

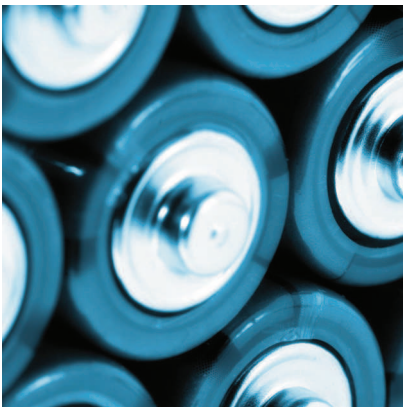
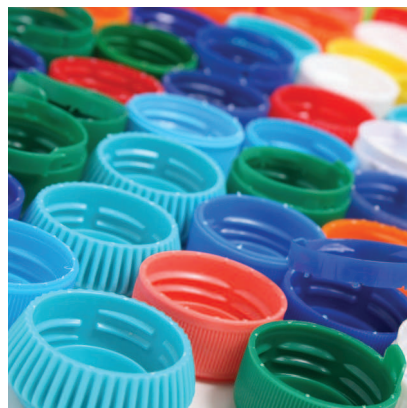


Comhshaol, Pobal agus Rialtas Áitiúil
Environment, Community and Local Government

Review of the Producer Responsibility Initiative Model in Ireland

Main Report (Redacted)

July 2014



PHILIP LEE
SOLICITORS

THE PROJECT TEAM WOULD LIKE TO THANK THE DEPARTMENT OF THE ENVIRONMENT,
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RESPONSIBILITY INITIATIVE MODEL IN IRELAND.

DUE TO THE COMMERCIALLY SENSITIVE NATURE OF THE INFORMATION IN THIS REPORT,
AT THE REQUEST OF REPAK, ERP, WEEE IRELAND AND THE IFFPG SOME ELEMENTS HAVE
BEEN REDACTED.

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APPENDICES

Appendix A: Terms of Reference

Appendix B: Consultation Working Paper

Appendix C: Working Paper on European Producer Responsibility Schemes

Appendix D: Competition in Extended Producer Responsibility Schemes

Appendix E: Use of risks management technique to determine the level of contingency funding

Appendix F: Corporate Governance Report

Appendix G: Packaging Levy

Appendix H: Use of Auto Shredder Residues

Appendix I: EWC Codes Assigned to ELV Treatment

Appendix J: References

ABBREVIATIONS

ATF	Authorised Treatment Facility
B2B	Business to business
B2C	Business to consumer
CASs	Civic Amenity Sites
C&D	Construction & Demolition
CEN	Comité Européen de Normalisation (European Committee for Standardization)
CFLs	Compact fluorescent lamps
CIF	Construction Industry Federation
CPI	Consumer Price Index
CSO	Central Statistics Office
DAFM	Department of Agriculture, Food and the Marine
DECLG	Department of the Environment, Community and Local Government
DIY	Do it yourself
DOENI	Department of the Environment Northern Ireland
DTTAS	Department of Transport, Tourism and Sport
EcoAP	Eco-Innovation Action Plan
EC	European Commission
ECJ	European Court of Justice
EEE	Electrical and electronic equipment
ELV	End of life vehicles
EPA	Environmental Protection Agency
EPR	Extended Producer Responsibility
ERP	European Recycling Platform (ROI)
EU	European Union
EUR/€	Euro: official currency of the Eurozone
EWRN	European WEEE Registers Network
FDII	Food and Drink Industry Ireland
FRS	Farm Relief Services
GB	Great Britain
GDP	Gross Domestic Product
GNP	Gross National Product
GPP	Green Public Procurement
HDPE	High density polyethylene

ICT	Information and Communications Technology
IFFPG	Irish Farm Films Producers Group
IPR	Individual producer responsibility
I.S.	Irish Standard
ISO	International Standardisation Organisation
IT	Information Technology
LAs	Local authorities
LHA	Large Household Appliances
LCA	Life Cycle Assessment
LCD	Liquid crystal display
MS	Member States
MRF	Materials Recovery Facility
N/A	not applicable
NCDWC	National Construction and Demolition Waste Council
NVDF	National Vehicle and Driver File
NI	Northern Ireland
NTFSO	National TransFrontier Shipment of Waste Office
NWR	National Waste Report
OECD	Organisation for Economic Co-operation and Development
OEE	Office of Environmental Enforcement
PET	Polyethylene terephthalate
POPs	Persistent organic pollutants
PP	Polypropylene
PPPs	Plant protection products
PR	Producer responsibility
PRI	Producer responsibility Initiative
PRO	Producer Responsibility Organisation
PST	Post shredder treatment
PVC	Polyvinyl chloride
RDF	Refuse derived fuel
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RFID	Radio-frequency identification
RMCs	Recycling Management Costs
RPS	Repak Payment Scheme
RSA	The Road Safety Authority
NRA	National Roads Authority
SCP	Sustainable Consumption and Production

SHA	Small household appliances
SLA	Secure Level Agreement
SME	Small Medium Enterprise
SRF	Solid recovered fuel
Tpa	tonnes per annum
TRACS	Tyre Recovery Activity Compliance Scheme
TWM	Tyre Waste Management
UK	United Kingdom
VEMCs	Visible Environmental Management Costs
VOCs	Volatile organic compounds
VRC	Vehicle Registration Certificate
WEEE	Waste electrical and electronic equipment
WMPs	Waste Management Plans
WPPs	Waste Prevention Programmes
WRAP	Waste & Resources Action Programme

GLOSSARY OF TERMS

An Annual Environmental Report (AER) must be submitted to the EPA each year by companies with either waste or Integrated Pollution Prevention Control licences, providing summary information on all aspects of the environmental performance of the licensed facility e.g. data on emissions to air and water, waste management, resource consumption, objectives and targets, ambient monitoring and complaints. AERs are made publicly available on the EPA website. Waste collection permit (WCP) and waste permit (WP) holders are required to submit AERs to local authorities under condition of permit.

Arising means actual amounts of waste generated.

Authorised waste collector means a holder of a waste collection permit that is in force.

Back-door waste means waste arising from secondary and tertiary packaging which is received by a producer but is not thereafter used in the supply of products

Central Statistics Office is the specialist national statistical agency with a mandate for “the collection, compilation, extraction and dissemination for statistical purposes of information relating to economic, social and general activities and conditions in the State”. It is also responsible for co-ordinating official statistics of other public authorities and for developing the statistical potential of administrative records.

Commercial waste in the context of this report, is a term used to describe the non-household fraction of municipal waste, which is produced by commercial premises such as shops, offices and restaurants, as well as municipal premises such as schools, hospitals etc. It also includes non-process industrial waste arising from factory canteens, offices etc. Commercial waste is broadly similar in composition to household waste, consisting of a mixture of paper and cardboard, plastics, organics, metal and glass.

Compliance Schemes are producer responsibility schemes operated by a PRO

Construction & Demolition waste refers to all waste that arises from construction, renovation and demolition activities and all wastes mentioned in Chapter 17 of the European Waste Catalogue (EWC).

de minimis refers to turnover and tonnage thresholds for the producers in the Waste Management (Packaging) Regulations 2007

Disposal means any operation which is not recovery even when the operation has as a secondary consequence the reclamation of substances or energy. Annex I of the new Waste Framework Directive (WFD) (Directive 2008/98/EC) sets out a non-exhaustive list of disposal operations.

End of Life Vehicle (ELV) means a vehicle which is waste within the meaning of Article 1(a) of the Waste Directive (refer to Directive 2000/53/EC on end-of-life vehicles).

European Waste Catalogue (EWC) is a list of all waste types generated in the EU and is now known as the List of Wastes (LoW). The different types of waste are fully defined by a six-digit code, with two digits each for chapter, sub-chapter, and waste type. The catalogue is available for download from the EPA website at

www.epa.ie/downloads/pubs/waste/stats/EPA_waste_catalogue_hazard_list_2002.pdf

Externality The effects of a production or consumption decision which are experienced by individuals or businesses which did not consent in the initial decision. Externalities may be either “positive” or “negative”. A negative externality is one in which costs are imposed on other people (as when a person dumps litter in the countryside, imposing costs on others whose aesthetic sense is disturbed by the litter, or imposing clean-up costs on the landowner or public authorities). A positive externality is one in which benefits are experienced by others. For example, if patent protection is incomplete, many firms may be able to benefit from the results of research expenditures by one firm. (OECD, 2005)

Free-riders are the actors in an EPR system who do not pay for the benefits they receive (OECD, 2001)

Gross Domestic Product (GDP) & Gross National Product (GNP). Gross Domestic Product (GDP) and Gross National Product (GNP) are closely related macroeconomic parameters. GDP measures the total output of the economy in a period i.e. the value of work done by employees, companies and self-employed persons. This work generates incomes but not all of the incomes earned in the economy remain the property of residents (and residents may earn some income abroad). The total income remaining with Irish residents is the GNP and it differs from GDP by the net amount of incomes sent to or received from abroad.

Hazardous wastes are wastes that have the potential to cause harm to human health or the environment. Any waste which displays one or more of the hazardous properties listed in Annex III of the Waste Framework Directive (2008/98/EC) is defined as hazardous waste.

Historical WEEE are EEE products put on the market before 13 August 2005

Household waste refers to wastes produced within the curtilage of a building or self-contained part of a building used for the purposes of living accommodation.

Industrial waste refers to wastes produced by industrial activities such as that of factories, mills and mines. Non-process industrial waste (e.g. from site canteen, office etc.) is similar in character to commercial waste.

Kerbside collection is a common reference for the practice of collecting household or commercial waste directly from its source, often, though not necessarily, from the pavement or front door.

Managed comprises the collection, transport, recovery and disposal of waste, including the supervision of such operations and the after-care of disposal sites, and including actions taken as a dealer or broker.

Manufacturer refers to an organisation involved in a form of activity where raw materials are transformed into finished goods.

Marginal Cost of an additional unit of output is the cost of the additional inputs needed to produce that output. More formally, the marginal cost is the derivative of total production costs with respect to the level of output. Marginal cost and average cost can differ greatly. For example, suppose it costs €1000 to produce 100 units and €1020 to produce 101 units. The average cost per unit is €10, but the marginal cost of the 101st unit is €20.

Municipal Waste means in ROI household waste as well as commercial and other waste that, because of its nature or composition, is similar to household waste. It excludes municipal sludges and effluents. In the context of this report municipal waste consists of three main elements – household, commercial (including non-process industrial waste), and street cleansing waste (street sweepings, street bins and municipal parks and cemeteries maintenance waste, litter campaign material). In NI, Municipal waste means waste under the control or possession of a district council.

Net benefit Total benefits from some course of action, minus the cost. Depending on the context “net benefit” may be the “bottom line” of a cost-benefit analysis, or may refer to a more restricted set of costs and benefits. Frequently, “net cost” and “net benefit” are used as interchangeable terms, differing only in terms of the sign. Thus a course of action with a “net cost” of one million dollars may equivalently be described as having a “net benefit” of minus one million dollars. (OECD, 2005)

Orphan products are those which are subject to an EPR policy, but whose producer is non-existent due to bankruptcy or other reasons (OECD, 2001)

Obligated Producers are producers who have obligations under the producer responsibility legislation.

Packaging is any material used to contain, protect and present goods. Virtually all packaging eventually becomes waste. Packaging is made from such materials as cardboard, paper, glass, plastic, steel, aluminium, wood, and composite materials such as those used in milk and juice cartons.

Primary Packaging is packaging conceived so as to constitute a sales unit to the final user or consumer at the point of purchase.

Producers: a producer is the entity with the greatest control over the decisions relating to materials selection and product design (OECD, 2001). In Ireland the definition of producer depends on the relevant producer responsibility legislation. For WEEE, the producer is considered to be the firm whose brand name appears on the product itself or the importer. However, in the case of packaging, the filler of the packaging, rather than the firm that makes the product container or wrapping, would be considered the producer. In instances where the brand owner can not be clearly identified, the manufacturer would be considered as the producer.

Producer Responsibility Organisation or in legislative parlance approved body is a non-profit organisation that takes on the obligations of its producer members for the collection, treatment and recycling of PRI waste.

Post-consumer waste means waste produced by material consumers, where waste generation did not involve the production of another product.

Pre-consumer waste also known as post-industrial waste, or industrial scrap, it refers to waste generated during converting or manufacturing processes.

Preparing for reuse means checking, cleaning or repairing recovery operations, by which products or components of products that have become waste are prepared so that they can be reused without any other pre-processing.

Processing facility means a facility where recycling or recovery activities are undertaken.

Recovery means any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfill a particular function, or waste being prepared to fulfill that function, in the plant or in the wider economy. Annex II of the new Waste Framework Directive (WFD) (2008/98/EC) sets out a non-exhaustive list of recovery operations, which includes material recovery (i.e. recycling), energy recovery (i.e. use a fuel (other than in direct incineration) or other means to generate energy) and biological recovery (e.g. composting).

Recyclate means materials resulting from the processing of plastic waste such as pellets, granules, flakes that will be used to form new products.

Recycling means any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations.

Recycling Management Costs (RMCs): fees producer pays compliance scheme for recycling/management of WEEE/batteries which are based on weight of product/battery type placed on the market each month.

Refuse Derived Fuels (RDF) refers to fuels produced from waste through a number of different processes such as mechanical separation, blending and compressing to increase the calorific value of the waste. Such waste derived fuels can be comprised of paper, plastic and other combustible wastes and can be combusted in a waste-to-energy plant, cement kiln or industrial furnace.

Reprocessor means an organisation which undertakes the specialised treatment or processing of material reclaimed from a waste stream in order to make it reusable in a new

product. Reprocessing is usually an intermediary step in the recycling chain it may also be the final step.

Residence time of the product is determined by both the functional lifetime of the products and their non-functional lifetime i.e. time spent as unused appliances in stock.

Residual waste means the fraction of collected waste remaining after a treatment or diversion step, which generally requires further treatment or disposal.

Reuse means any operation by which products or components that are not waste are used again for the same purpose for which they were conceived.

Secondary materials traditionally this term refers to industrial byproducts of a manufacturing process that are used as an ingredient of another manufacturing process to create another product. However the term can be broadly applied to; materials which have fulfilled their primary function and which cannot be used further in their present form, materials which occur as by-products from the manufacture or conversion of primary products, and materials that have been manufactured and used at least once and are to be used again after recycling. The term serves to distinguish virgin raw materials from materials that are not from virgin sources.

Self-compliers or self-compliant producers a self-compliant producer takes individual responsibility rather than collective with a compliance scheme for offering the take-back of products they put on the market (except for tyres). Producers are obliged to promote and advertise this service. Self-compliers must also fulfill certain requirements with regards to registration, payment of fees and reporting.

Statutory Instrument means an order, regulation, rule, scheme or bye-law made in exercise of a power conferred by statute.

Solid Recovered Fuels (SRF) refers to fuels refined from crude refuse derived fuels (RDF). To be defined as SRF a fuel must meet minimum standards for moisture content, particle size, metals, chloride and chlorine content and calorific value.

Social costs the sum of private costs (the costs incurred by the individual decision-maker which would be taken into account by individuals motivated by self-interest, of by businesses aiming to maximize profit. Private cost may be contrasted with a wider measure of costs,

such as social cost, which includes "external costs" borne by individuals other than the decision-maker) and external costs (costs incurred as a result of individual decisions, but which are borne by an individual other than the person making the decision. For example, a private landfill operator which allows the site to contaminate groundwater may impose costs on neighbouring residents or businesses, in terms of health damage, the costs of water purification, or the costs of obtaining alternative uncontaminated sources). (OECD, 2005)

TFS stands for TransFrontier Shipment of Waste. The 2007 Regulations set out new notification procedures, revised waste listings and enforcement provisions in relation to the export, import and transit of waste shipments within the EU. The National TFS Office at Dublin City Council is the competent authority for the implementation and enforcement of the TFS Regulations since 12 July 2007.

Treatment/pre-treatment includes, in relation to waste, any manual, thermal, physical, chemical or biological processes that change the characteristics of waste in order to reduce its mass, or hazardous nature or otherwise, to facilitate its handling, disposal or recovery.

Unreported waste is waste that is not recorded as having entered the formal waste management industry.

Visible Fees/Visible Environmental Management Costs (vEMCs) are costs on new products placed on the market after 13th August 2005 (only categories 1, 2, 4, 5 & 6) for a limited period of time (8 years for the various categories of historic WEEE and 10 years in the case of category 1 (large household appliances) . These costs act as contributions to the Producer Recycling Fund (PRF) to finance the collection and treatment of historical WEEE.

Waste refers to any substance or object which the holder discards, intends to discard or is required to discard, under the new Waste Framework Directive (WFD) (2008/98/EC).

Waste management means the collection, transport, recovery and disposal of waste, including the supervision of such operations and the after-care of disposal sites, and including actions taken as a dealer or broker.

Waste producer means anyone whose activities produce waste (original waste producer) or anyone who carries out pre-processing, mixing or other operations resulting in a change in the nature or composition of this waste, under the Waste Framework Directive (2008/98/EC).

Waste electrical and electronic equipment (WEEE) refers to electrical and electronic equipment which is waste within the meaning of Article 3(a) of the Waste Directive 2008/98/EC, including all components, subassemblies and consumables which are part of the product at the time of discarding.

Waste Framework Directive (WFD) - Waste Directive 2008/98/EC of 19 November 2008.

Waste Collection Permit (WCP). A permit issued by a local authority for the collection of waste under the Waste Management (Collection Permit) Regulations 2007, as amended.

Waste Permit (WP). A permit issued by a local authority to a facility for the transfer, storage or treatment of waste under the Waste Management (Facility Permit and Registration) Regulations 2007, as amended.

EXECUTIVE SUMMARY

INTRODUCTION

The OECD defines Extended Producer Responsibility (EPR) as a concept where manufacturers and importers of products should bear a significant degree of responsibility for the environmental impacts of their products throughout the product life-cycle, including upstream impacts inherent in the selection of materials for the products, impacts from manufacturers' production process itself, and downstream impacts from the use and disposal of the products. Producers accept their responsibility when designing their products to minimise life-cycle environmental impacts, and when accepting legal, physical or socio-economic responsibility for environmental impacts that cannot be eliminated by design.¹ Article 8 of the Waste Framework Directive also outlines some of the measures which can be undertaken in Extended Producer Responsibility.

Application of EPR also ensures that the waste management costs arising during the life of a product are internalised in the price charged to consumers. Such costs can be minimised where materials and products are managed in an environmentally effective manner throughout their life cycle. The Waste Management Act, 1996 established a legislative basis for producer responsibility initiatives (PRIs).

PRIs allow product producers (hereafter in this report referred to as "producers") to devise schemes that have the capacity to fulfil the basic objectives of waste management legislation without resort to a "command and control" approach. The principal PRIs in Ireland are in the areas of Waste Electrical and Electronic Equipment (WEEE), batteries, packaging, end-of-life vehicles (ELVs), tyres and farm plastics.

For packaging waste, WEEE, batteries, tyres and farm plastics, producers in Ireland have developed a collective approach to meet general objectives which would otherwise be imposed by detailed regulatory requirements on individual producers.

¹http://www.oecd.org/document/19/0,3746,en_2649_34281_35158227_1_1_1_1,00.html. This OECD webpage contains a guide to the extensive work that the organisation has done in the area of EPR. Accessed 26 July 2012.

The critical role in the collective approach to PRI is discharged through a Compliance Scheme, whereby the Producer Responsibility Organisation (PRO) offers a service that enables producers to comply with their environmental obligations.

Under the PRI approach, the PRO operates under an approval granted by the Minister. These producer responsibility agreements are underpinned by legal obligations so that individual businesses which do not elect to participate in a compliance scheme must then self-comply, as they cannot opt out of their obligations, or the costs associated with those obligations.

The majority of these PRI schemes have operated very successfully and have enabled Ireland to reach our domestic and EU recycling targets. In 2011 Ireland had the 4th highest recycling rate for packaging in Europe, was among the top tier of European recyclers of agricultural plastic, collected nearly double the target quantity of WEEE and exceeded the collection targets for portable batteries. They have also successfully contributed to Ireland meeting our overall environmental goals and have diverted substantial amounts of waste from landfill. However, while it is correct to note the achievements, it is imperative to carry out a review of the PRIs to ensure that Ireland's commitment in meeting EU and national targets will be achieved in a cost-effective manner.

Terms of Reference

In the regulatory environment, both at a domestic and EU level, it is expected that there will be new waste stream recycling targets. To ensure it can deliver upon new and increased recovery and recycling targets, the Department of the Environment, Community and Local Government (DECLG) commissioned a wide ranging review of the existing PRIs which are currently in operation in Ireland. The PRI review examined:

- The operation of the existing PRIs;
- The scope for additional measures to improve the effectiveness of the existing PRIs;
- The potential for further measures to enhance the prevention and minimisation of PRI waste and to encourage the preparation for reuse of recovered PRI waste resources.
- The potential to introduce further PRIs for the management of additional waste streams.
- The suitability and effectiveness of the current statutory and regulatory arrangements particularly when compared against best practice in other Member States,

- The effectiveness of the current competitive dynamic in the waste streams where PRI operates and how it can be maximised (i.e. existing schemes enhanced and / or additional schemes made subject to PRI) to increase competition, lower costs for producers & lower the potential for free-riders, and also bearing in mind the potential increase in costs which might arise due to the increases in the number of compliance schemes,
- The cost of recycling for Irish producers, including both the actual cost of recycling and the administrative cost of the compliance scheme,
- The effectiveness of the current use of information and awareness within the PRI and recommendations for its enhancement,
- The suitability, availability and quality of waste recycling infrastructure and services, which are present in Ireland and relevant to PRIs including the practical potential for the use of emerging technologies.

The Terms of Reference of the Review are attached in Appendix A of the main report. The terms of reference were informed by a consultation period prior to their publication.

The DECLG also invited members of the public together with industry and NGO's to make written submissions on the PRI Review on 29th June 2012 and this public consultation phase remained opened until Wednesday 25th July 2012. A list of the consultees responses can be found in Appendix B of the main report.

Report Structure

The report is divided into two main parts: one part dealing with cross-cutting issues and one part dealing with waste specific issues.

With regards to the cross-cutting issues:

- Section 2 describes the challenges which are currently facing Ireland and the existing PRIs.
- Section 3 presents a brief overview of the principles behind the development of successful PRI models from an international perspective (see Paper on European Producer Responsibility Schemes report in Appendix C of the main report).
- Section 4 examines cross-cutting issues relating to:

- **Efficiency** of the PRI model in Ireland, which will focus on three topics: the role of competition (see also Competition Paper in Appendix D of the main report), the role of contingency reserve (see also Appendix E of the main report) and how to reduce administrative burden on producers and government.
- **Effectiveness** of the PRI model in Ireland, which will concentrate on the monitoring of PROs (see also Corporate Governance report in Appendix F of the main report), the role of self-compliers, information and awareness, enforcement, prevention and reuse, development of indigenous capacity.

Section 5 to Section 11 examines the specific waste streams (packaging, WEEE, batteries, ELVs, tyres, farm plastics, and construction and demolition waste) that are subject to PRI. These sections are supported by Appendix G reviewing the need for the introduction of a Packaging Levy and Appendix H on the use of Auto Shredder Residues.

Section 12 examines what other waste streams might be suitable for the development of further PRIs.

BACKGROUND TO THE REVIEW

The economic context for Ireland has changed dramatically since 2007 which on the one hand has helped to ease some environmental pressures (e.g. traffic congestion, greenhouse gas emissions (GHG) and waste management pressures); however, the very challenging economic outlook for Ireland also means that there is greater pressure on public resources and a real risk that environmental issues may drop in priority when compared to the imperative to protect employment and enhance competitiveness.

At European and National levels there have also been policy and regulatory developments which will have a wide ranging influence on PRIs. These developments can be divided into two strands:

- Cross-cutting: which apply directly to all PRIs and the way PRI waste is managed (e.g. Waste Framework Directive 2008/98/EC, A Resource Opportunity Waste Management Policy in Ireland published by the DECLG in 2012)
- Specific: which applies only to certain PRI waste streams (e.g. Packaging Waste Directives, WEEE Directive)

Improving resource efficiency^{2 3} will lead the EU and Ireland into an economic transformation towards a more sustainable and competitive economy, and to contribute to world-wide efforts to ensure a transition towards a green economy⁴.

As summarised in the new Irish Waste Policy “*A Resource Opportunity*” published in July 2012 by the DECLG and which provides a roadmap for the future of waste management in Ireland, the guiding principles to improve resource efficiency are:

- Preventing and minimising waste;
- Maximising the value from waste by re-use, recycling and recovery; and
- Disposal of residual waste to landfill as a last resort, to be phased out within the next decade.

However, the European Commission has evaluated progress on the implementation of the 2005 Thematic Strategy on the Prevention and Recycling of Waste and has published a *Review of Progress Towards Achieving the Strategy Objectives (COM(2011)13)*⁵. The Review found that significant margin for progress still exists beyond the current EU minimum collection and recycling targets. In particular the review recommended that, optimal combination of economic and legal instruments should be promoted notably through landfill bans and by applying the producer responsibility concept to additional waste streams on the basis of a common European approach.

² *A resource-efficient Europe - Flagship Initiative under the Europe 2020 Strategy*

http://ec.europa.eu/environment/resource_efficiency/pdf/com2011_571.pdf

³ *Roadmap to a Resource-Efficient Europe* [http://ec.europa.eu/resource-efficient-](http://ec.europa.eu/resource-efficient-europe/pdf/resource_efficient_europe_en.pdf)

[europe/pdf/resource_efficient_europe_en.pdf](http://ec.europa.eu/resource-efficient-europe/pdf/resource_efficient_europe_en.pdf)

⁴ The OECD defines green growth as “fostering economic growth and development, while ensuring natural assets continue to provide the resources and environmental services on which our well-being relies. To do this, it must catalyse investment and innovation which will underpin sustained growth and give rise to new economic opportunities.”

⁵ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0013:FIN:EN:PDF>

In parallel the European Commission is planning a review of waste policy and legislation⁶. The current Waste Directives are in the process of being recast. WEEE and ROHS have already been completed and changes to batteries⁷, ELVs, and packaging targets are also expected within the next three years. Targets could also be set in the tyres area.

In the concept of Producer Responsibility **manufacturers and importers of products should bear a significant degree of responsibility for the environmental impacts of their products throughout the product life-cycle** (OECD, 2001). The importance of producers (manufacturers and importers of products) has been confirmed by the *Revised Waste Framework Directive 2008/98/EC*. Specifically, The *Waste Framework Directive* makes the following provisions:

- Article 8 on Extended Producer Responsibility is designed to allow Member States to develop measures to encourage producers to take responsibility for their products. Including eco-design and the provision of publicly available information on the reusability and recyclability of products.
- Article 14 provides that Member States may decide that the **costs of waste management** are to be borne partly or wholly by the producer of the product from which the waste came and that the distributors of such product may share these costs.
- Article 15 provides that the **responsibility for arranging waste management** is to be borne partly or wholly by the producer of the product from which the waste came and that distributors of such product may share this responsibility.

⁶ This initiative will review key targets in EU waste legislation (in line with the review clauses in the Waste Framework Directive, the Landfill Directive and the Packaging Directive) and carry out an ex-post evaluation of waste stream directives, including ways to enhance coherence between them. http://ec.europa.eu/atwork/pdf/cwp2013_annex_en.pdf

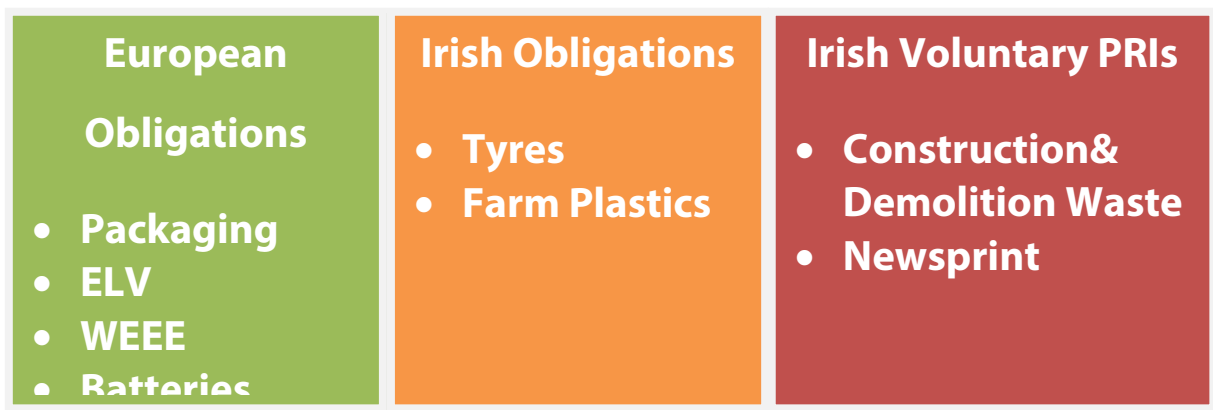
⁷ Revisions to the Batteries Directive 2006/66/EC have already been made under the revised Batteries Directive 2013/56/EU

THE IRISH PRODUCER RESPONSIBILITY MODEL

The Waste Management Act, 1996 established a legislative basis for producer responsibility and the first PRI in Ireland was rolled out with the implementation of the Packaging Directive in 1997. The principal PRIs are in the areas of Waste Electrical and Electronic Equipment, batteries, packaging, end-of-life vehicles, tyres and farm plastics.

As shown in Figure 1, most of the PRIs in Ireland were established in the framework of regulatory obligations. There are some cases, however, of purely voluntary PRIs adopted by producers (e.g. construction and demolition waste, newsprint).

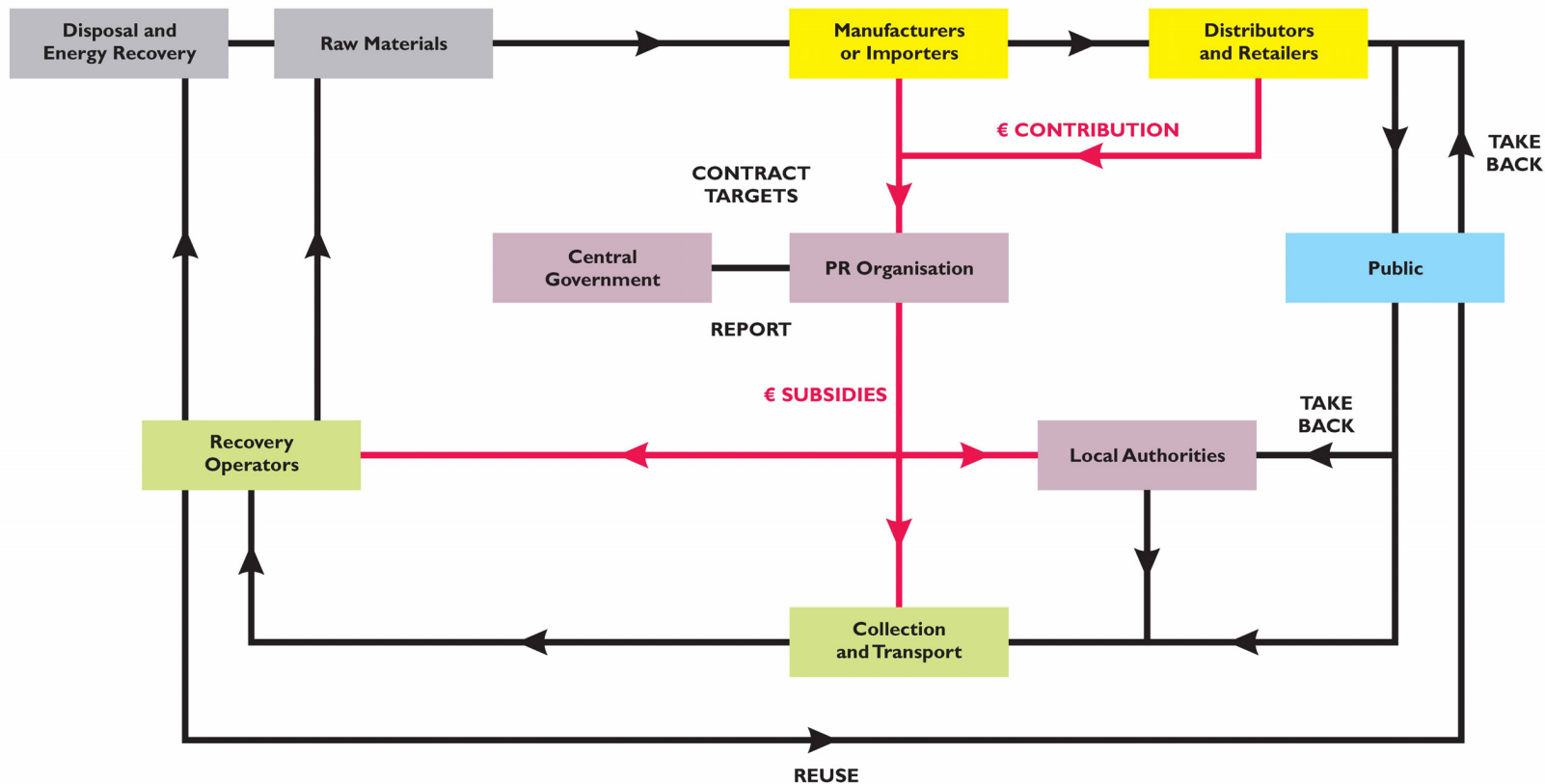
Figure 1: Main PRIs in Ireland



PRIs require a complex set of interactions between a wide range of stakeholders in a product supply chain. PRIs also require flows of product/waste, information and money as illustrated in Figure 2. All actors in the product chain must participate in the PRIs to optimise its effect.

Under the PRI model, producers must meet certain desired environmental outcomes. The respective requirements and choices (i.e. self-comply vs. joining a PRO) by which a producer fulfils the specified environmental outcomes are set in legislation, typically a statutory instrument developed by the DECLG. The latter also contains details of the desired environmental outcomes in terms of targets, collecting information and so on. The targets are frequently EU-mandated.

Figure 2: Overview of the PRI Model with a PRO.



The DECLG is also responsible for **setting the overall national policy** and regulatory framework (waste permitting, information and awareness, enforcement, etc.) in which the PRI is operating. The DECLG also provides funding to local authorities for a broad range of activities (e.g. provision of environmental awareness officers, enforcement, WEEE collection at Civic Amenity Sites, etc.).

Achieving the desired environmental outcomes is usually part of the mandate of the PRO, which uses the producers' fee to provide financial support or contract for **collection and/or treatment** of PRI waste. In some PRIs distributors are required by the regulations to take back certain waste.

The Minister for the Environment, Community and Local Government (the Minister) is responsible for **approving** PROs or in legislative parlance, "approved bodies". The legislation typically lists a series of documents that must form part of the application to be a PRO such as those relating to governance and membership rules, a declaration that the PRO will not discriminate against any producer on the grounds of its size or location, while the PRO agrees to co-operate with other PROs to achieve the environmental targets.

The Minister in approving a PRO may specify conditions across virtually all aspects of a PRO, including the obligation to meet certain specified targets, composition of the board of management, representativeness of the directors, amount to be spent on awareness and approval of amendments to articles of association, corporate governance rules and rules of membership. If a producer joins the PRO and participates satisfactorily in the compliance scheme, rather than self-comply, then the producer is exempt from certain reporting, registration with local authorities and other requirements. The PRO undertakes these activities on behalf of the producer. If, on the other hand, the producer decides to self-comply then certain information and documentation needs to be provided to the local authority, including an implementation plan to meet the environmental targets in the legislation. The legislation allows for the possibility of more than one PRO since there is reference to co-operation between PROs to meet targets. However, as set out in the Chapter on competition, the optimum number of PROs for a particular waste stream is influenced by a wide range of factors – there is no one-size-fits-all approach.

The DECLG must maintain a **management / oversight function** to ensure that the PROs appointed to assist Ireland in that regard are performing and meeting specified targets. While the DECLG monitors PRO performance, the local authorities or the EPA (depending on the waste stream) fulfil a monitoring role for self-compliers. The DECLG reports target

achievement to the European Commission. In this role the DECLG is assisted by the EPA for data collection and reporting,

A number of other factors contribute to the success of PRI recycling programmes (infrastructure provision, enforcement, etc.). However, without appropriate **information and awareness activities**, the contribution of these success factors can be undermined. Information and awareness activity in PRIs is a **shared responsibility** between the DECLG, EPA, local authorities, PROs, waste collectors, producers and retailers.

Enforcement is also an important instrument for ensuring the implementation of PRIs (OECD, 2001). The key enforcement challenge for enforcement authorities is to provide a framework which maintains a trade-off between effectiveness and administrative cost and also ensures a dissuasive effect for non-compliers without going too far towards the imposition of disproportionate penalties. Local authorities and the EPA are the main enforcement authorities.

The concept of Producer Responsibility incorporates several distinctive features considered to be important to **waste prevention and reuse**. There are mixed views on the effect of PRIs on waste prevention and reuse. The EPA is the main driver of waste prevention and reuse in Ireland supported by local authorities and PROs.

CROSS-CUTTING ISSUES

This section examines some cross-cutting considerations relating to:

- **Efficiency of the existing PRI model:** This relates to the level of resources from producers and public authorities required to meet the desired environmental outcomes). This will focus on three topics: the role of competition, the role of contingency reserve and how to reduce administrative burden on producers and government.
- **Effectiveness of the existing PRI model** which can be defined as the degree to which the desired environmental outcomes are met. This section will concentrate on the monitoring of PROs, interrelationships between PROs, the role of self-compliers,

information and awareness activities, enforcement, prevention and reuse and development of indigenous reprocessing capacity.

A detailed review of each waste stream will also provide more detailed information under these topics for each waste stream in Section 5 to 11.

The review of cross-cutting issues has shown the complexity of designing and implementing PRIs. The review has identified the benefits that can be derived from a number of changes to the current arrangements. The aim of these changes is to provide more cost-effective PRIs able to meet the desired environmental outcomes. This section presents a summary of the main recommendations.

PROs and Self-compliers

As highlighted in Section 2, with increasing targets from the EU it is necessary that both self-compliers and PROs (and their members) **contribute to the achievement of the desired environmental outcomes equally and effectively**. This will require:

- The equal allocation of targets by the DECLG to all obligated producers (e.g. based on market share of producers put on the market or waste generated) regardless if they are self-compliers or PRO members. The development of a national and centralised electronic registration system for obligated producers.
- The setting up of a clear reporting system to monitor PRO performance and self-complier performance, and their relative contribution to national targets which could be published in the National Waste Report.
- The development of a national and centralised electronic registration system for obligated producers. This will assist in data collation and sharing for monitoring. In addition the use of such a standardised approach could also reduce administrative burden to producers and public authorities.

The DECLG will have to introduce controls and **incentivise self-compliers and PROs to meet the desired environmental outcomes**.

- A standard Service Level Agreements (SLA) with consistent basic contractual provisions and 'bespoke' provisions should be used to govern the DECLG relationship with the PROs. The SLA should include (in separate schedules) both the interim targets (providing an early warning system to the DECLG) which the PRO is obliged under the SLA to reach, within a specified time-frame, and the specific measures

required to be carried out in the event of a breach (Non-Financial Contractual Penalties, Financial Contractual Penalties and termination). A clear and transparent PRO renewal process will be also used to assess the performance of the PRO and may lead to the replacement of the PRO if it has not met the required criteria.

- In order to improve the self-complier system, a combination of communication, enforcement and economic incentives should be used by the authorities. It is important that there is a clear and consistent communication of their obligations⁸. The level of enforcement applied to self-compliers not reporting and not achieving the desired environmental outcomes should increase⁹. Enforcement activities should not only focus on outward signs of compliance (e.g. signage and notices) but on key drivers to meet the desired environmental outcomes (e.g. quantities taken back and recycled). The DECLG should review the fees paid by self-compliers and consider using a fee system rewarding self-compliers meeting the targets and penalising self-compliers not meeting the targets. The costs of an effective monitoring and enforcement of the self-complier system should be reflected in the fees paid by self-compliers.

Information and Awareness

A number of other factors also contribute to the success of PRIs (infrastructure provision, enforcement, etc.). Without appropriate information and awareness, the contribution of these factors can be undermined.

Information and awareness activities increase householder involvement in recycling programmes. These activities are paramount to the success of recycling initiatives which rely on the willingness of individuals to change current behaviours and participate, provided they are empowered to do so. In the current PRI system, information and awareness activities are a shared responsibility model and have the benefits of involving a number of actors in the product chain giving recycling a certain visibility and mandate. However, communicating information on PRIs is complex as there are different actors responsible for communicating

⁸ A good model is given by the EPA in its management of the WEEE B2B producers. A clear website, supporting documentation and workshops to explain obligations.

⁹ The reasons why the packaging self-compliers are not performing as well as the PRO are explored further in Section 7 on the Packaging PRI.

messages, different target audiences and different messages required for these audiences. Consumer-facing messaging needs to be clearer and more consistent, which is a considerable challenge given the wide range of organisations involved in public engagement on the environment. Because of the complexity of recycling behaviours, there is no one size fits all model that can be developed to communicate information and awareness.

An improved coordination of the PROs communication and awareness activities is required, but it is unlikely that a separate entity taking responsibility for all the communication activities will be a better option because of the complexity and diversity of the issue. Furthermore the PRO is more likely to have the expertise and knowledge of where the gaps lie in collection, sorting and recycling of waste. However, the DECLG should provide further co-ordination by:

- Continuing setting the broad framework and priorities for changing behaviours using National policy documents, PRO approvals, separate communications etc..
- Requiring all PROs to develop generic communication tools in consultation with stakeholders to provide harmonised and coherent information. These tools should be made available to local authorities, new PROs entrants, self-compliers and NGOs.
- Requiring all PROs to develop a communication plan when applying for PRO approval. This communication plan should be fully costed and should include a vision, clear objectives, initiatives proposed, time frames involved and resources required.
- Requiring all PROs to update their communication programmes annually. These programmes should be elaborated by the PROs in collaboration with other stakeholders in the product chain / waste stream (producers, distributors, waste operators, EPA and local authorities). The communication programmes should be submitted to the DECLG for agreement. The DECLG should consult with the EPA in the approval process as they have developed expertise in successful communication campaigns.
- Considering a mandate for the PROs to engage with one another with a view to launching cross PROs/ cross stream education and awareness initiatives. The DECLG should be aware that such cooperation must reflect the shared or proportional obligations between schemes to meet targets and at all times occur within the confines of applicable competition law.
- Facilitating the sharing of research and consumer insight across delivery bodies and increasing collaboration on research. The DECLG should also commission independent monitoring of Irish recycling behaviours as this evidence based research

is essential to inform policy and communication initiatives. This could be achieved by specific call under the EPA Strive project co-funded by the PROs and self-compliers.

National information and awareness initiatives should rest with the PROs but they should be prepared and carried out in consultation with the other PROs (within the same waste stream), the DECLG and the EPA. As noted earlier, the DECLG may require PROs to collaborate further on joint information and awareness initiatives.

Local information and awareness initiatives should also rest with the PROs but should be prepared and carried out in consultation with the local authorities and other relevant stakeholders.

For PRIs where a significant change in scope will be required to meet the desired environmental outcomes, the DECLG should establish new Stakeholders Working Groups (e.g. Tyres, ELVs) or sub-groups in existing working groups (e.g. in the WEEE Batteries Monitoring Group) to facilitate the elaboration of collaborative proposals on communication and the implementation of proposed arrangements.

The current arrangements offer limited opportunities for self-complying businesses to impact significantly on behavioural change. Self-compliers include diverse organisations ranging from large retailers to smaller businesses with limited communication expertise to communicate about the environmental sound management of PRI waste. A code of practice / guidance for self-compliers should be developed by the EPA with support of the PROs and industry groups. Self-complier should also contribute financially towards information and awareness based of market share of product put on the market, except if they can satisfactorily demonstrate significant communication of their own.

Social media should be used as part of the overall communication strategy of the PROs, but its use is still new and further research on the use of social media by PRI would be beneficial. This could be achieved by specific call under the EPA Strive project co-funded by PROs and self-complying producers.

Enforcement

Enforcement is also an important instrument for ensuring the implementation of PRIs (OECD, 2001). There is scope for all kind of participants (consumers, producers, importers, retailers, collectors and recyclers) to be non-compliant with the PRI and waste regulations one way or

another. While there are various ways to reduce non-compliance, there is usually a trade-off between effectiveness of enforcement and the associated administrative cost. Addressing these problems is a shared responsibility between PROs and the enforcement authorities. On one hand enforcement of environmental regulation in Ireland is not new and several guidance documents have been developed (e.g. IMPEL¹⁰ key principles of enforcement, the RMCEI framework¹¹ and the applicable EPA core requirements). In addition, it is anticipated that the Commission will present a general framework proposal in autumn 2014 for a Directive on Environmental Inspections that will apply to the entire environmental acquis, in accordance with the provisions of the Seventh Environment Action Programme. These legislative and guidance requirements should guide PRI enforcement activities. On the other hand the PRI regulations and their enforcement of PRI obligations are particularly complex. With the constraints on public spending, enforcement activities by the EPA and local authorities have reduced in 2010 and 2011.

While it is acknowledged that the availability of public finances has reduced, clearly if governments are enacting new environmental regulations, they need to ensure that adequate provisions are in place to support their enforcement.

The reduction in the number of regional formations to three main groupings (DECLG, 2012b) should lead to better co-ordination and sharing of resources, **thus freeing resources**, some of which could be allocated towards PRI enforcement. These resources should focus in particular on packaging, ELVs, tyres and WEEE leakage (see specific recommendations in the waste specific sections of the main report). The further use of **outsourcing** should be considered for routine inspections. The **co-funding of public enforcement** by the PROs should be explored with the PROs. Increased compliance is of mutual benefit to the

¹⁰ The European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL) is an international non-profit association of the environmental authorities of the Member States, acceding and candidate countries of the European Union and EEA countries. The Association is the continuation of the informal network, which was commonly known as the IMPEL Network (<http://ec.europa.eu/environment/impel/>) and shares experience and develops guidance for best practice in environmental regulation and is a useful source of information

¹¹ Recommendation on the Minimum Criteria for Environmental Inspections: In 2001, the European Parliament and Council made a Recommendation on the Minimum Criteria for Environmental Inspections (RMCEI) in EU Member States. The purpose of the Recommendation is to strengthen compliance with, and contribute to a more consistent implementation and enforcement of, EU environmental law.

authorities, the PROs and the compliant producers. The fees charged to self-compliers should reflect the cost of enforcing the self-compliance system.

It is also recommended that **dedicated PRI enforcement units be established** to facilitate the concentration of specialised expertise at national or regional levels, facilitating the coordination of PRI enforcement activities and the tackling of transboundary illegal activities. This option should be considered in the course of the roll-out of new enforcement structures by DECLG with a view to possibly establishing centres of excellence for particular waste streams (e.g. WEEE, ELVs) in specific local authorities who would be called on as a support for other authorities.

In addition to the current process of the PRI Review, the DECLG should consider further **involvement of businesses and enforcement officers** at the early stages of the development or review of PRI Regulations to ensure that these regulations are practical, clear and well understood.

Capacity building is a critical function of enforcement and the NIECE¹² has an important role to play in this regard. In addition to the current role of the NIECE, the development of standard enforcement documentation would also be useful to facilitate enforcement of PRI obligations. Also, in order to improve collaboration between PROs and the local authorities, the PROs should be invited to input in some of the working group tasks.

The **RMCEI Framework** provides a rational approach to prioritising enforcement. Enforcement of PRI obligations is not rated as high as environmental problems generating direct pollution. However, non-compliant PRI producers undermine the system but it may take years for the targets to be missed or the environmental problems to appear. Therefore, in line with the establishment of dedicated PRI enforcement units, these units should continue to follow the RMCEI Framework to allocate priorities; however, the scope of the priorities should be on PRI waste only.

The development and use of further **civil sanctions** should be considered as it would also provide flexibility for the enforcement authority and reduce the cost of enforcement to public

¹² The Network for Ireland's Environmental Compliance and Enforcement (NIECE) is operated by the Agency in conjunction with other public bodies with responsibility for the implementation and enforcement of environmental legislation.

authorities. Where possible, on the spot fines or Fixed Payment Notices should be introduced as a means of streamlining the enforcement system.

It is also important to increase the risk for non-compliant businesses by **setting penalties** at an appropriate level and **disclosing publicly** businesses who have been convicted.

Improving the identification of non-compliant producers will also facilitate enforcement and reduce risk to the State. These can be achieved by establishing a central register for compliant businesses, as well as the application of peer group, pressure from compliant obligated businesses, whereby private and public buyers would be encouraged to report non-compliant businesses to the relevant enforcement authority.

Industry or trade associations are also important dissemination channels for communicating requirements, methods of compliance, and compliance activities.

Information on the outcomes of enforcement is critical for effective enforcement programmes. One of the challenges in assessing the effectiveness of PRI enforcement is the lack of data on the outcomes of the enforcement activities. The EPA should examine the inclusion of further information on outcomes of the enforcement activities for all PRIs in its “Focus on Environmental Enforcement in Ireland” report.

Prevention and Reuse

The concept of Producer Responsibility incorporates several distinctive features considered to be important to waste prevention and reuse. PRI aims to **prevent environmental problems** at source via the provision of incentives for changes at the design phase of a product’s life. However, internationally there are mixed views on the effect of PRIs on design changes.

The framework for waste prevention and reuse in Ireland is provided by the National Waste Prevention Programme (NWPP) supported by the EPA, local authorities, PROs and others. As a significant share of PRI products are not manufactured in Ireland, the key focus to encourage waste prevention should be to influence Irish businesses and the public to use more environmentally friendly products when the alternative exists.

In this regard, there is significant scope to use economic instruments consistent with the waste hierarchy, to influence the size of the financial incentives to prevent waste. The use of variable fees relating to the quantity of materials and the level of harmful substances within the relevant

products should be considered by the PROs and by the DECLG (in the self-complier system) in setting producer fees.

There have been limited initiatives in Ireland to date relating to prevention and reuse except for the packaging PRI which has been the most active in waste prevention. While there may be limited scope for prevention and reuse in some of the PRIs, all PROs should develop proposals for encouraging waste prevention and reuse in line with EU, national and regional policies and programmes. These proposals should be submitted as part of their approval application process and should demonstrate waste prevention and reuse initiatives in support of policy objectives at national, local and community level. The DECLG should liaise with the EPA Resource Efficiency Unit when reviewing the proposals.

There are also significant opportunities to reduce WEEE through reuse and this potential is explored in more detail in Section 5 examining the WEEE PRI.

Development of Indigenous Recycling and Reprocessing Capacity for PRI waste

In 2011, approximately 73% of non-hazardous municipal waste recovery and 47% of hazardous waste treatment took place abroad (EPA, 2013). European & national waste legislation and policy supports the proximity principle and restricts the export of waste for disposal. From an environmental perspective, there are many potential arguments and positions in favour of both the export of waste and the restriction on exports, depending on the outcome of the environmental analysis.

One of the options is that the State could investigate the possibility of instructing the PROs to direct waste to be processed in Ireland using only national waste infrastructure. This could contribute to the achievement of the Government's Action Plan for Jobs 2014 commitment in relation to options to support the development of indigenous treatment infrastructure. To date however, the PROs, while supporting in principle the idea of further developing indigenous recycling and reprocessing capacity, have been more focused in providing value for money to their members. The legal considerations of State interventions are complex and in order to advise on this issue with a sufficient degree of certainty to provide a clear recommendation, a thorough analysis of the case-law applicable to the free movement of goods and services would be required which was not part of the PRI review. Apart from the internal market and competition / state aid aspects, there are likely to be issues in relation to the statutory powers of the Department or Minister to impose conditions in authorisation requiring the direction of specified volumes or share of waste to particular facilities or types of facilities in Ireland, and

this issue also needs to be considered in the context of the Panda/Greenstar judgments of Judge McKechnie (2009) in the High Court to make sure that the measures adopted do not offend any recognised principles of public and administrative law.

However there are other measures which can be used to increase the availability of PRI waste and inhibit the export of PRI waste to substandard facilities.

In addition to the work of rx3 whose aim is to develop markets for recyclable materials, the establishment of national waste policy and waste management plans which are consistent with the waste hierarchy. These plans can be supported by the establishments of targets and the use of economic instruments favouring prevention, reuse, recycling or recovery compared to disposal. This will increase PRI waste available for reuse, recycling and recovery both in Ireland and abroad.

There is a shared responsibility between the State and the PROs to reduce the leakage of PRI waste out of the authorised channels (e.g. ELVs, WEEE and tyres)¹³. Leakage prevention will increase PRI waste available for recycling and recovery in Ireland and abroad. The use of ambitious recycling and recovery targets can also help achieve this goal, but they may affect the competitiveness of the producer sectors if these targets are not consistent with other EU Member States.

It is imperative that PRI waste which is exported for treatment outside Ireland is sent to authorised facilities meeting all the required EU and national requirements including environmental and health & safety standards. Export of green list, non-hazardous waste for recovery, in certain circumstances, can be blocked based on article 49(2) of the Waste Shipment Regulation or specific provisions governing such exports in EU Regulations No 1418/2007 and No 647/2012. For example, the TFS Office can prohibit the export if it has reason to believe that the waste will not be managed in accordance with the requirements for environmentally sound management.¹⁴

¹³ Leakage refers to the management of waste outside the control of the compliance schemes or authorised waste operators. The leakage of PRI waste out of the authorised channels does not contribute to Ireland meeting European or national targets and pose a risk to the environment.

¹⁴ Environmentally sound management may be assumed as regards to the waste recovery or disposal operation in the country concerned, if the person who intends to ship the waste or the authority in the country can demonstrate that the

As shown by the international experience, the PROs could work towards the dual goals of supporting indigenous facilities and providing value for money to their members by funding research to develop cost-effective technologies. Other funding partners could also be interested in providing financial support for such research activities, such as Enterprise Ireland or the EPA STRIVE.

Competition

One of the objectives of the PRI review has been to address the role of competition in securing a more efficient and effective collection, sorting and recovery of waste streams such as WEEE, packaging, batteries and so on, so as to improve the competitive position of firms and business that need to pay for such services, while at the same time ensuring that the service meets binding EU environmental targets. Success should not only contribute to the success of such firms through lower input costs but as a consequence also generate extra jobs and investment.

The vehicle through which collection, sorting and recovery of waste takes place is a producer responsibility organisation or PRO. It acts collectively on behalf of individual firms in the collection, sorting and recovering waste as well as meeting the targets and in return the PRO charges a membership fee based on tonnage of waste. In most markets more competition is associated, albeit crudely, with the number of providers. Hence, as a first approximation, it could be argued more PROs should lead to more competition where environmental targets are met with lower costs of collection, sorting and recovery. A win-win situation.

It is considered that this view is mistaken. This conclusion was reached only after a careful examination of the economics of the supply of collection, sorting and recovery services supplied through a PRO. It is unlikely that licensing more PROs with a national remit will lead to better outcomes in terms of cost. Instead, costs are likely to be higher while the increased difficulty of monitoring the PROs is likely to make reaching the targets more difficult. This does not mean that competition cannot be used to create lower collection, sorting and recovery costs, though, for example, tendering. When market conditions suggest that only one national PRO is appropriate then competition for the market is appropriate. Where market conditions suggest that multiple exclusive geographic markets, usually two, are appropriate,

facility which receives the waste will be operated in accordance with human health and environmental protection standards that are broadly equivalent to standards established in EU legislation.

then competition is possible. What needs to be done is create mechanisms to ensure competition takes place, while at the same time retaining the advantages of having a single firm responsible for meeting targets as well as responsibility for collection, sorting and recovery.

Contingency Fund

With the current arrangements, in order to mitigate the risks that arise if the Department needs to replace a PRO, one of the approval conditions of the PROs requires that a contingency fund is held in reserve by the PROs. The fund is the equivalent to approximately one year of the PROs operational costs. The contingency fund is built up by the PRO from the membership dues within a certain timeframe. This fund can then be set against recycling costs if the scheme was to cease operating.

There are several issues surrounding the topic of contingency reserve:

- The level of contingency fund is a concern for the public authorities (who want to ensure that there are enough guarantees against future liabilities) and the producers (for who it is a cost). The use of project management techniques can help in reducing the level of contingency reserve required to be set aside by the PROs and producers. However, its management will require monitoring from the DECLG or its nominee.
- Second, the current arrangements do not safeguard against a risk that a PRO may access the contingency fund, to fund day to day operations. In order to avoid the contingency fund being depleted in this way, the DECLG should require the contingency fund to be ring-fenced from the day-to-day financial requirements of the PRO.
- Third, there is a barrier for producers to switch between PROs in that the contingency fund built up by that producer cannot be taken with them. It is recommended that the DECLG include a protocol to facilitate the tracking and transfer of the producers' contribution to the contingency fund in the switching code. Once a protocol has been developed, a balancing exercise should be then undertaken and the amount of deferred income and contingency accumulated by producers that have switched PROs in the past should be calculated and transferred to the PRO that they are currently a member of.

Administrative Burden

The costs incurred to comply with regulations are often referred to as “administrative burden”. These administrative burdens are a cost to both businesses and State.

There is potential for administrative costs to be reduced by limiting duplication in terms of systems and data, and facilitating data sharing the development of a centralised electronic registration system for obligated producers (instead of the current arrangements with registration with PROs, local authorities and the WEEE Register) should be investigated. A nominated local authority, the Local Government Management Agency (LGMA) or the WEEE Register could operate this system.

The terms of reporting under the PRI regulations should be harmonised and co-ordinated by the EPA and the DECLG. The option to develop a basic set of PRI reporting requirements and a subordinate set of more specific requirements for particular product groups or waste streams should be established.

PROs and enforcement authorities should also explore synergies between their respective auditing functions and develop proposals to prevent duplications. This should be examined as part of the review of the respective waste regulation and enforcement roles of the EPA and local authorities currently being carried out by the DECLG.

Interrelationships

The PRI system contains many stakeholders who interact with each other. These interactions present opportunities and challenges, which are discussed below.

The **co-operation** between PROs on a broad range of issues could ensure more efficient and competitive delivery of desired environmental outcomes. There are opportunities for further collaboration from the PROs, in the following areas of mutual and national interests such as: Information and awareness, collection and research & development.

However, not all opportunities for collaboration are realised because of the competitive behaviour of the PROs. Specific conditions in the PRO SLA can direct PROs to collaborate, but the PRO needs to engage more actively and report on this engagement. A forum chaired by an independent facilitator where the potential for collaboration is discussed could provide such an opportunity. Currently the WEEE Batteries Monitoring Group or the National Waste Prevention Committee act as such, in an informal manner in the WEEE and battery PRIs.

Given the possibility of multiple schemes, a **dispute resolution mechanism** should be developed for settling disputes between PROs. This dispute resolution protocol should aim to settle any disputes at the lowest possible level between the organisations.

The Republic of Ireland has been collaborating with Northern Ireland to increase environmental protection. The areas of waste tyres and ELVs would benefit from further collaboration with regards to enforcement.

WEEE

There are two approved PROs in the WEEE compliance scheme in Ireland: WEEE Ireland and European Recycling Platform (ERP Ireland). Contrary to the packaging, farm plastics and tyres PRI, there is separate independent body the WEEE Register Society (WRS) to maintain a register of producers and verify the allocation of vEMCs (visible fees)¹⁵.

The key findings in relation to the WEEE Producer Responsibility Initiative are:

- Ireland has been very successful to date in implementing the WEEE Directive and meeting the EU targets. In 2010 8.2 kg per capita was collected which, is double the target set by the EU Directive.
- Cost to producers were compared with other EU member states. It was found that these costs are in the lower end of the spectrum. However a direct comparison may give an incomplete picture as costs vary due to differences in a number of factors.
- The recast WEEE Directive 2012/19/EU and transposing Regulation (S.I. No. 149 of 2014) applies tougher national collection targets and has a larger scope of material¹⁶ which will increase the costs of WEEE management in Ireland.

¹⁵ Visible Fees/Visible Environmental Management Costs (vEMCs) were costs on new products placed on the market after 13th August 2005 (only categories 1, 2, 4, 5 & 6) for a limited period of time (8 years for the various categories of historic WEEE and 10 years in the case of category 1 (large household appliances) . These costs act as contributions to the Producer Recycling Fund (PRF) to finance the collection and treatment of historical WEEE. vEMCs were re-introduced on 1st July 2014 for the following categories of WEEE (1.1,1.2a, 1.3, and 4.1).

¹⁶ The existing collection target – a minimum of four kilograms per person from private households - will remain in place until the end of 2015. A minimum rate of 45% - or 40% for new Member States - will then apply until the end of 2018. This

- The DECLG should continue to examine the possibility of Producers covering the full cost of the collection of WEEE at CASs and examine ways of improving CASs collection infrastructure.
- The DECLG should set a minimum level of contingency funding to be provided by the PROs and examine if the control of the contingency reserve is to remain with the PROs or to be under their full control or transferred to a nominee (i.e. WRS).
- In an Irish context, an increase in the opening hours of CASs and an increase in the role of retailers seem to offer the most cost-effective WEEE collection options. These collection methods will have to be supplemented by special events as needed to meet the targets.
- It is recommended that PROs should retain the responsibility for information and awareness however the PROs should be called upon when necessary at the request of the DECLG to combine efforts in a centralised approach.
- Various measures were recommended to deal with enforcement and WEEE leakage including:
 - Security arrangements at CASs and retail outlets need to be reviewed and upgraded as currently they are inadequate;
 - Enforcement efforts should concentrate on Article 15 (1) (a) of the WEEE Regulations. Reconciliation of data between PROs, collaboration between enforcement authorities and PROs will be required to achieve effective enforcement;
 - When Local Authorities are outsourcing management of CASs they should include a condition in the contract that the WEEE should only be collected by a PRO and that there is no charge to the public for the deposit of WEEE;
 - Work collaboratively with scrap yards to create an identification and registration system for scrap metal sellers; and
 - A review should be carried out of all existing waste licence/ facility permits for WEEE to ensure that they are reporting recovery of WEEE accepted.

collection target will be based on the average weight of electrical and electronic equipment (EEE) placed on the market in

- Various criteria were highlighted for inclusion in the reuse protocol being developed by the DECLG including:
 - In order to preserve the quality of the WEEE being collected, CASs and retail outlets should be upgraded to allow for segregation of WEEE for reuse and staff trained for the acceptance and safeguard of WEEE for reuse;
 - Access to WEEE for reuse and preparation for reuse should only be granted to reuse organisations which can demonstrate environmental credentials, implement their activity to accredited standards, have technical skills, and organisational capacity; and
 - Reuse organisations should register with the WEEE Register Society and the DECLG should develop an authorisation system for these organisations.
- A reconciliation exercise should take place to determine the allocation of the fund generated from vEMCs.
- ERP Ireland and WEEE Ireland should submit proposals to the DECLG to show how there are going to meet the deficit to treat the remaining quantities of historic WEEE estimated.
- It is recommended that the barrier for producers to switch from a PRO is removed and a switching protocol for producers be developed.
- It is recommended that an independent mediator be appointed to arbitrate on issues arising between the two compliances schemes during the reconciliation process or as required.
- It is recommended that B2B producers should be given the option of being able to join a compliance scheme while not creating a deterrent to those B2B producers who want to remain self-compliant.
- It is recommended that retailers register only using the online system and remove the option of registration directly with local authorities.

each Member State over the previous three years.

BATTERIES

Similarly to the WEEE PRI, there are two approved PROs in the battery compliance scheme in Ireland: WEEE Ireland and European Recycling Platform (ERP Ireland); however there are no visible fees. The key findings in relation to the Battery Producer Responsibility Initiative are:

- Ireland has been successful to date in implementing the Battery Directive and meeting the EU targets. Ireland exceeded the EU collection target of 25% for portable batteries for September 2012 with a collection rate of over 29% achieved at the end of 2011.
- A number of recommendations are made in relation to increasing the collection rate to achieve the 45% collection target in September 2016 which include:
 - Increase the opening hours at CASs.
 - Provide incentives to CASs to collect waste batteries.
 - Enhance the role of retailers in the visibility and promotion of battery collection by retailers.
 - Use rewards/incentives such as vouchers to increase collection at schools/educational institutions.
 - Increase the number of special events and investigate other methods of collection such as kerbside.
- The deferred income (excess annual income) should be ring fenced to cover the contingency fund for batteries.
- The proportion of portable batteries in EEE should be asserted by WRS.
- In order to ensure that the waste portable batteries are removed from separately collected WEEE and can count towards portable waste battery targets, it is recommended that the PROs do not enter into a contract with WEEE treatment facilities in Ireland or abroad unless this information is provided.
- The EPA to continue the enforcement relating to heavy metal content and capacity labelling of portable batteries.
- It is recommended that the PROs retain the responsibility for information and awareness at local level. However, significant efforts in terms of information and awareness activities will be required to meet the targets. Therefore it is recommended that:

- In order to enhance the key message being sent to the final user and allow for a more harmonised approach to awareness measures to increase participation in waste battery collection programme, it is recommended to rebrand the current national battery collection under one umbrella.
- Self-compliers should contribute their proportion towards information and awareness based on the quantity by weight of portable batteries placed on the market.

PACKAGING

There is one approved PRO in the Packaging compliance scheme in Ireland: Repak.

The main findings from the Review for the packaging PRI are:

- Ireland has achieved great success in recent years in recovering and recycling packaging waste. One of the key reasons for success was the shared responsibility approach to the packaging PRI.
- Repak and its members are largely responsible for the achievement of the national targets. In contrast, self-compliers had a very limited contribution.
- The cost to producers who are members of a compliance scheme was €35.6 per tonne in 2012, a decrease of €10 per tonne since 2010. When compared with other European countries, these costs are in the lower end of the spectrum. However a direct comparison of compliance cost may give an incomplete picture as costs may vary due to differences in a number of factors.
- In the period 2009-2011 Repak spent more than its income from producer fees. The deficit was covered by the contingency fund. In 2012 expenditure was less than income. In order to preclude a reoccurrence of expenditure exceeding income it is recommended that Repak closes the gap between income and expenditure in order to maintain current levels of contingency funding. In order to do so:
 - Repak should examine how to reduce direct recycling costs in order to balance income with expenditure. In particular in setting subsidy levels, the effect of the landfill levy should be considered.

- In combination with the improvement of the self-compliance system, the DECLG should investigate the allocation of a share of national targets to self-compliers.
 - An increased enforcement of producers' obligations will also assist Repak's financial sustainability.
- The self-compliance system is not performing well and should be improved. In particular the DECLG should:
 - Examine how the self-complier reporting system can be used to assess distance to targets and allow for financial penalties if the targets are not met.
 - Review the fees paid by the self-compliers. In particular, this review should aim to provide a level playing field between large self-compliers, small self-compliers and compliance scheme members.
- With regards to corporate governance, Repak should have a plan for the rotation of board members and which provides more transparency on the procedures for the calculation of subsidies paid to waste recovery operators.
- While the recycling and recovery targets are exceeded significantly, there is a significant numbers of obligated producers which are not compliant with the Packaging Regulations. The non-compliant businesses put compliant businesses at a competitive disadvantage and risk undermining the whole system. Therefore in combination with the cross-cutting recommendations on enforcement, the enforcement effort on non-compliant packaging producers should be increased.
- The review does not recommend removing the "De Minimis" thresholds and introducing a packaging levy as it will generate a large number of costs, without resulting in significant environmental benefits.

END-OF-LIFE VEHICLES

The Irish ELV system is not performing well. There is leakage¹⁷ at a number of stages in the ELV system, which results in limited ELVs delivered to facilities meeting the minimum treatment standards and in the reuse, recycling and recovery targets not being met.

The system needs structural changes regarding the allocation of responsibilities, which should be assigned solely to the producers, with minimum recycling and recovery standards set for all waste operators in the ELV system.

In order for the producers to meet their responsibilities, they need to be assisted by the Irish public authorities with increased enforcement of non-compliant producers and waste operators. The implementation of continuous vehicle taxation and link with the Certificate of Destruction (COD) system is also paramount to improve the system.

Finally the establishment of a producer compliance scheme will have beneficial effects by providing improved coordination in the ELV system, reducing administrative burden to the state and businesses, and improving ELV recycling and recovery rates. However the SIMI proposal needs to provide more details in this regard.

If the level of funding provided by the producers is not sufficient, the DECLG should consider introducing an environmental management fee on the vehicle first owner to be used to fund the ELV system and compliance scheme.

While the 2006 target can be achieved by using the current system and relying on waste to energy and UK Post Shredder Treatment (PST), the 2015 targets will be more challenging and further research will be required to improve the performance of the system to meet these target levels.

The recommendations in this report should be implemented as a matter of priority to help Ireland in achieving the ELV Directive targets. However, because of the structural changes

¹⁷ Leakage in this context refers to ELVs which are not managed by the channels authorised by the ELV Regulations. For example, ELVs which are not delivered to ATFs, depollution at ATF not compliant with the requirements of the regulations, shredding of undepolluted ELVs or export of undepolluted ELVs.

required and considerations for other measures implemented by Government, the sequencing of the measures needs to be considered.

The first step in improving the Irish ELV system is to implement the Continuous Vehicle Taxation System and provide a framework to set up the compliance scheme by the producers. Until the Continuous Vehicle Taxation System is in place, the enforcement focus on unauthorised ELV sites should be maintained.

The recommendations regarding enforcement should be also implemented urgently, but in conjunction with the local authorities redeployment of resources (following the rationalisation of the waste management regions) and in line with the review of waste regulation and enforcement roles of the EPA and local authorities which are proposed in the waste policy document published by the DECLG in July 2012.

Some awareness measures should be implemented as soon as possible (e.g. owner obligations), while other recommended measures will benefit from the establishment of the proposed producer compliance scheme (larger awareness campaign, simplification of reporting, research and development).

TYRES

Due to the lack of consistent and accurate data on tyres and waste tyres it is difficult to monitor the performance of this PRI. The current system is not tracking waste tyre flows as well as it was intended in the 2007 Regulations. While the level of illegal storage seems to have reduced, there is still a high level of non-compliant businesses (estimated to over 800) and significant quantities tyres and waste tyres unaccounted for.

Contrary to the WEEE and Packaging PRIs, the PROs do not fund or subsidise the collection and treatment of waste tyres and this is one of the main factors affecting performance.

For these reasons, it is recommended that the DECLG changes the Waste Tyre Regulations to make producers and importers responsible for financing the collection of waste tyres from tyre suppliers as a matter of priority. However, to prevent trade distortion with Northern Ireland, it would be beneficial if similar arrangements were implemented in Northern Ireland. The DECLG should therefore explore the establishment of the revised arrangements with the

DOENI. If similar developments in Northern Ireland cannot be expedited, the DECLG should progress with the establishment of PRI responsible for the collection and treatment of waste tyres anyway. To ensure the effectiveness of the proposed arrangements, collection targets should be set with input from the industry

There remains a significant, but unknown level of waste tyre stockpiles. The DECLG should develop a programme for end-of-life tyres stockpile abatement in consultation with the tyre producers and the compliance schemes. This programme should first assess the extent of the problem, then ascertain who is responsible for the abatement and proceed gradually with the abatement.

There is limited reliable information available on waste tyres arisings and tyre waste management in Ireland. This is a barrier to monitoring the performance of the waste management system, developing policies and for stimulating business investment in the sector. The DECLG should assign responsibility for the collation and compilation of tyre and waste tyre arisings from the PROs and the local authorities to the EPA. The EPA should be supported by the PROs and the local authorities.

Enforcement is an important instrument for ensuring the implementation of PRIs. Enforcement is necessary to increase the costs of non-compliance and encourage economic operators towards the compliance route. The overall recommendations regarding enforcement of PRIs should be also implemented urgently. The main recommendations relevant to tyre PRIs are:

- The DECLG should establish central PRI enforcement units,
- The DECLG should review the penalty levels to reflect the costs of non-compliance and ,
- The DECLG should increase the range of civil sanctions to provide more flexible enforcement with a focus, where possible on FPNs,
- The DECLG should coordinate the establishment of a central register of compliant business, which should be made publicly available on the PROs websites. In addition the PROs should make the list of their members publicly available in their annual report.
- Targeted enforcement actions by local authorities, or their agents, at the estimated 800 operators known not to be participating in a tyre compliance scheme or registered as a self-complier.
- PROs should develop Storage Guidance for used and waste tyres to reduce fly-tipping.

- Public disclosure of successful prosecutions should also be considered.
- All tyres that have a thread depth less than 1.6 mm should be considered waste.
- NIECE to develop template document for enforcement and arrange training for local authority enforcement personnel.

It is recommended that a national campaign to inform the tyre industry of its obligations and promote better compliance with the 2007 Tyres and Waste Tyres Regulations should be undertaken in parallel with the enforcement recommendations. The campaign should be funded by the PROs and coordinated by the DECLG or the EPA. To increase the effectiveness of the PRI, consistent information should be provided by the local authorities and the DECLG.

The tyres waste market is a single national geographic market¹⁸, only one PRO should serve this market. This will provide the dual benefits of improving the monitoring of the PRI performance and holding the PRO to account. In parallel, the DECLG should implement the recommendations set in Section 4, to ensure that the PRO is responsive to its members.

FARM PLASTICS

Farm plastic recycling has been in place in Ireland since 1998, following the introduction of the Farm Plastics Regulations in 1997 and has grown significantly since this time.

The IFFPG has met the targets set by the DECLG and in the region of 27,500 tonnes was collected for recycling in 2013.

The current funding mechanism used by the IFFPG for farm plastic collection is in line with the polluter pays principle and should be maintained. However, it is recommended that the producer levy charged by the IFFPG be monitored and reduced if this leads to an increase in deferred income¹⁹.

¹⁸ There is no exclusive geographic market as for WEEE or Waste Batteries.

¹⁹ Income set aside to ensure the availability to the DECLG of sufficient resources for the continued delivery of each PRI in the event of failure of a Scheme.

There is some illegal activity, but this issue is not widespread. In order to tackle this problem it is recommended that:

- The IFFPG continues its intelligence work into illegal activities and report these activities to the relevant enforcement bodies.
- In the absence of a farm plastics PRI in Northern Ireland it is important to utilise other means of collaborative enforcement such as the TFS office in the DOE.
- Inspections are carried out in all local authority areas that share a border with Northern Ireland and in areas with high silage usage.

Building on the success of the recycling of non-packaging farm plastics, a collection system for “other farm plastics” has also been set up. This system is currently funded by the farmers (90%) and Repak (10%). It is recommended that:

- The share of the cost of other agri-plastic waste collection covered by the producers should be increased in order to stimulate take up of the service.
- This increase should not be funded by additional producers contribution as they are already contributing to the packaging PRI but through an increase in the current Repak subsidy paid to “Farm Plastics Recycling”.
- Repak should also provide information and links on their website to the Farm Plastics Recycling service in order to promote and increase the uptake of farm plastic packaging recycling.

CONSTRUCTION & DEMOLITION

Just under 3 million tonnes of C&D waste was reported as collected in 2011, 66% of which relates to soil and stones and 34% of which includes other non-soil and stones fraction of C&D waste (rubble, metals, timber, plastic, glass, wood and mixed C&D waste) (EPA National Waste Report 2010). This is a 71% decrease in the figure reported in 2008.

In 2011, there were high rates of recovery, reporting 98% recovery for soil & stones and 97% recovery for the other fraction.

With regards to waste prevention, the NCDWC²⁰ did run successful waste prevention programmes when it was in operation. However, no such programmes specific to C&D waste are known to be running at present.

The PRI model used for products such as packaging and WEEE works well as there is one product type and the producers can fund the PRI. However, the difficulty with C&D waste is that instead of one product there are several categories of discarded products and similarly there is not just one economic operator which could be identified as producers but several.

There are existing building regulations and planning regulations incorporating obligations regarding C&D waste management which should be enforced and enhanced instead of recommending the introduction of a whole new PRI.

In summary, the following are the main recommendations for the operation of a PRI for C&D waste:

- Review and update of existing guidelines on the 'Preparation of Waste Management Plans for Construction & Demolition Projects' to ensure they address the consideration of waste generation in making design decisions (for consideration by Developers and Designers). In addition, requirements to prepare and submit (at Planning Application Stage) C&D Waste Management Plans for use on site by Building Contractors should also be addressed.
- Preparation of guidelines for Planning Authorities to address the following:
 - Requirements for the management of C&D waste and preparation of C&D waste management plans at the design and construction stages.
 - Review of the current thresholds for which a C&D waste management plan is required to be prepared.
 - Enforcement and auditing of C&D waste management plans (and the administration and funding of such enforcement (to facilitate compliance bonds)).
 - Penalties (including non-certification of a building) if C&D plans are not implemented or waste not disposed of appropriately.

²⁰ National Construction and Demolition Waste Council

- National Waste Prevention Programme to consider promotion of awareness of C&D waste management.

Other recommendations to consider are the development of internet exchange schemes for C&D waste and specifying waste segregation for projects that generate waste above certain thresholds.

NEW AREAS FOR PRODUCER RESPONSIBILITY INITIATIVES

This section considers and identifies other waste streams that might be suitable for the development of further producer responsibility initiatives (PRIs) or agreements with industry to govern the handling of end of life waste.

The products covered by PRIs are primarily products that pose problems for recycling or recovery operations when they are discarded in mixed waste streams, and which generate high management costs (OECD, 2001) because:

- The quantities involved are significant, as for packaging,
- They contain hazardous materials, as for WEEE,
- Their recovery operations are costly, as for tyres.

Two main sources were used for the identification of new waste streams suitable for the development of further PRIs or agreements with industry regarding the handling of end of life waste. These are the National Hazardous Waste Management Plan (NHWMP), published by the EPA in 2008²¹ and the consultation on the review of producer responsibility initiatives in Ireland.

In assessing if a producer responsibility approach should be applied to the waste streams, the OECD (2005) recommends that the **costs of operating a PRI** (administration, collection costs, treatment costs) be weighed against the benefits of **reduced social costs of waste management** (e.g. reduced landfill external costs, reduced external costs of virgin materials production) including the various externalities associated with landfilling or incineration and the environmental risks associated with “doing nothing” by maintaining existing practices.

PRIs can also be used in combination with other policy instruments (e.g. deposit and refund, levy, landfill taxes or bans etc.) to achieve desired environmental outcomes. Waste streams showing significant potential for the PRI approach all show a significant proportion being landfilled or not managed.

Table 3 provides a summary of what other waste streams might be suitable for the development of further PRIs or voluntary agreements.

²¹ <http://www.epa.ie/downloads/pubs/waste/haz/NHWMP2008.pdf>

Table 3: Suitability of waste streams for the development of further PRIs

Significant potential benefits of PRI approach	Other approach recommended	Limited benefits or costs of PRI approach	Further data needed
<ul style="list-style-type: none"> • Farm Plastic Chemical Containers* • Human Medicines • Food waste • Mattresses 	<ul style="list-style-type: none"> • Waste oil • Oil filters 	<ul style="list-style-type: none"> • Newspapers and magazines • Junk Mail • Disposable cups, trays, plates and cutlery 	<ul style="list-style-type: none"> • Animal remedies • Plant protection products • Paint and ink waste and its packaging

*This comes under the Packaging Regulations which has an existing PRI (Repak) and a collection system has been put in place in recent years by Farm Plastics Recycling.

CONCLUSIONS

The object of the PRI Review has been to address the role of PRIs in developing further measures for the prevention of waste, while securing an efficient and effective collection, sorting and recovery of waste streams such as WEEE, packaging, batteries and so on, so as to improve the competitive position of firms and business that need to pay for such services, while at the same time meeting binding EU environmental targets.

The topics and issues covered by the review are many and complex reflecting the concept of the PRI which is built around the shared responsibility and involve many economic operators.

The effectiveness of the PRI system (ability to meet the desired environmental outcomes) depends on a number of factors such as monitoring of PROs, interrelationships between PROs, the effectiveness of the self-complier system, information and awareness activities, enforcement, prevention and reuse and development of indigenous reprocessing capacity.

The Efficiency of the PRI system is based on the amount of inputs required by the various parties participating in the shared responsibility model (e.g. producers, public authorities etc.) to achieve the desired environmental outcomes. The review focused on three topics: the role of competition, the role of contingency reserve and how to reduce administrative burden on producers and government.

The findings and recommendations in the PRI review were reached only after a careful examination of the issues and engagement with the economic operators.

1 INTRODUCTION

The OECD defines Extended Producer Responsibility (EPR) as a concept where manufacturers and importers of products should bear a significant degree of responsibility for the environmental impacts of their products throughout the product life-cycle, including upstream impacts inherent in the selection of materials for the products, impacts from manufacturers' production process itself, and downstream impacts from the use and disposal of the products. Producers accept their responsibility when designing their products to minimise life-cycle environmental impacts, and when accepting legal, physical or socio-economic responsibility for environmental impacts that cannot be eliminated by design.²² Article 8 of the Waste Framework Directive also outlines some of the measures which can be undertaken in Extended Producer Responsibility.

Application of EPR also ensures that the waste management costs arising during the life of a product are internalised in the price charged to consumers. Such costs can be minimised where materials and products are managed in an environmentally effective manner throughout their life cycle. The Waste Management Act, 1996 established a legislative basis for producer responsibility initiatives (PRIs).

PRIs allow product producers (hereafter in this report referred to as "producers") to devise schemes that have the capacity to fulfil the basic objectives of waste management legislation without resort to a "command and control" approach.

The principal PRIs in Ireland are in the areas of Waste Electrical and Electronic Equipment (WEEE), batteries, packaging, end-of-life vehicles (ELVs), tyres and farm plastics.

²² http://www.oecd.org/document/19/0,3746,en_2649_34281_35158227_1_1_1_1,00.html. This OECD webpage contains a guide to the extensive work that the organisation has done in the area of EPR. Accessed 26 July 2012.

For packaging, WEEE, batteries, tyres²³ and farm plastics, producers in Ireland have developed a Compliance Scheme approach to meet general objectives which would otherwise be imposed by detailed regulatory requirements.

A body corporate or association granted approval by the Minister to operate as a Compliance Scheme (hereinafter referred to as a “Producer Responsibility Organisation (PRO)”) plays a critical role within the PRI approach by offering a service that enables those obligated producers that participate successfully in the scheme to comply with their environmental obligations.

Under the PRI approach, the PRO operates under an approval granted by the Minister. These producer responsibility agreements are underpinned by legal obligations so that individual obligated businesses which may decide not to participate in a compliance scheme must then take the alternative route of self-compliance, which generally requires compliance with each and every specific provision of the legislation. Thus, obligated businesses cannot opt out of their obligations, or the costs associated with those obligations.

The majority of these PRIs have operated very successfully and have enabled Ireland to reach our domestic and EU recycling targets. In 2011 Ireland had the 4th highest recycling rate for packaging in Europe, was among the top tier of European recyclers of agricultural plastic, collected nearly double the target quantity of WEEE and exceeded the collection targets for portable batteries. They have also successfully contributed to Ireland meeting national overall environmental goals and have diverted substantial amounts of waste from landfill. However, while it is correct to note the achievements, it is imperative to carry out a review of the PRIs to ensure that Ireland’s commitment in meeting existing and future EU and national targets will be achieved in a cost-effective manner.

²³However, unlike other Compliance Schemes the existing schemes for tyres do not fund or subsidise the collection and treatment of tyres or provide for specific recycling or recovery targets. Instead, these schemes were established largely as tracking /data gathering systems.

1.1 TERMS OF REFERENCE

Given the environmental and economic challenges which we are now facing, the commitments of the current Programme for Government, and the need to reengineer the compliance schemes it is required to re-examine the existing concept, structure, organisation and rules of both the PRI model and compliance schemes which are currently in operation in Ireland.

In the regulatory environment, both at a domestic and EU level, it is expected that there will be new waste stream recycling targets²⁴. To ensure that they will be able to deliver upon new and increased recovery, recycling and possibly reuse targets, the Department of the Environment, Community and Local Government (DECLG) commissioned a wide ranging review of the existing PRIs which are currently in operation in Ireland. The PRI review examined:

- The operation of the existing PRIs, including through the route of self-compliance;
- The scope for additional measures to improve the effectiveness of the existing PRIs, including in particular through approval conditions for compliance schemes, the provision of adequate contingency funding and the inter-relationship between different compliance schemes; and
- The potential to introduce further PRIs or Voluntary Agreements for the management of additional waste streams, with particular reference to the recommendations of the National Hazardous Waste Management Plan regarding the addition of further PRIs.
- The suitability and effectiveness of the current statutory, regulatory, administrative and enforcement arrangements particularly when compared against best practice in other Member States,
- The effectiveness of the current competitive dynamic in the waste streams where PRI operates and how it can be maximised (i.e. existing schemes enhanced and / or additional schemes made subject to PRI) to increase competition, lower costs for producers and reduce the potential for free-riders,

²⁴This has already happened in the cases of WEEE, and ROHS and also to a certain extent with batteries.

while also bearing in mind the potential increase in costs which might arise due to the increases in the number of compliance schemes,

- The cost of recycling for Irish producers, including both the actual cost of recycling and the administrative cost of the compliance scheme,
- The effectiveness of the current use of information and awareness mechanisms within the PRI and recommendations for its enhancement,
- The suitability, availability and quality of waste recycling infrastructure and services, which are present in Ireland and relevant to PRIs including the practical potential for the use of emerging technologies and the potential for enhanced co-operation with Northern Ireland.

The Terms of Reference of the review are attached in Appendix A. The terms of reference were informed by a consultation period prior to their publication.

The DECLG also invited members of the public to make written submissions on the PRI Review on 29th June 2012. The public consultation phase remained opened until Wednesday 25th July 2012²⁵. Written submissions were received from 39 stakeholders, and meetings or conference calls took place with 47 stakeholders. A list of the organisations which responded to the consultation can be found in Appendix B.

²⁵ The consultation document can be accessed at

www.environ.ie/en/Environment/.../FileDownload_30640,en.doc

1.2 REPORT STRUCTURE

The report is divided into two main parts: one part dealing with cross-cutting issues and one part dealing with waste specific issues.

With regards to the cross-cutting issues:

- Section 2 describes the challenges which are currently facing Ireland and the existing PRIs.
- Section 3 presents a brief overview of the principles behind the development of successful PRI models from an international perspective (see Paper on European Producer Responsibility Schemes report in Appendix C of the main report).
- Section 4 examines cross-cutting issues relating to:
 - **Efficiency** of the PRI model in Ireland, which will focus on three topics: the role of competition (see also Competition Paper in Appendix D), the role of contingency reserve (see also Appendix E) and how to reduce administrative burden on producers and government.
 - **Effectiveness** of the PRI model in Ireland, which will concentrate on the monitoring of PROs (see also Corporate Governance report in Appendix F), the role of self-compliers, information and awareness, enforcement, prevention and reuse, development of indigenous capacity.

Section 5 to Section 11 examines the specific waste streams (packaging, WEEE, batteries, ELVs, tyres, farm plastics, and construction and demolition waste) that are subject to PRI. A benchmark review of each PRI has been undertaken and recommendations have been developed following this process. For each PRI a number of qualitative and quantitative indicators, including but not limited to waste management performance, cost to producers and public bodies, number of PROs, enforcement, information and awareness, income and expenditure were examined. These indicators were identified by RPS based on the requirements of the Terms of Reference, information available on the PRI in Ireland and information available in order to compare schemes across Member States (MS). These sections are supported by Appendix G reviewing the need for the introduction of a Packaging Levy and Appendix H on the use of Auto Shredder Residues.

Where possible we compare these indicators with the performance of other EU MS. It is not always possible as some of MS do not always use the same indicators, performance criteria, or method of calculation. Further, data is not always available for the same time period or year for all MS.

Section 12 examines what other waste streams might be suitable for the development of further PRIs.

2 BACKGROUND TO THE REVIEW

This section provides an overview of the challenges which are currently facing Ireland's existing PRIs. In addition, this section presents a brief overview of the principles behind the development of successful PRIs.

2.1 ECONOMIC TRENDS²⁶

The Irish economy is small and highly open. The value of internationally traded goods and services in 2011 was equivalent to 188% of Gross Domestic Product (GDP), which amounted to €159 billion for the year.

Services are the largest component of Irish output. For example, in 2011, they accounted for 72% of gross value added at factor cost, while industry and agriculture represented 26% and 3% of gross value added respectively (see Figure 2.1). Pharmaceutical products, food, and computer and electronic products accounted for 37.3%, 18.6% and 9.9% of total gross industrial output in 2010.

Between years 2000 and 2007, the annual average growth in real Gross Domestic Product (GDP) and real Gross National Product (GNP) was 5.8% and 5.2%, respectively. During this time period, property prices in Ireland soared by a compound annual growth rate of 11%. However, with the onset of the global financial crisis, the Irish property sector collapsed, with prices of residential properties falling by 47% from their peak in September 2007 to December 2011. The resulting collapse of the construction and banking sectors meant that the Irish economy entered a very deep recession in 2008. Between 2008 and 2011 real GDP declined by 4.8%, while real GNP declined by 9.5%.

In the early part of the decade, the Irish economy recorded relatively high inflation rates combined with a very low unemployment rate. Between 2000 and 2008, annual inflation in consumer prices, as measured by the Consumer Price Index (CPI), meant that the average price level rose by 34.7%. In 2009, as the recession deepened,

²⁶http://www.esri.ie/irish_economy/

consumer prices fell sharply, so that by 2011 consumer prices were back at 2007 levels.

While government receipts exceeded expenditures prior to 2008, the situation reversed sharply in subsequent years. The deficit, as measured by the general government balance, widened from balance in 2007 to 7.3% of GDP in 2008 and 14% in 2009, before it increased to 31% of GDP in 2010 due to substantial government support to Irish banks that was required to prevent the collapse in the Irish banking system. Excluding support to the banking system, the deficit was 11.5% of GDP in 2009 and 10.9% of GDP in 2010. In 2011, the deficit narrowed to 9% of GDP.

The change in economic conditions had two main effects relating to waste:

- There was a substantial drop in municipal waste generation in 2008 due to the decrease in personal consumption and despite an increasing population.

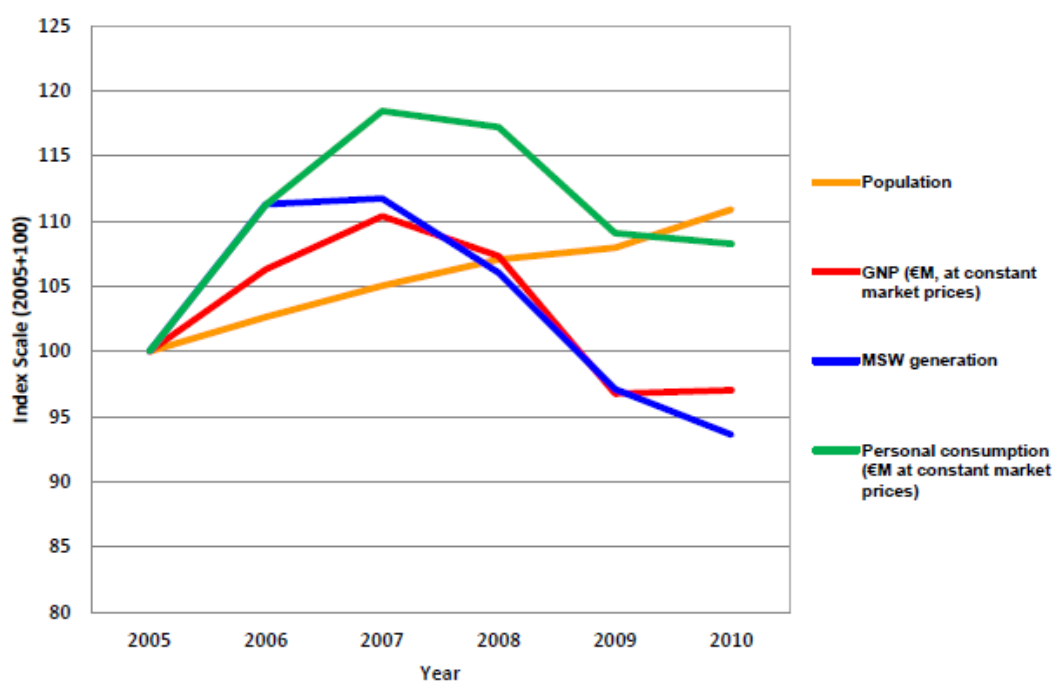


Figure 2.1: Trends in municipal waste generation, GNP, population and consumption, 2005-2010²⁷

²⁷EPA, (2012a).

- The global economic downturn led to a collapse in the price of recyclables in October 2008. This had a significant effect not only on recyclables pricing, which plummeted, but on the ability of waste handlers to trade their materials. This emphasised the reliance on the Asian export market. The higher grades of material continued to find buyers during this period but at rock bottom prices. Low grade recyclables were virtually untradeable which demonstrated the importance of quality in recyclables trading. Prices have recovered since this time but not to the over inflated pre-crash levels.

2.2 RECENT EUROPEAN DEVELOPMENTS

At European level, the most important policy and regulatory development which will have wide ranging influence on PRIs is the *Revised Waste Framework Directive 2008/98/EC*. Other developments of influence include:

- *Thematic Strategy on the Prevention and Recycling of Waste adopted in 2005 (COM (2005)0666)*.
- *Raw Materials Initiative (RMI) (COM (2008)699)*.
- *Communication on A resource-efficient Europe - Flagship Initiative under the Europe 2020 Strategy(Com (2011) 21) and The Roadmap to a Resource Efficient Europe (COM (2011)571)*.
- *“Innovation Union” Flagship Initiative under the “Europe 2020 Strategy” and the new Eco-Innovation Action Plan (EcoAP)*.

The cross-cutting policy and regulatory developments are described in this section while the specific developments will be examined in the waste specific sections 5 to 11.

2.1.1 Waste Framework Directive 2008/98/EC

The *Revised Waste Framework Directive 2008/98/EC* contains a number of important new and enhanced obligations for the management of waste by Member States. The need for compliance with these requirements is likely to have considerable implications for producer responsibility schemes and other participants of the product supply chain. Some of the more significant changes in binding waste management obligations arising from Directive 2008/98/EC include:

- Article 4 provides that with certain limited exceptions, Member States shall ensure that the following “**waste hierarchy**” is applied as a priority order in waste prevention and management legislation and policy: (a) prevention; (b) preparing for re-use; (c) recycling; (d) other recovery, e.g. energy recovery; and (e) disposal.
- Article 6 on “**end-of-waste status**” creates a legal framework to govern “end-of-waste status” for specific waste types. It establishes broad technical criteria under which certain specified wastes can cease to be waste. The fulfilment of “end-of-waste criteria” could be very onerous, presenting corresponding challenges to ensure that high quality recycling is carried out.
- Article 8 of the Waste Framework Directive sets of a **definition of EPR in legislative terms** (See Box 1).
- Article 11 introduces an obligation for the establishment of **separate collection of waste** where it is “technically, environmentally and economically practicable”, as well as where it is appropriate to meet the necessary quality standards for the relevant recycling sectors.
- Article 14 provides that Member States may decide that the **costs of waste management** are to be borne partly or wholly by the producer of the product from which the waste came and that the distributors of such product may share these costs.
- Article 15 provides that the **responsibility for arranging waste management** is to be borne partly or wholly by the producer of the product from which the waste came and that distributors of such product may share this responsibility.
- Article 28 provides that **Waste Management Plans** (WMPs) shall be developed to cover the geographical extent of Member States in accordance with the principles of effective protection of the environment and human health, optimised and efficient use of resources, the waste hierarchy, self-sufficiency and proximity. The WMPs should also contain, inter alia, an assessment for the need for new collection schemes and additional waste installation infrastructure, as well as supporting the implementation of the National Strategy on Biodegradable Waste.
- Article 29 provides that **Waste Prevention Programmes** (WPPs) shall be established in accordance with the principles of effective protection of the

environment and human health, optimised and efficient use of resources and the waste hierarchy. It is a requirement of the WPPs, following the evaluation of a wide range of potential waste prevention measures, to set out waste prevention objectives that are designed to break the link between economic growth and the environmental impacts associated with the generation of waste. In this regard, EU-wide indicators for waste prevention measures may be adopted.

Box 1: Article 8 of the Waste Framework Directive: Extended Producer Responsibility

1. In order to strengthen the re-use and the prevention, recycling and other recovery of waste, Member States may take legislative or non-legislative measures to ensure that any natural or legal person who professionally develops, manufactures, processes, treats, sells or imports products (producer of the product) has extended producer responsibility.

Such measures may include an acceptance of returned products and of the waste that remains after those products have been used, as well as the subsequent management of the waste and financial responsibility for such activities. These measures may include the obligation to provide publicly available information as to the extent to which the product is re-usable and recyclable.

2. Member States may take appropriate measures to encourage the design of products in order to reduce their environmental impacts and the generation of waste in the course of the production and subsequent use of products, and in order to ensure that the recovery and disposal of products that have become waste take place in accordance with Articles 4 and 13.

Such measures may encourage, inter alia, the development, production and marketing of products that are suitable for multiple use, that are technically durable and that are, after having become waste, suitable for proper and safe recovery and environmentally compatible disposal.

3. When applying extended producer responsibility, Member States shall take into account the technical feasibility and economic viability and the overall environmental, human health and social impacts, respecting the need to ensure a proper functioning internal market.

4. The extended producer responsibility shall be applied without prejudice to the responsibility for waste management ... and without prejudice to the existing waste stream specific and product specific legislation.

2.1.2 Other Recent European Developments

Thematic Strategy on the Prevention and Recycling of Waste

The *Thematic Strategy on the Prevention and Recycling of Waste adopted in 2005 (COM (2005)666)*²⁸ sets as long-term goal for the EU that it should become a recycling society that seeks to avoid waste and which uses waste as a resource. The strategy expected more and better recycling, less waste to landfill and more compost and energy recovery from waste, leading to significant environmental, social and economic benefits. In January 2011 the Commission published a *Review of Progress Towards Achieving the Strategy Objectives (COM (2011)13)*²⁹. In the review, the Commission commented that better conditions for the recycling markets were created by optimally using legal and economic instruments such as landfill bans, applying taxes and charges consistent with the waste hierarchy and applying the producer responsibility concept. However, significant margin for progress still exists beyond the current EU minimum collection and recycling targets. Optimal combination of economic and legal instruments should be promoted notably through landfill bans and by applying the producer responsibility concept to additional waste streams on the basis of a common European approach.

The European Commission is also planning to a review of waste policy and legislation³⁰. The current Waste Directives are in the process of being recast. WEEE

²⁸<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2005:0666:FIN:EN:PDF>

²⁹<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0013:FIN:EN:PDF>

³⁰ This initiative will review key targets in EU waste legislation (in line with the review clauses in the Waste Framework Directive, the Landfill Directive and the Packaging Directive) and carry out an ex-post evaluation of

and ROHS have already been completed and changes to batteries, ELVs, and packaging targets are also expected within the next three years. Targets could also be set in the tyres area.

Raw Materials

Resource efficiency ambitions can be seen across the breath of the Commission's policy agenda. One of those agenda areas is the critically important *Raw Materials Initiative (RMI)*(COM(2008)699)³¹ which envisions the need for three policy pillars:- ensuring a level playing field in access to resources in third countries; fostering sustainable supply from EU sources; and, boosting resource efficiency and promoting recycling. Arising from this initiative the Commission developed a policy communication on *Tackling the Challenges in Commodity Markets and on Raw Materials* (COM (2011)25)³² (the Raw Materials Strategy) published in February 2011. The Commission considers a resource efficiency policy "pillar" as central to a sustainable raw material strategy (adopted from Pillar 3 of the RMI); this to include "urban mining" where greater extraction of secondary raw materials from waste is seen as underexploited, as well as maximising efficiency of resources use, examining the recyclability and durability of products and eco-design.

Resource Efficiency

The European Commission has issued a Communication on *A resource-efficient Europe - Flagship Initiative under the Europe 2020 Strategy*, which provides a long-term framework for coordinated actions across many policy areas and agendas, including climate change, energy, transport, industry and raw materials. The European Commission has also issued a complementary Communication on a *Roadmap to a Resource-Efficient Europe*, which sets out medium and long term objectives as well as the means needed to achieve these objectives. The Flagship

waste stream directives, including ways to enhance coherence between them.http://ec.europa.eu/atwork/pdf/cwp2013_annex_en.pdf

³¹http://ec.europa.eu/enterprise/sectors/metals-minerals/files/com699_en.pdf

³²<http://ec.europa.eu/enterprise/policies/raw-materials/>

Initiative and the Roadmap are designed to lead the EU into economic transformation towards a more sustainable and competitive economy, and to contribute to world-wide efforts to ensure a transition towards a green economy³³. Some of the key milestones for the year 2020 on the Resource Efficiency Roadmap will be of fundamental importance to producers and, accordingly, will have profound implications for producer responsibility schemes. These milestones are to be facilitated by the implementation of a wide range of measures by the Commission and Member States.

Relevant milestones identified for 2020 include:

- Citizens and public authorities should have the **right incentives to choose the most resource efficient products and services**, through the provision of appropriate **price signals and clear environmental information**. The desire of consumers for more sustainable purchases should stimulate eco-innovation in companies and to supply more resource efficient goods and services. Minimum environmental performance standards should be established to remove the least resource efficient and most polluting products from the market.
- Market and policy incentives that reward business investments in efficiency should be in place, stimulating new innovations in resource efficient production methods that are widely used. **All companies and their investors should be able to measure and benchmark their lifecycle resource efficiency**. Economic growth and wellbeing shall have been decoupled from resource inputs and shall derive primarily from increases in the value of products and associated services.
- **Waste generated per capita shall be in absolute decline and waste will be managed as a resource** with recycling and re-use of waste being economically attractive options for public and private actors due to the widespread availability of separate collection and the development of functional markets for secondary

³³ The OECD defines green growth as “fostering economic growth and development, while ensuring natural assets continue to provide the resources and environmental services on which our well-being relies. To do this, it must catalyse investment and innovation which will underpin sustained growth and give rise to new economic opportunities.”

raw materials. More materials, including materials having a significant impact on the environment and critical raw materials, should be recycled.

- Waste legislation should be fully implemented and **illegal shipments of waste shall have been eradicated**. **High quality recycling** should be ensured, energy recovery should be limited to non-recyclable materials and land filling should be virtually eliminated.
- Scientific breakthroughs and sustained **eco-innovation** efforts should dramatically improve the understanding, management, and reduction of the use, reuse, recycling, substitution, safeguarding and valuation of resources. These achievements should be facilitated through increases in investment, along with greater coherence in addressing the societal challenges of resource efficiency through gains from smart specialisation and cooperation within EU Research.
- A major **shift from taxation of labour towards environmental taxation** should lead to a substantial increase in the share of environmental taxes in public revenues.
- Stakeholders at all levels should be mobilised to ensure that policy, financing, investment, research and innovation are coherent and mutually reinforcing. Public and private decision-makers will be guided by ambitious resource efficiency targets and robust indicators in the drive for transformation of the economy towards greater resource efficiency.
- Resource efficiency should be recognised as a global priority and progress on it should be secured on the basis of agreed approaches.

Innovation

The *Innovation Union* is another Flagship Initiative in the *Europe 2020 Strategy*. Innovation is seen as the key to building sustainable growth, as well as non-discriminatory and greener societies. The new *Eco-Innovation Action Plan (EcoAP)* is one of the commitments of the Innovation Union Flagship Initiative. Eco-Innovation is any form of innovation resulting in or aiming at significant and demonstrable progress towards the goal of sustainable development, through reducing impacts on the environment, enhancing resilience to environmental pressures, or achieving a more efficient and responsible use of natural resources. Eco-innovation is crucial to delivering the Europe 2020 strategy for smart, sustainable and inclusive growth.

The EcoAP should boost innovation that reduces pressure on the environment and should bridge the gap between innovation and the market. It should expand the focus from green technologies to the broader concept of eco-innovation, targeting specific bottlenecks, challenges and opportunities for achieving environmental objectives through innovation. Key aspects of the new Action Plan that will have consequences for producer responsibility schemes include:

- Using environmental policy and legislation to promote eco-innovation;
- Supporting demonstration projects and partnering to bring promising, smart and ambitious operational technologies to market;
- Developing new standards to boost eco-innovation;
- Mobilising financial instruments and support services for small and medium sized enterprises;
- Promoting international co-operation;
- Supporting the development of emerging skills and jobs and related training programmes to match labour market needs; and
- Promoting eco-innovation through European Innovation Partnerships

2.3 RECENT NATIONAL DEVELOPMENTS

Two important policy and regulatory developments were published which will have significant impact on the PRIs. Not only these shape the future landscape on which the PRIs will be delivered, but they also emphasise the central role of resource efficiency and the PRIs in the delivery of a sustainable future. These developments are as follows:

- *Waste Management Policy in Ireland* (DECLGa, 2012).
- *European Communities (Waste Directive) Regulations 2011 (SI 126 of 2011) (the Transposition Regulations)*.

In addition, three other significant policy documents will also influence the role of PRIs. These policy documents are:

- *Our Sustainable Future – a Framework for Sustainable Development for Ireland* (DECLG, 2012b).

- *Delivering Our Green Potential – Growth and Employment in the Green Economy* (Department of Jobs, Enterprise and Innovation, 2012).
- *Government’s Action Plan on Green Public Procurement, Green Tenders* (DECLG, 2011a).

2.3.1 A Resource Opportunity Waste Management Policy in Ireland

Published in July 2012 by DECLG, “A Resource Opportunity” provides a roadmap for the future of waste management in Ireland. The policy covers a wide spectrum of waste management, compliance and enforcement, and takes into account the principles set out in the Waste Framework Directive (2008/98/EC), especially the regard of the five tiers of the EU waste hierarchy. PRIs are central to meeting the objectives of the policy.

The guiding principles behind the policy are;

- Prevention and minimisation at the heart of waste policy;
- Maximum value should be gleaned from waste by re-use, recycling and recovery; and
- Disposal to landfill is a last resort, to be phased out within the next decade.

Running to 2020, with a midlife review in 2016 to assess performance, the policy seeks to integrate its aims with other strategic priorities such as national sustainable development, developing the green economy, and green public procurement. The policy addresses key issues under five main headings which are presented in Table 2.1.

Table 2.1: Summary of Key Measures, “A Resource Opportunity”

Policy Area	Key Measure
Waste Management Planning	<ul style="list-style-type: none"> • Reduce the number of waste management regions from 13 to 3, and also requires the existing plans meet the requirement of the Waste Framework Directive, • Require the EPA to revise the National Hazardous Waste Management Plan, and the Local Authorities to adopt its recommendations, • Require the DECLG and EPA to monitor compliance with the plans. • It is anticipated these measures will ensure the adequacy of waste management infrastructure in regard to capacity and

Policy Area	Key Measure
	the proximity principle, and also to free up resources within local authorities due to efficiencies.
Compliance and Enforcement	<p>There is recognition throughout the document that there is a need to balance compliance with avoiding unnecessary regulation and red-tape for business. The role of PRIs is also highlighted in the form of a PRI Review. This will:</p> <ul style="list-style-type: none"> • Assess the contribution of business and industry as Producers, and • Assess the effectiveness of existing PRI schemes in terms of environmental outcomes and cost burden on Producers. <p>To deal with issues of illegal waste disposal, both by industry and householders, a review of current enforcement activities is to be undertaken. An additional recommendation is the establishment of a team of specialist waste enforcement officers working in tandem with An Garda Síochána to tackle areas of serious criminal activity relating to waste disposal.</p>
Prevention	<ul style="list-style-type: none"> • Present and future PRI schemes will have prevention and reuse elements within them • The use of economic instruments will continue to be examined to drive resource efficiency.
Reuse	<ul style="list-style-type: none"> • The PRIs will encourage areas of reuse and opportunities for preparation for reuse. • The PRI review will examine the development of a reuse policy for EEE.
Recycling	<ul style="list-style-type: none"> • With regards to recycling, the PRI review will examine the appropriate financial mechanisms to ensure compliance by producers with their obligations. • The promotion of awareness of the benefits of recycling must be a shared responsibility and actors in the producer responsibility sector will be expected to demonstrate significant commitment to awareness-raising.
Recovery and Disposal	<p>The policy recognises that economic instruments may be critical in ensuring that market forces do not inhibit prevention reuse and recycling activities because they favour recovery and disposal. Hence, enforcement will be rigorous to ensure materials earmarked for recycling are not sent for disposal or recovery.</p> <p>Some measures that impact directly on activities undertaken by the PRIs include;</p> <ul style="list-style-type: none"> • The exemption for shredder residues is to be ended. • Following the increase in Landfill Tax to €75 in mid-2013, on-going review as to the economic effectiveness of such taxes will be undertaken.

2.3.2 European Communities (Waste Directive) Regulations 2011 (SI 126 of 2011) (the Transposition Regulations)

In March 2011, the revised *EU Directive on waste (98/2008/EC) (Waste Framework Directive)* was transposed into Irish law by the *European Communities (Waste Directive) Regulations 2011 (S.I. 126 of 2011) (the Transposition Regulations)*.

These Regulations provide for measures to protect the environment and human health by preventing or reducing the adverse impacts of the generation and management of waste and by reducing overall impacts of resource use and improving the efficiency of such use by substantially amending the Waste Management Acts and transposing Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain directives, referred to in these Regulations as the waste directive. Of particular relevance to the PRI waste are the articles relating to end-of-waste, extended producer responsibility, re-use and recycling, control of hazardous waste, and ban of mixing of hazardous waste.

Article 30 on extended producer responsibility allows the Ministers of the Irish Government to take **non-legislative** measures to apply extended producer responsibility on the “producer of the product”.

The EU Waste Framework Directive (2008/98/EC) places the waste hierarchy on a firm legal footing, as per Article 4. The “**waste hierarchy**” is for the first time legally established in national statute. The legislation states that the hierarchy “shall apply as a priority order” of prevention, preparing for reuse, recycling, other recovery and disposal, and that competent bodies are to encourage production and waste management options that deliver best overall environmental outcome. In certain circumstances there may be a departure from the hierarchy where it is justified on life-cycle thinking. The Transposition Regulations also detail clear responsibilities for waste producers and holders. Namely, it is a duty to ensure recovery in accordance with the hierarchy (with prevention at the top), and it is an offence not to. Moreover, there is a responsibility on waste producers to treat waste or have it treated in accordance with the hierarchy.

In terms of PRIs and waste management generally this is a hugely significant piece of legislation which introduces many new obligations for public and private sector waste operations as well as for regulatory activities.

2.3.3 Our Sustainable Future - a Framework for Sustainable Development for Ireland

The new sustainable development framework, Our Sustainable Future³⁴, sets out the challenges facing us and how we might address them in making sure that quality of life and general wellbeing can be improved and sustained in the decades to come. The economic context for Ireland has changed dramatically since 2007 which on the one hand has helped to ease some environmental pressures (e.g. traffic congestion, greenhouse gas emissions (GHG) and waste management pressures); however, the very challenging economic outlook for Ireland also means that there is greater pressure on public resources and a real risk that environmental issues may drop in priority when compared to the imperative to protect employment and enhance competitiveness. Resource efficiency plays an important role in sustainable development by delivering positive economic, environmental and social outputs and facilitating an appropriate balance between these three pillars of sustainability.

Our Sustainable Future broadly follows the thematic approach of the EU Sustainable Development Strategy and proposes measures to help meet the overall goal of achieving continuous improvement of quality of life for both current and for future generations. The key challenges are categorised into a number of themes. Each theme has a number of associated measures. The most relevant themes for the PRIs include:

- Sustainability of public finances and economic resilience,
- Sustainable consumption and production,
- Sustainable agriculture, and
- Education, communication and behaviour change.

³⁴<http://www.environ.ie/en/Publications/Environment/Miscellaneous/FileDownload,29081,en.pdf>

The delivery of the measures outlined in Our Sustainable Future will require a collective approach, involving the active participation of all key sectors and civil society generally.

2.3.4 Government's Action Plan on Green Public Procurement, Green Tenders

Green Tenders, an Action Plan on Green Public Procurement³⁵, is the first such Action Plan to be introduced in Ireland. Its overall objective is to assist public authorities to successfully plan and implement Green Public Procurement (GPP) by highlighting existing best-practice and outlining further actions to boost green public procurement. Public procurement has the capacity to shape production and consumption trends and generates significant demand for greener goods, in that way enlarging markets for environmentally friendly products and services. The Action Plan, by adopting the EU indicative target of 50% of GPP (i.e. 50% of procurement contract incorporating green criteria), is considered an intrinsic element of the National Recovery Plan whereby greening the economy is linked with growth and sustainability; the target applies in respect of both the number and the value of public procurement contracts concluded. The Action Plan nominates eight product groups as priority groups for GPP, namely:

- Construction;
- Energy;
- Food and catering services;
- Transport;
- Cleaning products and services;
- Paper;
- ICT; and
- Uniforms and other textiles.

The document also draws attention that organisations seeking to integrate GPP considerations into their procurement policies and practices must first ensure compliance with all the relevant laws. In the GPP context, five topical instances of such legal requirements concern energy efficiency; packaging waste; waste electrical

³⁵<http://www.environ.ie/en/Environment/SustainableDevelopment/GreenPublicProcurement/PublicationsDocuments/FileDownload,29208,en.pdf>

and electronic equipment (WEEE); volatile organic compounds (VOCs); and the Clean Vehicles Directive.

Clearly there are significant synergies between Green Public Procurement and the expected role of extended producer responsibility.

2.3.5 Delivering Our Green Potential

The policy statement Delivering Our Green Potential – Growth and Employment in the Green Economy³⁶, published by the Department of Jobs, Enterprise and Innovation in December 2012 recognises that the “green economy” is one of the most dynamic and rapidly growing market sectors in the world and sets out the areas where Ireland can capitalise on its strengths to capture domestic and international opportunities in this area. PRIs can support a number of policy areas such as Resource Efficiency, Green products and Services, Agri-Food, Waste Management, and Research, Development and Innovation

For example, the Farm plastic PRI whereby recycling silage wrap and sheets supports some of the key measure in the policy areas of Resource Efficiency, Green products and Services, Agri-Food, and Waste Management.

2.4 OTHER REGULATIONS

There are also other regulations, which provide the broader framework in which PRIs operate. These include:

- **Waste Management Acts 1996-2012:** The Waste Management Acts include requirements for waste management planning, waste collection and movement, authorisation of waste facilities, measures to reduce the production of waste and measures to promote the recovery of waste. The Waste Management Acts also place obligations on waste producers and divide responsibility for the regulation of waste between the Local Authorities and the Environmental Protection Agency.

³⁶http://www.djei.ie/publications/enterprise/2012/Delivering_Our_Green_Potential.pdf

- **Waste disposal and recovery activities** in Ireland are required to hold an authorisation in accordance with the Waste Management Acts. A four tier system of authorisation has been established for the regulation of such activities at a facility. A waste recovery or disposal activity at a facility is either:
 - A Waste (or IPPC) licence, or requires,
 - A Waste Facility Permit, or requires,
 - A Waste Certificate of Registration / Registration Certificate, or
 - In very exceptional and highly specific circumstances, constitutes an exempted activity (i.e. no waste authorisation required).

The principal legislative texts governing the form of authorisation required for waste facilities are:

- Waste Management (Licensing) Regulations 2004 (S.I. No. 395 of 2004),), as amended,
- Waste Management (Facility Permit and Registration) Regulations 2007 (S.I. No. 821 of 2007), as amended.

Depending on the authorisation required these activities are controlled either by the Environmental Protection Agency (EPA) or by the relevant Local Authorities in the area where the facility is located. All non-exempted Local Authority waste facility activities are regulated by the EPA.

- **Waste Collection Permit Regulations:** Apart from where specified exemptions exist, the collection of waste on a commercial basis requires a waste collection permit from a relevant local authority in accordance with section 34(1) of the Waste Management Act 1996 (as amended). The Waste Management (Collection Permit) Regulations 2007 (S.I. No. 820 of 2007) set out procedures for the making of permit applications, public consultation, consideration by local authorities of submissions in relation to permit applications, and the grant, refusal and review of permits by local authorities. Offaly County Council is the nominated Local Authority in Ireland for issuing waste collection permits nationally.
- **The Waste Management (Registration of Brokers and Dealers) Regulations 2008 (S.I. No. 113 of 2008):** These Regulations deal with the regulation of waste contractors who never actually take physical possession

of waste but arrange for its shipment nationally and internationally, or buy and sell waste as a commodity. These regulations amend the Waste Management (Licensing) Regulations 2004.

- **Waste Management (Shipments of Waste) Regulations 2007, S.I. No. 419 of 2007:** These Regulations transpose Commission Regulation (EC) No. 1013/2006 on transfrontier shipments of waste which sets out new notification procedures, specifies revised waste listings and strengthens enforcement provisions in relation to waste movements within, into and out of the EU. The national Regulations streamline the administration of the Transfrontier Shipment of Waste Legislation in Ireland so as to provide a better and more consistent level of implementation generally. All transfrontier shipments of waste originating in any local authority area in Ireland are subject to the prior written notification procedures and must be notified to Dublin City Council at the National TFS Office established to implement and enforce the Regulations.
- **Waste Management (Licensing) Regulations 2004 (S.I. 395/2004)³⁷:** These regulations, together with provisions already contained within the Waste Management Act, transport Landfill Directive 1999/31/EC. In relation to biodegradable municipal waste the Landfill Directive sets limits on what can be sent to landfill. The main constituents of the biodegradable proportion of municipal waste are typically parks and garden waste, food waste, timber, paper, card and textiles. These constituents include an element of packaging waste. The Landfill Directive bans whole and shredded waste tyres from being deposited at landfill sites. However, the legislation allows whole tyres to be used for landfill engineering purposes.
- **Landfill Levy:** With effect from 1st July 2012, the Minister for the Environment, Community and Local Government increased the landfill levy, using the power available to him under the Waste Management Acts. The Waste Management (Landfill Levy) (Amendment) Regulations 2013(SI No. 194of 2013)³⁸ increased the landfill levy by 10euro to 75euro per tonne for

³⁷ www.irishstatutebook.ie/2007/en/si/o664.html

³⁸ <http://www.environ.ie/en/Legislation/Environment/Waste/WasteManagement/FileDownload,33621,en.pdf>

each tonne of waste disposed of at authorised and unauthorised landfill facilities. Such increases are necessary to drive improved waste prevention and recycling, and to divert material from landfill.

2.5 RAW MATERIALS AND ENERGY PRICES

Materials and energy costs are important to PRIs as they have an influence on the:

- Recycling and reprocessing costs thus impacting on the PRO finance.
- Behaviour of certain participants in product supply chain (e.g. demand for recyclates, effect of high metal value on metal theft).

2.5.1 Energy

Ireland is heavily reliant on fossil fuels and imports around 90 per cent of its fuel needs. Energy costs in Ireland are primarily determined by international fuel prices (oil, coal and gas). Electricity prices for industry in Ireland doubled during the period 1997 to 2007, coal and gas prices also rising in that period (SEAI, 2011). Following the global economic crisis, electricity and gas prices have been more competitive; between 2008 and 2010, the cost of electricity for large energy users in Ireland decreased by 32.1% while Small Medium Enterprise (SME) prices fell by 20.3 per cent. However, in recent years prices are currently increasing again, mainly due to increases in the price of gas and the phasing out of the temporary rebate for large energy users³⁹. Irish energy prices are reasonably high in an EU context. There is a drive to produce energy from renewable sources where Ireland has a renewable energy target of 16% of final consumption by 2020, and is currently only producing 6.5% from renewable sources.⁴⁰

Energy prices have complex effects on recycling and recovery markets. It should be noted that when oil prices rise in particular, plastic commodity prices also tend to rise

³⁹http://www.forfas.ie/media/forfas201211-review_of_energy_competitiveness_issues_and_priorities_for%20enterprise-Publication.pdf

⁴⁰http://www.seai.ie/Publications/Statistics_Publications/Renewable_Energy_in_Ireland_2011.pdf

in tandem as oil is the main feedstock for plastic. The energy to produce a raw material is generally greater than to use recyclable material, so high energy prices may encourage recycling. However, energy prices with labour costs are one of the main cost inputs to recycling and reprocessing facilities. Energy prices also have an impact on transport costs and are a factor in the decision to export recyclable material for recycling.

2.5.2 Raw and Secondary Materials Prices

As shown in Figure 2.2 the prices of secondary materials (waste materials or recyclates) are typically cyclical and subject to volatility. These materials are internationally traded commodities and are susceptible to global price fluctuations because of world changes in capacity and demand. The price of secondary materials is also linked to raw material prices, where the raw materials are generally more expensive, and when there is a drop in the raw material price a drop in the secondary material price follows.

In the early 2000s, the majority of raw materials markets were faced with supply shortages and rocketing prices, these reaching peak levels by July 2008. World economic growth and the rise of the Chinese economy in particular have been at the root of this major crisis.

The scarcity of resources and rising prices became a subject of global concern for long-term economic growth. Not only were resources becoming rarer and consequently more costly, but their exploitation was causing serious environmental damage.

The most notable change in this trend during the last decade was a sharp reduction in secondary material prices during the financial crisis of 2008/2009. During this period, anecdotal evidence⁴¹ suggested that, in the short term, waste operators had difficulties selling the materials they had collected for recycling. The lower grades of

⁴¹See

<http://www.environ.ie/en/Publications/Environment/Waste/WasteManagement/FileDownload,19147,en.pdf>

recyclables were those most affected by this situation. However, according to Eurostat average annual figures for intra-European Union 27 trade suggest that the markets for most secondary materials were not substantially affected.

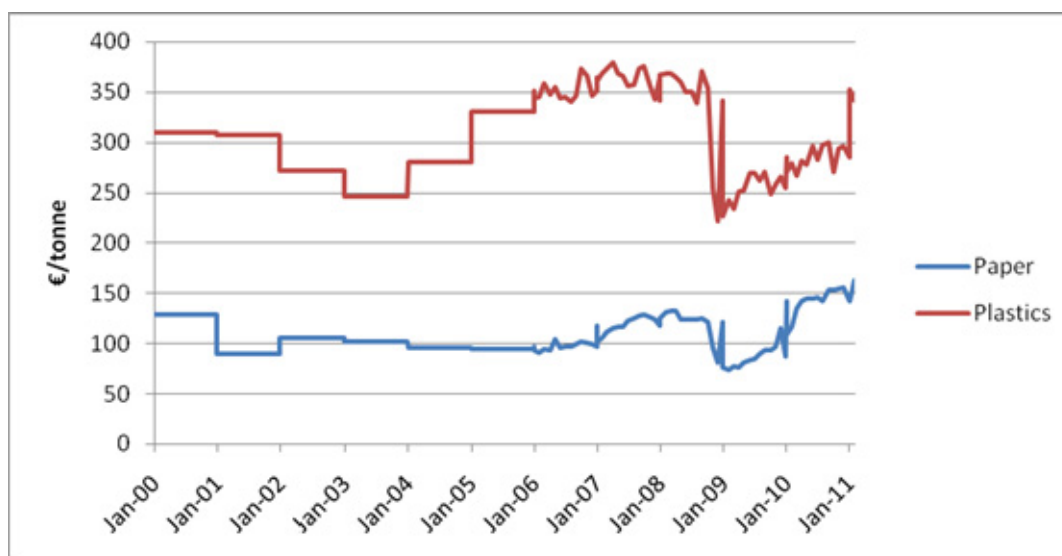


Figure 2.2: Price indicator and trade volume for paper and plastic waste in EU-27 until February 2011⁴²

The revenues from secondary materials can pay for a substantial part of the total cost of waste management and therefore have an impact on the cost of waste management for PRI waste.

The increasing value of metal and commodity prices is creating difficulties by encouraging illegal operators to enter the market, competing with and, in certain cases, depriving the compliance schemes of WEEE or ATFs from ELVs.

2.6 TECHNOLOGICAL CHANGES

The participants in the product supply chains engaging in recycling are faced with multiple technological challenges. These challenges are in the preparation and

⁴²Source Eurostat yearly average prices from Jan-00 to Jan-06, then monthly average prices afterwards.

http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Recycling_%E2%80%93_secondary_material_price_indicator#Plastics

sorting of waste for recycling, recycling and the development of markets for secondary raw materials.

On the one hand, there is a constant evolution in the nature of waste arising, which is due to a trend towards complex products and packaging that combine several materials and difficult to recycle. For example:

- The development of composite materials (e.g. plastics, carbon fibre etc.).
- The presence of plastic stickers and RFID labels on a number of products.
- The replacement of TVs with cathode ray tubes by plasma or LCD screens, where glass is combined with new materials. This results in recycling difficulties due to the presence of these new substances (e.g. iridium).

On the other hand, manufacturers are using more recyclate in their products, but these recyclates have to be sourced by waste operators from more heterogeneous and contaminated waste.

Finally buyers are more and more demanding on the quality of secondary materials. For example for close loop recycling of PET, the maximum PVC concentration limits decreased from 50 to 10 ppm in a short period of time (ADEME, 2012a).

To face these challenges, significant progress has been made in recent years, with regard to eco-design, and the preparation and sorting of waste. For example, French Agency for Energy and Environment ADEME (2012a) has identified the following developments in its review of recycling in France for the period 2001-2010:

- Ferrous metals: the presence of small pieces of copper in ferrous fractions from ELVs increases the fragility of recycled steel. Tests carried out using technology with optical sorting with X rays show that the removal of copper can now be done at an acceptable cost.
- Paper and cardboard: near infrared spectrometry combined with “visible” spectrometry for certain applications can improve, significantly the performance of Materials Recycling Facilities (MRFs), in particular for the following areas:
 - Separation of 3-D plastics (e.g. bottles) and 2-D paper and cardboard collected in the recycling bin.

- Additional sorting of paper fraction to meet technical requirements of paper mills, printing paper etc.
- Glass: significant progress has been made to detect ceramics and stones. The sorting of glass by colour is currently available.
- Plastics: the principal innovations are focused on the following:
 - Sorting of 3-D plastics from 2-D papers in the dry fractions of MBT plants.
 - Sorting of 3-D plastics and 2-D paper and cardboard collected in the recycling bin.
 - Additional sorting of plastics by type (PET, HDPE, PP) and colour, and elimination of PVC.
 - Sorting of mixed plastic flakes / pellets by polymer (PET, HDPE, PP, PS, PE, PVC, ABS).

These innovations should lead to an improvement in the sorting performance of MRFs in the near future. One of the challenges for Irish MRFs is the separation of 2-D plastics (e.g. films) from 2-D papers. Other challenges for Irish MRFs, metal shredding or similar facilities are the lack of scale, which may delay investments in such technologies.

3 PRODUCER RESPONSIBILITY OVERVIEW

Sections 3.1 to 3.5 provide an overview of the main principles of producer responsibility and Section 3.6 introduces the Irish PRI model. An overview of European PRIs is presented in Appendix C.

3.1 DEVELOPMENT OF PRIS

Industrial production and goods consumption have been steadily rising for 40 years, since the 1960's. In the 1980's, rising environmental awareness in European countries led to sounder waste management, as the strong tendency to dispose of waste in landfills gave way to increasingly sophisticated and environmentally friendly treatment activities. At the end of the 1980s, local authorities, who are responsible for household waste management, were facing the twin problems of rapidly rising amounts of waste and the obligation to adopt quality-driven management practices. The authorities incurred strong increases in waste management costs, which would have to be passed on to residents.

This was one of the reasons that led European governments and the European Union to reassess their waste management policies. To limit the environmental consequences of the growing quantity of waste, it was deemed **necessary to transfer the financial responsibility for waste management to the producer (manufacturer or importer), in application of the “polluter pays” principle.**

In 1991 a new type of regulatory instrument was adopted in Germany, implicating the entities that put products on the market (or producers) in the management of packaging waste generated by products offered for sale. Financial responsibility was no longer assumed solely by “waste producers”, but also by “product producers”, who could be assigned an operational role as well. Similar regulatory instruments were used in Sweden for packaging waste in 1993, waste papers⁴³ and tyres in 1994, and ELVs in 1997 (T. Lindhqvist, 2000). These regulatory instruments led to an increase in recycling and recovery rates for these waste streams.

⁴³ Newsprint, journals, telephone books, junk mail, and similar paper products

The Organisation for Economic Co-operation and Development (OECD) took a pioneering role in establishing the principle of Extended Producer Responsibility (EPR), launching the debate on the internalisation of the external costs of waste management in the 1980s. In 1994 the OECD opened an international discussion to assess the benefits of EPR and outline the conditions necessary for its implementation. This work resulted in the publication of a handbook “Extended Producer Responsibility - A Guidance Manual for Governments” in 2001. This handbook defines EPR as an environmental policy instrument that extends the material and/or financial obligations of a product producer up to the final stage of the product’s life cycle, just downstream of consumption.

The OECD defines Extended Producer Responsibility as “a concept where **manufacturers and importers of products should bear a significant degree of responsibility for the environmental impacts of their products throughout the product life-cycle**, including upstream impacts inherent in the selection of materials for the products, impacts from manufacturers’ production process itself, and downstream impacts from the use and disposal of the products. Producers accept their responsibility when designing their products to minimise life-cycle environmental impacts, and when accepting legal, physical or socio-economic responsibility for environmental impacts that cannot be eliminated by design.”⁴⁴

In parallel, work carried out by the European Union underscored that certain waste streams needed special attention, either because of the risks engendered, as with batteries and accumulators, or because of the increasingly large quantities involved, as with packaging. As these streams called for specifically tailored management, the European Union drew up appropriate policy measures in two Directives⁴⁵, in 1991 and 1994, but these did not make EPR mandatory.

⁴⁴http://www.oecd.org/document/19/0,3746,en_2649_34281_35158227_1_1_1_1,00.html. This OECD webpage contains a guide to the extensive work that the organisation has done in the area of EPR. Accessed 26 July 2012.

⁴⁵Hazardous Waste Directive 91/689/EC and Packaging Waste Directive 94/62/EC

Now the EPR model is a common feature of waste management with the development of PRIs in the EU⁴⁶ and also other countries such as Canada, the US and Japan.

3.2 CORE ELEMENTS OF PRIS

3.2.1 Objectives

PRIs vary widely, but many share two main aims:

- Relieve local authorities of some or all of the cost of managing waste, and transfer the financing from taxpayers to consumers;
- Internalise the cost of end-of-life management of a product in the new product sale price, to incite manufacturers to adopt an eco-design approach.

The related objective of efficient waste recycling took hold particularly in Europe and is now systematically found in regulations. There is also a growing demand for PRIs to have a role in stimulating innovation and job creation thus helping Europe in achieving economic recovery.

3.2.2 Features

PRIs are **shared responsibility models** and are based on partnerships between different participants in the product life cycle, and calls for coordination of action between these participants.

A set of desired environmental outcomes are identified by governments. Governments and producers' industry groups negotiate how to share co-responsibility in the area of waste management⁴⁷. Following the phase of industry

⁴⁶See Table 1 and Table 3 of the Working Paper on European PRI in Appendix C.

⁴⁷ See Cunningham J. (2004) for an overview of the development of the Irish Packaging Producer Responsibility Model at http://iamireland.ie/wp-content/uploads/2012/05/IJM_25_1_Final_crop.pdf

engagement, Governments establish obligations that producers have to follow to meet desired environmental outcomes (set in regulations or not).

Most PRIs share a common core of elements shown in Figure 3.1, including:

- The producers pay in the form of a **producer fee** for some or all the costs of the waste management of the end-of-life products.
- Waste collection operations (typically run through a PRO, but in some cases by individual firms). The PROs pledge to take in the collected products regardless of market conditions for raw materials. This type of mechanism generally includes financial support for collection and/or communication. PROs that are organisers can also contract with distributors when the latter are required to take back used products, in particular when a new product is purchased (the “take back” principle).
- Targets or incentives to influence treatment of the waste collected by the PRO (typically targets for the collection, recovery and recycling of the collected items), and
- A set of “governance” arrangements for joint financing and management of the PRO.
- PRIs allow producers to devise schemes that have the capacity to fulfill the basic objectives of waste management legislation without resort to a “command and control” approach. PRIs grant producers a certain degree of freedom in organising a system to fulfil their obligations. As the producers are likely to have better information than the government, they have a better ability to implement the least cost option when faced with the right incentive (Cunningham, 2004). The responsibility can be met independently (referred to as self-compliance in the Irish model) or collectively with the help of a PRO.
- Governments provide oversight and enforcement, but otherwise have minimal involvement.

The most successful producer responsibility schemes appear to share some common features: a common, fully private body that is created, run, owned and supported by the obligated producers; requiring producers to fully fund the collection and recycling scheme; and high targets (OECD, 2001).

3.3 PRI PARTICIPANTS AND THEIR ROLES

PRIs require a complex set of interactions between a wide range of stakeholders in a product supply chain. PRIs also require flows of product/waste, information and money as illustrated in Figure 3.1. All participants in the product chain must participate satisfactorily in the PRIs to optimise its effect.

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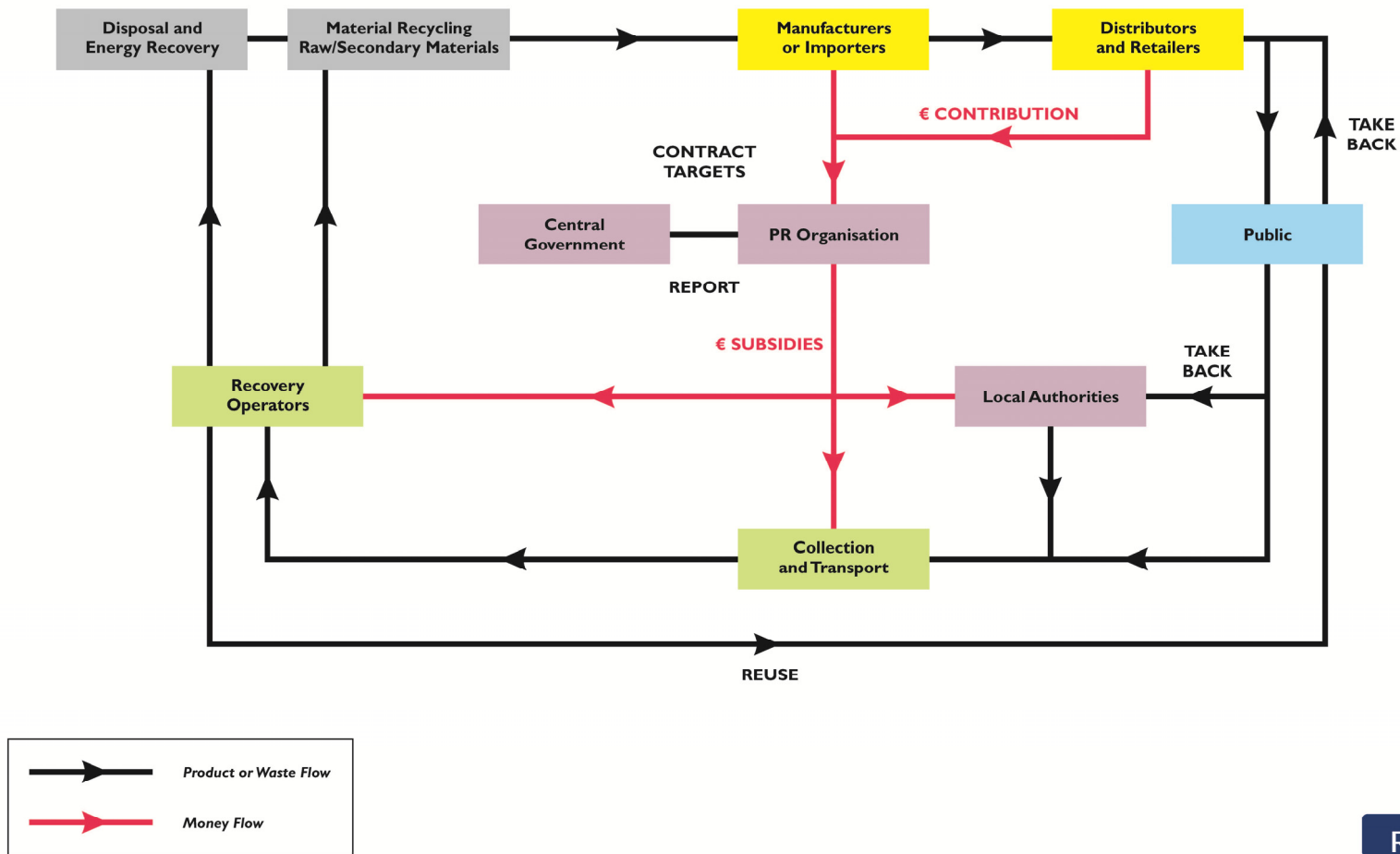


Figure 3.1: Overview of the PRI Model with a PRO

PRIs are in practice **responsibility shared between all participants of a product supply chain**. These participants are as follows:

- **Producers:** Manufacturers, importers of products from within the European Union or elsewhere, and distributors who distribute their own brands must all participate financially and/or directly (handling waste streams) in the appropriate management chain, and see that waste is transported to suitable treatment facilities. To this end, they may assume their responsibility either individually (i.e. through self-compliance), where typically there is a requirement to comply with each and every provision of the relevant producer responsibility legislation. Alternatively, producers may discharge their producer responsibility obligations collectively (i.e. via membership of and satisfactory participation in a PRO).
- **Producer Responsibility Organisations:** These organisations funded by producers to take responsibility for waste in compliance with the relevant regulations. Their role is examined in more detail in Section 3.4.
- **Waste producers or end-users:** Whether they be the initial producer of waste or any other entity that holds waste intended to be discarded, either household or professional, waste holders must sort their waste and see that it is treated and disposed of according to the appropriate mechanisms.
- **Distributors:** Retail and bulk distributors must inform consumers of the proper end-of-life management of used products, and may also be required to take back end-of-life products free of charge, either without related purchase obligations or when an equivalent new product is purchased.
- **Local Authorities:** In most EU Member States Local Authorities separately collect or take in used household products under the framework set by regulations and technical stipulations set by governments approving PRO's. In this capacity, they are an important vehicle for communicating information to individuals. They can also be a preferred partner for PROs when the products covered by a PRI are common consumer products.⁴⁸

⁴⁸ The situation is different in Ireland where local authority roles in kerbside collections have reduced; while they retain a key role in the operations of bring banks and civic amenity centres.

- **Waste operators:** These organisations ensure waste management in whole or in part, including collection, transport, preparation for reuse, recycling and recovery and disposal, in conditions that respect the environment, comply with specific standards for each type of waste, and preserve human health. The waste operators are commonly involved in the collection, transport, treatment and reporting of PRI waste under contract to the PROs.
- **Government:** Establish the regulatory framework of objectives, responsibility shared between actors, approvals, etc., and ensure that mechanisms are properly executed (e.g. supervision and oversight of the PRI, the monitoring of the quantities of product/waste entering the market, collected and treated, etc.). Government determines whether the actions undertaken by PRO's comply with their approval, whether self-compliance actions are adequate and in accordance with legislation and take steps to sanction those in violation of their obligations as the case may be.

3.4 PRODUCER RESPONSIBILITY ORGANISATIONS

The PRO plays a critical role within a PRI by offering a service that enables producers to comply with their environmental obligations. The PRI mechanism is based on partnerships between different participants in the product life cycle, and calls for coordination of action between these participants. Producers thus delegate this responsibility to the PRO by participating satisfactorily in the compliance scheme and through the payment of a membership fee usually based on their contribution to the waste stream measured by, for example, weight. In most cases, the PRO organises or supports the collection and sorting as well as the recovery of waste. It may decide to provide these services itself or alternatively contract with third parties – in the case of packaging, household waste collectors. Typically the latter option is selected, with the PRO making payments to firms for collection, sorting and recovery, referred to as subsidies. PROs are usually not-for-profit bodies with a relatively small staff.⁴⁹

⁴⁹Repak, for example, in 2009 had a staff of 35, WEEE Ireland 10, based on statutory accounts.

PROs have three main functions or objectives:

- To meet binding EU environmental targets;
- To contract with firms to collect, sort and recover waste; and,
- To educate and create awareness.

The latter two objectives are inputs towards meeting the first objective. Hence the three functions are closely linked to one another.

The governance of PROs must be ensured by its producers, shareholders and/or members. In the case of regulated EPR chains, the organisations are certified by government authorities according to the criteria in their approvals and terms and conditions that set the organisations' obligations in terms of resources, results and management of relations between the different actors involved, for a period of no more than six years.

PROs have a responsibility to accept the collected products regardless of market conditions for raw/secondary materials. This type of mechanism generally includes financial support for collection and/or communication. PROs that are directly involved in organising collection can also enter into binding contracts with distributors when the latter are obliged to take back used products, in particular when a new product is purchased (the "take back" principle).

To secure long-term outlets for collected products, some PROs sign partnership or subcontracting agreements with industries that use recovered materials. In some cases, they also fund research and development programmes to improve the performance of indigenous materials recovery and removal of pollutants, thereby enhancing the prospects of increased recycling and recovery levels.

3.5 REGULATION AND MONITORING OF PRIS

After putting regulations into place, the prime role of government authorities is to oversee the operation of PRIs and PROs, by setting operational rules and targets, and by arbitrating between actors. This role includes:

- Determining terms of reference for the certification of PROs.

- Periodic sharing out of objectives between different PROs that intervene in the same PRI.
- Determining rules for the implementation of financial guarantees, as the case may be.
- Sometimes approving the fee schedule for PRI fees paid upstream by producers.
- Sometimes approving the fee schedule for downstream payments for collection and sorting to local authorities and waste operators.
- Sometimes validating standard contracts.
- With regard to self-compliance, the requirements are fully set out in the relevant set of Regulations. Guidance information on self-compliance is also available on governing bodies websites, such as the EPA and Local Authorities. In addition to regulation these governing bodies are also responsible for monitoring, reporting, inspection and enforcement of self-compliers in line with their obligations as per the regulations.

In some instances the State entrusts other state bodies with the task of establishing Observatories for EPR chains. This mission consists of:

- Managing periodic data transmitted by producers, distributors and operators.
- Publishing annual Observatory reports on the chains.
- Evaluating the operations of EPR chains.

3.6 THE IRISH PRODUCER RESPONSIBILITY MODEL

The Waste Management Act, 1996 established a legislative basis for producer responsibility and the first PRI in Ireland was rolled out with the implementation of the Packaging Directive in 1997. The principal PRIs are in the areas of Waste Electrical

and Electronic Equipment, batteries, packaging, end-of-life vehicles, tyres⁵⁰ and farm plastics.

As shown in Figure 3.2, most of the PRIs in Ireland were established in the framework of regulatory obligations. There are some cases, however, of purely voluntary PRIs adopted by producers (e.g. construction and demolition waste, newsprint).

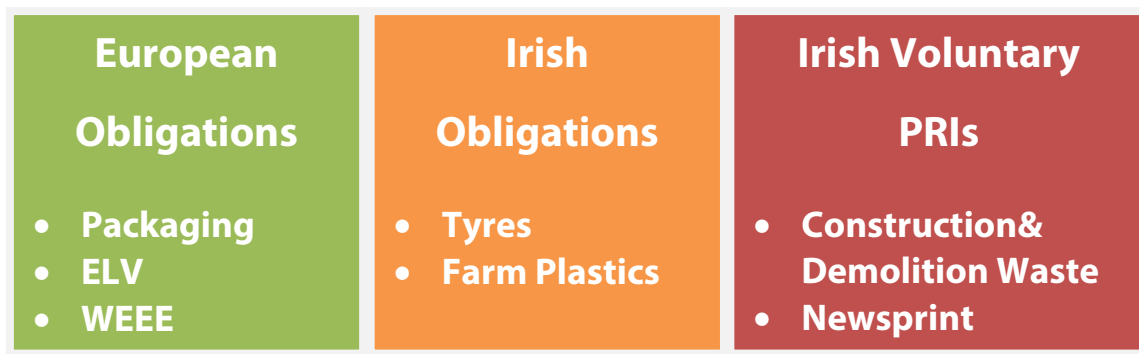


Figure 3.2: Main PRIs in Ireland

The main elements of the Irish PRI model are shown in Figure 3.3. Sometimes these elements overlap with other activities not regulated by a producer responsibility approach (e.g. other information and awareness or enforcement actions).

⁵⁰However, unlike other PRIs the existing schemes for tyres do not fund or subsidise the collection and treatment of tyres or provide for specific recycling or recovery targets. Instead, these schemes were established largely as tracking /data gathering systems.

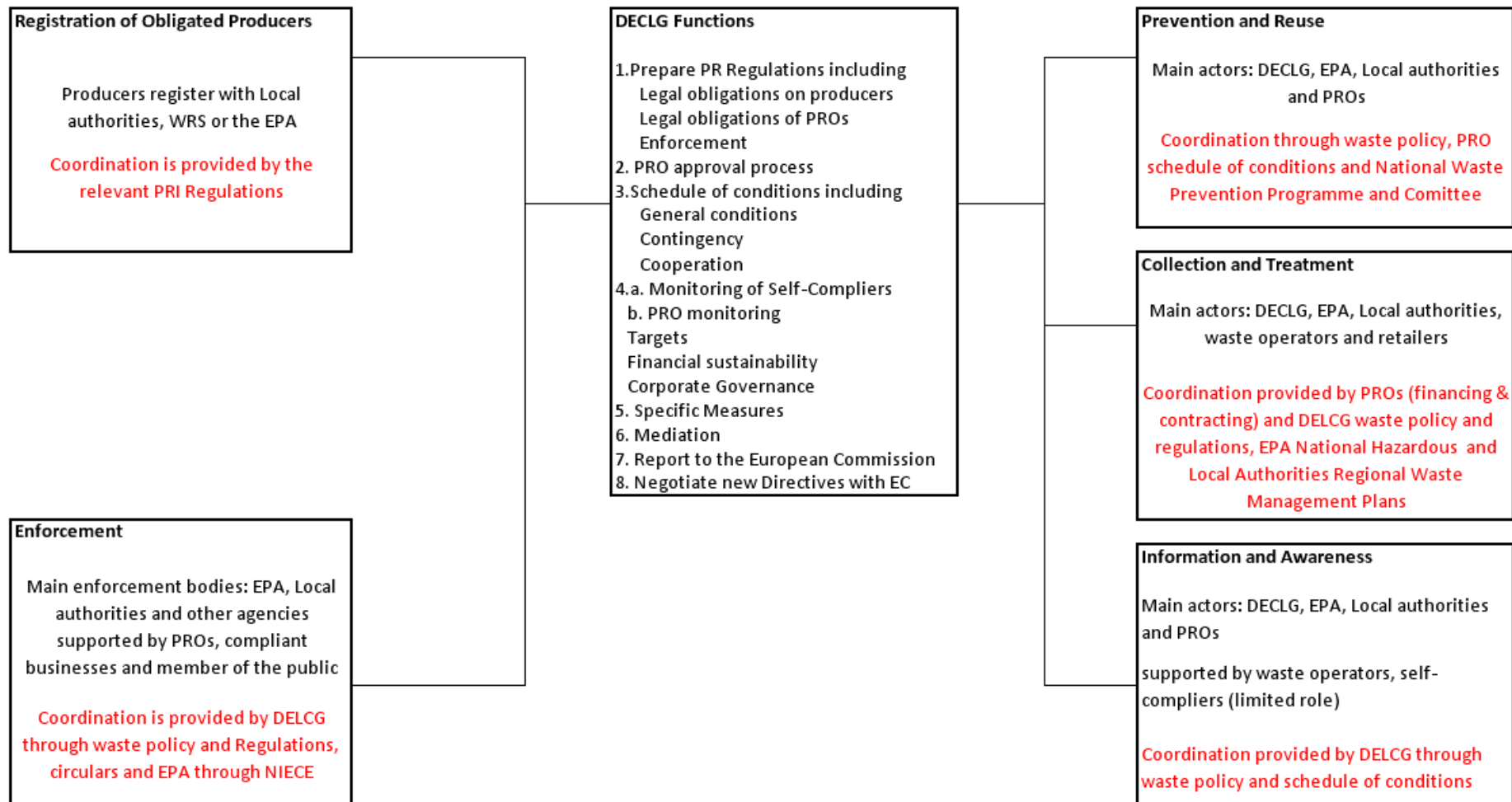


Figure 3.3: Overview of the PRI Model in Ireland

Under the PRI model, producers must meet certain desired environmental outcomes. The requirements and choices (i.e. self-comply vs. joining a PRO) by which a producer fulfils the specified environmental outcomes are set in legislation, typically a **statutory instrument developed** by the DECLG. The latter also contains details of the desired environmental outcomes in terms of targets, collecting information and so on. The targets are frequently EU-mandated.

The DECLG is also responsible for **setting the overall national policy** and regulatory framework (waste permitting, information and awareness, enforcement, etc.) in which the PRI is operating. The DECLG also provides funding to local authorities for a broad range of activities (e.g. provision of environmental awareness officers, enforcement, WEEE collection at Civic Amenity Sites, etc.).

Achieving the desired environmental outcomes is usually part of the mandate of the PRO, which uses the producers' fee to provide financial support or contract for **collection and/or treatment** of PRI waste. In some PRIs distributors are required by the regulations to take back certain waste.

The Minister for the Environment, Community and Local Government (the Minister) is responsible for **approving** PROs or in legislative parlance, "approved bodies". The legislation typically lists a series of documents that must form part of the application to be a PRO such as those relating to governance and membership rules, a declaration that the PRO will not discriminate against any producer on the grounds of its size or location, while the PRO agrees to co-operate with other PROs to achieve the environmental targets.

The Minister in approving a PRO may specify conditions across virtually all aspects of a PRO, including the obligation to meet certain specified targets, composition of the board of management, representativeness of the directors, amount to be spent on awareness and approval of amendments to articles of association, corporate governance rules and rules of membership. If a producer joins and participates satisfactorily in the PRO, rather than self-comply, then the producer is exempt from certain reporting, registration with local authorities and other requirements. The PRO undertakes these activities on behalf of the producer. If, on the other hand, the producer decides to self-comply then certain information and documentation needs to be provided to the local authority, including an implementation plan to meet the environmental targets in the legislation. The legislation typically allows for the

possibility of more than one PRO since there is reference to co-operation between PROs to meet targets. However, no criteria specify when more than one PRO should be permitted either in legislation or in terms of DECLG guidance.

The DECLG must maintain a **management / oversight function** to ensure that the PROs appointed to assist Ireland in that regard are performing. While the DECLG monitors PRO performance, the local authorities or the EPA (depending on the waste stream) fulfil a monitoring role for self-compliers. The DECLG reports target achievement to the European Commission. In this role the DECLG is assisted by the EPA for data collection and reporting,

A number of other factors contribute to the success of PRI recycling programmes (infrastructure provision, enforcement, etc.). Without appropriate **information and awareness**, the contribution of these factors can be undermined. The promotion and awareness in PRIs is a **shared responsibility** between the DECLG, EPA, local authorities, PROs, waste collectors, producers and retailers.

Enforcement is an important instrument for ensuring the implementation of PRIs (OECD, 2001). The key enforcement challenge for enforcement authorities is to provide a framework which maintains a trade-off between effectiveness and administrative cost and also a dissuasive effect for non-compliers without going too far towards the imposition of disproportionate penalties. Local authorities and the EPA are the main enforcement authorities.

The concept of Producer Responsibility incorporates several distinctive features considered to be important to **waste prevention and reuse**. There are mixed views on the effect of PRIs on waste prevention and reuse. The EPA is the main driver of waste prevention and reuse in Ireland supported by local authorities and PROs.

4 REVIEW OF CROSS-CUTTING ISSUES

As highlighted in Section 2, because of changes in economic conditions and new regulatory developments a review of the existing Irish producer responsibility model is required. This section examines some cross-cutting considerations relating to:

- **Efficiency of the existing PRI model:** This relates to the resources from producers and public authorities required to meet the desired environmental outcomes. This will focus on three topics: the role of competition, the role of contingency reserve and how to reduce administrative burden on producers and government.
- **Effectiveness of the existing PRI model** which can be defined as the degree to which desired environmental outcomes are met. This section will concentrate on the monitoring of PROs, interrelationships between PROs, the role of self-compliers, information and awareness, enforcement, prevention and reuse, as well as the development of indigenous reprocessing capacity.

A detailed review of each waste stream will also provide more detailed information under these topics for individual waste streams in Chapters 5 to 11.

4.1 EFFICIENCY OF THE EXISTING MODEL

Under the PRI model, the cost of meeting the desired environmental outcomes is:

- An input cost for producers involved in managing a particular waste stream. Minimising the cost of meeting the environmental outcomes will have knock-on effects in terms of the producer's ability to compete against producers located in other EU Member States, particularly those within the euro zone area⁵¹, that are also required to meet the same EU-wide environmental targets. For example, if the costs of compliance were higher in Ireland this

⁵¹ In the euro zone it is not possible for a member to offset higher costs of compliance through variations in the exchange rate since the euro zone is a currency union.

could place businesses located in Ireland at a competitive disadvantage, resulting in job losses and discouraging investment.

- Also a cost to the State which must ensure the regulation and monitoring of the PRI. Minimising the costs of regulating and monitoring PROs and self-compliers will also have knock-on effects in terms of resources required from the government to undertake these activities.

When considering efficiency of the existing PRI model, there are three key areas that were examined with the potential to drive down costs: the role of competition, the amount of contingency reserve and how to reduce administrative burden.

4.1.1 Competition

Underlying the terms of reference is the view that there is a need to drive down the costs of complying with environmental regulation through EPR compliance schemes so as to improve Ireland's competitiveness and thus create jobs and exports. The terms of reference highlight competition between PROs as one mechanism that might reduce such costs. Competition is seen as desirable because it is generally considered to assist in driving down costs, promoting innovation as well as providing producers with choice.

The issue of **whether or not greater competition can or should be injected into the provision of PRO services** is fully explored in Appendix D. This section only presents an overview of the main findings.

4.1.1.1 Competition amongst PROs: The Irish Experience

The degree of competition between PROs varies for the five waste streams in Ireland where there is a PRO.

In two waste streams there is only one PRO: Repak Limited (Repak) for packaging and Irish Farm Films Producers Group for farm plastics: As a result there is presently no competition for the provision of PRO services in these waste streams, although individual producers are provided with the option to self-comply within these Regulations.

For WEEE and batteries the competitive situation is different. Here there are two PROs which compete, although they each are responsible for an exclusive geographic area of Ireland. There are indicators that provide information on the degree of competition between WEEE Ireland and ERP in the WEEE and batteries waste market such as:

- Extent of producers switching between ERP and WEEE Ireland.
- ERP's market share of WEEE and batteries placed on the market has increased markedly.
- ERP and WEEE Ireland have different pricing models.

For tyres, there are also two PROs approved by the Minister in 2007 (TRACS) and 2009 (TWM). Following the approval of TWM, the extent of producers switching between TRACS and TWM has been limited. TWM has a small market share after four years of operation.

Under the 2007 Tyres and Waste Tyres Regulations producers and suppliers of tyres have the option to self-comply with the regulations requirements. The number of operators registered as self-compliers with local authorities is negligible (EPA, 2010a).

4.1.1.2 A Single PRO: How Responsive?

There are risks associated with having only one PRO in each PRI, as monopolies or sole providers are not generally thought of as being responsive to consumer preferences or prone to promoting innovation. A long-standing monopolist in a market with high barriers to entry and with little prospect of entry is unlikely to be overly concerned about costs, prices and new product development.

Although these risks can be mitigated using mechanisms for ensuring that the PRO is responsive to both the DECLG and the membership of the PRO. For example:

- The option of producers becoming self-compliant.
- The conditions of the approval to the PRO issued by the Minister.
- PROs in other waste streams that are potential entrants.
- Channels through which producers can hold the PRO to account (e.g. appropriate governance and accountability mechanism).

The necessity of the PRO to respond to the demands of the DECLG and its membership and the provision of mechanisms to ensure accountability and responsibility should provide clear incentives for the PRO to meet targets, minimise cost and provide a suitable service for members whose only alternative with a single PRO is to self-comply.

4.1.1.3 Competition amongst PROs: How Feasible?

Competition between PROs for members will depend, amongst other things, on the membership fee that they charge.

As collection, sorting and recovery are the main PRO input cost⁵², the feasibility of competition amongst PROs depends on the market situation for collection, sorting and recovery⁵³ as summarised as follows:

- Multiple Exclusive Geographic Markets for collection, sorting and recovery: the competition between PROs is feasible and likely to provide appropriate incentives for driving down subsidies and membership fees, while at the same time meeting the environmental targets.
- Single National Geographic Market for collection, sorting and recovery with Multiple PROs: there are two separate scenarios to distinguish:
 - Centralised procurement for collection, sorting and recovery: It is difficult to see where competition between the various PROs can take place except with respect to efficiency of administration.
 - Decentralised procurement for collection, sorting and recovery: there would, of course, be competition between PROs, but the costs are likely to be higher. The market might evolve towards a single PRO having a nationwide monopoly or a series of PROs that specialised in particular geographic areas.

4.1.1.4 Number of PROs in a Waste Stream

The optimum number of PROs will depend, inter alia, on the extent of economies of density, scale and scope. For example, if there are substantial economies in the provision of EPR compliance scheme services then that suggests that, on the face of it and without considering, for example, the specific characteristics of the waste stream itself, a single provider could be optimal. In order to ensure the lowest compliance costs, consideration might be given, for example, to introducing

⁵² Except in the case of WEEE and Batteries where the approval issued by the DECLG contains minimum level of spending on communication and awareness.

⁵³ Producers can join a PRO regardless of its geographic market.

competition *for* the market (i.e. tendering for the right to provide the compliance scheme for (say) every five years) as compared to competition *in* the market under which competition takes place between PROs in a particular waste stream for customers (i.e. members).

In order to better understand and explore the role that competition can play in the provision of PRO services, three functions or objectives of a PRO were considered:

- To meet binding EU environmental targets,⁵⁴
- To contract with firms to collect, sort and recover waste; and
- To educate and create awareness.

These functions of PROs were considered under four market arrangements. PROs can serve either national (e.g. packaging in Ireland and Germany) or sub-national (e.g. WEEE and batteries in Ireland) markets. If the market is national then the PRO(s) is responsible for providing services across the country, rather than for a particular region or sub-national area. At the national level the number of PROs can be either one or greater than one, with the latter divided into those where certain services or functions are centrally procured (e.g. collection in packaging in Germany) or where each PRO is responsible for delivery of the various PRO services or functions (i.e. decentralised procurement).⁵⁵ In the case of sub-national markets each PRO serves the market area it has been assigned

⁵⁴ There are binding EU targets for packaging, batteries, ELV and WEEE, but not for farm plastics and tyres. In the case of farm plastics Ireland sets environmental targets. For progress on meeting these targets see EPA (2012, pp. x-xii).

⁵⁵ There is a third possibility under which PROs within a waste stream specialise in certain sub-sectors of the waste stream. For example, in Belgium although there are two PROs in packaging, they do not compete with one another, since Fost Plus deals with household packaging recovery, while the other, VAL-I-PAC deals with industrial, commercial and institutional packaging. For details see SAIC (2012, pp. 4-2 - 4-3). However, in such instances each PRO should be treated as single PRO for a particular waste stream.

In each case, the implications of having one as opposed to two or more PROs in meeting these objectives are discussed in Appendix D: Competition in Extended Producer Responsibility Schemes. The following Sections present the main findings.

Effect on Meeting Binding EU Environmental Targets

The primary purpose of the PRO, from the viewpoint of the DECLG and the legislation that underpins the creation of PROs, is to meet the binding EU environmental targets specified in legislation and incorporated in the conditions under which a PRO is approved by the Minister. The targets are typically expressed as a certain percentage of a waste stream that should be recovered or recycled by a certain date. If the targets are not attained then the State can be taken to the European Courts by the European Commission for non-compliance. A fine on the State is likely to result, which is, of course, borne by Irish taxpayers, not the producers or the PRO. Thus the State has a strong interest in putting in place arrangements for the provision of PRO services that maximise the chances that the targets are met.

The DECLG needs to be satisfied that the arrangements for meeting the targets are credible and that the PRO(s) can be held to account if the targets are not met. In other words, the PRO needs to have the appropriate technical and financial capacity and has to be appropriately incentivised to meet the targets.

Holding the PRO to Account

If there is a *single* PRO for a waste stream then the DECLG has to examine only one application and hold only one PRO to account. The PRO could be held to account for failure to meet environmental targets in a number of ways. Since the PRO is typically approved for a given period of time, its approval could be revoked or it would have to compete with other potential PROs for the right to provide PRO services for a particular waste stream.

The situation is likely to change with the introduction of *additional* PROs for a waste stream. First, how are the various PROs to be held responsible for meeting the targets? The PROs are likely to differ both at a point in time and over time in terms of their membership, size, and perhaps the geographic area in which they are responsible for the collection, sorting and recovery of waste. These characteristics

are likely to affect success of a PRO in meeting the targets set between the two or more PROs. One PRO may cherry pick producers whose waste is easily collected, sorted and recovered, while the other PRO may not as a result be able to meet the target.⁵⁶ In the case of packaging waste, for example, one PRO might specialise in commercial waste recovery and recycling, while the other specialises in waste generated from the household. Bacon (2008, p. 15) estimated that it costs about €70 per tonne to collect commercial waste and €200 per tonne for household waste.⁵⁷ Hence it may be difficult for the DECLG to hold a particular PRO responsible for meeting an appropriate share of the target, without taking into account these differences, a difficult and time consuming task. Of course, there may be ways of mitigating such problems, depending on the market arrangements.

Monitoring PRO Performance

An important part of holding the PRO to account is on-going monitoring of its performance. It is essential from the viewpoint of the DECLG to identify early problems in meeting targets and ensuring, together with the PRO, that appropriate remedial action is taken to address any shortcoming. If a single PRO is responsible for collecting all the data for the purposes of monitoring performance, which is then provided to the DECLG, checks need to be built into the collection, sorting and recovery of only one system in order to verify the accuracy of the data supplied in the conditions of approval for the PRO⁵⁸. Furthermore, if the monitoring reveals ongoing problems with the PRO meeting the targets then negotiations and discussions need to be held with only one PRO.

The provision of information to the DECLG to monitor progress towards meeting the environmental targets may be more difficult, problematic and subject to error with

⁵⁶ The issue of cherry picking is raised, for example, by Indecon (2010a), and the EPRClub (2013).

⁵⁷ This is consistent with Repak (2010a, p. 9) reporting that in 2009 commercial waste accounted for 67 per cent of packaging waste recovered measured in tonnes, but cost only 23 per cent of expenditure on packaging (i.e. household and commercial) recovery.

⁵⁸ In the case of WEEE and batteries this is delegated to the Environmental Protection Agency (EPA), which carry out the checks when compiling the National Waste Reports (e.g. EPA, 2012a).

several PROs compared to one PRO. This is particularly the case with tyres PRI⁵⁹. There may be problems of double counting, particularly when a producer switches from one PRO to another and of misreporting when a firm involved in collecting, sorting and/or recovery does not file information correctly. Furthermore there is a need to ensure that systems used to record and verify recycling and recovery rates are compatible between the different PROs. If there are shortcomings in meeting the target, negotiation and discussion with several PROs is likely to be more difficult and time consuming compared to a single PRO. Of course, there may be ways of mitigating such problems, depending on the market arrangements.

Contracting for Waste Collection, Sorting and Recovery

In meeting the environmental targets the PRO may be responsible for arranging for the collection, disposal, and recovery of the particular waste stream. Typically the PRO, although it has the choice of contracting or self-supply, contracts for the provision of these services to third parties. In some instances it is a public or private contractor, such the green bin collection for packaging and in others, local authorities, such a bring centre or civic amenities site. However, the PRO may assist directly in the collection process. In the case of WEEE, for example, the PROs organises special collection events.

The cost involved in collection, sorting and recovery of waste accounts for the vast majority of expenditure by a PRO. This therefore suggests that if greater competition between PROs is to lower costs, this is likely to be where the savings are to be made.

⁵⁹ For tyres the PROs are responsible for the "operation [of] a system with the objective to ensure the proper management of all waste tyres by tracking tyre and waste flows" (Schedule of Conditions to letter from Minister approving TRACS as a PRO, 19 December 2007). TRACS, the first PRO licensed in the tyre waste stream, maps the flow of tyres from their importation into Ireland and their subsequent movement through the supply chain from wholesaler, retailer to waste tyre collectors. However, with a second PRO, TWM, licensed in 2009, not surprisingly holes and gaps begin to appear in recording the flow of tyres through the supply chain. As a result TRACS (2011, p. 3) claim that the operation of a second PRO "has compromised overall data collection and reconciliation."

In summary, there are likely to be advantages in terms of lower transaction costs, lower contract subsidies and ease of auditing from a single PRO compared to multiple PROs contracting for the same services over the same geographical area. However, strategies can be introduced to mitigate the impact of more than one PRO, while retaining the advantages of a single PRO in terms of minimising transaction costs, low subsidies, and ability to track waste and audit service providers. However, these costs are likely to be low for the second PRO depending on the market arrangements, but increase in a non-linear fashion as third and fourth PRO are added, irrespective of the market arrangements.

When comparing the average PRO fee per tonne in a large number of Member States in Europe, there is no clear relationship is evident between the presence of multiple PROs and the fees paid by PRO members⁶⁰. The lack of a clear relationship between the number of PROs and member fees per tonne for collection, sorting and recovery should not be surprising for two sets of reasons.

First, as set out in Sections 5 to 11 in this document, the fees vary because of differences in the collection system, the target, the proportion of the costs of collection, sorting and recovery accounted for by the fees and the types of collection, sorting and recovery channels covered (e.g. household, industrial and commercial).

Second, collection, sorting and recovery costs are likely to be a function of landfill costs, incineration charges and so on, which are likely to vary by Member State. This suggests that great care and attention is needed in interpreting the relationship between the number of PROs and fees per tonne for collection, sorting and recovery by Member State, by waste stream.

Education and Awareness

Waste is generated by consumers and businesses as they consume products. Education and awareness can assist in enhancing waste prevention and the effectiveness of collection, sorting and recovery of any given waste stream.

⁶⁰ See Table 4 on average PRO Fee per tonne and recycling and recovery rate in Table 6 and 7 in Appendix C Working Paper on European PRIs

Educating the consumer consists of informing and persuading them on how and what waste should be recycled. In some instances this can be quite specific. By carefully studying consumer behaviour, a PRO can spot where there are gaps in recycling.

Let us consider the performance of these functions if more than one PRO is involved. Several difficulties arise which could result in a suboptimal amount of expenditure on education and awareness:

- Some education and awareness is in the interest of the public good such that if one PRO undertakes a campaign then it may increase the recovery and recycling rates of other PROs in the same waste stream. For example, if PRO A sponsors campaigns on national TV and radio then it benefits PRO B which also collects the same waste materials, but in a different part of Ireland.
- There is the possibility of co-operation,⁶¹ but there may be problems with such co-operation. For example, WEEE Ireland collection boxes for waste batteries are blue while those of ERP are red, which may confuse consumers. Of course, there may be ways of mitigating such problems, depending on market arrangements.

In the case of *multiple exclusive geographic markets* each PRO has an incentive to optimise the amount of education and awareness consistent with meeting the targets. Its ability to attract members is based on its collection, sorting and recovery costs over the geographic area for which it has responsibility. It can internalise the externality created by such activities. This also makes it much more likely that agreement between PROs on national campaigns will be reached. However, no such agreement has been reached between the two PROs for WEEE and batteries⁶². In the case of a *single national geographic market with multiple PROs* this requires in the case of centralised procurement co-operation to achieve awareness and

⁶¹ Indeed, as noted in Section 1 there is a legal obligation on PROs to co-operate.

⁶² This may be rectified by placing appropriate conditions when the Minister approves these bodies as PROs.

education, perhaps handed over to a third party, while for decentralised procurement it is not clear how PROs could be incentivised when there is a real free rider problem.

One way of resolving problems that arise with respect to education / awareness, irrespective of whether there are one or several PROs, is to let the State undertake such activity, with the PROs contributing to the advertising and awareness. However, this does not seem like a sensible idea as shown in Section 4.6.

In summary, while increasing the number of PRO in the same waste stream may help drive down cost to producers, there are a number of risks associated with having more than one PRO in a waste stream. These risks are summarised in Table 4.1.

Table 4.1: Risks Associated with More than One PRO

PRO Objectives	If there is more than one PRO
Meeting binding EU environmental targets	<ul style="list-style-type: none"> Increased risk regarding assignment of responsibility for the targets and cherry-picking of producers, This raises the costs for the DECLG and may make holding PROs to account for meeting targets more difficult. However, the marginal or additional costs are likely to be low for the second PRO depending on the market arrangements, but increase in a non-linear fashion as third and fourth PROs are added, irrespective of the market arrangements. Co-ordination and regulatory problems increase (but these do not seem insuperable as demonstrated with respect to WEEE and batteries).
Contracting with firms to collect, sort and recover waste	<ul style="list-style-type: none"> The transaction costs of arranging for the collection, disposal and recovery of the waste stream are likely to increase. Auditing service providers means that the latter are likely to include the extra time required to deal with multiple audits in the subsidy rates charged by the PROs.
Education and awareness creation	<ul style="list-style-type: none"> Could result in a suboptimal amount of expenditure on education and awareness.

4.1.1.5 Competition: What Role has the State?

There is an important issue concerning the appropriate role of the State in relation to PROs, which may depend on the number of PROs. As noted earlier, if there is more

than one PRO, then a considerable degree of co-operation is required with respect to some key parameters of competition. However, the degree of co-operation is likely to vary considerably depending on the market arrangements employed with respect to a particular waste stream. There is little co-operation under the single national geographic market with decentralised procurement, but considerable co-operation where there is centralised procurement. While some co-operation is necessary in order to ensure that scale economies are realised and that consumer awareness campaigns are effective, there is danger that the scope for competition between the PROs will be compromised by co-operation which is not necessary and may lead to a breach of competition law.

Irrespective of whether or not there is one or several PROs, the European Commission (2005) has identified two sets of competition concerns with respect to PROs.

Firstly, so-called **spill-over** effects that lead to competition concerns in the market in which the PRO members compete, in which the waste is generated. For example, an ELV PRO might be used to co-ordinate new car prices or allocate market share⁶³.

Secondly, the PRO could adversely **affect competition in a downstream waste market**. For example, the PRO in packaging might bundle the collection of one form of packaging where there are strong network economies, with another where there are few if any, thus limiting competition in the latter market.

Mechanisms can be used in the design of PROs to alleviate these concerns. PROs in Ireland are not-for-profit organisations run by professional staff with membership representatives and independent directors. However, they are not representative in the sense that the relevant trade body nominates somebody to the PRO board. Information concerning upstream markets, as measured by the volume of a particular product put on the market are not released to the PRO membership, but held in confidence. Furthermore, in the case of WEEE and batteries all this information is

⁶³ However, some car marques, such as Citroen have been able to co-ordinate car prices in Ireland without a PRO. For details see <http://www.tca.ie/EN/Enforcing-Competition-Law/Criminal-Court-Cases/Citroen-Dealers-Association.aspx>. Accessed 7 September 2012.

recorded by a separate body, WEEE Register Society Limited, and not released to the two PROs. Hence, it is difficult to see how the PRO could be used to co-ordinate upstream markets in an anti-competitive manner.

Turning attention to co-operation with respect to downstream markets as well as co-operation between PROs, which in both cases strays beyond that strictly necessary in accordance with minimising input costs, then like any other form of co-operation competition laws apply and the remit of the Competition Authority comes into play. Furthermore under current competition law, PROs have to self-assess in order to determine whether or not they breach competition law.

4.1.1.6 Recommendation: Optimum Number of PROs

The Optimum Number of PROs per Waste Stream depends on which market arrangement is most appropriate:

- A single national geographic market with a single PRO, such as Repak for packaging;
- Single national geographic market with multiple PROs and centralised procurement, such as packaging in Germany;
- Single national geographic market with multiple PROs and decentralised procurement; and
- Multiple exclusive geographic markets, such as WEEE and batteries.

Where a *single national geographic market* is appropriate the optimum number of PROs is one, rather than either of the alternatives with multiple PROs. Such an approach is merited because two or more PROs per waste stream compared with one does not appear to lead to reduced collection subsidies, while there are other disadvantages in terms of increased transaction costs, holding the PRO(s) to account for meeting the environmental targets and co-ordinating education and awareness programmes.

If, on the other hand, the appropriate market structure is *multiple exclusive geographic markets*, then it is possible to have more than one PRO. Given the small

size of the Irish market and the probable non-linear increase in costs of three or more PROs, two would seem an appropriate number.

Recommendations:

The difficult task remains of deciding whether a waste stream should be assigned to either the single national geographic market with one PRO category or the multiple exclusive geographic markets category. The following is considered to be a sensible assignment of waste streams:

- Packaging, ELV, farm plastics, and tyres should be a single national geographic market with one PRO; while,
- WEEE and batteries should be multiple exclusive geographic markets, with two PROs.

The current market arrangements with respect to

- Packaging and farm plastics are consistent with the proposed market arrangements, therefore, as set out in detail in Sections 7 and 10, there should be no second PRO for packaging and farm plastics.
- WEEE and batteries are consistent with the proposed market arrangements, because of the size of the markets, there should not be further PROs in these waste streams.
- Tyres are not consistent with those proposed. Hence there should be only a single PRO for the tyres waste stream.

4.1.1.7 Effect of Current Arrangements on Competition

In considering whether current arrangements encourage or discourage competition attention needs to be paid to the entry conditions and competition between PROs, although as we shall see the line between the two can become blurred. The first is concerned with competition from PROs for different waste streams; and the latter on

competition between PROs that are currently offering services for the same waste stream.

Barriers to Entry refer to conditions or obstacles that inhibit firms from challenging the position of existing incumbent firms. The entry conditions refer to costs of entry such as the regulatory costs in terms of filing an application for approval from the Minister to be a PRO in a given waste stream. Are these procedures, for example, clear and transparent thus, other things being equal, facilitating entry? In the Irish PRI model, while there is currently no cost to apply for approval to the Minister, no guidance is available from the approving authority, DECLG, on the criteria to be applied for approving a second or subsequent PRO. Furthermore there does not appear to be a standard approach for processing applications for PRO licenses. At one extreme there has been considerable delay in the DECLG in coming to a decision in respect of one application. In the case of ERP's packaging application for PRO status, the application has been outstanding since 2009 and no resolution has been achieved to date. In contrast, the application to be a second PRO in tyres was processed in less than six months⁶⁴. Notwithstanding that there may be valid reasons for the delay with respect to ERP's application⁶⁵, such uncertainty and lack of clarity constitutes a regulatory barrier to entry.

Examining barriers to competition between existing PROs raises issues regarding **barriers to mobility of members** and how easy it is to switch from one PRO to another. If switching is unnecessarily difficult or these costs are unnecessarily high, then one option is introduce a Switching Code to facilitate competition. From our review it appears relatively easy for businesses to switch between PROs (WEEE, Batteries and Tyres) but these businesses will have to forego their contribution to the contingency fund. This can therefore be a barrier to switching, e.g. if a business

⁶⁴ Tyre Waste Management Ltd was approved by the Minister in December 2009. <http://www.twm.ie/>. Accessed 10 September 2012. The application was made in September 2009, based on information provided by the DECLG.

⁶⁵ These reasons include: the DECLG sought advice from the Competition Authority in January 2010, but the formal advice was not received until April 2011; the financial and other crisis which meant that the current PRO model needed to be re-examined; and, the launch in June 2012 of the Review of the Producer Responsibility Initiative Model for Ireland. (Based on information provided by the DECLG).

wants to leave an established PRO to join a new PRO, they will have to contribute to the setting up of the contingency fund again and may end up contributing twice⁶⁶.

Recommendations:

In order to resolve Barriers to Entry and Mobility:

- The DECLG should **set clear criteria** for the processing applications for PRO approvals.
- The DECLG should **specify, in approving a PRO, that certain practices are prohibited** (e.g. excessively long termination periods) while at the same time taking steps to deal with the issue of the contingency fund (such as that set out in Section 4.1.2).
- The DECLG might develop a **Switching Code** in consultation with the Competition Authority.
- It is suggested that the DECLG consult on the process for renewal of approval so as to get broad agreement on the parameters of the process, perhaps motivated by a consultation document.

4.1.1.8 Conclusions

It is unlikely that licensing more PROs with a national remit will lead to better outcomes in terms of cost. Instead, costs are likely to be higher (such as transaction costs, auditing costs, co-ordination costs by the DECLG) while the increased difficulty of monitoring the PROs is likely to make reaching the targets more difficult.

⁶⁶ In Ireland, in all of the PRI areas (except ELVs and WEEE B2B), producers also have the option of either self-complying with their environmental obligations.

What needs to be done is create mechanisms to ensure competition takes place, while at the same time retaining the advantages of having a single PRO in each geographic market responsible for meeting targets as well as responsibility for collection, sorting and recovery.

One way to achieve this could be for the DECLG to evaluate the PRO against a number of criteria when their approval comes up for renewal:

- Were the targets met?
- Were the conditions in the approval complied with by the PRO?

Regarding, the creation of new PROs, the assignment of the right to provide PRO services should be conducted using criteria similar to those set out above concerning the renewal of a PRO licence.

There needs to be an open transparent process by which these arrangements are reached to ensure the legitimacy for the organisation appointed.

Some thought should be given to ring fencing the contingency fund on an on-going basis and passing it on to whosoever is successful in being awarded the right to be the PRO.

4.1.2 Contingency Funding

With the current arrangements, in order to mitigate the risks that the DECLG needs to replace a PRO, one of the approval conditions of the PROs requires that a contingency funding is held in reserve by the PROs. The fund is the equivalent to approximately one year of the PROs operational costs. The contingency fund is built up by the PRO from the membership fees within a certain timeframe⁶⁷. This fund can then be set against recycling costs if the scheme was to cease operating. The topic

⁶⁷ The pace at which the fund should be built depends on a number of factors: the severity of the environmental and health risks presented by the liability of the waste stream, the ability of the current waste management system to deal with the risk and the ability of the producers to pay to build up the contingency fund.

of financial reserves is a concern for the public authorities (who want to ensure that there are enough guarantees against future liabilities) and the producers (for who it is a cost).

There are several issues surrounding the contingency reserve which need to be considered:

First, the level of contingency is currently set to approximately one year of the PROs operational costs. This may not reflect fairly the liabilities associated with the waste covered by the PRI. RPS investigated if it is appropriate that PROs hold this amount of contingency reserves and if the use of Risk Management Techniques could negate the need for this current level of contingency reserve. This is presented in Appendix E: Use of risks management technique to determine the level of contingency funding.

The main factors affecting the level of contingency funding should be the level of liabilities associated with the waste management of the materials targeted by the particular PRI and the probability that the PRO does not meet its objective. Applying a risk management framework, the following PRI areas would require one full year's funds for a contingency fund: Packaging, WEEE and batteries. The farm plastics PRI would require a notional six months fund to be in place and the tyres PRI three months. However, It must be remembered, the required level of this fund may vary due to changes in the factors affecting the risk (e.g. performance of PRO, new EU targets) and the knock on effect of such. Therefore the monitoring of these factors will be required by the DECLG (or its nominee). The monitoring of risk can be complex. Using such an approach will require consultation with the PROs regarding the allocation of risk ratings. Therefore we would recommend testing this approach first on one PRO and pending the results decide if it should be rolled out.

Second, there is currently a risk that a PRO may access the contingency fund to fund day to day operations. In order to avoid the contingency fund being depleted in this way, the DECLG should require the **contingency fund to be ring-fenced from the day-to-day financial requirements of the PRO**⁶⁸.

⁶⁸ See Appendix F Corporate Governance Report for further details where various options are explored.

Third, Section 4.1.1.7 has identified that there is a **barrier for producers to switch between PROs in that the contingency reserve built up by that producer cannot be taken with them**. The switching code to be developed by the DECLG in consultation with the Competition Authority should include a protocol to facilitate the transfer of the producer's contribution to the contingency fund from one PRO to another. The switching code should allow tracking the contribution made by producers to the contingency. WRS could assist by keeping a register of those producers that have switched PROs. As shown below in Box 1, this can be complex, but similar approaches exist in other sectors (e.g. pension fund).

Once a protocol has been developed, a balancing exercise could be then undertaken and the amount of deferred income and contingency accumulated by producers that have switched PROs in the past should be calculated and transferred to the PRO that they are currently a member of.

For existing PROs the contingency reserve has been built over a number of years. The contingency reserve covers one year of the PRO operational expenditure, but this expenditure may vary from year to year depending on a number of factors and the contingency fund needs to be adjusted accordingly. With the current arrangements, if a new member joins a PRO, they may or may not contribute to this reserve depending if the reserve needs to be adjusted to reflect changes in the level of expenditure of the PRO. In considering devising the switching protocol there is a need to consider that the producers involved in the setup of the PROs should not only be the only businesses contributing to the contingency fund. Contrary to the current arrangements, if a producer joins the PRO after several years, it should also ensure a contribution to the fund to a share proportional to its liability. The liability should be proportional to the market share of the producer⁶⁹. Similarly if a producer leaves the PRO for another PRO, the producer should be able to transfer its share of the contingency fund to the PRO that the producer is joining. Using an example of this approach, the effects of switching are examined in more detail in Box 1.

⁶⁹ The lifespan of the product may also come into play in this calculation but this will make the estimation of the liability cost more complex.

Box 2: Example of Protocol to Facilitate the Transfer of Contingency Funding when a Producer Switches between (PROs).

PRO Blue is formed in 2005. PRO Blue has 3 Members (producers A, B and C) which have contributed to the contingency reserve. The contingency fund was built in three years. In 2008, the characteristics of PRO Blue are the following:

PRO Expenditure	PRO Contingency Fund	Producer Market share
Administrative: €2 million	€4 million	A: 25%
Collection & treatment: €2 million		B:25%
		C:50%%

In 2008, producer A leaves PRO blue to join PRO Red. We assumed that the share of contingency fund covering member A liability ($€4 \text{ million} \times 25\% = €1 \text{ million}$) will be transferred from PRO Blue to PRO Red.

This will have the following effects for the PRO:

- The quantities to collect and treat for PRO Blue will reduce proportionally to the market share lost. This will reduce the PRO expenditure (maybe not to the same level because of the loss in economy of scale).
- The contingency reserve will have to be adjusted accordingly.

This will have the following effects for the remaining members of PRO blue:

- Their market share will increase.
- Their cost to cover PRO blue expenditure and corresponding contingency funding may increase due to the decrease in economy of scale.

Following the departure of member A, the characteristics of PRO Blue are the following:

PRO Expenditure	PRO Contingency Fund	Producer Market share
Administrative: €2 million -> €1.6 million*	€4 million -> €3.2 million	
Collection & treatment: €2 million -> €1.6 million*		B: 25% -> 33.3%
		C: 50% -> 66.6%

* This amount would be €1.5million if there was no impact due to the change in scale.

The above example assumes that Producer A is joining another PRO, but if Producer A is not joining a PRO, there are two cases:

- Producer A becomes self-compliant: the producer will be paid its share of the contingency funding. There may be considerations for requiring self-compliers to have a fund set-aside to deal with the legacy of their products if they become bankrupt.
- Producer A leaves the Irish market: its share of the contingency fund should be assigned to the organisation (PRO or State) which will be responsible for dealing with the end-of-life of the orphan product.

If in 2009, a new producer D is joining PRO Blue from PRO Red (with the same market share as producer A to simplify calculations).

This will have the following effects for the PRO Blue:

- The quantities to collect and treat by PRO Blue will increase proportionally to the quantities put on the market by the new member. This will increase the PRO expenditure (maybe not to the same level because of the possible economy of scale).
- The contingency can be adjusted accordingly.

This will have the following effects for the existing members of the PRO Blue:

- Their market share will decrease.
- Their cost to cover PRO expenditure and corresponding contingency funding

may decrease due to the increase in economy of scale.

Producer D will have to:

- Cover its share from the PRO Blue expenditure.
- Cover its share of the contingency fund. Depending where producer D comes from there are a number of scenarios:
 - Transfer from PRO Red: Some (if PRO Blue is providing the same service in a more cost-effective manner than PRO Red) or the entire share (assuming both PROs have the same cost base) of contingency will be transferred from PRO Red to PRO Blue. There could also be a case where the producer may have to top up the transfer if the PRO Blue has higher unit costs than PRO Red.
 - New entrant in the compliance system: In this case, there is no previous contingency fund and producer D will have to build up the contingency fund within the timeline agreed with the PRO. This approach could create barrier to entry for producers in a certain market or act as a deterrent to new producers joining a PRO.

For producers who have already switched this approach could be applied retrospectively.

Recommendations:

The contingency fund should not be accessed by the PROs to finance operational purposes, therefore it should be held in a secure account.

The use of risk management techniques can help reducing the level of contingency reserve required to be set aside by the PROs and producers. However, its management will require monitoring from the DECLG or its nominee.

It is recommended that the DECLG include a protocol to facilitate the tracking and transfer of the producers' contribution to the contingency fund in the switching code.

Once a protocol has been developed, a balancing exercise should be then undertaken and the amount of deferred income and contingency accumulated by producers that have switched PROs in the past should be calculated and transferred to the PRO of which they are currently a member

4.1.3 Administrative Burden

Regulation is generally defined as a “*diverse set of instruments by which governments set requirements on businesses and citizens*”⁷⁰. Regulations are put in place in order to support public policies in areas such as taxation, environmental protection, health and safety and employment rights. Regulations can create benefits for the participants in an economy by setting the framework for a competitive business environment.

However, a regulator, businesses and citizens spend resources in order to comply with regulations. The costs incurred to comply with regulations are often referred to as “administrative burden”. In addition to these costs, it is also recognised that regulations can impede innovation and create unnecessary barriers to trade and investment, as well as economic efficiency, if they become excessive in number and complexity. An administrative burden can also affect the overall cost efficiency of domestic firms and hence at a macro level can have a significant impact on the competitiveness of an economy internationally.

In response to this, many governments are focusing their efforts on reviewing and simplifying regulations. When well designed, regulations can improve the functioning of markets and achieve environmental and social goals without imposing a significant compliance burden on firms.

⁷⁰ Revenue. 2008. Key Administrative Burdens Faced by Revenue’s Small and Medium Sized Business Customers. www.revenue.ie/en/tax/it/leaflets/admin-burden-report.pdf

4.1.3.1 The Regulator's Responsibility

The DECLG, the government's department responsible for environmental protection and the development of environment-related regulation, has a unique set of responsibilities to the community. Environment-related regulation must be sufficiently robust to enable the achievement of the environmental protection targets set by government. At the same time, the DECLG's regulatory requirements must provide an effective support to allow business and others to comply efficiently with their responsibilities. With these aims in mind, it is important to develop and maintain a balanced regulatory environment - one that achieves its objectives without imposing unnecessary costs.

A particular aspect of regulation is the need to ensure that those who do not comply with their responsibilities are pursued and are appropriately subjected to effective sanctions. This is necessary to ensure a level playing field, an issue, which concerns both business and the regulator.

4.1.3.2 Key Administrative Burdens Identified

This review has identified three main areas where there is an opportunity to reduce administrative burden. These areas are: registration, reporting and auditing.

Registration of producers is a mandatory element of the PRI system, where obligated producers must provide details to the relevant bodies to comply with the regulations. Currently, the system of registration varies by the waste stream with different organisations responsible for the registration thus resulting in data redundancy and additional costs for developing and managing multiple systems.

The possibility of using a central electronic registration system across all PRIs and organisations should be investigated by the DECLG.

The use of an electronic registration system will reduce administrative burden and make it more straightforward for producers to register (especially for producers who are obligated under several PRIs or who have to register in several local authorities). It will also:

- Limit data redundancy e.g. by allowing self-compliers to register once rather than with each local authority (where applicable), thus reducing administrative costs to producers and local authorities processing applications.
- Improving data sharing: Competent authorities could obtain a national picture of the number of registered producers without the requirement to contact PROs and all the local authorities. This information can be used for reporting or enforcement purposes. An example is provided in Box 2.

Having one system, rather than multiple systems for each local authority and PRO, will also reduce the cost of developing and managing multiple systems. PROs could import data to the national registration system and request additional information which will be required from the producers. However, one size may not fit all PRIs and this will have to be researched on a case by case basis. There is a good starting template with the system which is currently operated in the WEEE and batteries PRIs.

The system could contain specific features such as:

- Information relating to the status of the producer (member of a PRO or a self-complier).
- Cover a number of PRI Regulations for the same producer.
- Be used to provide information on products put on the markets and pay fees (e.g. for self-compliers).
- The registration system could be used for other regulations as well (e.g. oil fat and grease for restaurant etc.).

A nominated local authority, the LGMA or the WEEE Register could operate this system.

Box 3: Electronic Registration System for Batteries Retailers⁷¹

An on-line application form was developed in 2011 to facilitate the registration of Retailers with the two compliances schemes under Article 40 of the Regulations. This is a free registration which all distributors of industrial and automotive batteries can avail of. The information received by the scheme is sent to the EPA. Local Authorities can then access this information on the NIECE (the Network for Ireland's Environmental Compliance and Enforcement) website.

Monitoring and reporting requirements on businesses with regard to environmental performance can be extensive and impose significant costs, not least because these are usually ongoing costs rather than one off events, as with permitting. Reporting is an important part of PRIs to ensure that businesses are compliant. Authorities (local authorities and the EPA) also receive large amounts of information requiring validation. This can be difficult to process effectively and share with other relevant authorities. It is, therefore, important that businesses are only required to monitor and report on aspects of their operation which are necessary and that authorities have systems in place to make the most effective use of the information which is received. An overview of the PRI reporting system is shown in Figure 4.1. The PRI reporting system overlaps with reporting system for waste collectors and operators.

⁷¹ See <http://www.erp-recycling.ie/index.php?content=213> or <http://www.weeeireland.ie/retailerregistration.php>

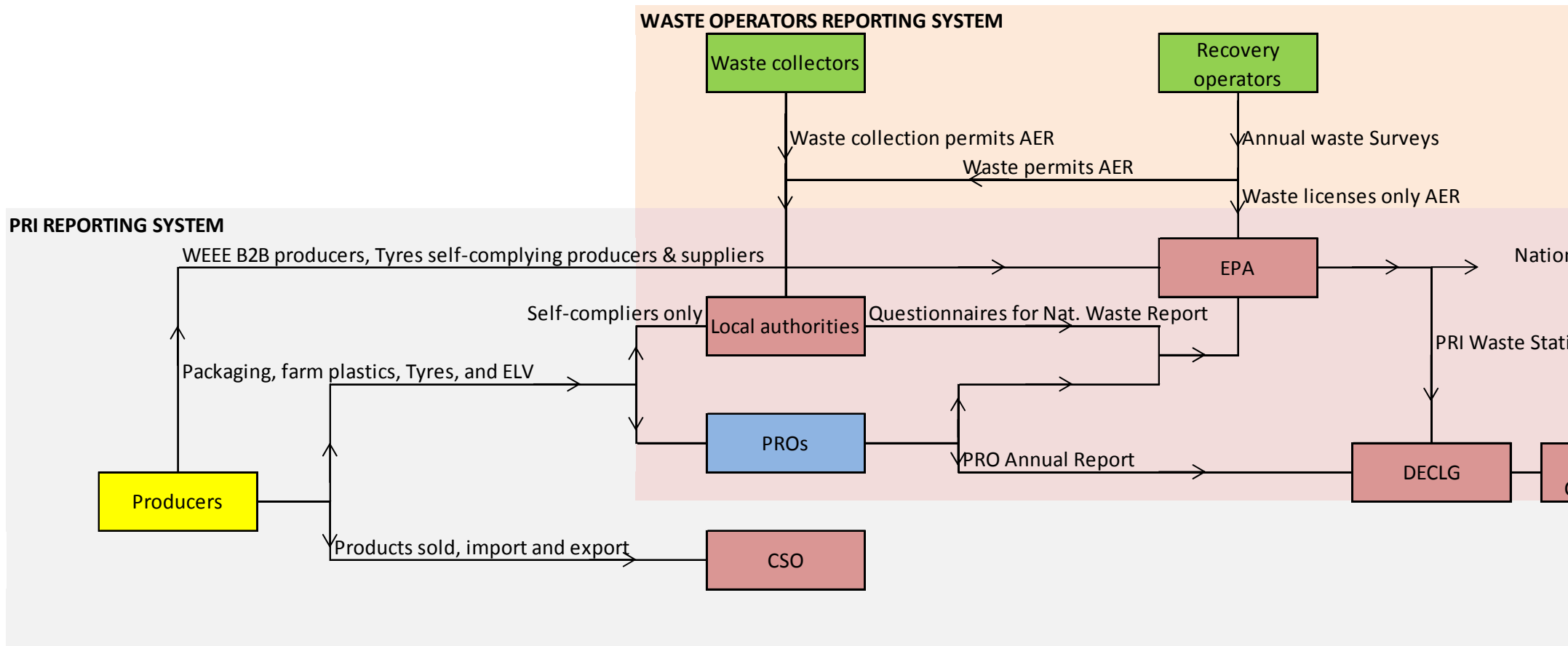


Figure 4.1: Overview of the Waste Operators and PRI Reporting Systems

In order to reduce the administrative burden associated with reporting a number of recommendations should be considered:

- Similar to the electronic registration system, the OECD (2001) recommends that electronic reporting should be used where possible. This will save time and resources and eliminate many of the errors that occur in transferring data from an electronic paper reporting form to an electronic database.
- The terms of reporting should be harmonised (OECD, 2001) and integrated as much as possible with other monitoring and reporting obligations, including what is monitored, format reporting process etc. (Farmer, 2009). Possible overlap between the waste reporting system and the PRI reporting system could lead to such harmonisation. The option to develop a basic set of PRI reporting requirements and a subordinate set of more specific requirements for particular product groups or waste streams could be established.
- The development of a single set of powers for authorised persons, dealing with all PRI systems would reduce the burden on regulatory authorities to maintain multiple and differentiated authorisations for enforcement personnel.
- Businesses also have identified that different reporting frequency between PRI is creating additional administrative burden (e.g. businesses which are obligated under WEEE and Batteries report monthly while businesses reported under the Packaging Regulations report quarterly).
- Ensuring the compatibility of the information required when there are two PROs in the same waste stream. For example, one of the PROs in the waste tyre PRI must report on the weight and unit of tyres placed on the market and recovered, while the second PRO reports only on the weight.
- As a rule of thumb the value of the information provided should always be weighed against the burden to provide such information. Again in the waste tyre PRI, it is unclear why the information on the unit of tyres placed on the market and recovered is required from only one PRO. Obtaining such information from recovery operators can be complicated for the PRO and inaccurate as the transactions are generally recorded by weight. If this information is judged

necessary, then maybe a “how-to-guide” should be provided with examples to facilitate the provision of this information.

- Also firms operating in more than one country would benefit from an agreed upon list of reporting requirements which minimises resources spent meeting a wide variety of requirements. See example in Box 3.

The investigation and implementation of these recommendations should be **co-ordinated** by the EPA and the DECLG.

Box 4: Stibat (Dutch Battery Compliance Scheme), The Netherlands

- In 2010, Stibat took the initiative to harmonise administrative matters at European level by agreeing to work closely with sister organisations in Belgium and Germany. A digital registration system, myBatbase NL is now used in Belgium and Germany to keep participants administrative burden to a minimum. Stibat aims to achieve further harmonisation within Europe by working with the European Compliance Organisation for Collection and Recycling of Waste Batteries (EUCOBAT). By developing a collective EU register, registration would be easier.

Auditing is an important part of the regulatory process whereby authorities and PROs adopt various approaches to ensure that activities comply with their environmental performance objectives. These inspections require resources from the auditee’s and from the auditors. PROs and enforcement authorities should explore areas of collaboration and integration between their respective auditing functions and develop proposals to prevent duplication (where possible). IMPEL (the network of European enforcement authorities) highlights that one important strand of better regulation for supervision activity is to bring different types of inspection activity together in a single or harmonized process (Farmer, 2009). This should be examined as part of the implementation of the recommendation in Section 4.7 on enforcement and as part of the review of the respective waste regulation and enforcement roles of the EPA (office of environmental enforcement) and local authorities in 2013 to be carried out by the DECLG.

A one-stop-shop compliance solution (e.g. a PRO offering compliance services in more than one waste stream) could also reduce administrative burden of businesses by removing the need of dealing with multiple schemes. This would facilitate the integration of number of services. However, this approach could lead to a number of complications relating to cost transparency, independence, and monitoring issues etc. If this service is offered by a PRO, the PRO will have to ensure that the operations under each waste stream are transparent and independent.

Recommendations:

The development of a **centralised electronic registration system for obligated producers** should be investigated. A nominated local authority, the Local Government Management Agency (LGMA) or the WEEE Register could operate this system.

The **terms of reporting should be harmonised and co-ordinated** by the EPA and the DECLG. The option to develop a basic set of PRI reporting requirements and a subset of more specific requirements for particular product groups or waste streams could be established.

PROs and enforcement authorities should explore **synergies between their respective auditing** functions and develop proposals to prevent duplications. This should be examined as part of the review of the respective waste regulation and enforcement roles of the EPA (Office of Environmental Enforcement) and local authorities in 2013 to be carried out by the DECLG.

4.2 EFFECTIVENESS OF IRISH PRI MODEL

The effectiveness of a PRI is measured by the degree to which the environmental objectives are met. A number of factors influence the effectiveness of PRIs. These factors include:

- The performance of the PROs and self-compliers in meeting the desired environmental outcomes. These aspects are explored in Section 5 to 10.

- The enforcement system which supports the PRIs (see Section 4.7).
- The effectiveness of communication and awareness to stimulate public and business participation in PRIs (see Section 4.4.8 and 4.6).

The DECLG has a key role in designing a successful PRI model by:

- Deciding which products, product groups or waste streams are most suitable for addressing through PRI. The question of which products should have their end-of-life managed by PRI is examined in Section 12.
- Setting operational rules including:
 - Allocation of responsibility by setting obligations for the participants in the product supply chain,
 - Defining goals and targets,
 - Holding PRO(s) to account if targets are not met,
 - Setting the incentives for the participants in the product chain, to ensure that participants meet their obligations, by using the range of policy instruments available.

The DECLG meets this role by developing Producer Responsibility Regulations. Once regulations have been developed, the DECLG must maintain management or oversight to ensure that the PROs appointed to are performing (see Section 4.3). These functions include PRO approval and the monitoring of PRO performance. The local authorities or the EPA (depending on the waste stream) fulfil the role of monitoring for self-compliers (see Section 4.4).

4.3 REGULATING AND MONITORING OF PROS

Appropriate regulation and monitoring of PRIs is required to ensure that the desired environmental outcomes are met. The DECLG requires a simple, efficient, transparent and easily enforceable legal structure to govern its relationship with the PROs to ensure the highest standards of internal corporate governance which will assist the State in meeting its various waste stream targets.

A successful relationship between the DECLG and the PROs will require on-going monitoring, management and engagement on the part of the DECLG with the PROs.

This engagement is a means of minimising the risk of issues arising with the PROs under the new structures that are proposed in this report.

Currently the contractual framework between the PROs and the DECLG is based on an application process which, if successful, is followed by the grant of an approval to operate a given PRO. The performance of the PRO is then monitored by the DECLG and specific measures considered appropriate may be taken in the likelihood that the desired environmental outcomes are not likely to be met. This Section discusses these measures

4.3.1 PRO Approval Process

The DECLG has broad statutory powers to grant or refuse an application for approval as a PRO under the WEE, Batteries, Packaging and Waste Tyres legislation.⁷²

In approving or renewing the PRO approval to operate, the DECLG must be satisfied that the arrangements proposed for meeting the targets are credible. In other words, the PRO needs to have the appropriate level of technical capability and financial capacity and has to be appropriately incentivised to meet the targets. Such considerations are likely to become more important in meeting future environmental targets as the “low hanging fruit” in terms of meeting targets may have already been gathered. Meeting future targets is likely to be more challenging as the marginal cost of achieving the extra percentage point addition in recycling and recovery rates increases.

In addition to recommendations in the Corporate Governance Report in Appendix F, the application by the PRO should include:

- A proper business plan containing a vision, a mission statement and clear objectives that are fully costed.

⁷² SI No. 355 of 2011 (European Communities Waste Electrical and Electronic Equipment) Article 33(1), SI No. 268 of 2008 (Waste Management Batteries and Accumulators) Article 36(1), SI No. 798 of 2007 (Waste Management

- An implementation plan regarding the roll-out of services, the time-frame involved and the resources required.
- Job specifications for key management posts and the resources required to achieve objectives.
- The proposed organisational structure and governance structure should be made clear.
- Proposals relating to communication and awareness for the recruitment of new members and to increase public and/or business participation in the recycling programme (see recommendations in Section 4.6).
- Proposals relating to prevention and reuse, and collaboration with other stakeholders (other PROs, local authorities, EPA, etc.) (see recommendations in Section 4.5 and 4.8).
- Proposals regarding the collection of data necessary for the Environmental Protection Agency to report to the domestic and EU authorities on the meeting of targets.
- Proposals regarding communication with the DECLG.

4.3.2 PRO Schedules of Conditions

The Schedules of conditions are issued by the DELCG and complement the PRI regulations by specifying certain obligations that the PRO has to meet.

A review of the current arrangements (which include Letters of Approval and Schedules of conditions issued to PROs) was carried out and two principal weaknesses were identified.

Packaging) Article 19(1), SI No. 664 of 2007 (Waste Management Tyres and Waste Tyres) Article 27(1). The legislation relating to Farm Plastics and ELVs is not as robust, and there is no PRO for ELVs.

Firstly they each contain differing contractual provisions, meaning that there are few consistent obligations which would apply to all the PROs. This is a considerable weakness as some of the current arrangements do not include clauses which would be viewed as key. Secondly the current documentation lacks certain basic contractual provisions which are required to protect the DECLG.

For example, some schedules do not provide for the possibility for the DECLG to terminate the arrangements or state what would occur in the case of unsatisfactory performance or upon an insolvency event occurring in respect of a PRO. Some of these powers may be catered for in the underlying legislation but it would be advisable to see express powers provided for in the contractual documentation between the DECLG and the PRO. In other PRO approval letters and schedules, the main focus appears to be on Corporate Governance, and many standard contractual provisions, such as termination, dispute resolution mechanisms, confidentiality, force majeure, and governing law are missing.

It is recommended that a new system is implemented to ensure that the DECLG receives appropriate **contractual protections** from the PROs and that the corporate governance framework which reflects best practice is adopted by the PROs. This recommendation can be simply achieved through a two-step approach.

Firstly, it is recommended that each PRO enters into a **Service Level Agreement (SLA)** with the DECLG. The SLA will form the contract between the two parties and will replace the current system of approval letters combined with schedules. Each SLA can be tailored to each PRO to ensure that the specifics of each approval are catered to, but at a minimum each SLA will contain consistent basic contractual provisions which will give the DECLG a greater level of certainty and protection. The provisions of each SLA should clearly set out the following obligations on the PROs:

- **Incorporation of a Corporate Governance Code:** The SLA should provide that the provisions of the Code of Corporate Governance (as further discussed below) are accepted and shall immediately be adopted by the PRO.
- **Requirements of Approval by the DECLG as a PRO:** This clause in the SLA should operate as a system of pre-conditions so that the PRO is only approved on condition that it abides by these requirements.

- **Achievement of Targets:** As the achievement of targets is of critical importance to the DECLG, it should clearly enumerate the individual targets that each PRO is required to meet for its individual waste stream(s).
- **Contingency Fund:** The SLA should carefully outline the circumstances in which DECLG is permitted by the SLA to access the Fund and when (if at all) the PRO or its members would be permitted to access it.
- **Cooperation with other PROs / Self-compliers:** Depending on the PRO, the DECLG should specify provisions and obligations in respect of cooperation with another PRO operating in the same waste stream (if there is more than one PRO in the stream) and with producers who have chosen to self-comply.
- **Notice:** This would enable the DECLG to take measures against a PRO which threatened or indicated that they no longer wished to provide services without providing sufficient notice.
- **Services to be Provided by the PROs:** Depending on the complexities of the given waste stream, this clause may vary from SLA to SLA. At its core the clause should set out in a significant amount of detail the exact scope of services (which can be defined as the “Services”) which the DECLG requires the PRO to carry out. These could include (but are not necessarily limited to) membership services⁷³, collection services, sales services, marketing services and support services.
- **Term:** Each SLA should have a start date and an express fixed duration. Failure to meet the deadline for renewal may result in the approval lapsing, unless an extension of time is agreed by the DECLG.
- **Disputes:** Issues may arise between the DECLG and the PRO which amount to a legal or commercial dispute under the SLA. Including a clause in the SLA requiring both parties to submit disputes under the SLA to an expert agreed by

⁷³ For example, specifying that certain practices are prohibited (e.g. excessively long termination periods).

both parties, or to mediation or arbitration would be beneficial to limit having recourse to the courts.

- **Warranties in Favour of the DECLG:** Warranties are contractual undertakings or promises which, if not respected, trigger an action by the party in whose favour they are drafted, for breach of warranty. Warranties should also be part of the SLA.

The basic contract law clauses would be the same in each SLA and the 'bespoke' provisions to apply to different PROs would be added into the SLA after the standard clauses. An objective of this SLA system would be to implement a system where the DECLG can manage the performance of the PRO on a low resource basis. Although, the aim is to ensure that the DECLG does not have to deploy very significant resources on an on-going basis to the PROs, a successful relationship between the DECLG and the PROs (from the DECLG's perspective) will require on-going management and a monitoring role for the DECLG.

In order to ensure that a corporate governance framework reflecting best practice is adopted by the PROs, it is recommended that one standard **Code of Corporate Governance** is drafted, which would form part of the SLA between the DECLG and each PRO, and would apply across all the PROs. It will be a term of each SLA that the PROs are contractually required to comply with the Code of Corporate Governance, a breach of which would constitute a breach of the SLA. This document would enable the DECLG to impose high standards of corporate governance within each PRO and would address many of the points which the DECLG had previously sought to address by way of the conditions to the approval letters. The PROs would be contractually bound (via their SLA) to implement the Code of Corporate Governance and the DECLG would reserve the right to amend the Code from time to time meaning that the Code of Corporate Governance could be updated to reflect changes to best practice without requiring the underlying contract to be renegotiated or re-executed.

The key provisions of the standard Code, which are designed to remedy the DECLG's and stakeholders' current apprehensions in relation to lack of transparency at board level by the PROs, are set below:

- **Membership and Representation on the Board:** To carefully address the issue of who should sit on the board of each PRO. Rather than the DECLG mandating specific percentages of representation on each board, it is recommended to include a clause in the Code to the effect that the Board of each PRO shall be representative of all relevant stakeholders, that any Board member who has resigned from or otherwise left a producer company shall immediately resign from the Board, and that each Board shall include a certain number of independent Board directors
- **Rotation of Directors on the Board:** The Code can also mandate the length of term of a directorship, and it may also oblige a rotation of new directors over a given period. There is no fixed best practice model as the appropriate length of tenure of a directorship will vary considerably from sector to sector and depending on the nature of the company, its aims, ethos etc.
- **Remuneration of Directors:** Remuneration shall be in line with industry standards, and in the interests of transparency and accountability to members, Board directors' remuneration and benefits shall be published annually, together with information on levels of attendance by individual Board directors at meetings, sub-committees and AGMs.
- **Role and Function of the Board:** The directors should exercise full and effective control over the activities of the PRO and should monitor executive management and performance. The Code should provide for specific functions or obligations for the chairperson of the Board, including an obligation to keep the DECLG advised of specified matters of significance arising in respect of the PRO, and to brief the members on the functioning of the PRO at given intervals in time. These would include an obligation to report in a specified manner and at given intervals.
- **Reporting, Transparency and Information:** In addition to the obligation to report in a specified manner and at given intervals, the Code should also include detail on the information in relation to conducting the Services and the meeting of Targets which the DECLG or the EPA require in order to report onwards to the

European Commission⁷⁴. A related issue which can be neatly dealt with in the Code is the external information which the PROs routinely provide in the public domain (by way of advertising campaign or otherwise).⁷⁵

- **Cooperation between PROs:** The Code should mandate that PROs (either within a stream or across streams) shall cooperate with each other and with producers who have chosen to self-comply to ensure that information provided to the public is at all times clear and consistent, and that operational activities which might lead to synergies and cost savings are explored and undertaken where possible.
- **Membership of the PRO:** The DECLG should consider whether it wishes to impose on the PROs any particular requirements in terms of their members and membership of their PRO.
- **Objects of the PRO:** The Code of Governance should specify that each PRO's Objects (which would be contained in their Memorandum and Articles of Association) include a clause to the effect that they shall administer the PRO as approved by the Minister for the DECLG in accordance with the applicable law and Regulations and in accordance with their SLA with the DECLG and this Code of Governance.

Conflicts of Interest: The Code should provide that directors must inform the Board of any potential or actual conflict of interest.

⁷⁴ The quality of the National Waste Report is predicated on information from a variety of organisations operating within the waste industry. Data from PROs is an important input to these reports and an explicit obligation on all PROs and waste management operations contracted to them should be an obligation to provide the regulatory authorities all relevant information in relation to the collection and management of PRI wastes in a timely manner should be included.

⁷⁵ The principles and objectives underpinning the requirements for greater levels of reporting, transparency and information can be found in the Aarhus Convention, which was ratified by Ireland on 12 June 2012, and the EC (Access to Information on the Environment) Regulations 2007-2011.

Further details on the content of the SLA and the Corporate Governance Code are provided in Appendix F.

Recommendations:

It is recommended that a new system is implemented to ensure that the DECLG receives appropriate contractual protections from the PROs and that the corporate governance framework which reflects best practice is adopted by the PROs. This recommendation can be simply achieved through a two-step approach.

Firstly, it is recommended that each PRO enters into a **Service Level Agreement (SLA)** with the DECLG.

In order to ensure that a corporate governance framework reflecting best practice is adopted by the PROs, it is also recommended that one standard **Code of Corporate Governance** is drafted, which would form part of the SLA between the DECLG and each PRO, and would apply across all the PROs.

4.3.3 PRO Monitoring

The Producer Responsibility Unit in the DECLG monitors the performance of PROs by reviewing information provided by the PROs (annual reports and audited accounts). Following the review of these documents, the DECLG may implement specific measures to help the PRO to improve its performance.

Information of key importance for the monitoring includes:

- PRO performance to date
- Plans to meet targets
- Actual achievement of targets
- Financial sustainability

Strategic Review

With the current arrangements, the DECLG Producer Responsibility Unit (as any organisation) is facing a number of challenges relating to the tasks to be carried out, competencies and resource limitations. The DECLG should consider undertaking an internal review in order to:

- Identify what are its core and non-core activities. For example, policy development, co-ordination of policy implementation, and liaison with the European Commission are of strategic importance, while for example handling public queries on ELVs is not.
- Identify which non-core activities can be delegated to other State agency or other resources better equipped to handle these tasks. For example the EPA seems to have the range of skills required for validating waste data from the PROs and collating information from the self-compliers. The EPA could then report on headline indicators to the DECLG. The review of the financial sustainability also requires skills which may not be available in the DECLG Producer Responsibility Unit and may be sourced internally or externally.
- Identify specific resource and capabilities requirements. Monitoring PROs can be a complex and resource demanding process which require a good understanding of the product supply chains, waste regulations and other legal aspects(e.g. relating to competition, contract etc.). Specific training or external expertise may be required.

For example Box 4 shows how the French environmental authorities are supported by external resources for the monitoring of PRIs.

Box 5: Monitoring of PRIs, France (ADEME, 2012a)

In France, each PRI is monitored to ascertain whether it has attained its objectives, as well as to determine France's position in relation to the objectives set for the country by European regulations. The data gathered improves the regulatory process

and can be used to sanction actors who are not in compliance, if necessary.

For its assessments the French government relies on reports from ADEME⁷⁶, on evaluations the government has requested, and on the advice of a special commission established for each chain. These commissions bring together representatives from government ministries and ADEME, as well as from bodies that represent the participants in the product chain. These include:

- Entities that bring products to the market
- Distributors
- Local authorities
- Consumer groups
- Environmental advocacy groups
- Waste collection and treatment entities.

By law a State comptroller sits on the board of each PRO to oversee proper financial operations. The role of the comptroller is specified by government decree n° 2011-499 of 19th April 2011. The comptroller may conduct audits.

Criteria for Monitoring PROs

Currently there is no clear set of criteria to help the DECLG in conducting its assessment. It is recommended to set clear criteria for PRO monitoring as it will

⁷⁶ ADEME is the French Environment and Energy Management Agency

<http://www2.ademe.fr/servlet/KBaseShow?sort=-1&cid=96&m=3&catid=17614>

provide clarity and help the PRO to focus its actions. As highlighted in Section 4.1.1 on Competition a number of criteria could be used by the DECLG. These include:

- Were the targets met?
- Were the conditions in its approval (e.g. targets, contingency etc.) complied with by the PRO?

A key challenge with monitoring PRIs is to identify potential risks early and take action at the earliest opportunity. Improving performance in waste collection and recovery may require a build-up phase with a certain lead-time. Therefore it is recommended that the DECLG structures the overall target by dividing it into a series of interim targets to be met by each PRO to ensure that the risk of further non-achievement of targets is avoided and fully mitigated. The advantage of this approach is that the DECLG gains insight into the progress of the PRO in terms of meeting its targets on an on-going basis. The use of risk management techniques could also assist with the monitoring process.

Fee for PRO Monitoring

Since the monitoring process is costly, the DECLG should consider charging a fee to the PRO to fund the monitoring activities⁷⁷. In setting the fee, careful considerations should be given on its level as it may act as a barrier to entry and its impact on PRO / self-compliance market.

Recommendations:

It is recommended to set clear criteria for PRO monitoring as it will provide clarity and help the PRO to focus its actions.

⁷⁷ Fees are currently charged to producers by local authorities to administer the self-compliance system. Also a similar approach is used by a number of public bodies (e.g. EPA waste licence monitoring).

4.3.4 Renewal and Revocation

The DECLG has a broad statutory power to grant or refuse an application for approval as a PRO under the WEEE, Batteries, Packaging and Waste Tyres legislation. While the discretion to refuse an application appears to be unfettered in the legislation, it must be exercised legitimately in accordance with the purposes and objectives of the legislation^{78 79}.

The DECLG should have the ability to cease or terminate its SLA with a given PRO in the event that the PRO breaches a key provision of the SLA or ceases carrying out the Services. The lack of an express provision in this regard under the current arrangements is a cause for concern and could certainly be easily remedied by including a clause outlining events which would result in the DECLG being able to terminate the SLA.

4.3.5 Encouraging PRO Performance

To encourage PROs, the DECLG use a range of non-contractual measures. For example, in 2011, the DECLG became concerned that the 25% collection target in Batteries Directive was not going to be achieved. The DECLG initiated a series of meetings with both PROs approved for batteries to identify and implement measures to ensure the targets will be met. These measures involved

- Making them aware of the target dates and the methodology around the computation of the target,
- Initiating a process of discussion which led to increased information and awareness activities, and increased collections

⁷⁸ The legislation relating to Farm Plastics and End of Life Vehicles (which have no PRO) is less robust.

⁷⁹ Grounds for refusal could include for example inability to meet targets specified by the DECLG, failure to meet minimum requirements of SLA, lack of financial, technical and /or managerial capacity. Decisions must be fair, reasonable, proportionate and transparent, and must afford the applicant the opportunity to be heard in relation to the decision.

- Making arrangements for publicity to heighten awareness of battery recycling by national advertising and arranging for the creation of a joint website to heighten awareness of where to recycle batteries.

The DECLG is concerned that the current arrangements in PRIs are not providing enough incentives to the PROs. This concern is based on the following reasons.

Both at a domestic and EU level, it is expected that there will be new waste stream recycling targets⁸⁰. In 2014, the European Commission will announce the results of a review of current waste policy and legislation. Specifically, this legislative initiative will review key targets in EU waste legislation in line with the review clauses contained in the Waste Framework Directive, the Landfill Directive, and the Packaging Directive. It will also carry out an evaluation of waste stream directives. To date, while Ireland has performed very well in most waste streams, with the recovery and recycling targets having been met and exceeded. However, Ireland has fallen short of its obligations in other areas, where both domestic and EU targets are in place (e.g. ELVs).

Therefore, with increased and more complex targets, there is a greater level of risk associated with achieving these targets in the near future. Also, the risk of incurring fines has increased as the timeframe, between the non-achievement of target and the commencement of infringement proceedings by the Commission, has been greatly reduced. The possible fines involved for non-achievement of targets, as we have seen in the recent judgement by the ECJ on septic tanks⁸¹, are very significant both on a once off and daily fine basis.

While the ability of the DECLG to terminate the SLA with a PRO may provide a protection for the DECLG and may encourage competition, it is unlikely to be as effective to encourage the producers to meet targets. The PROs derive their membership from industry groups whose members have chosen to handle their end of life waste responsibilities collectively through establishing a PRO. Essentially, it would be asking those industry groups to establish another PRO and the DECLG

⁸⁰ Accessed on 23/12/2012 at http://ec.europa.eu/atwork/pdf/cwp2013_annex_en.pdf

⁸¹ Accessed on 23/12/2012 at http://europa.eu/rapid/press-release_IP-11-592_en.htm?locale=en

would have to deal with the process of revoking one approval, and establishing another PRO while also dealing with the Commission on infringement proceedings. Also given that most PROs are approved for five years, and that terminating would take some time and would not happen immediately, the current arrangements may not provide enough incentive to the producers to invest sufficiently to meet the targets.

A number of additional potential performance incentives and penalties are considered below. There is also scope for the PROs themselves to propose appropriate incentives, deterrents and sanctions to ensure achievement of targets at the time that they apply to be appointed as a relevant PRO, which could then be incorporated as binding terms of the Agreement.

4.3.5.1 Interim Targets

Regardless of the approach adopted, ultimately any regime to encourage PRO performance, whether reliant upon penalties, self-imposed sanctions, incentives and contractual remedies, will require action to be taken at the earliest opportunity by the DECLG. Current arrangements include long-term binding EU targets. Interim (6 - 12 months) targets required to achieve the long-term targets, should also be included as a schedule to the SLA to be agreed by the DECLG and the relevant PRO.

This approach should ensure that the DECLG gains insight into the progress of the PRO in terms of meeting its overall targets on an interim and on-going basis, thereby mitigating the risk of non-achievement of the target.

4.3.5.2 Contractual Incentives and Penalties

The SLA between the DECLG and the PRO should include incentives and deterrents designed to significantly improve performance towards achieving the requisite targets.

The SLA should include a clause providing that any failure by the PRO to achieve the relevant target shall constitute a breach of contract. If the DECLG considers it necessary to do so, it can take action to seek a remedy from the PRO to address the breach. Typically remedies for breach of contract consist of damages, however it is recognised that damages are not always an adequate remedy (and may in fact place

the PRO under financial pressure when it needs to dedicate its resources to the operation of the PRO). Therefore a range of alternative contractual remedies may be considered in lieu of damages. The purpose of making a breach of the interim targets a contractual breach of the SLA is to provide an incentive / deterrent towards the achievement of targets.

Alternative contractual remedies might include both non-financial and financial penalties.

4.3.5.3 Non-Financial Contractual Penalties

Non-financial penalties might include (*inter alia*) a specified increase in activities which are considered appropriate and necessary to increase the likelihood of final targets being met; PR and awareness campaigns, training and direction for the Board and staff engaged by the PRO, increase in levels of oversight and supervision by the DECLG, increase in reporting obligations to the DECLG and to the PRO members, requirement to prepare a revised and independently verified and assessed action plan setting out the actions to be taken by the PRO to remedy the failure within a specified time-frame. PROs may have their own proposals for appropriate remedies to be included as a Schedule to the SLA, with the prior approval and agreement of the DECLG. Also the interim targets will provide for the gradual development of the required collection initiatives and infrastructure.

4.3.5.4 Financial Contractual Penalties

In addition to damages, another form of contractual financial incentive or penalty might include a Performance Fund, which can be established in a number of ways. It might involve, for example, the payment of an up-front sum (at the time of the application) and/or regular additional payments into an account to be established by the DECLG, with such sums to be held in escrow pending satisfactory performance of specified contractual performance obligations and/or specified targets (interim and final). On the attainment of satisfactory performance/achievement of targets, the DECLG would release all or an appropriate proportion of the Performance Fund back to the PRO. If satisfactory performance of interim or final targets are not achieved, the DECLG would be authorised to retain the Fund and to apply it directly to measures appropriate and necessary to increase the likelihood of final targets being met, such as, for example, a public information campaign or provision of additional

infrastructure or services. It is likely that such a measure would constitute a heavy administrative burden for the DECLG and is therefore not recommended at present.

4.3.5.5 Criminal Sanctions / Enforcement of Penalties

The DECLG currently has no statutory power to apply criminal sanctions or enforce fines against a PRO. Such power would need to be set out in legislation. However there is likely to be some difficulty defining the offence for this purpose with sufficient certainty and clarity and the DECLG would also be required to meet the criminal standard of proof.

Administrative sanctions are not widely used in Ireland, principally because although they may be imposed directly by the relevant monitoring authority, they require a similar level of proof as District Court criminal proceedings and they may be subject to appeal. From an administrative and evidential perspective, therefore, administrative and criminal sanctions will not provide a 'quick-fix' incentive/deterrent.

4.3.5.6 Termination of PROs

In addition to monitoring, the revocation of PRO status is a deterrent used by EU Member States to incentivise the PROs and producers to meet targets⁸².

Termination must however be viewed as a last-resort option. As highlighted previously in Section 4.3, revocation and termination therefore would likely constitute an administrative and legal burden to the DECLG while unlikely to achieve the desired outcome for relevant stakeholders.

4.3.5.7 Conclusion

The SLA should include (in separate schedules) both the interim targets which the PRO is obliged under the SLA to reach, within a specified time-frame, and the

⁸² See

http://ec.europa.eu/environment/waste/pdf/strategy/7.%20sabelle%20Martin%20comparison%20Fr_UK_DE%20study.pdf

specific measures required to be carried out in the event of a breach. These measures shown in Figure 4.2 should be designed to remedy both the cause and the effect of the breach. These schedules will comprise terms of the SLA, and will constitute contractual obligations imposed on the Scheme. Breach of any of the specific terms of the Schedules will constitute a breach of contract. If a PRO fails to meet its contractual obligations with regard to interim targets, this should under the contract trigger the obligation to remedy the breach in accordance with the specified measures, or such other measures as may be agreed with the DECLG at the relevant time.

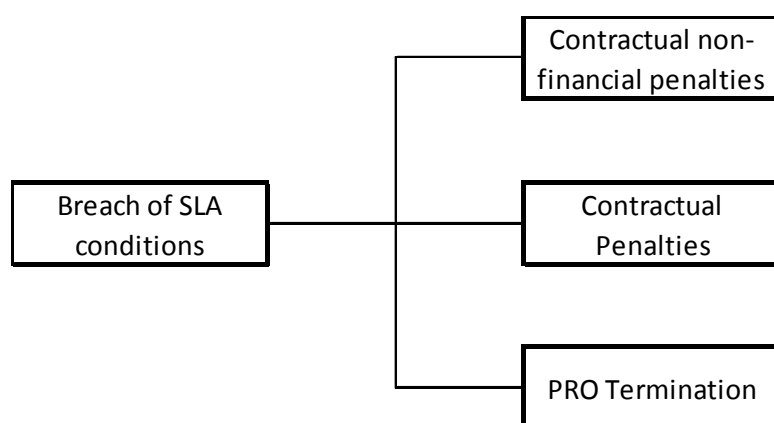


Figure 4.2: Overview of the Type of Measures to Encourage PRO Performance

4.4 REGULATING AND MONITORING SELF-COMPLIERS

The area of self-compliance by producers also has an influence on the effectiveness of the PR Model as self-compliers also contribute to the achievement of the desired environmental outcomes of PRIs.

4.4.1 Overview of the Irish Self-compliance System

In Ireland, in all of the PRI areas (except ELVs and WEEE B2B), producers have the option of either self-complying with their environmental obligations or participating satisfactorily in an approved compliance scheme which will fulfil their obligations for them. This choice is generally provided by national legislation (e.g. for Packaging, Tyres, Batteries) or by the EU legislation (e.g. WEEE Directive).

Under self-compliance, a producer takes responsibility for the take-back of products they put on the market (except for tyres). Producers are obliged to promote and

advertise this service. Self-compliers must also fulfil certain requirements with regards to registration, payment of fees and reporting. The requirements for each waste stream under PRIs are detailed in Sections 5 to 10.

As shown in Table 4.2, there are significant differences in the proportion of businesses choosing a specific route according to the PRI waste stream. The differences are due to the current regulatory arrangements and their impact on compliance costs.

Table 4.2: Number of Self-Compliers and Members of PROs (2011)

Waste Streams	Self-compliant	Member of PRO Members
Packaging (2010)	139	c.2,301
WEEE B2C (2011)	None	c.730
WEEE B2B (2011)	563	None
Batteries (2011)	4	c.751
ELVs (2012)	21	None
Tyres (2011)	Negligible *	903
Farm Plastics	None	46

* 21 local authorities reported information to the EPA (2010a) indicating that eight operators are registered with them.

It is important that the burden allocation between the two routes is equitable. The equity between the obligations for self-compliers and scheme members is reflected in their relative contribution to environmental protection (e.g. contribution to target achievement).

4.4.2 Effectiveness of Self-Compliance

With regards to the effectiveness of self-compliance versus collective compliance, there are only three waste streams where the two options can be compared: Packaging, batteries and tyres.

Unfortunately, there is limited publicly available data for the waste tyres to allow comparison. None of the self-complying battery producers (4 no.) are producers of portable batteries⁸³ and therefore their performance cannot be compared to the collection target for batteries in the batteries regulations as they only apply to portable batteries.

For packaging, the EPA National Waste Report 2011 (2013) indicates that the performance of self-compliers in achieving the Packaging Directive recovery targets has been poor with 25% recovery in 2009, 44% recovery in 2010 and 36% recovery in 2011⁸⁴ ⁸⁵. The EPA also reported that a number of self-compliers failed to report packaging recovery data.

4.4.3 Benefits and Disadvantages of Self-Compliance

Self-compliance is important to provide competition to PRO (Lifset and Lindqvist, 2008) by creating incentives for the PRO to provide cost-effective and high-standards services. However, in most cases, producers choose to do meet their obligations collectively as it is the least cost option⁸⁶. There are a number of reasons for this:

- The economies of scale and transportation costs that exist in waste management give market power to waste firms or even lead to geographic monopolies under certain circumstances. This primarily hurts producers that assume their responsibility individually, whereas co-operation in PROs helps counterbalance this power or even enables firms to partly integrate certain

⁸³ EPA email 26/02/13

⁸⁴ Percentage calculated from Table 29 of the EPA National Waste Report 2011 (2013).

⁸⁵ This does not mean that all packaging self-compliers are not meeting the targets set in the Packaging Directive as indicated by Table 28 of the EPA National Waste Report 2011 (2013).

⁸⁶ Except in some case for packaging see Section 7, where for large producers the cost (€/tonne of packaging put on the market) of the self-compliance option is lower than the costs of collective compliance with a PRO. The space and the ability for producer to accept waste in their own facility is also a factor.

waste management activities. However, this effect may be mitigated in the case of large producers. (e.g. large packaging self-compliers).

- The administrative burden put on self-compliers is generally higher than the administrative burden of compliance schemes members as they need to register with each local authority (e.g. packaging, tyres, farm plastics etc.) where their premises are located. Producers would also need to keep themselves up to date on any developments in existing legislation and targets (whereas in the case of a compliance scheme, usually the PRO takes care of this).
- Fees for self-compliance can also be higher as generally businesses with outlets in every local authority must register and pay fees with each local authority. This is to reflect the higher monitoring cost for the State of the self-compliance regime⁸⁷.
- In some cases, the treatment of financial guarantees is also discouraging self-compliance (e.g. WEEE).

4.4.4 Allocation of Responsibility

The allocation of responsibility is an essential element of the PRI success. With the current arrangements, the allocation of responsibility to self-compliers to achieve targets is not clear in all the waste streams.

For example, in the ELV PRI, where self-compliance is the only option, the producers are only responsible for the ELVs collected by the Authorised Treatment Facilities (ATFs) they are contracted with and not for the ELVs collected by non-contracted

⁸⁷

Self-compliance when compared to the compliance scheme system adds extra workload on state bodies e.g. local authorities have to register producers and receive fees and reports from the producers. Local authorities need to review and verify the information included in the reports, as well as ensure efficient enforcement measures so that self-compliers actually submit reports.

ATFs. Therefore with these arrangements it is difficult to hold producers to account with regards to target achievement. In order to facilitate the monitoring of target achievement by the DECLG, targets should be allocated to one entity, the producers.

With regards to packaging, the self-compliers are responsible for meeting their own recycling and recovery target, but the packaging PRO is responsible for meeting the national targets, therefore self-compliers may feel that they do not need to contribute to this requirement. In addition, with the PRO responsible for the national targets, any producer switching from the PRO to the self-complying system will reduce the PRO ability to meet the national targets as the PRO income will reduce while its target will remain the same⁸⁸.

In order to provide a level playing field for the producers' members of a PRO, the targets should be allocated equally to all obligated producers regardless if they choose to self-comply or participate in a compliance scheme. The targets should be allocated based on market shares of product put on the market or waste generated.

Recommendations:

In order to facilitate the monitoring of target achievement by the DECLG, targets should be allocated to one entity, the producers.

In order to provide a level playing field for the producers' members of a PRO, the targets should be allocated equally to all obligated producers regardless if they choose to self-comply or participate in a compliance scheme.

⁸⁸ This issue was examined in details by Indecon (2010b) in its assessment of the implications of an increase in the self-compliance rate on the packaging waste compliance market.

4.4.5 Reporting

It is essential that reports are submitted by self-compliers so that local authorities and the EPA can determine whether self-complying producers are meeting their legal obligations with regard to recovery and recycling targets.

There is a need for consistency in the presentation and completeness of these reports to ensure the information can be used for performance measurement and national reporting.

Local authorities should undertake thorough validation of the reports submitted by self-compliers. A clear and consistent process for auditing self-compliers should be developed by the relevant authorities.

It is also important to adhere to proper enforcement and that a system of penalties is put into place to ensure that reports by self-compliers are submitted.

With the current system, the lack of a national reporting system⁸⁹ to monitor the performance of self-compliance is a challenge to assess the effectiveness of self-compliance. It is recommended that the **DECLG should instruct the EPA to set up a reporting system to monitor PRO performance and self-complier performance, and their relative contribution to national targets.** This system should use similar indicators to allow comparison of performance (e.g. tonnes collected per tonne put on the market for WEEE etc.). This information could be published in the National Waste Report prepared by the EPA.

Recommendations:

DECLG should instruct the EPA to set up a reporting system to monitor PRO performance and self-complier performance, and their relative contribution to national targets.

⁸⁹ Except for packaging which is currently reported by the EPA in the National Waste Reports since 2009.

Local authorities should undertake thorough validation of the reports submitted by self-compliers. A clear and consistent process for auditing self-compliers should be developed by the relevant authorities.

4.4.6 Improving Self-compliers Performance

Assigning clear and equitable targets to self-compliant producers which can be monitored is the first step to ensure an improvement in the effectiveness of the self-compliant system. In addition, the DECLG will also need to develop incentives to encourage the self-compliers to achieve the required desired environmental outcomes in line with the obligations set out in the Regulations.

In order to achieve this end, a number of concurrent supporting measures could be implemented.

There should be **clear and consistent communication** on the obligations of self-compliers. For example the Packaging Regulations guidance from local authorities does not always make reference to the need for self-compliers to achieve recycling and recovery targets. It is recommended that local authorities inform self-compliers of their obligations with regards to the packaging recovery targets and provide consistent information reflecting the PRI Regulations on their website.

Enforcement also has a central role in improving the performance of self-compliers. There should also be **increased enforcement of self-compliers not achieving the required desired environmental outcomes**. Enforcement activities should not only focus on outward signs of compliance (e.g. signage and notices) but on key drivers to meet the desired environmental outcomes (e.g. for packaging the quantities taken back and recycled). The review of the respective waste regulation and enforcement roles of the EPA (Office of Environmental Enforcement) and local authorities in 2013 should explore possible changes to the ranges of sanctions for producers failing to conform to their obligations.

Table 4.3 shows the types of fees charged to self-compliers. For example, in the packaging, farm plastics and tyres waste streams the fee is based on the weight of product put on the market paid by self-compliers, which may provide an incentive to reduce the quantities of products put on the market but does not provide an incentive to achieve collection and recovery targets. The DECLG could **develop a fee system**

rewarding self-compliers meeting the targets and penalising self-compliers not meeting the targets. Further use of self-compliers fees should also be considered to encourage waste prevention. A portion of the fee should also be set aside in a dedicated “Contingency Fund”.

Table 4.3: Type of Fees Charged to Self-compliers

Waste Stream	Fee	Effect on Reducing Environmental Impacts
Packaging	Weight based with max. Threshold	Incentive for waste prevention
WEEE	Not an option for B2C No fee for B2B ⁹⁰	None
Batteries	Flat fee	None
Tyres	Weight based	Small Incentive for waste prevention
Farm Plastics	Weight based	Incentive for waste prevention
ELVs	Fee based on turnover	None

As shown in Box 5, there are also other measures which can be taken for to improve the performance of self-compliers.

⁹⁰ The EPA decided to set a fee at zero for B2B as there is no option for them to join compliance scheme. EPA 05/11/12 email

Box 6: Self-compliance Regime in Austria

The Austrian government requires businesses that are not already members of a compliance scheme or which cannot show that they have taken back and recycled the appropriate quantity of packaging, to join recovery systems under the following conditions:

- If they have achieved a return rate of 50% or more, they must sign up with an organisation such as ARA⁹¹ for the difference between their return rate and 90% of the packaging they have placed on the market;
- If they have achieved a return rate of less than 50% they have to sign up for the difference between their actual return rate and 100% of what they place on the market.

All of these measures require resources from the monitoring authorities. This should be reflected in the fees paid by the producers selecting the self-compliance route.

4.4.7 Administrative Burden

In a number of waste streams, the self-complier regime creates extra administrative burden for the producer and the State⁹². **Reducing this burden should be a priority to ensure that the expenditure is used to achieve the positive environmental outcomes** (See recommendation relating to the national and centralised electronic registration system for self-compliers and reporting in Section 4.1.3).

⁹¹ Altstoff Recycling Austria Aktiengesellschaft (ARA) is the PRO for packaging waste in Austria.

<http://www.ara.at/>

⁹² The setting up of a PRO generally lowers monitoring and enforcement costs borne by the regulatory agency in charge of EPR implementation (Fleckinger and Glachant, 2010).

4.4.8 Information and Awareness

Information and awareness is a necessary expenditure to meet the desired environmental outcomes. Currently, the contribution to information and awareness from self-compliers is generally limited. This is explored in more details in Section 4.6, which concludes that self-compliers have limited opportunities, capabilities and obligations to contribute to information and awareness. However their participation could be improved by their contribution to fund national or local authorities' information and awareness initiatives. It is also recommended that a code of practice / guidance for self-compliers be developed by the PROs in consultation with the EPA and local authorities.

4.4.9 Comparison of Self-Compliance Costs Vs. PRO Membership

It is particularly difficult to compare self-compliance costs versus PRO membership costs, as there are a number of parameters to take into account. These parameters are:

- Producer's fee to PRO, local authorities or EPA.
- Costs of take-back obligations and financial guarantees. These are included in the PRO fees for PRO members, but are a direct cost for self-compliers.
- Indirect costs linked to administrative requirements. These include self-compliers liaising with the local authorities or EPA, contracting waste operators, information and awareness. These costs are largely reduced when joining a PRO as there is only one point of contact and the PRO take responsibility for contracting waste operators, and information and awareness.

A summary of the comparison of self-compliance costs versus PRO membership costs is shown in Table 4.4. The details in Table 4.4 are based on examples presented in Sections 5 to 9.

Table 4.4: Comparison of Self-compliance Costs versus PRO Membership Costs

Waste Stream	Comment
Packaging	Self-compliance shows lower costs for large producers and higher costs for small producers. Removing the minimum and maximum fee thresholds to ensure a level of contribution proportional to the quantity of packaging put on market would restore more balance.
WEEE	For B2C WEEE, it is not possible to compare as there is no example of pricing structure for self-complier. However, self-complier costs are estimated to be higher due to take back obligations and the need to provide a 15 million € guarantee.
Batteries	Depend on battery type, For a producer placing 10 tonnes of automotive batteries on the market the PRO fees are generally higher than the EPA fees. However for portable batteries, it is expected that the take back obligations would be very expensive for a self-complier. EPA should consider using a variable fee based on the quantities put on the market
Tyres	Self-compliance costs are higher than PRO membership costs.
Farm plastics	Self-compliance costs are higher than PRO membership costs.
ELVs	Comparison not possible as there is no PRO.

In reviewing self-compliers fees, the DECLG should consider the following:

- Direct fees paid by the self-compliers should cover the costs of administering the system by public authorities⁹³.
- The effect of fees on reducing environmental impacts and encouraging self-compliers to meet targets.

⁹³ Information provided by Fingal County Council 04.104/2013 indicated that the current cost of managing the packaging self-complier system was €310 per self-complier. 10% of the cost is for the application process and the remainder 90% is for monitoring and enforcement. The monitoring cost includes for review of quarterly report and one inspection at the self-complier site.

- Consider carefully the use of minimum and maximum fee thresholds.

Summary Recommendations:

In order to facilitate the monitoring of target achievement by the DECLG, targets should be allocated to one entity, the producers. In order to provide a level playing field for the producers' members of a PRO, the targets should be allocated equally to all obligated producers.

There should be clear and consistent communication on the obligations of self-compliers.

The DECLG should review the fees paid by self-compliers and ensure that they cover the costs of administering the system by public authorities. The DECLG should also consider using a fee system rewarding self-compliers meeting the targets and penalising self-compliers not meeting the targets.

Local authorities should undertake thorough validation of the reports submitted by self-compliers. A clear and consistent process for auditing self-compliers should be developed by the relevant authorities.

If the desired environmental outcomes are not met, local authorities should take the necessary enforcement actions.

A centralised electronic registration system for self-compliers should be developed to reduce administrative burden to public authorities and businesses.

4.5 INTERRELATIONSHIPS

The PRI system contains many stakeholders who interact with each other. These interactions present opportunities and challenges, which are discussed below.

4.5.1 PRO Cooperation

The co-operation between PROs on a broad range of issues could ensure more efficient and competitive delivery of desired environmental outcomes. There are

already a number of examples of collaboration taking place between stakeholders in the PR Model.

This collaboration can be between:

- PROs operating in the same waste stream. For example, in the WEEE PRI, there is a compensation process agreed by both PROs for the reconciliation of the difference between market shares and WEEE collected and treated.
- PROs operating in different waste streams. For example, the collection and recycling costs of farm plastic packaging by “Farm Plastics Recycling” is partly funded by Repak. WEEE Ireland and Repak are collaborating on information and awareness initiatives.
- PROs and other stakeholders such as local authorities and retailers for the organisation of collection events.

There are opportunities for further collaboration from the PROs, in the following in areas of mutual and national interests such as:

- Information and awareness: e.g. Devise campaigns which are mutually supportive of each other’s collection systems (provide information on collection events carried out by both schemes),
- Collection e.g. collection of packaging farm plastics by Farm plastics Recycling Ltd. which is supported by Repak, automotive batteries and other waste streams from the farming sector could be considered,
- Strategic development of the Irish recovery sector,
- Research & development to reduce contamination, improve quality, monitor effectiveness of awareness campaign on recycling behaviours.

However, not all opportunities for collaboration are realised because of the competitive behaviour of the PROs⁹⁴. Specific conditions in the PRO SLA can direct PROs to collaborate, but the PRO needs to engage more actively and report on this engagement. A forum chaired by an independent facilitator where the potential for collaboration are discussed could provide such an opportunity. Currently the WEEE Batteries Monitoring Group or the National Waste Prevention Committee act as such, in an informal manner.

4.5.2 Dispute Resolution

Given the possibility of multiple schemes, a dispute resolution mechanism should be developed for settling disputes between PROs. This dispute resolution protocol should aim to settle any disputes at the lowest possible level between the organisations.

A Dispute resolution protocol⁹⁵ was prepared by ERP for use between ERP and WEEE Ireland. The protocol was subject to the following provisions:

- PROs should use their best endeavours to settle the Dispute by mutual agreement within a given timeframe. There several steps involving the PRO Representative first, then the CEO and finally the Chairman.
- If the dispute cannot be resolved by mutual agreement, the PROs should submit disputes to the DECLG to independently mediate/referee in the reconciliation process.
- If the PROs do not agree with the DECLG recommendations, they will have recourse to the courts.

⁹⁴ There is no collaboration in the waste tyres PRI although collaboration would be beneficial for these PROs to meet the conditions of their approvals.

⁹⁵ ERP email 30/07/2012

Recommendations:

It is recommended should the DECLG wish to delay its involvement in disputes between PROs, it could consider recommending that the PROs use an agreed independent third party before its intervention.

4.5.3 Cooperation with Northern Ireland

The Republic of Ireland has been collaborating with Northern Ireland to increase environmental protection and working constructively both through the existing structures in the North South Ministerial Council (NSMC) and on a bilateral basis on issues outside the NSMC framework.

The areas of waste tyres and ELVs would benefit further collaboration which includes the following:

- In the absence of a waste tyre PRI in Northern Ireland, there may be illegal import of waste tyres from Northern Ireland to the Republic of Ireland. It is important to utilise means of collaborative enforcement such as the TFS office in the Department of the Environment in Northern Ireland. Also Revenue and Customs in Northern Ireland may be interested in potential illegal exports from Northern Ireland into Ireland where they may be losing revenue to the exchequer.
- The illegal export of ELVs to Northern Ireland indicates the need for collaboration with Northern Ireland in order to reduce unauthorised export.

The Irish Local Authorities from bordering counties are in contact with their Northern Ireland counterparts in relation to illegal cross border waste movements. However the Evaluation Report for North East Waste Management Plan (RPS, 2012), highlighted that it appears the level of communication has lapsed somewhat in recent times. It has been recognised that communication/liaison between Local Authorities and their counterparts in Northern Ireland needs to be stepped up moving forward

particularly in relation to the enforcement of illegal waste movements in conjunction with the Gardaí and PSNI.

4.6 INFORMATION AND AWARENESS

A number of factors contribute to the success of PRI recycling programmes (infrastructure provision, enforcement, etc.). Without appropriate information and awareness, the contribution of these factors can be undermined. For example, the importance of local infrastructure cannot be underestimated in its empowering effects on people to participate in more sustainable waste management practices, but this is of little use if householders are not aware of its availability and why they need to change their behaviour.

Communication activities increase householder involvement in recycling programmes. These activities are paramount to the success of recycling initiatives which rely on the willingness of individuals to change current behaviours and participate, provided they are empowered to do so.

The aim of successful PRIs is to make consumers (public and businesses) aware of the environmental impacts associated with the consumption of goods and services (e.g. waste management, resource use etc.)⁹⁶ and to influence the consumer to act by segregating, storing and presenting or delivering waste for collection. Collection and treatment of the PRI waste is then carried out by waste management operators funded by producers.

In addition to consumers, other participants in the product supply chain need to be informed about their PRI obligations (e.g. producers and retailers). Without appropriate information about their legal obligations these businesses may not participate in (or fund) the PRIs or retailers may not accept PRI waste as required under legislation.

Communicating information on PRIs is complex:

⁹⁶ Consumer participation in a producer responsibility programme is a subset of green consumption behaviour.

- As there are different actors responsible for communicating messages, different target audiences and different messages required for these audiences.
- The actual significance of communication activities is difficult to determine as often communication campaigns go hand-in-hand with infrastructure developments. There is limited research in the literature that measures the effectiveness of communication methods in isolation.
- While it has been demonstrated that the public in general has a positive attitude towards the environment, it is notoriously difficult to change people's habits with regards to recycling. There may be a number of reasons why people do not recycle and it may be a challenge to find the most effective ways to encourage them to do so.

This section will focus mainly on the role of the PROs and communication initiatives to increase participation in the PRI recycling programmes. Communication relating to producers and other participants in the product chain are discussed in the specific PRI chapters.

4.6.1 Communicating for PRI Recycling Programmes

4.6.1.1 Attitudes and Behaviours

In order to **design an effective recycling programme**, there is a need to **understand people's recycling behaviour**. Internationally, there is a considerable body of literature examining the attitudes and behaviours to recycling.

In Ireland, the DECLG funded a survey of public opinion in 1999 to establish the Irish public's behaviour and sentiments as regards to their environment. The results were used to shape the government's Environmental Awareness Programme, which focused on achieving behavioural change. A follow-up benchmarking survey was conducted in 2003 (Drury, 2003). The surveys have included indicators, such as levels of recycling, and were useful in showing the changes in behaviour from the 1999 baseline and the 2003 survey (e.g. the numbers that reported recycling glass, paper, plastic had increased). These surveys identified a population concerned with

the quality of the environment including waste (attitude), but few people taking actions to help protect or enhance their environment (behaviour).

This weak relationship between attitude and behaviour is a common theme in research and can be attributed to other variables affecting behaviours (Morgan and Hughes, 2006). Behaviour is the outcome of interactions of factors that are social, cultural and contextual on the one hand and individual on the other hand. Figure 4.3 shows that there are other variables found to be significantly related to environmental behaviour, but the strength of the relationship is weak or nebulous. In addition, the relative importance of these variables is not well understood. Therefore isolating the factors of behavioural change in order to test their effectiveness is very difficult, particularly in terms of recycling, where there are so many factors that influence daily operations (Timlett and Williams, 2008).

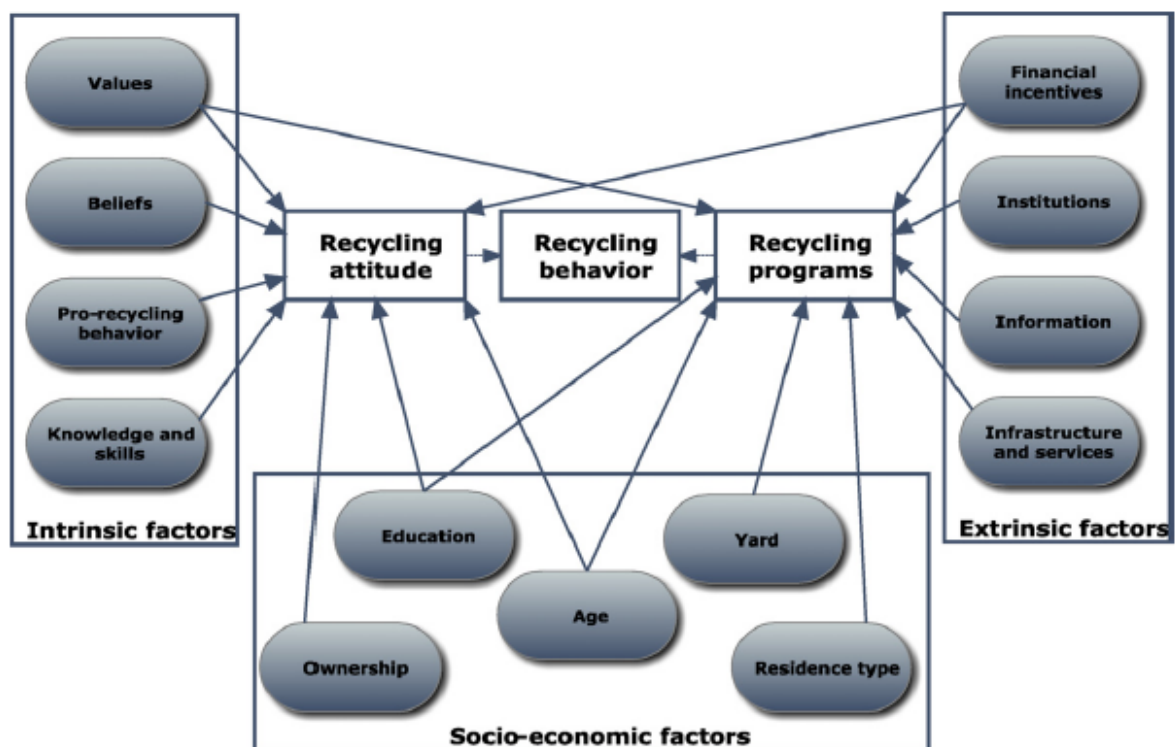


Figure 4.3: Influential factors of recycling behaviour⁹⁷

⁹⁷ Adapted from Keramitsoglou and Tsagarakis, 2013

An in-depth analysis of attitudes towards, and behaviour in relation to, waste management in Ireland was carried out by Davies et al. (2006) under an EPA funded research project. Respondents **explained their current levels of behaviour** (negative, passive or proactive) in relation to waste management in terms of five main themes: relationships, personality, practicality, responsibility and culture. These themes are consistent with other international research.

Aside from the provision of more and better waste management facilities and door-to-door waste collections, respondents identified a number of mechanisms for **changing waste management behaviour**: education, consultation and policy evolution. Most respondents felt that improved education, both formal and informal, about positive waste management behaviour was pivotal for reducing the amount of waste produced and dealing with it more benignly. However, they were also clear that the nature of this **education had to be appropriate to the target audience** and, to be effective information has to be provided from **sources that are trusted by the recipients**.

4.6.1.2 Segmentations and Strategies

The Davies research showed that there were different attitudes and behaviours within populations. Therefore these populations can be grouped in **segments** to which a different strategy can be applied. For example Morgan and Hughes (2006) propose the following segments:

- For consumers who already recycle the aim should be to increase their recycling rates.
- For consumers who are environmentally aware but do not recycle the aim of the campaign should be to modify their behaviours.
- For consumers who are not concerned about the environment and who do not recycle, these should not be targeted by the campaign. Morgan and Hughes pointed out that the marginal benefit of reaching the third type of consumer is minimal and that these consumers are more likely to modify their behaviours following the use of economic instruments (also applicable to the other two segments).

Defra (2008) developed a framework for pro-environmental behaviours shown in Figure 4.4 and proposed seven segments based on the consumer's ability to act and the willingness to act. Defra followed a social marketing⁹⁸ methodology, moving from the initial scoping through to more detailed consumer insight, segmentation and strategy. Defra recommends different strategies to encourage pro-environmental behaviours from these segments. These strategies are summarised as follows:

- Enablers, e.g. infrastructure, education and information and removal of barriers.
- Encouragement, e.g. taxes, penalties, rewards and league tables.
- Engagement, e.g. communication, feedback, consultation, community involvement and 'bottom up' policies.
- Exemplify, e.g. leading by example.

⁹⁸ Social marketing is a process that applies marketing principles and techniques to create, communicate, and deliver value in order to influence target audience behaviours that benefit society (public health, safety, the environment, and communities) as well as the target audience (Kotler and Lee, 2008).

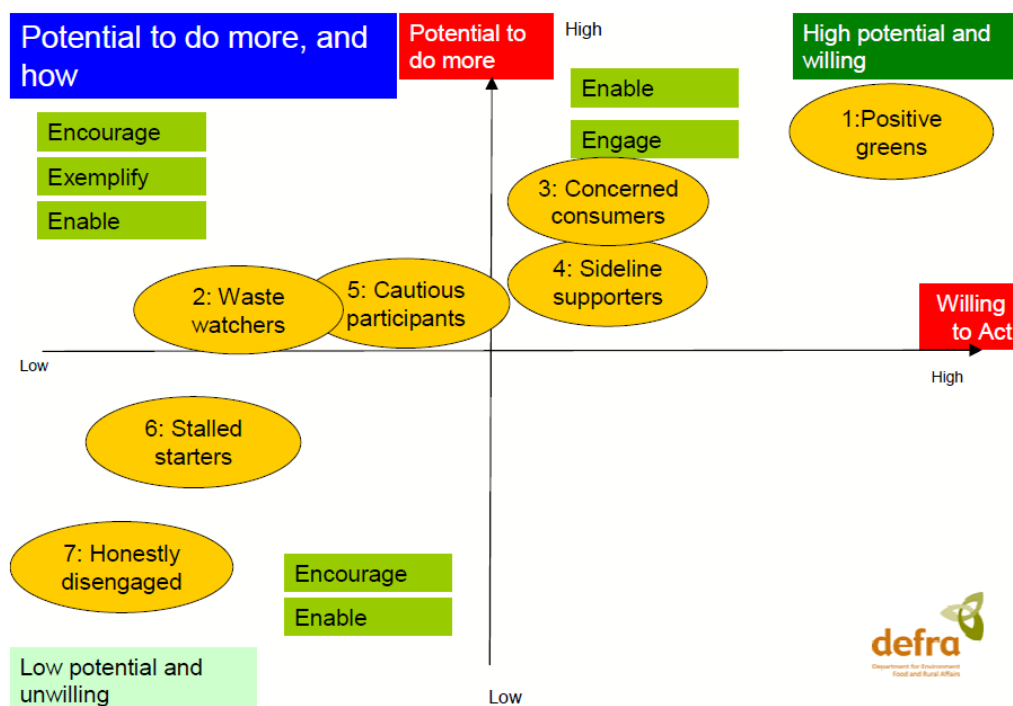


Figure 4.4: The Seven Population Segments

These segments and strategies show that the rationale⁹⁹ behind communicating environmental information to consumers has shifted away from general awareness raising techniques (e.g. advertising) in favour more **advanced techniques** that can bring about behaviour change (Timlett and Williams, 2008). This is to reflect the fears that continual calls through information campaigns to change behaviours in an already rich society may not be effective. 'Pro-environmental behaviour change requires a more sophisticated policy approach. A **concerted strategy** is needed to make behaviour change easy: ensuring that incentive structures and institutional rules favour pro-environmental behaviour, enabling access to pro-environmental choices and engaging in initiatives to help themselves (Davies et al., 2005).

4.6.1.3 Impact of Media Messaging

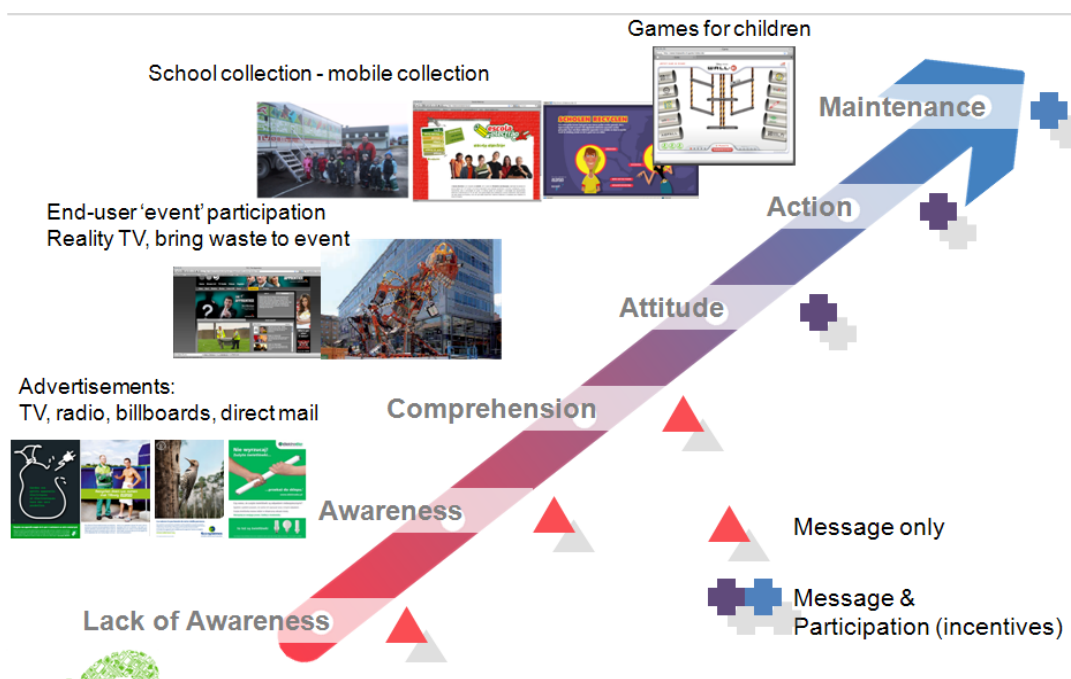
A variety of media is used to communicate the recycling message to consumers.

⁹⁹ http://ec.europa.eu/environment/eussd/pdf/footprint/ProductsCommunication_Final%20Report.pdf

The most commonly used method is the leaflet, distributed door-to-door and/or at community points (such as libraries and doctors surgeries). **Leaflets are the medium most commonly well received by the public** (Mee et al., 2004), although there is the risk that they are dismissed as junk mail (Read, 1999).

Other types of media include: newspaper, radio, television, signs on buses, trains, etc., council magazines and newsletters, bin stickers, fridge magnets, roadshows, displays, posters, talks to schools and other community groups and websites. All have varying degrees of impact (e.g. Evison and Read, 2001; McDonald and Ball, 1998; Mee et al., 2004; Read, 1999) but use is usually determined by budget and instinct, rather than demonstrated effectiveness.

Research funded by the WEEE Forum on ‘Communicating about Collection: Roles and experiences in societal awareness raising and behaviour change’ (2009) identified several stages in consumer behaviour and provided examples of effective campaigns for each stage. Figure 4.5 shows that to generate action a combination of messages and initiatives are required.



Source: WEEE Forum

Figure 4.5: Stages in consumer behaviour and examples of effective campaigns

Waste management companies have been using emails increasingly to replace leaflets as a more cost-effective approach to communication.

Recently the use of **social media** has been on the rise, but it is still a new media and its use is not widespread. It has been documented that the clever use of social media can have a significant impact on awareness. Social media is mainly used for two purposes:

- General brand awareness.
- Providing practical information on collection event.
- Disseminating information about a competition.

4.6.2 The Current System

As highlighted in the recent waste policy document (DECLG, 2012a) the promotion and awareness of the benefits of recycling is a **shared responsibility**. Participants in the producer responsibility sector (and local authorities, waste collection companies and the wider public sector and business community) are expected to demonstrate significant commitment to awareness-raising.

The DECLG as part of its wider mandate has a central role in the co-ordination of information and awareness. The DECLG co-ordination tools include waste policy documents, circulars to local authorities, and the schedules of conditions issued to the PROs. The DECLG also implemented the Race Against Waste Campaign, which helped to raise general awareness with regards to the need to recycle and develop better waste practises for households, businesses and institutions. This has recently decreased following the reduction in public spending, however the DECLG is still active by supporting campaigns such as the Green School and Tidy Towns. The DECLG also co-operates from time to time with the PROs on information and awareness initiatives.

Over recent years the **EPA National Waste Prevention Programme (NWPP)** demonstrated that there is significant potential for achieving behavioural change through the application of social marketing techniques within specific groups. Programmes such as Green Schools, Green Home, Green Communities, Green

Festivals, Master Composter, etc., have been particularly successful. Other approaches into business peer groups (Retail, Hospitality, Garages, Healthcare, etc.) have been similarly successful. The NWPP also involves representative groupings in the programmes which facilitated sectoral penetration (e.g. Fáilte Ireland, IBEC, Irish Hospitality Sector).

Behavioural change in relation to consumption and recycling (resource efficiency) in society can be successfully advanced through targeted societal interventions. The EPA, with the DECLG, has commenced activities in this area through the Greening Communities programme and Tidy Towns programme.

The local authorities have appointed **40 Environmental Awareness Officers and three Green Business Officers** to encourage their citizens and businesses to use the infrastructure provided. These roles were instrumental in communicating to the public during the roll out of kerbside recycling collections and also include awareness across many sectors e.g. waste, water, biodiversity, litter, and are not a sole resource from waste. Some limited information can also be found on other public websites¹⁰⁰.

The **waste operators** also played a role in raising awareness by providing information on the type of materials accepted in the recycling bin and organic bin. However, this awareness activity has been limited and is often overtaken by a sales pitch as opposed to promoting recycling behaviours. The introduction of competition in the market and the focus on low waste collection costs limited waste operators spend on information and awareness activities. The lack of consistency of the messages in the household waste collection market may also create confusion.

The **PROs** have a range of campaigns focusing on recycling, brand awareness, practical information about collection, compliance. A general overview of their initiatives is provided in the next section and more details are also provided in the relevant waste sections.

¹⁰⁰ <http://www.citizensinformation.ie/>

Producers and retailers provide information to the consumers on the characteristics of the product.

4.6.2.1 PROs Communication Initiatives

All of the PROs operate information and awareness campaigns. These communication initiatives vary in scale and scope reflecting the variety of budgets and target audiences. Table 4.5 shows an overview of these parameters, while a summary of the PROs communication initiatives is presented in Table 4.6.

Table 4.5: Communication Initiative Spend 2011

PRO	Waste stream	Target audience	Spend
WEEE Ireland	WEEE& Batteries	Public	€1,900,000
ERP	WEEE& Batteries	Public	€992,000
Repak	Packaging	Public	€880,000
IFFPG	Farm plastics	Farmers	€64,000
TRACS	Tyres	Tyre industry	€35,000
TWM	Tyres	Tyre industry	€4,000
Total			€3,831,000

WEEE Ireland, ERP and Repak are the largest spenders on communication initiatives. This reflects the nature of these compliance schemes which targets a B2C or public audience while the other compliance schemes are focused more on industry operators. In the case of both WEEE Ireland and ERP, their schedules of conditions for WEEE and batteries issued by the DECLG specify a minimum level of spending on communication and awareness which is linked to the achievement of collection targets which are currently achieved.

These three PROs use a wide range of media to spread their message and also carry out surveys to determine the effectiveness of their communication programme. The messages range from brand awareness, general recycling messages and practical information relating to collection. These surveys generally showed good brand awareness from the respondents and good recycling behaviours. There would be benefits if the findings of these surveys were made public as it would assist in the

design of future recycling programmes implemented by public authorities and other PROs.

The IFFPG and TRACS PROs are more modest spenders. This reflects the B2B audience which is targeted through industry magazines and sectoral activities. It is interesting to note that some events are targeted by several schemes (e.g. the Ploughing Championship by the IFFPG and TRACS) and there may be potential for the PROs to collaborate. The IFFPG messages focuses on compliance and practical information relating to collection.

TWM is the smallest spender on communication initiative, however TWM spend in a similar proportion of its income as TRACS. The impact of its communication initiative is surely limited and there would be benefit in having these smaller PROs combining their resources to achieve a critical mass.

TRACS and TWM do not have a role in financially supporting the collection of waste tyres, therefore their message is more about compliance.

There is currently little collaboration on communication initiatives within the same waste stream. For example TRACS and TWM do not collaborate with regards to communication to producers, suppliers waste and waste collectors. WEEE Ireland and ERP could not agree on a unique brand for the collection of portable batteries. This lack of cooperation may have negative impacts on the achievement of the future national targets for waste batteries collection.

The PROs also collaborate with the local authorities by providing practical information on their activities (e.g. special collection events for WEEE).

Table 4.6: Indicators of PROs Communication Activities

PRO	Online Traffic (hits per annum)	Event	Articles	Social Media
Repak	Repak.ie 51,147 (B2B) Preventandsave.ie 7,310 (Prevention) Recyclemore.ie 36,868 (B2C)	Members conferences Contractors conference/ breakfast briefings Members breakfast briefings Repak recycling awards Packaging Prevention Seminars	High level of coverage	Facebook - 4,229 likes Phone App - 4,833 downloads
WEEE Ireland	Weeeireland.ie 33,184 Recyclefree.ie 16,474	Schools Programme Public Collection Events WEEE Wagon Days WEEE to Work Kerbside Campaign	363 press coverage &100 ads	Facebook -7,000 likes Twitter- 1,154 followers
ERP	erp-recycling.ie 78,000	Schools and 3 rd Level collection campaign. Junk Kouture, Go Recycle, It's Free program WEEE to work initiative Sponsoring and activities at events.	15 national press coverage	Facebook -6,500 Likes Twitter – c. 2,000 followers
IFFPG	farmplastics.ie	Ploughing Championships with IFA		SMS messaging
TRACS	tracsireland.ie	NCAD Competition Ploughing Championships with IFA	58 press coverage	Linked in profile
TWM	twm.ie	None	N/A	

4.6.2.2 Social Networking

An important aspect of any recycling programme includes developing directed information for a particular audience with targeted approaches. While printed materials – including flyers, brochures and newspapers as well as web pages are important, the way in which relevant audiences are reached with information on how, what and why to recycle is expanding.

Social networking and media is an area which has radically changed how businesses market their activities. Audience requirements are more sophisticated and are not as interested in being broadcast messages and are therefore engaging more with social networks.

Outbound marketing was typically the traditional approach to market a business. This is where an organisation broadcasts a message through advertising and other mediums to try and grab the users attention. Audiences are bombarded with an increasing numbers of messages every day, and as outbound marketing can be quite expensive this form of marketing has become less effective.

Inbound marketing is where an organisation provides something of value that attracts the audience and uses this attraction to try to build a relationship. After the relationship is built, trust must be developed and this then allows the organisation to sell a product or service to them. This form of marketing is becoming increasingly effective within certain groups. It does involve more of the marketer's time but there is less expense. Performance/return is relatively easy to track so the campaign can be adjusted to get better results.

People are joining social networks such as Facebook. They are increasingly using these social networks more and more to find out recommendations about products and services from their friends, share out information about their trips and experiences, and promote companies they really like. Tapping into this media marketing can be very powerful.

A guiding principle in creating a communication strategy is to understand that the internet, social media and the associated technologies are tools the PROs use to deliver their message. However, the use of these tools does not eliminate the need for other media and approaches, or the need to provide the right content. For most firms these forms of media supplement the company's traditional marketing strategy, making it more effective or less costly, or both.

Repak

Repak has now established a number of social media channels (facebook, twitter and linkedin) through which it communicates. Repak has also developed the 'Recyclemore phone' App to find the nearest recycling centre/bring bank or civic amenity site through the phone GPS locator.

The wide range of online communication tools, including social media, means that Repak can communicate and reach a broader range of online audiences in a media rich format not possible with traditional methods. These tools provide:

- A wider online footprint
- Positioning of Repak as expert in packaging recycling issues
- 24/7 availability of Repak and recycling issues
- Engagement and community development with other recyclers
- Regular and easy to update content from video to photography
- Better search engine visibility
- Driving higher recycling rates and acceptance of recycling message
- Direct contact with hard to reach demographics
- More positive public face of the organisation

The organisation produces a wealth of content and through customising the messages for the different platforms and utilising video, audio and photography it can portray the recycling message in a variety of different and engaging ways. Further engagement with these communities needs to be undertaken to create a truly interactive and collaborative relationship, in conjunction with the on-going development of content and other tools.

WEEE Ireland

In July 2011 WEEE Ireland set up accounts on Facebook and Twitter. In the space of six months over 4,000 people had 'liked' the page with hundreds of daily visitors interacting with WEEE Ireland, learning about up and coming collection events and taking part in campaigns. They currently have 6,980 likes. Several competitions were run through Facebook to increase publicity and awareness with people regularly posting comments and questions including former Minister Dick Roche and national broadcaster *Bláthnaid Ní Chofaigh*. Facebook and Twitter have proven to be fundamental tools for online advertising as they provide flexibility to clearly define the target

audience. This was used with particular effect when advertising special collection events in certain areas of the country and as support for the variety of campaigns launched.

In December of 2011 alone, WEEE Ireland's Facebook page was reaching an average of 100,000 Irish users a day through posts, photos, ads, and other users sharing WEEE Ireland's content with their friends. 77 Facebook ads were run in 2011 for various collection days and competitions. These ads generated an additional 3,292 fans for WEEE Ireland. WEEE Ireland encourages Facebook users to 'like' the site and stay informed on all the battery and WEEE activities. Also members can let the scheme know if they are involved in any environmental initiatives which could be featured on the WEEE Ireland Facebook page. WEEE Ireland is also on Twitter @WEEEIreland and currently has 1,154 followers.

Table 4.7: Comparison of Website Activity from 2009-2012¹⁰¹

Website	2009	2010	2011	2012
Weeeireland.ie	15,103	27,459	32,566	33,184
Recyclefree.ie	9,645	9,645	14,782	16,474

In 2011 a remarkable increase in the number of visits to the corporate and consumer sites were noted with increases of 25% and 30% respectively noted during September, October and November. This coincided with the launch of several WEEE Wagon Days throughout County Galway as well as the Bring Batteries Back and the Spread a Little Sunshine campaigns.

WEEE Ireland finds that social media is an effective way to deliver consistency through the marketing communications and to reach people in what they consider to be their own space. It allows targeting specific audience. However, it has to be part of the overall media strategy and there is a need to marry online and offline tools.

¹⁰¹ WEEE Ireland, 2012

ERP Recycling

ERP Recycling set up a Facebook page back in 2005 and currently has over 6,500 likes. This page is updated on a daily basis covering relevant ERP content covering key initiatives as well as recycling tips. They do not however seem to get a lot of feedback in the form of comments and as a result of this there is very little interaction. The page also hosts photos from key launches, up and coming competitions. ERP also has a Twitter account and currently has 1,916 followers.

ERP finds that social media activity has been very worthwhile and undertaken with little or no third party budget. By increasing their investment in social media, they feel that they could further build target audience and engage more with consumers.

TRACS

TRACS has had limited use of social media to date however it kept up-to-date on the business side of things with LinkedIn. To-date TRACS is connected to many professionals in the motor sector through this professional social media site. The following are some of the companies which TRACS is connected to:

- Continental
- European Tyre Professionals
- SIMI
- Motor Industry Ireland
- Automotive Industry Professionals
- Volkswagen IRL
- The Defence Forces
- Renault IRL
- Compliance EU

TRACS also advertises on Donedeal.ie which is the biggest buy and sell website in Ireland.

IFFPG (Farm Plastics)

The IFFPG does not have a Facebook, Twitter or LinkedIn accounts. At present the IFFPG website contains the contact address, low call number and email address. The IFFPG do however use text messaging service to notify farmers of collection events.

Conclusion

Repak, WEEE Ireland and ERP all use social networking to communicate to increase brand awareness and encourage public participation in their programmes. Social media is used as part of the overall communication strategy of these PROs with other marketing tools. These PROs targets large audience and the time investment in social media is a cost-effective way to engaging with their audience.

TRACS / TWM and the IFFPG have a lesser need of this media because of their different target audience. Their audience is more limited, not as receptive to social media and the time investment in developing social media campaign may not provide the same return on investment. However TRACS has shown that using LinkedIn can be a good media to keep businesses informed of events and developments.

The availability of social media gives all sorts of opportunities not only to increase awareness and encourage public participation in recycling programmes, but also including data sharing, market research, competition and support. For example:

- WEEE Ireland and ERP should consider widening the range of social media used to reach a broader range of online consumer audiences. For example, the development of apps for mobile phones (available for both android and iPhone platforms) that give details of recycling points within the vicinity, their opening hours and also useful facts, fun trivia and games is an option to encourage participation.
- Social networking can create links for virtual information exchange or be an additional resource for offline initiatives. The use of videos should also be considered to demonstrate best practice. For example, Repak could work with the IWMA to develop videos demonstrating best practice in sorting dry recyclables.
- Social networking can help provide a forum to exchange ideas and experience between households as they participate in recycling programmes. This may help to improve the programme.

Social media technology and use is moving at a very fast pace and its applications continue to evolve. Its use is still new and further research on the applied use of social media by PRIs would be beneficial. This could be achieved by specific call under the EPA Strive project.

Summary of Recommendations:

Social media should be used as part of the overall communication strategy of the PROs, but its use is still new and further research on the use of social media by PRI would be beneficial. This could be achieved by specific call under the EPA Strive project.

WEEE Ireland and ERP should consider widening the range of social media used to reach a broader range of online consumer audiences.

TRACS / TWM and the IFFPG have a lesser need of this media because of their different target audience, however TRACS has shown that using LinkedIn can be a good media to keep businesses informed of events and developments.

The use of videos should also be considered to demonstrate best practice (e.g. in sorting).

4.6.2.3 Contribution of Self-compliers

The contribution to information and awareness from self-compliers is generally limited to legal requirements. These requirements include two newspaper advertisements yearly and a site notice indicating that the business is self-complying with the PRI Regulations and providing information relating to the business take-back obligations (e.g. packaging) or informing the public how to manage PRI waste (e.g. tyres).

Notices and information relating to the management of PRI waste are hard to find among other marketing materials. They are not reader friendly and their main focus is they are an outward sign of self-compliance rather than practical information to the public on how to deal with PRI waste. An example of good signage is shown in Figure 4.6.



Figure 4.6: Example of Waste Battery Take Back Advertising from a Retailer Member of a Compliance Scheme

Self-compliers include diverse organisations ranging from large retailers with CSR policies (e.g. IKEA¹⁰²) to smaller businesses with limited communication expertise or incentives to communicate about the environmentally sound management of PRI waste. They may (retailer) or may not (B2B) interact with the public. They may or may not have facilities to take back waste from the public.

The current framework offers **limited opportunities for self-complying businesses to impact significantly on behavioural change**. They may at their own discretion work with their local

¹⁰²

<http://www.fingalcoco.ie/Environment/WasteEnforcement/PackagingRegulations/Self%20Complying%20Companies%202012.do>

authorities and other bodies on other initiatives (e.g. Tidy Towns, Green Schools etc.) which may not be directly related to the PRI waste. Sometimes businesses are self-compliers under one set of regulations (e.g. Packaging Regulations) and participate in a compliance scheme under another set of regulations (e.g. WEEE Regulations). They may support the WEEE compliance scheme when they organise¹⁰³ collection events. This may have spillover effects for other waste streams.

While self-compliance producers are compliant with the legislative requirements, they may be seen as free riders by producers member of PROs who fund a wide range of communication activities.

While there is scope for considerable improvement in the provision of information and awareness by self-compliers, it is important to be aware of these limitations

It is unlikely that self-compliers will develop their own communication campaign, but they can support existing initiatives by promoting existing collection infrastructure and encourage segregation by the public, offering advertising space or co-funding of these initiatives.

The promotion of existing collection infrastructure, encouraging segregation by the public, and offering advertising space could be achieved by:

- Developing guidance or a code of practice to assist self-compliers in communicating to the public would be beneficial¹⁰⁴. The development of these guidance documents could be co-ordinated by the EPA with support of the PROs and industry groups.
- Making provision in the relevant legislation to ensure that the self-compliers adopt this code of practice.

With regards to co-funding, if information and awareness was centrally managed, each obligated producers would fund initiatives proportionally to the market share of product they put on the market. Unfortunately such a system may be difficult to implement and may not be the most

¹⁰³ <http://www.erp-recycling.ie/index.php?content=227>

¹⁰⁴ See WRAP Guidance on raising public awareness of WEEE recycling and re-use. Accessible at <http://www.wrap.org.uk/sites/files/wrap/2.0%20Raising%20public%20awareness%20of%20recycling%20and%20reuse%20-%20Online.pdf>

effective way of communicating. However, when reviewing self-complier fees, consideration should be given that there a contribution towards information and awareness based of market share of product put on the market. This contribution could go towards the cost of development of guidance or a code of practice or other national or regional awareness initiatives.

Recommendations:

A code of practice / guidance for self-compliers should be developed by the EPA with support of the PROs and industry groups.

Consideration should be given that there is a contribution by producers towards information and awareness based of market share of product put on the market.

4.6.2.4 Information Available for New Entrants

New PROs receiving approval from the DECLG will have demonstrated their financial and technical capacity. On entering the market, they will design an information and awareness strategy which will be part of their setup costs. Access to information on existing information and awareness activities can help to reduce their setup costs.

Currently these new entrants can easily access information from a number of sources e.g. publicly available from other compliance schemes (in Ireland and abroad) and public sources providing information (EPA, DECLG, rx3, European Commission DG Environment, university database). Obviously they will need the skills and the resources to use this information to develop their own approach.

Information partly or not available is the results from the opinion surveys carried out by the other PROs. These surveys can provide a good hindsight on the effectiveness of their activities. There is a risk that if the PROs share the findings they may lose competitive advantage provided by this research.

The access by new entrants to existing information could also assist in the provision of more consistent information to the consumers. However, this objective is more likely to be achieved by a body providing some coordination of information. This would also address the competition issue with the information being made available to all players.

4.6.3 Effectiveness and Efficiency of the Current System

The current PRI system is a shared responsibility model and has the benefits of involving a number of participants in the product chain giving recycling a certain visibility and mandate.

As identified by Davies, and more generally by DEFRA research, more needs to be done to build a sense of collective movement spanning the public, private and third sectors. Consumer-facing messaging needs to be **clearer and more consistent**, which is a considerable challenge given the wide range of organisations involved in public engagement on the environment. Co-ordination is limited which may result in loss in efficiency (e.g. due to duplication) and effectiveness (e.g. inconsistent message).

As highlighted previously, because of the complexity of recycling behaviours, there is **no one size fits all model** that can be developed to communicate information and awareness. However, with such a complex system, certain procedures might improve the efficiency and effectiveness of the current system.

For example, an **improved coordination of the PROs communication and awareness activities** will ensure increased visibility is given to the actions which government and business are already taking. It will also ensure that messages to the consumers are more consistent among actors and that resources are shared (where relevant).

It is unlikely that a separate entity taking responsibility for all the communication activities will be a better option than the PROs. Because of the complexity and diversity of the issue, it may be more efficient and effective for the schemes to continue devising and running individual information and awareness campaigns. In addition, the PRO has an environmental target to meet and hence the incentive to ensure that this goal is met. Often a successful campaign may involve ensuring extra collection facilities are available which is within the remit of the PRO. If the State or its nominee takes over this function then it is not clear how this would be co-ordinated. Furthermore the PRO is more likely to have the expertise and knowledge of where the gaps lie in collection, sorting and recycling of waste than the DECLG. Finally, there is a real danger that in time of fiscal austerity the advertising and awareness budget, if part of DECLG, would be cut with no compensating reduction in the contribution by PROs.

Recommendations: While it is not recommended that a separate entity takes responsibility for PRI communication and awareness activities, it is recommended that the DECLG provide further co-ordination by:

- **Setting the broad framework and priorities for changing behaviours.** This can be achieved by the publication of National policy documents, PRO approvals, separate communications etc.
- Requiring PROs to develop **generic communication tools** in consultation with stakeholders to provide harmonised and coherent information. These tools should be made available to local authorities, new PROs entrants, self-compliers and NGOs. The messages to develop should focus on:
 - Sorting (sorting requirements, collection infrastructure and fate of waste, costs and funding, significance of labels on products).
 - Waste prevention (upstream eco-conception, downstream reuse etc.).
 - Communicating results of waste management.
- **Requiring PROs to develop a communication plan** when applying for PRO approval. This communication plan that is fully costed and includes a vision, clear objectives, initiatives proposed, time frames involved and resources required.
- **Requiring PROs to update their communication programmes annually.** These programmes should be **elaborated by the PROs in collaboration with other stakeholders** in the product chain / waste stream (producers, waste operators, EPA and local authorities). The communication programmes should be submitted to the DECLG for agreement. The DECLG should consult with the EPA in the approval process as they have developed expertise in successful communication campaigns.
- **National information and awareness initiatives** rest with the PROs but are carried out in consultation with the other PROs, the DECLG and the EPA. The DECLG may require PROs to collaborate further on joint information and awareness initiatives.
- **Local information and awareness initiatives** rest with the PROs but are carried out in consultation with the local authorities.

- For PRIs presenting specific challenges, the DECLG should consider setting up new **Working Groups** (e.g. Tyres, ELVs) or sub-groups in existing working groups (e.g. in the WEEE Batteries Monitoring Group) to facilitate the elaboration of collaborative proposals on communication.
- Facilitating the **sharing research and consumer insight across delivery bodies and increasing collaboration on research**. The DECLG should also commission independent monitoring of Irish recycling behaviours as this is critical to inform policy and communication initiatives. This could be achieved by specific call under the EPA Strive project.
- The DECLG may wish to mandate that the **PROs engage with one another with a view to launching cross PROs/ cross stream education and awareness initiatives**. The DECLG should be aware that such cooperation must reflect the shared or proportional obligations between schemes to meet targets and at all times occur within the confines of applicable competition law.

4.7 ENFORCEMENT

The objective of this section is to provide a review of the effectiveness of the enforcement arrangements under the PRI model.

4.7.1 Enforcement under the PRI Model

Enforcement is an important instrument for ensuring the implementation of PRIs (OECD, 2001). The key enforcement challenge for the DECLG and enforcement authorities is to provide a framework which maintains a trade-off between effectiveness and administrative cost and also a dissuasive effect for non-compliers without going too far towards the imposition of disproportionate penalties.

In this context, issues such as targeted enforcement actions, identifying priority sectors for monitoring, and defining “significant non-compliance,” constitute common concerns.

4.7.2 Issues to be Addressed

The main challenge that needs to be addressed by PRI enforcement is free riding¹⁰⁵, but there are other challenges such as fraud and theft. Some activities are within the law (e.g. consumer buying goods in another country) and not subject to enforcement, and some are not, in this case they are referred to as non-compliant and subject to enforcement.

There is scope for all kind of participants (consumers, producers, importers, retailers, collectors and recyclers) to be non-compliant with the PRI and waste regulations one way or another. Table 4.8 provides an overview of enforcement challenges and responsibilities for enforcement. In this section we will mainly focus on enforcement of producers, importers and retailers as reducing consumer free-riding may be better addressed by communication or economic instruments. The enforcement of waste collectors and recovery operators are also part of a wider enforcement framework as they also treat non PRI waste.

Table 4.8: Overview of Enforcement Challenges and Responsibilities

Who?	What?	Enforcement Responsibility
Consumers	<ul style="list-style-type: none"> Buying product in a jurisdiction not covered by PRI Using wrong receptacle for waste 	<ul style="list-style-type: none"> Custom and Excise above a certain threshold Local authorities / waste operators
Producers, importers, retailers	<ul style="list-style-type: none"> Not registered with the system at all Under declaring the amount of products put on the market Paying fees in low-cost jurisdiction and selling in higher cost one 	<ul style="list-style-type: none"> Local authorities or EPA PROs
Collectors	<ul style="list-style-type: none"> Unauthorised collectors taking the most valuable materials from skips Collectors overdeclaring collection 	<ul style="list-style-type: none"> Local authorities PROs
Recovery operators	<ul style="list-style-type: none"> Not meeting minimum 	<ul style="list-style-type: none"> Local authorities or EPA

¹⁰⁵ Free-riders are the actors in PRI systems that do not pay for the benefits they receive (OECD, 2001).

Who?	What?	Enforcement Responsibility
	requirements for waste treatment and not reporting waste data. <ul style="list-style-type: none"> • Overdeclaring recovery 	<ul style="list-style-type: none"> • PROs

While there are various ways to reduce non-compliance, there is usually a trade-off between effectiveness and the administrative cost. Achieving zero non-compliance, even if possible, would probably not be worth the cost.

The extent of non-compliance problems depends on the design of the PRI system and the type of product involved. Systems with a large number of producers have a higher potential for non-compliance than more concentrated markets. The scope for non-compliance is greater and more complicated to deal with when a large number of producers are part of a long production chain.

In some cases the cost of non-compliance does not threaten the viability of the PRI but raises concerns, as the non-complying businesses obtain a competitive advantage.

Addressing these problems is a shared responsibility between PROs and the enforcement authorities.

4.7.3 Core Requirements for an Effective Enforcement System

Enforcement of environmental regulation in Ireland is not new and Irish environmental regulators are responsible for in excess of 500 environmental protection functions within some 100 pieces of legislation (O'Leary and Lynott, 2011). Irish regulators built upon international experience from IMPEL (the network of European enforcement authorities)¹⁰⁶ and other resources and developed a number of specific requirements for an effective enforcement system. The Irish environmental

¹⁰⁶ The European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL) is an international non-profit association of the environmental authorities of the Member States, acceding and candidate countries of the European Union and EEA countries. The Association is the continuation of the informal network, which was commonly known as the IMPEL Network (<http://ec.europa.eu/environment/impel/>) and shares experience and develops guidance for best practice in environmental regulation and is a useful source of information

regulators also work with other international environmental regulators particularly with regard to cross-border issues where co-ordinated enforcement actions are required.

Clearly written and understood regulations, a systematic and consistent approach is a prerequisite to an effective enforcement system and comprises of a number of core requirements.

There are five key principles of enforcement, developed by IMPEL which guide enforcement practice and the selection of the appropriate enforcement response. The five principles are:

- **Proportionality in the application of environmental law and in securing compliance:** Enforcement action is taken in proportion to the magnitude of the breaches and/or environmental impact, taking account of the conduct of the parties involved.
- **Consistency of approach:** The environmental regulator should aim to ensure a consistent response, across the regulated communities and across different locations, to pollution and other incidents and in its use of powers and in decisions on whether or not to prosecute.
- **Transparency about how an environmental regulator operates:** It means helping those who are subject to regulation and others to understand what is expected of them.
- **Targeting of enforcement action:** The environmental regulators should focus their enforcement effort on activities that cause the greatest environmental damage, that pose the greatest threats to the environment or that undermine the public's confidence in the environmental legislation enacted to protect and improve the environment.
- **Implementation of the polluter pays principle:** The environmental regulator should apply the polluter pays principle and work towards ensuring that activities or persons that cause environmental damage are held financially accountable for their actions. The severity of the non-compliance and the possible enforcement action form a sequence of responses, which can be escalated to match the severity of the non-compliance.

The EPA in its 'Code of Practice for the Development of an Enforcement Policy for Unauthorised Waste Activities' (2009a) also identifies five core requirements for an effective enforcement system:

- **Detection:** Identification of potential offences is the first step in the enforcement chain. Detection activities need to be focused both on the regulated community and on illegal operators. Detection activities could include, but are not limited to:
 - Proactive targeted inspection of a sector (e.g. car scrapyards);
 - Follow-up on information gathered through a low cost telephone line such as the Illegal Dumping Line (1850 365 121);
 - Working with trade and industry federations.
- **Cessation:** Having detected an offence, the priority switches to bringing about an end to the unauthorised activity as quickly as possible. Cessation of the activity not only involves bringing the illegal offence to an end but also that the site is either remediated or regulated.
- **Clean-Up/Remediation:** The Code of Practice “Environmental Risk Assessment for Unregulated Waste Disposal Sites” (available on www.epa.ie) provides guidance on the environmental risk assessment of unregulated waste disposal sites. It sets out a detailed risk-based procedure that allows all historic unregulated waste disposal sites to be identified, the potential risks to be assessed and then the appropriate remedial measures or corrective actions to be put in place. The Code can also be applied to any new waste disposal site that is identified. The Section 60 Direction (ref. WIR:04/05) of 3 May 2005 details circumstances where waste should at all times be removed, such as wetlands. Securing the site, including the removal of waste from high-risk sites¹⁰⁷, should be a priority. Waste left *in situ* for extended periods of time should be avoided, as this is not consistent with the polluter pays principle.
- **Regularisation:** This involves proper regulation wherein the waste is handled and removed by licensed operators for recovery/disposal at licensed facilities¹⁰⁸. Illegally deposited waste can only be left in situ if a satisfactory environmental risk assessment carried out in

¹⁰⁷ This, inter alia, reflects the requirements of Article 4(1) of the Waste Framework Directive to ensure that waste disposal or recovery does not cause environmental harm.

¹⁰⁸ This, inter alia, reflects the requirements of Articles 4(2), 8, 9 and 10 of the Waste Framework Directive which are aimed at ensuring that waste is covered by a waste permit or licence or is otherwise lawfully held.

accordance with the EPA Code of Practice has been completed and a waste licence or permit has been granted.

- **Penalties & Sanctions:** The imposition of penalties & sanctions in a timely and consistent manner is central to an effective enforcement system. Consideration of the nature and extent of the illegal activity will dictate the degree of the sanctions that need to be taken against the polluter to ensure that:
 - Persons will not gain financial or other advantage through by-passing the legal requirements of existing waste licence or permit, or compliance with other legal requirements.
 - The risk of the offender repeating the offence is minimised;
 - Others are discouraged from committing the same offence.

In addition, it is anticipated that the Commission will present a general framework proposal in autumn 2014 for a Directive on Environmental Inspections that will apply to the entire environmental acquis, in accordance with the provisions of the Seventh Environment Action Programme.

The IMPEL key principles of enforcement and the applicable EPA core requirements should guide PRI enforcement activities.

4.7.4 Responsibilities for Enforcement

As shown in Table 4.8, in the PRI model there are three groups of organisations which have responsibility for enforcement. These groups are the local authorities, the EPA and the PROs.

4.7.4.1 Key role of Local Authorities

The enforcement of regulations to implement producer responsibilities initiatives for packaging, farm plastics, tyres and end-of-life vehicles (ELVs) is primarily the responsibility of local authorities. Enforcement of the WEEE Regulations is carried out jointly by the EPA and local authorities.

The powers of the Local Authorities which are given by the Waste Management Acts and are applicable across all PRIs include the power to:

- Enter and inspect a premises,
- Serve a notice on an individual or company and require the production/ or proof of compliance through information and documentary evidence, and
- Take summary proceedings for an offence, and in the case of prosecution, recover the cost of the proceedings from the offender.

Local Authorities are also responsible for the permitting of recycling and recovery facilities located within their administrative area along with the permitting of the collection and transportation of recycled and recovered waste¹⁰⁹. Note, any facility recovering less than 50,000 tonnes per annum of non-hazardous waste, requires a waste permit or certificate of registration; except a Waste Recovery Facility that exceeds the thresholds set out in Annex I of the Industrial Emissions Directive which requires an IPPC licence.

For tonnages above this level a waste licence is required.

All local authorities now also have waste enforcement policies and use the Recommendation of Minimum Criteria for Environmental Inspections (RMCEI) plans described in Section 4.7.5 to prioritise consistent enforcement actions.

Across all their responsibilities, 34,711 planned routine waste inspections and 14,050 completed non-routine waste inspections were completed by the 120 local authority waste enforcement staff (an average of 406 inspections per person) (DECLG, 2012a). These activities led to 10,581 enforcement actions initiated (7,193 closed) and 1,186 prosecutions initiated (918 closed). These enforcement actions and prosecutions all require time and resources.

With regards to PRI, 3,112 inspections or 6.3% of total waste inspections were carried out by local authorities in 2011. Assuming the 120 local authority waste enforcement staff were involved this equals to an average of 25 inspections per person. Figure 4.7 shows that packaging enforcement accounts for the largest proportion of enforcement. Even though the producer responsibility

¹⁰⁹ In 2012, Offaly County Council was designated as the Nominated Authority for the processing of all new Waste Collection Permit applications and review applications received on or after that date. This single Nominated Authority is known as the National Waste Collection Permit Office (NWCPO).

inspections activities peaked in 2009 due to new regulations to be enforced (batteries) and increase in tyres inspections, local authorities' inspections have reduced by 35% from 2007 to 2011. This decrease is likely to reflect the decrease in local authority reduced income¹¹⁰. Higher levels of inspections would be expected when a new regulation is introduced to increase awareness of the obligations.

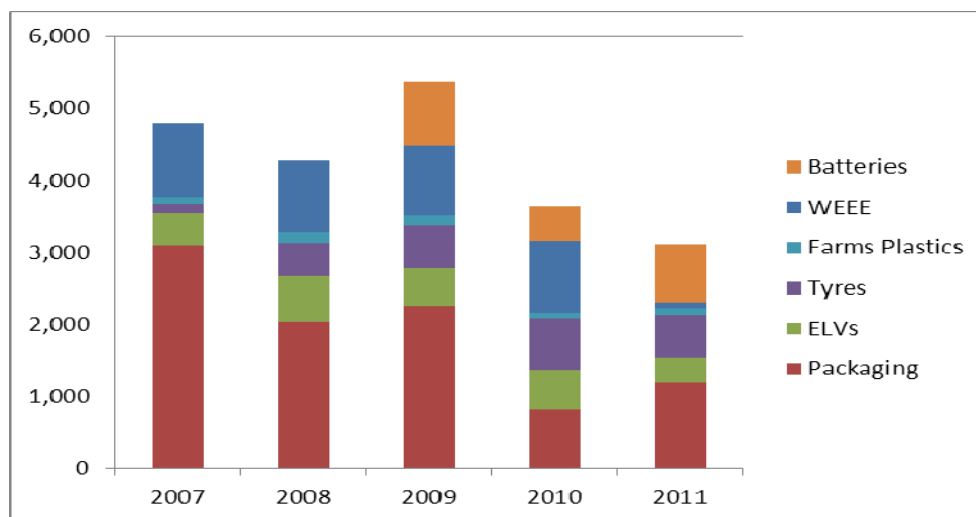


Figure 4.7: Producer responsibility inspection activities by local authorities from 2007 to 2011¹¹¹

4.7.4.2 Role of the EPA

The Environmental Protection Agency¹¹² is at the front line of environmental protection and policing. The EPA's mission is to ensure that Ireland's environment is protected, and the EPA monitors changes in environmental trends to detect early warning signs of neglect or deterioration.

The EPA is an independent public body established under the Environmental Protection Agency Act, 1992. The other main instruments from which the EPA derives its mandate are the Waste Management Act, 1996, and the Protection of the Environment Act, 2003.

¹¹⁰ Local authority current expenditure is funded from a variety of sources including government funding, Charges for Goods and Services, business rates, Charge for Non Principal Private Residences etc.

¹¹¹ 2007 – 2008 data (EPA, 2009), 2009-2011 personal communication with Cormac MacGearailt, EPA

¹¹² <http://www.epa.ie/about/roles/>

The EPA has a wide range of functions to protect the environment, and its primary responsibilities include:

- Environmental licensing
- Enforcement of environmental law
- Environmental planning, education and guidance
- Monitoring, analysing and reporting on the environment
- Regulating Ireland's greenhouse gas emissions
- Environmental research development
- Strategic environmental assessment
- Waste management

With regards to enforcement, the Office of the Environmental Enforcement (OEE) in the EPA implements and enforces environmental legislation. It also deals with members of the public who have exhausted all other avenues of complaint. Its main functions are to:

- Enforce the Integrated Pollution Control (IPC), Integrated Pollution Prevention and Control (IPPC) and waste licences issued.
- Prosecute or assist in the prosecution of significant breaches of environmental protection legislation.
- Monitor and report on how local authorities perform in their environmental protection functions, and help them to improve their performance (see section on the NIECE).

The PRIs being enforced by the EPA include Waste Electrical and Electronic Equipment (WEEE), waste batteries and accumulators and restriction of hazardous substances (RoHS).

Regulations are in place, which restrict the type and quantity of hazardous substances used in certain products. This reduces the impact of the hazardous substances where the products are disposed of. In certain cases the enforcement responsibility for these regulations is split between the EPA and local authorities. In general the EPA is responsible for enforcing the restrictions on the content of the materials whereas the local authorities deal with the enforcement of local retailers and collection points. The EPA undertakes inspections to ensure compliance under the product compliance requirements for electrical and electronic equipment, batteries and paints.

These are detailed in Figure 4.8 and are in addition to the inspections undertaken by the local authorities.

Obligations under the Batteries Regulations came into effect on 26 September 2008. Enforcement of these Regulations by the EPA is integrated into existing structures for WEEE enforcement and the scope of enforcement inspections carried out since this date include both WEEE and batteries compliance.

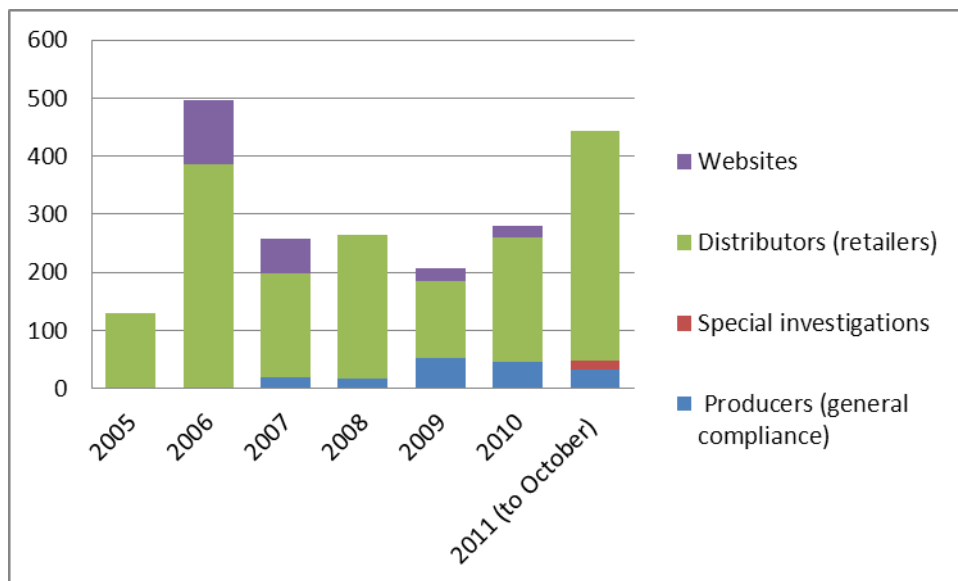


Figure 4.8: Summary of Inspections Completed by the EPA¹¹³

In order to assist with enforcement, the EPA has been outsourcing inspections for compliance with the WEEE, batteries, ROHS and Decopaints Directives¹¹⁴.

4.7.4.3 Role of Compliance Schemes

Producers and their PROs are able to deal with non-compliant members by peer pressure, monitoring, self-reporting requirements, sanctions, and even expulsion from the PRO. But such

¹¹³ <http://www.epa.ie/downloads/pubs/waste/weee/Enforcement%20update%20note%20November%202011.pdf>

¹¹⁴ http://www.etenders.gov.ie/search/show/search_view.aspx?ID=SEP170017

methods are ineffectual against free riders who operate outside of the Producer Responsibility regime that applies to them.

PROs have no regulatory enforcement powers but they have obligations to notify local authorities and/or EPA of organisations joining or leaving the scheme. They also provide information to the regulator of non-compliant businesses. Some PROs are also taking a proactive approach to reducing non-compliance by increasing awareness of producers' obligations. For example, TRACS main communication activities are focusing on awareness raising of producers and retailers compliance. The IFPPG has also appointed a compliance officer.

When the PRO has done what it can to minimise non-compliance, it needs government help (e.g. the EPA or local authorities) to obtain compliance by PRO non-members and other free riders.

PROs also audit their members to validate declaration of the amount of products put on the market and in the case of PROs financing or organising collection and treatment they audit waste management companies involved in collection and recovery.

4.7.5 Minimum Criteria for Environmental Inspections Plans

In 2001, the European Parliament and Council made a Recommendation on the Minimum Criteria for Environmental Inspections (RMCEI) in EU Member States. The purpose of the Recommendation is to strengthen compliance with, and contribute to a more consistent implementation and enforcement of, EU environmental law.

The Recommendation requires that authorities, with the responsibility for regulating industrial and other enterprises subject to authorisation, permitting or licensing under EU Law, undertake their inspection duties in accordance with the Recommendation.

The key requirements of the Recommendation are that authorities:

- Produce a plan for environmental inspections, including a general assessment of major environmental issues within the plan area and a general appraisal of the state of compliance by the controlled installations with EU legal requirements. For example dealing with the illegal infill of wetlands and other locations of high biodiversity interests with construction and demolition waste, could be a priority in an area or region and inspections planned accordingly;

- Undertake inspections of regulated installations and produce written reports of those site inspections.

The RMCEI inspection planning system has developed to a point where all 34 local authorities produce annual inspection plans¹¹⁵. Regional and local circumstances are taken into account with all activities carried out in accordance with a risk-based prioritisation system.

The inspection plans produced by Irish regulatory authorities must:

- Be approved by senior management (i.e. Director of Services) within the local authority;
- Define the time period and geographical area to which the plan relates;
- Detail specific sites or types of installations covered by the plan;
- Include programmes for routine environmental inspections, taking into account environmental risks;
- Include procedures for non-routine inspections such as dealing with complaints, accidents and incidents;
- Develop procedures to co-ordinate actions with other Inspecting Authorities; and
- Define a time frame and methodology within which the plan must be reviewed.

Enforcement plans should also set out the resources that will be applied to enforcement and review the resources, training and any specialist advice requirements. In this regard efforts to co-

¹¹⁵ Examples of RMCEI plans can be found at:

<http://www.lcc.ie/NR/rdonlyres/BC2CD750-F330-4BC4-BoB9-7F1A70039F32/0/LimCoCoRMCEIInspectionPlan2011.pdf>

<http://www.southtippcoco.ie/newenvironmenthome/en/media/2010%2002%2001%20RMCEI%20Plan%202010%20Excl%20Appx%20C.pdf>

ordinate with other regulatory authorities and also the Garda Síochána should be planned and performed so as to maximise the effectiveness of the use of resources.

A review of RMCEI plans for three local authorities indicated inspections priorities for WEEE, batteries, ELVs and tyres.

4.7.6 Network for Irelands Environmental Compliance and Enforcement

The Network for Irelands Environmental Compliance and Enforcement (NIECE) previously known as the Environmental Enforcement Network (EEN) is operated by the Agency in conjunction with other public bodies¹¹⁶ with responsibility for the implementation and enforcement of environmental legislation. It was established as one of the response to the European Court of Justice Case C/494/01.

The NIECE's core objective is to foster co-operation between all regulators involved in the enforcement of environmental legislation so that there is a higher and more consistent standard of enforcement achieved throughout the country (i.e. assure a seamless chain of responsibility for waste).

The key NIECE functions are to:

- Ensure more effective co-ordination in the implementation of environmental enforcement activities;
- Provide a framework for a co-ordinated approach to special investigations/actions;
- Develop a consistent approach to the enforcement of environmental legislation;
- Promote the exchange of information and experience in the implementation, application and enforcement of environmental legislation;

¹¹⁶ Participants of the Network include the EPA, all local authorities, government departments, An Garda Síochána, the National Bureau for Criminal Investigations, the Northern Ireland Environment and Heritage Service, the Police Service of Northern Ireland, the Fisheries Boards, the Health Service Executive, the Revenue Commissioners, and the Director of Public Prosecutions.

- Provide assistance to local authorities and other relevant agencies in the development of best practice;
- Provide a mechanism for feedback to policy makers and legislators on the practical implementation of policies and regulations.

The NIECE comprises public bodies with enforcement responsibilities and saw the establishment of a number of working groups dealing with priority issues such as Transfrontier Shipment of Waste, packaging waste and unauthorised waste activities. These groups worked together to produce guidance material, as well as planning and executing concerted enforcement actions. NIECE, through its working groups, holds bi-annual workshops to agree priorities for the year and to review progress with previous enforcement plans.

4.7.7 Recommendations

The recommendations below should be examined in conjunction with implementation of recommendations arising from the review of the respective waste regulation and enforcement roles of the EPA (office of environmental enforcement) and local authorities.

4.7.7.1 Resourcing

The average level of inspections per person in 2011 was 406 inspections per person per year. The local authority enforcement network has therefore little spare capacity to increase inspections for PRI enforcement or enforce new PRI regulations without additional resources or increased efficiencies.

While it is acknowledged that the public finances are over stretched, clearly if governments are enacting new environmental regulations, they need to ensure that adequate provisions are in place to support enforcement.

The reduction in the number of regional formations to three main groupings (DECLG, 2012a) should lead to better co-ordination and sharing of resources, **thus freeing resources**, some of which could be allocated towards PRI enforcement. These resources should focus in particular on packaging, ELVs, tyres and WEEE leakage (see specific recommendations in the waste specific sections). Consideration could be given to designating one of the proposed new lead authorities for enforcement as a “centre for excellence” with respect to PRI enforcement.

The further use of **outsourcing** should be considered for routine inspections. Outsourcing is a proven business practice which provides a flexible solution to resourcing issues. There is also a proven model, which has been used by the EPA for the WEEE inspections¹¹⁷ and local authorities.

The **co-funding of public enforcement** by the PROs should be explored with the PROs. Increased compliance is of mutual benefits to the authorities, the PROs and the compliant producers. This is similar to the IPPC model where the licensee funds monitoring and EPA enforcement. However, there is a need to keep enforcement separated from the PROs to avoid conflict of interest (e.g. excessive focus on self-compliers). Repak has been highlighting for many years that the lack of enforcement is a significant issue for its members. If increased enforcement was to bring more companies to participate in the compliance scheme, this could result in an increase in the PRO income and/or a potential decrease in fees paid by existing scheme members. The PRO could carry out its own cost benefit analysis of how much extra enforcement is required.

The fees charged to self-compliers should reflect the cost of enforcing the self-complying system.

Recommendations:

The reduction in the number of regional formations to three main groupings should lead to better co-ordination and sharing of resources, **thus freeing resources**, some of which could be allocated towards PRI enforcement. These resources should focus in particular on packaging, ELVs, tyres and WEEE leakage (see specific recommendations in the waste specific sections of the main report). The further use of **outsourcing** should be considered for routine inspections. The **co-funding of public enforcement** by the PROs should be explored with the PROs. Increased compliance is of mutual benefit to the authorities, the PROs and the compliant producers. The fees charged to self-compliers should reflect the cost of enforcing the self-complying system.

¹¹⁷ http://www.etenders.gov.ie/search/show/search_view.aspx?ID=SEP170017

4.7.7.2 Shared Services

Most environmental enforcement programmes around the world and in Ireland are decentralised to take advantage of local knowledge of facilities and the more specialised resources available at the local level. Despite this bias towards decentralisation, some programs are centralised where there is a clear need for national involvement, e.g., to handle transboundary pollution; where local desire to create favourable conditions for industry may lead to lax enforcement; or where unique or very specialised expertise is concentrated at the national level (INECE, 2009).

Arguably, the enforcement of PRI regulations require specialised expertise. Local authorities and the EPA have confirmed that the PRI regulations and their enforcement of PRI obligations are particularly complex. While significant expertise and experience has been developed within the local authority system, not all local authorities are equal. This poses challenges to the local authority's personnel and suggests that a shared service or lead authority / centre of excellence approach¹¹⁸ with dedicated personnel with the relevant expertise dealing with PRI enforcement would help overcome some of the associated challenges.

The main benefits of having dedicated PRI enforcement units¹¹⁹ would be to have a team with specialised skills fully dedicated to the enforcement of the PRIs, providing a limited number of points of contact for the DECLG, PROs and the EPA. A central point of contact could also be provided by the EPA or the DECLG. It would be easier to co-ordinate inspection campaigns and monitor the outcomes of these campaigns. A disadvantage to this would be the loss of the relationships built up between the local authorities and the businesses in their own areas. However, a central PRI enforcement unit enforcing all PRIs could bring different types of inspection

¹¹⁸ A shared service approach is already used for issuing all waste collection permits in the state which has been centralised in a single national Waste collection permit office operated by Offaly County Council, as a shared service on behalf of all local authorities since February 2012. More recently a shared service approach was used for the consolidation of local authorities in 3 Waste Management Planning Regions mirroring the Regional Framework set out in "Putting People First" Government Action Programme for Effective Local Government, (2012) and the new regional waste management planning configuration set out in the DECLG Waste Policy Document "A Resource Opportunity" launched in July 2012.

¹¹⁹ There could be one dedicated unit or three dedicated units reflecting the proposed regional formations. This unit could operate under a coordinating body such as the NIECE. These units could be resourced from existing local authority waste enforcement personnel and also use outsourcing to assist with inspections.

activity together in a single or harmonised process which increases coherence and reduces costs to business and authorities¹²⁰.

In addition, the issue of PRI enforcement does not always follow local authority boundaries, so communication and reporting between local authorities' enforcement personnel should be facilitated. The use of Customer Relationship Management tools should be considered to share information.

It is therefore recommended that one of the proposed new lead authorities for waste enforcement should be identified as a centre for excellence specifically for PRI enforcement. This option should be considered when the DECLG implements the recommendations from the review of respective waste regulation and enforcement roles of the EPA (office of environmental enforcement) and local authorities in 2013/2014. The model could be based on the overview shown in Figure 4.9.

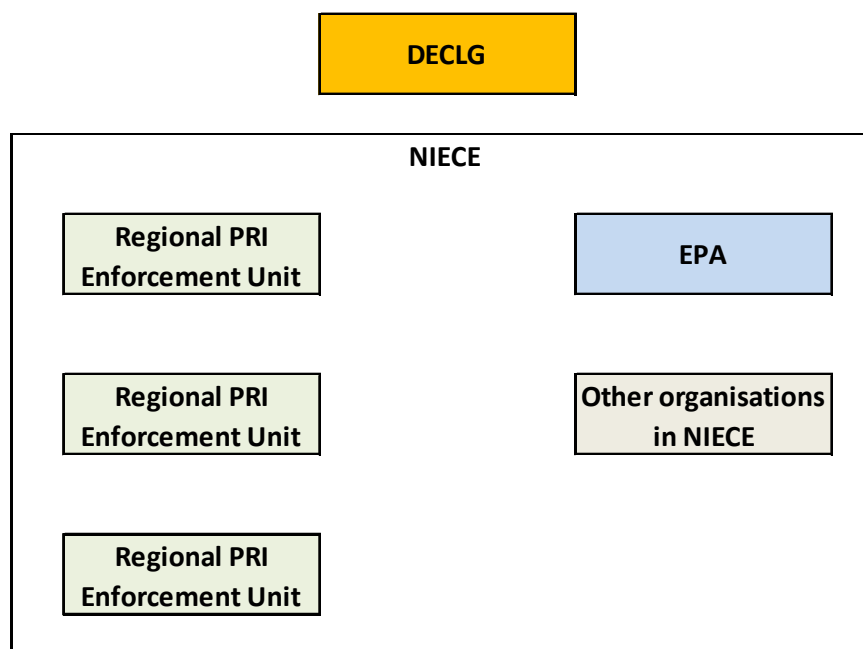


Figure 4.9: Overview of Proposed PRI Enforcement Framework

¹²⁰ This is one of the best practice recommended by IMPEL following a Better Regulation Principles in Improving the Efficiency and Effectiveness of Environmental Inspection Authorities (IMPEL, 2009).

4.7.7.3 The Role of Better Regulation

There has been significant progress in the design of regulations in the last decade. There is early engagement with the affected industry and other stakeholders at early stages and formal consultation on Draft Regulations. Cost benefits analysis of primary legislation has also become more common.

However, even with these progresses, it has been highlighted by the enforcement authorities and other stakeholders that the current PRI regulations remain complex and sometimes challenging to understand and apply.

In addition to the current process of the PRI Review, the DECLG should consider further involvement of businesses and enforcement officers at the early stages of the development or review of PRI Regulations to ensure that these regulations are clear and well understood.

4.7.7.4 Capacity Building

Capacity building is a critical function of enforcement, and the NIECE network in collaboration with the Environmental Services Training Group have an important role to play in this regard.

In addition to the current role of the NIECE, the development of standard enforcement documentation would also be useful to facilitate enforcement of PRIs. The Environmental Services Training Group could also develop further training packages similar to the course on enforcement of the Packaging Regulations for local authorities. Additionally training videos and webcasts could be developed to facilitate capacity building. A dedicated enforcement website or section within the NIECE/EDEN extranet could also be used to store all relevant documents, videos and contents.

There could also be consideration in setting up a PRI working group(s) as part of the NIECE, which could be used to share the expertise and experience which has been developed within the local authority system on the issues relating to PRI enforcement. Although if dedicated PRI units are setup, this working group may be duplication.

In order to improve collaboration between PROs and the local authorities, the PROs should be invited to input into some of the working group tasks.

4.7.7.5 Effectiveness of RMCEI for PRI enforcement

The RMCEI Framework provides a rational approach to prioritising enforcement. The priorities focus on solving long term and recurring non-compliance issues with particular emphasis on issues which are the subject of:

- European Court of Justice decisions against Ireland (e.g. End of Life Vehicles (unauthorised) sites).
- EPA or DECLG directions concerning environmental pollution (e.g. increase in tyre inspections in 2009 following EPA direction).
- Complaints or Pollution Incidents that can impact on public health or pose serious environmental impacts.
- Investigation of reports made to the illegal dumping line reports.
- Investigation, assessment and verification of complaints received by the local authorities and where possible “Close Out” of Long-Standing complaints.
- Assessment of compliance at facilities that are subjects to EU complaints.
- Verification that the monitoring required by all discharges licences is being carried out and reported to the local authority.
- Prioritisation of compliance at facilities that had a high level of non-compliance or were problematic to enforce in the past.

The high priorities areas generally apply to environmental problems after they happened. Enforcement of producers or retailers obligations are not rated as high to these priorities as non-compliant PRI producers undermines the system but it may take years for the targets to be missed or the environmental problems to appear. It has taken specific incidents such as enforcement action from the EU (e.g. illegal waste disposal at ELV sites) or media exposure (e.g. tyres stockpiling) to give priority to PRI enforcements. From an environmental point of view, enforcement of PRI producers needs to be more preventative as opposed to being reactive, therefore, and requires to be treated as a separate issue.

In line with the establishment of dedicated PRI enforcement units, these units should continue to follow the RMCEI Framework to allocate priorities, however the scope of the priorities should be on PRI waste only.

4.7.7.6 Use of Civil Sanctions

The use of **civil sanctions** would also provide flexibility for the enforcement authority and reduce the cost of enforcement to public authorities. An example is provided in Box 6.

Box 7: Civil Sanctions in the United Kingdom¹²¹

In January 2011, the civil sanctions powers of the Environment Agency (EA) were extended. They include now:

- **Variable Monetary Penalties (VMPs)**. The EA can choose to fine a non-compliant company based on the severity of the offence. This can be anything up to the maximum of £250,000 per offence committed. The fine is calculated on a number of factors, which include the costs avoided through non-compliance, a deterrent factor and aggravating circumstances (e.g. if the company contacted a PRO in the past but failed to sign up to that compliance scheme).
- **Enforcement Undertaking (EU)**: Businesses can complete an Enforcement Undertaking Offer Form which can be submitted voluntarily to the EA. The business must offer a sum of money and put forward a suitable environmental project which they agree to fund with the money. They will also need to demonstrate that they have put in place a number of internal systems / processes to ensure they are complying with the relevant regulations and will remain compliant in the future.

¹²¹ <http://www.environment-agency.gov.uk/business/regulation/116844.aspx> (As at 30/09/2012)

It may also be worthwhile to incentivise local authorities to enforce the PRI by, for example, requiring those not in compliance with the Regulations to pay fines to the local authorities themselves. This would require specific provisions to be made in the legislation for that purpose.

4.7.7.7 Penalty Levels

Setting **penalties** at an appropriate level is also part of a successful enforcement framework. As shown in the two case studies in Section 7.9.9 for the packaging PRI and Section 9.10.6 for the tyres and waste tyres PRI, the summary convictions are not likely to be a significant deterrent. The summary convictions need to be set to exceed the gains made by non-compliance otherwise they are not likely to be a significant deterrent.

4.7.7.8 Public Disclosure of Successful Prosecutions

Public disclosure of producers who have been found to cheat should be used to encourage compliance. This will increase the costs of not being compliant therefore reduce the incentive to cheat. Many stakeholders credited the success in enforcing the WEEE Regulations to the approach taken by the EPA in disclosing the companies which were prosecuted. There are precedents with the Health and Safety Authority¹²².

4.7.7.9 Identification of Non-compliant Producers

Improving the identification of non-compliant producers will also facilitate enforcement and reduce risk to the State. A number of methods can be used for example:

- A central register for compliant businesses should be established to allow more transparent and efficient tracking. The PROs and local authorities for example, could host this service on their website.
- Peer group pressure from obligated businesses can be expected to play an important role in reducing non-compliance by producers. There is an economic incentive to report competitors who cheat the system, to the extent that they can be identified.

¹²² <http://www.hsa.ie/eng/enforcement/Prosecutions/>

- All local authorities or state bodies tendering out contracts should require all tendering organisations to furnish proof of compliance (e.g. copy of the producer's current 'Certificate of Registration' with a PRO or registration with local authority) with Irish Regulations including compliance with PRIs. If the supplier does not have a valid certificate, the supplier should register as required by the relevant PRI Regulations, or be disqualified from the procurement process¹²³. The buyer should report producers proven to be non-compliant with producer responsibility obligations to the relevant enforcement authority. Private sector organisations should also apply the same principles in order to assist with enforcement.
- Other options were suggested by Repak (2004) such as requiring all limited companies to include a statement by their Directors in their annual return to the Companies Registration Office to confirm that they have complied with their obligations under the Waste Management Legislation (Tyres, Packaging, WEEE, and Batteries etc.). This statement could be audited by the companies' auditors and contained in the auditor's report. This would place the obligation of compliance on the companies' directors. Other options suggested by Repak included tying in the producer responsibility compliance regime with the obligation to obtain a tax clearance certificate. While this could provide an alternative in the long term, this may be difficult to implement as it could require changes in the regulations which control the provisions of annual return to the Revenue Commissioners. This could also result in some additional costs to businesses.

Industry or trade associations track and publicise developments that may affect their members. Therefore, they can be important dissemination channels for communicating requirements, methods of compliance, and compliance activities. These associations also usually try to influence the development and implementation of environmental legislation and programs.

4.7.7.10 Monitoring Enforcement Outcomes

Information on the outcomes of enforcement is critical for effective enforcement programmes. One of the challenges in assessing the effectiveness of PRI enforcement is the lack of data on the outcomes of the enforcement. Information on all PRI inspection is provided by the EPA Focus on

¹²³ Under the packaging regulations, a producer can be below the de-minimis definition of "major producer", in this case they can provide a self-declaration stating that they are below that threshold.

Environmental Enforcement in Ireland reports (2007 and 2009), but there is only limited information on the success of enforcement. Only for the WEEE and batteries waste streams are the number of prosecutions and level of fines published (EPA, 2011a).

The EPA should include information on outcomes of the enforcement for all PRIs in its “Focus on Environmental Enforcement in Ireland” report. However, tracking these outcomes may be resource demanding. The use of an electronic system as shown in Box 7 could assist in evaluating the effectiveness of enforcement.

Box 8: The Case Conclusion Data Sheet (CCDS), US¹²⁴

The Case Conclusion Data Sheet (CCDS) is a manual data collection tool used by the US Environmental Protection Agency to collect information on concluded federal enforcement cases including the case name and identification number, injunctive relief, environmental benefits (including environmental benefits from Supplemental Environmental Projects), and assessed penalties. The US EPA uses the data obtained from the CCDS to assess the environmental outcomes of its enforcement program and report annual accomplishments to the public, Congress, and Office of Management and Budget.

Recommendations:

As part of the review of enforcement structures, a lead authority should be identified and designated as a centre for excellence for PRI enforcement.

The DECLG should examine options for simplifying and streamlining enforcement mechanisms and penalties for offences. Where possible, fixed payment notices should be used as punishment for lesser offences as a means of providing a sharp response to breaches and of keeping smaller scale cases away from the Courts.

The DECLG should consider further involvement of businesses and enforcement officers at

¹²⁴ Accessed on 23/10/2012 at <http://www.epa.gov/compliance/resources/publications/data/tools/ccds.pdf>

the early stages of the development or review of PRI Regulations to ensure that these regulations are clear and well understood.

The development of standard enforcement documentation through NIECE to facilitate enforcement of PRIs.

There could also be consideration in setting up a PRI working group(s) as part of the NIECE. In order to improve collaboration between PROs and the local authorities, the PROs should be invited to input in some of the working group tasks.

Public disclosure of producers who have been found to cheat should be used to encourage compliance.

Improve the identification of non-compliant producers.

The EPA should examine the potential for the inclusion of information on outcomes of the enforcement for all PRIs in its “Focus on Environmental Enforcement in Ireland” report.

4.8 PREVENTION AND REUSE

In the current very challenging economic conditions, prevention has been shown to reduce costs; improve competitiveness while encouraging innovation and the adoption of cleaner processes and products (EPA, 2012b). In other words, prevention has an important contribution to make to the development of a cleaner and greener smart economy in Ireland.

This section examines how to increase the focus of the compliance schemes on the prevention of waste with regards to WEEE and packaging waste streams, and the potential to develop reuse in the schemes.

4.8.1 Legislative Provisions

There is a growing body of national and EU environmental legislation – designed to “decouple” economic activity from the harmful impacts of waste.

This environmental legislation seeks to enhance waste prevention by introducing mandatory criteria to reduce impacts of products on the environment (e.g. packaging waste, ROHS, WEEE and Batteries Directives). Many products or components which were commonly procured in the recent past (e.g. components with brominated flame retardants) can no longer be placed on the market under current legislation.

There are also provisions in the *EU Directive on Waste (98/2008/EC)* (Waste Framework Directive) highlighting the growing focus on prevention and reuse. The Waste Framework Directive also clarifies important definitions in this area as follows:

*“Prevention” means measures taken **before** a substance, material or product has become waste that reduces:*

- a. the quantity of waste, including through the re-use of products or the extension of life span of products;*
- b. the adverse impacts of the generated waste on the environment and human health; or*
- c. the content of harmful substances in materials and products.*

*“Reuse” means any operation by which products or components **that are not waste** are used again for the same purpose for which they are conceived.*

*“Preparing for re-use” means checking, cleaning or repairing recovery operations, by which products or components **that have become waste** are prepared so that they will be re-used without any other pre-processing”.*

The provisions of the Waste Framework Directive are transposed into Irish law by the *European Communities (Waste Directive) Regulations 2011* (SI 126 of 2011) (hereafter the Transposition Regulations). This is a significant piece of legislation which introduces many new obligations for public and private sector waste operators (including compliance schemes) as well as for regulatory activities.

The Transposition Regulations define ‘waste prevention and management legislation and policy’ as:

- (a) The Waste Management Act and regulations made under the Act,
- (b) Policy issued by the Minister,
- (c) Waste management plans made by a local authority, or
- (d) Waste prevention programmes guidance or policy issued by the EPA.

There is no direct reference to EU policy, however these are the primary mechanisms under which the requirements of EU policy and legislation are implemented at the national level.

There are significant legal changes introduced by the transposition:

- The **waste hierarchy** is for the first time, in national statute, legally established. Waste prevention is stated as representing the highest priority for policy makers, waste producers and regulatory authorities. The legislation states that the hierarchy ‘shall apply as a priority’, and that competent bodies are to encourage production and waste management options that deliver the best overall outcome. In relation to the production aspect, Life Cycle Thinking¹²⁵ is introduced as a decision support framework.
- A new Section 27A to the Waste Management Acts 1996-2011 (via Regulation 13 of the Transposition Regulations) makes it a legal obligation to prepare **waste prevention programmes**. The EPA is now the competent authority to establish these programmes¹²⁶, and shall be revised at least once every six years.
- The Transposition Regulations also clarifies **responsibilities for waste producers and holders**.

¹²⁵ Life Cycle Thinking is a thought or decision process that seeks to identify improvements and to lower the overall negative environmental impacts of a good or service through all stages across its life cycle (design — raw material sourcing — manufacture — distribution — use — post-use (Disposal/Recovery) phases).

- Namely, it is a duty to ensure the recovery of waste in accordance with the hierarchy (with prevention at the top), and it is an offence not to.
- Moreover there is a responsibility on waste producers to treat waste or have it treated in accordance with the hierarchy.
- The Regulations also provide a framework for decision makers to consider a substance or object, resulting from a production process, as a by-product rather than a waste. Any intervention that sees a material diverted from the waste stream to an acceptable and safe form of beneficial use is contributing to waste prevention success.

The recent policy document from the DECLG '**A Resource Opportunity Waste Management Policy in Ireland**'¹²⁷ (2012a) confirms:

- The position that waste prevention and resource efficiency are crucial elements of a platform for sustainable economic growth.
- The role of the EPA in the development of coordinated approaches with other state agencies focusing on resource efficiency, prevention and reuse. The National Waste Prevention Programme will form the foundation for all waste prevention work and will support and mentor programmes at national, local and community level.

The Policy commits local authorities to have regard to prevention obligations in their Regional Waste Management Plans, and also commits to requiring producer responsibility schemes, as part of the conditions of their approval, to formulate, implement and demonstrate significant waste prevention and re-use initiatives for their particular waste streams.

The Policy also acknowledges the need for Ireland to work at a European level to secure EU-wide engagement with large scale international producers in relation to product design and anticipates further use of economic instruments to drive change in production and consumption behaviour.

¹²⁶ The Irish National Waste Prevention Programme can be found at <http://www.epa.ie/waste/nwpp/>

¹²⁷ <http://www.environ.ie/en/Publications/Environment/Waste/WasteManagement/FileDownload,30729,en.pdf>

In the areas of reuse and preparation for reuse, the new policy seeks to encourage and promote through the renewed National Waste Prevention Programme (NWPP), the environmental awareness work of local authorities, the PROs and the enterprise support agencies.

The leadership role of the public sector in developing a sustainable economy is reflected in the policy and it plans to develop a new public sector reuse policy to ensure that public sector organisations give full consideration to feasible reuse options before embarking on the purchase of new goods.

4.8.2 Producer Responsibility and Waste Prevention / Reuse

Extended Producer Responsibility (EPR) is laid out in Article 8 of the Waste Framework Directive 2008/98/EC. It allows Member States to introduce measures legislative or otherwise to ensure a producer of a product has extended producer responsibility. Such measures may include acceptance of returned products and associated waste, management of waste and financial responsibility for such activity, but also information on product reusability or recyclability and product design to reduce environmental impacts and waste generation. This demonstrates that the design and operation of PRIs should place on prevention and reuse.

4.8.2.1 PRI Features relevant to Waste Prevention and Reuse

Instead of focusing on point sources such as production sites and end-of pipe solutions, Extended Producer Responsibility (EPR) seeks to reduce the overall environmental impacts of products and their management throughout their life cycle. Without prescribing what should be done, EPR aims to **prevent environmental problems** at source via the provision of incentives for changes at the design phase of a product's life. The incentives are provided by delegating responsibilities to producers.

By extending responsibility related to end-of-life management to producers, a PRI aims not only to improve the end-of-life management per se, but also to link the *upstream* (design phase) of the product's life cycle with *downstream* (end-of-life management) (Tojo, 2004). Table 4.9 shows the influence producers can have.

Table 4.9: Producers Influence on Waste Prevention and Reuse

	Upstream (design phase)	Downstream (end-of-life)
Waste Prevention	Reducing weight of inputs or concentration of hazardous materials.	Helping buyer to make pro-environmental choices.
Waste Reuse	Design for disassembly.	Supply goods for reuse Supply information on disassembly.

Despite the envisioned upstream environmental improvements as a consequence of EPR, the focus of most PRIs, has been on the improvement of **end-of-life management** (collection, recycling and recovery) of materials rather than **design change**.

There has also been limited focus from PRIs on facilitating reuse. This is an area where PROs have a central role to play and facilitate access to goods for reuse. However, there is a dilemma for producers. Producers can see the benefits of Business to Business reuse as this can provide competitive advantage through reverse logistics. The benefits are not as clear for the Business to Consumer market where they do not have the same control of the product chain, have concerns regarding brand protection and see remanufactured products as potential competitors to their existing product range.

4.8.2.2 Effectiveness of PRIs on Waste Prevention and Reuse

Internationally, there has been much debate on the effect of producer responsibility initiatives on waste prevention, but research is more limited on reuse.

There are a number of factors which make **measuring the effectiveness of PRIs on waste prevention and reuse difficult**. For example, waste prevention and reuse activities can take various forms with a wide range of actors participating and the understanding of individual and collective responsibility varies. It is therefore difficult to quantify these activities and their overall contribution in reducing environmental impacts.

There are mixed views on the effect of PRIs on design changes. According to United Nations University report (2008), there is no evidence that the measures in the WEEE Directive 2002/96/EC seeking to induce design modifications that make WEEE easier to dismantle, recycle and recover has led to design changes. On the other hand when measures for the elimination of

hazardous substances (as implemented by the ROHS or ELV Directives for examples) are taken into account, case studies from the electronics and ELVs recycling industries in Japan and Sweden provide evidence that PRI laws have led to changes in product design to meet environmental and/or end-of-life goals. For example, to facilitate recycling, several EEE manufacturers have eliminated problematic substances, selected fewer and more uniform materials for the products, and designed products for easier disassembly. However in these case studies, it seems that the more compelling examples of design changes appear to have been made when a producer made changes in anticipation of the implementation of the PRI regulations (Tojo, 2004).

In relation to design changes, an issue increasingly discussed is the **effect of individual or collective responsibility** when implementing PRIs. PRIs based on individual responsibility are assumed to provide more incentives for design changes (e.g. a producer can obtain competitive advantage) than one based on collective responsibility. The perception of the challenges, combined with the lack of clarity of what individual responsibility actually means in practice, has discouraged adoption of PRIs that enhance possibilities for individual implementation (Tojo, 2004).

Because, a significant share of PRI products manufacturing is not taking place in Ireland (and this present a challenge with increasing waste prevention), the key focus should be to influence Irish businesses and the public to use more environmentally friendly products when the alternative exists. **The way in which individual producers finance the PRO is a crucial aspect of PRI design**, since the method chosen can directly influences the size of the incentives to prevent waste (Flekinger and Glachant, 2010). The usual instrument consists of a fee per unit or weight of product that each producer puts on the market. The product fee is frequently uniform across brands. It can also take into account waste-related product characteristics. This is the case of packaging PROs like Repak, for which the fee rates vary across materials and depend on the weight, type and size of each packaging type.

What Roles for the PROs?

As shown in Figure 4.10, actions to prevent waste can be taken at many of the steps in a product's life cycle. Actions at the start of the product chains are undertaken by the producers and are more technical in nature (e.g. design for the environment), actions taken at the end of the product chains are softer and targeting a wider audience (e.g. behaviour change).

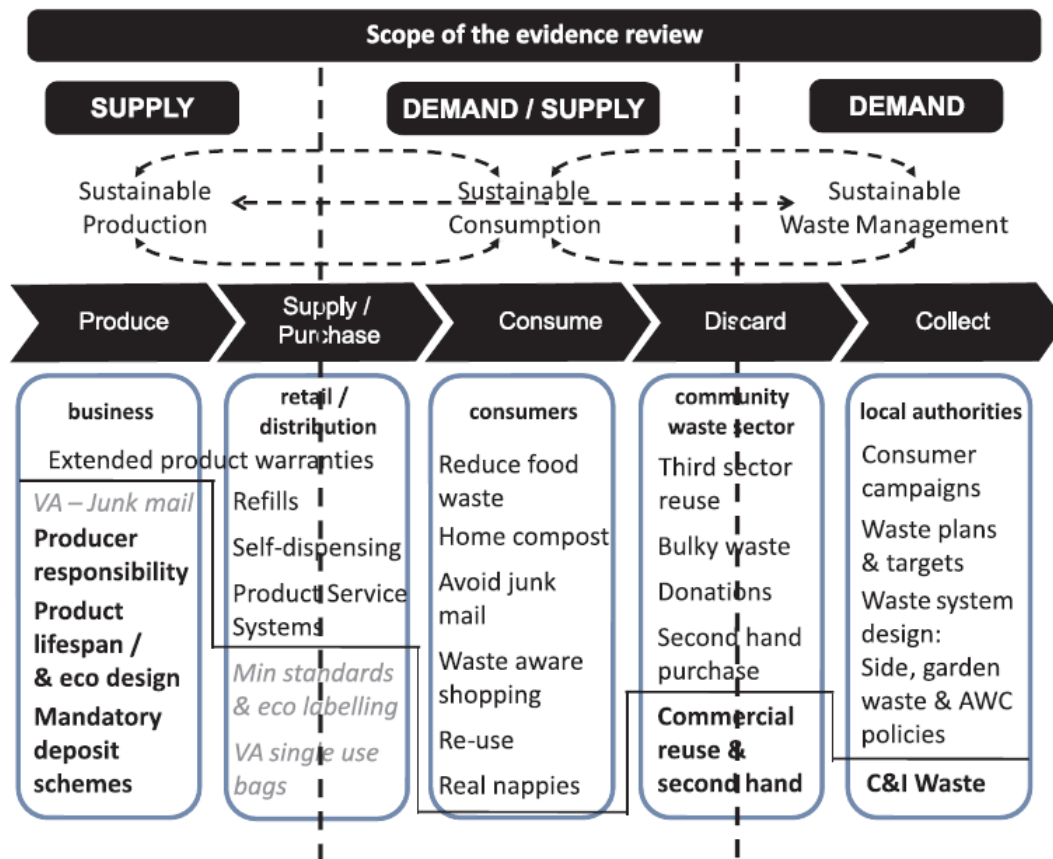


Figure 4.10: Waste Prevention Actions in the Context of a Product’s Life Cycle¹²⁸

Not all the actions under the five steps (production, supply, consumption, discard, collection) of the life cycle are relevant to PRIs and compliance schemes, but the PRIs can influence:

- The design of their products by producers (prevention, ability for goods to be reused)
- Collection (supply of goods for reuse) and treatment of PRI waste (decide between reuse and recycling) and setting the incentives for producers to design for the environment

However the ability of national PRI to influence may be limited as many products are designed abroad. A fact recognised by the new waste Policy (DECLG, 2012) in the need to work within the EU-wide framework.

¹²⁸ Adapted from Cox et al., 2010

4.8.3 Waste Prevention in Ireland

The framework for waste prevention in Ireland is provided by the National Waste Prevention Programme (NWPP) supported by the EPA, local authorities, PROs and others.

4.8.3.1 National Waste Prevention Programme (NWPP)

The EPA has published in June 2014 the fourth iteration of the NWPP, '*Towards a Resource Efficient Ireland A National Strategy to 2020 incorporating Ireland's National Waste Prevention Programme*'. Over the years the programme has evolved beyond an initial focus on preventing generation of solid wastes to a broader view of preventing wastage across materials, energy and water (primarily because of the integrated nature of relationships between each).

The NWPP has three main strands, one dealing with production and consumption behavioural change (resource efficiency and waste prevention)¹²⁹; the second dealing with statutory producer and holder responsibility obligations for specified materials and controlled substances (see enforcement Section 4.7); and the third deals with measurement of progress through waste reporting and statistics. A substantive element of the NWPP budget is expended on resource efficiency activities.

The NWPP works with PRIs to deliver on Ireland's waste prevention obligations. In particular, The NWPP promotes an increased focus on the prevention of waste within compliance schemes, for the current priority streams (e.g. packaging, WEEE) and for those identified in future.

4.8.3.2 Packaging PRI

There are a number of waste prevention opportunities in the packaging waste stream. These opportunities are of two types:

- Design change to reduce the quantity of packaging materials and level of hazardous materials in packaging products.

¹²⁹ This strand contains a packaging

- Behaviour and distribution model change (e.g. refill, bulk buying etc.).

There is also reliable data which shows the evolution of packaging waste managed in Ireland. Figure 4.11 indicates that there was growth in packaging waste managed in the period 2001-2007 at an average compound rate of 3.5%. However, with the economic downturn leading to a decrease in consumption, the quantities of packaging in 2010 have returned to the 2001 level.

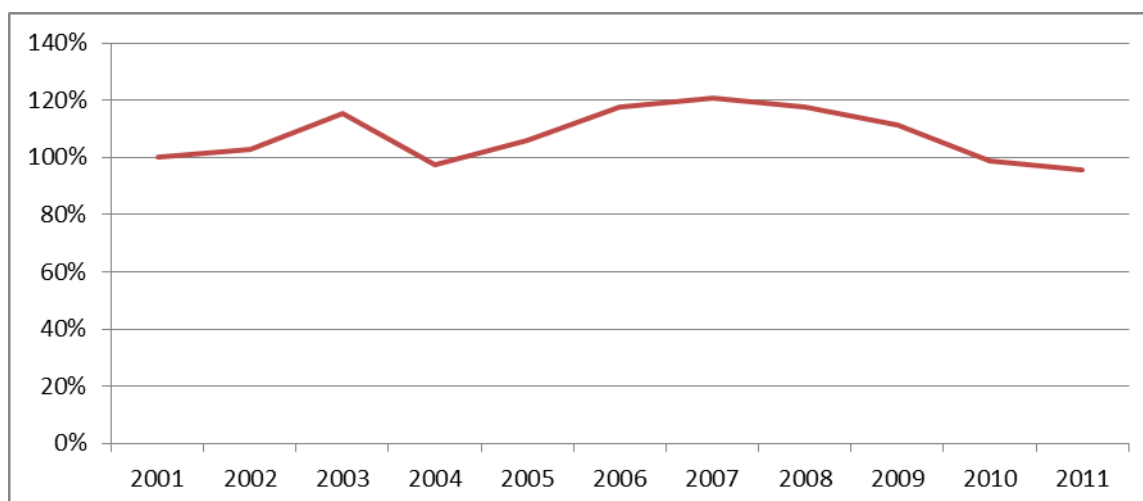


Figure 4.11: Packaging Waste Managed 2001 – 2010¹³⁰ (indice 100 for base year 2001)

The effect by type of material is quite different, with some materials showing growth while others have decreased significantly over the period 2001 to 2011.

- The materials showing the greatest growth are wood (157%) and glass 142%).
- The material showing the greatest decrease is textiles (24%) and other metals (84%).
- Plastics (91%), aluminium (84%) and ferrous metals (74%) have decreased but not as significantly as others plastics.

This reflects the linked effects of changing consumption patterns and economic growth.

There are a number of measures in the current PRI, which encourage waste prevention:

- Article 2.1 of the Packaging Directive 2004/12/EC (as amended) has as a first priority preventing the production of packaging waste. Furthermore Member States must ensure that packaging placed on the market complies with the essential requirements (i.e. packaging shall be so manufactured that the volume and quantity is limited to the minimum amount adequate to maintain the necessary levels of safety, hygiene and acceptance for both the packed product and the consumer, content of hazardous materials), and
- The Repak membership fee structure is based on weight and type of packaging. It applies across the packaging supply chain and is designed to incentivise obligated businesses to use less and lighter packaging. This encourages businesses to reduce the weight of packaging they manufacture, import or sell,
- Since 2007, A Packaging Waste Prevention Programme is funded by Repak, with a contribution from the National Waste Prevention Programme to further support packaging prevention and minimisation. Repak employs two packaging technologists dedicated to assisting its members to prevent and minimise packaging of all types, including sharing of best practices among the organisation's members.
- Repak's packaging prevention and minimisation initiatives have been assisted by a Steering Group (that includes representatives from the DECLG, the EPA, Enterprise Ireland and Repak members) and is providing technical and strategic input.
- Examples of Repak members' waste prevention activities include removal of cardboard packaging, light-weighting of plastic and glass, replacement by lighter, more flexible and/or less packaging and the use of steel trollies (see <http://www.preventandsave.ie/> for more information).

The packaging PRI has been the most active in waste prevention out of all the PRIs, however there were limited initiatives related to reuse. The scope for reuse of packaging is limited (e.g. to tertiary packaging such as pallets) and must be considered in the wider context of sustainable transport and logistics so it is unlikely that there will be the same level of initiatives in this area.

¹³⁰ EPA National Waste Reports 2001-2010

The relative contribution of these measures and economic factors to waste prevention are difficult to isolate. However, Repak¹³¹ estimated the savings from packaging waste prevention activities of Repak's member firms. In the report, the consultant compared the quantities of packaging put on the markets by Repak member with the quantity of packaging put on the market derived using the CSO Retail Sales Index. The report estimates that, on average during 2005-2011, each successive year saw an additional approximately 14,000 tonnes of packaging being prevented by Repak's members (equivalent to a 0.2% decrease in the total quantity of packaging managed over the same period). Assuming that the assumption of direct correlation between Packaging quantities put on the market and Retail Sales Index is correct, this is an impressive achievement¹³².

4.8.3.3 WEEE PRI

There are also a number of waste prevention opportunities in the WEEE stream. These opportunities are also of two types:

- Design change to reduce the size and level of hazardous materials in EEE.
- Behaviour, technological and distribution model change (e.g. Cloud technology, leasing, etc.).

There are significant opportunities to reduce WEEE through reuse. This is explored in more details in Section 5 examining the WEEE PRI.

Because of the lack of reliable data on WEEE arising, the EEE put on the market was used as a proxy to examine the market trend. The EEE put on the market from 2006 to 2011 decreased by 28% due to the economic downturn leading to a decrease in consumption.

¹³¹ PMCA Economic Consulting. 2012. Packaging Prevention and Minimisation: The Quantity and Values of Savings by Repak Members

¹³² It may be useful to apply the same approach to other EU countries to compare trends with and without active waste prevention programmes.

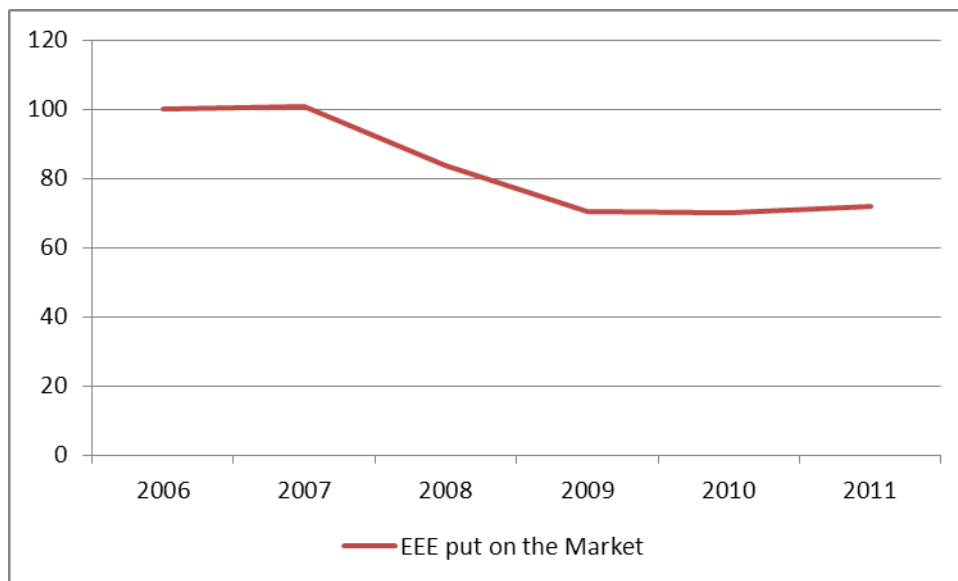


Figure 4.12: EEE put on the market 2006 – 2010¹³³ (indice 100 for base year 2001)

The quick technological advances, pace of new product development and strong change in consumption pattern have an effect on WEEE generation.

The main measures encouraging the prevention of WEEE or its negative environmental impacts are linked to the European Directives limiting substances in EEE products. For example:

- The Restriction of the use of certain Hazardous Substances (RoHS) Directive limits the amount of six hazardous substances used in the manufacturing of Electrical and Electronic Equipment (EEE) which is in common use.
- The Energy Using Products (EuP) Directive 2005/32/EC established a framework for setting eco-design requirements for energy using products.

There is also evidence that PRIs have led to design change, but this is generally in anticipation of PRI implementation (Van Rossen et al., 2006). For example, Japanese manufacturers made efforts to reduce the use of hazardous substances in advance of the RoHS Directive to ensure that their products continue to be placed on the market and may allow them to gain market share over rivals slower to implement design change.

¹³³ Based on quantities of EEEE put on the market are reported by the WEEE Register

While the WEEE Ireland fee structure is based on the quantity of EEE put on the market, it is unlikely to provide a strong enough incentive to reduce the weight of EEE that producers manufacture or import or sell as it is only a small percentage of the product price. ERP fees based on quantities collected and treated are also unlikely to have an effect. Visible Environmental Management Costs (vEMCs)¹³⁴ are not providing any incentives for waste prevention.

The main opportunities in WEEE prevention seem to be in the reuse of products, the reduction in the adverse impacts of the generated waste on the environment and human health, or the content of harmful substances in materials and products.

While a significant share of EEE manufacturing is not taking place in Ireland, the possibility of incentivising producers to design products with less harmful substances should be examined by the PROs. For example a differentiated charging system relating to the level of harmful substances could be considered (see Box 8).

Box 9: PRO Agreement for WEEE, France¹³⁵

In France Producer fees are modulated depending on the environmental impacts of products for example, hoovers with plastic pieces containing more than 25 g of brominated flame retardant are charged 20% more than a Hoover without. Similarly, mobile phones without universal chargers are charged 100% more than mobile with universal chargers. For laptops and TVs, if there are lamps with mercury and more than 25 g of brominated flame retardant in plastic components, there is a surcharge of 20%. LEDs are charged 20% less than the other lamps.

4.8.3.4 Batteries PRI

The environmental concerns related to batteries and accumulators are linked to the hazardous substances they contain (i.e. mercury, lead and cadmium). Despite the legal restriction applied to the use of mercury in batteries and accumulators, batteries produced before this restriction entered

¹³⁴ Visible Environmental Management Costs (vEMCs) are used to fund the management of WEEE from EEE put on the market prior to 13 August 2005. See Section 5 for further details.

¹³⁵ http://www.developpement-durable.gouv.fr/IMG/Cdc_DEEE_public%3%A9_BO_022010.pdf

into force and batteries produced in other countries imported into the EU still contain certain amounts of mercury¹³⁶. Portable Nickel Cadmium (NiCd) batteries and accumulators are reported to contain an average 13% of cadmium by weight and industrial NiCd batteries and accumulators 8% by weight. Lead acid batteries and accumulators are the largest users of global lead production accounting for 73% of production in 1997. Other metals used in batteries such as zinc, copper, manganese, lithium and nickel may also pose a risk to the environment if batteries are disposed of.¹³⁷

Encouraging further the use of rechargeable batteries and the use of differentiated fees based on the level of harmful substances contained in batteries would help waste prevention.

4.8.3.5 ELV PRI

Prevention in this PRI is driven by provisions in the ELV Directive 2000/53/EC which aims to minimise the impact of ELVs on the environment. This is principally achieved at the 'design phase' where the use of certain hazardous materials in the manufacture of new cars is controlled. The Vehicle Design Requirements in the Waste Management (End-of-Life Vehicles) Regulations 2006 (S.I. No. 282 of 2006)¹³⁸ impose the requirement that the materials and components of specified new vehicles (8th June 2006) do not contain lead, mercury, cadmium or hexavalent chromium other than in cases specified in the Fourth Schedule of the regulations. In addition, technical documentation must be made available by the producer to verify compliance with these requirements.

With regards to the reduction of hazardous substances, there is limited information publicly available. A report published by the European Parliament (2010) found that there is no evidence suggesting that requirements of Article 4 of the ELV Directive (ban of certain hazardous substances in new cars e.g. Cd, Hg, Pb, and CrVI) are not fulfilled as the internal quality assurance systems of the manufacturers allow compliance monitoring of these provisions. However, when the

¹³⁶ This represents a breach of the Batteries Directive, which applies equally to products manufactured in countries outside the EU.

¹³⁷ DECLG July 2008 Waste Management (Batteries and Accumulators) Regulations, S.I. No. 268 of 2008 - Screening Regulatory Impact Assessment

¹³⁸ <http://www.irishstatutebook.ie/2006/en/si/o282.html>

report was published no external monitoring of the level of compliance with the provisions had been conducted.

The level of generation of waste through ELVs is closely correlated to:

- The change in weights and composition of vehicles: While more lightweight materials are being used, statistics show that vehicles are also increasing in size, with the average weight of an ELV, despite the use of lighter materials, projected to increase from a baseline of 951 kg in the baseline situation (2000) to 964 kg in 2006 and to 1025 kg by 2015 (GHK, 2006).
- The effect of the economy on domestic spending.
- Some of the State interventions aimed at changing consumer behaviours may have negative impacts (e.g. scrapping schemes¹³⁹) or positive impacts (road tax based on CO2 emission) on waste prevention.

As there are no vehicles manufactured in Ireland and because the producers' obligations under the ELV Directive are met through self-compliance, there is limited scope for waste prevention initiatives in this area¹⁴⁰. On the other hand there is a vibrant reuse network for the trade of 'second-hand' parts of ELVs.

4.8.3.6 Tyre PRI

There are limited prevention incentives in the waste tyre PRI. The main opportunity for waste prevention is related to the use phase e.g. choice of tyres, driving at low speed and using properly inflated tyres.

¹³⁹ Some of the negative environmental impacts may be mitigated with the provision of requirements for the environmentally sound management of ELVs.

¹⁴⁰ Other policy measures aiming at changing the purchasing behaviour of customers could be used e.g. tax to influence CO2 emission, there are opportunities to reduce the impact of transport.

With regards to reuse there are good opportunities which relate to reuse on silage pits, in marinas and on race tracks, although there is a limit on the number of tyres that can be accepted at such outlets. Rethreading is also an option but only a small percentage of tyres is using this option (Less than 5%).

Currently the PROs do not have any waste prevention or reuse initiatives.

4.8.3.7 Farm Plastics

There is no specific work being carried out by the IFFPG on waste prevention and the organisation does not have a dedicated prevention team, such as Repak, advising on material optimisation. However, the IFFPG engages with their members to highlight waste material prevention through the use of light-weight products.

However, in recent years IFFPG members have concentrated significant resources on the research and development associated with light-weighting farm plastics¹⁴¹. The result of this work has been the introduction in the last 2-3 years of new light weight silage wrap products by farm plastic manufacturers. This product, which is 20% lighter than the standard product, results in less farm plastics waste been generated per bale of silage produced.

It is envisaged that this lighter product will in time become dominant and contribute to a significant reduction in the weight of farm plastic waste being generated. For its part, the IFFPG has actively encouraged research by its members in this area, with the scheme's weight based levy charge acting as a stimulus.

It is also likely that farmers would not use more film than absolutely necessary from a cost savings perspective. The number of layers of film a farmer may use in wrapping silage is linked to the nutrient density. The optimum number of layers to be used will depend on the brand of film. The IFFPG could insert some informative text regarding optimal use of film which would be in line with prevention objectives. This could be done via a feature in the Farmers Journal and/or the IFA website prior to the buying season for wrap.

When discussing reuse of farm plastics, one must distinguish between pit covers, which account for 16% of the market and bale wrap, which accounts of 84% of the market. In the case of pit covers, there is almost 100% reuse by farmers. Silage pit covers may be reused by farmers depending on the degree of wear and tear. A farmer will typically use an old pit cover under a new pit cover for more effective sealing of the silage. Bale wrap is typically used for one season only owing to the method of application, nature of its use and contamination levels post use.

4.8.4 Recommendations

There have been limited initiatives in Ireland to date relating to prevention and reuse except for the packaging PRI which has been the most active in waste prevention. There are significant opportunities to reduce WEEE through reuse. This is explored in more details in Section 5 examining the WEEE PRI.

There is significant scope to use economic instruments to encourage the application of the waste hierarchy and to influence the size of the incentives to prevent waste. The use of variable fees relating to the quantity of materials and the level of harmful substances should be considered by the PROs and by the DECLG (in the self-complier system) in setting producer fees.

While there may be limited scope for prevention and reuse in some of the PRIs, all PROs should develop proposals for encouraging waste prevention and reuse in line with EU, national and regional policies and programmes. These proposals should be submitted as part of their approval application process. These proposals should demonstrate waste prevention and focus upon reuse in order to support overall policy objectives at national, local and community level. The DECLG should liaise with the EPA Resource Efficiency Unit when reviewing the prevention and reuse proposals contained in the applications for approval submitted by PROs.

Recommendations:

The use of variable fees relating to the quantity of materials and the level of harmful

¹⁴¹ See article BPI Visqueen promotes polythene's possibilities in Plastic Ireland 2012 p18

[http://www.plasticsireland.ie/Sectors/PI/PI.nsf/vPages/Press_and_Publications-plastics-ireland-2012-09-08-2012/\\$file/Plastics%20Ireland%202012.pdf](http://www.plasticsireland.ie/Sectors/PI/PI.nsf/vPages/Press_and_Publications-plastics-ireland-2012-09-08-2012/$file/Plastics%20Ireland%202012.pdf)

substances should be considered by the PROs and by the DECLG (in the self-complier system) in setting producer fees.

All PROs should develop proposals for encouraging waste prevention and reuse in line with EU, national and regional policies and programmes.

4.9 DEVELOPMENT OF INDIGENOUS RECYCLING AND REPROCESSING CAPACITY FOR PRI WASTE

In 2011, approximately 73% of non-hazardous municipal waste recovery took place abroad and 47% of hazardous waste was treated abroad (EPA, 2013). Figure 4.13 shows the destination for the recovery and treatment of selected waste streams. Most rubble, wood and municipal organic waste was recovered in the State in 2011, while Ireland's substantial reliance on recovery and treatment of recyclables abroad continues, in particular for metals, paper and cardboard and glass, and to a lesser extent for plastic, refuse derived fuel, WEEE and tyres.

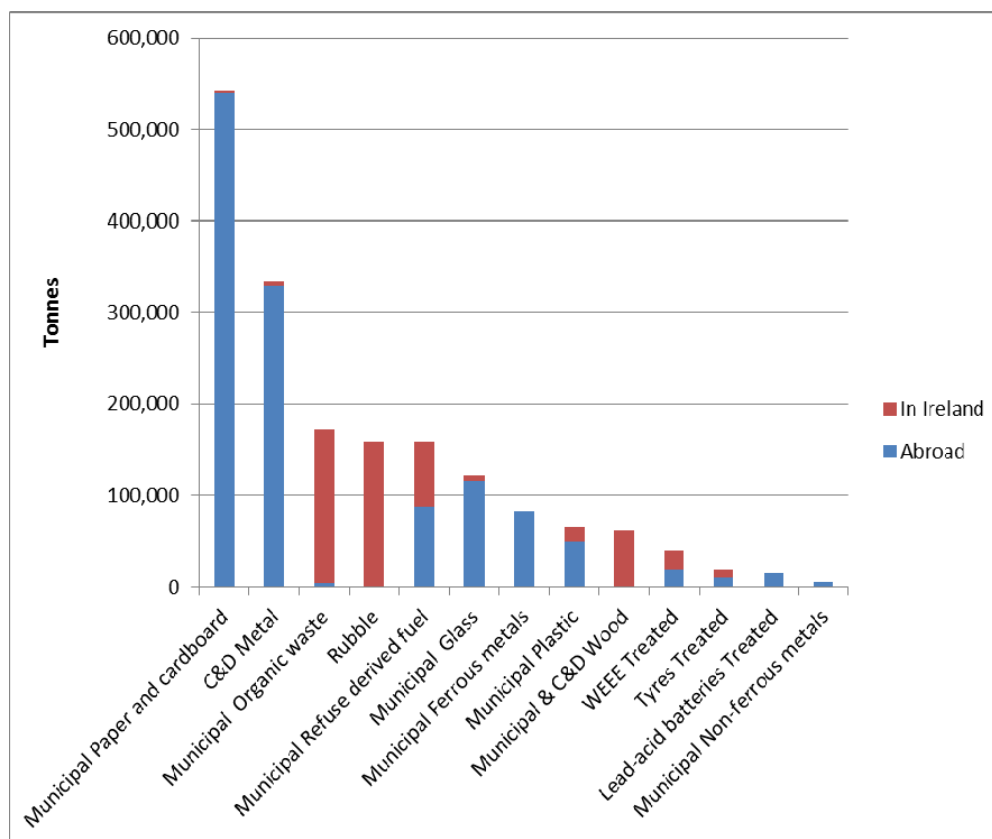


Figure 4.13: Destination for the recovery and treatment of selected waste streams, 2011

A number of submissions from the Irish recycling and recovery sector¹⁴² are calling for further support from the PRIs to develop indigenous reprocessing capacity. These submissions highlight the benefits of waste treatment in Ireland (support the proximity principle, support job creation in Ireland).

To date, PROs, while supporting in principle the idea of further developing indigenous recycling and reprocessing capacity in appropriate circumstances, have been more focused on providing value for money to their members.

As already noted, some stakeholders have expressed the views that there should be further State intervention as it would support the social objectives of stimulating job recovery in Ireland and the environmental objective associated with the proximity principle. For example, it is suggested that the State could direct waste to be processed in Ireland using only national waste infrastructure. But this is not simply done because the State must be careful to respect the principles of the EU Treaty and not unlawfully restrict the movement of goods and services across EU borders, which would be contrary to internal market rules and would also impede competition.

4.9.1 Legal Considerations

When examining how the State could direct waste to be processed in Ireland using only national waste infrastructure, the legal considerations below have to be taken into account. Ireland is also a small open economy and it is not clear how a policy of self-sufficiency could work in that context.

4.9.1.1 Environmental Law

European and national waste legislation and policy support the proximity principle and the restrictions on export of waste for disposal. However there is no such restriction on export of waste for recovery/recycling. From an environmental perspective, therefore there are many potential

¹⁴² Crumb Rubber, Filmco, Cynar and IWMA submissions.

arguments and positions in favour of both the export of waste and the restriction on exports¹⁴³, depending on the outcome of the environmental and legal analyses¹⁴⁴.

4.9.1.2 Internal Market Law

From an Internal Market perspective, an outright ban or restriction on the movement of waste in to and out of Ireland may result in a restriction on the free movement of goods, services and/or people across EU borders contrary to internal market rules. For an emanation of the State to mandate (whether through the imposition of a ban or restrictive conditions in licences, permits or authorisations) that a certain action be completed domestically could be considered to be a measure having equivalent effect to a quantitative restriction on exports. Even a more limited provision, i.e. that a certain proportion or share of the waste be treated domestically may offend EU Treaty principles, although under certain conditions such a provision might be considered within acceptable parameters.

In order to advise on this issue with a sufficient degree of certainty to provide a clear recommendation, it would be necessary to consider whether (a) this action would be considered to be restrictive and prohibited, and (b) if so whether any of the legal and policy justifications for such restrictions would apply. It is not possible to consider these aspects without carrying out a thorough analysis of the case-law applicable to the free movement of goods and services, and applying and testing that analysis against the specific proposal suggested.

4.9.1.3 Competition Law

There would be concern from a competition law perspective about the State specifying an inherent limitation of competition in the proposal to restrict waste exports. Restrictions on competition may be permissible in certain circumstances, but in order to advise on this issue and provide a clear recommendation, it would be required to analyse whether the DECLG (or the other entity chosen to

¹⁴³ Environmental factors to consider include the environmental costs of transport/export of waste when set against the environmental benefits from reuse, recycling and recovery operations. There may also be other policy drivers associated with reducing costs, maximising domestic employment and economy.

¹⁴⁴ For example, CJEU Case C-209/98 focused on both the environmental and legal considerations relevant to the particular situation.

actually implement the restriction) would be considered to be an undertaking under Irish or EU law. It would also (if the analysis showed that this was a risk) be required to establish if this action might be judged to be an abuse of a dominant position, or indeed an unlawful state intervention in a market which, to our knowledge, is not currently experiencing any market failure. This would involve an analysis of the relevant market (both product and geographical) and an analysis of the different possibility of abuse.

4.9.1.4 Other Issues

Apart from the internal market and competition /state aid aspects, there are likely to be issues in relation to the statutory powers of the DECLG or Minister to impose conditions in authorisation requiring the direction of specified volumes or share of waste to particular facilities or types of facilities in Ireland. This issue also needs to be considered in the context of the Panda/Greenstar judgments of Judge McKechnie (2009) in the High Court to make sure that the measures adopted do not offend any recognised principles of public and administrative law.

4.9.2 International Experience

There are examples of PROs making commitments and supporting the development indigenous capacity (see Box 9) by funding research to develop cost-effective technologies locally. The projects referenced generally happened in larger European countries and it is unclear if a similar approach in Ireland would be as successful due to the smaller scale.

4.9.3 Conclusions

While it may be difficult for the State to direct waste to be processed in Ireland using only national waste infrastructure, there are other measures could be used to increase the availability of PRI waste and to inhibit the export of wastes subject to PRI control to substandard facilities.

rx3¹⁴⁵ funded by the DECLG has been engaged since October 2008 in the implementation of the Market Development Programme for Waste Resources, a resource efficiency programme whose aim is to develop markets for recyclable materials. The Programme contains 35 wide-ranging projects to be implemented over five years and the key objectives are to:

¹⁴⁵ www.rx3.ie

- Provide a framework to harness the full potential of existing markets for recyclable materials,
- Identify new applications and markets for recyclable material and secondary recycled products, and
- Identify and address barriers to the use and marketing of recyclable material in Ireland.

The project is considered to be of key strategic importance in promoting the greening of the Irish economy and to the development of green enterprises in Ireland. The rx3 Programme is also helping to support key national policy priorities including Environmental Innovation, Research & Development and the benefits of North South co-operation.

Although, while it may be difficult for the State to direct waste to be processed in Ireland using only national waste infrastructure, there are other measures which can be used to increase the availability of PRI waste and prevent the export of PRI waste to substandard facilities.

- The establishment of national waste policy and waste management plans which are consistent with the waste hierarchy. These plans can be supported by the establishments of targets and the use of economic instruments favouring prevention, reuse, recycling or recovery compared to disposal. This will increase PRI waste available for reuse, recycling and recovery both in Ireland and abroad.
- There is a shared responsibility between the State and the PROs to reduce the leakage of PRI waste out of the authorised channels (e.g. ELVs, WEEE and tyres). Leakage prevention will increase PRI waste available for recycling and recovery in Ireland and abroad. The use of ambitious recycling and recovery targets can also help achieve this goal, but they may affect the competitiveness of the producer sectors if these targets are not consistent with other EU Member States.

It is imperative that PRI waste which is exported for treatment outside Ireland is sent to authorised facilities meeting all the required EU and national requirements including environmental and health & safety standards. In this regard, most PRI Directives relating to recycling and recovery targets within the waste sector will only allow waste materials recycled or recovered in Third Countries to count for the achievement of obligations and targets if there is sound evidence that the recovery or recycling operation took place under conditions that are broadly equivalent to those prescribed by the Community legislation on the matter. Export of green list, non-hazardous waste for recovery, in

certain circumstances, can be blocked based on article 49(2) of the Waste Shipment Regulation or specific provisions governing such exports in EU Regulations No 1418/2007 and No 647/2012. For example, the TFS Office can prohibit the export if it has reason to believe that the waste will not be managed in accordance with the requirements for environmentally sound management¹⁴⁶.

As shown by the international experience, the PROs could work towards the dual goals of supporting indigenous facilities and providing value for money to their members by funding research to develop cost-effective technologies. Other funding partners could also be interested such as Enterprise Ireland or the EPA STRIVE.

Box 9: Valorplast and Eco-Emballages, France

A significant factor that has contributed to the successful use of national recycling facilities in France for household packaging is the **involvement that Valorplast invests in research and development on technologies for the optimum recycling** of household packaging (plastics in particular). Since 2008, Valorplast has been working closely with Eco-Emballages (Packaging PRO) and ADEME (French Agency for Energy and Environment) on several for industrial projects.

In 2010, SéRéPlast III, a two-year programme, was initiated by Eco-Emballages/ADEME with the support of Valorplast and PlasticsEurope. It includes 51 municipalities, 3.7 million inhabitants and 32 sorting centres with the aim of increasing the recycling rates of plastic packaging waste from households. The objective of the project is to promote industrial development and the development of technologies that will be needed for the optimum recycling of household plastic packaging waste. The programme will be complemented by industrial trials designed to achieve large-scale recycling of rigid PVC packaging. If successful, it will be adopted nationwide in 2014¹⁴⁷. The purpose of SéRéPlast III is to

¹⁴⁶ Environmentally sound management may be assumed as regards to the waste recovery or disposal operation in the country concerned, if the person who intends to ship the waste or the authority in the country can demonstrate that the facility which receives the waste will be operated in accordance with human health and environmental protection standards that are broadly equivalent to standards established in EU legislation.

¹⁴⁷ Plastics Europe, 2012, Plastics – the Facts 2012 An analysis of European plastics production, demand and waste data for 2011

develop, analyse and validate methods of separation and regeneration to develop an industrial solution for the French territory.

Valorplast offers recycling facilities contracts for a period ranging from two to five years. Prices are determined on the basis of price revision formulas that take into account current virgin raw materials and the level of the European market.¹⁴⁸ In 2011, 86% of crushed plastic bottles were recycled within French borders, and 14% was exported for treatment in neighbouring countries of Spain, Italy, Germany, Netherlands, and Portugal¹⁴⁹.

In France, most household packaging waste is collected and treatment within national borders and in certain cases in neighbouring Member States. Overall, the percentage of household packaging waste exported outside of France for treatment is very low – see table below¹⁵⁰.

Table 4.10: Destination of Packaging Waste Collected for Recycling and Recovery

Destination	Steel	Steel from bottom ash	Aluminium	Paper & cardboard	Plastics	Glass
France	78%	90%	90%	82%	78%	100%
Europe (outside France)	22%	10%	10%	12%	19%	0%
America	0%	0%	0%	0%	1%	0%
Asia	0%	0%	0%	6%	3%	0%

¹⁴⁸ http://www.valorplast.com/Front/nouvelles-consignes-tri-plastique_441.php

¹⁴⁹ http://www.valorplast.com/Front/destination-balle-plastique_122.php

¹⁵⁰ Workshop on Household packaging in France, organised by Ademe and Eco-Emballage 22 October 2007.

In mainland France, 92 % of collected householder packaging waste is recycled or treated on national territory. This is however not the case for French overseas departments and territories, where 94 % of collected household packaging waste is exported for treatment. Low quantities of packaging, the dispersion of collection points and the lack of local market opportunities are at the origin of exportation of packaging waste in overseas territories. The main challenges in French overseas territories were how to recycle small volumes when most recycling industries are based on much larger waste quantities flow and how to develop and maintain sustainable local markets.

To address these challenges, in September 2011, Eco-Emballages launched a call for projects aiming to promote the emergence of a recycling economy adapted to each of these overseas territories: manufacturers, operators, local authorities and research laboratories were invited to develop their project concerning a particular industrial recycling technology and / or use of the recycled material locally.

The first phase of the call for projects lasted until summer 2012. The selected projects will then be carried out from September 2012 to the end of 2013. Particular attention is paid to the following criteria:

- The potential for job creation,
- The reproducibility/feasibility of solutions,
- Creating opportunities in line with the local market.

This first phase of the call for projects has enabled Eco-Emballages to mobilize and network with industry and business premises so that each actor is met through the proposed projects. The inhabitants of overseas territories do not all have access to proper collection and recycling systems: for example, the collection system covers only 63% of territories overseas. To increase the coverage to 95% by the end of 2013, Eco-Emballages will provide communities with collection and treatment system specific to the geographic, economic and social conditions of these territories. This is the case of Mayotte and the French Guyana¹⁵¹.

¹⁵¹ <http://www.ecoemballages.fr/fileadmin/contribution/pdf/instit/rapports-annuels/rapportannuel.pdf>

4.10 SUMMARY OF PROPOSED ARRANGEMENTS

The review of cross-cutting issues has shown the complexity of designing and implementing PRIs. The review has identified a number of changes that can improve the current arrangements. The aim of these changes is to provide more cost-effective PRIs able to meet the desired environmental outcomes. This section presents a summary of the main recommendations.

4.10.1 PROs and Self-compliers

With increasing targets from the EU it is necessary that both self-compliers and PROs (and their members) **contribute to the achievement of the desired environmental outcomes equally and effectively**. This will require:

- The equal allocation of targets by the DECLG to all obligated producers (e.g. based on market share of producers put on the market or waste generated) regardless if they are self-compliers or PRO members.
- The setting up of a clear reporting system to monitor PRO performance and self-complier performance, and their relative contribution to national targets which could be published in the National Waste Report.
- The development of a national and centralised electronic registration system for obligated producers. This will assist in data collation and sharing for monitoring. In addition the use of standardised approach to registration could also reduce administrative burden to producers and public authorities.

The DECLG will have to ensure that measures are in place to **incentivise self-compliers and PROs to meet the desired environmental outcomes**.

- For the PRO, the use of a standard Service Level Agreements (SLA) with consistent basic contractual provisions and 'bespoke' provisions particular to the relevant waste stream should apply to each PRO. The SLA should include (in separate schedules) both the interim targets (providing an early warning system to the DELCG) which the PRO is obliged under the SLA to reach, within a specified time-frame, and the specific measures required to be carried out in the event of a breach (Non-Financial Contractual Penalties, Financial

Contractual Penalties and termination). In addition to providing competition, a clear and transparent PRO renewal of approval process will be also be used to assess the performance of the PRO and may lead to the replacement of the PRO if it has not met the required criteria.

- For the self-compliers, the DECLG should review the fees paid by self-compliers and consider using a fee system rewarding self-compliers meeting the targets and penalising self-compliers not meeting the targets. Self-compliers not reporting should also be subject to enforcement. Enforcement activities should not only focus on outward signs of compliance (e.g. signage and notices) but on key drivers to meet the desired environmental outcomes (e.g. quantities taken back and recycled). The enforcement of self-compliers not achieving the desired environmental outcomes should increase¹⁵². The costs of an effective monitoring and enforcement of the self-complier system should reflect in the fees paid by self-compliers. Clear and consistent communication on the obligations of self-compliers.

A number of other factors also contribute to the success of PRIs (infrastructure provision, enforcement, etc.). Without appropriate information and awareness, the contribution of these factors can be undermined.

4.10.2 Information and Awareness

Information and awareness activities increase householder involvement in recycling programmes. These activities are paramount to the success of recycling initiatives which rely on the willingness of individuals to change current behaviours and participate, provided they are empowered to do so. The current PRI system is a shared responsibility model and has the benefits of involving a number of participants in the product chain giving recycling a certain visibility and mandate. However, communicating information on PRIs is complex as there are different actors responsible for communicating messages, different target audiences and different messages required for these audiences. Consumer-facing messaging needs to be clearer and more consistent, which is a considerable challenge given the wide range of organisations involved in

¹⁵² The reasons why the self-compliers are not performing as well as the PRO are explored further in Section 7 on the Packaging PRI.

public engagement on the environment. Because of the complexity of recycling behaviours, there is no one size fits all model that can be developed to communicate information and awareness.

An improved coordination of the PROs communication and awareness activities is required, but it is unlikely that a separate entity taking responsibility for all the communication activities will be a better option because of the complexity and diversity of the issue. Furthermore the PRO is more likely to have the expertise and knowledge of where the gaps lie in collection, sorting and recycling of waste than the DECLG. It is recommended that the DECLG provide further co-ordination by:

- Continuing Setting the broad framework and priorities for changing behaviours using National policy documents, PRO approvals, separate communications etc.
- Require PROs to develop generic communication tools in consultation with stakeholders to provide harmonised and coherent information. These tools should be made available to local authorities, new PROs entrants, self-compliers and NGOs.
- Requiring PROs to develop a communication plan when applying for PRO approval. This communication plan needs to be fully costed and should include a vision, clear objectives, initiatives proposed, time frames involved and resources required.
- Requiring PROs to update their Communication programmes annually. These programmes should be elaborated by the PROs in collaboration with other stakeholders in the product chain / waste stream (producers, waste operators, EPA and local authorities). The Communication programmes should be submitted to the DECLG for agreement. The DECLG should consult with the EPA in the approval process as they have developed expertise in successful communication campaigns.
- The DECLG may wish to mandate that the PROs engage with one another with a view to launching cross PROs/ cross stream education and awareness initiatives. The DECLG should be aware that such cooperation must reflect the shared or proportional obligations between schemes to meet targets and at all times occur within the confines of applicable competition law.
- Facilitating the sharing of research and consumer insight across delivery bodies and increasing collaboration on research. The DECLG should also commission independent monitoring of Irish recycling behaviours as this is critical to inform policy and

communication initiatives. This could be achieved by specific call under the EPA Strive project.

National information and awareness initiatives rest with the PROs but are carried out in consultation with the other PROs, the DECLG and the EPA. The DECLG may require PROs to collaborate further on joint information and awareness initiatives.

Local information and awareness initiatives rest with the PROs but are carried out in consultation with the local authorities.

For PRIs presenting specific challenges, the DECLG should consider setting up new Working Groups (e.g. Tyres, ELVs) or sub-groups in existing working groups (e.g. in the WEEE Batteries Monitoring Group) to facilitate the elaboration of collaborative proposals on communication.

The current arrangements offer limited opportunities for self-complying businesses to impact significantly on behavioural change. Self-compliers include diverse organisations ranging from large retailers to smaller businesses with limited communication expertise to communicate about the environmental sound management of PRI waste. A code of practice / guidance for self-compliers should be developed by the EPA with support of the PROs and industry groups. Consideration should be given to the requirement that self-compliers make a financial contribution towards overall information and awareness campaigns based of market share of product put on the market.

Social media should be used as part of the overall communication strategy of the PROs, but its use is still new and further research on the use of social media by PRI would be beneficial. This could be achieved by specific call under the EPA Strive project.

4.10.3 Enforcement

Enforcement is also an important instrument for ensuring the implementation of PRIs (OECD, 2001). There is scope for all kind of participants (consumers, producers, importers, retailers, collectors and recyclers) to be non-compliant with the PRI and waste regulations in one way or another. While there are various ways to reduce non-compliance, there is usually a trade-off between effectiveness and the administrative cost. Achieving zero non-compliance, even if possible, would probably not be worth the cost. Addressing these problems is a shared responsibility between PROs and the enforcement authorities. On one hand enforcement of environmental regulation in Ireland is not new and several guidances have been developed (e.g.

IMPEL key principles of enforcement, the RMCEI Framework and the applicable EPA core requirements). These should guide PRI enforcement activities. On the other hand the PRI regulations and their enforcement of PRI obligations are particularly complex. With the constraints on public spending, enforcement activities by the EPA and local authorities have reduced in 2010 and 2011.

While it is acknowledged that the public finances are over stretched, clearly if governments are enacting new environmental regulations, they need to ensure that adequate provisions are in place to support enforcement.

The reduction in the number of regional formations to three main groupings (DECLG, 2012a) should lead to better co-ordination and sharing of resources, **thus freeing resources**, some of which could be allocated towards PRI enforcement. These resources should focus in particular on packaging, ELVs, tyres and WEEE leakage (see specific recommendations in the waste specific sections). The further use of **outsourcing** should be considered for routine inspections. The **co-funding of public enforcement** by the PROs should be explored with the PROs. Increased compliance is of mutual benefit to the authorities, the PROs and the compliant producers. The fees charged to self-compliers should reflect the cost of enforcing the self-complying system.

It is also recommended that there is **designated lead authority for PRI enforcement** to facilitate the concentration of specialised expertise at national or regional levels, facilitating the coordination of PRI enforcement activities and handle transboundary illegal activities. This option should be considered when the DECLG commences implementation of the recommendations arising from the review of respective waste regulation and enforcement roles of the EPA (office of environmental enforcement) and local authorities.

In addition to the current process of the PRI Review, the DECLG should consider further **involvement of businesses and enforcement officers** at the early stages of the development or review of PRI Regulations to ensure that these regulations are clear and well understood.

Capacity building is a critical function of enforcement and the NIECE has an important role to play in this regard. In addition to the current role of the NIECE, the development of standard enforcement documentation would also be useful to facilitate enforcement of PRIs responsibility. Also, in order to improve collaboration between PROs and the local authorities, the PROs should be invited to input into some of the working group tasks.

The **RMCEI Framework** provides a rational approach to prioritising enforcement. Enforcement of PRI obligations is not rated as high as environmental problems generating direct pollution as non-compliant PRI producers undermines the system but it may take years for the targets to be missed or the environmental problems to appear. Therefore, in line with the establishment of dedicated PRI enforcement units, these units should continue to follow the RMCEI Framework to allocate priorities, however the scope of the priorities should be on PRI waste only.

The development and use of further **civil sanctions** applied to non-compliant producers should be considered as it would also provide flexibility for the enforcement authority and reduce the cost of enforcement to public authorities.

It is also important to increase the risk for non-compliant businesses by **setting penalties** at an appropriate level and **disclosing publicly** businesses who have been convicted.

Improving the identification of non-compliant producers will also facilitate enforcement and reduce risk to the State. These can be achieved by establishing a central register for compliant businesses, as well as through pressure applied to non-compliers by obligated businesses, peer group private and public buyers, including the reporting of non-compliant businesses the relevant enforcement authority.

Industry or trade associations are also important dissemination channels for communicating requirements, methods of compliance, and compliance activities.

Information on the outcomes of enforcement is critical for effective enforcement programmes. One of the challenges in assessing the effectiveness of PRI enforcement is the lack of data on the outcomes of the enforcement. The EPA should examine the inclusion of information on outcomes of the enforcement for all PRIs in its “Focus on Environmental Enforcement in Ireland” report.

4.10.4 Prevention and Reuse

The concept of Extended Producer Responsibility (EPR) incorporates several distinctive features considered to be important to waste prevention and reuse. EPR aims to **prevent environmental problems** at source via the provision of incentives for changes at the design phase of a product’s life. However, internationally there are mixed views on the effect of PRIs on design changes.

The framework for waste prevention and reuse in Ireland is provided by the National Waste Prevention Programme (NWPP) supported by the EPA, local authorities, PROs and others.

However, a significant share of PRI products are not manufactured in Ireland (which presents a challenge to the potential for increasing waste prevention levels), the key focus should be to influence Irish businesses and the public to use more environmentally friendly products when the alternative exists.

There is significant scope to use economic instruments to encourage the application of the waste hierarchy and to influence the size of the incentives to prevent waste. The use of variable fees relating to the quantity of materials and the level of harmful substances should be considered by the PROs and by the DECLG (in the self-complier system) in setting producer fees.

There have been limited initiatives in Ireland to date relating to prevention and reuse except for the packaging PRI which has been the most active in waste prevention. While there may be limited scope for prevention and reuse in some of the PRIs, all PROs should develop proposals for encouraging waste prevention and reuse in line with EU, national and regional policies and programmes. These proposals should be submitted as part of their approval application process. These proposals should demonstrate waste prevention and reuse to support policy objectives at national, local and community level. The DECLG should liaise with the EPA Resource Efficiency Unit when reviewing the proposals.

There are also significant opportunities to reduce WEEE through reuse. This is explored in more details in Section 5 examining the WEEE PRI.

4.10.5 Development of Indigenous Recycling and Reprocessing Capacity for PRI Waste

Approximately 73% of non-hazardous municipal waste recovery and 47% of hazardous waste treatment took place in abroad (EPA, 2013). European & national waste legislation and policy supports the proximity principle and the restrictions on export of waste for disposal. From an environmental perspective, there are many potential arguments and positions in favour of both the export of waste and the restriction on exports, depending on the outcome of the environmental and legal analyses.

One of the options is that the State could instruct the PROs to direct waste to be processed in Ireland using only national waste infrastructure. To date however, the PROs, while supporting in principle the idea of developing indigenous recycling and reprocessing capacity in appropriate circumstances, have been more focused in providing value for money to their members. The legal considerations of State interventions are complex and in order to advise on this issue with a sufficient degree of certainty to provide a clear recommendation, a thorough analysis of the case-

law applicable to the free movement of goods and services would be required which was not part of the PRI review. Apart from the internal market and competition / state aid aspects, there are likely to be issues in relation to the statutory vires of the DECLG or Minister to impose conditions in authorisation requiring the direction of specified volumes or share of waste to particular facilities or types of facilities in Ireland, and this issue also needs to be considered in the context of the Panda/Greenstar judgments of McKechnie J in the High Court to make sure that the measures adopted do not offend any recognised principles of public and administrative law.

Although, while it may be difficult for the State to direct waste to be processed in Ireland using only national waste infrastructure, there are other measures which can be used to increase the availability of PRI waste and prevent the export of PRI waste to substandard facilities.

- The establishment of national waste policy and waste management plans which are consistent with the waste hierarchy. These plans can be supported by the establishments of targets and the use of economic instruments favouring prevention, reuse, recycling or recovery compared to disposal. This will increase PRI waste available for reuse, recycling and recovery in Ireland and abroad.
- There is also a shared responsibility from the State and the PROs to reduce the leakage of PRI waste from the authorised channels (e.g. ELVs, WEEE and tyres). This will increase PRI waste available for recycling and recovery in Ireland and abroad. The use of ambitious recycling and recovery targets can also achieve this goal, but they may affect the competitiveness of sector if these targets are not consistent with other EU Member States.

It is imperative that PRI waste which is exported for treatment outside Ireland is sent to authorised facilities meeting all the required EU and national environmental and health & safety standards. In this regard, most PRI Directives relating to recycling and recovery targets within the waste sector will only allow waste materials recycled or recovered in Third Countries to count for the achievement of obligations and targets if there is sound evidence that the recovery or recycling operation took place under conditions that are broadly equivalent to those prescribed by the Community legislation on the matter. Export of green, non-hazardous waste for recovery can be blocked based on article 49(2) of the Waste Shipment Regulation or specific provisions governing such exports in EU Regulations No 1418/2007 and No 647/2012. For example, the TFS Office can

prohibit the export if it has reason to believe that the waste will not be managed in accordance with the requirements for environmentally sound management¹⁵³.

As shown by the international experience, the PROs could work towards the dual goals of supporting indigenous facilities and providing value for money to their members by funding research to develop cost-effective technologies. Other funding partners could also be interested such as Enterprise Ireland or the EPA STRIVE.

4.10.6 Competition

In considering whether current arrangements encourage or discourage competition attention also needs to be paid to the entry conditions and competition between PROs. The first is concerned with competition from PROs outside the waste stream, the latter competition between PROs that are currently offering services in a particular waste stream.

The terms of reference highlight competition between PROs as one mechanism that might reduce such costs. Competition is seen as desirable because it is generally considered to assist in driving down costs, promoting innovation as well as providing producers with choice.

The Optimum Number of PROs per Waste Stream depends on which market arrangement is most appropriate. It is unlikely that licensing more PROs with a national remit will lead to better outcomes in terms of cost. Instead, costs are likely to be higher while the increased difficulty of monitoring the PROs is likely to make reaching the targets more difficult.

What needs to be done is create mechanisms to ensure competition takes place, while at the same time retaining the advantages of having a single firm in each geographic market responsible for meeting targets as well as responsibility for collection, sorting and recovery.

One way to achieve this could be for the DECLG to evaluate the PRO against a number of criteria by the when their approval comes up for renewal:

¹⁵³ Environmentally sound management may be assumed as regards to the waste recovery or disposal operation in the country concerned, if the person who intends to ship the waste or the authority in the country can demonstrate that the facility which receives the waste will be operated in accordance with human health and environmental protection standards that are broadly equivalent to standards established in EU legislation.

- Were the targets met?
- Were the conditions in the approval complied with by the PRO?
- Are the members of the PRO satisfied with the level of service?
- Did the PRO follow best practice in terms of securing low collection, sorting and recovery costs, which were reflected in its membership fees?

In addition, in order to improve competition further:

- The DECLG should **set clear criteria** for the granting of PRO approvals.
- The DECLG should **specify, in approving a PRO, that certain practices are prohibited** (e.g. excessively long termination periods) while at the same time taking steps to deal with the issue of the contingency fund (such as that set out in Section 4.1.2).
- The DECLG might develop a **Switching Code** in consultation with the Competition Authority.
- It is suggested that the DECLG consult on the process for renewal of approval so as to get broad agreement on the parameters of the process, perhaps motivated by a consultation document.

4.10.7 Contingency Fund

With the current arrangements, in order to mitigate the risks that the DECLG needs to replace a PRO, one of the approval conditions of the PROs requires that a contingency funding is held in reserve by the PROs. The fund is the equivalent to approximately one year of the PROs operational costs. The contingency fund is built up by the PRO from the membership fees within a certain timeframe. This fund can then be set against recycling costs if the scheme was to cease operating.

There are several issues surrounding the topic of contingency reserve:

- The level of contingency fund is a concern for the public authorities (who want to ensure that there are enough guarantees against future liabilities) and the producers (for who it is a

cost). The use of risk management techniques can help reducing the level of contingency reserve required to be set aside by the PROs and producers. However, its management will require monitoring from the DECLG or its nominee.

- Second, there is currently a risk that a PRO may access the contingency fund, to fund day to day operations. In order to avoid the contingency fund being depleted in this way, the DECLG should require the contingency fund to be ring-fenced from the day-to-day financial requirements of the PRO.
- Third, there is a barrier for producers to switch between PROs in that the contingency fund built up by that producer cannot be taken with them. It is recommended that the DECLG include a protocol to facilitate the tracking and transfer of the producers' contribution to the contingency fund in the switching code. Once a protocol has been developed, a balancing exercise should be then undertaken and the amount of deferred income and contingency accumulated by producers that have switched PROs in the past should be calculated and transferred to the PRO that they are currently a member of.

4.10.8 Administrative Burden

The costs incurred to comply with regulations are often referred to as “administrative burden”.

The development of a centralised electronic registration system for obligated producers should be investigated. A nominated local authority, the Local Government Management Agency (LGMA) or the WEEE Register could operate this system.

The terms of reporting should be harmonised and co-ordinated by the EPA and the DECLG. The option to develop a basic set of PRI reporting requirements and a subordinate set of more specific requirements for particular product groups or waste streams could be established.

PROs and enforcement authorities should explore synergies between their respective auditing functions and develop proposals to prevent duplications. This should be examined as part of the review of the respective waste regulation and enforcement roles of the EPA and local authorities in 2013 to be carried out by the DECLG.

4.10.9 Interrelationships

The PRI system contains many stakeholders who interact with each other. These interactions present opportunities and challenges, which are discussed below.

The **co-operation** between PROs on a broad range of issues could ensure more efficient and competitive delivery of desired environmental outcomes. There are opportunities for further collaboration from the PROs, in the following in areas of mutual and national interests such as: Information and awareness, collection and research & development.

However, not all opportunities for collaboration are realised because of the competitive behaviour of the PROs. Specific conditions in the PRO SLA can direct PROs to collaborate, but the PRO needs to engage more actively and report on this engagement. A forum chaired by an independent facilitator where the potential for collaboration are discussed could provide such an opportunity. Currently the WEEE Batteries Monitoring Group or the National Waste Prevention Committee act as such, in an informal manner.

Given the possibility of multiple schemes, a **dispute resolution mechanism** should be developed for settling disputes between PROs. This dispute resolution protocol should aim to settle any disputes at the lowest possible level between the organisations.

The Republic of Ireland has been collaborating with Northern Ireland to increase environmental protection. The areas of waste tyres and ELVs would benefit further collaboration with regards to enforcement.

5 WEEE PRODUCER RESPONSIBILITY INITIATIVE

5.1 INTRODUCTION

This section presents an overview and examines the following specific issues relating to the WEEE PRI:

- the existence of any barriers to the transfer of producers from one PRO to another and recommendations for a transfer regime,
- the financial reserves built up from visible Environmental Management Costs (vEMCs) for environmentally sound treatment of historic WEEE,
- WEEE Leakage and recommendations for improved enforcement to ensure WEEE is collected and treated through the compliance scheme network,
- the advantages and disadvantages of retaining vEMCs,
- the reuse protocol for WEEE and recommendations for enhancing implementation into WEEE waste stream,
- the methods to increase collection rates of WEEE in line with newly agreed 'WEEE 2' targets and explore the 'WEEE placed on market approach' versus the 'WEEE generated approach',
- examples of best practice for WEEE Producer Responsibility Initiatives in Europe, and
- the cost of operation and the fees charged to producers for registration.

5.2 POLICY FRAMEWORK

In addition to the European (e.g. Waste Framework Directive) and national (e.g. A Resource Opportunity) policy frameworks presented in sections 2.2 and 2.3, this section presents legislation specific to the WEEE waste stream.

5.2.1 WEEE Directive 2002/96/EC

The WEEE Directive 2002/96/EC is a producer responsibility Directive which aims to promote the reuse, recycling and recovery of WEEE. The Directive, which came into force in February 2003, required each Member State to introduce regulations providing for a producer funded take-back scheme for consumers of end-of-life waste **electrical and electronic equipment (EEE)** from 13

August 2005. All producers and distributors (retailers) of EEE had to comply with the National WEEE Regulations, 2005.

An initial collection target of 4kg an average per head of population per year of WEEE from private households was set by the Directive to be achieved by 31 December 2006. The recovery targets based on collected WEEE in accordance with Article 7 (3) of the Directive are shown in Table 5.1.

Table 5.1: WEEE Directive Recovery, Reuse/Recycling Targets*

WEEE Categories	Rate of Recovery	Rate of Reuse/Recycling
1 and 10	80%	75%
3 and 4	75%	65%
2, 5, 6 7, and 9	70%	50%

*by average weight per appliance

Ireland's European Communities (Waste Electrical and Electronic Equipment) Regulations 2014, (S.I. No. 149 of 2014) (WEEE Regulations) have since replaced the 2005 and 2011 Regulations and amendments and give effect to the provisions of the EU WEEE Directive 2012/19/EC in national legislation.

5.2.2 WEEE Directive 2012/19/EU Recast or WEEE II

The revised WEEE Directive¹⁵⁴ was published on 24 July 2012. Each Member State had until 14 February 2014 to transpose the revised WEEE Directive into national legislation. The following identifies some measures included in the Recast (this list is non-exhaustive):

- More ambitious collection targets: 45% take back of what is placed on the market (in the previous 3 years and the target is based on an annual average of these three figures) will apply from 2016. The target will increase to 65% or alternatively 85% based on WEEE generated from 2019. The existing collection target of at least 4 kg per person will remain in place until the end of 2015,
- Increase in recovery targets,

¹⁵⁴ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:197:0038:0071:en:PDF>

- Scope has been widened to include all EEE except specific exemptions as well as the re-organisation of categories into six types or ‘families’. After 14 August 2018 all types of WEEE will be covered,
- The definition of “producer” will be revised to allow an EU-based producer to comply through an authorised representative in a Member State in which the producer has no legal seat,
- Greater producer responsibility by encouraging design and production of EEE to take repair, upgrading, reuse, disassembly and recycling into full account,
- New optional provision on visible fees showing end of life costs on the product separately from the purchase price,
- Free take back of small household appliances (no more than 25cm) to retail stores (with a sales area of at least 400m²), regardless if the customer buys a new product or not,
- A significant amendment is the inclusion of reuse in the collection targets. A combined target for recycling and preparation for reuse is to be increased by 5% to account for reuse. However, this will be re-examined using an impact assessment by August 2016 and the possibility of setting separate targets for preparation for reuse will form part of this,
- Standards for treatment, including recovery, recycling and preparing for reuse to be developed by February 2013. A Mandate was issued by the European Commission to CENELEC for the development of standards for the treatment of WEEE on 24th January 2013, and
- The burden of proof that exported EEE is used equipment will fall on the exporter. Minimum requirements have to be met when shipping used EEE (test report for each piece of EEE, a declaration that no piece of EEE is waste, appropriate protection against damage during transportation and reference to third party certification).

In addition the effective implementation of WEEE II is supposed to sustainably develop the specific areas of employment, environment and economy (the “3 EEE’s”) in Europe.

5.2.3 EU (WEEE) Regulations, 2014 (S.I. No. 149)

Ireland's European Communities (Waste Electrical and Electronic Equipment) Regulations 2014, (S.I. No. 149 of 2014) (WEEE Regulations) have since replaced the 2005 and 2011 Regulations and amendments. S.I. No. 149 of 2014 gives effect to the provisions of the EU WEEE Directive 2012/19/EC in national legislation.

The following identifies some of the measures included in the WEEE Regulations in 2014:

- the scope was widened and from 2018 the 10 WEEE categories will be re-organised into 6 ‘families’;
- More ambitious collection targets: 45% take back of what is placed on the market (in the previous 3 years and the target is based on an annual average of these three figures) will apply from 2016. The target will increase to 65% (or alternatively 85% based on WEEE generated) from 2019. The existing collection target of at least 4 kg per person will remain in place until the end of 2015;
- New approval and registration system for re-use organisations and WEEE to be made available for preparing for re-use;
- Re-introduction of vEMCs for certain categories from July 1st 2014;
- Retailers are no longer permitted to transfer WEEE to their local CAS.
- Increase in targets set for recovery and preparing for re-use/recycling for timeframes up to August 2015, August 2018 and after August 2018. WEEE shall be treated in accordance with the WEEELABEX Standard or any other equivalent EN treatment standards;
- Free take back of small household appliances in retail stores with a sales area of at least 400m², regardless if the customer buys a new product or not; and
- The burden of proof that exported EEE is used equipment will fall on the exporter. Minimum requirements have to be met when shipping used EEE.

5.2.4 Complimentary Legislation

5.2.4.1 Restriction of Hazardous Substances (RoHS) Directive

The Restriction of the use of certain Hazardous Substances (RoHS) Directive limits the amount of hazardous substances used in Electrical and Electronic Equipment (EEE).

Restriction of Hazardous Substances (RoHS) Directive 2002/95/EC was transposed into national legislation by the Waste Management (Restriction) of Certain Hazardous Substances in Electrical and Electronic Equipment) Regulations, 2005 (amended in 2008 and 2012). The European Union (Restriction of Certain Hazardous Substances in Electrical and Electronic Equipment) Regulations

2012 gave effect to the provisions of the EU Directive 2011/65/EU or RoHS II. The RoHS II Directive *inter alia* extended the scope to a wider range of EEE.

All producers have to confirm that their products conform to RoHS Regulations when they register on an annual basis with the WEEE Register Society (a signed declaration in relation to compliance with the RoHS Regulations has to be provided as part of the application form for registration). The EPA is the competent authority with regard to RoHS enforcement in Ireland.

5.2.4.2 Regulation (EC) No 850/2004 on Persistent Organic Pollutants (POPs)

Regulation (EC) No. 850/2004 on Persistent Organic Pollutants (POP) was transposed into national legislation by S.I. No. 235/2010 Persistent Organic Pollutant Regulations. Wastes are required to be managed in such a way as to ensure that the POP content is destroyed or irreversibly transformed so that the remaining waste and releases do not exhibit the characteristics of POPs.

In mid 2014, technical requirements were agreed within the POPs Regulation to establish minimum concentration levels for certain types of waste (i.e. certain POPs polybrominated diphenylethers) under which waste materials containing levels of these POPs above such thresholds will be regarded as 'POPs-waste'. Therefore, any recycling/recovery of certain waste streams such as specific fractions of WEEE containing POPs will only be permitted if such wastes are below these minimum concentration levels.

5.2.4.3 Eco-Design Directive 2009/125/EC

The Energy Using Products (EuP) Directive 2005/32/EC established a framework for setting eco-design requirements for energy using products. It was recast in 2009 as the Eco-Design Directive 2009//125/EC and its scope widened to include other energy related products (e.g. windows). The Directive was transposed into Irish legislation by the European Communities (Eco-design Requirements for Certain Energy Related Products Regulations, 2011 (S.I. No. 203 of 2011). It aims to improve the environmental performance of products throughout their life-cycle via the integration of environmental aspects (energy efficiency, air emission, other use of resources) within the product design phase.

5.3 PRODUCT AND WASTE CHARACTERISTICS

Electrical and Electronic Equipment (EEE) is defined in the Waste Management (WEEE) Regulations (S.I. No. 149 of 2014) as “electrical and electronic equipment” meaning equipment which is dependent on electric currents or electromagnetic fields in order to work properly and equipment for the generation, transfer and measurement of such currents and fields falling under the categories set out in Annex I of European Parliament and Council Directive 2012/19/EC on waste electrical and electronic equipment and designed for use with a voltage rating not exceeding 1,000 volt for alternating current and 1,500 volt for direct current.

The scope of the WEEE Directive includes for the following 10 categories of EEE:

- Category 1: Large household appliances,
- Category 2: Small household appliances,
- Category 3: IT and telecommunications equipment,
- Category 4: Consumer equipment,
- Category 5: Lighting equipment,
- Category 6: Electrical and electronic tools,
- Category 7: Toys, leisure and sports equipment,
- Category 8: Medical devices,
- Category 9: Monitoring and control equipment, and
- Category 10: Automatic dispensers.

The WEEE Directive does not apply to any of the following EEE:

- equipment which is specifically designed and installed as part of another type of equipment that doesn't fall within the scope of the Directive (e.g. car radios),
- equipment which is connected with the protection of the essential interests of the security of any Member State,
- filament bulbs,

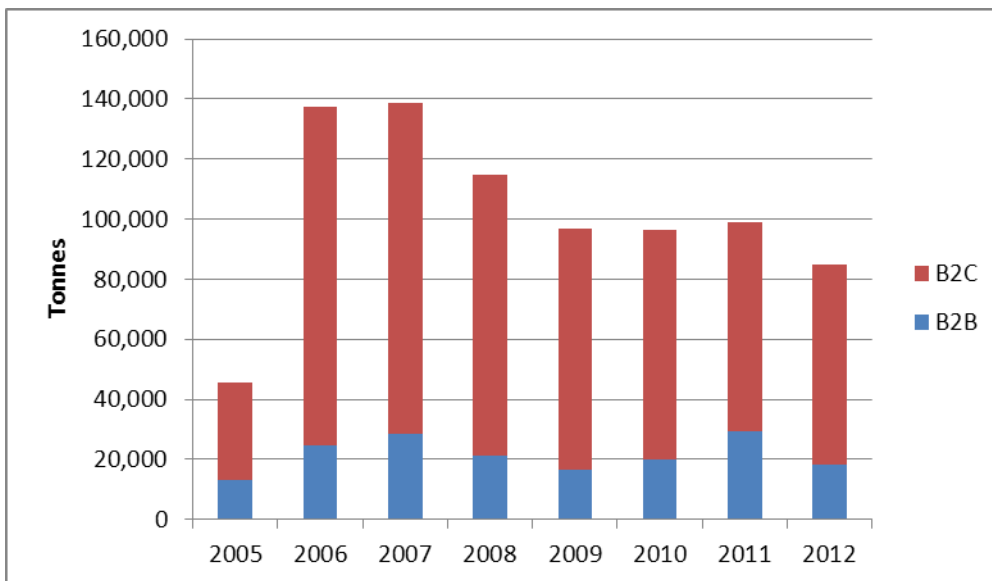
In addition, from 15 August 2018, this Directive shall not apply to the following EEE:

- equipment designed to be sent into space,
- large-scale stationary industrial tools,

- large-scale installations, except any equipment which is not specifically designed and installed as part of those installations,
- means of transport for persons or goods, excluding electric two-wheeled vehicles which are not tyre-approved,
- non-road mobile machinery made available exclusively for professional use,
- equipment specifically designed solely for the purposes of research and development that is only made available on a business-to-business basis, and
- implanted and infected products in medical devices.

Figure 5.1 provides details on the total EEE placed on market from 2005 to 2012. The total EEE placed on the market peaked in 2007 and since that time it has been gradually decreasing except for a slight increase in 2011.

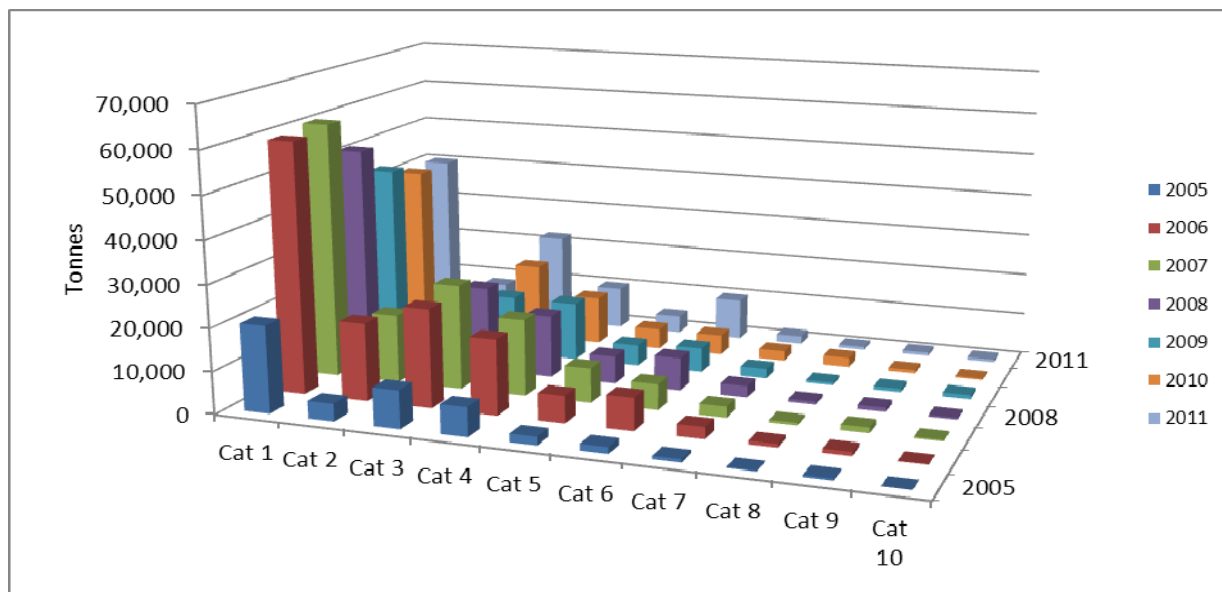
Figure 5.2 provides a breakdown of the EEE placed on market from 2005 to 2012 by EEE category by weight.



Source: WRS 09.07.13

Figure 5.1: EEE placed on market from 2005-2012¹⁵⁵

¹⁵⁵ It should be noted that 2005 was for the period 13th August – end of December 2005.



Source: WRS 09.10.12

Figure 5.2: EEE placed on market from 2005-2011 by category¹⁵⁶

As the market continues to expand and innovation cycles become even shorter, the replacement of equipment accelerates, making EEE a fast-growing source of waste. For example in consumer electronics, the introduction of newer gadgets coupled with rapidly falling prices has meant quicker obsolescence¹⁵⁷.

In 2005, Ireland had the highest consumption expenditure per household on household appliances in the EU (4 times the EU average in terms of purchasing power standards¹⁵⁸).

Waste Electrical and Electronic Equipment (WEEE) is defined in the Waste Management (WEEE) Regulations (S.I. No. 149 of 2014) as electrical and electronic equipment, which is waste (any

¹⁵⁶ It should be noted that 2005 was for the period 14th August – end of December 2005.

¹⁵⁷ Khetriwal et al., 2007

¹⁵⁸ p71 Eurostat (2009) Consumers in Europe

http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-DY-09-001/EN/KS-DY-09-001-EN.PDF

substance or object which the holder discards or intends or is required to discard¹⁵⁹), including components, subassemblies and consumables which are part of the product at the time of discarding.

Table 5.2 shows that a typical EU15 household contains 362 kg of EEE and generates 917kg of WEEE over a 20 year period or 45kg of WEEE per year. The three main items WEEE items are washing machines, televisions and computers in that they represent almost 50% of the weight that is generated. Typical lifespans for the different items range from 3 to 10 years are shown.

Table 5.2: Weight of WEEE generated in a typical EU15 household¹⁶⁰

Item	No. in Household	Wt of EEE item (kg)	EEE Wt in household	Typical life (years)	No of replacements in 20 years	Wt of waste in 20 years (kg)
Washing machine	0.9	65	58.5	8	2.5	146
Tumble Dryer	0.4	35	14	10	2.0	28
Dishwasher	0.4	50	20	10	2.0	40
Refrigerator	0.5	35	17.5	10	2.0	35
Fridge/Freezer	0.7	35	24.5	10	2.0	49
Freezer	0.6	35	21	10	2.0	42
Microwave	0.9	15	13.5	7	2.9	39
Electric cooker	0.5	60	30	10	2.0	60
Vacuum cleaner	1	10	10	10	2.0	20
Iron	1	1	1	10	2.0	2
Kettle	1	1	1	3	6.7	7
Toaster	0.9	1	0.9	5	4.0	4
Food mixer	0.8	1	0.8	5	4.0	3
Television	1.8	30	54	10	2.0	108
Video recorder & DVD player	2	5	10	5	4.0	40
Hi-Fi system	2	10	20	10	2.0	40
Radio	1	2	2	10	2.0	4
Computer	1.5	25	37.5	4	5.0	188
Other electronic games	1.5	3	4.5	5	4.0	18
Hair dryer	0.5	1	0.5	10	2.0	1
Electric heaters	0.2	5	1	20	1.0	1
Telephone	2	1	2	5	4.0	8
Electric drill	0.8	2	1.6	10	2.0	3
Power saw	0.2	2	0.4	10	2.0	1

¹⁵⁹Article 3 (1) of Directive 2008/98/EC of the European Parliament and of the Council of 19th November 2008 on waste and repealing certain Directives

¹⁶⁰ Huisman et al.,(2007)

Other DIY tools	0.2	2	0.4	10	2.0	1
Lawnmower	0.8	15	12	10	2.0	24
Other garden tools	0.3	10	3	10	2.0	6
Total			362			917

The three main materials arising from WEEE are metals, glass and plastics. Ferrous metals amounting to approximately 50%, non-ferrous metals for 5% and plastics for 20-25% of the WEEE arising. The composition of future WEEE will change as the composition of EEE currently being put on the market differs from past EEE. For example flat panel displays have replaced CRT (Cathode Ray Tube) TV screens and refrigerators and freezers containing CFCs and HCFCs banned in the early 1990s will reduce in future WEEE. With the implementation of the RoHS Directive the hazardous content of WEEE arising will reduce. The RoHS Directive has restricted the use of some hazardous substances: lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE). PBB and PBDE are used as flame retardants in plastics in EEE. Mercury is used in some lamps and electrical switches. Cadmium is contained in batteries, lead is used in printed circuit boards and chromium is used to prevent corrosion in iron-based alloys (European Commission, 2008).

5.4 PRODUCERS

A 'Producer' "means any natural or legal person who, irrespective of the selling technique used, including distance communication.....

(i) is established in a Member State and manufactures EEE under his or her own brand or trademark, or has EEE designed or manufactured and markets it under his or her name or trademark within the territory of that Member State,

(ii) is established in a Member State and resells within the territory of that Member State, under his or her own brand name or trademark, equipment produced by other suppliers, a reseller not being regarded as the 'producer' if the brand of the producer appears on the equipment, as provided for in sub-paragraph (i),

(iii) is established in a Member State and places on the market of that Member State, on a professional basis, EEE from a third country or from another Member State, and

(iv) sells EEE by means of distance communication directly to private households or to users other than private households in a Member State, and is established in another Member State or third country.

The definition of “producer” has also been revised to allow an EU-based producer to comply through an authorised representative in a Member State in which the producer has no legal seat.

In line with the Producer Responsibility Initiative for WEEE, producers are responsible for their own products at end of life. This creates an economic and/or commercial incentive for producers to improve the design of their products in terms of repair, upgrading, reuse or recycling and treatment.

In accordance with Part III of the Waste Management (WEEE) Regulations (S.I. No. 149 of 2011)⁴ any Producer selling EEE in Ireland is obliged to take responsibility for the treatment and recycling of WEEE.

A transaction is considered Business to consumer (B2C) if an EEE product placed on the Irish market is sold or used by a consumer at any stage. Business to business transactions of WEEE is called B2B. **It should be noted that if in this report there is no reference made to B2C or B2B, WEEE or EEE covers both fractions.** In 2012, 41% of producers were B2B self-compliers, 50% were B2C and 9% were non-compliant¹⁶¹.

In the case where a Producer is based outside of Ireland selling to a Distributor/Retailer in Ireland the Distributor/Retailer becomes the Producer. Distance communication sellers are also covered in the Regulations in Ireland.

5.4.1 Business to Consumer (B2C) WEEE

B2C Producers are obliged to finance the take back of WEEE and are responsible for collection, recycling and treatment targets. They must also register with WEEE Register Society (National Registration Body) and report to the Blackbox the amounts in units and weights (kg) of EEE placed onto the Irish market on a monthly basis.

¹⁶¹ 1,365 total no of producers (WEEE & batteries) in 2012 (WRS 15.05.12) and 126 were non-compliant (9%) (WRS 12.10.12). 563 no. of B2B self-compliers (EPA 09.08.12).

5.4.2 Business to Business (B2B) or Commercial WEEE¹⁶²

B2B Producers are obliged to finance the takeback of historic and new B2B WEEE. Each producer or (someone acting on his/her behalf) must finance the environmentally sound management of WEEE arising from B2B customers as follows:

For B2B EEE placed on the market since 13th August 2005 (new WEEE): Producers must take back and manage WEEE from the business end user or make alternative financing arrangements with the business user (there must be a formal agreement between both parties on how and who will finance the management of WEEE. The WEEE must be managed by an authorised licenced/permitted waste contractor.

For B2B EEE placed on the market prior to 13th August 2005 (historic WEEE): the Producer is obliged to take back WEEE of a similar type and function (irrespective of brand) when a business user is purchasing new equipment. The Producer is then responsible for the collection and environmental management of WEEE. If the business user is simply discarding the WEEE and not replacing it, the responsibility for ensuring the environmentally sound management of WEEE remains with the business user. The WEEE must be managed by an authorised licenced/permitted waste contractor and the business user is required to record the quantity delivered and treated at the authorised facility.

5.5 DISTRIBUTORS/RETAILERS

A “Distributor” means any natural or legal in the supply chain, who makes an EEE available on the market.

Distributors (Retailers) must:

- be registered with their local authority or with one of the compliance schemes,
- accept back WEEE from customers free of charge on a one-to-one basis on the sale of a product of similar type or have performed the same function as the new product purchased,

¹⁶² The EPA published in 2012 a guide for B2B producers on how to comply with the WEEE Regulations. This guide can be found at https://www.epa.ie/pubs/advice/waste/weee/B2B_EEE_producer.pdf

- ensure that if supplying new EEE from a retail premises with a sales area relating to EEE of at least 400 m² that provision is made for the in-store collection of very small WEEE (no external dimension more than 25cm) free of charge to end-users and with no obligation to buy WEEE of any type,
- ensure that customers are informed of the WEEE take back facilities available to them and are encouraged to participate, and
- ensure that the storage and transport of WEEE collected meets the requirements outlined in the Regulations and that the WEEE is delivered to an approved facility.

Distributors (Retailers) are prohibited from distributing EEE from a producer who does not have a valid Certificate of Registration from WEEE Register Society or does not display the registration number on any invoice, credit note, and dispatch or delivery docket.

In the instance where a new product is delivered the Retailer of the product must take back the old WEEE at the time of delivery provided that the Retailer has given at least 24 hours' notice or on account of less than 24 hours' notice having been given for collection, by arranging for and collecting within 15 days of the date of delivery or by accepting it, at all reasonable times at any or every place of business of distribution.

A new on-line application form was developed by the PROs in 2009 to facilitate the registration of Retailers with the two compliances schemes under Article 40 of the Regulations. This is a free registration which all distributors of EEE can avail of. The information received by the scheme is sent to the EPA. Local Authorities can then access this information on the Environmental Enforcement Network website.

Currently there are 8,258 retailers/distributors registered on the online system.¹⁶³ However this is not the total number registered as retailers can also register directly with their local authority and no central database exists for those registered in this way.

¹⁶³ EPA o6.11.12

5.6 FINAL USERS

The Waste Management (WEEE) Regulations (S.I. No. 149 of 2011)⁴ defines the “final user” to mean “*any person who discards electrical and electronic equipment, for which they have no further use or, as appropriate, who intends to or is required to discard it, but shall not include any person who on behalf of or as a service to any other person -*

- (i) *buys, sells or arranges for the purchase, sale, or transfer of waste from one person to another, or*
- (ii) *arranges for the collection, recovery or disposal of waste.”*

All users (households and corporate organisations) have responsibilities under the Waste Management Act 1996 -2012 and waste collections bye-laws.

Private householders or consumers can bring their WEEE to Local Authority Civic Amenity Sites (CASs), special collection days organised by Local Authorities and PROs (WEEE to work, community and open days and door to door collections/within housing estates) and to retail outlets for one for one take back. Corporate organisations (e.g. businesses) can set up arrangements with WEEE waste contractor for the collection and treatment of WEEE.

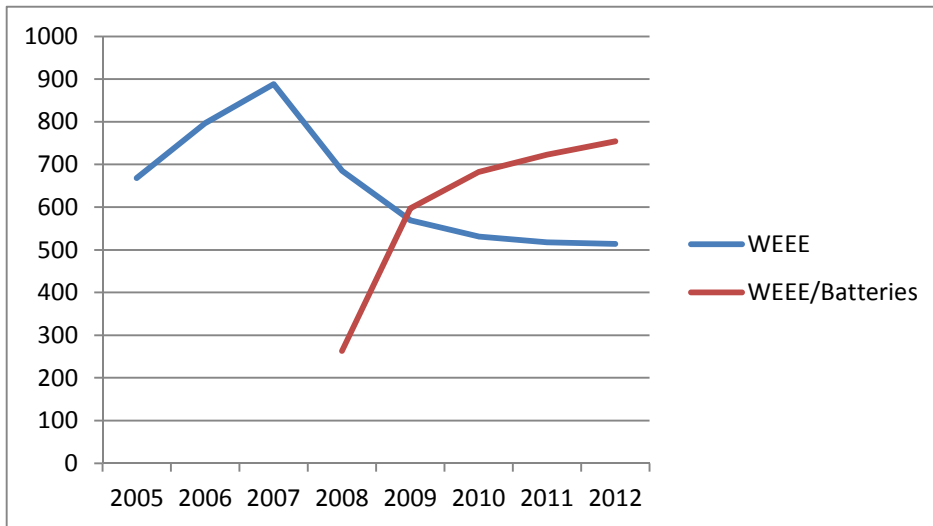
5.7 WEEE REGISTER SOCIETY (WRS)

WEEE Register Society (WRS) was established as a registration body and its functions in accordance with Article 8 (2) of the WEEE Regulations 2014 include the following:

- To maintain a register of producers and authorised representatives,
- To determine market share of individual producers through the Blackbox (currently managed by Deloitte and Touche),
- Establish and maintain a register of approved preparing for re-use of WEEE organisations,
- Submit to the Minister for approval criteria for approving preparing for re-use of WEEE organisations and approve such organisations,
- Track and report non-compliance and notify the relevant LA or EPA,
- Provide for verification that each producer has adequate financial guarantees in place, and
- Verification of vEMCs (visible environmental management costs from July 2014)

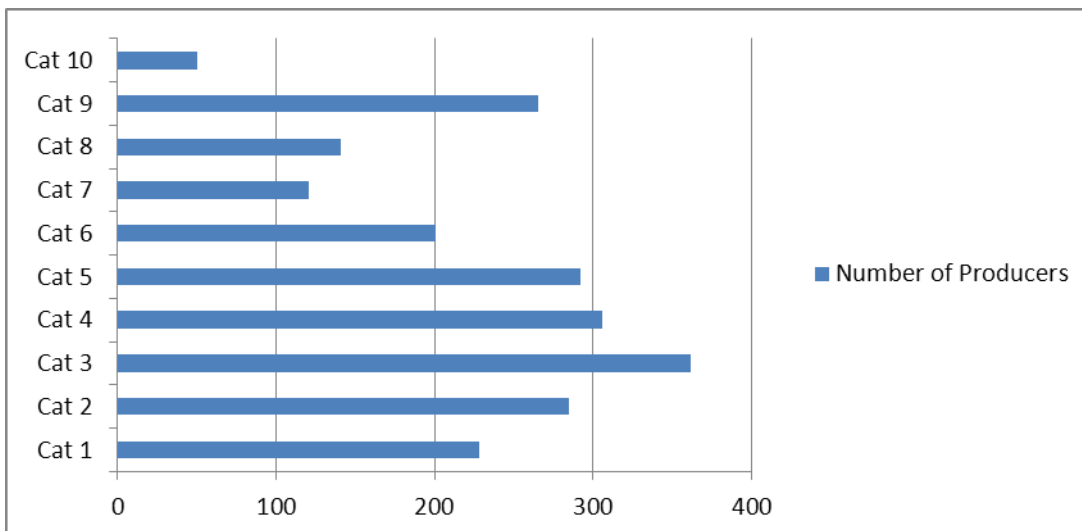
WEEE Register Ltd is part of the wider European WEEE Registers Network (EWRN).

A producer can register on-line and when completing registration, they have to answer questions relating to compliance. Figure 5.3 outlines the evolution of active producers registered with WRS from 2005 – 2012 with WEEE obligations. A total of 1,268 producers were registered in 2012 with WEEE obligations (754 had WEEE and battery obligations and 514 had WEEE obligations only). Figure 5.4 shows the number of producers by WEEE category (some producers will have multiple category obligations).



Source: WRS 17.01.13

Figure 5.3: Number of active producers registered 2005-2012



Source: WRS 25.10.12

Figure 5.4: Number of producers by WEEE category

Figure 5.5 outlines the WRS Reporting Procedure. Producers submit data to the Blackbox and the WRS issues reports to the PROs regarding affiliated producers, market share, categories reported by units/weights, and billing information. In May 2013 there was a level of 92% compliance¹⁶⁴ by producers reporting monthly to the Blackbox.

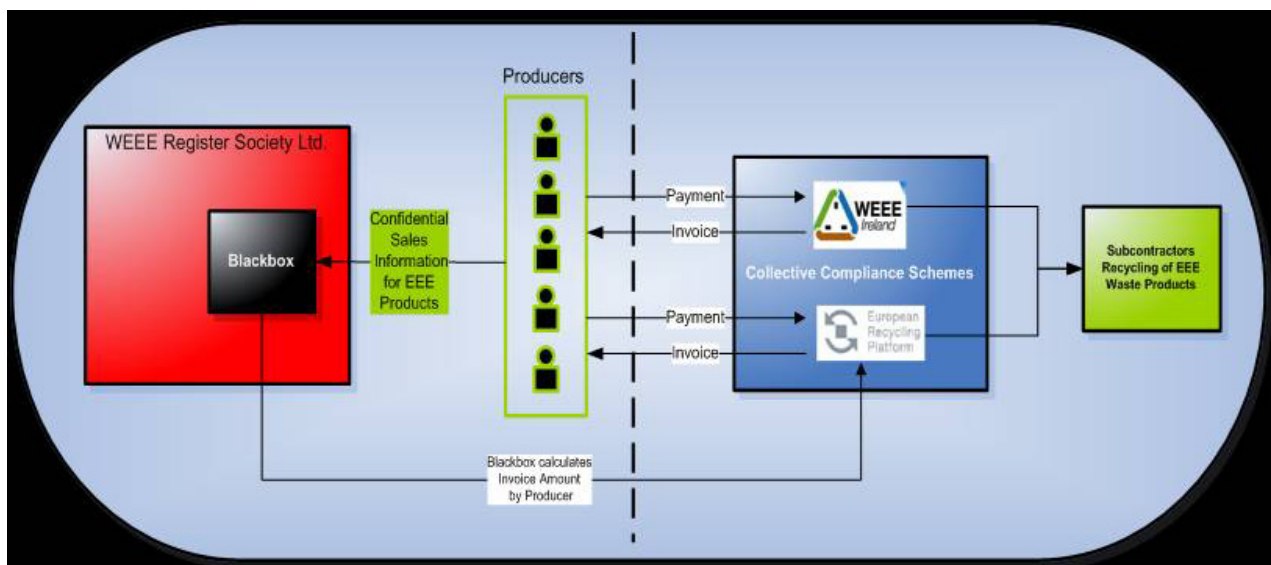


Figure 5.5: WRS reporting procedure¹⁶⁵

Currently data verification audits are carried out by WRS and the PROs. WRS selects a sample number of producers for auditing each year across the various sizes of producers (large, medium and small) having regard to factors such as product scoping, registration status and producer monthly compliance reporting records. Audits are performed by an external auditor (currently Deloitte and Touche). The number of inspections being carried out by WRS takes into account the inspections being undertaken by the PROs. In addition WRS carry out audits following specific requests from the EPA and the PROs.

During the inspection Deloitte and Touche follow procedures agreed with WRS which compares the producers WEEE Blackbox submissions against their own systems/records. In addition, checks are carried out on B2B/B2C categorisations, non-reporting on EEE products, double reporting, correct charging of vEMCs and display of registration number on documentation. Any non-

¹⁶⁴ WRS 09.07.13

¹⁶⁵ WRS Presentation 31.07.12

conformances are ranked on a scale of 1 to 4 where 1 is critical. The producer has to confirm if the recommendations have been implemented and if deemed necessary a producer can be revisited. It has been found over the years by WRS that those producers with over-riding critical non-conformances have been few in number.

5.8 COMPLIANCE SCHEMES

A PRO is a non-profit organisation that operates a compliance scheme and takes on the obligations of its producer members for the collection, treatment and recycling of WEEE. There are two approved PROs in the WEEE sector in Ireland: WEEE Ireland and European Recycling Platform (ERP) Ireland.

ERP Ireland was set up in December 2002 by Braun, Electrolux, HP and Sony and it's the first ever pan-European take back scheme and currently operates in twelve European countries.

WEEE Ireland is the larger of the two PROs and only operates in Ireland. It was originally founded by the White Goods Association (WGA), Consumer Electronics Distributors Association (CEDA), Information and Communications Technology (ICT) Ireland, and Producers of Small Household Appliances (SHA) in 2004.

Business to Consumer (B2C) Producers of EEE can join either of two PROs ERP Ireland or WEEE Ireland or self-comply. Producers that participate satisfactorily in a compliance scheme by joining a PRO are exempt from certain requirements of the legislation. An overview of the WEEE Producer Responsibility Model for B2C with compliance schemes is presented in Figure 5.6.

A geographical division for the collection of WEEE currently exists between the two PROs. WEEE Ireland currently collect in the following areas (17 no. functional areas) Donegal, Sligo, Mayo, Roscommon, Longford, Galway, Cork, Tipperary, Waterford, Kilkenny, Laois, Offaly, Dublin, Kildare, Wicklow, Carlow and Wexford. ERP Ireland collects in (10 no. functional areas) Fingal, Clare, Kerry, Limerick, Leitrim, Cavan, Monaghan, Louth, Meath, and Westmeath. There is an exception to this division where WEEE Ireland is the only PRO that collects waste lamps nationwide.

The original allocation of collection areas was decided on the basis of the average percentage of the members market share of EEE placed on market from 2005 to 2007. ERP Ireland and WEEE Ireland looked at population, population density (rural vs. urban split), proximity to border, number and types of collection points and distance travelled from Dublin. The proximity to the border was

taken into consideration so as to take account of suspected leakage of WEEE on the part of consumers bringing it to Northern Ireland.

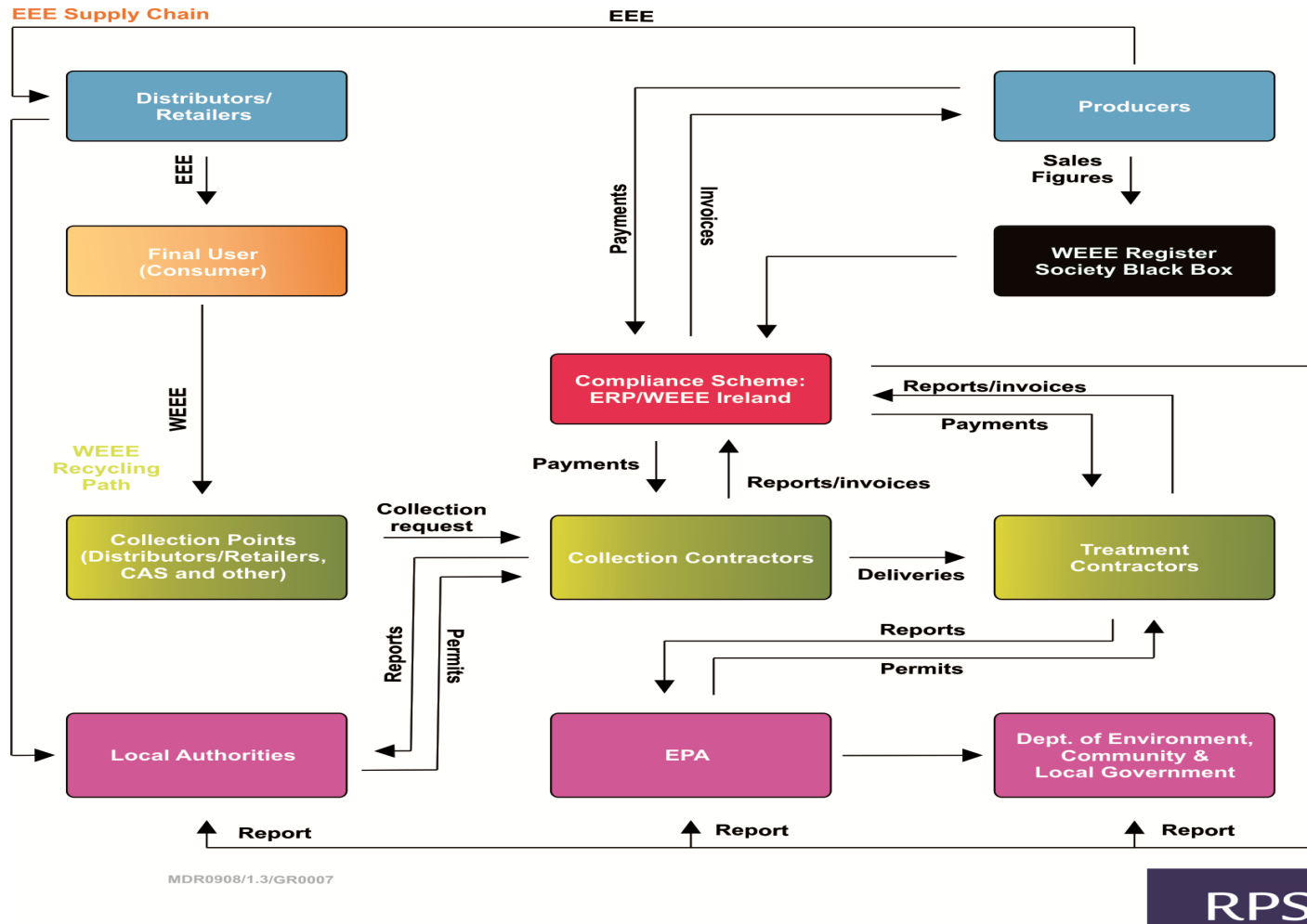


Figure 5.6: WEEE producer responsibility model (B2C)

It is important to note that a producer that is an ERP Ireland member that is located in a WEEE Ireland allocation area has WEEE Ireland collecting the WEEE and vice versa.

A voluntary accord and compensation process has been established between the two PROs, the details of which are as follows:

- Market share is calculated, based on an average of the previous 5 years for each of the WEEE families based on EEE put on the market by the PRO members and collection data is shared, between the PROs, to establish over/under collections. The calculated over/under collections information is sent to the WEEE BlackBox along with each schemes costs of recycling. The WEEE Blackbox applies the average recycling cost per tonne per family and informs the PROs of the resulting balancing amount.
- It is agreed that should the tonnage over/under-collected by one scheme differ to market share by more than 4%, then the two PROs examine the exchange of counties to minimise future differences.
- The fact that the PROs operate on a “not for profit” basis allows for co-operation. The compensation process or reconciliation occurs on an annual basis and the geographic area can be re-organised which occurred in 2009 with ERP Ireland taking over County Leitrim and Westmeath as ERP Ireland Ireland’s market share had grown.

The PROs obtain the data they require from WRS but there is currently no process of mediation or arbitration in the reconciliation process and to date resolutions have been agreed but in some incidences it has taken a long time to reach agreement and only after intervention of WRS and DECLG.

5.8.1 Approval, Terms and Conditions

In accordance with Part IV of the Waste Management (WEEE) Regulations (S.I. No. 149 of 2014) a body corporate may apply for approval to the Minister of the Environment to operate as an “approved body” for the environmentally sound management of WEEE.

Approval was granted by DECLG in 2005 for both PROs and renewed for a second five year period in August 2010 until 31 July 2015.

Approval is subject to conditions specified by DECLG. These conditions reflect European or National regulatory or policy development. Table 5.3 provides a summary of the main provisions for the two PROs.

Table 5.3: Summary of the main provisions of the Schedule of Conditions for WEEE Ireland and ERP Ireland

Headings	Summary
General	The PRO shall ensure that membership of its Board is reflective of the membership, that the representation of members of the PRO concerned is strictly in proportion to the EEE market share in the State of all members and that small and medium sized enterprises (SMEs) are guaranteed a minimum of two members on the board.
Reporting	The PRO shall submit an environmental report and financial statement annually to DECLG, which shall be separate from the PRO's activities concerning the management of waste batteries. The reports shall be made available to all stakeholders including member of the public.
Management of Financial Resources	Ensure that separate contingency reserves be maintained in separate interest bearing accounts in the State and be ring fenced from all other reserves and are not used for current operational purposes.
Cooperation with Other Collective PROs and Self- Compliers	Voluntary accord in place between the two PROs. Where no agreement is reached or when a voluntary accord ceases to operate each PRO will be required to contribute to the financing of adequate clearing arrangements.
Achievement of Targets	A minimum national collection target of 7.6kgs of household WEEE per head of population is collected for recycling, recovery and/or reuse. Recovery targets.
Information Dissemination	Contribute to information and awareness programmes on an annual basis. Each PRO shall contribute its proportion based on the quantity by weight of EEE placed on the market of its members of costs towards a recycling and reuse awareness programme costing at least: <ul style="list-style-type: none"> • €2.5m per annum provided the 7.6kgs per head of population target is achieved, • €4m per annum in the event of a failure to achieve the 7.6kgs per head of population target.
Retailer Registration	Both compliances schemes to engage to develop a web based retailer registration system.
Discrimination	Submit to the Department details of all applications for membership rejected since July 2005, together with the grounds for rejection.

5.8.2 PROs Services

The main function that the PROs carry out is to assist its producer members adhere to the WEEE Regulations.

The services include the following:

- Collect and treat WEEE on behalf of its members,
- General administration,
- Membership certification and annual renewal,
- Member auditing to assist in WEEE compliance,
- Regular liaison and co-operation with WRS and the EPA on enforcement,
- Monitoring updates to EU legislation,
- Reviewing Blackbox reporting compliance,
- Information and awareness, and
- Auditing collection and recycling contractors.

The PROs issue a Certificate to each Member declaring that the Member is satisfactorily participating in a scheme for the environmentally sound management of WEEE.

5.8.3 Membership

WEEE Ireland had a total of 649 members and ERP Ireland had a total of 81 members with WEEE obligations in 2011. The evolution and breakdown of the membership is provided in Tables 5.4 and 5.5. Some producers have obligations for WEEE only and some for both WEEE and Batteries. Producers with Batteries only obligations are shown as they make up the total number.

Both PROs have confirmed that no producer is refused membership if they agree to sign rules of membership and abide by the terms and conditions.

Table 5.4: Evolution and breakdown of membership for ERP Ireland for 2005-2011

Year	Number of Members			
	WEEE only	Both WEEE and Batteries	Batteries only	Total
2005	30			30
2006	55			55
2007	75			75
2008	30	36	3	69
2009	30	50	15	95
2010	26	54	26	106
2011	25	56	32	113

Source: ERP Ireland

Table 5.5: Evolution and breakdown of membership for WEEE Ireland for 2005-2011¹⁶⁶

Year	Number of Members			
	WEEE only	Both WEEE and Batteries	Batteries only	Total
2005	206			206
2006	418			418
2007	495			495
2008	Unavailable	Unavailable	40	584
2009	Unavailable	Unavailable	58	634
2010	223	362	161	746
2011	193	456	207	856

Source: WEEE Ireland

¹⁶⁶ Producers change battery and WEEE status on an on-going basis depending on trading conditions, company decisions, audit findings etc. The old WEEE Ireland membership IT system did not track changes but date of registration and WEEE or battery categories of the producers from end of year Blackbox request reports have been used to estimate some of the figures. The Blackbox reports did not specify WEEE or Battery status until late in 2009 and WEEE Ireland updated their system to reflect this in 2010.

5.8.4 Membership Fees, Visible Fees and Management Costs

5.8.4.1 Membership Fees

The PROs are solely funded by its members and the fees paid. The membership fees in 2011 for the two PROs are outlined in Table 5.6. It should be noted that one fee is only required for producers that have both WEEE and Batteries obligations.

Table 5.6: PROs annual membership fees

	ERP Ireland	WEEE Ireland
Joining Fee	None	€600
Annual Membership Fee	€500	Turnover >€250K = €600 Turnover <€250K = €400 (€300 discount if direct debt)

Source: ERP Ireland and WEEE Ireland

5.8.4.2 Visible Fees/Visible Environmental Management Costs (vEMCs)

For historic WEEE arisings (placed on market prior to 13 Aug 2005) the WEEE Regulations allowed producers to show visible Environmental Management Costs (vEMCs) on new products placed on the market by unit (only categories 1, 2, 4, 5 & 6) for a limited period of time (8 years for the various categories of historic WEEE and 10 years in the case of category 1 (large household appliances). vEMCs did not apply to the categories 8, 9 10 as B2B WEEE and categories 3 and 7. The vEMCs were determined and approved by WEEE Register Society in consultation with the producers via PROs and these costs act as contributions to the Producer Recycling Fund (PRF), which is also known as the Historic WEEE Fund. vEMCs were collected by the retailer from the consumer and then sent to the producer who sent it onto the PRO. Article 16 (11) of the WEEE Regulations states that the vEMCs may not exceed the current substantiated costs of the environmentally sound management of WEEE.

Table 5.7 provides details on the vEMCs, which were reclassified and reduced on a few occasions between 2005 and 2010. Recycling costs, accumulating funds, take-back rates, and anticipated house builds were some of the factors taken into account when reducing vEMCs.

Table 5.7: vEMCs Evolution

Category	Description	August '05 (€) per unit	August '06 (€) per unit	October '07 (€) per unit	June '08 (€) per unit	July '10 (€) per unit	February '11 (€) per unit
1.1	All Refrigeration (large)	40.00	30.00 ¹⁶⁷	30.00	30.00	5.00	5.00
1.2	All Refrigeration (small)	20.00	20.00	20.00	20.00	2.00	2.00
1.2a	All Refrigeration (below 150 litres)	20.00	10.00	10.00	10.00	2.00	2.00
1.3	Large Appliances	20.00	10.00	5.00	5.00	1.00	1.00
1.4	Medium Appliances	5.00	5.00	2.00	0.00	0.00	0.00
1.5	Small Appliances	2.00	1.00	0.50	0.00	0.00	0.00
2.1	Floor Care	5.00	2.00	1.00	0.00	0.00	N/A
2.2	All other SHA	2.00	1.00	0.50	0.00	0.00	N/A
2.3	Misc. SHA	1.00	0.50	0.00	0.00	0.00	N/A
4.1	Large TVs	20.00	15.00	12.00	8.00	1.00	N/A
4.2	Medium TV's	10.00	10.00	8.00	5.00	1.00	N/A
4.3	Small TV's	5.00	5.00	4.00	2.00	1.00	N/A
4.4	Medium Consumer Products	5.00	1.00	0.50	0.00	0.00	N/A
4.5	Small Consumer Products	2.00	0.50	0.00	0.00	0.00	N/A
4.6	Misc. Minor Items	1.00	0.50	0.00	0.00	0.00	N/A
5.1	Lamps	0.50	0.50	0.50	0.25	0.25	N/A
5.1a	CFLs	0.50	0.50	0.50	0.00	0.00	N/A
5.2	Luminaires	2.00	0.50	0.00	0.00	0.00	N/A
6	All Electrical Equip	3.00	2.00	1.00	0.00	0.00	N/A

Source: WRS

In accordance with the WEEE Regulations on the 13th February 2011 the vEMCs ceased for all WEEE except for some Category 1 products (in which ceased in February 2013). With regards, to WEEE 2, Article 14 of the Directive allows Member States to require producers to show purchasers, at the time of sale of new products, the costs of collection, treatment and disposal of WEEE in an environmentally sound manner. As a result of stakeholder consultation during the transposition of WEEE 2, new visible environmental costs will be applied from 1st July 2014 to a limited range of electrical and electronic equipment and on a

¹⁶⁷ Refrigeration Categories reclassified in 2006

significantly reduced level compared with the costs introduced with the original WEEE Regulations in 2005.

The application of the new vEMCs regime triggers the introduction of a range of measures to promote and support increased take-back of WEEE which includes an incentivisation scheme for electrical retailers to encourage them to take back as much WEEE as possible from members of the public, direct funding by electrical producers to support local WEEE collection systems at civic amenity facilities and further funding to defray EPA enforcement costs and to support much needed WEEE related research.

The new vEMCs, (which must be shown on the price ticket) that are being reintroduced from 1st July 2014 only apply to the following categories:

- Category 1.1,
- Categories 1.2, 1.2a and 1.3,
- Category 4.1 and
- Category 5.1 and 5.2.

5.8.4.3 Recycling Management Costs (RMCs)

RMCs were introduced effective from 1st March 2011 (non-vEMC WEEE categories always had RMC's associated with them). RMCs are calculated by weight (except for Category 5.1 and 5.1a (lamps and CFL's) which are charged per unit) of EEE reported to the Blackbox and must not be made visible on invoices but instead be incorporated into the price of the EEE.

WEEE Ireland's charging mechanism is based on the quantity of new WEEE managed, while ERP is based on all (historic and new) WEEE managed.

WEEE Ireland's RMCs are calculated using the following formula;

RMC per category = Producer quantity put on market multiplied by the management cost per unit weight (which is determined as a percentage of new WEEE managed multiplied by the total management cost divided by the total quantity placed on the market by all producers)

ERP Ireland's RMCs are calculated using the following formula;

RMC per category = Producer Market Share Rate multiplied by the management cost per unit weight multiplied by the total quantity managed by ERP Ireland

5.8.5 Transfer between PROs

Since 2005 one producer has switched from ERP Ireland to WEEE Ireland and three producers have transferred from WEEE Ireland to ERP Ireland. The reasons for leaving included the following: financial and customer service reasons, connections to companies who were members of the other PRO, and European decision by parent company.

If a producer desires to switch it is required that all liabilities with their existing scheme are covered before they transfer. A major deterrent to transfer currently exists in that the reserves built up by a producer cannot be taken with them as there is no mechanism in place for transferral between PROs. This is also the case if commercial arrangements change. For example, in the case where a company was supplying a distributor, the producer's responsibility was fulfilled by the distributor which was contributing and built up reserves with compliance scheme A. Subsequently the company took up producer obligations directly, but joined the compliance scheme B. The reserve was not transferred from compliance scheme A to B. This has occurred on two occasions.

5.8.6 Income of PROs

[This information has been redacted due to its commercially sensitive nature].

The expenditure of the PROs increased from 2006 to 2008 and decreased from 2009 to 2011. WEEE Ireland's expenditure shows a significant increase in 2008 and decrease in 2009 (shown in Figures 5.7 and 5.8).

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Figure 5.7: Evolution of income and expenditure for ERP Ireland¹⁶⁸

[This information has been redacted due to its commercially sensitive nature].

Figure 5.8: Evolution of income and expenditure for WEEE Ireland¹⁶⁹

5.8.7 Expenditure of PROs

[This information has been redacted due to its commercially sensitive nature].

¹⁶⁸ Source: ERP Ireland emailed 11/10/12. Note that Year 2006 (11 months) and Year 2008 (17 months)

¹⁶⁹ Source: WEEE Ireland emailed 10.10.12. Note that Year 2006 (11 months) and Year 2008 (17 months).

Table 5.8: WEEE Ireland and ERP Ireland total expenditure breakdown (average 2006-2011)

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As shown in Figures 5.9 and 5.10, treatment costs decreased in value and as a proportion of total expenditure from 2008, while information and awareness expenditure increased significantly for both PROs in 2008.

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Figure 5.9: WEEE Ireland's expenditure 2005-2011¹⁷⁰

[This information has been redacted due to its commercially sensitive nature].

Figure 5.10: ERP Ireland's expenditure 2005-2011^{171 172}

¹⁷⁰ Source: WEEE Ireland emailed 10.10.12. Note that Year 2006 (11 months) and Year 2008 (17 months).

¹⁷¹ Source: ERP Ireland 11.10.12. Note that Year 2006 (11 months) and Year 2008 (17 months).

5.8.7.1 Treatment Costs¹⁷³

[This information has been redacted due to its commercially sensitive nature].

¹⁷² In 2009 ERP Ireland provided financial support (€600k) to Local Authorities for collection of WEEE at CASs for security, covering cages etc. which was included in the information and awareness expenditure.

¹⁷³ It should be noted that treatment costs include for collection and recycling costs.

[This information has been redacted due to its commercially sensitive nature].

Figure 5.11: Cost per tonne treated (based on total expenditure) from 2006-2011¹⁷⁴

[This information has been redacted due to its commercially sensitive nature].

Figure 5.12: Cost per tonne treated (based on treatment costs) from 2006-2011¹⁷⁵

5.8.7.2 Contingency Reserve

[This information has been redacted due to its commercially sensitive nature].

¹⁷⁴ Source: WEEE Ireland and ERP Ireland emailed 10.10.12 and 11.10.12 respectively. Note that Year 2006 (11 months) and Year 2008 (17 months).

¹⁷⁵ Source: WEEE Ireland and ERP Ireland emailed 10.10.12 and 11.10.12 respectively. Note that Year 2006 (11 months) and Year 2008 (17 months).

5.8.7.3 Remaining Historic WEEE Fund

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Table 5.9: Total vEMCs allocation and use by PROs (2005-2012)

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[This information has been redacted due to its commercially sensitive nature].

Figure 5.13: Contribution of historic WEEE to the total WEEE managed by PROs

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Figure 5.14: Contribution of vEMCs to PRO total expenditure

5.8.7.4 Information and Awareness

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Table 5.10: Contribution towards Information and Awareness

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Both PROs favour a strategic integrated approach to information and awareness campaigns on national, regional and local levels combining a range of media.

The two compliances schemes have developed comprehensive information and awareness campaigns which raises awareness of the WEEE Directive and collection and recycling options available to consumers, schools and the general public.

Some examples in 2012 are as follows:

WEEE Ireland:

- WEEE Ireland conducted over 300 special collection events through its designated areas,
- Over 400 pieces of unpaid printed press coverage,
- Over 500,000 viewers, per episode of the WEEE Ireland stings (short adverts) – sponsoring Room to Improve on RTE,
- The WEEE Ireland Facebook attracted 2,700 new fans in 2012 taking the fan numbers from 4,000 to 6,700,
- WEEE Ireland was Saorview's official recycling partner during the digital switchover, achieving 80% increase in TV recycling during Q4 2012, and
- WEEE Ireland's schools education programme in conjunction with Rehab Recycle continued in 2012 with an estimated 900,000 pupils having participated to date.

ERP Ireland:

- ERP Ireland hosted awareness activities Recycle and Rock at the Earthship at the Electric Picnic music festival in 2012
- ERP Ireland's in conjunction with the EPA created the Green Zone stage at the Cavan Fleadh Cheoil na hÉireann 2012.
- ERP Ireland highlighted the importance of responsible recycling at the Volvo Ocean Race in 2012 with the creation of an environmentally conscious sculpture, and
- ERP Ireland Junk Kouture Recycled Fashion Competition for Secondary Schools which challenged secondary school children to create couture outfits from used materials and everyday waste, with the Grand Final in April 2012.

It has been WEEE Ireland's experience that TV sponsorship has a high out-reach especially with their e-waste challenge on "The Apprentice", radio advertisement is also very effective and can be combined with the scheduling of local collections. In the Netherlands it was found that working directly with retailers was more effective than TV advertisements (Communicating about Collection Presentation by WEEE Forum, April 2009, London).

WEEE Ireland conducted research online (to measure the awareness levels of WEEE Ireland and its activities in 2011 and 2013). The surveys which had 1000 respondents showed that overall awareness of WEEE Ireland had increased from 54% in 2011 to 84% at the beginning of 2013.

5.9 SELF-COMPLIANCE

5.9.1 Business to Consumer (B2C) WEEE

B2C Producers may choose to remain self-compliant (provided the appropriate guarantee to cover all of the costs of the environmentally sound management of WEEE from EEE placed on the market by the producers in place) or they may join an approved PRO. Producers that join a PRO are exempt from certain requirements of the legislation as they are transferred to the PRO including the requirement for a guarantee. The EPA confirmed that there are no B2C self-compliers in Ireland¹⁷⁶. The provision of the financial guarantee is sufficient to encourage producers to join a PRO.

5.9.2 Business to Business (B2B) Self-Compliers

Business to Business (B2B) Producers of EEE do not have the option to join a PRO so have to self-comply and report with the EPA. An overview of the WEEE Producer Responsibility Model for B2B is presented in Figure 5.13.

The EPA confirmed that the number of self-complying B2B WEEE producers in Ireland is currently 563¹⁷⁷.

B2B self-compliers must register with WEEE Register Society and report on a monthly basis the amount of EEE placed on the market and submit a three-year Waste Management Plan and Annual Waste Management Report to the EPA. The purpose of the Waste Management Plan is to ensure that B2B self-compliers are managing WEEE in an environmentally sound

¹⁷⁶ EPA Meeting 09.08.12

¹⁷⁷ Ibid

manner. Currently there is no fee for B2B WEEE producers to the EPA however there is for producers with Battery obligations.

There is some cross over between B2B and B2C as some producers supply both markets (e.g. IT equipment).

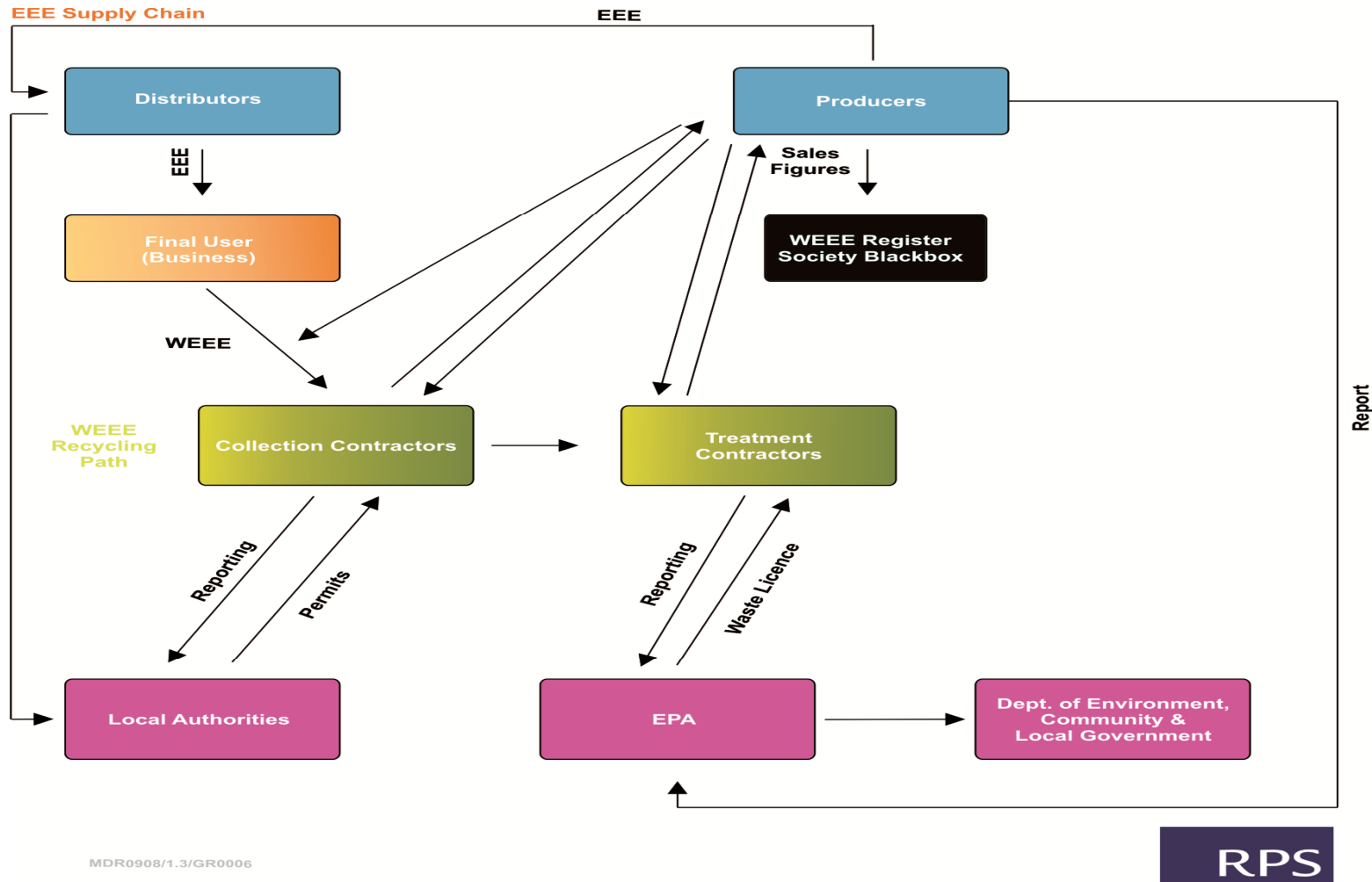


Figure 5.15: WEEE Producer Responsibility Model (B2B)

5.10 NON-COMPLIANT PRODUCERS

The non-compliant producers comprise producers who are in the process of registration but might not have all the required documentation available yet in order to finalise the registration process. However these producers are registered with WRS and report every month. Table 5.11 shows that in 2011, 1,241 producers were registered with WRS for WEEE obligations. Approximately 109 or 9% of these were non-compliant, However, the non-compliant producers only accounted for 87 tonnes or 0.1% of WEEE placed on market (see Table 5.12).

Table 5.11: Number of non-compliant producers ¹⁷⁸

Year	WEEE	WEEE/Batteries	Batteries	Total
2011	71	38	17	126
2010	75	39	13	127
2009	67	14	12	93
2008	115	19	6	140
2007	165	N/A	N/A	165
2006	176	N/A	N/A	176
2005	421	N/A	N/A	421

For any B2C producers that were initially non-compliant (after 2006) and then joined PROs they had to pay back fees (membership and management fees) from the date the producer's obligations began (2005). Discounts are sometimes be offered by the PROs in relation to membership fees in the case of a small company or charity so to encourage them to join but no discount can be given on RMC's or vEMC's fees but a staged payment system can be set up.

¹⁷⁸ WRS emailed data 12.10.12. The number of non-compliant producers fluctuates on a weekly basis and increases and decreases throughout the year. These numbers are a snapshot for the month of December each year from 2005 -2011.

5.11 WASTE MANAGEMENT

5.11.1 Quantity of WEEE Placed on Market

In 2010, 96,360 tonnes (21.5 kg/capita) of EEE was placed on the market in Ireland, 76,389 tonnes was B2C and 19,971 tonnes was B2B¹⁷⁹. The total EEE placed on the market increased slightly in 2011 to 99,058 tonnes (21.6 kg/capita). In 2011, 69,517 tonnes was B2C and 29,541 tonnes was B2B.

Table 15.12 provides details on EEE placed on market from 2005 to 2011 for B2C (even though a small percentage of B2B EEE is included due to some overlap in reporting between the two categories). With an estimated population of 4,588,252, 15.1 kg/capita of B2C EEE was placed on the market in 2011. The total EEE placed on the market peaked in 2006 and since that time it has been gradually decreasing. The market share of ERP Ireland has increased from 11% in 2005 to 33% 2011.

Table 5.12: B2C EEE placed on market from 15th August 2005-31st December 2011

Year	WEEE Ireland		ERP IRELAND		B2B Self-Compliers*	Non-Compliant	Total
	Tonnage EEE Placed on Market	%	Tonnage EEE Placed on Market	%	Tonnage EEE Placed on Market	Tonnage EEE Placed on Market	
2005	28,603	88.8	3,457	10.7	36	105	32,201
2006	87,268	77.3	24,845	22.0	21	642	112,775
2007	82,613	74.9	27,084	24.5	25	561	110,282
2008	67,628	72.1	26,001	27.7	134	17	93,779
2009	57,426	71.5	22,662	28.2	37	175	80,299
2010	54,232	70.9	22,054	28.8	54	49	76,389
2011	46,444	66.8	22,977	33.0	8	87	69,517
Total	424,214	73.7	149,079	25.9	314	1,636	575,242

Source: WRS 02.10.12

* A small % of B2B EEE is included due to some overlap in reporting between the two categories

¹⁷⁹ DECLG Report sent to Commission in 2010 emailed 04.09.12

5.11.2 Quantity of WEEE Collected and Treated

From 2005 to 2011, WEEE Ireland collected a total of 170,217 tonnes and ERP Ireland collected a total of 60,420 tonnes of WEEE since inception (Tables 5.13 and 5.14). In 2011 WEEE Ireland collected 74% and ERP Ireland collected 26% of the total WEEE collected between the two PROs. Since 2006, except for ERP Ireland in 2007, both PROs have met the national target of 7.6kgs.

Table 5.13: WEEE collected by WEEE Ireland from 15th August 2005-31st December 2011

	2005	2006	2007	2008	2009	2010	2011	Total
WEEE Collected (tonnes)	5,545	20,892	28,744	30,082	30,434	28,529	25,991	170,217
WEEE Collected Kg per Head of Population	6.28	7.89	8.86	9.10	9.13	8.84	7.88	
EU Collection Target 4kg	4							

Source: WEEE Ireland

Table 5.14: WEEE collected by ERP Ireland from 15th August 2005-31st December 2011

	2005	2006	2007	2008	2009	2010	2011	Total
WEEE Collected (tonnes)	3,992	10,448	9,068	10,090	8,815	9,040	8,967	60,420
WEEE Collected Kg per Head of Population	5.9	7.67	7.49	9.08	8.80	8.40	7.60	
EU Collection Target 4kg	4							

Source: ERP Ireland

Table 5.15 shows that the profile of WEEE categories collected by each PRO in 2011 was different.

Table 5.15: Profile of WEEE categories collected in 2011

WEEE Category	ERP Ireland	WEEE Ireland
Large Household Appliances	34%	46%
TV/Monitors	21%	17%
Cold	15%	16%
Other*	30%	21%

Source: ERP and WI Annual Reports 2011

* Other includes Small Household Appliances (SHA), IT & T Equipment, Consumer Equipment, Tools, Toys and Monitoring Equipment

From DECLG data¹⁸⁰ for 2010, 44,431 tonnes of WEEE was collected in Ireland comprising 36,754 tonnes of B2C and 7,677 tonnes of B2B. 17.3% of the total WEEE collected was from B2B and 82.7% was from B2C. The collection rate for B2B in 2010 was 38% and for B2C was 48%. The collection rate is calculated by dividing tonnage POM by that collected. Therefore it would seem that the collection rate for B2B is not performing as well as that for B2C. This trend is common with other EU Member States, where the quantity of B2B collected is quite low in comparison with B2C collected (See Section 5.14.1, Table 5.17). The difference could be due to a number of factors (under reporting of B2B WEEE management¹⁸¹, market trends, reuse of the B2B WEEE, residence time (functional and non-functional time until it becomes waste) for B2B and B2C would vary and collection rate based on generated and not placed on market would provide a more accurate comparison).

5.11.3 WEEE Collection Network

The breakdown of the main collection methods for both compliances schemes is shown in Figures 5.16 and 5.17. ERP Ireland collects significantly more WEEE from CASs than WEEE Ireland. However the trend for both PROs is for an increase in collection at retail sites and special collections and a decrease in collection at CASs. In 2011 41% of WEEE was collected from retailers (collectively from both PROs). In 2012, WEEE was being collected

¹⁸⁰ DECLG Report sent to Commission in 2010 emailed 04.09.12

¹⁸¹ A recent survey of businesses in France, Germany and the UK has revealed that they recycle and refurbish much of their waste electrical and electronic equipment (WEEE). However, some of this information is not being reported under the EU's WEEE Directive because the waste is being disposed of informally or by contractors, rather than by manufacturers who are responsible for the whole life cycle of the products (Peagam et al., 2007)

from a **total of 153 CASs or bring banks** (WEEE Ireland 120; ERP Ireland 33) and a **total of 1,870 retailer collection points** (WEEE Ireland 1,755; ERP Ireland 115). In addition in 2012 WEEE Ireland had 3,000 collection points for lamps, 300 community collections and school projects and 150 days of activity in the Dublin area servicing housing estates and ERP Ireland had 10 WEEE to work days, 5 door to door collection days, and 70 open days.

In 2012, WEEE Ireland showed the following variation in the different WEEE categories collected per collection method: Retailers collected 65% of Category 1 WEEE and 21% of Other Categories of WEEE; CAS collected 27% of Category 1 WEEE and 56% of Other Categories of WEEE and Other collection methods collected 8% of Category 1 WEEE and 23% of Other Categories of WEEE¹⁸².

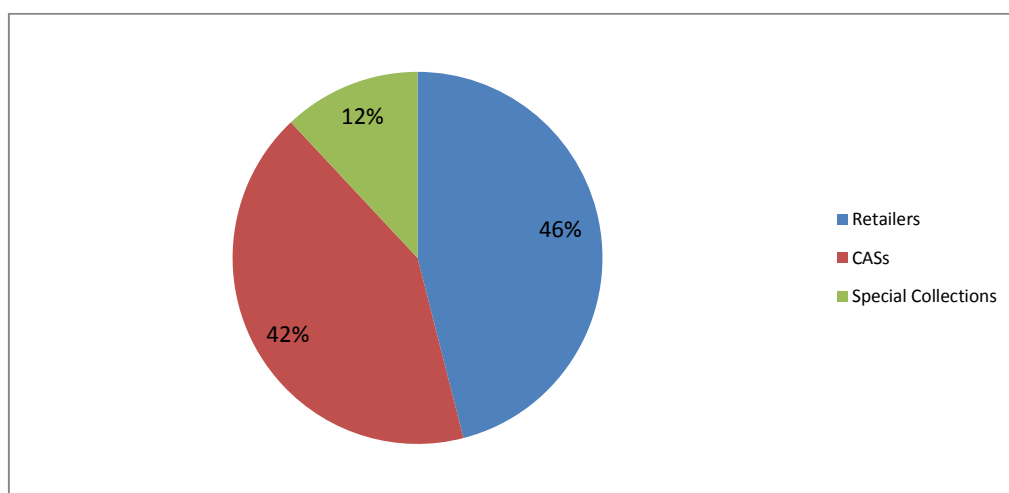


Figure 5.16: Breakdown of collection methods for WEEE Ireland for 2011

¹⁸² WEEE Ireland 09.04.13 Retailer Collection Trial Results

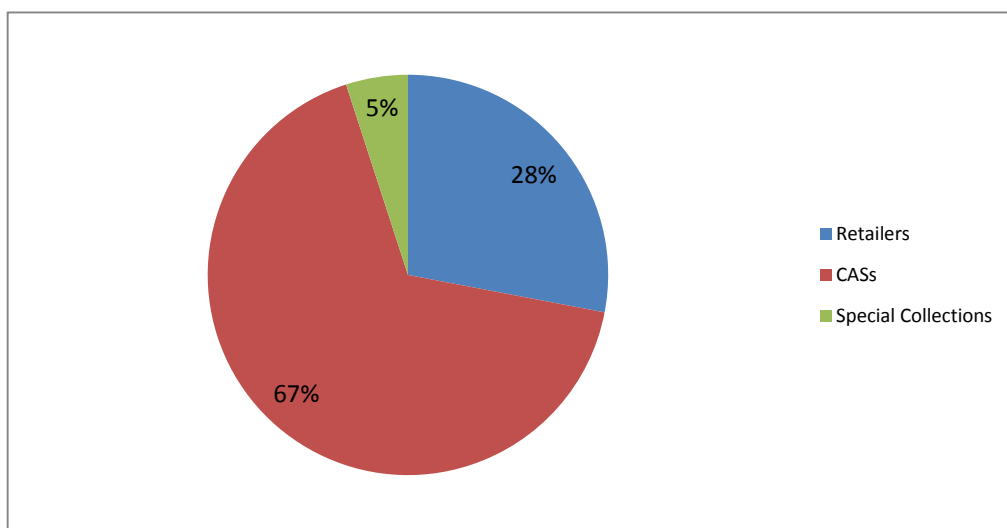


Figure 5.17: Breakdown of collection methods for ERP Ireland for 2011

5.11.4 WEEE Recycling and Recovery Network

Both PROs follow an open tendering process when acquiring collection and recycling/treatment contractors. The PROs working on the producers behalf own the WEEE.

Contractors used for collection and treatment of WEEE have to meet performance indicators and an audit programme is followed by the PROs. Storage and treatment has to be carried out in accordance with the Sixth and Seventh Schedule of the WEEE Regulations.

A standard of excellence with respect to collection, logistics and treatment of WEEE called WEEELABEX, the WEEE Label of Excellence has been developed by numerous working groups within the WEEE Forum and funded under the EU LIFE programme¹⁸³. It is currently being submitted for European Standard approval (CENELEC) and eventually will be developed into an International Standard (IEC). Currently an R2 Standard and E-Stewart Standard also exist for Recycling of WEEE in the US.

¹⁸³ WEEE Forum Annual Report 2010

The treatment of WEEE is defined by the WEEE Directive (2012/19/EC) (by Article 3 of Directive 2008/98/EC) as meaning “*recovery or disposal operations, including preparation prior to recovery or disposal.*” In 2010, 52% of WEEE collected was treated in Ireland with the 47.9% treated in EU. A very small amount 0.1% was treated outside the EU (64 tonnes of B2B IT and telecommunications equipment)¹⁸⁴. Treatment of WEEE in Ireland consists mainly of pre-treatment with post-treatment mainly being carried out in the UK and Europe.

A processing plant for small mixed WEEE is currently in operation in Tullamore, Co. Offaly. Economy of scale was achieved by acquiring the volumes of WEEE from WEEE Ireland. A total of 17,000 tonnes of WEEE per annum is treated at the waste licensed facility which includes B2B and B2C fractions. Of this total 7,500 tonnes of small mixed WEEE is accepted and processed although capacity exists to treat double this amount.

WEEE is collected and treated according to five family groupings which include:

- Fridge/Freezers,
- Large Household Appliances
- TV’s and Monitors,
- Mixed WEEE, and
- Lamps.

Pre-treatment is undertaken to remove any hazardous components prior to processing (i.e. Cathode Ray Tubes (CRT), flat panel displays and oil filled radiators) to be treated in separate specialised processes. Each WEEE family is separated manually and mechanically into the final outputs of the ferrous and non-ferrous metals and a mixed plastics fraction which are then sent to a smelter for recovery. Some WEEE categories have a positive value (e.g. IT equipment) and some categories have a negative value (e.g. small WEEE) associated with them.

Ireland has achieved the recovery/recycling rates in accordance with the WEEE Directive, but an increase in targets for recovery and recycling is now included in the WEEE Recast

¹⁸⁴ DECLG email 04.09.12

Directive which will require more WEEE to be managed in an environmentally sound manner. These issues are examined in Section 5.14.

5.12 REUSE

5.12.1 Introduction

The reuse of WEEE is beneficial in three main ways: environmentally, socially and economically.

Environmental Benefits: “Reuse” is a means of prevention and is placed at the top of the waste hierarchy. “Preparing for reuse” is just below prevention in the waste hierarchy and they are both positioned above recycling. They consume fewer resources and less energy than recycling (and other options lower down the hierarchy) and the manufacture of new products from virgin materials.

Social Benefits: Many WEEE reuse models are built on the concept of social enterprise. They train disadvantaged / vulnerable people, e.g. long-term unemployed, recovering addicts and disabled people etc., in the preparation for reuse of WEEE and create jobs for them also. Social enterprises such as this are common in the EU.

Economic Benefits: Reuse allows people from all socio-economic circles the opportunity to purchase electrical items they need as they are less expensive to buy than new equivalents. There are indications of a growing “grey market” in commercial refurbishment of WEEE. It also reduces the amount of WEEE to be managed as it reduces the manufacture of new items of electrical equipment.

However, there are several key issues that need to be addressed that involve all of the stakeholders and are critical to the success of a reuse model. They are based on the following:

- **Collection/Access:** The levels of collection and means of collection determine the levels of access to WEEE that is suitable to be prepared for reuse and thus the viability of a reuse organisation’s activities. There are a number of barriers to access of WEEE for reuse. For example, one of the barriers to reuse is caused by the current regulatory system as the local authorities do not own WEEE that is delivered to their CA/RCS and can not transfer it to reuse organisations (rx3, 2013).

- **Producer Buy-in:** Brand protection needs to be assured and producers will also be concerned that allowing products for reuse will have a negative impact on their sales of new products.
- **Licensing:** in order to ensure a level playing field between reuse organisations and that their operations are undertaken safely and in line with environmental regulations should reuse organisation be licensed by Irish authorities?
- **Quality Assurance and Standards:** Standards should be set for the processes in preparing an item for reuse such that they would be certifiable. This ensures a level playing field for all reuse organisations, ensures brand protection and assures the quality of second-hand products, which creates confidence in the public. This should include for a standard warranty to be issued and the original manufacturer's name removed and a reuse quality label attached.
- **Financial/business model of reuse:** Reuse and preparing for reuse preserve much of the value created through manufacturing but there are a number of market and material barriers preventing organisations to capture this value and establish sustainable business model for reuse¹⁸⁵.
- **Data capture and reporting** are important to demonstrate to stakeholders that targets are met and regulatory conditions are adhered to. Different stakeholders will have different requirements, it is therefore important to capture a range of data without it being too onerous.
- **Co-ordination:** Co-ordination is required with regard to collection, quality assurance, information and awareness and reporting. .

5.12.2 Reuse in Ireland

The DECLG Report sent to the Commission in 2010¹⁸⁶ estimated the total quantity of reuse of whole appliances by summing the weights of appliances prepared for reuse by obtaining EPA data on waste treatment operators (including charities and reuse organisations) and by

¹⁸⁵ See Benton and Hazell, 2013 for further information on these challenges.

¹⁸⁶ DECLG Report sent to Commission in 2010 emailed 04.09.12

B2B producers. In 2009, 616 tonnes were reused as whole appliances. In 2010, this figure was 315 tonnes, which mainly comprised of information and communication technological equipment (ICT) i.e. mobile phones and computers. There is a greater demand for ICT equipment over white goods for example as they are more profitable to reuse and enable improvements in education and business.

5.12.3 WEEE Reuse Initiatives in Ireland

There are 10-15 organisations involved in WEEE Reuse in Ireland. Two levels exist remanufacturing and distribution. The current model of WEEE Reuse is shown in Figure 5.18.

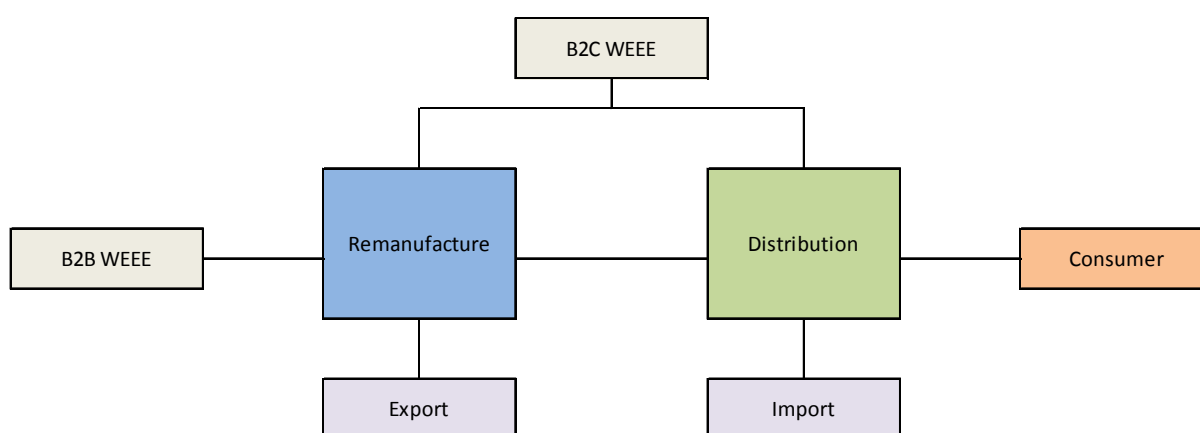


Figure 5.18: WEEE Reuse Model

There two main not-for-profit organisations involved in the remanufacturing of IT equipment are Rehab Recycle and Camara. There are also a number of businesses in the distribution of second hand and remanufactured large domestic appliance (e.g. Murphy Discount Appliances, ReUseIT etc.) but there is limited large scale remanufacture due to inability to access the supply of WEEE in line with WEEE Regulations (Article 15 (1) (a)). Most of the large domestic appliances are imported from the UK and Northern Ireland and only a small fraction comes from the Republic.

Rehab Recycle initiated a Corporate Social Responsibility scheme where companies can offer their B2B WEEE – mainly out-of-date and unused computer and other electrical equipment – to Rehab Recycle who collect the equipment, wipe all information from hard drives, rebuild the equipment where necessary and deliver it to a charity, community group, school, etc.

Camara takes computers from companies or homeowners. The computers are refurbished and sent to one of their Education Hubs (there are seven in Africa, one in Jamaica and one in Ireland). The Education Hub receives the computer then carries out further testing at its own workshop, cleans it and then sells the computer to ‘approved’ schools. For a small fee, the school gets the computer, a maintenance contract for the computer, a training program for a number of teachers and a recycling/replacement service at the end of the computer’s life.

5.12.4 Reuse Research in Ireland

Re-evaluate-Reuse of EEE-Evaluating & Mainstreaming Project

Research into the potential for reuse of WEEE has been undertaken by a team from University of Limerick on behalf of the EPA with funding from the Government’s Science, Technology, Research and Innovation (STRIVE) programme. The project entitled “Re-evaluate-Reuse of EEE-Evaluating & Mainstreaming” was published in 2013¹⁸⁷. For white goods (washing machines, dishwashers, tumble dryers and refrigeration units) a quantitative model was developed to determine when it is beneficial to reuse an appliance compared to the purchase of a new appliance; accounting for the energy rating of the appliance, original usage intensity, secondary usage intensity, the electricity generation portfolio and efficiency of the electricity supply. The result of the model indicates that re-use of all “A” and “B” rated appliances will be beneficial for the above criteria.

Bulky Waste Reuse Study

The report was commissioned and managed by rx3, the DECLG’s programme to develop markets for recyclable materials in Ireland. Bulky waste items included WEEE. The All Island Bulky Waste Reuse Best Practice Management Feasibility Study found that an all-island reuse initiative between CASs and reuse organisations is feasible. The study recommended that:

¹⁸⁷ O’Connell, M. and Fitzpatrick, C. 2013 <http://www.epa.ie/pubs/reports/research/waste/strive110-re-evaluate-re-useofelectricalandelectronicsequipment.html#.U5sXrZRdV8E> accessed on 25/06/14

- There is a requirement for regulatory or policy driver to further stimulate the reuse of bulky wastes,
- A reuse protocol be developed to assist CASs, operators and reuse organisations,
- A reuse certification system and quality mark and/or reuse logo should be developed to allow reuse organisations to show that their products meet high quality standards,
- The demand for training course/information session for local authorities and reuse organisations be assessed,
- There is clarification provided for the owners and operators of CASs on the implications of reuse and preparing for reuse activities on the facility authorisation, and
- The existing level of funding is maintained and additional funding is made available to support CASs and reuse organisations.

5.12.5 Regulatory Framework

5.12.5.1 Waste Framework Directive

The Waste Framework Directive (2008/98/EC) was revised in 2008 in order to clarify the definitions of key concepts of waste management and strengthen the measures that must be put in place with respect to the waste hierarchy and reuse such that reuse is prioritised as the one of the primary goals.

Article 4 of the Waste Framework Directive places the waste hierarchy and reuse on a firm legal footing. Article 11.1 specifies that Member States shall take measures, as appropriate, to promote the re-use of products and preparing for re-use activities, notably by encouraging the establishment and support of re-use and repair networks, the use of economic instruments, procurement criteria, quantitative objectives or other measures.

It includes the following definitions:

- “Reuse” means any operation by which products or components that are not waste are used again for the same purpose for which they were conceived, and

- “Preparing for reuse” means checking, cleaning or repairing recovery operations, by which products or components of products that have become waste are prepared so that they can be reused without any other pre-processing.

In June 2012, the EU Commission published guidance on the key provisions of the above Directive and clarifying the definitions of “reuse” and “preparing for reuse”.

Re-use is a means of waste prevention; it is not a waste management operation. For example, if a person takes over a material directly from the current owner with the intention of re-using (even if some repairing is necessary) it for the same purpose and this comprises evidence that the material is not a waste.

The key difference between “reuse” and “preparing for reuse” is that in the former case the material or object has not become a waste, whereas in the latter case the material in question has become waste where “waste” is defined as “any substance or object which the holder discards or intends or is required to discard”.

Under the above definitions, where an item is being moved for reuse, it is not a waste activity and thus is not subject to waste legislative requirements. Items for reuse can move from civic amenity sites to reuse organisations like any other product for sale, which includes the movements of items across national borders, coming into or going out of Ireland.

Under the above definitions, where an item is being moved to prepare it for reuse, it is a waste activity and is therefore subject to authorisation. The Waste Framework Directive was transposed into Irish law in the European Communities (Waste Directive) Regulations 2011 (S.I. No. 126 of 2011).

5.12.5.2 WEEE Directive (2012/19/EU) Recast or WEEE II

Reuse is included in the Recast Directive but there is no separate target for reuse. Instead, it is included in the targets for preparation for reuse and recycling of collected WEEE. The new targets will come into effect on 15th August 2015 (Until 14th August 2015, the targets are for recovery and recycling only). However, this will be re-examined using an impact assessment by August 2016 and the possibility of setting separate targets for preparation for reuse will form part of this. Standards for treatment, including recovery, recycling and preparing for reuse are to be developed from February 2013. A mandate was issued by the

European Commission to CENELEC for the development of standards for the treatment of WEEE on 24th January 2013.

Table 5.16: Targets for collected WEEE prior to reclassification of categories of EEE

	Category 1, 10 ¹⁸⁸	Category 3, 4	Category 2, 5, 6, 7, 8, 9
13 August 2012 – 14 August 2015	<ul style="list-style-type: none"> • 80% recovered • 75% recycled 	<ul style="list-style-type: none"> • 75% recovered • 65% recycled 	<ul style="list-style-type: none"> • 70% recovered • 50% recycled
15 August 2015 – 14 August 2018	<ul style="list-style-type: none"> • 85% recovered • 80% prepared for reuse & recycled 	<ul style="list-style-type: none"> • 80% recovered • 70% prepared for reuse & recycled 	<ul style="list-style-type: none"> • 75% recovered • 55% prepared for reuse & recycled

Table 5.17: Targets for collected WEEE post reclassification of categories of EEE

	Category 1, 4 ¹⁸⁹	Category 2	Category 5, 6	Category 3
From 15 August 2018	<ul style="list-style-type: none"> • 85% recovered • 80% prepared for reuse & recycled 	<ul style="list-style-type: none"> • 80% recovered • 70% prepared for reuse & recycled 	<ul style="list-style-type: none"> • 75% recovered • 55% prepared for reuse & recycled 	<ul style="list-style-type: none"> • 80% recycled

Article 6 (2) states that “*Member States shall ensure that the collection and transport of separately collected WEEE is carried out in a way which allows optimal conditions for preparing for re-use, recycling and the confinement of hazardous substances*”.

Article 5 (4) of the Recast Directive provides for a Member State requiring that WEEE collection facilities pass on WEEE to nominated bodies for the purposes of preparing for reuse:

“Member States may require that the WEEE deposited at collection facilities referred to in paragraphs 2 and 3 is handed over to producers or third parties acting on their behalf

¹⁸⁸ Annex I of Recast Directive

¹⁸⁹ Annex III of Recast Directive

or is handed over, for purposes of preparing of re-use, to designated establishments or undertakings.”

In order to facilitate the preparation for re-use Member States are required to take the necessary measures to ensure that producers provide information to WEEE reuse organisations (the different EEE components and materials, as well as the location of dangerous substances and mixtures in EEE) (Article 15).

The Recast Directive also established tougher restrictions on the illegal export of WEEE, to prevent waste electrical equipment from being processed in countries where conditions are hazardous to workers and the environment. The measures will see exporters made responsible for proving that goods are being shipped abroad for repair or reuse and not as a cover for illegal exports. This includes for functionality testing and records.

5.12.5.3 WEEE Regulations (S.I. No. 149 of 2014)

The current WEEE Regulations also provide for reuse of WEEE such that:

- *“Each producer shall (a) be prohibited from preventing waste electrical and electronic equipment from being prepared for reused through specific design features or manufacturing processes, unless such specific design features or manufacturing processes present overriding advantages with sustainable environmental practices or, as appropriate, health and safety requirements, and (b) ensure that eco-design requirements facilitating the preparation for reuse and treatment of WEEE established in the framework of Directive 2009/125/EC are applied, and (c) ensure that the design and production of electrical and electronic equipment, takes into account and facilitates the dismantling and recovery, in particular the reuse and recycling of waste electrical and electronic equipment, together with all the components and materials contained therein” (Article 43 (1) (a), (b), (c)).*
- *“Prior to any further transfer for treatment, a producer or authorised representative shall provide for the separation at their collection points of waste electrical and electronic equipment that is to be prepared for reuse from other separately collected waste electrical and electronic equipment by granting access for personnel from approved preparing for reuse of waste electrical and electronic equipment organisations that have been approved and registered by the registration body.” (Article 17 (3)).*

- Producers are obliged to provide information to preparing for reuse organisations (on preparation for reuse and treatment, the different EEE components and materials, and the location of dangerous substances and mixtures in EEE) (Article 26 and 27).
- “...*Each final user, distributor, local authority, approved body, producer or authorised representative and authorised facility in possession of waste electrical and electronic equipment shall give priority to preparing for reuse of WEEE and its components, sub-assemblies and consumables.*” (Article 44).

5.12.5.4 National Waste Policy

The National Waste Policy ‘*A Resource Opportunity*¹⁹⁰’ is predicated on the waste hierarchy and recognises the importance of resource efficiency. The policy highlights the barrier of a lack of widespread public confidence in second-hand products and points towards the public sector’s role in demonstrating a commitment to reuse and in providing leadership in the reuse of second-hand products. A Public Sector Reuse Policy is to be developed to ensure the public sector gives full consideration to the procurement of feasible reuse options prior to purchasing new products.

Reuse and opportunities for preparation for use will be encouraged through the National Waste Prevention Programme, Producer Responsibility Initiatives and by the local authorities.

5.12.6 Leading Examples of WEEE Reuse

Two of the leading examples of reuse of WEEE and preparation for its reuse are the Repair and Service Centre (R.U.S.Z) in Austria and the Kringloop Reuse Centres in Belgium.

¹⁹⁰

<http://www.environ.ie/en/Environment/Waste/PublicationsDocuments/FileDownload,30729,en.pdf>

5.12.6.1 Repair and Service Centre (Austria)

The Repair and Service Centre (R.U.S.Z)¹⁹¹, which is based in Vienna, is a social economy enterprise that combines the training of long term unemployed people over the age of over 45 in the reuse and preparation for reuse of WEEE that would otherwise end up going for disposal. The participants in the project are trained over the course of one year in the electrical repair of computers and gain qualifications that help them back into work. In addition, the enterprise provides services and products at a lower price for those who cannot afford to buy the equivalent products new.

The enterprise began in 1998 with twelve training places, and the appliances refurbished or dismantled were washing machines, tumble driers, dish washers, and ovens.

The R.U.S.Z has seen a significant increase in the demand for repair services since 1998, and its services have changed considerably. In 2007, there were 140 people working in the R.U.S.Z and it has created a repair network consisting of 52 private repair enterprises. Between 1998 and 2008, the R.U.S.Z had resulted in 300 former long-term unemployed gaining employment and had trained another 100 to the point where they were ready for gainful employment. The project has a 71% success rate at finding work for its trainees in the labour market.

The Repair and Service Centre works in partnership with Viennese adult education centres offering repair courses for household appliances. This teaches people how to carry out do-it-yourself repairs. As the activities of the Repair and Service Centre expand, for example into refurbishment of computers, so do the courses that are offered.

It has also prevented in excess of 10,000 tonnes of waste from electrical and electronic equipment in its first 10 years by extending the utilisation phase of household appliances. Evaluating the results using the concept of *material input per unit of service* (MIPS) of Wuppertal Institute, 20,000 tonnes of material inputs are avoided annually. Using the data from the R.U.S.Z, it is estimated that the repair of an item extends its lifespan by 25%.

¹⁹¹ Pre-Waste Factsheet 10 Repair and Service Centre in Austria R.U.S.Z. Accessed on 08/01/13 at <http://www.prewaste.eu/waste-prevention-good-practices/best-practices/item/272.html>

In the ten years from 1998 to 2007, R.U.S.Z was commissioned by the Viennese labour administration (AMS) to reintegrate long-term unemployed over the age of 45 and people with disabilities into the workplace. In this ten-year period R.U.S.Z was funded with an average of €35,000 per transitory work place per annum, which amounted to a of about €3 million in 2007.

R.U.S.Z was transformed into a non-profit private enterprise in 2008 and has covered its costs on its own. It still follows its mission and employs only long-term unemployed and disabled persons on an unlimited basis.

5.12.6.2 Kringloop Reuse Centres (Belgium)

The *Koepal van Vlaamse Kringloopcentra* (KVK) network of Reuse Centres originated in the Netherlands but was set up in Flanders in the early 1990s. Kringloop Reuse Centres¹⁹² (known as Kringwinkels) collect, sort, repair and resell discarded products, extending the useful lives of a wide range of products. Types of goods include clothing, appliances, furniture, kitchenware, books, records, and bicycles.

In addition to protecting the environment by reusing discarded items, the Reuse Centres assume employment and social functions as well. Most Reuse Centre employees had previously been unskilled, long-term unemployed. The Reuse Centres provide a stable income and on the job training, and offer those with limited means the opportunity to buy low priced goods. The quantitative objective of the initiative, furthermore, is to achieve an annual reuse volume of 5 kg per inhabitant in the long term.

The system facilitates the reuse of goods through several methods for the collection of goods:

¹⁹² EUROPA Waste Prevention Best Practice Factsheets in Preparation for 'Waste Prevention Guidelines' June 2009.

Kringloop Reuse Centre (Flanders) Accessed on 08/01/13 at

http://ec.europa.eu/environment/waste/prevention/pdf/Kringloop%20Reuse%20Centres_Factsheet.pdf

- Pick-up at home (including a free, scheduled house clear-out service for those moving to new properties)
- Delivery to a Reuse Centres
- Delivery to a municipal waste collection point

The collected goods are then sorted (into saleable and non-saleable items), thoroughly checked, repaired or refurbished, and finally sold in one of the twelve regional stores. The KVK network has developed its own quality label, Revisie, for WEEE refurbished by the network. The Revisie label was developed to show customers refurbished WEEE meets certain quality standards after stringent testing. Appliances with the Revisie label appliances have a warranty of 6 months.

In 2008, the total collection of reusable goods reached 47,218 tonnes, a 10% increase on 2007. The quantity of actual reuse per capita per year increased in tandem by 10% to 3.68 kg in 2008 (includes other household goods for reuse, 0.2kg/capita of WEEE were reused). Of the collected waste approximately 50% is reusable, 35-40% is recyclable and 10-15% goes to disposal.

5.12.6.3 Reuse in the UK

In the UK, any company can become a PRO once they register with the Environment Agency (for England and Wales), the Scottish Environment Protection Agency or the Northern Ireland Department of the Environment and have an incoming supply of WEEE. All PROs compete for market share and have quotas to reach each year. In 2012 there were 37 approved compliance schemes (though the top three accounted for 76% of the market share). Of these schemes, 24 are dedicated to both B2C and B2B WEEE while 13 are dedicated to B2B only.

IT equipment constitutes the greatest fraction (by weight) of B2B WEEE sold in the UK with 113,000t out of a total of 300,000t sold in 2009 (Butler, 2010). B2B WEEE is transferred to a recycler mainly via a third party with some units diverted to remanufacture or charities. Where equipment is deemed suitable for remanufacturing or refurbishment, third party brokers act as an intermediary between B2B end users and the reuse organisations. If the equipment is not suitable for reuse, it is sent to a metal recycler.

White goods are typically B2C WEEE and 15,000t of large household appliances were sold in the UK in 2009 (Butler, 2010). The consumer has various collection options available for their B2C WEEE i.e. civic amenity sites, retailers, kerbside collections and WEEE Collection events. WEEE re-processors and reuse operators must register as “Authorised Treatment Facilities” (ATF’s) and must compile annual reports quantifying how much WEEE they have processed and also the quantity of whole appliances reused. This data is used to determine the level of WEEE recycling and reuse in the UK.

When a producer joins a PRO, they must provide data every quarter on the types and quantity of new electrical and electronic equipment (EEE) they have placed on the UK market. This data is used to calculate their financial responsibility for treating and recycling household WEEE. The PRO then passes this data to the appropriate environment agency, along with information on how much WEEE has been collected from designated collection facilities. Each PRO will also compile data from ATFs and Approved Exporters of WEEE to show the level of treatment and recycling carried out on the collected WEEE.

WRAP developed a set of protocols for WEEE reuse in 2011 which support reuse organisations in obtaining the PAS141 standard¹⁹³.

Local authorities in the UK offer reuse credits for household WEEE that is reused. Organisations such as community groups, Scout groups, church groups, charities and schools can claim reuse credits as long as they register and meet the requirements set out in the Recycling and Reuse Credits Information Pack.

The following are the reuse figures for collected WEEE in The United Kingdom in 2010¹⁹⁴

- Large Household Appliances - 7%
- Small Household Appliances – 2%
- Consumer Equipment – 9%
- All WEEE – 8%

¹⁹³ WRAP Reuse Protocols www.wrap.org.uk/reuseprotocols

¹⁹⁴ Eurostat 2010. EEE put on the market, collection and treatment of WEEE, by country, year, EEE-Category and treatment type, in number (if available), tonnes, percent (%) and kg per inhabitant.

5.13 ENFORCEMENT

The EPA leads the national enforcement of the WEEE Regulations with the Local Authorities having local enforcement responsibilities particularly in relation to Distributor/Retailer obligations.

Local authorities are also responsible for the permitting of waste facilities within their administrative area. The EPA is also responsible for licensing waste facilities. The EPA also has a supervisory role over all local authorities under Section 63 of the EPA Act, 1992.

A Producer Responsibility Enforcement Network as part of the wider NIECE (the Network for Ireland's Environmental Compliance and Enforcement) is in place since June 2006 to guide and coordinate local authorities in their enforcement of producer responsibility initiatives. A WEEE Monitoring Group (including representatives for producers, distributors/retailers, waste management industry, WEEE Register Society, PROs, reuse industry, DECLG, and regulators) was established in February 2008 as a sub-group of the Network to focus on certain key aspects.

Since obligations under the WEEE Regulations came into force in 2005, the EPA has been undertaking inspections of companies producing and distributing electrical and electronic equipment (EEE). Between August 2005 and July 2013, the EPA has carried out inspections on 1,725 retailers, 247 sellers of goods over the internet and 190 producers. It also carried out 16 special investigations (EPA, 2013b). The inspections are verifying that retailer obligations are being met and non-compliant producers are identified. The special investigations are focused on the 'WEEE leakage' as the current high value of metal has led to the diversion of WEEE to channels other than management via the compliance schemes.

Up to July 2013 the EPA has taken eleven prosecutions and Dublin City Council has taken one. In three of the cases the Probation Act was applied and in the other cases fines and costs were imposed. Of the twelve cases prosecuted, nine were due to non-compliant Producers Obligations and three related to Retailer Obligations.

The EPA works in co-operation with the WEEE Register Society on producer enforcement, particularly those producers who fail to register, fail to join a compliance scheme or self-comply, or fail to report what they place on the market to the blackbox. The EPA also works with the WEEE Register Society and the PROs, particularly to follow up complaints regarding potential unregistered producers who may be placing EEE or Batteries on the

market. The EPA regularly attends the Committee of Management meetings of the WEEE Register Society as an observer and participates in the WEEE Monitoring Group which is chaired by DECLG.

In accordance with Article 39 (4) of the WEEE Regulations a person found guilty of an offence is liable on summary conviction, to a class A fine or imprisonment for a term not exceeding 12 months, or both, or on conviction on indictment, to a fine not exceeding €500,000 or imprisonment for a term not exceeding 3 years, or both.

The consequences of illegal shipments include environmental damage, health risks and loss of material resources in the EU as the majority of WEEE is improperly treated and a lower quantity of resources are recovered. New requirements in Recast Directive for shipment of EEE should reduce or eliminate illegal shipments as evidence has to be provided by the shipper that the equipment is functioning and can be reused. The WEEE Forum is currently part of a consortium which is involved in a project investigating illegal trading in WEEE (CWIT: Countering WEEE Illegal Trading) which is due to commence in September 2013.

In addition in November 2010 the National TFS Office revised its policy on the classification of WEEE shipments¹⁹⁵. Shipments of whole and whole crushed non-hazardous WEEE can now only take place on a consented notification.

¹⁹⁵

http://www.dublincity.ie/WaterWasteEnvironment/Waste/National_TFS_Office/Pages/GuidelinesforExportingorImportingWaste.aspx

5.14 BENCHMARK AND RECOMMENDATIONS

A benchmark review of the WEEE PRI has been undertaken and recommendations have been developed following this process. The review has included:

- A review of relevant published information on the management of WEEE in Ireland and abroad,
- Engagement with various stakeholders involved in the WEEE PRI¹⁹⁶, and
- A review of the findings of national consultation.

5.14.1 Waste Management Performance

Ireland has been very successful to date in implementing the WEEE Directive and meeting the EU targets. In 2010 8.2 kg per capita was collected, which is double the target set by the EU Directive (Table 5.18). However, while Ireland is in the top tier of the EU Member States some MS exceeded the Irish performance ((Sweden (15.9 kg/capita), Denmark (14.8 kg/capita), Belgium (9.3 kg/capita), Finland (9.1 kg/capita), Germany (8.8kg/capita) and Austria (8.7kg/capita). The existing collection target of at least 4 kg per capita will remain in place until the end of 2015.

¹⁹⁶ ERP Ireland, WEEE Ireland, waste collector, waste recyclers, IBEC representing compliance scheme producer members, producers, retailers, self-compliant producer, CCMA, Reuse Sector, WEEE Register Society Ltd, EPA Office of Environmental Enforcement, EPA Resource Use Unit and the DECLG.

Table 5.18: WEEE Collection Targets for EU Member States (kg/capita) 2010¹⁹⁷

Member State	Products put on the market	Waste collected	Waste collected from households	Reuse	Recovery	Total Recycling and Reuse
Austria	19.8	8.9	8.7	0.2	7.9	7.1
Belgium	27	9.7	9.3	0.5	8.4	7.8
Bulgaria	6.8	6	5.9	0	4.8	4.7
Cyprus*	22.5	3.0	2.9	n.a	n.a	n.a
Czech Rep	15.8	5	5	0	4.7	4.4
Germany	21.2	9.5	8.8	0.1	9	7.9
Denmark	26.6	14.9	14.8	0	13.6	12.5
Estonia	9.8	4.2	4.2	0	4	3.5
Spain	16.2	3.4	3.2	0	2.5	2.3
Finland	27.6	9.5	9.1	0	8.7	8.4
France	25.2	6.7	6.4	0.2	5.5	5.2
Greece	15.8	4.1	3.9	0	4	4
Hungary	12.4	4.1	3.9	0	3.5	3.3
Ireland	21.5	9.9	8.2	0.1	8.1	8
Italy	18.5	4.4	4.2	0	0	0
Lithuania	7.3	2.7	2.7	0	2.1	2
Luxembourg	33.6	9.5	9.4	0	8.6	8.2
Latvia	6.8	1.9	1.9	0	1.6	1.6
Malta	34.4	3.7	3.4	n.a	n.a	n.a
Netherlands	3.7	7.7	7.3	0	7.3	6.2
Poland	12.8	2.9	2.8	n.a	n.a	n.a
Portugal	14.8	4.4	4.4	0	3.8	3.7
Romania	7.1	1.2	1.1	0	1.1	1
Sweden	24.8	17.2	15.9	0	15.8	14.4
Slovenia	13.9	4.2	4	0	3.4	3.3
Slovakia	9.1	4	3.9	0.1	3.6	3.5
UK	24.6	7.7	7.4	0.6	0	0

*in 2008

¹⁹⁷ Appendix A Working Paper on European PRIs Table 13

By 2010 the rates for recovery and recycling achieved in Ireland for the various categories of WEEE ranged between 80 – 91%. The targets and rates of recovery and recycling for some of the WEEE categories are outlined in Table 5.19.

Table 5.19: WEEE Recovery, Reuse & Recycling Targets and Rates

	Target Recovery	Achieved in 2010	Target Reuse / Recycling	Achieved in 2010
1. Large Household Appliances	80%	82%	75%	80%
2. Small Household Appliances	70%	82%	50%	80%
3. IT, Telecomm. Equipment	75%	85%	65%	80%
4. Consumer Equipment	75%	89%	65%	88%
5. Lighting Equipment				
5a Gas Discharge Lamps	N/A	91%	80%	91%
6. Electrical and Electronic Tools	70%	82%	50%	80%
7. Toys, Leisure and Sports Equip.	70%	82%	50%	80%
8. Medical Devices		85%		83%
9. Monitor and Control Instruments	70%	85%	50%	83%
10. Automatic Dispensers	80%	85%	75%	83%

Source: WEEE Regulations 2011 and DECLG

5.14.2 Cost of the current system

5.14.2.1 Cost to Producers

Similarly to other waste stream PRIs, it is difficult to compare meaningfully costs to producers within other European countries as the costs to producers are determined by several factors:

- Registration and administrative costs to producers,
- Collection (correlation with density of population) and treatment costs (effect of economy of scales and transport costs),
- Information and awareness costs,
- Effectiveness of the PROs in discharging the producer obligations,
- Proportion of waste management costs covered by the PROs,
- Mechanisms to fund the historic WEEE (e.g. using vEMCs), and
- Level of financial guarantees (e.g. contingency funding).

In nine Member States (Austria, Belgium, Cyprus, Czech Republic, Finland, Latvia, Poland and Sweden), producers cover the full cost of waste management (collection, recycling and recovery)¹⁹⁸. In Ireland producers cover the full cost of managing WEEE except for a subsidy that is made available to the local authorities to fund WEEE collection at CASs as outlined in Section 5.14.2.6.

5.14.2.2 Cost of Registration

The National Registration Body in Ireland for producers of WEEE is the WEEE Register Society. WRS current charges a variable fee based on turnover ranging from €50 to €1,900. Table 5.20 provides details on the evolution of WRS's registration fees from inception to 2012.

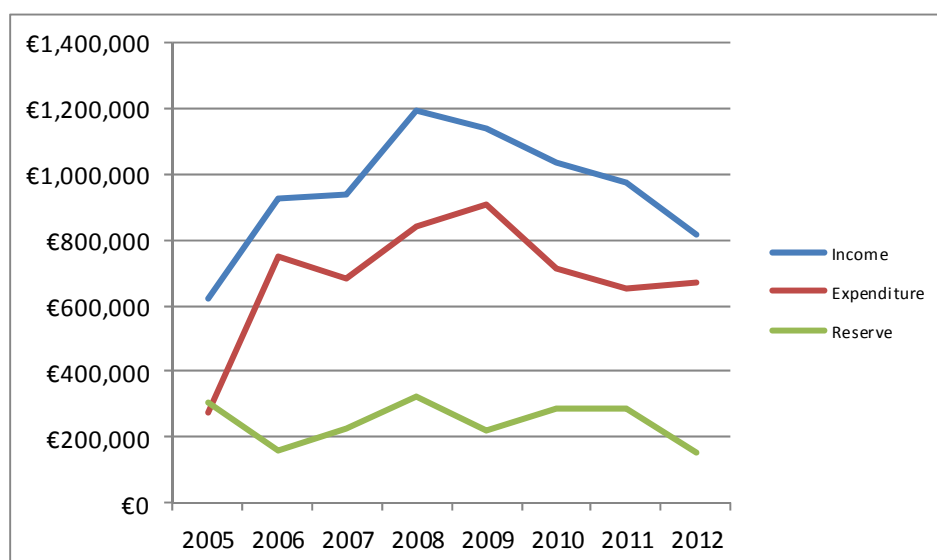
Table 5.20: Evolution of WRS producer registration Fees

Year	Registration Fees based on Turnover
2005	<ul style="list-style-type: none"> • €500 < €1,000,000 • €1,000 ≥ €1,000,000
2006/2007/2008	<ul style="list-style-type: none"> • €250 < €250,000 • €500 ≥ €250,000 • €1,000 ≥ €500,000 • €2,000 ≥ €1,000,000
2009/2010	<ul style="list-style-type: none"> • €150 < €150,000 • €250 ≥ €150,000 • €500 ≥ €250,000 • €1,000 ≥ €500,000 • €2,000 ≥ €1,000,000
2011	<ul style="list-style-type: none"> • €100 < €150,000 • €250 ≥ €150,000 • €500 ≥ €250,000 • €1,000 ≥ €500,000 • €2,000 ≥ €1,000,000
2012	<ul style="list-style-type: none"> • €50 < €150,000 • €150 ≥ €150,000 • €400 ≥ €250,000 • €900 ≥ €500,000 • €1,900 ≥ €1,000,000

¹⁹⁸ Table 12 Appendix A Working Paper on European PRIs

In other EU Member States, the registration role is carried out mainly by public authorities with some PROs also carrying out the role. Registration bodies in 13 countries have no registration fee, 3 countries have annual fees and 3 countries have a once off fee. The Danish DPA System fees are based on a once off payment in addition to an annual fee based on weight with a minimum fee. The German EAR register's fee structure is based on number of brands and types of equipment per producer with additional fees for updates to quantitative data¹⁹⁹. It is difficult to make a direct comparison with other countries, due to the different fee structures.

Figure 5.19 shows the income and expenditure associated with operation of WRS. A significant amount of reserve has been accumulated from the annual excess income from 2005 to 2012 (€1.96m). It was recommended that a reserve of €1.75-2m be accumulated by WRS in case of any legal proceedings that might arise.



Source: Financial Statements from WRS

Figure 5.19: WRS Financial Information 2005 – 2012

¹⁹⁹ A table comparing the fees charged to producers for registration across some Member States can be found in Appendix A Working Paper on European PRIs Annex 1

5.14.2.3 Cost to Producers – Members of PROs

The cost to producers who are members of WEEE Ireland was €182 per tonne and those who are members of ERP Ireland was €372 per tonne in 2011 (based on total expenditure). When compared with other EU Member States (Czech Republic, France, Greece, Italy, Slovakia, Slovenia and Spain) in Figure 5.20 treatment costs in Ireland appear to be the lowest except for Spain (combined figure for the two PROs in Ireland was €228 per tonne). It is difficult to compare Member States as national contexts vary but some of the factors which would explain the difference in costs are as follows:

- The schemes may cover different percentages of the costs of collection and recycling,
- Collection systems vary, some are more costly than others,
- The level of infrastructure (collection points, treatment facilities) varies, as does population density, all of which could affect cost, and
- WEEE type collected varies between Member States some schemes only collect B2C and some collect both B2B and B2C.

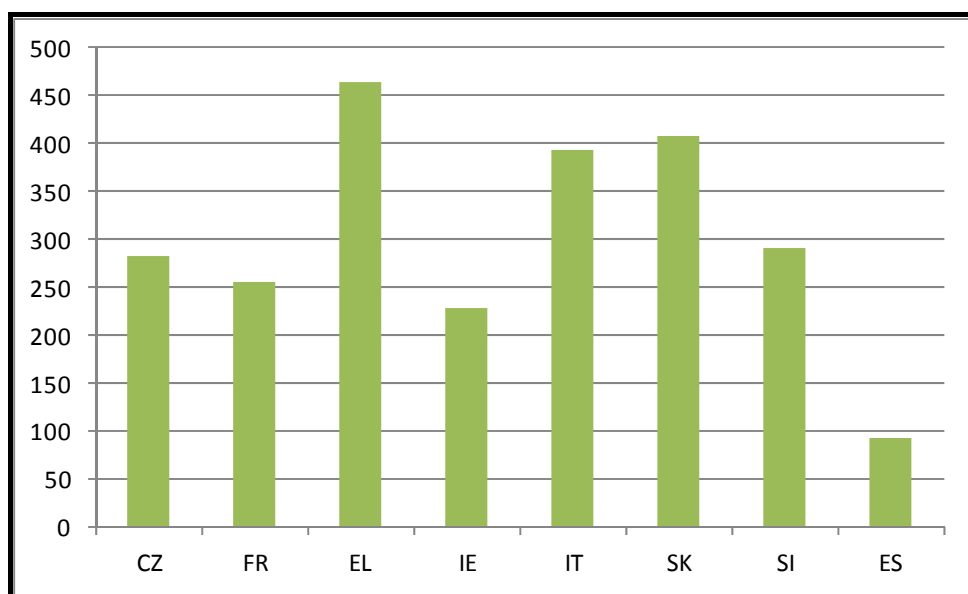


Figure 5.20: Approximate (€) cost per tonne of WEEE treated²⁰⁰

²⁰⁰Appendix A Working Paper on European PRIs Figure 3

5.14.2.4 Cost to Producers – B2B Self-Compliers

B2B self-compliers have the following costs associated with compliance of the WEEE Regulations:

- Resource cost to manage compliance,
- Registration fee with WRS, and
- Collection and recycling costs for WEEE.

B2B self-compliers do not have to pay a fee to the EPA for WEEE for Annual and 3 year reporting.

5.14.2.5 Cost to Retailers

For categories 1, 2, 4 and 6 retailers received 17.5% of the visible fee of products placed on the market. To date it has been estimated by WRS that retailers have received the following contributions outlined in Table 5.21.

Table 5.21: Details of retailers' contribution from visible fees

Year	Aug 05 – Feb 06	March 06 – Feb 07	March 07 – Dec 07	2008	2009	2010	2011	Total
Retailers Contribution € M	4.0	6.5	3.7	2.1	1.3	0.7	0.2	18.5

Source: WRS

When visible fees were in place, retailers were being supported for their role in WEEE collection but fees ceased for all WEEE in February 2013 in accordance with the WEEE Regulations. However a new visible fees regime was reintroduced on 1st July 2014 for a limited range of WEEE. The application of the new vEMCs regime triggers the introduction of a range of measures including an incentivisation scheme for electrical retailers to encourage them to take back as much WEEE as possible from members of the public.

5.14.2.6 State and Taxpayers Costs

The main costs to be incurred by the State and taxpayers include:

- Enforcement activities by the EPA (producers obligations and local authorities (distributor/retailer obligation)).

- Information and awareness for special collection days held by the Local Authorities,
- Provision and operations of WEEE collection infrastructure for the public (e.g. CASs and special collection days held by the Local Authorities). The PROs cover the cost of collection (from the CASs) and treatment of WEEE collected by Local Authorities. The Local Authorities received from the DECLG (sourced from the Environment Fund) a subvention of €101.38/tonne²⁰¹ of WEEE collected by the PROs to cover the cost of providing the sites (salaries, rent for the site, security, insurance etc.)

As these costs and revenue are not easily accessible, it is not possible to calculate what proportion of the costs is recovered. However, as an example one local authority confirmed that this subvention accounts for 30% of the total income for the operation of two CASs²⁰². Other sources of income for the overall running of CASs include Repak subsidies, gate fees and income from recovery of other waste materials. In 2011, the State funded 20% of the expenditure for the environmentally sound management of WEEE (€8m combined expenditure for the PROs and €2m subsidy received from DECLG's Environment Fund).

In addition in 2009 ERP Ireland provided financial support to local authorities for the collection of WEEE from CASs from information and awareness expenditure amounting to €600,000.

Because of the decrease in the Environment Fund available shown in Figure 5.21, it may not be possible for the State to continue supporting B2C WEEE collected at CASs.

²⁰¹ Details from DECLG on subvention from Environmental Fund given to CASs for WEEE collected emailed 04.09.12

²⁰² Personal Communication Alain Kerveillant, Fingal County Council

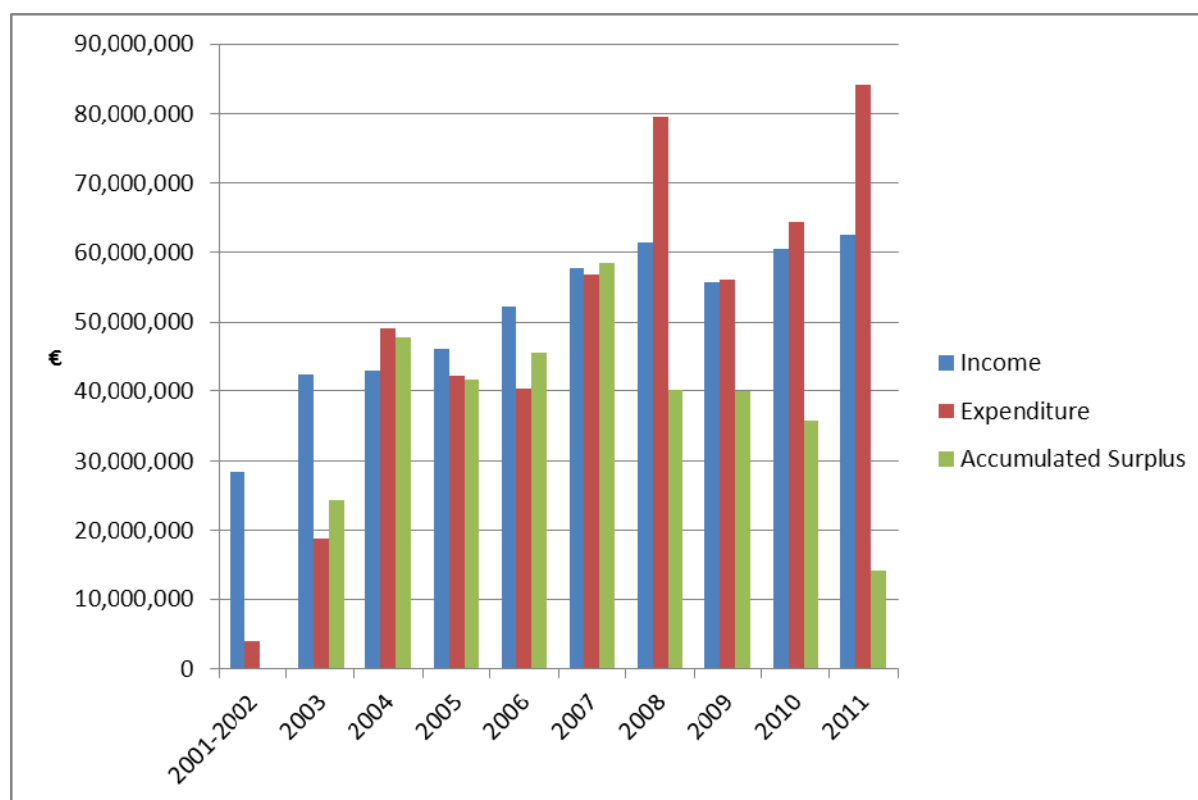


Figure 5.21: Total income and expenditure of Environment Fund 2001-2011

The support by the PROs of WEEE collection at CASs should be examined by the DECLG. This would assign financial responsibility to one economic operator: the producers through the PROs. As the PRO will be in a position to implement the most cost-effective collection systems (retailers, CASs, or other means), this is likely to result in a decrease in the overall WEEE management costs. If CASs are not as cost-effective to collect WEEE as other collection methods (e.g. retailers), CASs could lose income. This may affect operations if the money received from the DECLG was used to fund other services as well. This will also increase the cost of compliance for the producer which may feel they are already supporting the CASs through other funding mechanisms (e.g. commercial rates).

Fees paid by producers to municipalities for collection of WEEE range from €26/tonne in Portugal, to €45/tonne in Belgium and €50/tonne in Finland, to €80/tonne in Spain. In Belgium, this cost only covers management of WEEE at municipal civic amenity sites and does not include the costs of transportation, treatment, recovery, recycling and final disposal

of WEEE. In France the producers compensate the municipalities around €150/tonne on average²⁰³.

Some of these issues have been partly addressed as commencing on 1st July 2014 (with the new vEMC regime) producers are required to directly fund the local authorities €1.2m per year over the next seven years to support local WEEE collection systems at CASs. The Environment Fund will no longer be used to provide a subvention for WEEE collected at CASs. Producers (through the PROs) are also now required to directly fund the EPA €250k per year over the next seven years to provide a contribution towards WEEE research and enforcement.

Recommendation:

The DECLG should continue to examine the possibility of Producers covering the full cost of the collection of WEEE at CASs.

5.14.3 New Collection Target Methodologies

The Revised Directive on Waste Electrical and Electronic Equipment (WEEE) (Directive 2012/19/EU) was published on 24 July 2012. Each Member State has until 14 February 2014 to transpose the Directive into National legislation. The recast WEEE directive applies tougher national collection targets and has a larger scope of material.

It will apply to specific types of WEEE from 13 August 2012 to 14 August 2018, as given in Annex II of Directive 2012/19/EU. After this date, all forms of WEEE will be covered, with certain exemptions, as per Annex III.

The existing collection target – a minimum of four kilograms per person from private households - will remain in place until the end of 2015. A minimum rate of 45% - or 40% for new Member States - will then apply until the end of 2018. This collection target will be

²⁰³ Appendix A Working Paper on European PRIs

based on the average annual weight of electrical and electronic equipment (EEE) placed on the market in each Member State over the previous three years.

From 2019, Member States must collect a minimum of 65% of EEE placed on the market or 85% of WEEE generated each year. Each Member State must choose which methodology they are setting their targets with.

Table 5.22: Existing and New Collection Targets

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020
Target	Min 4 kg/inhabitant or average kg/inhabitant collected annually over the previous 3 years (whichever is greater)				45% Placed on Market (annual average from 3 preceding years)			65% Placed on Market (annual average from 3 preceding years) or 85% Waste Generated	

5.14.3.1 Methodology Overview

There are two methodologies for determining the targets for collection of all WEEE arising from 2019 onwards.

The first methodology is based solely on the EEE placed on the market of the Member State in the previous three years. The second is based on the WEEE generated which is calculated from EEE put on the market *and* the lifespan of the items before they enter the WEEE stream.

EEE Placed on Market (POM Model)²⁰⁴

This methodology for setting the WEEE collection target for a given year requires the data for EEE placed on the market in Ireland each year for the preceding three years and the target based on the average of these three figures. For the period 2016 – 2018 (inclusive), the collection target for WEEE will be 45% of the calculated average. From 2019 onwards, it will be 65% of the calculated average.

²⁰⁴ As described in Article 7 of the revised Directive on Waste Electrical and Electronic Equipment (WEEE) (Directive 2012/19/EU)

The data required for calculating targets using the POM Model is the quantities of EEE placed on the market on an annual basis. This data is recorded by the WEEE Register Society and is readily available.

'WEEE Generated' Model²⁰⁵

This methodology for setting the WEEE collection target for a given year requires the data for all EEE put on the market in Ireland and also the rate at which EEE enters the WEEE stream over time. This rate should be based on the 'residence time' of the EEE, which is determined by both the functional lifetime of the products and their non-functional lifetime, i.e. time spent as unused appliances in stock.

The data required for calculating targets using the targets using the 'WEEE Generated' Model is not as easily available. The Commission has in March 2014, launched a project to facilitate the development of this WEEE generated methodology.

5.14.3.2 Testing the Models

In order to understand the implications of using each methodology, the project team tested both of the models to generate targets for 2011 using the available data.

5.14.3.3 EEE Placed on Market (POM Model)

To calculate the target for 2011 using this model, the EEE placed on the market in 2008, 2009 and 2010 is required. The average over these 3 years is calculated and this is the target for 2011. An example is presented in Table 5.23.

²⁰⁵ WEEE Generated calculations link the sales data to the lifespan of the EEE and the EEE in stock (The Dutch WEEE Flows, United Nations University (2011))

Table 5.23: EEE placed on market for 2008 – 2010²⁰⁶

Year	EEE Placed on Market (tonnes) ²⁰⁷	Average (tonnes)
2008	114,918	102,650
2009	96,671	
2010	96,360	

Using the rules for setting targets post 2015, the collection target is 45% of the average figure so for 2011 this would mean a target 46,192 tonnes of WEEE to be collected. This translates to a figure of 10.1 kilograms per head of population, based on a total population of 4,588,252 (CSO, 2011).

Using the rules for setting targets post 2019, the collection target is 65% of the average figure so for 2011 this would mean a target 66,722 tonnes of WEEE to be collected. This translates to a figure of 14.5 kilograms per head of population, based on a total population of 4,588,252 (CSO, 2011).

5.14.3.4 'WEEE Generated' Model

Calculating the quantity of WEEE entering the waste stream annually in Ireland is fraught with difficulty because of the lack of availability of data relating to:

- EEE put on the market prior to the establishment of the WEEE Register Society and data relating to historic WEEE arisings.
- Lifecycle of EEE and the pace at which EEE placed on the market enters the WEEE stream.

In order to estimate the collection targets for 2011 using the 'WEEE Generated' Model, RPS has therefore developed a model to estimate the annual quantity of WEEE generated.

²⁰⁶ Includes EEE in Categories 1 - 10

²⁰⁷ WEEE Register Society

The model estimates the quantities of WEEE arisings for the period 1991 to 2011 using the following variables²⁰⁸:

- Quantities of EEE put on the market every year from 1991 to 2011.
- Quantities of EEE that becomes WEEE every year from 1991 to 2011.

In order to estimate the remaining WEEE arisings for the period 1991 to 2011, a number of assumptions were made:

- The quantities of EEE put on the market:
 - Using the CSO Retail Sales Index (Value) for Electric Goods, the quantity put on the markets from 1995 to 2005 was estimated. From 2006 to 2011, the quantities of WEEE put on the market as reported by the WEEE Register were used.
 - Figure 5.22 shows that the quantities of WEEE put on the market²⁰⁹ as reported by the WEEE Register broadly correlates with the CSO Retail Sales Index (Value) for Electric Goods for the period 2006 -2011.
 - As the CSO Retail Sales Index (Value) for Electric Goods is not available prior to 1995, it was assumed that the quantities put on the market from 1991 to 1995 are based on the 1996 quantities being reduced by 1.8% per year. 1.8% being the average yearly increase from 1995 to 2011.
- The proportion of each category is similar to the average put on the market from 13th August 2005 to 2011 shown in Table 5.24.
- Lifetime Profiles of EEE: In 2010 WEEE Ireland commissioned research to analyse the life cycle of EEE²¹⁰. The research illustrated that the majority of products placed on the market will enter the WEEE stream over a period of 20 years was consistent

²⁰⁸ The difference between the WEEE generated model and the historic WEEE Model is the period covered by the calculation of EEE POM, 1991-2011 for the WEEE generated and 1985 to 2005 for the historic WEEE.

²⁰⁹ The quantity of WEEE put on the market for the period 2006 – 2011 have been used to create an index with the base year 2006 = 100. 2006 was used as base year because 2005 only includes data from 15th August to 31st December.

²¹⁰ E-mail communication from WEEE Ireland on 29/08/2012

with other international studies. The research also provided lifetime profiles²¹¹ for EEE categories 1, 2, 3, 4, 5, and 6. WEEE Ireland lifetime profiles showed consistency with findings from other international research for category 1 (see Figure 5.23), 2, and 3 (ECODOM. 2013) (United Nations University, 2012) (Norden, 2009). For category 4 and 7, WEEE Ireland data showed that these products in these categories were forecast to reach end-of-life later. There was no data to compare EEE category 5 and 6. These differences could be explained by different market trends and consumption behaviour in Ireland. Therefore WEEE Ireland lifetime profiles was used to estimate the WEEE entering the waste stream annually and it was assumed that all historic WEEE will have been collected by 2025.

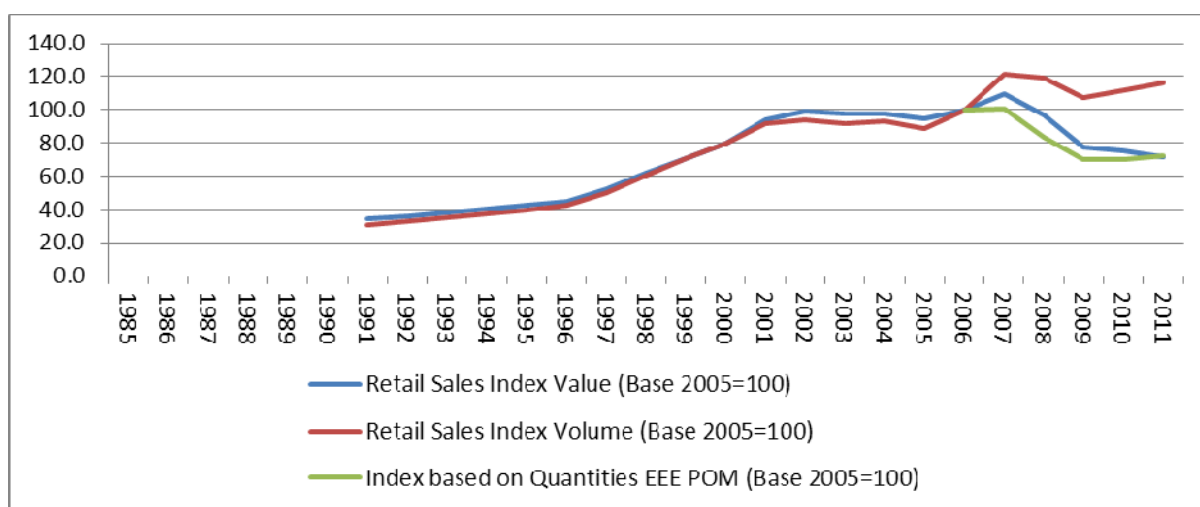
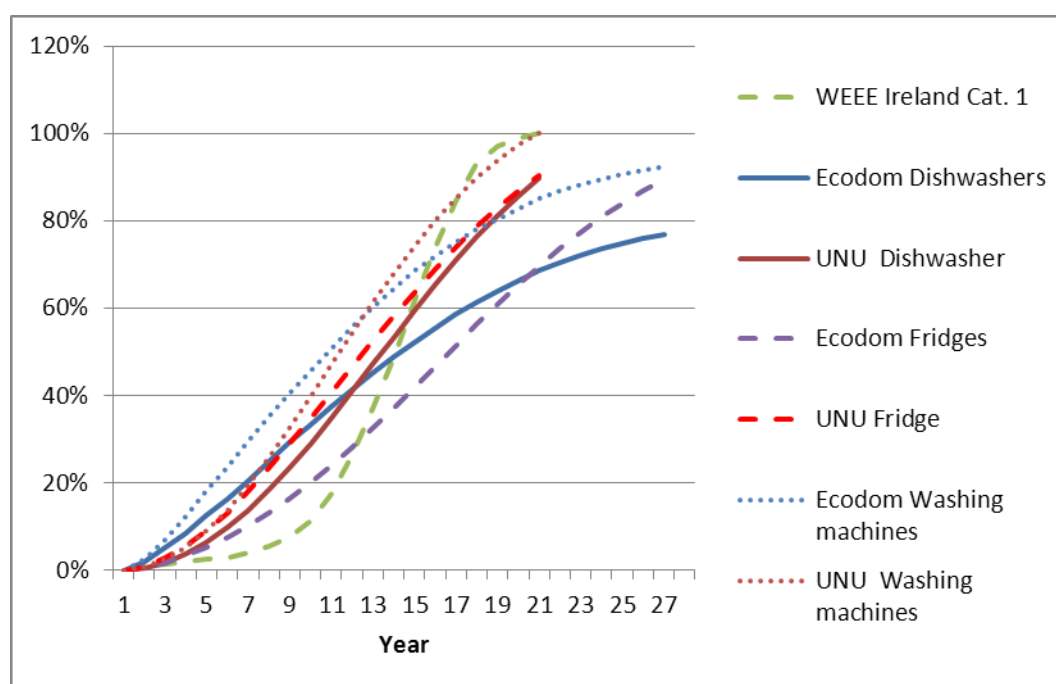


Figure 5.22: Comparison of CSO Retail Sales Index and quantities of EEE put on the market

²¹¹ The percentage of each category/subcategory EEE entering the WEEE stream in any particular year over a 20 year period

Table 5.24: Average proportion of EEE put on the market per category from 2005 to 2011²¹²

Category	2005	2006	2007	2008	2009	2010	2011	Total	%
Category 1	20,492	59,215	60,446	51,367	43,613	40,216	40,172	315,521	43%
Category 2	4,106	18,347	16,181	9,191	9,334	10,861	8,432	76,452	10%
Category 3	8,958	23,250	24,803	20,257	14,065	18,276	22,194	131,803	18%
Category 4	6,858	17,777	18,100	14,862	13,996	11,483	10,154	93,230	13%
Category 5	1,972	6,409	8,210	6,582	5,037	4,893	4,199	37,302	5%
Category 6	1,540	7,689	6,104	7,799	5,826	4,859	9,833	43,650	6%
Category 7	765	2,805	2,572	2,702	2,361	2,356	1,928	15,489	2%
Category 8	227	859	617	714	637	2255	716	6,025	1%
Category 9	464	949	1321	1005	830	809	794	6,172	1%
Category 10	24	174	312	439	972	352	636	2,909	0%
Total	45,406	137,474	138,666	114,918	96,671	96,360	99,058	728,553	100%

**Figure 5.23: Lifetime profile comparison for category 1 EEE**²¹² WEEE Register Society, 09/11/2012

The estimated WEEE arisings from 1991 to 2011 is shown in Table 5.24. Category 1 remains the largest category followed by categories 3 and 2.

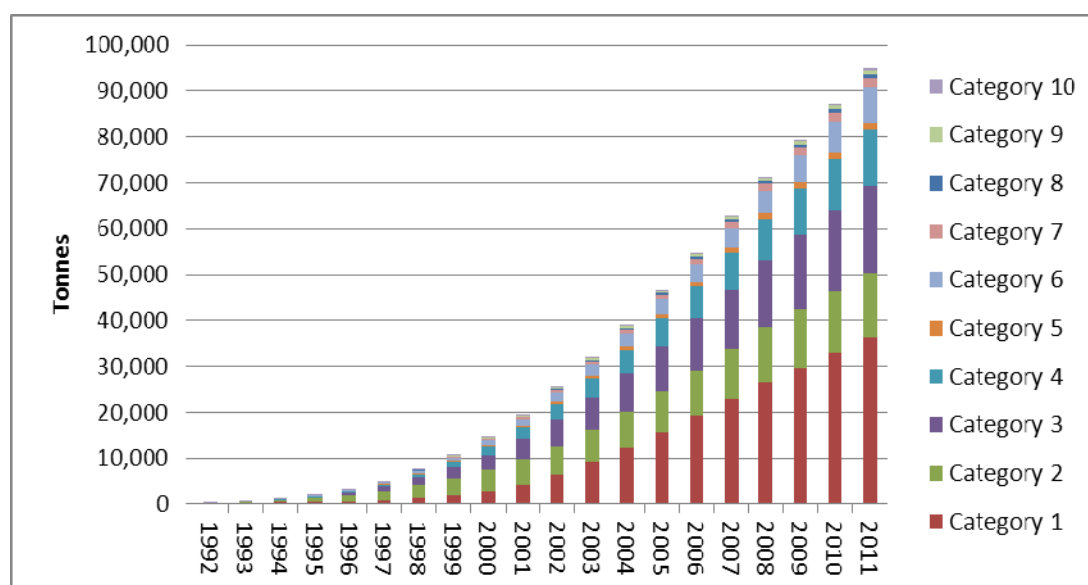


Figure 5.24: Estimated WEEE arisings for EEE put on the market from 1991 to 2011

The quantity of WEEE generated shown in Figure 5.24 can be estimated by applying lifetime profiles data to the extrapolated EEE POM data. In 2011, it is calculated that 94,894 tonnes (20.7 kg/capita²¹³) of WEEE will be generated. Using the rules for setting targets post 2019, the target is 85% of the WEEE Generated figure so for 2011 this would mean a target of 80,660 tonnes (17.6 kg/capita) of WEEE to be collected.

5.14.3.5 Implications and Recommendations

POM Model: Using this model to set future collection rates requires data that is readily available. The rates set using this model will be considerably higher than current collection rates. Applying the POM Model to generate a 45% target collection rate for 2011 will require 46,192 tonnes (10.1 kg per capita) to be collected, an increase of 32% of the quantities collected by the PROs (34,958 tonnes in 2011). Similarly to reach the 65% collection target, 66,722 tonnes (14.5 kg per capita) needs to be collected, which is 91% higher than the actual collection figure for 2011.

²¹³ Based on 4,588,252 people in 2011 (CSO, 2011)

Given the lifespan of certain categories of EEE, what is put on the market may only become WEEE after several years.

If there is a period of economic growth during the years used to calculate the target for a given year, the target may be high as sales of EEE will be high. Similarly, a period of low economic growth would result in a reduction in the generation of WEEE in future years because of the lower EEE sales.

‘WEEE Generated’ Model: Using this model to set future collection rates requires data for EEE placed on the market for a longer period than is currently available. At the moment, the only accurate data for quantities of EEE placed on the market is from 2005 onwards. In order to create a more accurate reflection of the WEEE generation, it is necessary to extrapolate the POM data backwards using Retail Sales data from the Central Statistics Office (CSO). This data has its limitations: historic data for Retail Sales by Volume and Retail Sales by Value runs from 1995 – 2002 (with 1995 as the base year), 2000 – 2008 (with 2000 as the base year) and 2005 – 2011 (with 2005 as the base year)²¹⁴. It is difficult to link the data together to the actual data for EEE placed on the market from 2005 onwards, which impacts upon the quality of the extrapolated data.

However, using the correlation between the 2006-2011 data for EEE placed on the market and Retail Sales (Value), it is possible to extrapolate the POM data backwards to ultimately yield a target of 80,660 tonnes (17.6 kg per capita) for 2011, which is 131% higher than the actual collection figure for 2011.

The first year that the WEEE Generated Model would be required is 2019 when there will be 14 years of accurate POM data available.

In conclusion, with the level of historical data available in Ireland, the POM Model seems more suitable for the setting of collection targets as it is based on currently available data. The European Commission has recently launched a project to develop a common methodology for the calculation of the quantity of WEEE generated in each Member State and the weight of WEEE placed on the national market of each Member State which will

²¹⁴ CSO ‘Services’ database – ‘Retail Sales’

provide further guidance.²¹⁵. Once this methodology is finalised it should provide alternatives for Ireland in developing assumptions to use in the 'WEEE Generated' Model.

5.14.4 Increasing Collection Rates

The new collection targets in the WEEE Directive will be challenging, especially the 2016 target. In order to increase collection rates a combination of measures will be required:

- Measures to reduce WEEE leakage discussed in Section 5.14.5.
- Increased information and awareness to encourage all householders and businesses to participate in the recycling of WEEE and ensure that it is separately collected and sent to an authorised facility for treatment. For further details on information and awareness refer to Sections 4.6 and 5.14.6.
- Improvement of the existing collection network to make it more accessible to the general public. This is the main focus of this section.

5.14.4.1 Current situation

In 2012 WEEE is being collected from a **total of 153 CASs or bring banks** (29,282 people per site) and a **total of 1,870 retailer collection points** (2,396 people per site). In addition in 2012 WEEE Ireland has 3,000 collection points for lamps, 300 community collections and school projects and 150 days of activity in the Dublin area servicing housing estates and ERP Ireland has 10 WEEE to work days, 5 door to door collection days, and 70 open days. Between the two compliances an average of 8 tonnes was collected per retailer site, an average of 110 tonnes was collected per CASs/bring banks and an average of 7 tonnes was collected per special events.

Figure 5.25 shows there has been a significant decrease in annual quantity of WEEE collected by CASs. This may relate to the change in the economic conditions in Ireland, the decrease of EEE put on the market, technological changes leading to lighter WEEE,

²¹⁵ Directive 2012/19/EU, Article 7 (5)

competition from other collection methods (special events, retailers and schools) and restriction on CASs operating hours.

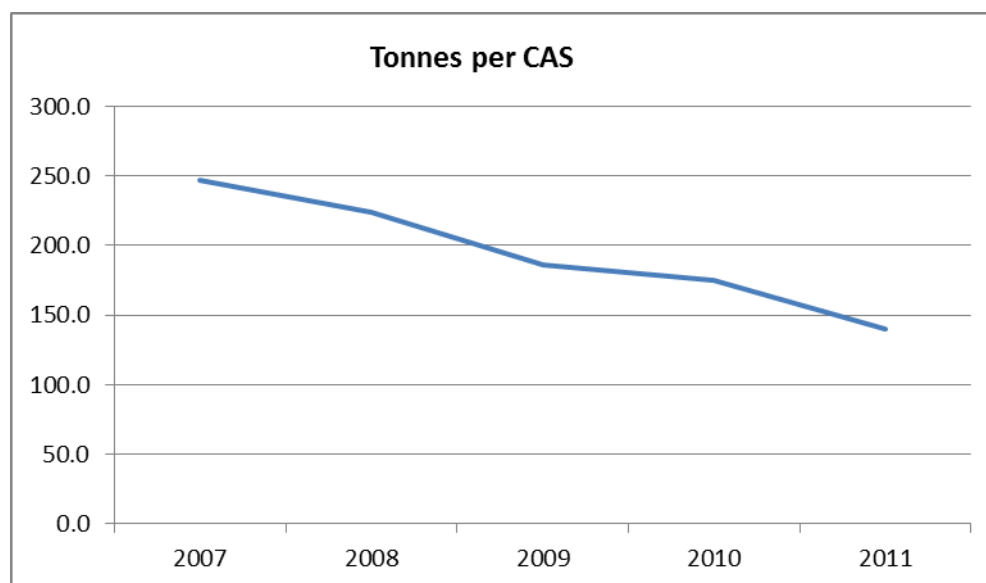


Figure 5.25: Average quantity of WEEE collected by CASs²¹⁶

5.14.4.2 Best Practice of WEEE Collection in Europe

As shown in Figure 5.26, when comparing WEEE collection rate with the density²¹⁷ of collection points (without distinction between municipal collection points (e.g. CAs) and retailer collection points), there seems to be limited correlation between the density of collection points and the collection rate.

However, when comparing WEEE collection rate with the density of **municipal** collection points, European countries with high WEEE collection rates, such as Sweden (17.2 kg/capita) and Denmark (14.9 kg/capita) seem to have a higher density of municipal collection points than other countries.

The difference of correlation may also be due to the higher collection rate per site of the municipal collection points.

²¹⁶ Source: EPA National Waste Report 2007, 2008, 2009, and 2010, 2011.

This may indicate that other initiatives in combination with an increase in collection points should be investigated. For example the Swedish system has collection points that are easily accessible with extended opening hours and they have high profile advertising campaigns.

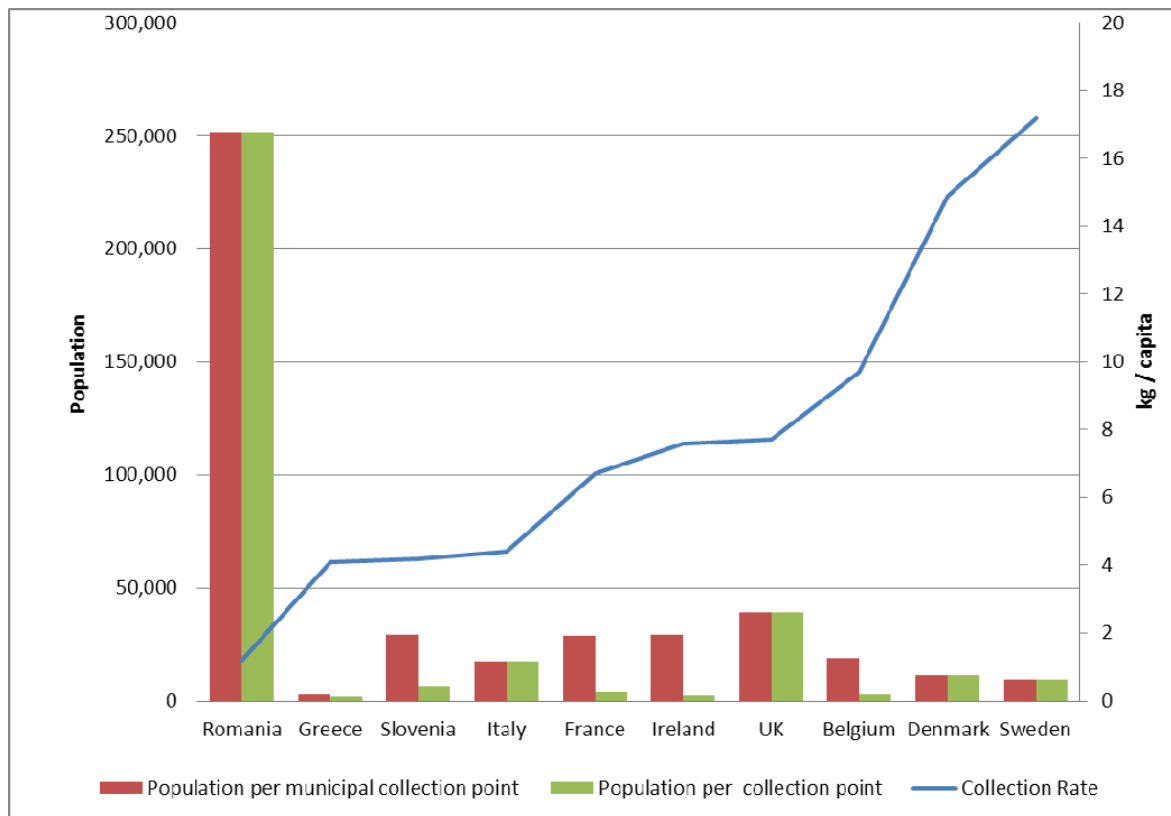


Figure 5.26: Comparison of WEEE collection rate with density of collection points²¹⁸

²¹⁷ Population per collection point

²¹⁸ Appendix A Working Paper on European PRIs Annex 2

Box 10: EI-Kretsen, Sweden

The Swedish EI-Kretsen system achieved the highest collection rate in Europe (Table 5.19). EI-Kretsen is a non-profit service producer set up in 2001 to represent producers in agreements with local regional authorities and operate a voluntary nationwide scheme to collect and recycle WEEE. It has an agreement with 290 local authorities to use their collection schemes. Local Authorities provide storage space and receive WEEE from private households and the producers collect and recycle the WEEE. Collection points are run at the expense of the local authorities. Producers through EI-Kretsen finance the further collection and the recovery of WEEE but historical WEEE from households is the responsibility of the local authorities. On average the cost of WEEE collected and treated is about €420/tonne with 72% for treatment, 19% for transport/loading boxes and 7% for administration²¹⁹. Visible fees are forbidden under Swedish law. Retailers were not obligated to collect WEEE initially however in 2008 the Swedish Association of Recycling Electronic Products (EAF) started collecting through retail outlets. As retail outlets are not present in all municipalities, a financial clearing agreement has been concluded such that EAF will pay the same fee as other members of EI-Kretsen for the share of their WEEE that is collected by EI-Kretsen. The success of the Swedish system is due to the following factors:

- The system was set up in 2001, before the WEEE Directive,
- Most collection sites are easily accessible with many offering weekend and late night opening,
- EL-Kretsen's nationwide collection system comprises approximately 1,000 collection points (650 for households, and 350 for businesses). B2B is also handled by EL-Kretsen in collaboration with municipalities or through third party logistics companies. These collection points are also often supplemented with on-site collection from housing estates, and
- High profile advertising campaigns.

²¹⁹ Description of Initiatives undertaken by selected European Countries in the field of WEEE Management accessed on 15/06/2013 at http://resourcities.acrplus.org/download/WEEE_update.pdf

5.14.4.3 Options to Increase Collection Rate

One of the key physical factors helping consumers to engage with recycling programmes is the density and accessibility of collection infrastructure.

Accordingly, there are a number of options to increase the collection rates which are presented in Table 5.25.

Table 5.25: Options to increase WEEE collection rate

Options	Comment
Increasing the number of CASs.	<ul style="list-style-type: none"> • Capital intensive • Need planning, which may result in delays
Increasing the opening days and hours of CASs.	<ul style="list-style-type: none"> • Running costs funded by State or PRO based on performance • Flexible option, if a more cost-effective method becomes available or if collection are successful, the opening hours can be reduced
Increasing retailers collection	<ul style="list-style-type: none"> • Currently legal obligation to accept WEEE one for one • Convenience for the public • Flexible option • Capital costs to be incurred to provide collection points and WEEE storage
Increasing special events	<ul style="list-style-type: none"> • High running costs • Flexible option
Kerbside collection	<ul style="list-style-type: none"> • High running cost • High convenience for householder

Drop-off centralised collection systems are generally good to collect the “low-hanging” fruit, but as targets increase costly collection systems more convenient to the waste producers (in the absence of economic incentives /penalties) need to be put in place e.g. kerbside).

It is likely that a combination of options will be used by the PROs to increase collection rates, but in the short term, the more promising in an Irish context include:

- **Increasing the opening hours of CASs.** Research (Duffy and Wilkinson, 2003) has indicated that more items are collected at CASs outside working hours. The increase in opening hours will result in an increase in operating cost. One way of mitigating this increase could be to close the CASs during a working day and open during a week-end day. For example Saturday collections collect twice as much as the other working days

of the week. This would also have beneficial effects on the collection of other waste materials.

- **Increasing the role of retailers in WEEE collection:** Retailers already have a key role in the collection network of WEEE (41% of WEEE collected in 2011). To achieve future collection targets, the retailers are going to play an even more important role in WEEE collection. WEEE Ireland and ERP ran a collection trial with 100 retail outlets (over a 3 month period (December 2012 – February 2013) where the retailers are paid €60/tonne for WEEE collected. An overview of the findings is presented in Box 11. The trial showed that by using an economic incentive, the collection of WEEE increased. It highlighted that a close working relationship is required between the PRO and the retailer. The trial also resulted in additional costs for the PROs but some of these additional costs can be offset by improved collection efficiencies.

An increase in the role of retailers seems to offer a cost-effective WEEE collection option. If financial support is provided to retailers, it should not be a flat fee at the point of sale as it does not provide incentives to the retailer to increase WEEE collection. This support should be linked to target achievement and quantity of WEEE collected by the retail outlets. In order to facilitate take-back from the public, the retailers should also commit to the following:

- To take back all WEEE in store regardless of whether a new appliance is purchased (0 for 1 take back),
 - To take back all WEEE including small WEEE,
 - Deliveries of EEE to take back other WEEE not just the appliance being replaced,
 - Improving security at retailers collection points,
 - Greater co-operation between PRO and retailer with audits to be carried out by the PRO to increase effectiveness,
 - Effective communication and awareness campaign in relation to their role in reuse/recycling of WEEE,
 - A code of practice should be developed which should give an competitive advantage to those retailers that follow the code, and
 - Involvement in a programme of reuse.
- **Increasing the number of special events and investigating alternative methods of collection.** The PROs are already expanding the collection network with WEEE to work, days and door to door collections and collections in housing estates. This is a flexible but

expensive option which can be increased during the year to make the shortfall of what is not collected by other means. The possibility of using other points of collections such as train stations should be investigated. This approach has proven successful in Switzerland for example.

Box 110: Retailer Collection Trials²²⁰

WEEE Ireland and ERP ran a collection trial with 100 retail outlets (over a 3 month period (December 2012 – February 2013) where the retailers were paid €60/tonne for WEEE collected. The commercial trial consisted of small, medium and large main stream electrical retailers (electrical being the core of their business). Using this economic incentive, collection increased in overall tonnage of 18% for the 25 retail outlets with ERP Ireland and 3% for the 75 retail outlets with WEEE Ireland. It should be noted that the trial only took place over a 3 month period and therefore it may be difficult to provide the complete picture with regards to the results. Retailer WEEE take back is correlated with EEE sales. Sales for Category 1 EEE reduced by 5%, while sales for other categories increased by 7%, over the period of the trial. The collection trial also highlighted some important issues which are as follows:

- Retailers are very diverse in nature. They can differ greatly when it comes to their WEEE obligations and involvement in take back. Some retailers do not comply with the WEEE Regulations some carry out the necessary minimum in relation to their obligations and some go over and above their obligations.
- The trial provided visibility on retailers suspected of non-compliance. ERP Ireland reported that 80% of those retailers categorised as being suspected of non-compliance showed increases in WEEE collected when previously ERP Ireland would have not collected any WEEE from these retailers. This shows that enforcement activity needs to be strengthened to ensure that retailers are complying with Article 15 (1) (a) of the WEEE Regulations and sending WEEE to the compliance schemes. Refer to section 5.14.5 on enforcement for recommendations.
- A close working relationship is required between the retailer and the compliance scheme which will allow for an increase in tonnage collected and greater efficiencies and reduced

²²⁰ ERP Ireland Retailer Collection Trial Results emailed 15.03.13; WEEE Ireland Retailer Collection Trial Results emailed 09.04.13

costs as shown in the trial. PRO could assist and supply promotional materials for use in retail outlets.

- The trial resulted in additional costs for the PROs. Some of these additional costs can also be offset by improved collection efficiencies.

Recommendations:

- In an Irish context, an increase in the opening hours of CASs and an increase in the role of retailers as outlined seem to offer the most cost-effective WEEE collection options. These collection methods will have to be supplemented by special events as needed to meet the targets.
- The DECLG should continue to examine the possibility of Producers covering the full cost of the collection of WEEE at CASs.

5.14.5 Enforcement and WEEE Leakage

WEEE leakage refers to the management of WEEE outside the control of the compliance schemes. WEEE leakage has the following effects:

- WEEE leakage does not contribute to Ireland meeting the WEEE Directive targets.
- WEEE may be diverted to channels which do not ensure the environmentally sound management of WEEE and put legitimate operators at a competitive disadvantage.

5.14.5.1 Extent of WEEE Leakage

To determine how much WEEE is currently leaking from the system we first have to determine how much is being generated and how it is managed.

Figure 5.27 provides details on WEEE flows and destinations. It is estimated of the total WEEE arising that 33% on average in the EU is collected through legal channels²²¹. 13% of small WEEE (if it can fit in a bin) is unsorted and ends up in the mixed municipal waste stream destined for landfill/energy recovery. Illegal dumping is still widespread in Europe but not estimated. It is estimated that 2% of EEE is reused. Of the remaining 52% unaccounted and unreported it is estimated that 11% is properly treated and 41% is improperly treated within and outside of the EU.

New collection targets outlined in the WEEE Recast Directive will be difficult to meet due to these flows outside the formal collection channels. In Ireland in 2011, 21.6 kg/capita²²² of EEE was placed on the market, it was estimated that 20.7 kg/capita of WEEE²²³ was generated and 8.8 kg/capita was collected²²⁴. Over 50% of WEEE was not reported as managed. It is important to close this gap in order to improve the collection rate of WEEE.

²²¹ European Commission 2008.

²²² 99,058 tonnes of WEEE divided by 4,588,252 people

²²³ See Section 5.14.3.4

²²⁴ 41,092 tonnes of WEEE (EPA, 2013) divided by 4,588,252 people

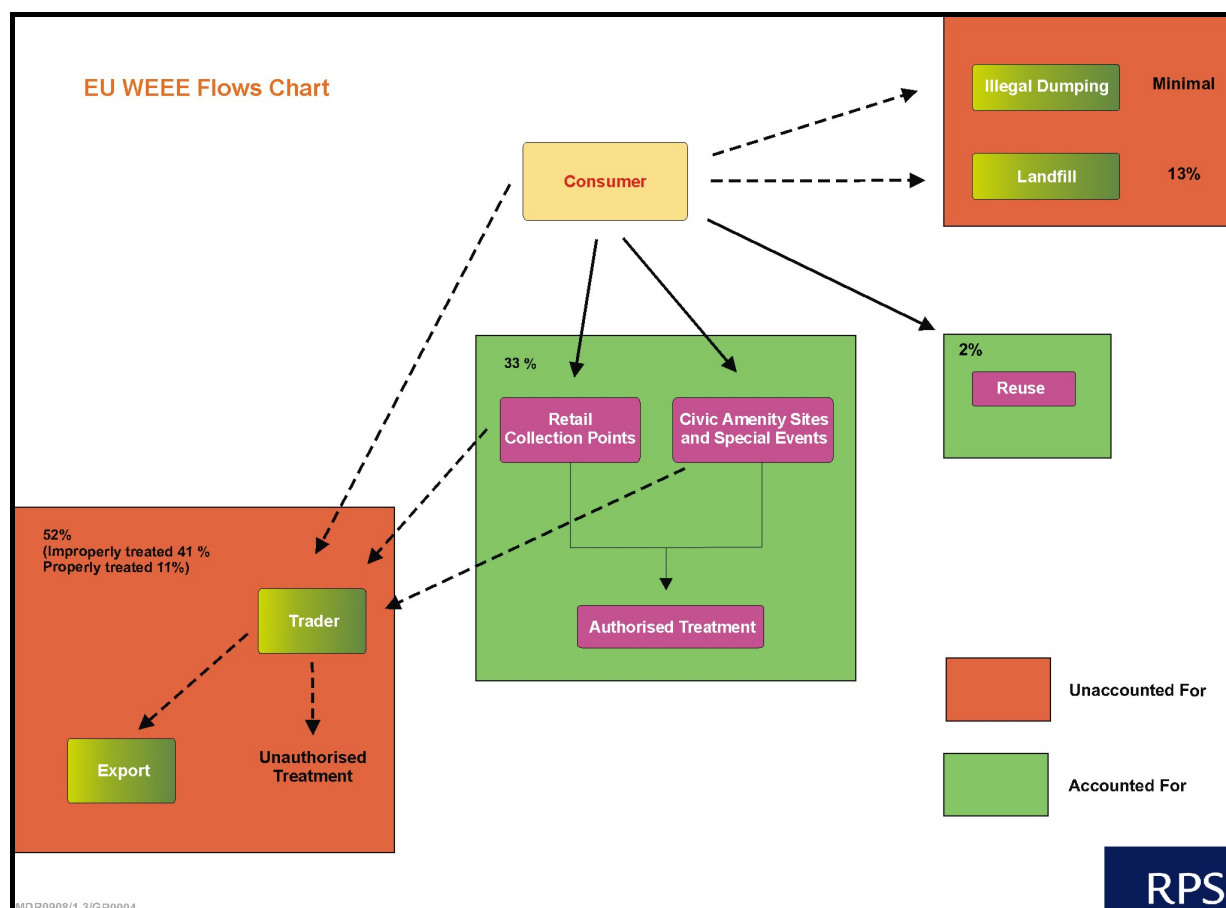


Figure 5.27: EU WEEE Flows²²⁵

5.14.5.2 WEEE Leakage Routes

As shown in Figure 5.27, there are a number of routes leading to WEEE leakage.

First, there is WEEE which goes through reuse channels that is not fully accounted for.

Second, and likely to be the most important category is small WEEE being disposed in the residual household bin (because of its size), fly-tipped, undergoing unauthorised treatment or unreported authorised treatment. Some WEEE is collected unsorted as mixed metal and sold directly to metal recycling industry and is unaccounted for and becomes unrecognisable as WEEE.

²²⁵ Adapted from European Commission, (2008)

While WEEE leakage and metal theft are the subject of many articles and media reports, there is a shortage of good empirical data on the problem. However, some data does exist and is being collected. Local authorities, the EPA and An Garda Siochana are collecting statistics here and there across the country and various industry groups have conducted their own surveys or maintain limited databases for their singular purposes. This data need to be shared and used to develop policies and solutions. Research by the University of Indianapolis in Box 12 shows that there is a strong correlation between scrap yards and metal theft, as scrap yards are an unavoidable element of recovering value from metals.

Box 111: Metal Theft Project: University of Indianapolis

The University of Indianapolis Community Research Center started the Metal Theft Project in 2008 to collect data in Indianapolis. The University reviewed 1520 metal theft reports. On average, 1.5 catalytic converters were stolen daily, and aluminium siding was stolen off a house once every four days. The University estimated that victims lost more than \$7 million in the first six months of 2008.

Using National Insurance Crime Bureau data, they found that the per capita number of scrap yards in a city was the strongest predictor of metal theft rates, even stronger than crime rates generally. With data shared by the Rochester police department, The University found that metal thefts are less geographically clustered than other property crimes, which has implications for prevention.

The Retailer trial provided some information on the scale of WEEE leakage at retailer sites, with some retailer increasing their collection of WEEE by 500% during the trial. One PRO also provided a grading of retailers that had participated in the trial: 47% had historically demonstrated good practices, 33% are trying but have an history of theft at the sites, and 20% have demonstrated non-compliance with the retailers obligations selling WEEE to scrap yards or other buyers, part harvesting and major security issues resulting in theft.

Using waste composition data, it was estimated that a total of 2,835 tonnes of WEEE was disposed of in the residual and recyclable bin by households (2,296 tonnes or 0.3% of the

residual bin and 539 tonnes or 0.2% the recyclable bin)²²⁶. However it is likely that some of the WEEE in the recyclables bin was diverted for treatment as part of the processing of mixed recyclable and was not disposed of at landfill.

For B2B WEEE, a recent survey of businesses in France, Germany and the UK has revealed that they recycle and refurbish much of their waste electrical and electronic equipment (WEEE) (Peagam et al., 2013). However, some of this information is not being reported under the EU's WEEE Directive because the waste is being disposed of informally or by contractors, rather than by manufacturers who are responsible for the whole life cycle of the products.

5.14.5.3 Measures to reduce WEEE Leakage

There will be a need for a range of actions targeting a variety of stakeholders to reduce WEEE leakage.

These include the development of protocols to capture data from reuse, which is discussed in Section 5.14.7.

Information and awareness campaigns, allied with enforcement measures targeting the general public and businesses to prevent the disposal of WEEE in the residual household bin should also be prioritised. However, the main focus of action to reduce WEEE leakage will involve enforcement to deal with metal theft and unauthorised collection and treatment.

WEEE leakage subject to unauthorised treatment is happening all around the world and is also linked to the wider problem of metal theft. As metal prices have risen on the world market, so has metal theft. This increase in metal theft has highlighted the challenges in regulating the scrap metal industry.

According to Kooi (2012) a number of strategies need to be implemented in an integrated manner to reduce the level of WEEE leakage and metal theft. These strategies are:

²²⁶ EPA National Waste Report, 2011 Appendix B and H

Increasing the Effort

- Harden targets by securing metal around construction sites, utilities, and other vulnerable areas.

Increasing the Risk

- Reducing WEEE Leakage from metal theft is more likely to occur when offenders perceive some risk before they commit their offence.
- Work collaboratively with scrap yards to create an identification system for scrap metal sellers.
- Incorporate into information and awareness campaigns information about ID markings on targeted metal products in order to deter theft.
- Conduct spot check audits of scrap yards and hold them criminally accountable for being in possession of stolen metal or not adhering to prescribed seller identification record keeping.

Reducing the Rewards

- Prohibit cash payments from scrap yards.
- Prohibit scrap yards from paying for obvious stolen metals. In the UK and France, changes to the law have made cash sales for metal scrap illegal. However in France this initiative has resulted in some leakage of WEEE to Germany and Belgium from border regions in France.
- Incorporate into information and awareness campaigns information the fact that copper ground wire has been replaced with copper weld which has a lower resale value (which is worth less in resale).

Removing Excuses

- Conduct public awareness campaigns letting the public know about the results from the analysis of the problem so everyone is aware of the community costs.
- Educate the community about their role in preventing metal theft (securing metal when appropriate).

- Educate scrap yard management about their role in helping to identify and deny the sale of stolen metal.

In Ireland, the National Metal Theft Forum was established in 2011 by An Garda Síochána involving various groups and agencies including the ESB, Eircom/Meteor, Irish Rail, Luas, UPC, British Telecom, the Irish Farmers Association, Diageo, the Irish Brewers Association, DECLG and the EPA. The Forum developed a “Metal Theft Crime Prevention & Reduction Plan” which was published in early 2013. The Plan focuses on five essential areas: Offenders, Targets/Locations, Stakeholders, Scrap Metal Dealer, and Regulation/Legislation.

With regards the hand-over of WEEE from a retailer, Article 15 (1) (a) of the WEEE Regulations outlines that the ownership of WEEE is with the producers, PRO representing them and their collection and recycling contractors, therefore making it illegal for anyone else to collect this waste, trade or treat as scrap metal. Enforcement efforts should be concentrated on this aspect of the WEEE Regulations. The retailer collection trial carried out by compliance (See Box 11) highlighted that some retailers are non-compliant and that WEEE is not being sent to the PROs. Enforcement of retailers needs to focus on where the WEEE is destined for and not just the front end requirements. Collaboration is required from the EPA, LAs and the PROs and joint inspections between the enforcement authorities and the compliance schemes should be examined. Reconciliation of data between PROs will be essential for enforcement to track WEEE moving from retailers to hubs in the two compliance scheme areas²²⁷. Security at retail outlets and CAS needs to be reviewed and upgraded. Examples of solutions to secure WEEE are the use of lockable shipping containers and video surveillance on sites. Also an increase in the collection frequency of WEEE for location at risk has proven effective to reduce WEEE leakage (Khatriwal and al., 2007).

When Local Authorities are outsourcing management of CASs they should include a condition in the contract that the WEEE should only be collected by a PRO and that there is no charge to the public for the deposit of WEEE. A review should be carried out of all existing waste licence/ facility permits for WEEE to ensure that they are reporting recovery of WEEE accepted.

²²⁷ PROs have WEEE collection information for the store, which can be correlated against the store sales. This profile can then be benchmarked to identify potential WEEE leakage.

In order to reduce the opportunities to sell stolen metals and WEEE, the legislation governing waste facility permits (Waste Management (Facility Permit and Registration) (Amendment) Regulations, 2012) is currently being reviewed by DECLG.

In order to counteract metal theft the following additional requirements on all permitted facilities when receiving/purchasing waste are proposed:

- (a) prohibit cash payments in respect of material received,
- (b) prohibit the purchase of metals which have been damaged by fire,
- (c) require the production of proof of identity and current address of the person supplying the material,
- (d) require records to be kept of the registration number and waste collection permit number of the delivery vehicle,
- (e) require records to be kept describing the materials, time and date of sale, weight and amount paid etc., and
- (f) require a signed statement by the person supplying the material that they are the lawful owner of the material or have the consent of the lawful owner to sell the material.

The draft regulations were put out to public consultation at the end of 2012 and twenty two written responses were received. The DECLG envisage having the Regulations updated and finalised by Quarter 3 of 2014.

Waste Management (Registration of Brokers and Dealers) Regulations S.I. No. 113 of 2008 provides a system in order to facilitate controls on such persons who arrange shipments of waste including WEEE. There is an obligation on brokers and dealers to compile and maintain records relating to the waste dealt with during the course of business. There should be greater enforcement of these Regulations by the National TFS Office in ensuring that brokers and dealers are properly recording and reporting WEEE.

In addition to increasing efficiency and reduce costs relating to enforcement being carried out by local authorities and in line with the recommendations in Section 4.7, it is recommended that efforts are centralised or regionalised. The EPA would still be the enforcer in relation to producer responsibilities unless it was agreed that some of their responsibilities could also be transferred to the national or regional PRI enforcement unit/units.

The possibility of PROs engaging in legal action against operators who have been found in possession of stolen goods should be investigated. For example in 2010, OCAD3E in France has engaged legal actions on 90 lawsuits resulting in 30 judgements against operators receiving stolen goods (ACR+ & WEEE Forum, 2013).

In addition to the enforcement measures some collaborative approaches should be investigated as the scrap recycling industry can also be a part of the solution to material theft. For example, ScrapTheftAlert.com²²⁸ is a tool for law enforcement that allows you to alert the scrap industry of significant thefts of materials in the United States and Canada. Upon validation and review, alerts you post are broadcast by email to all subscribed users within a 100 mile radius of where the incident occurred.

In addition the following recommendations are outlined below.

Recommendations:

It is recommended that the following approaches be explored by the DECLG, PROs and enforcement authorities:

- Enforcement efforts should concentrate on Article 15 (1) (a) of S.I. No. 149 of 2014. Reconciliation of data between PROs and collaboration between enforcement authorities and PROs will be required to achieve effective enforcement.
- Security arrangements at CASs and retail outlets need to be reviewed and upgraded as currently they are inadequate.
- When Local Authorities are outsourcing management of CASs they should include a condition in the contract that the WEEE should only be collected by a PRO and that there is no charge to the public for the deposit of WEEE.
- A review should be carried out of all existing waste licence/ facility permits for WEEE to ensure that they are reporting recovery of WEEE accepted.
- Work collaboratively with scrap yards to create an identification and registration system for scrap metal sellers.

²²⁸ <http://www.scraptheftalert.com/>

- Examination of the current legislation with regard to Garda monitoring/powers of entry or search at premises dealing in scrap metal.
- Standardise the reporting of WEEE and metal theft, and data sharing to inform the development of policies and solutions to fight WEEE metal theft.
- Increase public awareness as a means of fighting WEEE metal theft.

5.14.6 Information and Awareness

As shown in Section 5.8.7.4 the PROs did not contribute to information and awareness in line with their approval conditions.

While it is a breach of the licence conditions, the national collection targets were met. However, more awareness will be required to meet the revised targets in the WEEE Recast Directive.

In order to facilitate, the monitoring of licence conditions, it is recommended that when the PROs report to the DECLG, they clearly set out the level of spending on information and awareness activities.

Strategic integrated approach to information and awareness campaigns on national, regional and local levels will be required to maintain the current level of performance and increase performance to meet the future collection targets.

Members of the public have been targeted by the PROs and other public bodies in relation to WEEE take back provisions however, more awareness will be required to reduce WEEE leakage and targeting businesses on their rights and obligations in relation to the management of WEEE generated by them.

Information and awareness in relation to WEEE obligations at retail outlets needs to be improved. Retailers should display information to the public regarding the free take-back options for WEEE. Figure 5.28 shows an example provided by WEEE Ireland during the retailer collection trial in described in Box 11.

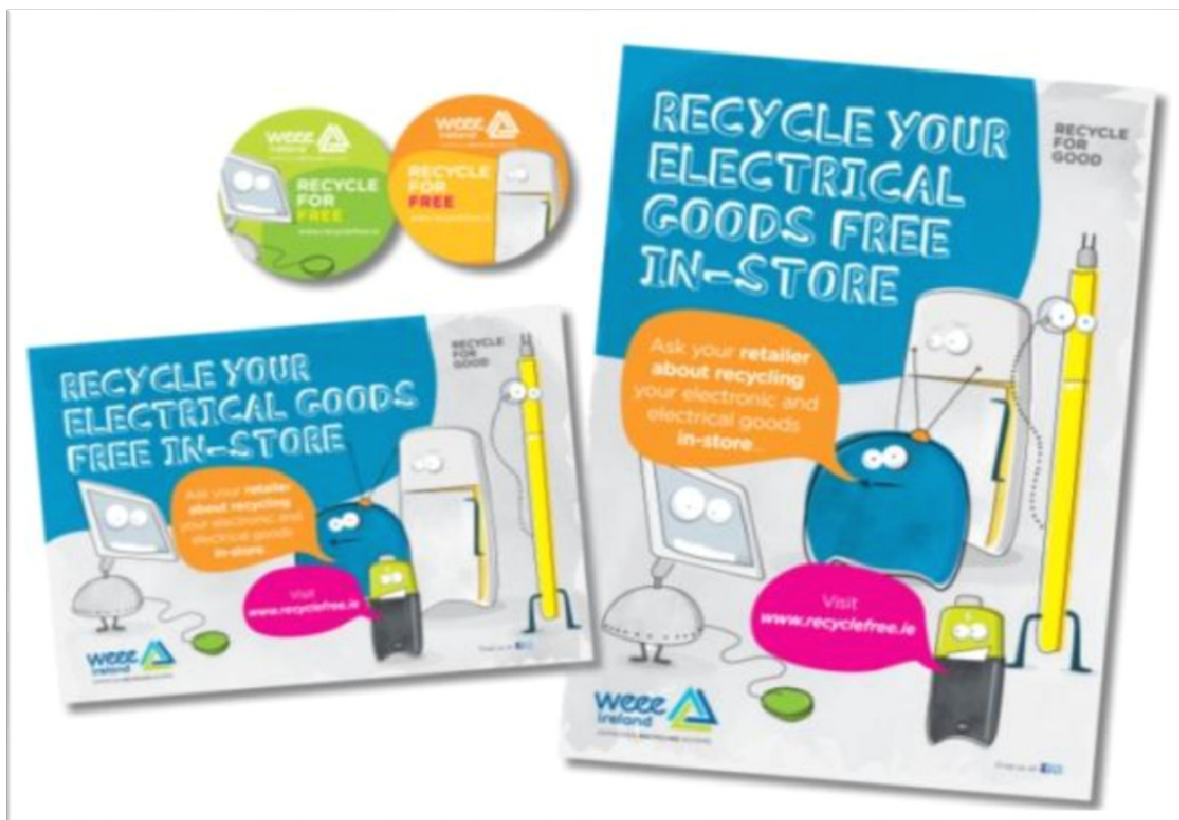


Figure 5.28: Poster, card point of sale, shelf wobblers, and appliance stickers

Recommendations:

In addition to recommendations in Section 4.6, for the WEEE waste stream, it is recommended that:

- In order to facilitate the monitoring of licence conditions, when the PROs report to the DECLG, they clearly set out and provide evidence for the level of spending on information and awareness activities.
- More awareness will be required to reduce WEEE leakage and targeting businesses on their rights and obligations in relation to the management of WEEE generated by them.

5.14.7 Reuse

There are many key issues that will need to be addressed in the development of any reuse model.

5.14.7.1 Access to WEEE and Collection

In order for reuse organisations to be viable, access to **sufficient quantities of good quality WEEE** is necessary. Items for reuse are currently supplied mainly by businesses and in more limited quantity by the public. PROs collect a significant proportion of the WEEE generated by private households at CASs and from retailers, but it is sent for recycling and recovery. WEEE leakage is also diverting WEEE, which could potentially be reused.

It is also important to **preserve the quality of the WEEE** being collected for reuse or preparation for reuse (e.g. it should not be allowed to be thrown into a skip at a recycling centre). The preservation of the WEEE should be addressed by all stakeholders in the collection infrastructure. In particular CASs and retail outlets should be upgraded to cater for segregation of WEEE for reuse. At a minimum there should be a well signed, dedicated covered area for storage. Staff at CASs and retail outlets should receive specific training and information on the storage and handling requirements for EEE products with potential for reuse. It was estimated in the rx3 Bulky Waste Reuse Study (2013) that the provision of a shipping container, signage and awareness costs are in the region of €2,250. However cost will depend on the option chosen (container, covered hard standing area, shed etc.). In addition greater awareness among householders is needed in terms of preserving the quality of WEEE before it arrives at the collection point. The rx3 Bulky Waste Reuse Study recommended that the householder who is delivering EEE to a collection point is asked if they would be happy for their item to be set aside for reuse. The onsite operative will be monitoring the area and consulting with the householder. When the reuse organisation collects the EEE they will check the items, if they are suitable for reuse they will take them if they are not they will be placed in the appropriate area for recycling and become waste.

In terms of the access of WEEE for reuse, the rx3 Bulky Waste Reuse Study recommended that the regulations be amended to make WEEE available to reuse organisations. However, careful considerations will have to be given to preventing WEEE leakage and the effect of such a measure on WEEE collected by or on behalf of the PROs.

To prevent WEEE leakage and ensure access to WEEE is given to genuine reuse organisations, access to WEEE for reuse and preparation for reuse should only be granted

to reuse organisations which can demonstrate environmental credentials, implement their activity to accredited standards, have technical skills, and organisational capacity.

The requirement for reuse organisations that are preparing items for reuse to be authorised should be reviewed by the DELCG and consideration should be given to introducing minimum thresholds or different classes of authorisation in order to exempt reuse organisations from requiring a Waste Facility Permit if the nature and scale of the activity is such that it does not pose a risk to the environment.

As part of the authorisation system reuse organisations should meet certain criteria (operate to certifiable standard, provide warranty, show technical skills and environmental credentials). The reuse organisations should also be able to collect, maintain and transmit data to the PROs, EPA and WRS on the quantities and fate of goods prepared for reuse. This is important to show the contribution of reuse to the achievement of the WEEE Recast Directive targets.

All Reuse organisations should register with WEEE Register Society Ltd. This will provide a centralised list of reuse organisations which will eliminate rogue operators and ensure that only fully compliant reuse organisations are provided with WEEE. The PROs and CASs could only use registered reuse organisations.

To ensure the **fair allocation of WEEE to reuse organisations**, clear rules should be developed. The process should be transparent and independent to prevent conflict of interest and ensure access to the diverse range of organisations including community and social enterprise sector and commercial reuse organisations.

Partnership agreements could be formed based on specific criteria being met (e.g. registration and accreditation). Some form of competitive tendering could also be used for the allocation of WEEE. However, under the current WEEE regulations, it is not allowed to charge community and social enterprise sector for WEEE, but this could be allowed following the transposition of the WEEE Recast Directive. Consideration should also be given to using environmental criteria in the tendering process to ensure the proximity principle is respected.

To provide coordination the supply of WEEE could be controlled by the PROs or by a separate scheme.

PROs have experience in the logistics of WEEE collection, reporting and communicating with the public. However, while the Waste Management Hierarchy favours reuse over

recycling, PROs may not find that it is in their best financial interest to supply WEEE to reuse organisations as it could lead to higher compliance costs. This could be due to a number of reasons, for example the costs of providing dedicated areas for collection of WEEE for reuse (if PROs are required to finance some of these costs), the costs of preparing for reuse may be higher than the cost of recycling (WRAP, 2009²²⁹), or if items are passed free of charge the PROs could lose the end of life scrap value. Therefore the PROs are likely to meet the reuse and recycling targets by using the most cost-effective option for their business model, which may not be reuse. In addition, there is a potential conflict of interest from PROs in controlling WEEE supplied to reuse organisations. As PROs are producers funded organisations, these producers may see second hand goods sold in Ireland as competition to their products.

On the other hand, using a separate scheme to provide access of WEEE to reuse organisations could overcome these issues, but it will require setting up a new structure, which will need to be financed and resourced with experienced personels. The scheme for reuse will compete with the PROs for access to WEEE, which may lead to increased cost due to the loss in economy of scales.

Ensuring the collaboration from existing PROs is likely to be more effective than setting up a separate scheme which may compete for WEEE. This will allow for synergies in terms of collection, information and awareness, and reporting. Existing PROs have access to funding from producers, are experienced in managing and financing existing collection systems, have access to large B2C WEEE supply and can influence the separation and quality of the WEEE collected.

However, in order to encourage PROs to provide or facilitate access to WEEE to reuse organisations, considerations should be given to include reuse targets should in the PRO conditions of approval²³⁰.

²²⁹ This study examined the financial costs and benefits of reuse and showed that a TV had a recycling cost £260/tonne and preparation for reuse cost £734/tonne and a washing machine has a recycling cost £39/tonne and preparation for reuse cost £366/tonne.

²³⁰ It must be noted that the European Commission is in the process of revising the EU Waste Directive Targets and the possibility of setting separate targets for WEEE to be prepared for reuse. This is to be concluded by 14th February 2016.

The DECLG (or its nominee WRS for example) should act as a referee in case of dispute regarding the allocation of WEEE.

5.14.7.2 Producer Support

It is important for producers, also referred to as original equipment manufacturers (OEMs) to buy into the reuse of WEEE as they control several aspects that dictate whether or not reuse of their products is possible. However, in order to obtain producers support there are a number of concerns which need to be considered:

- **Brand protection** is an important concern to producers. Products must be refurbished to a certifiable standard because failure to do so will almost certainly lead to a short lifespan for the reused product, which will create a negative image of the brand to those who purchased such products and for reuse in general. The original brand should be removed or hidden on reused EEE. The contract and details supplied by the refurbisher or seller must make clear to the buyer that they are the point of contact in case of technical problems and not the original producer. A reuse quality label should be used instead. A warranty should also be provided with details of refurbisher highlighting that the purchaser contacts them directly and not the original producer.
- One of the main environmental benefits of reuse is **production displacement**²³¹. While second hand purchases are a well accepted practice in the road vehicle market²³², EEE producers are concerned that the sale of used second-hand EEE or WEEE will reduce sales of new products. To date there has been limited research exploring this complex issue, however this is a genuine concern (WRAP, 2009²³³ and 2013²³⁴). Reuse is one of the highest priorities of waste management policy and the

²³¹ The quantity of second hand purchases that have replaced what would otherwise have been a purchase of a new item

²³² Where for example according to the CSO 32% of private cars sold in 2011 were second-hand.

²³³ This study shows that in the UK in 2009 TV reuse was 13% and washing machine reuse was 3%.

²³⁴ In 2012, WRAP published a survey of 3,100 consumers into second-hand shopping behaviour. The surveys indicated that for Great Britain the average displacement effect for EEE was between 25.3% to 28.7%. The main EEE items reused

purchase of second hand item is likely to become more widespread. The challenge for producers is to embrace reuse by developing new business models through reverse logistics/ leasing etc. This is already in place for some B2B and B2C goods (e.g. IT assets recovery programmes).

- Many products are produced in such a way that is prohibitive with respect to reuse. Use of proprietary parts etc. makes preparing for reuse difficult; even though producers are obliged to facilitate design for reuse in the current WEEE Regulations (Article 43 (1) (a) (b)) and in the WEEE Recast Directive. Greater enforcement of producer obligations in relation to design could be investigated. In order to facilitate the preparation for re-use Member States are required to take the necessary measures to ensure that producers provide information to WEEE reuse organisations (the different EEE components and materials, as well as the location of hazardous substances and mixtures in EEE) (Article 15 of WEEE Recast Directive).

5.14.7.3 Quality Assurance Standard/Legislation

- The public need to be assured of the quality of reused goods. Standards should be developed to assure the public that reused items that have met a certifiable standard are fit for purpose. Standards ensure a level playing field for reuse organisations. Standards for treatment, including recovery, recycling and **preparing for reuse** are to be developed in accordance with the WEEE Recast Directive. A Mandate was issued by the European Commission to CENELEC for the development of standards on 24th Jan 2013, which is still at the drafting stage.
- Ideally, legislation would require all WEEE being prepared for reuse to meet the certified standard chosen with a label being put on any reused EEE being put on the market to identify it as meeting a certified standard. Legislation should make it illegal to place reused EEE on the market if it has not met the certified standard.
- Minimum requirement for legislation would be legislation that covered the actual preparation for reuse process:

were CD/DVD/MP₃ players, game consoles, TVs, mobile phones. The survey pointed out that there was a lack of clarity on the reasons why items for reuse are purchased.

- Physical condition of the item: that the item would be in saleable condition similar to Sale of Goods and Supply of Services Act which states that goods must be of merchantable quality.
 - Safety
 - Item must be safe for use as originally intended in accordance with Low Voltage Directive (2006/95/EC) and General Product Safety Directive (92/59/EEC) in particular.
 - Testing apparatus used to assess equipment for reuse must be calibrated in accordance with national reference standards or the original equipment manufacturer's instructions.
 - Where the equipment's safety does not satisfy the above requirements, it must be assigned for recycling/recovery or disposal, as appropriate.
 - Testing: assessment of the equipment must be in accordance with national standards or, where there are none, the Original Equipment Manufacturer (OEM) instructions.
- A standard warranty should be issued.
 - Tracking of items from collection through to re-distribution after being prepared for reuse, i.e. full traceability to address issues of product recalls.
 - Data protection/destruction is an issue for B2B ICT equipment so suppliers of WEEE to reuse organisations need to be confident that all data is confidentially removed.

5.14.7.4 Information and Awareness

In 2011 Eurobarometer²³⁵ conducted a survey which found that 45% of EU citizens would be happy to purchase second hand electrical equipment and the principal reasons

²³⁵ European Commission, 2011. Eurobarometer Summary. Attitudes of Europeans towards Resource Efficiency. Pages 11-12.

for not buying second hand products are concerns about the quality, usability and health and safety concerns.

The public need to be informed about the potential reuse option for B2C EEE and how to prevent potential damage to EEE. It should also be emphasised to the public that reuse provides social training employment opportunities and benefits to communities as a whole²³⁶.

In addition, there should be a focus on improving the perception of used equipment as being inferior or not for purpose such that it becomes a realistic alternative to purchasing a new, equivalent product. The primary element of this will be the establishment of a recognised standard and/or national branding for the preparation for reuse of WEEE, which will reassure consumers and create confidence in the quality of reused items of EEE. The Revisie label of the KCK network in Belgium is an example of where a specific quality label has been developed by a reuse network to show customers that refurbished WEEE meets certain quality standards.

In tandem with establishing collection systems for the segregation of WEEE for reuse have been established, PROs and Local authorities should expand their information and awareness campaigns to include reuse of WEEE.

5.14.7.5 Reporting of Reuse

The EPA currently captures data on reuse by obtaining data from B2B reports, reuse organisations and charities (Section 5.12.2).

It is proposed that the reuse organisations collect, maintain and transmit data to the PROs, EPA and WRS on the quantities and fate of goods prepared for reuse.

Recommendations:

In order to preserve the quality of the WEEE being collected, CASs and retail outlets should

²³⁶ Also reuse is more likely to lead to job creation for goods, which are not manufactured in Ireland as there will not be job displacement.

be upgraded to allow for segregation of WEEE for reuse and staff trained for the acceptance and safeguard of WEEE for reuse.

The WEEE Regulations should be amended to make WEEE available to reuse organisations, the access to WEEE by reuse organisations need to be controlled.

Access to WEEE for reuse and preparation for reuse should only be granted to reuse organisations which can demonstrate environmental credentials, implement their activity to accredited standards, have technical skills, and organisational capacity.

Reuse organisations should register with the WEEE Register Society and the DECLG should develop an authorisation system for these organisations.

Access to WEEE should be given to authorised reuse organisations that prepare equipment for reuse to a certifiable standard.

A Reuse standard should be mandatory and included in legislation to assure the public that reused items that have met a certifiable standard are fit for purpose. Existing standards can be used such as PAS-141 or WEEELABEX. The standard should include for a standard warranty to be used and a reuse quality label.

Ensuring the collaboration from existing PROs is likely to be more effective than setting up a separate compliance schemes. However, while the Waste Management Hierarchy favours reuse over recycling, PROs support may be difficult to gain.

To ensure the fair allocation of WEEE to reuse organisations, clear rules should be developed. Specific reuse targets should be included in PROs conditions of approval. PROs should use partnerships with reuse organisations or competitive tender for the supply of WEEE. The process used by the PROs should be based on best procurement practice, be transparent and independent to prevent conflict of interest. Consideration should be given to using environmental criteria in the tendering process to ensure the proximity principle is respected. WRS could act as a referee in case of dispute regarding the allocation of WEEE.

A requirement to expand information and awareness campaigns to include reuse of WEEE should be included in PROs conditions of approval.

5.14.8 Contingency Funding

The following approval conditions are set by DECLG for the management of contingency reserves:

“3.1 the CS shall ensure that separate contingency reserves be maintained in separate interest bearing accounts in the State. Furthermore, the CS shall ensure a separate interest bearing investment account is maintained in respect of contingency provision from

- *Funds generated by EMCs*
- *Income not visibly displayed at any point in the supply chain...*

The CS shall also ensure that any separate interest bearing investment account is maintained in respect of any contingency provision is never overdrawn.

3.2 the CS shall ensure that contingency reserves are ring fenced from all other reserves and are not used by the compliance scheme for current operational purposes.”

[This information has been redacted due to its commercially sensitive nature].

The level of contingency is currently set to approximately one year of the PROs operational costs. The main factors affecting the level of contingency funding should be the level of liabilities associated with the waste management of the EEE and the probability that the PRO does not meet its objective. Applying a risk management framework (Section 4.1.2) WEEE would require one full year's funds for a contingency fund. However, the required level of this fund may vary due to changes in the factors affecting the risk (e.g. performance of PRO, new EU targets) and the knock on effect of such.

The PROs should meet the minimum required by the DECLG. A reserve higher than the minimum required by the DECLG is an issue for the PRO and its members. The Corporate

Governance framework should provide a mechanism for the members of a PRO to influence the level of contingency in excess of the minimum required by the DECLG held by the PRO.

Recommendations:

The PROs should meet the minimum contingency fund required by the DECLG.

See section 4.1.2 for additional cross cutting recommendations for contingency funding.

5.14.9 Remaining Historic WEEE Fund

Historic WEEE in an Irish context is defined as B2C WEEE arising from EEE put on the market prior to 13th August 2005. From that date, visible Environmental Management Costs (vEMCs) were introduced for categories 1,2,4,5 and 6 in order to cover the liability for historic WEEE arising. The vEMCs is set aside in the Producer Recycling Fund which funds the take back and recycling scheme for historic WEEE. In total up to 2012, €106.54 million²³⁷ has been paid into the Producer Recycling Fund.

Since the vEMCs came into effect, they have been reviewed on an on-going basis by WRS and amended, as appropriate, taking factors such as reduction in recycling costs, take back rates, anticipated house builds and accumulating deferred income. On the 13th of February 2013, the vEMCs ceased for all EEE under the original 2005 WEEE Regulations.

Calculating the quantity of historic WEEE in Ireland is fraught with difficulty because of the lack of availability of data relating to EEE put on the market prior to the establishment of the WRS and data relating to historic WEEE arisings.

In order to estimate the exact amount of funding that is required to discharge the responsibilities for the remaining amounts of historic WEEE, RPS has developed a model to

²³⁷ Communication with WRS on 15/08/2012 and 28/08/13

estimate the annual quantity of WEEE generated from EEE put on the market from 13th August 1985 to 13th August 2005²³⁸.

5.14.9.1 Model and Assumptions

The model estimates the quantities of WEEE arisings for the period 2005 to 2025 using the following variables:

- Quantities of EEE put on the market every year from 1985 to 2005
- Quantities of EEE that becomes WEEE every year from 1985 to 2025

In order to estimate the remaining historic WEEE, a number of assumptions were made:

- The quantities of EEE put on the market:
 - Using the CSO Retail Sales Index (Value) for Electric Goods, the quantity put on the markets from 1995 to 2005 was estimated. From 2006 to 2011, the quantities of WEEE put on the market as reported by the WEEE Register were used.
 - Figure 5.29 shows that the quantities of EEE put on the market²³⁹ as reported by WRS broadly correlates with the CSO Retail Sales Index (Value) for Electric Goods for the period 2006 -2011.
 - As the CSO Retail Sales Index (Value) for Electric Goods is not available prior to 1995, it was assumed that the quantities put on the market from 1985 to 1995 are based on the 1996 quantities being reduced by 1.8% per year. 1.8% being the average yearly increase from 1995 to 2011.

²³⁸ The model is similar to the model used in the calculation of the WEEE generated targets. The main differences are that it only applies to categories 1,2,4,5 and 6 instead of all the categories and it examines historic WEEE for the period 1985 to 2025.

²³⁹ The quantity of WEEE put on the market for the period 2006 – 2011 have been used to create an index with the base year 2006 = 100. 2006 was used as base year because 2005 only includes data from 15th August to 31st December.

- The proportion of each category is similar to the average put on the market from 13th August 2005 to 2011 shown in Table 5.26.
- Lifetime Profiles of EEE: In 2010 WEEE Ireland commissioned research to analyse the life cycle of EEE²⁴⁰. The research illustrated that the majority of products placed on the market will enter the WEEE stream over a period of 20 years, therefore it was assumed that all historic WEEE will have been collected by 2025. The research also provided lifetime profiles for categories 1,2,4,5 and 6. WEEE Ireland lifetime profiles showed consistency with findings from other studies for category 1 and 2 (ECODOM. 2013) (United Nations University, 2012) (Norden, 2009). For category 4, WEEE Ireland data showed that the products in these categories were forecast to reach end-of-life later. There was no data to compare EEE categories 5 and 6. These differences could be explained by different market trends and consumption behaviour in Ireland, therefore WEEE Ireland lifetime profiles was used to estimate the historic WEEE entering the waste stream annually and it was assumed that all historic WEEE will have been collected by 2025.

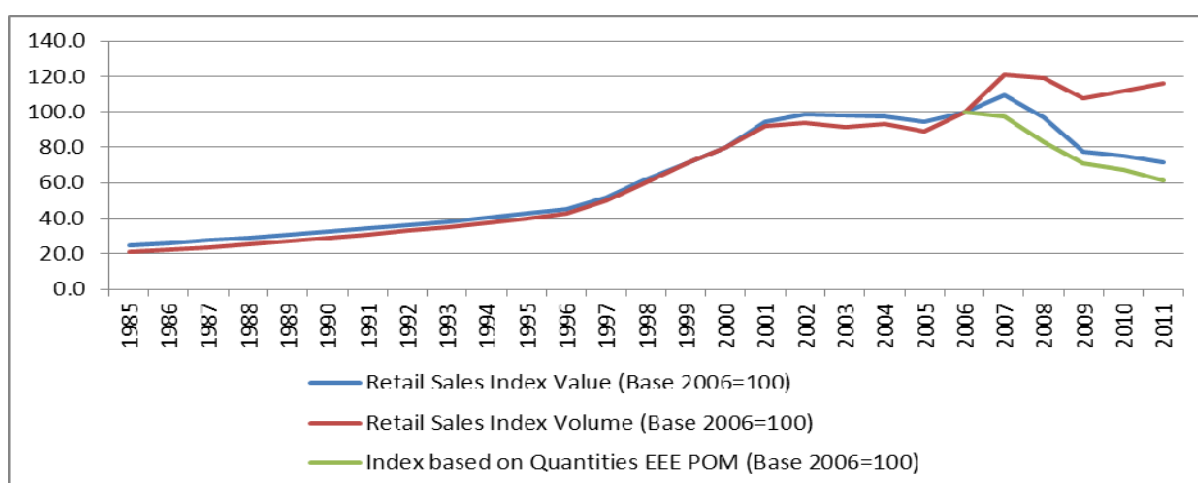


Figure 5.29: Comparison of CSO Retail Sales Index and quantities of EEE put on the market

²⁴⁰ E-mail communication from WEEE Ireland on 29/08/2012

Table 5.26: Average proportion of EEE put on the market per category²⁴¹

Category	2005	2006	2007	2008	2009	2010	2011	Total	%
Category 1	16,643	59,728	58,178	48,763	39,518	38,470	37,848	299,149	58%
Category 2	3,256	15,346	8,977	8,577	8,874	10,371	7,600	63,000	12%
Category 4	6,560	17,186	17,927	13,960	13,509	10,647	9,432	89,221	17%
Category 5	1,291	4,361	7,976	6,031	4,526	4,244	3,520	31,947	6%
Category 6	1,254	5,641	5,374	6,801	5,456	4,448	4,212	33,187	6%
Total	29,004	102,262	98,432	84,131	71,883	68,180	62,612	516,504	100%

5.14.9.2 Caveats

The CSO provides a Retail Sales Index of Electric Goods for year 1995 to 2008, but there is no breakdown per EEE category, therefore the proportional increase and decrease of certain categories is not reflected in this model.

The overlapping of the datasets and base indices for different years makes it difficult to link the actual POM data from the WEEE Register Society to the Retail Sales data for the period 1995-2005.

It was assumed that the data provided by WEEE Ireland is representative of the whole country.

5.14.9.3 Calculating Historic WEEE

The projected WEEE arisings for EEE put on the market from 1985 to 2005 is shown in Figure 5.30. Category 1 remains the largest category followed by category 4.

²⁴¹ WEEE Register Society 13/11/12

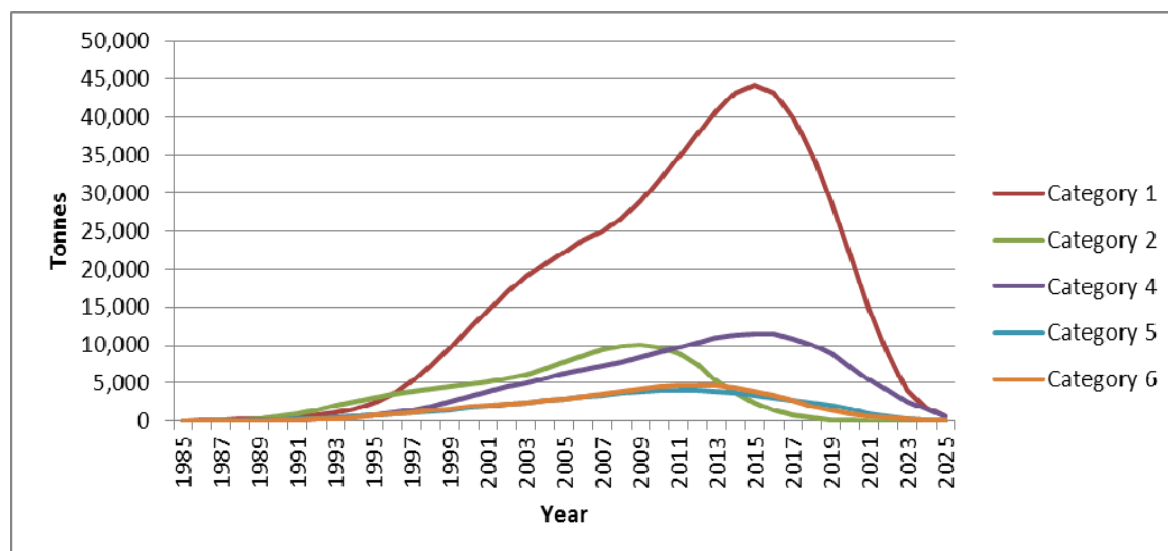


Figure 5.30: Projected WEEE arisings for EEE put on the market from 1985 to 2005

Table 5.27 shows that 24% of EEE put on the market (for categories 1,2,4,5 and 6) prior to 1985 to 13th August 2005 became WEEE prior to 13th August 2005 and 35% became WEEE from 13th August 2005 to 2011. The remaining historic WEEE arisings after 2012 is estimated to be 471,970 tonnes or 41% of the EEE put on the market between 13th August 1985 and 13th August 2005.

Table 5.27: Estimated Quantities of Historic WEEE Arisings

Category	Prior to 13th August 2005	From 13th August 2005 to 2012	From 2013 to 2025	Total
Category 1	130,100	217,210	326,958	674,268
Category 2	60,519	66,901	14,579	141,999
Category 4	47,613	73,663	76,462	197,738
Category 5	17,391	25,447	29,170	72,008
Category 6	20,359	29,642	24,802	74,802
Total	275,982	412,862	471,970	1,160,815
Share of Total	24%	35%	41%	100%

5.14.9.4 Cost of Managing Uncollected Historic WEEE

Not all costs of managing WEEE will be carried by the PROs as a small proportion of historic WEEE is collected in the municipal residual bin (estimated at 13% on average in the EU) and a large proportion is collected through other legal or illegal channels (estimated at 54% on average in the EU) (European Commission, 2008).

Therefore the PROs only collected a fraction of the estimated 338,227 tonnes of historic WEEE arisings.

However with the new targets set out in the Revised Directive on Waste Electrical and Electronic Equipment (WEEE) (Directive 2012/19/EU), the proportion of WEEE collected on behalf of the PROs is expected to increase. The compliance schemes will not have to fund 100% of the historic WEEE arisings collection and treatment but a share based on their projected collection performance shown in Table 5.28. The maximum is based on the 2019 minimum collection target of 85% of WEEE generated each year.

Table 5.28: PROs Projected Collection Performance

Year	2013	2014	2015	2016	2017	2018	2019-2025
Collected	55%	60%	65%	70%	75%	80%	85% for each year

Therefore PROs will only collect a projected 334,141 tonnes or an average 71% of historical WEEE arisings for that period (471,970 tonnes) as shown in Table 5.28.

Table 5.29: Projected historic WEEE to be collected by the PROs

Year	Category 1	Category 2	Category 4	Category 5	Category 6	Total
2013	22,435	2,959	6,700	2,172	2,533	36,799
2014	25,946	2,251	7,108	2,364	2,591	40,260
2015	28,700	1,594	7,161	2,504	2,519	42,479
2016	30,281	1,050	6,781	2,584	2,346	43,042
2017	29,978	630	6,234	2,549	2,002	41,394
2018	28,133	335	5,501	2,431	1,573	37,973
2019	24,535	152	4,626	2,191	1,215	32,720
2020	18,390	50	3,425	1,682	853	24,400
2021	12,606	0	2,458	1,122	592	16,777
2022	7,490	0	1,686	699	377	10,251
2023	3,377	0	1,052	325	215	4,969
2024	1,442	0	592	139	107	2,280
2025	476	0	222	46	53	796
Total	233,791	9,020	53,545	20,809	16,977	334,141

WRS has data relating to the vEMC income and recycling costs (includes for collection and treatment)²⁴² for each year and each category of WEEE. Using the 2005-2011 data for WEEE collected we can calculate an average treatment cost for each category of WEEE. The cost of recycling in € / tonne is shown in Table 5.30

Table 5.30: Cost of treatment per WEEE Category

Category	2005-2011 Total WEEE Collected* (tonnes)	2005-2011 Treatment Costs (€)	Cost per tonne
1	144,466	19,617,000	€135.79
2	12,877	2,373,000	€184.28
4	42,134	8,854,000	€210.14
5	12,093	4,621,000	€382.12
6	3,302	683,000	€206.84
Total	214,872	36,148,000	€168.23

*WEEE Ireland Annual Reports; ERP Ireland emailed 30.01.13

Therefore multiplying the quantities in Table 5.29 by the costs in Table 5.30, it is estimated that the cost of treatment for uncollected historic WEEE generated in the period 2012-2025 should be €56.1 million as shown in Table 5.31.

Table 5.31: Cost of treatment for uncollected Historic WEEE

Category	Historic WEEE Arisings 2012 - 2025	Cost per tonne (€)	Total Costs (€ million)
1	233,791	135.79	31.7
2	9,020	184.28	1.7
4	53,545	210.14	11.2
5	20,809	382.12	8.0
6	16,977	206.84	3.5
Total	334,141	168	56.1

²⁴² WRS emailed 15.08.12

As shown in Table 5.9 in Section 5.8.7.3, the remaining vEMCs allocated to PROs was €17.10 million at the end of 2012. The deadline has passed for the collection of vEMCs except for EEE, which ceased in February 2013.

[This information has been redacted due to its commercially sensitive nature].

Table 5.32 provides a summary breakdown for each PRO for the remaining Historic WEEE Fund. As shown in Table 15.32, the remaining fund will not be enough to cover for the cost of collection and treatment of the remaining historic WEEE.

In addition, Table 5.32 provides an estimate of the cost of managing future historic WEEE for each of the PROs and if they have sufficient funds available to finance the treatment. WEEE Ireland and ERP will not have enough funding available.

Table 5.32: Summary Breakdown by PRO for Deferred Income for Historic WEEE

	ERP Ireland	WEEE Ireland	Total
Estimated Quantity of Historic WEEE remaining 2012-2025 (tonnes) *	110,267	223,875	334,141
Estimated Cost of Management (€ million)	18.5	37.6	56.1
Remaining Historic WEEE Fund remaining at end of 2012 (€ million) **	[This information has been redacted due to its commercially sensitive nature].		
Deficit (€ million)			

*Based on market share for 2011: 33% ERP and 67% WEEE Ireland

** Some additional income for Cat 1 will be accumulated from January - February 2013 but this will be minimal

Recommendations:

ERP Ireland and WEEE Ireland should submit proposals to the DECLG to show how they are going to meet the deficit. Additional funding will have to be sourced which will inevitably result in higher costs for producers but there will be less of an effect on WEEE Ireland members as the deficit is significantly lower.

The Historic WEEE Fund should be monitored by an independent body to ensure that the fund is being spent on the treatment of historic WEEE.

Refer to Section 5.14.14 for recommendations on allocation of vEMC income to PROs.

5.14.10 Visible Fees

Visible fees or vEMCs, sometimes called recycling fees are charged to the buyer at the point of sales.

The concept of visible fees²⁴³ was used in the WEEE Directive (2002/96/EC) to finance the costs of the environmentally sound management of historic WEEE²⁴⁴. The WEEE Directive allowed Member States to provide that for a transitional period of eight years (10 years for large household appliances) producers are allowed to show consumers, at the time of sale of new products, the costs of collection, treatment and disposal of historic WEEE in an environmentally sound way.

In Ireland, under national legislation a temporary visible fee or vEMCs was set up to show the costs of the environmentally sound management of WEEE from private households arising from EEE placed on the market prior to 13 August 2005.

The vEMCs displayed to consumers could not exceed the actual costs of recycling and were assigned for recycling activity. The vEMCs were calculated on the basis of the estimated number of electrical and electronic appliances that were recovered and were subject to change. The vEMCs were determined and approved by WRS in consultation with the producers via PROs and paid by the customers at the point of sale. Up to the end of 2012 €106.54 million was collected.

Table 5.33 gives an example of how a vEMC of €5 is allocated among the economic operators. The retailer mark-up is to cover costs associated with complying with their take-back responsibilities. The visible fee covers the collection and treatment costs of WEEE by the PROs.

²⁴³ A visible fee is a fee that is explicitly mentioned as an additional component in the price of the product. On the other hand, on a product with an inbuilt fee, the product price includes the fee, without explicit information on the value of the fee (Khetriwal and al., 2007).

²⁴⁴ Historic WEEE are products that have been sold in the past prior to the implementation of EPR legislation. Historic WEEE refers to EEE placed on the markets prior to 13 August 2005

Table 5.33: Example of Visible Fees Allocation

Item	Consumer pays retailer	Retailer pays producer	Producer pays PRO
Visible Fee	€3.25	€3.25	€3.25
Retailer Mark-up	€0.82		
VAT	€0.93	€0.75	€0.75
Total	€5.00	€4.00	€4.00

An alternative to visible fees is to use an “inbuilt fee”, the product price include the fee without explicit information on the value of the fee. With inbuilt fees other mark-ups could be added to the compliance costs.

The regime of vEMCs expired in February 2013, and the costs of the environmentally sound management of WEEE are now embedded in the product price. The WEEE Recast Directive provides for a new provision on visible fees for all WEEE (historic and new). *“Article 14.1 Member States may require producers to show purchasers at the time of sale of new products, the costs of collection, treatment and disposal in an environmentally sound way. The costs mentioned shall not exceed the best estimate of the actual costs incurred.”*

The new provision on visible fees in the WEEE Recast Directive differs from the WEEE Directive (2002/96/EC) as it applies to new EEE products at the time of sale and not to historic WEEE.

Below we examine the benefits and disadvantages of retaining such a structure in the future.

The re-introduction or continuation of visible fees requires addressing a certain number of issues. These issues include:

- Determining which product categories the visible fees should apply. For example:
 - Some WEEE categories have an intrinsic value which covers or exceeds the costs of its end-of-life management. When using visible fees it is recommended that they only apply to products which have intrinsic value lower than the end of life management costs. For example the following categories of B2C WEEE could have a visible fee applied (1, 2, 4, 5, 6 and 7).

- For some products, there is a risk that the product may be orphaned²⁴⁵ and visible fees could finance the future environmentally sound management of this product²⁴⁶.
- Determining how the visible fees will reflect the costs of waste management and how the actual costs incurred can be best estimated. The PROs will be the primary source of the information for this estimate. One of the challenges in reflecting these costs is that the intrinsic value of WEEE may be volatile and it may be difficult to comply with the WEEE Recast Directive requirement to estimate of the costs displayed can not exceed the costs incurred.
- Determining if the visible fees apply for a certain period. For example for dealing with orphan products or historic waste arisings.
- Maintaining an administrative system associated with the monitoring, operation and the transparent collection and utilisation of the visible fees.

The main benefits of retaining visible fees are the following:

- A visible fee, at the time of purchase, is a way of making the system transparent to the consumer as well as creating awareness of the true costs of managing end of life products and to reinforce the message that consumption and recycling/disposal are linked (Huisman et al., 2008). Visible fees can also assist in consumer education (Khatriwal and al., 2007). One Irish retailer stated that it was useful to help customer identifying what is EEE.
- A visible fee also makes it more difficult for unscrupulous retailers or recyclers from charging money for taking back WEEE (Khatriwal and al., 2007). However, it is not expected to be a significant benefit in Ireland as the previous visible fees are likely to have achieved this goal.

²⁴⁵ Orphan products are products subject to producer responsibility requirements whose producer has disappeared due to bankruptcy or for other reasons (OECD, 2001).

²⁴⁶ This is a similar scenario to the financing of historic. As pointed out during the consultation, such a risk could exist in the lamp industry, where CFL and incandescent bulbs may become an orphan product if CFL and older lamp producers exit Irish market. LED producers might not be willing to contribute to the cost of waste management for CFL and incandescent bulbs. Therefore the option of a visible fee to be paid on all bulbs indiscriminately (LED/CFL etc.) to create a Producer Recycling Fund for potential orphan products could be examined.

- The visible fee also creates a level playing field for all manufacturers and retailers, making it difficult to undercut prices on recycling fees (Khatriwal and al., 2007).
- Producer groups have also argued that the use of visible fees may also result in a cheaper option for the consumer as it disallows additional mark-ups by each element of the supply chain for compliance costs.

The main potential disadvantages of this option include:

- The visible fees do not provide an incentive for producers to develop environmentally friendly design as a flat fee exists for all producers²⁴⁷. Also as the fee reflects the costs of products manufactured previously, little consideration may be given to new generation of products which are more environmentally friendly (Clift and France, 2006) (Khatriwal and al., 2007).
- Visible fees using a flat fee instead of variable rates of recycling management costs will not provide for greater competition between the PROs and therefore lower costs (Khatriwal and al., 2007).
- A visible fee system is not a system that is able to adapt quickly to shifting market dynamics.
- There are a number of complex considerations (e.g. relating to which product will have a visible fee, the setting of the visible fees, allocation of visible fees to PROs²⁴⁸ etc.), which need to be agreed. This may require lengthy discussion and resources from stakeholders (DELCOG, PROs, producers, retailers, NGOs, consumers association etc.).
- There will be administration costs associated with setting up continuing the visible fee system however there is a current system in place which could be modified at limited costs.

²⁴⁷ There may also be other reasons preventing this incentive to work (e.g. collective take-back system, producers' fees). As discussed in Section 4.8 the incentive may be limited because collective take-back systems do not differentiate between different brands of a product type and fees charged to producers may not always take into account products with lower environmental impacts. Therefore, the producers may gain limited competitive advantage by innovating and reducing these environmental impacts of their products at end-of-life.

²⁴⁸ vEMCs were allocated to PROs based on PRO market shares of products placed on markets when the vEMCs were collected. One of the PRO claims that there was an overallocation. This is discussed further in Section 5.14.14.2.

- While the visible fees may result in a cheaper option for the consumer they may be perceived as an extra-charge by the consumers, which may limit its public acceptance (as it may generate concerns about the fairness of the allocation of costs) (Clift and France, 2006). However, as shown in the previous use of visible fees in Ireland, this did not seem to affect the overall performance of WEEE collection.

Unfortunately the data and accounting challenges in calculating and allocating costs and benefits are quite significant, it is therefore difficult to provide clear recommendations with regards to the continuation of the visible fee system.

However, should the visible fees be reintroduced:

- The reintroduction of a visible fee and its communication should be managed carefully to prevent negative perceptions from the consumers which could reduce participation in the take-back programme. “Visible fees” should also be renamed to allow for better consumer understanding that it relates to the recycling/reuse cost of the product at end of life.
- In order to maximise the increased consumer awareness associated with the use of visible fees, the reintroduction of visible fees should be part of the communication strategy to promote the environmentally sound management of WEEE.
- The selected visible fee system should try to reuse the existing administrative system in order to reduce administrative burden to businesses.
- Regardless of the system implemented this should be enforceable.
- A function of WRS was to set and monitor the collection of visible fees. A lot of work was carried out previously by WRS in analysing what the visible fee rates should be set at and this role should continue in the event that visible fees are re-introduced.

5.14.11 Competition

Appendix D addresses the role of competition in the WEEE PRI model in Ireland in securing a more efficient and effective system. The existing geographical split between the PROs for WEEE in Ireland was examined. The optimum number of PROs for WEEE was discussed and it was found that with the multiple exclusive geographic markets present, it was possible to have more than one PRO however given the small size of the Irish market and the probably non-linear increase in costs of three or more PROs, two would seem an appropriate number.

In addition as long as (i) the geographic division reflects, in a rough and ready way, the market share of WEEE Ireland and ERP Ireland and, (ii) the geographic areas for which the PROs are responsible for in terms of collection, sorting and recycling are homogenous²⁴⁹, there is no need to question the division. The only caveat is that ERP Ireland is responsible for the collection, sorting and recovery of waste in two separate areas: one in the border area and the other in the south west. If lower subsidy rates were realised from having one continuous area to serve, then some thought might be given to redrawing the boundaries to realise these lower subsidy rates.

5.14.12 Corporate Governance

Appendix F details recommendations for Corporate Governance for all PRIs including WEEE to be included in a Corporate Governance Code.

Corporate Governance refers to the system by which companies are directed and controlled. The Board of Directors are responsible for the governance.

The schedule of conditions set by DECLG states that membership of the Board is reflective of the membership, that the representation of members of the PRO concerned is strictly in proportion to the EEE market share in the State of all members and that small and medium enterprises (SMEs) are guaranteed a minimum of two members on the board.

The Memorandum of Articles of Association ERP Ireland Ltd provides for a minimum of 6 and a maximum of 15 directors and provides requirements on how many directors should be from each sector (including SME's and independents). There is also a stipulation in the Corporate Governance Framework that an independent non-executive director should have financial/accounting expertise. There are three Board committees: audit and finance committee, the remuneration committee and the nominations committee. The procurement and sourcing team are based at ERP headquarters in France, which provide services to ERP Ireland.

²⁴⁹ With respect to the major parameters that are likely to determine collection, sorting and recovery costs, such as urban/rural split, population density, and proximity to the border to take account of suspected leakage on the part of

ERP Ireland's Board of Directors is currently composed of eight members. Four members are producers from the Large Household Equipment, Information and Communication Technology and Consumer Equipment sectors. One member is an independent, one member is representing the retail sector and the last member is a distributor representing the SME sector. The President and CEO of ERP Europe is also a Director on the Board. The average length of service on the Board is over 5 years with the most recent appointment taking place in 2012 while four of the eight members have been on the Board since 2005.

The Memorandum of Articles of Association WEEE Ireland Ltd provides for a minimum of 7 and a maximum of 15 directors and provides for requirements on the composition breakdown by sector (including SME's and independents) and the election process. Article 55.4 provides for maximum terms that a director can hold. No director can hold office on the date of the adoption of the articles for a period exceeding 12 years and no director appointed after the date of the adoption of the articles for a period exceeding 9 years. The following Board committees exist: procurement, finance, battery and recruitment and from time to time other short-term committees are established (i.e. Recast Directive).

WEEE Ireland's Board of Directors is currently composed of twelve members. The Board is comprised of four independents, two from SME sector, one distributor and four producers from the Large Household Equipment, Information and Communication Technology and Consumer Equipment sectors. The CEO is also a Director on the Board. The average length of service on the Board is over 5 years with the most recent appointment taking place in 2012 while half of the members have been on the Board since 2005.

During consultation it was mentioned that the Board of Directors for both PROs were not representative of the supply chain as they did not include many retailers or any regulators or waste management companies. Recently the retailer sector has been appointed to one of the Boards of the PROs.

It is not recommended waste management companies sit on the Board as there are not reflective of the membership of PROs. This may also create a conflict of interest with regards to the procurement of waste collection and treatment services.

consumers bringing it to Northern Ireland. These factors were used, according to ERP Ireland, in allocation of the

Retailers are an important stakeholder in the supply chain and some would have producer and retailer/distributors obligations together, however if retailers sit on the Board precaution needs to be taken to prevent conflict of interests could arising from their role in the collection network.

5.14.13 Inter-scheme Framework

The WEEE PRI is the only PRI where there is collaboration between PROs with regards to a number of arrangements.

5.14.13.1 Co-operation between PROs

A voluntary accord and compensation process was set up to allow for co-operation between the PROs. However intervention by DECLG in the reconciliation process was necessary in order to reach agreement. Therefore it is recommended that an independent mediator/referee be appointed to be called on if necessary in future in the reconciliation process.

While the geographical division for the collection of WEEE limits the potential for collaboration, the PROs should examine further opportunities for collaboration in areas of mutual and national interests such as:

- Information and awareness: e.g. Devise campaigns which are mutually supportive of each other collection systems (provide information on collection events carried out by both schemes),
- Strategic development of the national Infrastructure for recovery of WEEE, and
- Research in areas of common interests (e.g. lifecycle of historic WEEE).

Recommendations:

It is recommended that the DECLG appoint an independent mediator to resolve differences between the two PROs during the reconciliation process or as required.

geographic areas to be served by it and WEEE Ireland.

The PROs, in conjunction with the DECLG should examine further opportunities for collaboration in areas of mutual and national interests.

5.14.13.2 Rebalancing Arrangements

There is a requirement for rebalancing arrangements between the PROs in relation to the following:

1. **WEEE collected/treated vs. market share:** There is a voluntary accord and compensation process agreed by both PROs for the reconciliation of the difference between market shares and WEEE collected and treated. A voluntary accord and compensation process already exists for WEEE collected/treated vs. market share and is agreed by both PROs. This agreement is working well and is not discussed further.
2. **Contingency funding:** when a producer transfers from one PRO to another and needs to transfer their portion of the contingency fund. This item was discussed in Section 4.2.
3. **vEMCs allocation to the PROs:** The vEMCs are distributed to the PROs for their historic WEEE liabilities based on market share. According to ERP Ireland the allocation of the vEMCs using this approach has led to a situation of over allocation of vEMCs to WEEE Ireland²⁵⁰. This issue is examined in Section 5.14.14.3

5.14.13.3 Allocation of vEMCs to the PROs

From a total of €106.54m of vEMCs collected up to the end of 2012, €18.6m went towards supporting the retailers while the remaining €87.8m was divided between the PROs based on the number of units placed on the market. ERP Ireland was allocated 21% (€18.2m) of the €87.8m and WEEE Ireland received 79% (€69.5m)²⁵¹.

²⁵⁰ Personal communication Martin Tobin, ERP Ireland 19/10/2012

²⁵¹ WRS 25.01.13

The vEMCs²⁵² are distributed monthly to the PROs for their historic WEEE liabilities based on the overall market share of EEE put on the markets by their members. Figure 5.31 shows the allocation per annum for each PRO.

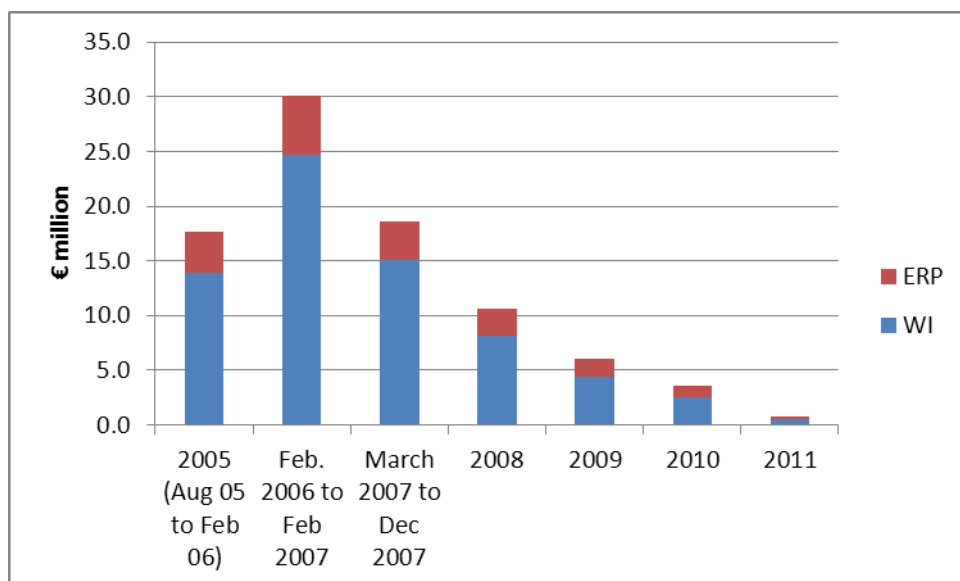


Figure 5.31: Allocation of vEMC per annum for each PRO²⁵³

According to ERP the allocation of the vEMCs using this approach has led to a situation of underallocation of vEMCs to ERP Ireland. According to WRS this is due to the following reason: vEMCs were more substantial in the initial years (as shown in Figure 5.32) when the market share of EEE POM by ERP Ireland was low.

²⁵² "Visible Environmental Management Costs" means the costs of the environmentally sound management of WEEE from private households arising from EEE placed on the market prior to 13 August 2005.

²⁵³ Source WRS

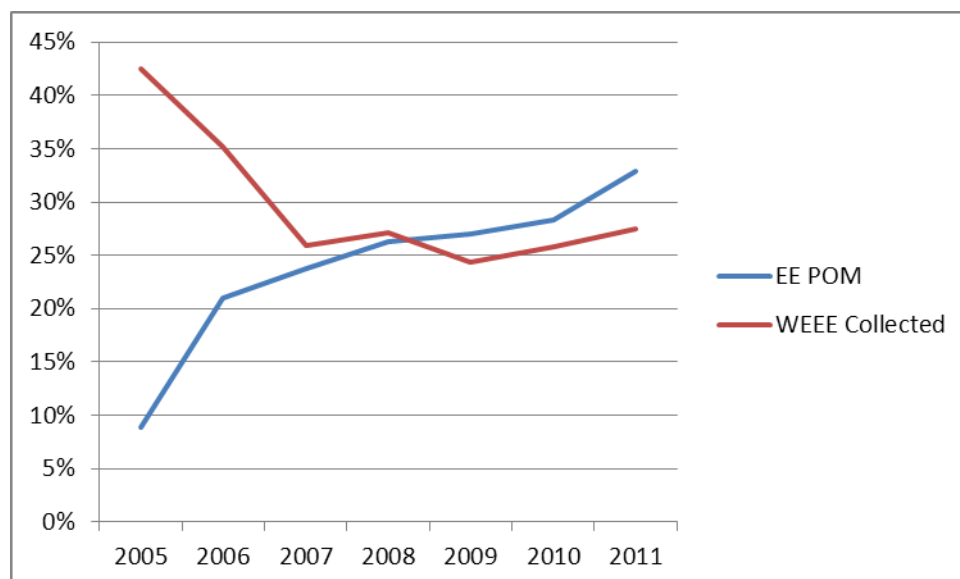


Figure 5.32: ERP Ireland's market shares of EE POM and WEEE collected²⁵⁴

A number of other approaches could be used to allocate the vEMCs to the PROs.

Approach 1: Simple Market Share Basis based on Total WEEE collected 2005-2011

The vEMCs are used to for the environmentally sound management of historic WEEE, therefore the vEMCs should be allocated based on the quantities of WEEE collected and treated. Using this approach, the proportion of vEMCs allocated to WEEE Ireland and ERP is presented in Table 5.34. Using this approach the vEMCs allocation should have been 28% ERP and 72% WEEE Ireland.

Table 5.34: Simple market share basis based on total categories 1,2,4,5 and 6 WEEE collected 2005-2011

PRO	Tonnes	%
WI	154,552	72%
ERP	60,320	28%
Total	214,872	100%

²⁵⁴ Source WRS

Because of there is already reallocation of WEEE collected/treated vs. market share, Approach 1 cannot be used.

Approach 2: Simple Market Share Basis based on Total EEE Placed on Market 2005-2011

Instead the approach to allocate vEMCs should be using the market share of EEE put on the market by the PROs members. Using this approach the vEMCs allocation should have been 25% ERP and 75% WEEE Ireland. This approach is different from the current system where vEMCs allocation is based on monthly POM share whereas this approach is using an average POM share over the period from 2005-2011.

Table 5.35: Simple market share basis based on total categories 1,2,4,5 and 6 EEE placed on market 2005-2011

PRO	Tonnes	%
WEEE Ireland	386,331	75%
ERP	128,578	25%
Total	514,909	100%

Approach 3: Market share basis based on EEE put on market 2005-2011 per EEE category

As not all WEEE has the same collection and treatment costs, applying an approach taking into account the proportion of EEE put on the market and the relevant vEMCs for each category should be more accurate. Using this approach the vEMCs allocation should have been 23% (20.2m€) ERP and 77% (67.6m€) WEEE Ireland.

Table 5.36: Allocation of vEMCs based on the total EEE POM 2005-2011 per EEE category

Category	vEMC Income (m€)	WEEE Ireland		ERP	
		Market Share of EEE POM	Share of vEMC Income (m€)	Market Share of EEE POM	Share of vEMC Income (m€)
Cat 1	40.2	72%	28.8	28%	11.4
Cat 2	9.5	84%	8.0	16%	1.5
Cat 4	20.5	71%	14.5	29%	6.0
Cat 5	13.2	97%	12.8	3%	0.4
Cat 6	4.4	78%	3.4	22%	1.0
Total	87.8		67.6		20.2

Therefore based on 2005-2011 data, ERP should have been allocated €20.2m instead of €18.2 m.

Depletion of the vEMCs Allocation

Going forward an issue which needs consideration is how quickly the allocation of vEMCs should be depleted by the PRO. We understand that currently there is no guideline and no official estimate of the proportion of historic WEEE.

Once this has been agreed by the PROs and the DECLG, a reconciliation exercise should take place annually based on the market share POM to determine the vEMCs allocation. Approach number 3 could be used based on market shares for the agreed period. The final reconciliation will take place at the end of the agreed period.

Considering how quickly the allocation of vEMCs should be depleted lead to another concern. One PRO could decide to use this allocation to decrease the producer fee and increase its market share. This may result in reduced costs for the producers in the early years, but these costs will increase once the allocation of vEMCs is depleted. The PRO could also become insolvent and will not be able to provide for the environmentally sound management of historic WEEE.

The use of the vEMCs by the PROs should be monitored more closely by the DECLG or its nominee to ensure that the monies from the vEMCs are used for historic WEEE. However this is challenging, as in order to do this, the proportion of historic WEEE in WEEE collected

should be ascertained. Section 15.14.9 provides one approach, but further empirical evidence made available publicly would be useful to improve the accuracy of this estimate.

The DECLG should request that an independent assessment of the historic WEEE be undertaken based on data collected at collection and treatment facilities. The PROs should co-finance this study under the supervision of the DECLG (or its nominee e.g. the EPA). Once this figure has been agreed the fund should be expended according to this estimate.

Recommendations:

The DECLG should ascertain the pace at which the fund generated from vEMCs should be depleted by the PROs.

The allocation of vEMCs between the PRO's during the period 2005-2013 is not reflective of the costs of historic WEEE management. The DECLG should conduct a reconciliation exercise to determine the allocation of the fund generated from vEMCs. Approach number 3 could be used based on market shares for the agreed period.

The use of the monies from the vEMCs by the PROs should be monitored more closely by the DECLG or its nominee to ensure that the monies from the vEMCs are used for historic WEEE.

The DECLG should request that an independent assessment of the historic WEEE be undertaken based on data collected at collection and treatment facilities.

5.14.14 B2B Producers

Business to Business (B2B) Producers of EEE currently do not have the option to join a compliance scheme so have to self-comply and report to the EPA.

Some producers have both B2C and B2B obligations for WEEE and have joined a compliance scheme for their B2C obligations and even though compliance schemes do provide guidance for these producers in relation to the management options for B2B WEEE some would also like the option to join a compliance scheme. In addition a lot of producers have WEEE and battery obligations and are members of compliance schemes for battery

obligations and would also like the option to join a compliance scheme for their B2B WEEE obligations. Different membership options could be examined e.g. full membership and compliance membership where the B2B producer would still have control over reuse/recycling.

Table 5.37 outlines the advantages and disadvantages of the implications of B2B producers joining compliance schemes.

Table 5.37: Implications of B2B Producers joining Compliance Schemes

Advantages	Disadvantages
<ul style="list-style-type: none"> • B2B producers will provide additional funding for compliance schemes. • Reduces administration burden for producers that already are members of PROs for B2C and/or battery obligations. • Collectively PROs could provide more focus and in turn this would increase awareness and increase the collection rate for B2B WEEE. • Reduce the number of self-compliers that would report to the EPA. 	<ul style="list-style-type: none"> • B2B WEEE has different requirements than B2C WEEE. PROs will require additional resources for this. • B2B producers would not have control over existing reuse/recycling options.

Recommendations:

It is recommended that B2B producers should be given the option of being able to join a PRO while not creating a deterrent to those B2B producers who want to remain self-compliant.

Different membership options with the PROs could be examined so that B2B producer could still have control over reuse/recycling.

5.14.15 Retailers Registration

Currently retailers can register online with either PRO or alternatively they can register with their local authority. The EPA hosts the database for all the retailers registered with the

PROs. However, there is no account centrally of the total number of retailers registered individually with local authorities.

Recommendations:

It is recommended that retailers register only using the online system and to remove the option of registration directly with local authorities.

5.15 CONCLUSIONS

The key findings in relation to the WEEE Producer Responsibility Initiative are:

- Ireland has been very successful to date in implementing the WEEE Directive and meeting the EU targets. In 2010 8.2 kg per capita was collected which, is double the target set by the EU Directive.
- The financial responsibility for the treatment of B2C WEEE is shared between the State and the PROs. In 2011, 80% was funded the PROs and 20% by the State.
- Cost to producers who are members of a PRO was compared with other EU member states. It was found that these costs are in the lower end of the spectrum. However a direct comparison may give an incomplete picture as costs vary due to differences in a number of factors.
- The PROs should meet the minimum contingency fund required by the DECLG.
- The DECLG should continue to examine the possibility of Producers covering the full cost of the collection of WEEE at CASs.
- In an Irish context, an increase in the opening hours of CASs and an increase in the role of retailers as outlined seem to offer the most cost-effective WEEE collection options. These collection methods will have to be supplemented by special events as needed to meet the targets.
- Various measures were recommended to deal with enforcement and WEEE leakage.
- In order to facilitate the monitoring of licence conditions, when the PROs report to the DECLG, they clearly set out and provide evidence for the level of spending on information and awareness activities.

- Additional information and awareness will be required to reduce WEEE leakage, promoting reuse and targeting businesses on their rights and obligations in relation to the management of WEEE generated by them.
- Various criteria were highlighted for inclusion in the reuse protocol being developed by the DECLG.
- A reconciliation exercise should take place to determine the allocation of the fund generated from vEMCs.
- ERP Ireland and WEEE Ireland should submit proposals to the DECLG to show how there are going to meet the deficit to treat the remaining quantities of historic WEEE estimated.
- It is recommended that the barrier for producers to transfer is removed and a transfer protocol for producers be developed.
- It is recommended that an independent mediator be appointed to resolve differences between the two PROs during the reconciliation process or as required.
- It is recommended that B2B producers should be given the option of being able to join a compliance scheme while not creating a deterrent to those B2B producers who want to remain self-compliant.
- It is recommended that retailers register only using the online system and remove the option of registration directly with local authorities.

6 BATTERIES PRODUCER RESPONSIBILITY INITIATIVE

The Batteries Regulations facilitate the collection, treatment and recycling of waste batteries and accumulators (rechargeable batteries). The Regulations provide the public with free take back of all portable waste batteries and accumulators in-store and at designated locations. The Regulations also contain minimum targets for the collection of waste portable batteries. Ireland exceeded the EU collection target of 25% for portable batteries for September 2012 with a collection rate of over 29% achieved in 2011. In 2013 the collection rate increased slightly to 31%. Therefore 69% of portable batteries were not separately collected in 2013. However it has been estimated that around 40% of batteries placed on the market are not available for collection²⁵⁵. This is due to disposal in municipal waste stream, hoarding effect heightened by increase in the rechargeable battery market, WEEE leakage (illegal and legal unreported waste batteries contained in WEEE) and rechargeable portable batteries (up to 40% of portable batteries POM) placed on the market in EEE²⁵⁶ that are exported in second hand or refurbished EEE before the EEE becomes waste. An increase of 14% in the collection rate will be required to achieve the EU collection target of 45% for portable batteries set for September 2016. The EU collection target of 45% for portable batteries for September 2016 will therefore be challenging.

This report represents a benchmark review of the Battery PRI. The review has included:

- A review of relevant published information on the management of batteries in Ireland and abroad,
- Engagement with various stakeholders involved in the Battery PRI²⁵⁷, and
- A review of the findings of national consultation.

²⁵⁵ Study on behalf of EPBA-The collection of waste portable batteries in Europe in view of the achievability of the collection targets set by Batteries Directive 2006/66/EC, Perchards, SagisEPR.com, August, 2013.

²⁵⁶ Of which 80-90% are incorporated into EEE.

²⁵⁷ ERP Ireland, WEEE Ireland, waste collector, waste recyclers, IBEC representing compliance scheme producer members, producers, retailers, self-compliant producers, CCMA, WEEE Register Society Ltd, EPA Office of Environmental Enforcement, EPA Resource Use Unit and the Department of Environment, Community and Local Government.

It makes a number of recommendations to increase collection rates to help Ireland meet the 2016 targets and recommend other improvements to the current system.

6.1 INTRODUCTION

This section presents an overview of the Battery Producer Responsibility Initiative (PRI) and examines the following issues which are specific to the Battery PRI namely:

- Examples of best practice for Battery PRI in Europe,
- Examine possible rebranding of the national battery collection measures under one umbrella, and
- Initiatives to increase collection rates of waste batteries in line with future targets.

6.2 POLICY FRAMEWORK

6.2.1 Directive 2006/66/EC on Waste Batteries

Ireland's Waste Management (Batteries and Accumulators) Regulations, S.I. No. 268 of 2008 (the Battery Regulations) transpose the EU Directive 2006/66/EC on waste batteries. Directive 2013/56/EU amends Directive 2006/66/EC which is to be transposed by July 2015. This amendment ensures that manufacturers must design appliances for easy removal of batteries with instructions to the end user or independent qualified professional and revises the exemptions on hazardous content of waste batteries.

The Battery Regulations facilitate the collection, treatment and recycling of waste batteries and accumulators (otherwise known as rechargeable batteries). The Battery Regulations provide for the free take back of all portable waste batteries and accumulators in-store and at designated locations. The following benefits are associated with the Directive:

- Reduction in hazardous waste,
- Resource efficiency,
- Reduction in energy use and greenhouse gases as less primary production if more recycling/recovery, and
- Improvements in the consumer decision making process in relation to capacity labelling.

Types of batteries

Directive 2006/66/EC on waste batteries establishes three distinct battery classifications: industrial, automotive and portable (usually defined as sealed and hand carried). Recycling rates of automotive batteries and industrial batteries are already very high²⁵⁸ as they have a high positive value due for example, to their lead content. As many portable batteries do not have a positive residual value the main emphasis of the Battery Regulations is to increase the number of portable batteries for collection and recycling. The collection targets contained in the Regulations therefore relate to portable batteries only. However producers are still responsible for take back and collection of automotive and industrial batteries. There is concern over lead batteries (portable) being included in the collection figures for portable batteries even though they were placed on the market as industrial batteries; as a result the collection rates for portable batteries are inflated. In some countries the present definition of portable battery is complemented with a weight restriction criterion to respond to this issue²⁵⁹.

Collection Targets for portable batteries

In accordance with the Directive each Member State shall achieve minimum collection rates for **waste portable batteries** as follows:

- 25% by 26 September 2012, and
- 45% by 26 September 2016.

of the quantity and type of battery placed on the market (POM).

Ireland achieved a collection rate of 29.23% by 2011 thereby exceeding the target set (as set out in Annex I of the Directive)²⁶⁰.

²⁵⁹ Stibat (NL): portable battery < 1 kg; AFIS (GR) < 1.5 kg; Ecobatterien (LU) < 2 kg. In August 2013, UK authorities proposed a 3 kg threshold which is estimated to reduce overall POM by 12%. BIO, Arcadis and IEEP (2014) Ex-post Evaluation on Five Waste Stream Directives (including Batteries Directive) Study for the European Commission – DG Environment, Study not yet published).

²⁶⁰ DECLG emailed 19.09.12

Treatment Requirements and Recycling Targets

From 26 September 2008 onwards, any person is prohibited from disposing of waste industrial and automotive batteries in landfill or by incineration. The Directive also outlines provisions for the labelling of batteries and their removability from equipment.

Treatment and recycling requirements are set out in Part A and B of Annex III of the Directive 2006/66/EC on waste batteries. The Directive defines treatment to include, as a minimum, removal of all fluids and acids and stipulates that treatment and storage must take place in sites with impermeable surfaces and suitable weatherproof covering or in suitable. It also provides that recycling processes must achieve certain levels of recycling efficiency.

Commission Regulation (EU) No 493/2012 published on 11 June 2012 details the rules regarding the calculation of recycling efficiencies of the recycling processes for waste batteries. The first such report on these new recycling rate calculations is due on the 15 April 2015.

Reduction of Hazardous Waste

The Regulations require producers to consider the promotion of research and encourage improvements in the overall environmental performance of batteries throughout their entire lifecycle.

In accordance with Directive 2006/66/EC and amending Directive 2013/56/EU in relation to reduction of hazardous waste, producers are prohibited from importing or placing on the market batteries and accumulators that contain more than 0.0005% of mercury and 0.002% of cadmium by weight. The exemption on button cells (with a mercury content of no more than 2% by weight) shall only apply until 1st October 2015. The cadmium prohibition does not apply to batteries and accumulators intended for use in emergency and alarm systems including emergency lighting and medical equipment. The exemption in relation to cordless power tools now only applies until 31st December 2016.

6.2.2 Complimentary Legislation

6.2.2.1 Linkage with WEEE and ELV Directives

Directive 2006/66/EC applies to all types of batteries and rechargeable batteries including any incorporated into EEE and/or battery packs. A producer of EEE is also regarded as a

battery producer in a Member State under the Batteries Directive, if the appliance producer places the battery (inside an appliance) for the first time on the market in that Member State on a professional basis. This is to ensure that there will be a producer responsible for all batteries placed on the market. However, Member States should avoid any double charging of producers when batteries are collected with appliances under the WEEE Directive.

In accordance with the Ninth Schedule of the WEEE Regulations (S.I. 149 of 2014), batteries are one of the components requiring removal from separately collected EEE. Article 11 of the Batteries Directive requires that each Member State shall ensure that manufacturers design WEEE in such a way that waste batteries and accumulators can be readily removed by either the end user or by independent qualified professionals and accompanied by instructions to do so. It is essential that WEEE recyclers are compliant with the recycling requirements, including targets for batteries contained in WEEE²⁶¹.

The Batteries Directive and the ELV Directive (2000/53/EC) both establish the principle of producer responsibility. A car producer is also regarded as a battery producer in a Member State under the Batteries Directive if it places a battery on the market (inside the car) for the first time in that Member State on a professional basis. This is to ensure that there is a producer responsible for all batteries placed on the market. However, the Batteries Directive states that Member States should avoid double charging of producers when car batteries are collected under the ELV Directive²⁶².

6.2.2.2 Transportation of Waste Batteries

Lead batteries, Ni-Cd batteries, mercury containing waste batteries and unsorted batteries are classified as hazardous waste under European Waste Catalogue and Hazardous Waste List. Therefore when transporting these battery types within Ireland a Waste Transfer Form (WTF) is required in accordance with the European Communities (Shipment of Hazardous Waste exclusively within Ireland) Regulations, 2011 (S.I. No. 324). The Regulations are concerned with the collection, transport and transfer of hazardous waste exclusively within

²⁶¹ BIO, Arcadis and IEEP (2014) Ex-post Evaluation on Five Waste Stream Directives (including Batteries Directive) Study for the European Commission – DG Environment, Study not yet published).

²⁶² Commission Services Document (April 2008) Questions and Answers on the Batteries Directive (2006/66/EC).

the State and set out the duties and responsibilities of producers, consignors, carriers, collectors, holders and consignees. A WTF is an identification document that must accompany the consignment. A consignee shall only accept a consignment of hazardous waste which is accompanied by a WTF.

When transporting these waste battery types outside of Ireland a Transfrontier Shipment Document (TFS) must accompany the consignment in accordance with the Waste Management (Shipments of Waste) Regulations, 2007 S.I. No. 419 (which gives effect to Regulation (EC) No. 1013/2006). The overall objective of these Regulations is to implement measures for the supervision and control of shipments of waste in order to ensure that movement, recovery or disposal of waste, is managed in an environmentally sound manner.

In addition, ADR requirements for transport of dangerous goods and the Carriage of Dangerous Goods by Road Regulations, 2010 as amended do not apply to lead acid batteries if they fulfill the following requirements in accordance with Special Provision 598 of ADR requirements:

- their cases are undamaged,
- they are secured in such a way that they cannot leak, slip, fall or be damaged, e.g. by stacking on pallets,
- there is no dangerous traces of alkalis or acids on the outside of the articles, and
- they are protected against short circuits.

However, spent lithium batteries (stored as a single battery type) are classified as dangerous goods, as under certain conditions they can overheat and ignite.

6.3 PRODUCT AND WASTE CHARACTERISTICS

The battery product chain is characterised by a wide variety of products. There are six main types of non-rechargeable batteries (primary batteries): Zinc, Alkaline, Button alkaline, Silver zinc, Button zinc, Lithium ion, and eleven types of rechargeable batteries (secondary batteries): Nickel-cadmium, NiMH (Nickel metal Hydride), Lithium, Lithium-Ion Polymer, Alkaline, chargeable Titanium, Lead SLI, Lead traction, Lead stationary, Nickel-iron, Nickel-zinc.

The chemical composition, the nominal voltage, the key-applications for which the battery can be used and specific considerations in relation to the recycling of portable batteries can be very diverse²⁶³.

The lifespan of batteries will vary considerably with its type (rechargeable/not rechargeable), how it is used, how it is maintained, temperature, and other factors.

Waste battery or accumulator is defined as any battery or accumulator which is waste (any substance or object which the holder discards or intends or is required to discard)²⁶⁴.

The Battery Regulations apply to all types of batteries and rechargeable batteries including any incorporated into EEE and/or battery packs, regardless of their shape, volume, weight, material composition or use with the exception of batteries and/or accumulators used in equipment connected with protection of Member States' essential security interests or designed to be sent into space.

There are three distinct battery classifications: industrial, automotive and portable (usually defined as sealed and handheld). The percentage weight of the total market for batteries in Europe is broken down into 12% portable batteries, 25% industrial and 63% automotive. Portable batteries account for 98% of the number of batteries on the EU market (Perchards and SagisEPR.com, 2013).

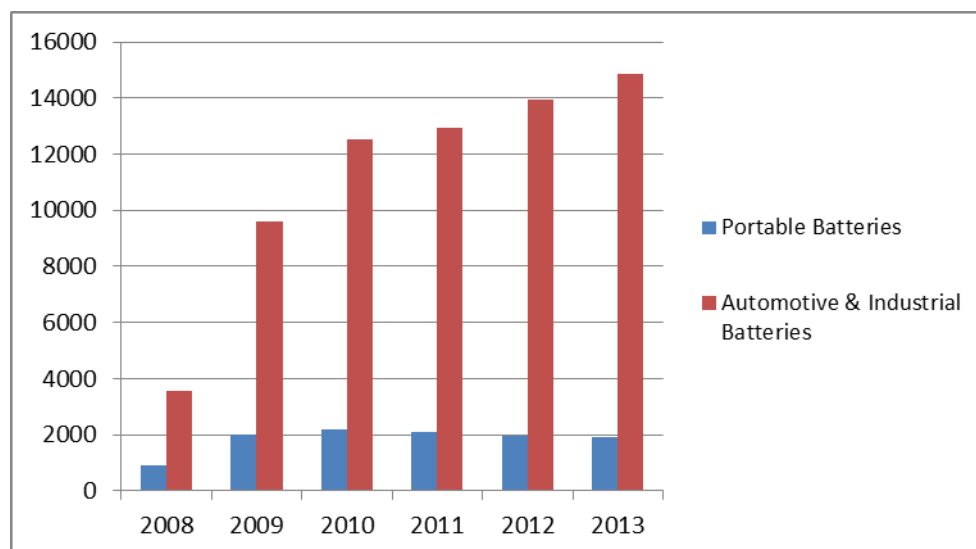
The environmental concerns related to batteries and accumulators are generally linked to the hazardous substances they contain (i.e. metals such as mercury, lead and cadmium) – hence the prohibition on sending to landfill and incineration. Other metals used in batteries such as zinc, copper, manganese, lithium and nickel may also pose a risk to the environment if these batteries are treated inappropriately. In the event that waste batteries are disposed of at landfill, metal containing leachate has the potential to be released into the environment. Recycling of batteries ensures that secondary raw materials are being recovered.

Figure 6.1 provides details on portable and automotive/industrial batteries placed on market from 2008 to 2013. Automotive/industrial batteries placed on the market have increased from

²⁶³ http://www.epbaeurope.net/EPBA_product%20information_may2007_FINAL.pdf

²⁶⁴ Article 1 (1) a of Directive 2006/12/EC on waste as amended

3,547 tonnes in 2008 to 14,863 tonnes in 2013. Portable batteries placed on the market have increased from 908 tonnes in 2008 to 2,181 tonnes in 2010 but have been decreasing slightly every year and in 2013, 1,913 tonnes were placed on market.



Source: WRS 28.09.12; 31.01.13 and 25.05.14.

Figure 6.1: Batteries (Tonnes) Placed on Market 2008-2013²⁶⁵

6.4 PRODUCERS

In accordance with the Battery Regulations “a producer means any person in a Member State that, irrespective of the selling technique used, including by means of distance communication....places batteries or accumulators, including those incorporated into appliances or vehicles, on the market for the first time within the territory of that Member State on a professional basis”.

Producers are obliged to finance the take back of waste batteries and are responsible for collection, treatment and recycling targets. They must also register with WEEE Register Society Ltd (WRS) (National Registration Body) and report the chemistry and weights (kg) of batteries placed onto the Irish market on a monthly basis to the Blackbox (reporting commenced in February 2009).

²⁶⁵ Data shown for 2008 for just 3 months (Sept 26-end of Dec 2008)

Producers of batteries and accumulators can join either one of two Producer Responsibility Organisations (PRO) - ERP Ireland or WEEE Ireland or they may opt to self-comply. Producers that join a PRO are exempt from certain requirements of the legislation, as these obligations are transferred to the PRO. There is no distinction in the Regulations between Business to Business (B2B) and Business to Consumer (B2C) like there is in the WEEE Regulations and this means that all producers have the option to join a compliance scheme.

6.5 DISTRIBUTORS/RETAILERS

In accordance with the Battery Regulations “*a distributor means any person that provides batteries or, as appropriate, accumulators on a professional basis to an end-user*”.

Distributors (Retailers) must:

- be registered with their local authority (automotive and industrial), unless they only sell portable batteries (AAA, AA, Cell C, Cell D, PP3, PP9 etc.),
- take back batteries from customers free of charge and without requirement for purchase as long as the batteries and accumulators are of the equivalent type available to purchase from the premises.. Retailers may limit any one consumer to 5kgs of battery returns at any one time and may refuse to accept any battery that poses a health/safety or environmental risk (i.e. leaking fluids).
- inform customers of the return and collection systems available to them when supplying a new product,
- put in place / erect a A4 sign advising customers of waste battery take back arrangements must be placed within one metre of each point of sale and/or each point where batteries are displayed, and
- ensure that the storage and transport of batteries collected meets the requirements outlined in the Battery Regulations and that the batteries are delivered to an approved facility.

A retailer who sells EEE with a battery incorporated in or accompanying the product is also considered a battery retailer.

An on-line application form was developed in 2011 to facilitate the registration of Retailers with the two compliances schemes under Article 40 of the Regulations. This is a free registration which all distributors of industrial and automotive batteries can avail of. The

information received by the scheme is sent to the EPA. Local Authorities can then access this information on the NIECE (the Network for Ireland's Environmental Compliance and Enforcement) website.

In 2012 there were 8,258 retailers/distributors registered on the online system for WEEE and Battery obligations.²⁶⁶ However this is not the total number registered as retailers can also register directly with their local authority and no central database exists for those registered in this way. It was also not possible to identify the number of retailers/distributors are just registered for Battery obligations only but it is assumed that the majority have battery obligations as a retailer who sells EEE with a battery incorporated in or accompanying the product is also considered a battery retailer.

The display of any costs associated with the management of waste batteries is prohibited at all points in the supply chain. However visible fees for the management of waste batteries were permitted in Belgium as a successful system was already in place before the introduction of the Batteries Directive.

6.6 FINAL/END USER

Final users can be businesses, schools, public bodies, institutions, industry, and the general public.

All users (households and corporate organisations) have responsibilities under the Waste Management Act 1996 -2012 and Waste Collections Bye-laws.

Batteries can be brought back to any outlet that sells batteries of a similar type. Household batteries such as AA, AAA and button cell batteries can be brought back to battery retailers. Car batteries can be brought back to car garages, and electric fence batteries can be brought to agri-stores. All waste battery types can be brought to a civic amenity site or special collection events. PROs also collect from businesses and schools.

²⁶⁶ EPA 06.11.12

6.7 WEEE REGISTER SOCIETY

The WEEE Register Society Ltd (WRS) was established as an independent body and its functions include the following in respect of batteries:

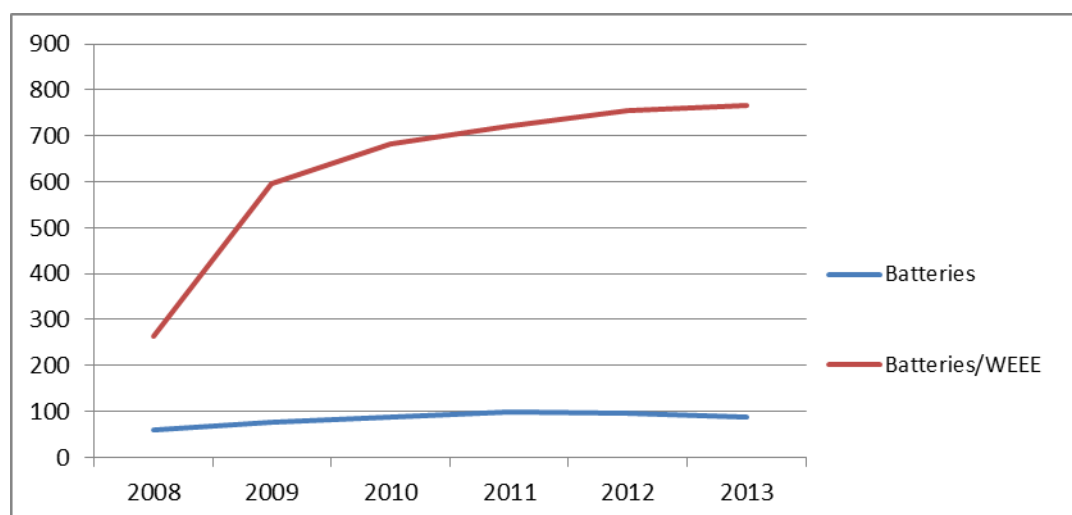
- To maintain a register of producers,
- To determine market share of individual through the Blackbox (currently managed by Deloitte and Touche), and
- Track and report non-compliance and notify the EPA.

Producers submit data to the Blackbox and the WRS issues reports to schemes regarding affiliated producers, market share, and battery type reported by chemistry and weight, and billing information. In 2012, there was a 86% level of compliance²⁶⁷ by producers reporting every month to the Blackbox.

Each year Deloitte and Touche carry out audits each year on producers to verify the data reported to the Blackbox. A producer can register on-line and when completing registration they have to respond to questions relating to compliance. WRS is part of the wider European WEEE Registers Network (EWRN).

Figure 6.2 outlines the evolution of active producers registered with WRS from 2008 – 2013 with battery obligations. In 2013, 87 producers had battery obligations and 766 producers had both WEEE and battery obligations.

²⁶⁷ WRS Meeting 31.07.12



Source: WRS 17.01.08; 23.01.13 and 29.05.14

Figure 6.2: Number of Active Producers Registered 2008-2013

6.8 COMPLIANCE SCHEMES

There are two approved PROs in the waste batteries PRI in Ireland: WEEE Ireland and European Recycling Platform (ERP) Ireland.

ERP Ireland was set up in December 2002 by Braun, Electrolux, HP and Sony and is the first ever pan-European take-back scheme. It currently operates in twelve European countries.

WEEE Ireland (the larger of the two PROs) only operates in Ireland was originally founded by the White Goods Association (WGA), Consumer Electronics Distributors Association (CEDA), Information and Communications Technology (ICT) Ireland, and Producers of Small Household Appliances (SHA) in 2004. Before the inception of the battery PRO WEEE Ireland established a Portable Battery Steering Committee made up of current WEEE members and potential battery producers. The Battery Steering Committee meets twice a year and provides a valuable source of information and guidance on behalf of the portable battery industry.

A geographical division for the collection of waste batteries currently exists between the two PROs. WEEE Ireland collect in the following areas (17 no. counties) Donegal, Sligo, Mayo, Roscommon, Longford, Galway, Cork, Tipperary, Waterford, Kilkenny, Laois, Offaly, Dublin,

Kildare, Wicklow, Carlow and Wexford. ERP collect Batteries in (8 no. counties) Dublin/Fingal, Clare, Kerry, Limerick, Cavan, Monaghan, Louth, and Meath.

A reconciliation and compensation process has not yet been established between the two PROs for batteries.

An overview of the Waste Battery Producer Responsibility Model with Compliance Schemes is presented in Figure 6.3.

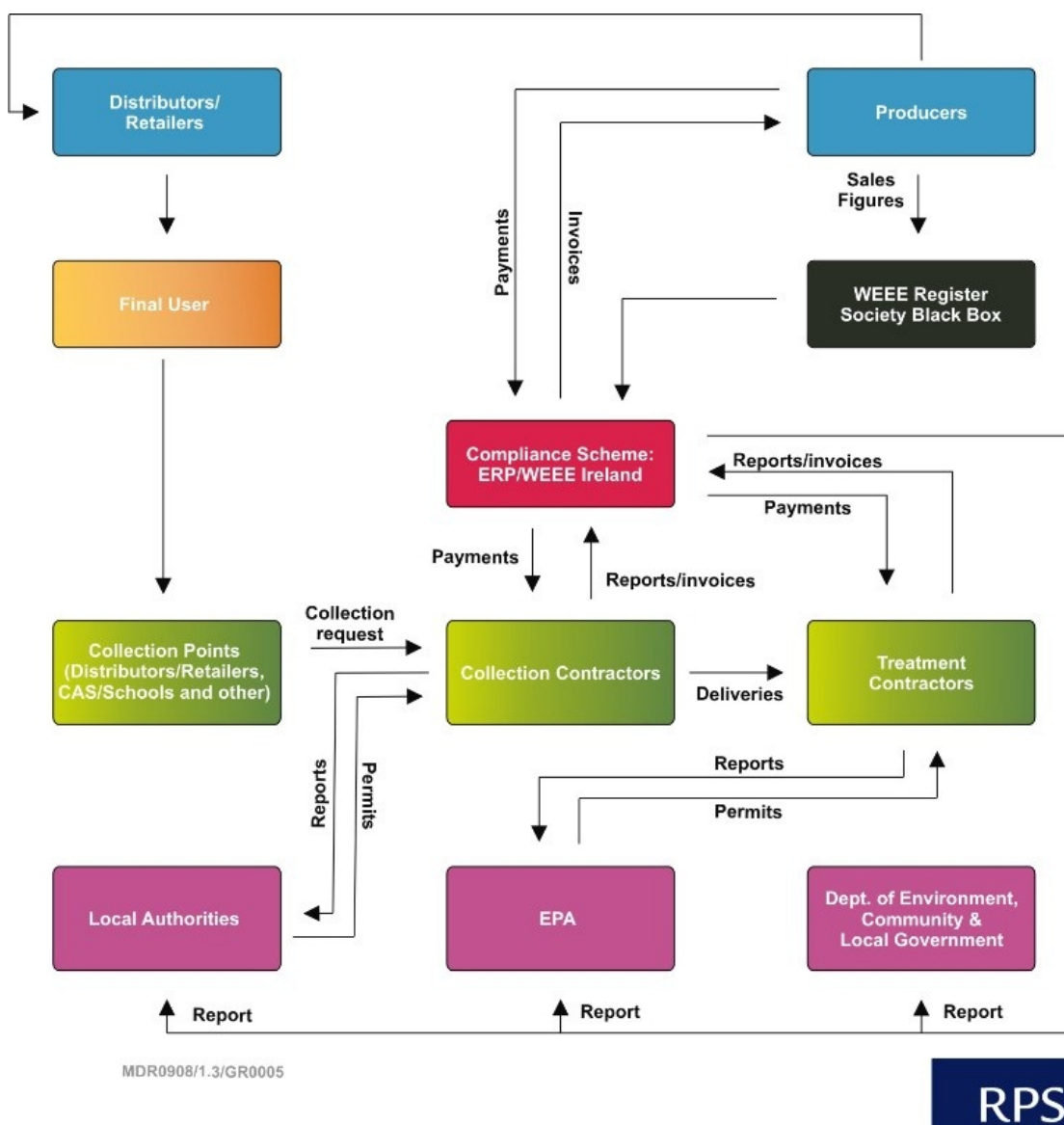


Figure 6.3: Waste Battery Producer Responsibility Model

6.8.1 Approval, Terms and Conditions

In accordance with Part V of the Battery Regulations a body corporate may apply for approval to the Minister to operate as an “approved body” for the environmentally sound management of waste batteries.

Approval was granted by DECLG in September 2008 for both PROs, which covers the period up to September 2013 and these approvals have been extended until June, 2014.

Approval is subject to conditions specified by DECLG. Table 6.1 provides a summary of the main provisions for the two PROs.

Table 6.1: Summary of the Main Provisions of the Schedule of Conditions for WEEE Ireland and ERP Ireland

Headings	Summary
General	Submit an environmental report and financial statement annually to DECLG, which shall be reported separate from those activities for WEEE.
Composition of the Board of Management	The board is required to have two SME Directors one representing the EEE sector and one representing the battery sector, and two independent Directors. Each with voting rights.
Amendments to Business Plan for Battery Compliance under Collections	<p>WEEE Ireland will, on request arrange for the direct collection of 10 or more boxes with a capacity of approximately 5kg from each retailer when full.</p> <p>ERP Ireland will, on request also arrange for the direct collection of two or more boxes with a capacity of approximately 25kgs each from retailers when full or when WEEE is being collected from the retailer concerned.</p> <p>PROs should provide suitable receptacles in proportion to market of its members to local authority civic amenity sites in order to accommodate boxes of waste batteries deposited at facilities by retailers, businesses etc.</p> <p>PROs should in proportion to market of its members either on an agreed basis or through a clearing mechanism, provide suitable receptacles and collection arrangements to schools and workplaces requesting a battery collection service on an economic commercial basis.</p>
Amendments to Contingency Reserve Proposal	<p>The contingency reserve must be:</p> <ul style="list-style-type: none"> • built up over a period of not less than 5 years, • must enable operations to be continued for a period of not less than 12 months, • shall be specifically for the recycling of batteries, and • shall be maintained and accounted for separately from any other contingency reserve.
Cooperation with Other Collective PROs and Self Compliers	Voluntary accord in place between the two PROs. Where no agreement is reached or when a voluntary accord ceases to operate each PRO will be required to contribute to the financing of adequate clearing arrangements.
Achievement of Targets	<p>Additional interim collection targets to be achieved as follows:</p> <ul style="list-style-type: none"> • 15% of portable batteries by 26 September 2010 • 35% of portable batteries by 26 September 2014

	Based on the quantity by weight of portable batteries placed on the market in the State by its members.
Information Dissemination	<p>WEEE Ireland shall contribute, during the period of its approval its proportion based on the quantity by weight of portable batteries placed on the market in the State by its members, of costs towards an awareness programme costing at least €750,000 provided the interim collection target of 15% of waste portable batteries is achieved by 26 September 2010.</p> <p>If targets are not achieved WEEE Ireland will work with all approved bodies and self-complier producers to look at what is required to achieved collection targets.</p> <p>ERP Ireland shall contribute, during the period of its approval its proportion based on the quantity by weight of portable batteries placed on the market in the State by its members, of costs towards an awareness programme costing at least -</p> <p>(a) €750,000 provided the -</p> <p>(i) the interim collection target of 15% of waste portable batteries is achieved by 26 September 2010 and,</p> <p>(ii) mandatory collection target of 25% of waste portable batteries is achieved by 26 September 2012, or</p> <p>(b) €1.5 million if the interim collection target of 15% is not achieved by 26 September 2010.</p>

6.8.2 PRO services

The main function that the PROs carry out is to assist its producer members adhere to the Battery Regulations.

The services include the following:

- Collect, treat and recycle waste batteries and accumulators on behalf of its members,
- General administration,
- Membership certification and annual renewal,
- Member auditing to assist in compliance,
- Regular liaison and co-operation with WRS and the EPA on enforcement,
- Monitoring updates to EU legislation,
- Reviewing Blackbox reporting compliance,
- Information and awareness, and
- Auditing collection and recycling contractors.

The PROs issue a Certificate to each Member declaring that the Member is satisfactorily participating in a scheme for the collection, treatment and recycling of waste batteries and accumulators.

6.8.3 Membership

WEEE Ireland had a total of 826 members and ERP Ireland had a total of 114 members in 2013. The breakdown of the membership is provided in Tables 6.2 and 6.3. In 2013 680 of WEEE Ireland's members and 97 of ERP's members had battery obligations.

Table 6.2: Breakdown of Membership for ERP Ireland for 2008-2013

Year	Batteries only	Both WEEE and Batteries	WEEE only	Total
2008	3	36	30	69
2009	15	50	30	95
2010	26	54	26	106
2011	32	56	25	113
2012	29	59	16	104
2013	34	63	17	114

Source: ERP Ireland

Table 6.3: Breakdown of Membership for WEEE Ireland for 2008-2011²⁶⁸

Year	Batteries only	Both WEEE and Batteries	WEEE only	Total
2008	40	Not available	Not available	584
2009	58	Not available	Not available	634
2010	161	362	223	746
2011	207	456	193	856
2012	241	448	173	862
2013	258	422	146	826

Source: WEEE Ireland

²⁶⁸ Producers change battery and WEEE status on an on-going basis depending on trading conditions, company decisions, audit findings etc. The old WI membership IT system did not track changes but date of registration and WEEE or battery categories of the producers from end of year Blackbox request reports have been used to estimate some of the figures.

The Blackbox reports did not specify WEEE or Battery status until late in 2009 and WI updated their system to reflect this in 2010.

6.8.4 Membership Fees and Management Costs

6.8.4.1 Membership Fees

The PROs are solely funded by its members and the fees paid. The membership fees in 2014 for the two PROs are outlined in Table 6.4. It should be noted that one fee is only required for producers that have both WEEE and Batteries obligations.

Table 6.4: PROs Membership Fees

Fee	ERP Ireland	WEEE Ireland
Joining Fee	None	€600
Annual Membership Fee	€500	Turnover ²⁶⁹ >€250K = €600 Turnover <€250K = €400 (€300 discount if direct debt)

Source: ERP Ireland and WEEE Ireland

6.8.4.2 Recycling Management Costs (RMCs)

ERP Ireland has three pricing options for batteries (placed on market, collected & treated and placed on market by kg) and WEEE Ireland's pricing is based on the placed on market model. Table 6.5 using placed on market by kg option compares the current RMCs for batteries for the two compliances schemes.

²⁶⁹ 37% over >€250,000 and 63% <€250,000

Table 6.5: Comparison of Recycling Management Costs between ERP and WEEE Ireland

ERP Ireland	WEEE Ireland
3 pricing options (placed on market, collected & treated and placed on market by Kg)	1 pricing option put on market per Kg
Comparison of put on market by Kg option (but ERP has other pricing options)	
Portable	
€0.90/Kg or €900/tonne	€0.38 – €1.20/Kg or €380 - €1,200/tonne
Automotive & Industrial (non-lead acid)	
€0.50/Kg or €500/tonne	€0.55/Kg or €550/tonne
Automotive & Industrial (lead acid)	
€0.21/Kg or €210/tonne but rebate offer for positive net value if applicable	No charge

Source: WEEE Ireland and ERP

To make a more direct comparison the following examples can be used:

- 1) A producer places 10 tonnes of portable batteries on the market. ERP Ireland's RMC is €9,000/tonne. WEEE Ireland's RMCs are shown in Table 6.6.

Table 6.6: WEEE Ireland's RMC's for Portable Batteries

Portable Battery Type	Charge
non-rechargeable silver oxide	No charge
rechargeable lead	
non-rechargeable alkaline	€3,800
non-rechargeable zinc carbon	
non-rechargeable zinc air	€5,500
non-rechargeable mercuric oxide	
rechargeable nickel cadmium	
rechargeable nickel metal hydride	€12,000
non-rechargeable lithium	
non-rechargeable other	
rechargeable lithium ion	
rechargeable lithium polymer	
rechargeable other	

- 2) A producer places 10 tonnes of automotive and industrial (non-lead acid) on the market. WEEE Ireland's RMC is €5,500 and ERP Ireland's RMC is €5,000.

- 3) A producer placed 10 tonnes of automotive and industrial (lead acid) batteries on the market. WEEE Ireland's RMC has no charge and ERP Ireland's RMC is €2,100 but a rebate offer for positive net value is applied.

6.8.5 Income of PROs

[This information has been redacted due to its commercially sensitive nature].

Figure 6.4: Evolution of Income and Expenditure for WEEE Ireland²⁷⁰

[This information has been redacted due to its commercially sensitive nature].

Figure 6.5: Evolution of Income and Expenditure for ERP Ireland²⁷¹

6.8.6 Expenditure of PROs

[This information has been redacted due to its commercially sensitive nature].

²⁷⁰ Source: ERP Ireland and WEEE Ireland (Figures 9.2-9.7). Note that Year 2008 (4 months)

²⁷¹ Source: ERP Ireland and WEEE Ireland (Figures 9.2-9.7). Note that Year 2008 (4 months)

[This information has been redacted due to its commercially sensitive nature].

Figure 6.6: WEEE Ireland's Expenditure 2006-2013

[This information has been redacted due to its commercially sensitive nature].

Figure 6.7: ERP Ireland's Expenditure 2006-2013

6.8.6.1 Treatment Costs

[This information has been redacted due to its commercially sensitive nature].

Figure 6.8: Cost per Tonne Portable Waste Batteries Treated (based on total expenditure) from 2009-2013

[This information has been redacted due to its commercially sensitive nature].

Figure 6.9: Cost per Tonne for Treated Waste Batteries (Total) (based on total expenditure) from 2009-2013

6.8.7 Contingency Reserve

[This information has been redacted due to its commercially sensitive nature].

6.8.8 Information and Awareness

[This information has been redacted due to its commercially sensitive nature].

Table 6.7: Contribution towards Information and Awareness

[This information has been redacted due to its commercially sensitive nature].

6.8.1.1 ERP Survey of Recycling Habits

ERP Ireland carried out a survey on the recycling habits of Irish people with regard to batteries²⁷². Over 1,000 people took part in the survey in September 2011. 75% of respondents in the ERP survey said that they recycled their household batteries. Nearly 90% of persons aged over 45 years recycled their batteries however only 50% in the 18 to 24 age group recycled. 85% of respondents were aware that battery recycling was free in Ireland (86% of all 35-44 year olds and 92% of 45 years and over. However, 32% were not aware that they could bring their batteries back to their local retailer to have them recycled.

91% of people were aware that irresponsible disposal of batteries can have negative environmental consequences and 68% knew that batteries sold in Ireland contain hazardous

²⁷² ERP Ireland (2011) Survey on Attitudes to Battery Recycling in Ireland.

substances. However 59% were not aware that the materials in batteries can be recovered, if recycled in the proper way. The survey also showed that the most common items that were associated with batteries in Ireland are household gadgets (63%) compared to toys (21%) and phones (16%).

The following information and awareness initiatives were undertaken by the PROs in 2013:

WEEE Ireland:

- WEEE Ireland and the Children's Sunshine Home incorporating LauraLynn House set up the Spread a Little Sunshine Campaign which aimed to recycle 4.5 million waste batteries by the end of 2011 as part of this charity initiative. A dedicated website www.spreadalittlesunshine.ie was developed to provide information on how and where to recycle batteries. Advertisement posters and sleeves for battery boxes were made available. The target was reached and WEEE Ireland donated €45,000 to the children's hospice. The partnership continued in 2012 with Bláthnaid Ní Chófaigh and Bosco in 2013 with total of €90,000 been raised to date.

ERP Ireland:

- Go Recycle and Win is a competition open to primary schools with an aim of collecting over 1 million batteries. Each school is set a target base on the number of students in the school and those who collected above the target are in with a chance of winning an ERP Recycling Party for their school. Teachers were supplied with an educational pack to teach the students on the importance of recycling. Overall, the campaign recycled the equivalent of 176,000 AA batteries during the 2012/2013 school year

The collective target was achieved in 2012 and the information and awareness campaigns were successful. This demonstrates that information and awareness can be effective in increasing the collection target and that PROs can work on an individually and jointly in working towards a common goal.

In addition for automotive batteries WEEE Ireland continued to work closely with Society of Irish Motor Industry (SIMI) which includes advertising in the SIMI newsletter as well as other trade magazines. These advertisements provide information on approved lead acid battery recycler list.

To meet the EU collection target of 45% for portable batteries, a combination of additional means will be required.

6.9 SELF-COMPLIANCE

Producers may also chose to self-comply (provided the appropriate guarantee is in place).

Self-compliers must demonstrate their compliance through the submission of three-year Waste Management Plans and annual Waste Management Reports to the EPA and register with the WEEE Register Society. Currently battery self-compliers must pay a fee of €6,000 to the EPA every 3 years on submission of the Waste Management Plan.

There is no distinction between Business to Business (B2B) and Business to Consumer (B2C) like there is in the WEEE Regulations therefore all producers have the option to join a compliance scheme. However, the EPA has confirmed that a small number of self-complying battery producers (four) exist. Of the four self-complying battery producers, only one is a “battery only” producer the other three are also self-complying B2B WEEE producers²⁷³.

6.10 NON-COMPLIANT PRODUCERS

The non-compliant producers category relates to producers who have not yet made the decision to self-comply or join one of the compliance schemes or are awaiting some form of documentation. However these producers are registered with WRS and report every month. From a total of 72 non-compliant producers in 2013, 39 of these had battery obligations (Table 6.8). In 2013 853 producers were registered with WRS for battery obligations and 39 or 5% of these were non-compliant

²⁷³ EPA 09.08.12

Table 6.8: Number of Non-compliant Producers²⁷⁴

Year	WEEE	WEEE/Batteries	Batteries	Total
2008	115	19	6	140
2009	67	14	12	93
2010	75	39	13	127
2011	71	38	17	126
2012	52	38	13	103
2013	33	29	10	72

For any producers that were originally non-compliant (after 2008) and then joined a compliance scheme they had to pay back fees (membership and management fees) from the date the producer's obligations began (2008). Discounts are sometimes offered in relation to membership fees in the case of a small company or charity so to encourage them to join but no discount can be given on management fees but a staged payment system can be set up.

6.11 WASTE MANAGEMENT

6.11.1 Quantity of Batteries Placed on Market

Table 6.9 provides details on the total batteries (portable, industrial and automotive) placed on market from 2008 to 2013. For total batteries, in 2013 ERP Ireland had 3.1% and WEEE Ireland had 88.2% of market share for total batteries, self-compliers 3.3% and non-compliant producers²⁷⁵ accounted for 5.0%.

Table 6.10 provides details on portable batteries placed on market from 2008 to 2013. In 2013 ERP Ireland had 21% and WEEE Ireland had 79% of market share for portable batteries, self-compliers 0.6% and non-compliant accounted for 0.1%.

²⁷⁴ WRS emailed data 12.10.12 and 29.05.14. The number of non-compliant producers fluctuates on a weekly basis and increases and decreases throughout the year. These numbers are a snapshot for the month of December each year from 2005 -2011.

²⁷⁵ There are a variety of administrative reasons why these producers are non-compliant and it usually relates to the fact that they are awaiting some form of documentation.

Table 6.9: Total batteries placed on market by producer members of PROs from 2008-2013

Year	WEEE Ireland		ERP Ireland		Self-Compliers	Non-compliant Producers	Total
	Tonnage Total Batteries Placed on Market	%	Tonnage Total Batteries Placed on Market	%	Tonnage Total Batteries Placed on Market	Tonnage Total Batteries Placed on Market	Tonnage Total Batteries Placed on Market
2008	3,538	79.4	514	11.5	157	246	4,455
2009	9,701	83.4	828	7.12	322	775	11,626
2010	13,005	88.3	724	4.92	384	599	14,712
2011	13,290	88.5	625	4.16	484	617	15,016
2012	14,288	89.8	437	2.7	483	694	15,903
2013	14,801	88.2	512	3.1	558	904	16,776

Source: WRS emailed 28.09.12 and 29.05.14 * All battery types (portable, industrial and automotive)

Table 6.10: Portable batteries placed on market by producer members of PROs from 2008-2013

Year	WEEE Ireland		ERP Ireland		Self-Compliers	Non-compliant Producers	Total
	Tonnage Portable Batteries Placed on Market	%	Tonnage Portable Batteries Placed on Market	%	Tonnage Portable Batteries Placed on Market	Tonnage Portable Batteries Placed on Market	Tonnage Portable Batteries Placed on Market
2008	610.08	67%	292.72	32%	4.89	0.07	907.76
2009	1,270.25	63%	661.80	33%	84.27	0.94	2,017.25
2010	1,459.60	67%	685.04	31%	25.43	10.58	2,180.64
2011	1,469.20	70%	602.62	29%	20.72	3.96	2,096.49
2012	1,579.49	81%	308.35	16%	17.81	45.58	1,951.23
2013	1,503.33	79%	396.24	21%	11.52	2.07	1,913.16

Source: WRS emailed on 31.01.13 and 29.05.14

6.11.2 Quantity of Waste Batteries Collected

Figure 6.10 shows that automotive batteries are the battery type that are most collected by the PROs, followed by industrial batteries and portable batteries. WEEE Ireland and ERP Ireland collected a total of 1,799 tonnes and 487 tonnes of portable batteries respectively since Battery Regulations came into force in September 2008 (Tables 6.11 and 6.12). In addition, WEEE Ireland collected 37,165 tonnes and 8,526 tonnes of automotive and industrial batteries respectively. ERP Ireland collected 37 tonnes of automotive and no industrial batteries. In 2013 WEEE Ireland and ERP Ireland separately collected 34% and 28% of the total of portable batteries their members placed on the market.

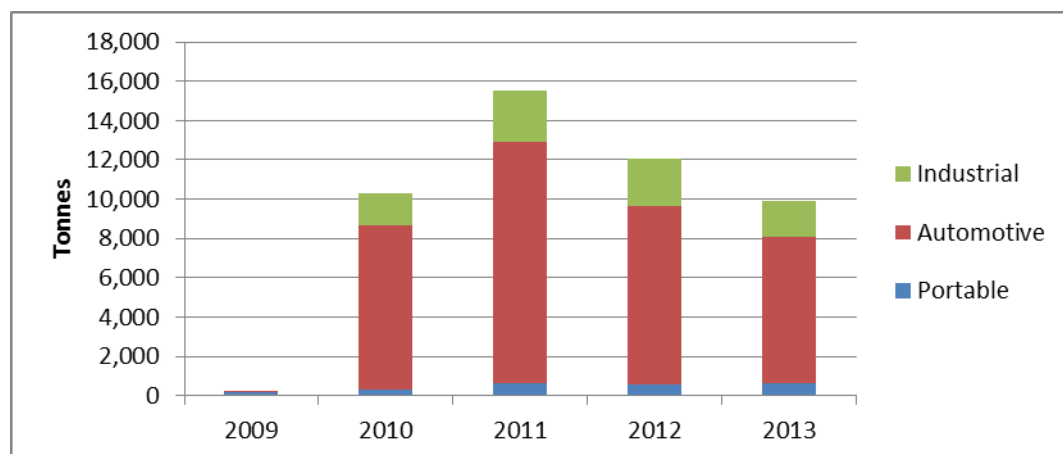


Figure 6.10: Batteries Collected by ERP Ireland and WEEE Ireland from 2009-2013

Figure 6.11 shows that WEEE Ireland collected significantly more than ERP in each battery category.

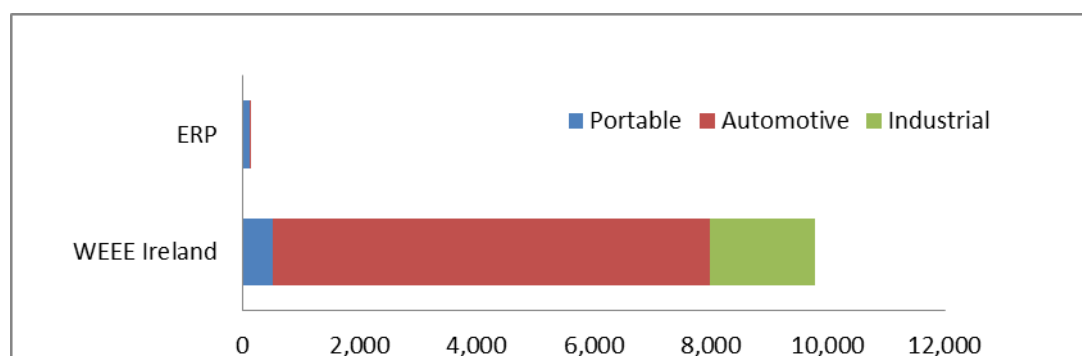


Figure 6.11: Batteries Collected by ERP Ireland and WEEE Ireland in 2013

Table 6.11: Batteries Collected by WEEE Ireland from 2009-2013

Batteries Collected (tonnes)	2009	2010	2011	2012	2013	Total
Portable	150	225	445	472	507	1,799
Automotive*	0	8,354	12,263	9,079	7,469	37,165
Industrial*	0	1,677	2,658	2,395	1,796	8,526
Total	150	10,256	15,366	11,946	9,772	47,490

Source: WEEE Ireland *collection of these battery types only commenced in 2010

Table 6.12: Batteries Collected by ERP from 2009-2013

Batteries Collected (tonnes)	2009	2010	2011	2012	2013	Total
Portable	52	57	168	101	109	487
Automotive	19	11	7	4	4	45
Industrial	0	0	0	0	0	
Total	71	68	175	105	113	532

Source: ERP Ireland

6.11.3 Waste Battery Collection Network

Special collection battery boxes were designed by both PROs for the collection of batteries.



Both PROs provide a range of collection services for waste portable batteries at retailers, Civic Amenity Sites (CASs), schools, businesses, and special events.

Both PROs also provide a collection service for automotive batteries with WEEE Ireland also collecting industrial batteries.

WEEE Ireland works closely with the Society of the Irish Motor Industry (SIMI) to promote the recycling of automotive batteries which includes advertising in the SIMI newsletter as well as numerous trade magazines. These advertisements inform producers and distributors of WEEE Ireland's approved lead acid battery recycler list. If distributors use one of the approved recyclers for lead acid batteries they do not have to report annually to the EPA on volumes of lead acid batteries recycled however collection dockets have to be retained as proof of recycling. The approved recyclers report the annual tonnages to WEEE Ireland who then report the volumes of lead acid batteries collected.

Separate collection systems for industrial batteries have also been set up by WEEE Ireland for farm fence battery producers and the forklift industry.

The breakdown of the collection methods for both compliances schemes is shown in Figures 6.12 and 6.13. The top two collection methods are retailers and CASs with 29% and 22% being collected at retailers by WEEE Ireland and ERP Ireland respectively and 29% and 40% being collected at CASs by WEEE Ireland and ERP Ireland respectively. It should be noted that retailers can bring their waste batteries to CASs so some waste batteries originating from retailers will be included in the tonnage collected at CASs however no data is available on actual quantities.

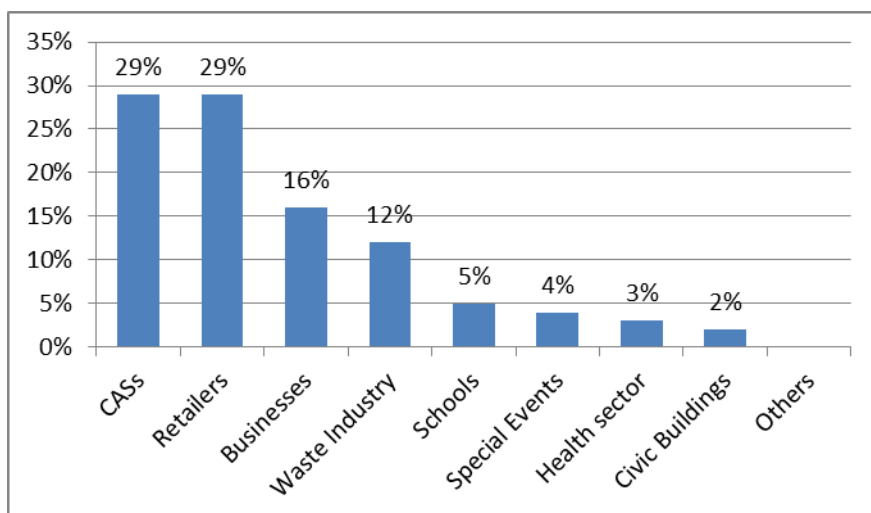


Figure 6.12: Breakdown of Collection Methods for WEEE Ireland for 2013

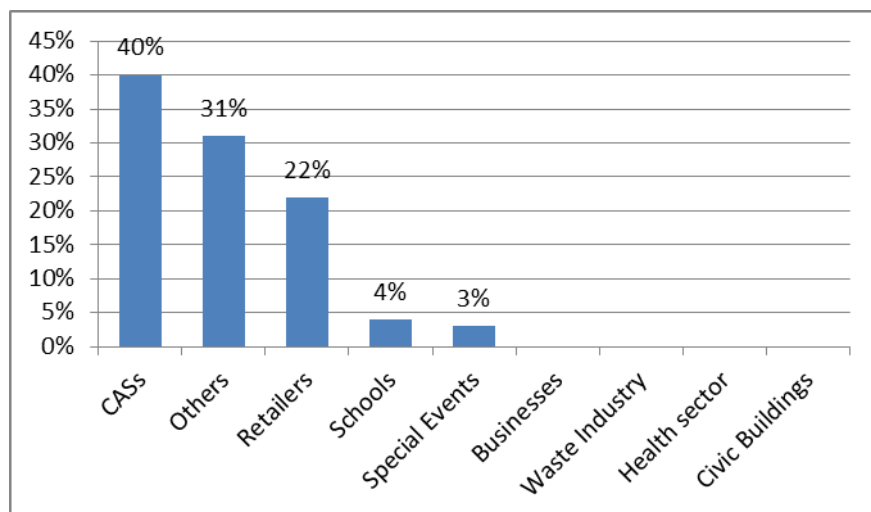


Figure 6.13: Breakdown of Collection Methods for ERP Ireland for 2013

In 2013 ERP Ireland had a total of 4,672 collection points for waste batteries (30 CASs/bring banks, 1,000 schools, 850 crèches, 2,200 retailers, 52 special events and 540 workplaces) and WEEE Ireland had 2,231 battery collection points in 2013 (99 CASs/bring banks, 412 schools/colleges, 1,184 retailers, 193 businesses, 60 health sector, 86 civic offices/public buildings, 34 waste industry and 163 special events)²⁷⁶.

6.12 BATTERY RECYCLING AND RECOVERY NETWORK

Due to the wide range of batteries that exist and the varying component metals of which they are made, there are specific recycling processes for each battery type. Before recycling can take place the first step is to sort the batteries into groups by type. Where batteries are not collected separately they enter the municipal waste stream²⁷⁷ and are either landfilled or incinerated.

Tables 6.13 and 6.14 outline the contractors used by ERP Ireland and WEEE Ireland in Ireland and Europe. Both PROs follow an open tendering process when acquiring collection and treatment contractors.

Table 6.13: ERP Ireland Contractors

Contractor	Service Provided
Recycling Village	Battery collection and recycling
Recypilas in Spain	Battery recycling

Table 6.14: WEEE Ireland Contractors

Contractor	Service Provided
KMK Metals Recycling	Battery collection and recycling
Recycling Village	Battery collection and recycling
Various Recyclers in UK in Europe	Battery recycling

²⁷⁶ WI and ERP emailed 10.06.14 and 04.06.14

²⁷⁷ EPA National Waste Report, 2010 (EPA, 2012a) Appendix B and H. Unpublished data - Batteries were included in the hazardous waste category in Appendix B. Batteries accounted for 0.09% of total waste disposed of in the residual bin and accounted for 0.04% of the total waste disposed of in the recyclable bin.

KMK Metals Recycling and The Recycling Village are the two contractors currently tendered to WEEE Ireland for the collection and treatment of waste batteries. Both companies sort the batteries collected by size and chemistry type and export them for final treatment to UK and European recyclers (In 2011 the following were used: Redux Recycling (Germany), G&P Batteries (UK), Recypilas (Spain), and SNAM (France)). During the initial sorting process 6V and portable lead acid batteries are hand-picked while button batteries are mechanically sorted. Then during the second sort other battery types are positively hand-picked. Where batteries are contaminated with general waste or batteries get wet / corroded they become more difficult to sort and harder to identify. There is a positive value from some batteries (i.e. lead containing) but most other batteries do not have a positive value once they have undergone final treatment.

ERP Ireland currently uses The Recycling Village to collect and recycle waste batteries. The waste batteries are sent to Recypilas SA in Spain for final treatment. Metals (including lead, nickel, zinc and cobalt) are extracted from the batteries in a smelting process.

6.13 ENFORCEMENT

The EPA leads the national enforcement of the Battery Regulations with the Local Authorities having local enforcement responsibilities particularly in relation to Distributor/Retailer obligations.

Local authorities are also responsible for the permitting of waste facilities within their administrative area. The EPA is responsible for licensing waste facilities. The EPA also has a supervisory role over all local authorities under Section 63 of the EPA Act, 1992 as amended.

A Producer Responsibility Enforcement Network as part of the wider NIECE (the Network for Ireland's Environmental Compliance and Enforcement) has been in place since June 2006 to guide and coordinate local authorities in their enforcement of producer responsibility initiatives. A WEEE/Battery Monitoring Group also exists which is a Ministerial Working Group (including representatives for producers, distributors/retailers, waste management industry, WEEE Register Society, PROs, reuse industry, DECLG, and regulators). The WEEE/Battery Monitoring Group was re-constituted from the original WEEE Taskforce in 2006.

Between August 2005 and November 2011, the EPA has carried out inspections on 1,686 retailers, 211 sellers of goods over the internet and 167 producers (EPA, 2011a). The

inspections are verifying that retailer obligations are being met and non-compliant producers are identified.

To date the EPA have taken one prosecution in relation to Producer Obligations under the Battery Regulations.

EPA works in co-operation with the WEEE Register Society Ltd on producer enforcement, particularly those producers who fail to register, fail to join a compliance scheme or self-comply, to fail to report what they place on the market to the Blackbox. The EPA also works with the PROs, particularly to follow up complaints regarding potential unregistered producers who may be placing batteries on the market.

The EPA regularly attends the Committee of Management meetings of the WEEE Register Society Ltd. as an observer and participates in the WEEE/Battery Monitoring Group which is chaired by DECLG.

The EPA is also empowered to order the withdrawal and recall of non-compliant batteries from the market.

In accordance with Article 48 (2) of the Battery Regulations a person found guilty of an offence is liable on summary conviction, to a fine not exceeding €5,000 or imprisonment for a term not exceeding 12 months, or both or on conviction on indictment, to a fine not exceeding €500,000 or imprisonment for a term not exceeding 3 years, or both.

6.14 BENCHMARK AND RECOMMENDATIONS

6.14.1 Waste management performance

Ireland has been successful to date in implementing the Battery Directive and meeting the EU collection target of 25% for portable batteries for September 2012 with a collection rate of over 29% achieved in 2011. In 2013 the collection rate increased slightly to 31%.

Figure 6.14 shows collection rates of batteries in all Member States. Only three Member States failed to achieve the collection target of 25% in 2012 (Cyprus, Malta and Romania) probably due to the fact that their collection schemes started to operate only in 2012. In 2011

and 2012 seven countries had already achieved collection rates above 45% target (Slovakia, Luxembourg, Sweden, Belgium, Austria, Lithuania and Denmark).²⁷⁸

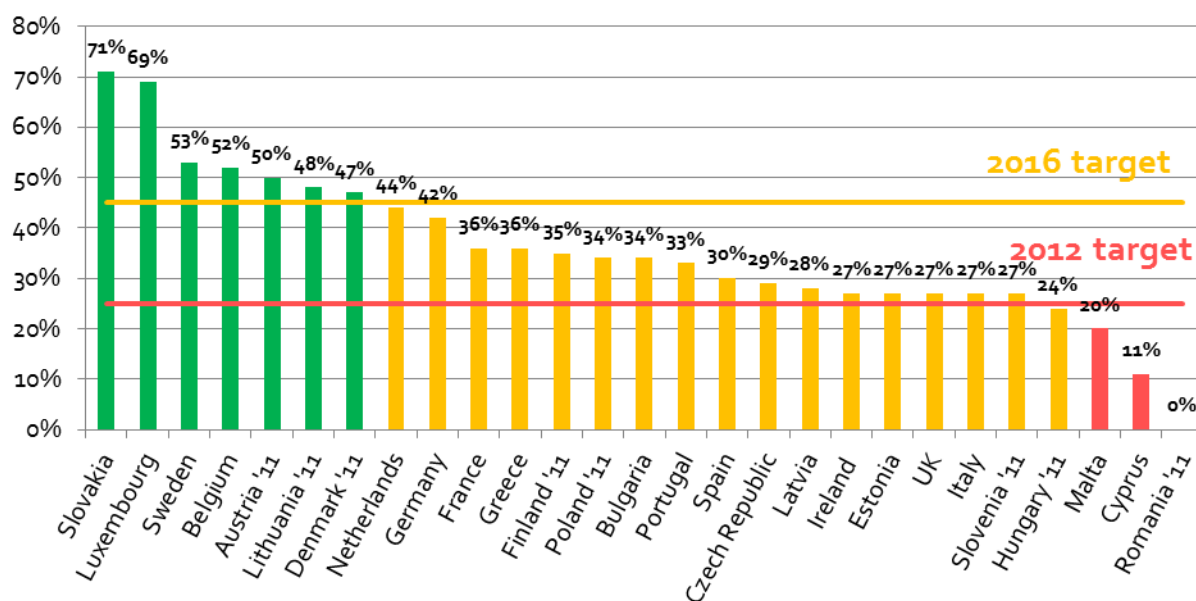


Figure 6.14: Collection Rates for Portable Batteries in 2012 (2011 where indicated)²⁷⁹

Countries with high collection rates have some common features including long established collection systems, high availability and accessibility of collection network and effective awareness measures.

Although the progress that has been made is impressive, it is expected that reaching a collection target of 45% by 26 September 2016 will be challenging for many Member States. According to BIO, Arcadis and IEEP (2014) *“This is partly due to the large variation of existing take-back schemes and varying levels of customer awareness in Member States. The picture is further complicated by the fact that as the share of rechargeable batteries with*

²⁷⁸ It must be noted that concerns exist about the use of collection rate as a measure of performance in the collection of portable waste batteries (Perchards and SagisEPR.com, 2013). These concerns relate to the disproportionate amount of lead batteries in waste portable battery collection for some countries, batteries not becoming waste in the countries where they are placed on the market, and uncertainty about POM Volumes.

²⁷⁹ Perchards and SagisEPR.com, 2013.

*longer lifetimes is growing, fewer batteries will become available for collection in coming years.*²⁸⁰ It has been estimated that around 40% of batteries placed on the market are not available for collection in the same country (Perchards and SagisEPR.com, 2013).

This is due to WEEE leakage waste flows (illegal and legal unreported), WEEE containing batteries being shredded without prior removal of the batteries, and rechargeable portable batteries (up to 40% of portable batteries POM) placed on the market in EEE²⁸¹ that are exported in second hand or refurbished EEE before the EEE becomes waste. Some waste batteries are also being hoarded at the place of use (which postpones the moment at which the waste batteries will be collected for recycling) and the use of rechargeable batteries²⁸² increases this hoarding effect due to their longer lifespan become available for collection at a much later date.

6.14.2 Cost of Current System

6.14.2.1 Cost to Producers

Similarly to other waste stream PRIs, it is difficult to compare meaningfully costs to producers within other European countries as the cost to producers is determined by several factors:

- Registration and administrative costs to producers,
- Collection (correlation with density of population) and treatment costs (effect of economy of scales and transport costs),
- Information and awareness costs,
- Effectiveness of the PROs in discharging the producer obligations,
- Proportion of waste management costs covered by the PROs, and
- Level of financial guarantees (e.g. contingency funding).

²⁸⁰ BIO, Arcadis and IEEP (2014) Ex-post Evaluation on Five Waste Stream Directives (including Batteries Directive) Study for the European Commission – DG Environment, Study not yet published).

²⁸¹ Of which 80-90% are incorporated into EEE.

²⁸² 20-40% of portable batteries placed on the market in Europe are rechargeable and 90% of these are placed on the market in EEE (Perchards and SagisEPR.com, 2013).

BIO, Arcadis and IEEP (2014) has found that variation in costs across Member States depend on several factors including firstly the structure of the system and fees tend to be lower when there are several competing collection systems in operation. Secondly costs depend on the size of the market with lower costs associated with larger markets. Thirdly costs depend on the budget that is allocated to information and awareness or R&D. Fourthly the degree of urbanisation also influences collection costs.

Cost of Registration

Refer to Section 5.15.2.2 for WEEE PRI.

Cost to Producers – PROs Members

The cost to producers in Ireland by PRO is shown in Table 6.15. The cost per tonne in EU Member States varies from €8/tonne Portugal to €1,493/tonne in France.²⁸³ It is expensive to collect and treat portable batteries. The cost per tonne will depend on the battery types being collected. The more battery types that are being collected with positive value (mostly lead containing) the cheaper the treatment costs are.

Table 6.15: Cost for Producers in €/tonne – 2013

[This information has been redacted due to its commercially sensitive nature].

6.14.2.2 Cost to Producers – Self-Compliers

The EPA confirmed that the number of self-complying battery producers is 4. Of the 4 self-complying battery producers, only one is a “battery only” producer the other 3 are also self-complying B2B WEEE producers²⁸⁴.

²⁸³ Table 21 in Appendix A Working Paper on European PRI and International Best Practice, Bio Intelligence Service

²⁸⁴ EPA 09.08.12

Battery self-compliers have the following costs associated with compliance of the Battery Regulations:

- Resource cost to manage compliance,
- Registration fee with WRS,
- Fee of €6,000 to the EPA every three years, and
- Collection and recycling costs for batteries.

6.14.2.3 Cost to Retailers

Retailers cover the full cost of complying with their obligations under the Battery Regulations. However, the costs are likely to be minimal and include the following:

- Administration costs (signage informing consumers of take back, collection and storage of batteries within the retail outlet, arrange for collection by PROs or delivery to approved facility or CASs).
- Any costs associated with transporting to approved facility or CASs, and
- Registration fee with local authority of €20²⁸⁵ for retailers that sell industrial and automotive batteries. There is also a free online registration, which was launched in 2011 through the PROs and the majority of retailers register online.

6.14.2.4 State and Taxpayers Costs

In eight Member States (Ireland, Austria, Cyprus, Estonia, Finland, Greece, Latvia and Sweden) producers cover 100% of the cost of waste management for batteries²⁸⁶.

Local Authorities have indicated that costs associated with managing waste batteries at CASs are minimal²⁸⁷.

²⁸⁵ Initial period was 15 months and then per annum thereafter

²⁸⁶ Table 19 in Appendix A Working Paper on European PRI and International Best Practice, Bio Intelligence Service

²⁸⁷ Killian Farrell, Mayo County Council 18/06/14

Local authorities also incur costs in relation to enforcement of the retailer obligations and the EPA incurs costs in relation to enforcement of the producer obligations under the Battery Regulations.

6.14.3 Increasing Collection Rates

Ireland exceeded the EU collection target of 25% for portable batteries for September 2012 with a collection rate of over 29% achieved in 2011. In 2013 the collection rate increased slightly to 31%. Therefore an increase of 14% in the collection rate in Ireland will be required to achieve the EU collection target of 45% for portable batteries set for September 2016. Because of the short timeframe this will be challenging.

In order to increase collection rates a combination of measures will be required:

- Improvement of the existing collection network to make it more available to the general public. This is the main focus of section 6.14.4.
- Increased information and awareness to encourage all householders and businesses to participate in the recycling of waste batteries and ensure that all waste batteries separately collected. For further details on information and awareness refer to Sections 4.6 and 6.14.5.
- Removal of portable batteries from separately collected WEEE to count towards portable waste battery targets. This is discussed in Section 6.14.6.

6.14.4 Improvement of the existing collection network

6.14.4.1 Current situation

Between the PROs the total number of battery collection points in Ireland is 6,903 (one collection point per 665 people²⁸⁸). The majority of batteries are collected via retail outlets and CASs with approximately 62% (ERP Ireland) and 58% (WEEE Ireland) of batteries being collected via these two collection routes in 2013. In 2013 the PROs collected directly

²⁸⁸ Eurostat: population for Ireland in 2013 4,591,087

from a total of 129 CASs/bring banks and 3,384 retailers with smaller retailers bringing their batteries directly to CASs.

Local Authority CASs/bring banks are the most effective collection method with 1.478 tonnes of portable batteries collected per site in 2013. Between the two PROs, an average of 0.110 tonnes was collected per special events, an average of 0.051 tonnes of portable batteries was collected per retailer site, and an average of 0.021 tonnes was collected per school. The average collected per retailer is low when compared with the UK WRAP Trial described in Box 13²⁸⁹.

Figure 6.15 shows there have been a significant decrease in average quantity of waste batteries collected by CASs. This may reflect competition from other collection methods (special events, retailers and schools) or restriction on CASs operating hours.

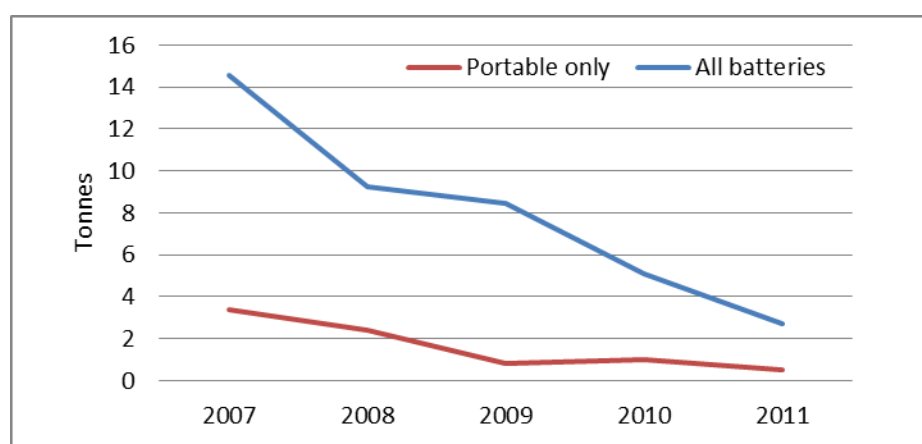


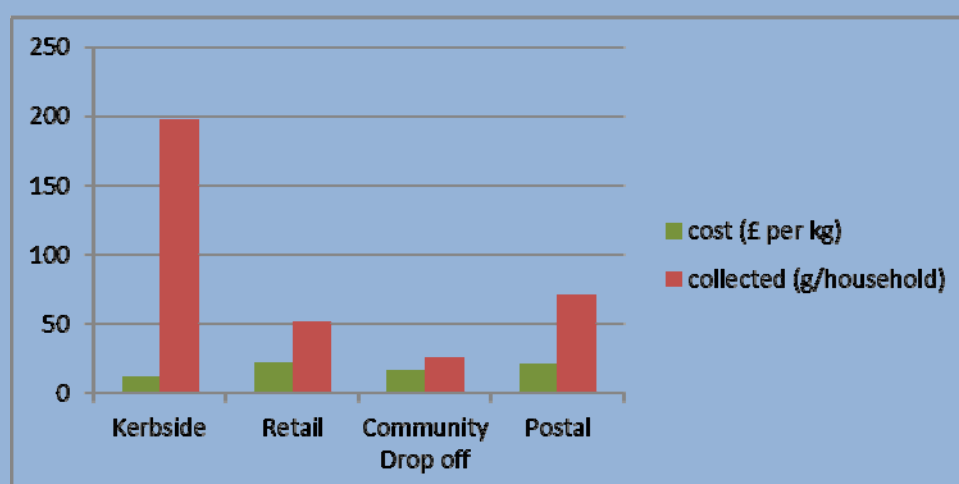
Figure 6.15: Average Quantity of Waste Batteries collected by CASs²⁹⁰

²⁸⁹ 33 retailers collected 10.39 tonnes or 0.3 tonnes per site.

²⁹⁰ Source: EPA National Waste Report 2007, 2008, 2009, 2010 and 2011.

Box 13: UK Household Battery Collection Trials

In 2008 Waste and Resources Action Programme (WRAP)²⁹¹ published the results of a household battery collection trials carried out in the UK between April 2005 and March 2008. The trials involved assessing a variety of collection methods including kerbside collection, retailer take-back, community drop-off and postal return (rural areas) to gain an understanding of the most cost efficient ways to collect portable household batteries.



Kerbside collected the most batteries (0.197 kg/household), while providing the lowest cost per quantity collected.

WRAP also conducted a large scale survey on a sample of householders across all WRAP battery collection scheme areas. The key findings are:

- The postal and kerbside schemes had both the highest awareness (over 40%) and the highest actual (reported) usage (30%);
- The retail take-back scheme had both the lowest awareness (less than one-third) and lowest actual (reported) usage by respondents (less than 20%);
- Lack of information on scheme operation was a common reason for not using the schemes;

²⁹¹ WRAP, Nov 2008 Household Battery Collection Trials April 2005 – March 2008.

- Respondents were most likely to use their scheme once or twice a year;
- Four-fifths of respondents who had used a scheme claimed to recycle all their batteries through their scheme;
- Kerbside collection was stated as the preferred method of battery recycling by 71.4% of current (kerbside) users and post back was preferred by 36.3% of current (postal) users;
- Community and retail take-back scheme users rated collection from outside their house (kerbside) as their most preferred method of recycling.

Box 14: Stibat -The Netherlands

Nine major importers of batteries established Stibat which serves as a collection system to meet producer responsibility requirements for batteries. Battrex, an importer of special batteries used mainly for mobile phone also established its own collection and recycling system in the Netherlands. From 2011, consumers were able to dispose of their spent batteries at almost 22,000 collection points (most of these located in shops (17,200) and schools (4,800)). Local authorities finance battery collection at municipal facilities and retail outlets through collection fees paid to Stibat by industry members, while Stibat members bear the costs of transport, storage, and recycling used batteries directly. Producers and importers pay a small management fee for each battery they sell on the Dutch market. This fee also covers the cost of awareness campaigns. In 2010 there were 778 producers registered with Stibat placing over 370 million batteries on the market. The total management fees contributed in 2010 amounted to €5.4 million. 25% of this contributed to administrative costs.

Stibat recognises that consumers play a crucial role in the collection of discarded batteries. Therefore, great effort is made to disseminate information and awareness campaigns. Digital newsletters are sent informing consumers about the usefulness and necessity of battery collection. Other campaigns includes radio adverts, banners on popular websites, and a raffle of travel vouchers and gift cards to encourage consumers to hand in used batteries. Stibat monitor the quality and safety of the entire collection system on a regular basis. The collection containers are provided with instruction cards and posters containing information and recommendations for responsible and safe collection and storage.

By using the Stibat experience Ireland could increase collection rate of discarded batteries by providing consumer more incentive to go to the collection points. In order to do that, accessibility, visibility and service are essential. The most important collection points for used batteries can be found in shops and schools throughout the Netherlands. Collection points are located at supermarkets, DIY shops, toy, electrical and photo shops, and general non-food shops. This is to ensure that a large and diverse population is reached. The latest communication methods, such as social media, will also be developed on an ongoing basis to stress the importance of collecting used batteries.

6.14.4.2 Improvement in Accessibility and Availability of the Collection Network

The provision of sufficient and convenient points for the collection of waste battery is one of the key success factors (with communicating and shaping end-user behaviour) for waste battery collection scheme. This is determined by:

- **Legal obligations on PROs and producers** which is critical to motivate PROs and producers to invest in the collection network.
- **Number of collection points**, which can be provided in a number of forms (e.g. CASs, retailers, schools etc.)
- **Legal obligations on retailers to take back** waste batteries. This is the most common model in Europe except for Denmark, Sweden and Greece.
- **Role of municipalities:** they often have a significant role in the collection of waste batteries (local awareness and provision of collection points).

According to the Perchards and SagisEPR.com study (2013) an optimal density of collection points appears to be reached when there is one point for every 300 - 500 residents. Ireland has currently one collection point per 665 people²⁹². A higher density of collection points is likely to improve return convenience to the public and potentially increase volume. This can be delivered by a number of collection options which are summarised in **Table 6.16**.

²⁹² Comparison of the number of collection points with other European countries can be difficult as the criteria for counting them vary and they do not have same effectiveness / yield

Table 6.16: Options to Increase Battery Collection Rate

Options	Comment
Increasing the number of CASs.	<ul style="list-style-type: none"> • Capital intensive • Need planning, which may result in delays
Increasing the opening days and hours of CASs.	<ul style="list-style-type: none"> • Running costs funded by State or PRO based on performance • Flexible option, if a more cost-effective method becomes available or if collection are successful, the opening hours can be reduced
Increasing retailers collection	<ul style="list-style-type: none"> • Currently legal obligation to accept batteries as long as the equivalent type on sale • Convenience for the public • Flexible option • Costs minimal • Use rewards
Increasing school collection	<ul style="list-style-type: none"> • Cost minimal • Use rewards
Increasing kerbside collection	<ul style="list-style-type: none"> • Currently not used in Ireland • Cost benefit analysis required

Because of the short timeline required to meet the target and the capital cost, increasing the number of CASs does not seem to be a practical option in an Irish context. With the current arrangements, there are existing collection methods which have been successful in meeting the 2012 targets. However to meet the 2016 targets there will be a need to increase the performance of the existing collection methods and potentially develop new approaches. The Dutch example and the WRAP UK trial have shown some good options. The following options are recommended to increase the collection rate for batteries:

- **Enhancing the role of retailers in battery collection:** Retailers already have a key role to play in the collection network of batteries. However, when compared with the WRAP UK trial, the average quantities of portable waste batteries collected by site are low. WRAP (2008) identified that retailer take back could still prove effective if they are adopted and promoted by retailers so ensuring better locations of the collection containers; “buy in” from local managers and staff and resolution of transport issues. To increase retailer awareness, the PROs should examine the opportunities of building the communication regarding waste batteries collection with the WEEE collection. A guidance document could be developed to highlight obligations and provide recommendations for improvements to optimise collection.

- **Increasing the opening hours of CASs:** to meet the future targets it will be critical to reverse the decrease in the average quantities of portable waste batteries collected by CASs. Research (Duffy and Wilkinson, 2003²⁹³) has indicated that more items are collected at CASs outside working hours. The increase in opening hours will result in an increase in operating cost. One way of mitigating this increase could be to close the CASs during a working day and open during a week-end day. For example Saturday collections collect twice as much as the other working days of the week. The increase in the opening hours of CASs would also have beneficial effects on the collection of other waste materials, therefore some of the cost would be compensated by the PROs for these waste streams (e.g. WEEE, packaging).
- **Providing incentives to CASs to collect waste batteries:** A mechanism will be required to reimburse local authorities for their additional costs of collecting waste batteries. This incentive could be based on quantities collected in order to provide an incentive to increase waste batteries collection and be funded by the producer.
- **Increasing collection at schools/educational institutions:** by using rewards/incentives such as vouchers (1 voucher for every 1 kg collected) in exchange for free goods for the school such as computers and stationary.
- **Offering incentives to members of the public to bring batteries back:** by using rewards/incentives such as vouchers (1 voucher for every 1 kg collected) in exchange for free goods. By using the Stibat experience Ireland could increase collection rate of discarded batteries by providing the consumer more incentive to go to collection points. In order to do that accessibility, visibility and service are essential. Another example is also provided in Box 14.
- **Kerbside** could be a cost effective option for high density population areas. Batteries could be collected successfully as additions to existing collection networks and require only limited modifications to the collection vehicles. Promotion of a kerbside battery scheme could be undertaken as part of the broader communications about recycling to limit costs. However, as waste batteries are already collected by a number of other methods in Ireland, the results of the UK WRAP trials may not be transferable. A pilot research project should be carried out to confirm the transferability of the results in the

²⁹³ Duffy and Wilkinson, 2003

WRAP UK trial and establish the costs and benefits of such a collection method in Ireland.

The above measures will need to be combined with improved communication and awareness initiatives. These are discussed in Section 6.14.5.

Recommendations: It is recommended to:

- The awareness of retailers should be increased by preparation of a guidance document to highlight obligations and provide recommendations for improvements to optimise collection.
- The PROs should work with the retailers to enhance their role in the visibility and promotion of battery collection.
- Improve accessibility to the public by increasing the opening hours at CASs.
- Producers to provide for funding to Local Authorities for collection of waste batteries at CASs on an incentive based model.
- The use of rewards/incentives such as vouchers to reduce the hoarding effect and increase collection at schools/educational institutions to be funded by the Producers.
- Increase the number of special events and investigate other methods of collection such as kerbside.

6.14.5 Information and Awareness

General recommendations made in Section 4.6 are applicable to the Battery PRI. In addition, this section examines some of the issues which are specific to information and awareness in the Batteries PRI.

6.14.5.1 Spending by the PROs

As shown in Section 6.8.8 Both PROs contributed to information and awareness in line with its approval conditions.

6.14.5.2 Need for further information and awareness

It may be concerning that the high level of awareness and participation in the battery recycling programme reported in the survey commissioned by ERP Ireland in September 2011 only translates only into a 29% collection rate in 2011.²⁹⁴

At first, we may think that there will be limited impact of increased communication and awareness initiatives. However, we have to be careful in this conclusion as:

- First, the survey respondents always overestimate their participation,
- Second, this was an online survey which is only representative of the online population. Some other groups not using internet may have a much lower level of participation in battery recycling (e.g. in the older age groups).
- Third, the positive impact on battery collection of the awareness campaign initiated in October 2011 (post survey), indicates that information and awareness will continue to play an important role to maintain and increase public participation in order to meet the 2016 EU collection target of 45% for portable batteries.

The 2011 level of spending on information and awareness will have to be maintained and even increased to meet the EU collection target of 45% for portable batteries. Assuming direct correlation between collection rate and information and awareness, this could require spending in the area of €600,000-650,000 per annum (Figure 6.16)²⁹⁵.

²⁹⁴ The results of the surveys presented in the Perchards and SagisEPR.com report (2013) suggest that the percentage of respondents aware of the need for separate disposal of waste batteries is typically around double the collection rate.

²⁹⁵ E.g. 900 tonnes (possible quantity to collect to meet 2016 target)/ 616 tonnes (collected in 2013)* €549,281 (information and awareness spending by WI and ERP in 2013) = €628,928.

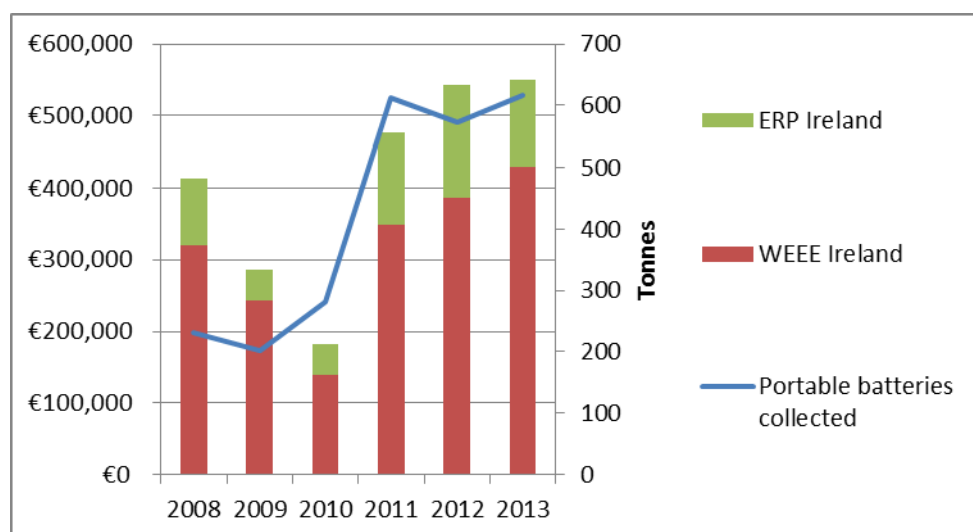


Figure 6.16: Portable Battery Collection and Information and Awareness Spending

Further effort will have to increase participation from all population groups already participating in the battery collection programme but also targeting other groups which are not as engaged (e.g. only 50% in the 18 to 24 age group recycled batteries). Examples of successful initiatives are shown in Box 15 and 16.

Box 15: Win Campaign The Netherlands²⁹⁶

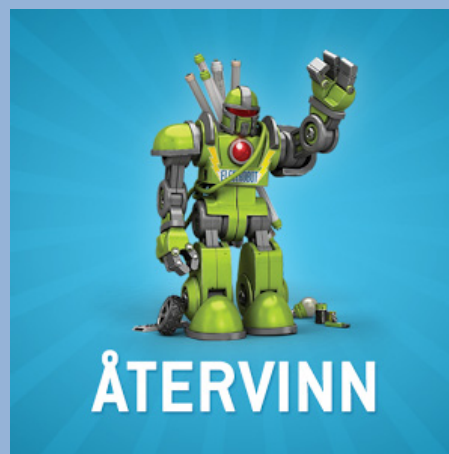
Win Campaign prize draw for each returned collection bag, supported by a viral campaign: The 'Empty Batteries – Hand them in and win' campaign allows end-users returning at least 10 batteries in a collection bag with their name and address on it to participate in a draw. Each month 51 winners are drawn. The first prize is €2,000 in travel vouchers, with other prizes worth about €50. Users visiting the campaign site are encouraged to send the link to friends. The campaign continues the viral email campaign 'tell a friend' which included the same draw mechanism, and collected about 350,000 email addresses annually. The number of bags returned increased from 1.8 million in 2006 to more than 2.2 million in 2010.

²⁹⁶ <http://www.legebatterijen.nl/#!actie>



Box 16: Use of Social Media - Sweden²⁹⁷

El-Kretsen has developed apps for mobile phones (available for both android and iPhone platforms) that give details of recycling points within the vicinity, their opening hours and also useful facts, fun trivia and games. Educational videos are provided through YouTube.



This will require a combination of measures such as already in use by the PROs. In addition, as highlighted in Section 6.14.3.4, the PROs should also work with retailers to increase promotion of battery recycling programmes and support the use of the CASs by the public.

WRAP (2008) also pointed out that communication for waste battery collection need to be as easy and simple as possible to encourage participation. All forms of communications to end users need to be clear and have simple instructions. WRAP's experience suggested that

²⁹⁷ http://www.el-kretsen.se/sitespecific/elkretsen/files/elk_arsrapport_2013.pdf

local awareness raising is the most effective where it builds on national or regional messaging and branding linked to wider recycling campaigns.

To support regional initiatives undertaken by the PROs, consideration should be given to run a visible national campaign to increase further the level of awareness. A simple national campaign can be more effective in raising consumer awareness than several small ones (Perchards and SagisEPR.com, 2013). The need for national awareness raising activities was demonstrated by the effectiveness of the campaign undertaken by the DECLG and the PROs in September 2011.

6.14.5.3 National Brand for Batteries PRI

While the PROs operating under their own branding met the EU portable battery collection target of 25%, rebranding the current national battery collection under one umbrella would be beneficial in this aspect as it would enhance the key message being sent to the final user and allow for a more harmonised approach.

The existing PROs could continue operating as they are with each collecting within their geographically area but under the same brand on their collection boxes and awareness campaigns.

Initially there is likely to be additional setup costs which will be related to the design of the new brand (e.g. €20-40,000), the printing and distribution of new materials²⁹⁸. The printing and distribution costs could be partly mitigated if the replacement of the existing collection boxes is undertaken at the end of their life.

These costs could also be offset as the PROs would use a common platform for general national awareness messages (e.g. one national advertising campaign instead of two separate ones for ERP Ireland and WEEE Ireland).

There is also a risk of confusing the public, but this again can be managed during the transition to the national brand.

²⁹⁸ The value of the current stock is estimated at €300,000 to €400,000.

In conclusion, there are benefits in terms of communication from the use of one national brand, but in order to realise these benefits without incurring excessive costs the transition to one national brand would require buy-in from the PROs and likely involvement from the DECLG to facilitate and manage cooperation from the PROs.

Recommendations:

In order to enhance the key message being sent to the final user and allow for a more harmonised approach to awareness measures to increase participation in waste battery collection programme, it is recommended to rebrand the current national battery collection under one umbrella.

6.14.6 Removal of portable batteries from separately collected WEEE

The WEEE Directive states in Annex VII that “*batteries should be removed from any separately collected WEEE.*” When removed, the batteries are then covered by the Battery Directive. The calculation of the collection rate for portable batteries includes batteries in EEE and WEEE, it is important that these flows are measured or recorded.

Information from the few countries that require producers to indicate separately the volume of portable batteries placed on the market in EEE suggests that batteries in EEE contribute around 20% to 30% of portable batteries placed on the market (Perchards and SagisEPR.com, 2013). Applying these estimates to the volume of batteries placed on the market in Ireland in 2013, shows that the volume of batteries in EEE could be between 383 to 574 tonnes.

ERP Ireland and WEEE Ireland has reported that in 2013, 1.5 tonnes and 8.5 tonnes of portable batteries respectively were removed from WEEE which only accounts for 1-2% of the volume that was collected by the PROs that year and was included for in the collection targets. Even accounting for WEEE leakage, this seems low compared to the estimated proportion of portable batteries placed on the market in EEE. The proportion of portable batteries in EEE should be asserted by WRS. In order to ensure that portable batteries in WEEE are separated and count towards targets, the PROs should provide further information on the process used and methods of recording this information.

Recommendations:

The proportion of portable batteries in EEE should be asserted by WRS.

In order to ensure that the waste battery removal of portable batteries from separately collected WEEE count towards portable waste battery targets, it is recommended that the PROs do not enter into a contract with WEEE treatment facilities in Ireland or abroad unless this information is provided.

6.14.7 Enforcement

EPA inspections for WEEE and battery obligations are combined and between August 2005 and November 2011, the EPA has carried out inspections on 1,686 retailers, 211 sellers of goods over the internet and 167 producers as most producers. In 2012 twenty battery samples were tested for compliance with one sample found non-compliant which is still under investigation. The DECLG have highlighted a risk with cheap imports of non-complaint portable batteries. To date the EPA have taken one prosecution in relation to Producer Obligations under the Battery Regulations. Therefore these enforcement statistics would suggest that there is good compliance amongst retailers and producers in relation to the Battery Regulations. However the EPA have stated that it was found during inspections at retailer premises in 2010 that over time awareness of their obligations has reduced significantly²⁹⁹. Enforcement activities should focus on retailers to reverse this trend to meet the EU collection target of 45% for portable batteries for September 2016.

Also in 2013, 853 producers were registered with WRS for battery obligations and 39 or 5% of these were non-compliant producers who have not yet made the decision to self-comply or join one of the compliance schemes or are awaiting some form of documentation (in 2008, 8%; in 2009 4%; in 2010 7%, in 2011 7%, and in 2012 12%). A reasonable timeframe is given for a non-compliant producer to become complaint however, if they are still non-compliant after this timeframe enforcement action is taken by the EPA.

²⁹⁹ EPA Submission o8.10.12

Recommendations:

It is recommended to:

- Increase enforcement of retailers' obligations to ensure that take back systems are available to customers and that the customers are informed of the collection systems available to them.
- The EPA to continue the enforcement relating to heavy metal content and capacity labelling of portable batteries.

6.14.8 Retailers Registration

Currently retailers can register online with either PRO or alternatively they can register with their local authority. The EPA hosts the database for all the retailers registered with the PROs. However, there is no account centrally of the total number of retailers registered individually with local authorities.

Recommendations:

It is recommended that retailers register only using the online system and remove the option of registration directly with local authorities.

6.14.9 Competition

Refer to Section 5.15.11 in WEEE PRI for recommendations for competition.

6.14.10 Corporate Governance

Refer to Section 5.15.12 in WEEE PRI for recommendations for corporate governance.

6.14.11 Interscheme Framework

Refer to Section 5.15.13 in WEEE PRI for recommendations for co-operation between PROs. A reconciliation and compensation process has not yet been established between the two PROs for batteries.

Recommendations:

It is recommended that a reconciliation and compensation process be established between the two PROs for batteries.

6.15 CONCLUSIONS

The key findings in relation to the Battery Producer Responsibility Initiative are:

- Ireland has been successful to date in implementing the Battery Directive and meeting the EU targets. Ireland exceeded the EU collection target of 25% for portable batteries for September 2012 with a collection rate of over 29% achieved at the end of 2011.
- A number of recommendations are made in relation to increasing the collection rate to achieve the 45% collection target in September 2016 which include:
 - Producers to provide for funding to Local Authorities for collection of waste batteries at CASs on an incentive based model.
 - Improve accessibility to the public by increasing the opening hours at CASs.
 - The awareness of retailers should be increased by the preparation of a guidance document to highlight obligations and provide recommendations for improvements to optimise collection.
 - The PROs should work with the retailers to enhance their role in the visibility and promotion of battery collection.
 - The use of rewards/incentives such as vouchers to reduce the hoarding effect and increase collection at schools/educational institutions to be funded by the Producers.

- Increase the number of special events and investigate other methods of collection such as kerbside.
- The deferred income should be ring fenced to cover the contingency fund for batteries.
- The proportion of portable batteries in EEE should be asserted by WRS.
- In order to ensure that the waste portable batteries are removed from separately collected WEEE and can count towards portable waste battery targets, it is recommended that the PROs do not enter into a contract with WEEE treatment facilities in Ireland or abroad unless this information is provided.
- It is recommended that the PROs retain the responsibility for information and awareness at local level.
- In order to enhance the key message being sent to the final user and allow for a more harmonised approach to awareness measures to increase participation in waste battery collection programme, it is recommended to rebrand the current national battery collection under one umbrella.
- Self-compliers should contribute towards information and awareness their proportion based on the quantity by weight of portable batteries placed on the market.
- The EPA to continue the enforcement relating to heavy metal content and capacity labelling of portable batteries.

7 PACKAGING PRODUCER RESPONSIBILITY INITIATIVE

This section presents an overview and examines the following specific issues relating to the Packaging Producer Responsibility Initiative:

- The need and feasibility of a packaging levy,
- Examination of all the considerations and practical issues underpinning the principle of self-compliance, and
- The economic and environmental implications of altering the “*de minimis*” rule.

To undertake the above tasks we first provide an overview of the policy framework in Section 7.1. Sections 7.2 to 7.7 provide information on the economic operators involved in the PRI and their obligations. Section 7.8 provides an overview of the enforcement initiatives, which make a significant contribution to the success of PRIs. Finally in Section 7.9, we examine specific issues relating to the Packaging PRI and make recommendations for improvement.

7.1 POLICY FRAMEWORK

The policy framework in Ireland was brought about by a number of Council Directives including; the Packaging Waste Directive (Council Directive 94/62/EC), Council Directive 2004/12/EC and Council Directive 2005/20/EC, both of which amend the 1994 Directive.

The **Packaging Directive** aimed to harmonise national measures concerning the management of packaging and packaging waste in order to:

- Prevent any impact thereof on the environment,
- Ensure the functioning of the internal market and to avoid obstacles to trade and distortion and restriction of competition within the Community.

The Packaging Directive covers all packaging placed on the European market and all packaging waste, whether it is used or released at industrial, commercial, office, shop, service, household or any other level, regardless of the material used.

The Member States must introduce systems for the return and/or collection of used packaging to attain the following **targets**:

- By no later than 30 June 2001 (target derogation for Ireland until 31 December 2005), between 50 and 65 % by weight of packaging waste to be recovered or incinerated at waste incineration plants with energy recovery;
- By no later than 31 December 2008 (target derogation for Ireland until 31 December 2011), at least 60 % by weight of packaging waste to be recovered or incinerated at waste incineration plants with energy recovery;
- By no later than 30 June 2001 (target derogation for Ireland until 31 December 2005), between 25 and 45 % by weight of the totality of packaging materials contained in packaging waste to be recycled (with a minimum of 15 % by weight for each packaging material);
- By no later than 31 December 2008 (target derogation for Ireland until 31 December 2011), between 55 and 80 % by weight of packaging waste to be recycled;
- No later than 31 December 2008 (target derogation for Ireland until 31 December 2011) the following targets for materials contained in packaging waste must be attained:
 - 60 % for glass, paper and board;
 - 50 % for metals;
 - 22.5 % for plastics and;
 - 15 % for wood.

The main driving elements behind the majority of the measures in the Packaging Waste Directives were focused on the recycling and recovery of packaging materials and all of the binding targets to date that have been set at European level have focused on recycling and recovery targets³⁰⁰.

It should be noted that Article 2.1 of the Packaging Directive has as a first priority preventing the production of packaging waste. Furthermore Member States must ensure that packaging placed on the market complies with the **essential requirements** (Article 9 and Annex II):

³⁰⁰ The Revised Waste Framework Directive 2008/98/EC also contains a number of important new and enhanced obligations for the prevention of waste

- To limit the weight and volume of packaging;
- To reduce the content of hazardous substances and materials in the packaging material and its components;
- To design reusable or recoverable packaging.

The Packaging Directive also lays down specific conditions with regards to the **marking and identification** system of packaging to facilitate identification and classification.

Member States should develop **information systems** (databases) on packaging and packaging waste so that realisation of the targets of this Directive can be monitored.

In Ireland, a number of statutory instruments give effect to the requirements of the Packaging Waste Directive. The regulatory regime governing packaging waste has been in place in Ireland since 1 July 1997³⁰¹ although the original regulations have been revised and replaced on a number of occasions (primarily due to the imposition of higher recovery/recycling targets), in 2003³⁰², 2004³⁰³, 2006³⁰⁴ and more recently in 2007. A summary of the changes in the Irish Regulations is available in the Statement on Regulatory Impacts on the Draft Waste Management (Packaging) Regulations 2007 published by the DECLG in 2007³⁰⁵.

The Waste Management (Packaging) Regulations 2007 (S.I. No. 798 of 2007) consolidate the current suite of regulations with the aim of bringing improved clarity, transparency and accessibility to the packaging waste regulatory regime. They also introduce a range of integrated measures aimed at optimising the recovery and recycling of packaging waste in

³⁰¹ Waste Management (Packaging) Regulations, 1997 (S.I. No. 242 of 1997)

³⁰² Waste Management (Packaging) Regulations, 2003 (S.I. No. 61 of 2003),

³⁰³ Waste Management (Packaging) Regulations, 2004 (S.I. No 871 of 2004)

³⁰⁴ Waste Management (Packaging) (Amendment) Regulations 2006 (S.I. No 308 of 2006)

³⁰⁵ Accessed on 17/08/2012 at

<http://www.environ.ie/en/Legislation/Environment/Waste/WasteManagement/FileDownload,17135,en.pdf>

Ireland, including a reduction from 25 tonnes to 10 tonnes in the “*de minimis*” (i.e. one of the thresholds to determine ‘major producer’ status) to spread the burden of compliance more equitably across all obligated producers in light of the higher targets that have to be achieved under Directive 2004/12/EC. The principal articles of the regulations came into effect on 31 March 2008.

A number of other policies / regulations, presented in Section 2, exist that complement the aims and objectives of the Packaging Regulations.

7.2 PRODUCT / WASTE CHARACTERISTICS

In an increasingly globalised world, the role of packaging is vital to the commercial success of both consumer and industrial products in that it:

- Protects the product,
- Provides information about the product, and
- Provides tamper-evidence for the product.

Additionally, in the case of fast-moving consumer goods, it also:

- Markets the product

Packaging is made from such materials as cardboard, paper, glass, plastic, steel, aluminium, wood, and composite materials such as those used in milk and juice cartons. In modern society packaging is ubiquitous and generally has a short lifespan. Virtually all packaging eventually becomes waste. Most packaging is non-hazardous, however some packaging can be used to contain hazardous substances and therefore become hazardous because of the hazardous residues it contains.

The packaging supply chain is complex as there are a number of economic operators involved in the packaging production supply chain as shown in Figure 7.1. Ireland is a small open economy and many packaging products or their inputs are produced or manufactured outside Ireland.

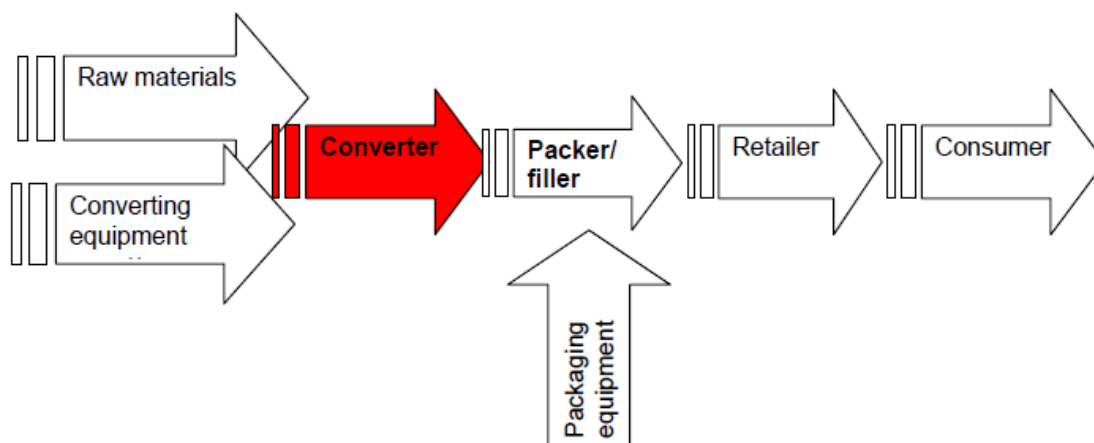


Figure 7.1: Supply Chain in the Consumer Packaging Industry³⁰⁶

“**Packaging**” is defined by Section 5 of the Waste Management Acts 1996 to 2012 and in accordance with the criteria set out in article 3 of the Waste Management (Packaging) Regulations 2007.

The Waste Management (Packaging) Regulations 2007 distinguish:

- **Sales or primary packaging**, means packaging conceived so as to constitute a sales unit to the final user or consumer at the point of purchase (e.g. a plastic bottle or a beverage carton), or
- **Grouped or secondary packaging**, means packaging conceived so as to constitute at the point of purchase a grouping of a certain number of sales units (whether the latter are sold as such to the final user or consumer or whether the packaging serves only as a means to replenish shelves at the point of sale), and which can be removed from a product without affecting the product’s characteristics (e.g. plastic bag or cardboard box), or
- **Transport or tertiary packaging**, means packaging conceived so as to facilitate handling and transport of a number of sales units or grouped packaging in order to prevent damage from physical handling and transport (but not including road, rail, ship and air containers) (e.g. pallets).

³⁰⁶ PIRA, (2000)

The Waste Management (Packaging) Regulations 2007 also define:

- **“Packaging material”** as material used in the manufacture of packaging that is placed on the market and includes raw materials prior to their conversion into packaging, excluding any kind of production residue from the production of packaging or packaging materials or from any other production process.
- **“Packaging waste”** means any packaging or packaging material, excluding production residues, which is discarded or is intended to be discarded or is required to be discarded as waste and shall be read in accordance with the meaning of section 4(1) (a) of the Waste Management Act 1996-2012 and article 1(a) of European Parliament and Council Directive 2006/12/EC3 of 5 April 2006 on waste.

7.3 PRODUCERS

Article 4 of the Waste Management (Packaging) Regulations 2007 defines a **“producer** as a person who, for the purpose of trade or otherwise in the course of business, sells or otherwise supplies to other persons packaging material, packaging or packaged products, and produce shall be construed accordingly”.

“Producers” of packaging include:

- Materials manufacturers,
- Converters e.g. organisations using plastic materials from manufacturers to make packaging,
- Brandholder / importer e.g. Coca Cola, Kellogg’s etc.,
- Distributor / wholesaler, and
- Retailer: e.g. shops, pubs, supermarkets.

Producers Obligations

Under Part II of the Waste Management (Packaging) Regulations 2007, obligations are imposed on “producers” of packaging.

All producers must segregate the packaging waste arising on their own premises into specified waste streams (i.e. waste aluminium, fibreboard, glass, paper, plastic sheeting, steel and wood) and have it collected by authorised operators for recycling.

In tandem with the above requirements, the landfill of such materials from commercial sources is prohibited. However it must be noted that this obligation is not 100% achievable

as there has always been a packaging fraction remaining in municipal waste sent to landfill (RPS, 2008).

Producers are also obliged to provide information, within a reasonable period of time, to the distributors to whom they supply packaging to in relation to the weight of packaging they have supplied and use only authorised recovery operators for the collection and recovery of packaging waste.

Producers are not themselves confronted with targets for recycling and recovery. Rather, their obligations relate more to their own waste management arrangements and their reporting.

Major Producers

Additional obligations are imposed on producers who exceed specific “*de minimis*” criteria (i.e. meet both a turnover threshold and a tonnage threshold) and whom are subsequently referred to as “**major producers**”.

A major producer is a producer whose turnover is greater than €1 million (excluding trade discounts and VAT) and who supplies 10 tonnes or more of packaging material or packaging to the Irish market.

Major producers have responsibilities for the recovery of packaging waste from their customers (including the provision of segregated receptacles on their premises for the acceptance of packaging waste), meeting prescribed targets, on-site signage, public advertising, data reporting and registration with local authorities. Major producers cannot purchase packaging waste from other major producers in order to fulfil their obligations.

Major producers have the option of either complying directly with their producer responsibility obligations individually or collectively³⁰⁷ with other major producers located within the functional area of a local authority (i.e. self-compliance), or alternatively, getting an exemption (under article 17) from those requirements by becoming a member of a packaging waste PRO.

³⁰⁷ Limited to 10 major producers. The facilities accepting segregated packaging waste should be within 250 m of all major producers.

Essentially, major producers of packaging waste are categorised into three groups within the current regulations, namely:

- Businesses that are self-compliant and that arrange for the free take back, collection and recovery of their own specific packaging waste,
- Businesses that join a PRO. These businesses pay a membership fee to the PRO and must participate satisfactorily in the compliance scheme. These businesses while obligated to recover waste arising on their own premises do not directly arrange for the collection and recovery of their packaging waste placed on the market. Instead, the packaging waste is put into the general waste stream by householders or commercial users of the product contained in the packaging. This waste is collected and recovered by a waste operator. The PRO then refund the operators for some of the costs of collecting and recovering the waste put into the waste streams by its members,
- Businesses that are below the “*de minimis*” threshold of waste tonnages are exempted from fulfilling major producer obligations.

In addition, there is a fourth category, referred to “non-compliers”³⁰⁸, which are businesses that are not exempted by the “*de minimis*” rule, but are neither self-compliant or a member of a PRO. The estimation of the scale or impact of non compliance in Ireland is difficult.

As businesses do not report (e.g. to the CSO) the amount the packaging they put on the market, it is difficult to estimate how many businesses are producers. The Statement on Regulatory Impacts on the Draft Waste Management (Packaging) Regulations 2007 published by the DECLG in 2007 provided an estimate of the number of producers:

- 2,200 producers with a turnover greater than €1.27 million (excluding trade discounts and VAT) and who supply 25 tonnes, or more
- 3,000 with a turnover between €1 million to €1.27 million (excluding trade discounts and VAT) and who supplies 10-25 tonnes.

³⁰⁸ The term “non-compliers” instead of “free-riders” as in some cases compliant businesses can be “free riders” (e.g. Self-compliers can benefit from the compliance scheme activities in relation to public education and awareness, but they are free riders as they do not pay their share towards these activities).

The EPA (2009b) identified over 5,000 businesses that are likely to be designated obligated major producers under the regulations.

- 80,000 producers below the thresholds.

This is to be compared with the 445,207 businesses recorded by the CSO in 2007³⁰⁹. This number decreased to 406,720 businesses in 2010.

Figure 7.2 shows the packaging compliance market in volume in 2010. The market can be broken down into Repak members, self-compliance and others (businesses that are below the “*de minimis*” and non-compliers). Repak members have 62% of the packaging market in terms of volume. However, according to Repak the packaging claimed to be recovered by self-compliers may include packaging which is also claimed by a waste operator under the Repak Payment Scheme³¹⁰. Repak conducts audit to mitigate the risk of double-counting, but lack of visibility on the arrangements between self-compliers and waste operator may limit the effectiveness of this audit.

³⁰⁹ CSO Business Demography Statistics available at www.cso.ie

³¹⁰ Repak 25.07.2012

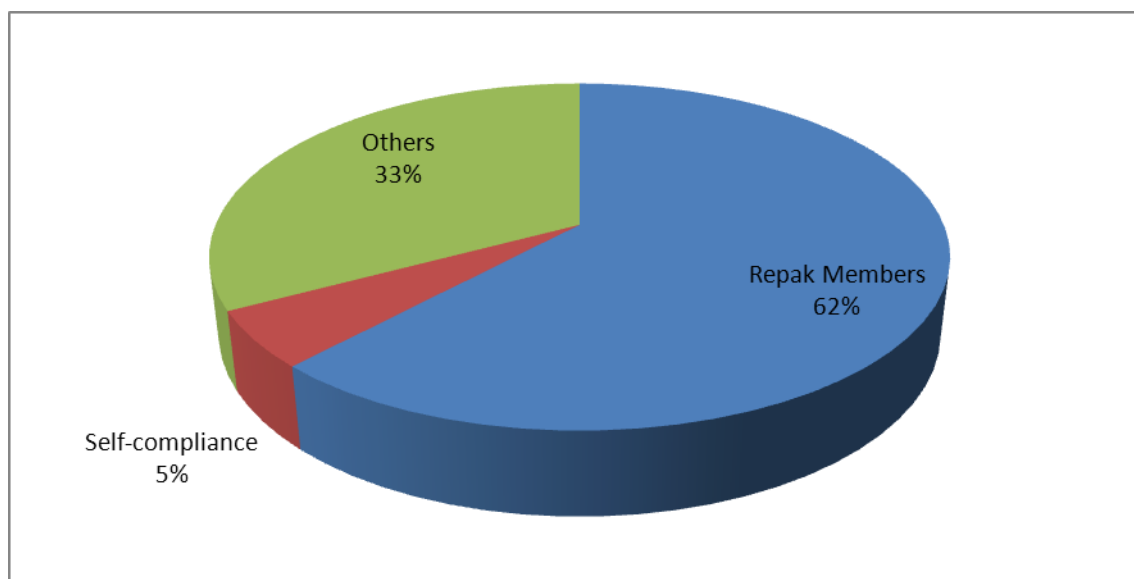


Figure 7.2: Packaging Compliance Market (volume of packaging) 2010³¹¹

7.4 PACKAGING END-USERS

Packaging waste is a by-product of consumption by government, business, institutional, industrial users, and the general public. These economic operators generate packaging waste.

The Waste Management (Packaging) Regulations 2007 do not define end-users of packaging and do not give specific obligations to end-users of post-consumer waste. However, these regulations require producers to provide for the source segregation and recovery of “back-door waste”³¹². All users (households and corporate organisations) have

³¹¹ Total packaging market assumed to be equivalent to quantities of packaging waste managed (863,714 tonnes) and quantities put on the market by self-compliers (45,387 tonnes) (EPA, 2012). Quantities put on the market by Repak members were estimated to 535,000 tonnes in 2010 (Repak, 2011). Others estimated by difference between Total packaging managed minus Repak members quantities and self-compliers quantities put on the market.

³¹² “back-door waste” means waste arising from secondary and tertiary packaging which is received by a producer but is not thereafter used in the supply of products;

responsibilities under the Waste Management Act 1996-2012 and waste collections by-laws.

Businesses that are producers also have waste management obligations which are in Part II of the Waste Management (Packaging) Regulations 2007 which were discussed in Section 8.5.

Packaging waste produced by end-users is highly mixed, may be contaminated, and is disposed in high volume from many sources, generally within a short timespan after production.

7.5 COMPLIANCE SCHEME

An overview of the Packaging compliance scheme is presented in Figure 7.3. The PRO plays an important role in the compliance scheme by offering a service that enables producers to comply with their environmental obligations.

Part IV of the Waste Management (Packaging) Regulations 2007 provides for the establishment of “approved bodies” and sets out the requirements for an application to the Minister in this regard. Producers which are members of an approved body are exempt from certain requirements of the Waste Management (Packaging) Regulations 2007.

Repak Limited is a not-for-profit company, which was set up in 1997 to support the attainment of Ireland’s packaging waste recovery targets. It is the only PRO to have been approved since the regulatory system started³¹³.

Notwithstanding the aggregate weight of packaging waste accepted by major producers (members of Repak) for recycling and recovery in accordance with Article 11 of the Waste Management (Packaging) Regulations 2007, Repak is responsible for the achievement of the national targets in accordance with its application for approval.

³¹³ The European Recycling Platform (ERP) applied in August 2009 to operate a packaging compliance scheme. Some aspects of the ERP application are discussed further in Appendix A.

As a general rule, Repak members pay a **fee based on the material specific tonnage of packaging which they place on the market** and are also obliged to participate in the compliance scheme in a satisfactory manner.

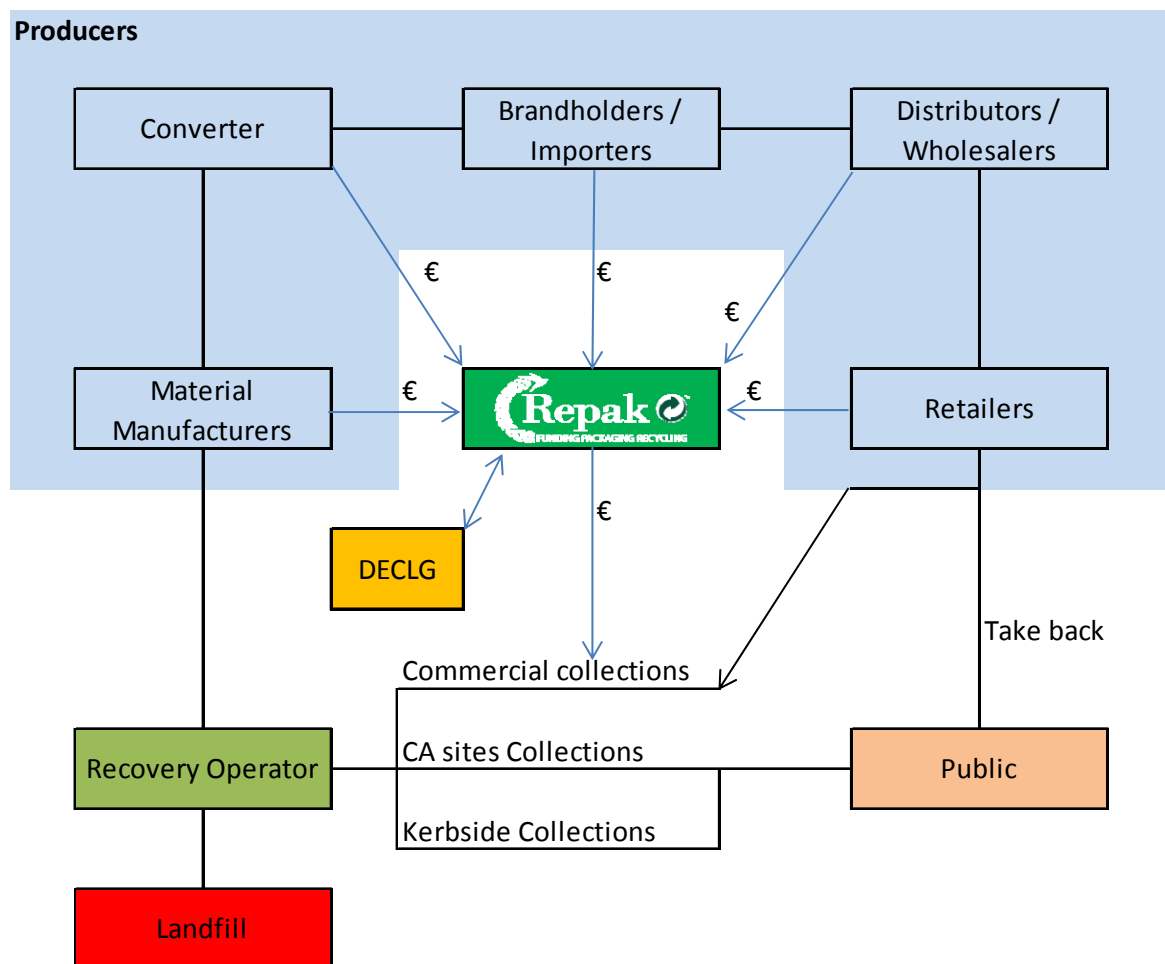


Figure 7.3: Overview of the Packaging compliance scheme

7.5.1 Approval and Terms and Conditions

Subject to the provisions of Part IV of the regulations, any person or body corporate may apply for approval to the Minister of the Environment to operate as an “approved body” for the recovery of packaging waste.

It should be noted that the legislation allows for the possibility of more than one PRO. However, no criteria specify when more than one PRO should be permitted, either in legislation or in terms of DECLG guidance.

Repak was originally granted approval, on 10th June 1997, by the Minister for the Environment and Local Government, under the Waste Management (Packaging) Regulations, 1997 and has been operational since July 1997. Repak's most recent approval ended on 31st December 2011. The Minister approved Repak for a further year up to 31st December 2012 subject to a number of conditions including Repak completing a strategic review of its activities. In 2013 two short term temporary approvals were granted to Repak by the Minister to complete this work. On completion of the review, the Minister approved Repak for a five year term until 31st December 2018.

Table 7.1: Summary of Schedule of Conditions for Repak³¹⁴

Headings	Summary
General	Submit before 31/03, the following: <ul style="list-style-type: none"> • Statement of audited accounts • Annual report including: <ul style="list-style-type: none"> ○ The quantities of packaging placed on the market by their members and associated aggregate payments broken down by material types and by main producer classifications. ○ The quantities of packaging recycled and recovered that had been supported by Repak ○ The aggregate subsidy paid by Repak for such quantities of packaging waste recovered and recycled. • Make available annual report to the public. • Adopt environmental best practice in the procurement of goods and services within Repak and its members organisations. • Any proposed change to the Repak subsidy must be first submitted to the DECLG with supporting documentation and economic analysis three months before any proposed changes. Repak must have full regard to the Department's view prior to any proposed change.
Corporate Governance	<ul style="list-style-type: none"> • 5 directors reflective of the Repak Membership and elected by Members • Establish Nomination, Remuneration and Audit Committees with a minimum of three members in each committee.
National Targets	Repak shall be responsible for: <ul style="list-style-type: none"> • The achievements of recycling and recovery targets for Ireland. • Confirming that the sites used for recovery outside Ireland comply with the requirements of Article 6(2) of the Packaging Directive³¹⁵.

³¹⁴ DECLG, (2011a)

7.5.2 PRO Services

In order to meet its obligations to the State and to its shareholders (the packaging producers), the PRO performs a number of services. An overview of these functions is shown in Figure 7.4.

³¹⁵ To ensure that sound evidence of recycling / recovery operation took place under conditions broadly equivalent to those prescribed in the EC legislation.

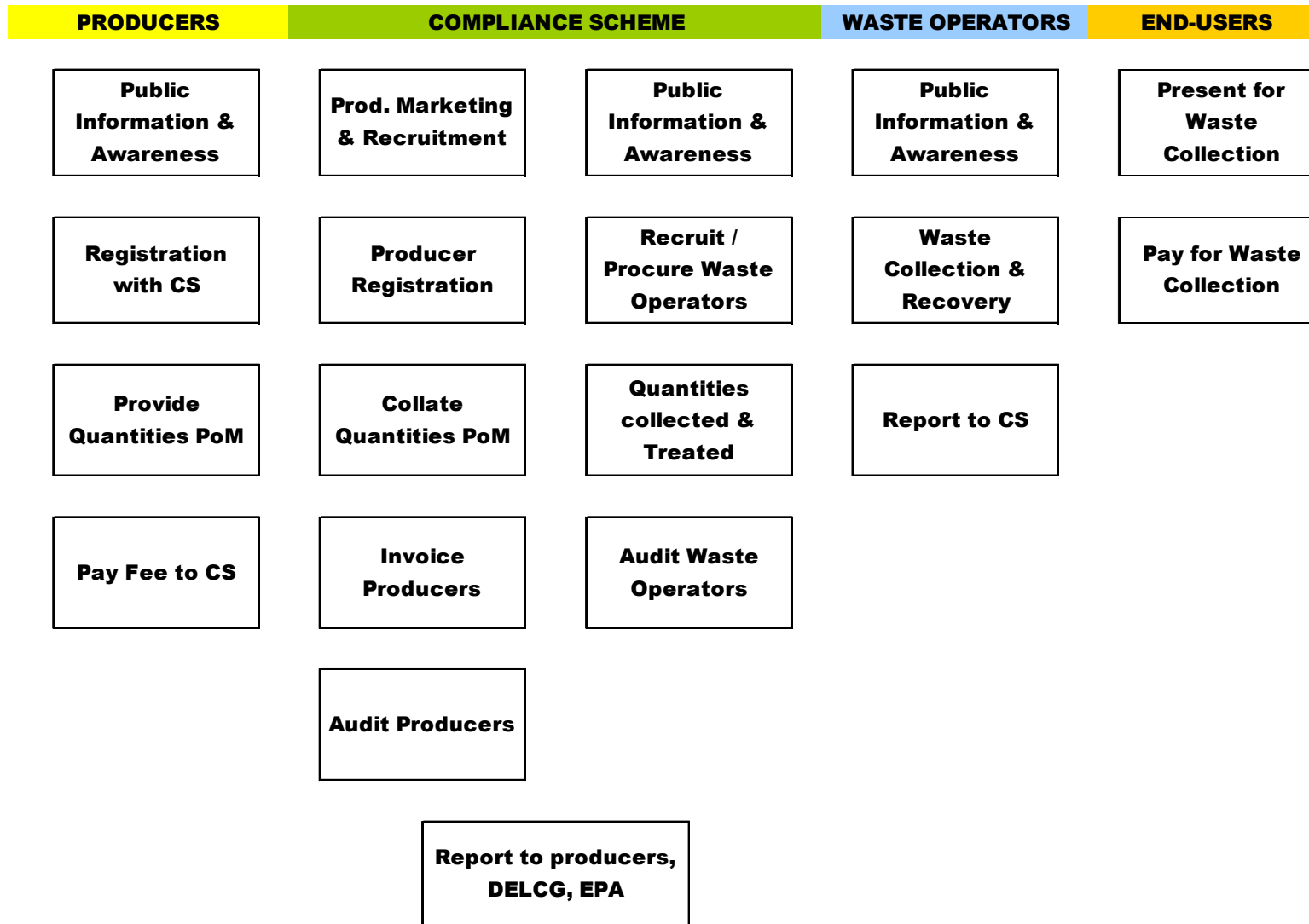


Figure 7.4: Overview of the Main Repak Services

These services can be grouped into a number of organisational units within Repak:

Membership Services

- Registration of producer's specific information as requested by Repak,
- Collation of data from producers on packaging put on the market – via the bespoke “Repak Online Submissions (ROLS)”, and
- Invoicing of producers: Repak raise funds from obligated major producers placing packaging on the Irish market who join and subscribe to the scheme each year.

Collection Services

The Collections Department of Repak undertakes the management of the Repak Payment Scheme (RPS) to all registered Service Providers. “Service Providers” consist of legitimate waste management companies and Local Authorities that own and control their services to collect and recycle packaging waste

- Collation of data from waste operators (including local authorities) on packaging recycled and recovered,
- Audits of waste operators: Contractors must provide a clear audit trail by material type, quantity and origin. They must provide detail on the end destination of material, and
- Payment to waste contractors: The funds that are collected each year from membership fees are used to contribute towards the recovery and recycling target that is set each year.

Sales and Marketing Services

- Marketing to producers: this include direct awareness raising (press adverts, radio, mail shots) and engagement with trade bodies focusing on obligations of businesses under the Waste Management (Packaging) Regulations 2007,
- Awareness campaign to educate the general public on how and what packaging to recycle, and
- Repak holds the licence for the Green Dot in the Republic of Ireland. The Green Dot is a registered trademark owned by the German packaging recovery organisation, Duales

System Deutschland AG (DSD). Use of the trademark is licensed to packaging recovery organisations throughout Europe, and the Green Dot logo is being used by the recovery organisations in an increasing number of European countries.

There are also a number of **support services** including:

- Statistics,
- Information systems,
- Waste Prevention and dissemination to members of information on compliance and innovation,
- Management of the reporting at a national level from their members to the EPA, and
- Liaison with enforcement authorities about producers who joined or left the PRO.

Repak also employ consultants to assist them in specific tasks related to examining specific market issues and for lobbying purposes.

7.5.3 Membership

Repak had 2,178 members in 2012 (Repak, 2013) in their compliance scheme which represents 62% of the packaging put on the market by volume and accounting for 45-47% of the total estimated number of obligated producers. However in 2011 Repak members accounted for 95%³¹⁶ of the compliant obligated producers (Repak members and self-compliers).

Figure 7.5 shows that Repak membership increased significantly from 1997 to 2005, but the pace of increase reduced thereafter even with the change in the “*de minimis*” threshold brought by the Waste Management (Packaging) Regulations 2007.

³¹⁶ Based on data from EPA NWR 2011

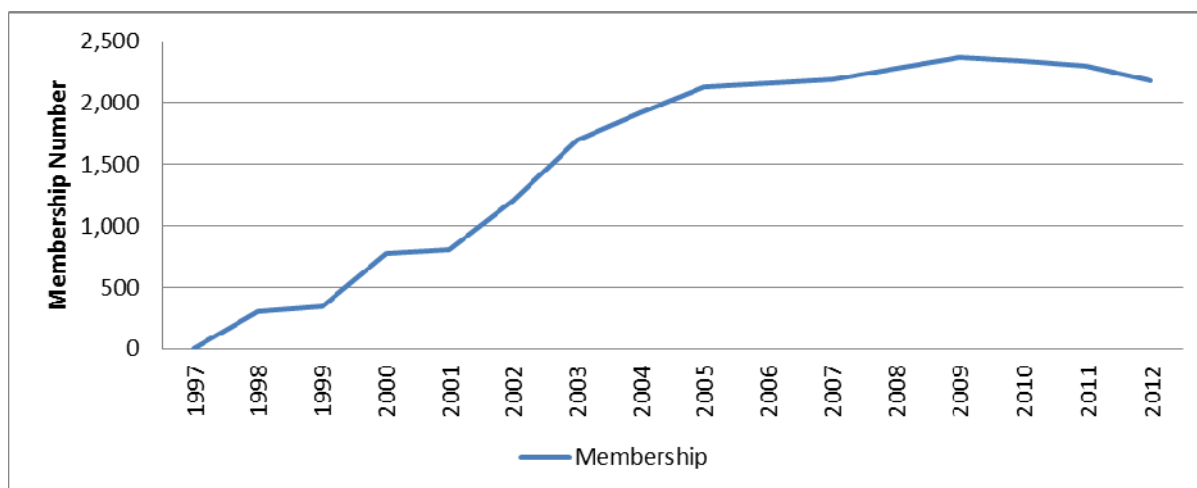


Figure 7.5: Evolution of Repak Membership 1997 – 2012³¹⁷

There are essentially three types of Membership within the Repak compliance scheme, which are categorised as follows:

- **Producer Member:** A Producer who has provided proven and auditable data that it is either below the 10 tonnes and/or €1m turnover threshold but wishes to become a Member. It may wish to become a member to use the Green Dot or wish to have the company name on the registered list of members to demonstrate its commitment to good corporate social responsibility.
- **Regular Member:** A Major Producer who supplies packaging data on a six-monthly basis and who adheres to the timing and accuracy requirements as outlined in the Scheme Rules. These Major Producers are also required to participate satisfactorily in the scheme, including furnishing a Waste Management Plan to Repak to outline current and future strategies of handling and reducing packaging waste on an annual basis.
- **Scheduled Member:** A Major Producer who uses a set schedule of fees to evaluate its obligation and who does not have to furnish packaging data. Examples of such are; independent grocery retailers, hardware retailers, pharmacies, licensed premises, hotels, restaurants and off-licenses. This area has a turnover cap currently standing at €12.7m.

³¹⁷ Repak Annual Reports 2001 - 2012

A thorough certification process for members is in place, the details of which are considered commercially sensitive³¹⁸. Having successfully completed the process, each Producer is granted an exclusive membership number and all correspondence is distributed using this unique identifier. The registered Producer name is granted a Certificate of Compliance when certain conditions of membership are discharged in accordance with the Scheme Rules.

In addition to each membership number, the Producer is permitted to declare subsidiary locations and is required to furnish details of each address in full to Repak. The member receives an annual Certificate of Compliance that is valid until the 31st of December of that year.

7.5.4 Membership Fee

Repak is solely funded by its members and the fees they pay. Repak's members are charged on the type and amount of packaging they produce, i.e. the more packaging they place on the Irish Market, and the more they pay.

Repak operates a **shared responsibility fee system** to its Major Producer members. This identifies five stages in the lifecycle (Manufacturer, Converter, Brandholder/importer, Distributor and Retailer) of an item of packaging and charges a fee per tonne to the business entity responsible for the packaging at each stage.

The largest fees are charged to the brandholder/importer because it is at this level that control is exercised over the type and quantity of packaging used. In general, Repak members finance two to three links in the packaging supply chain.

Repak's website provides details of the fees charged to producers and major producers³¹⁹.

For **Producers**, there is a flat fee of €980 (excl. VAT).

³¹⁸ Repak meeting 25/07/2012

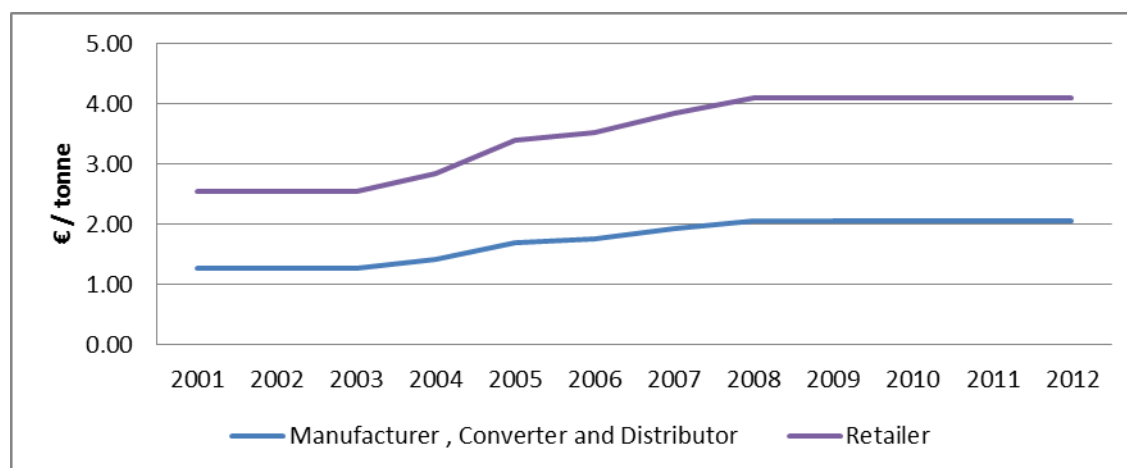
³¹⁹ Accessed on 03/09/2012 at <http://www.repak.ie/Membership-Fees-and-Back-Fees.html>

Special sectoral fee structures continue to apply to some groups called **Scheduled Members**: retailers, pharmacies, hardware merchants, and members who trade in the hospitality sector. In these instances, members pay a fee based on a matrix of turnover bands that reflect their specific type of trading activity. The fees are derived from audited packaging information and agreed with individual Trade Associations. All sales must be taken into consideration when determining turnover including cigarettes, Lotto etc. (with the exception of petrol in forecourts). These fees range from €400 to €3,461 depending on sector and turnover / packaging quantities³²⁰.

For **Major Producers**, there are two types of fees:

- Participation Fees - are charged at a flat fee per tonne, irrespective of the material type, and are charged depending on the activity, or activities, of the Member. The evolution of participation fees for manufacturer, converter, distributor and retailer is shown in Figure 7.6.
- Material Specific fees - are based on the weight of each participating material placed on the market by members and are charged at the Brandholder/Importer stage of the supply chain. The evolution of material specific fees is shown in Figure 7.7.

All fees are calculated on packaging statistics supplied for the previous year.



³²⁰ Details per sector can be found at <http://www.repak.ie/JoiningRepak.html>

Figure 7.6: Evolution of Repak's Participation Fees for Manufacturer, Converter, Distributor and Retailer³²¹

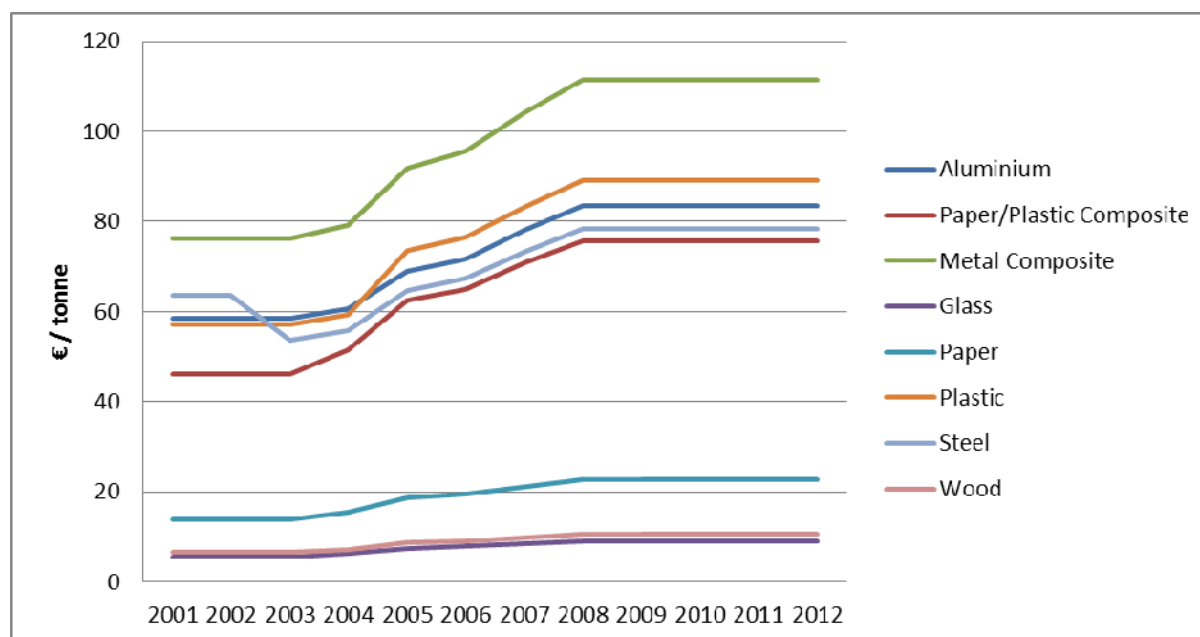


Figure 7.7: Evolution of Repak's Material Specific Fees for Brandholder/Importer³²²

According to Repak, membership fees have remained unchanged since 2008, in recognition of the difficult trading conditions that continue to be faced by members throughout the country.

Any Major Producer wishing to become a Repak member must also pay **back fees** where applicable. Back fees are necessary because organisations registered with Repak have collectively met industry's recovery and recycling targets since 1997. Companies that join Repak will be charged back fees on the previous year's packaging statistics, from 2006 onwards, at the rate they would have paid membership fees during those years.

Exemptions are granted for any year to a company who can provide:

- Documented evidence of non-major producer status for that year, or

³²¹ Repak Annual Reports 2001 - 2012

- Documented evidence of self-compliance for that year

7.5.5 Green Dot Fee

Repak holds the licence for the Green Dot in the Republic of Ireland. The Green Dot is a registered trademark owned by the German packaging recovery organisation, Duales System Deutschland AG (DSD). The use of the trademark is licensed to packaging recovery organisations throughout Europe who wish to use it on primary packaging³²³.

A non-obligated producer who wishes to use the Green Dot must pay a minimum fee of €980 excl. VAT. The self-complier must also pay a material specific fee shown in Figure 7.8 per tonne of packaging placed on the market using the Green Dot logo.

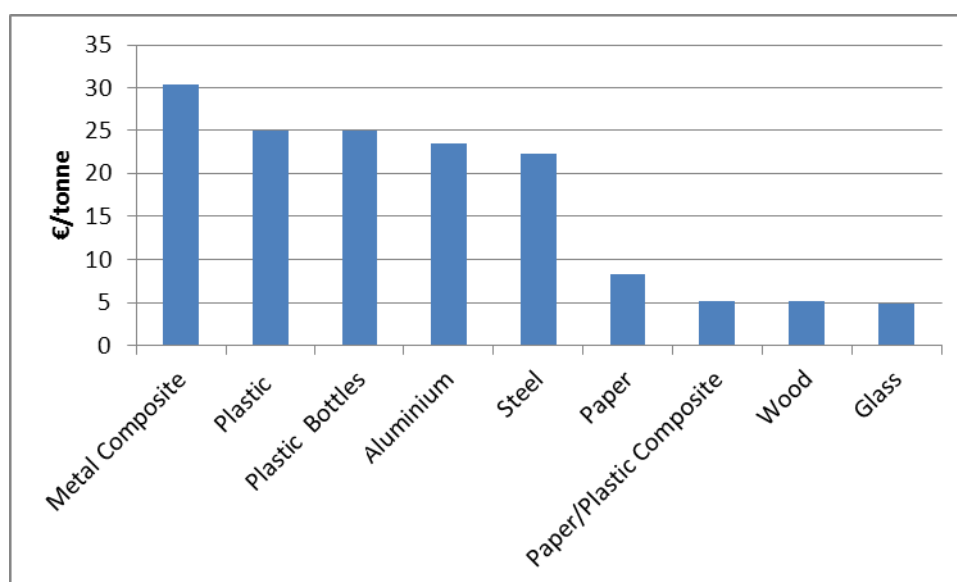


Figure 7.8: Material Specific Fee for Green Dot Licence³²⁴

³²² Repak Annual Reports 2001 - 2012

³²³ Packaging conceived so as to constitute a sales unit to the final user or consumer at the point of purchase.

³²⁴ Accessed on 03/09/2012 at <http://www.repak.ie/files/documents/Green-Dot-Licence-Application-Form-2012.pdf>

7.5.6 Repak Income

Figure 7.9 shows that membership fees amounted to €24.5 million in 2012, a decrease of €5 million on 2008 income. The decrease is due to the decrease in volume of packaging placed on the market.

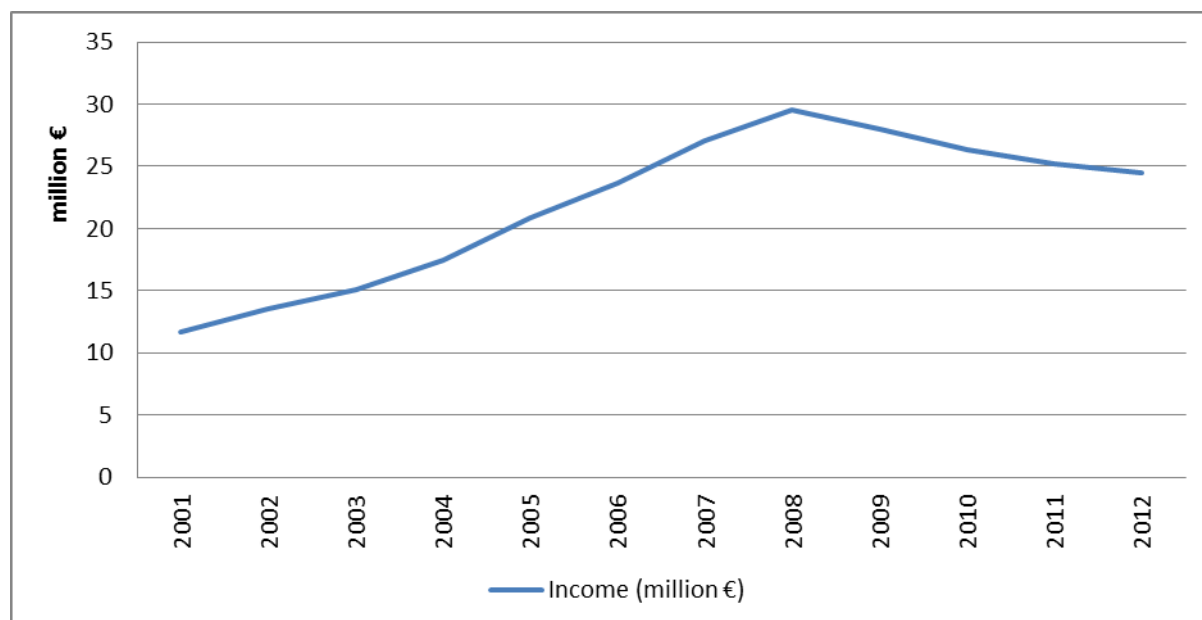


Figure 7.9: Change in Repak Membership Income 2001 – 2012³²⁵

[This information has been redacted due to its commercially sensitive nature].

[This information has been redacted due to its commercially sensitive nature].

Figure 7.10: Repak Membership Income Distribution of Fee 2012³²⁶

³²⁵ Repak Annual Reports 2001-2012

7.5.7 Repak Expenditure

Repak expenditure can be divided into three categories:

1. Direct recycling costs represent payments made to fund the operations of recycling operators, who collect and recycle packaging waste on behalf of the company, these are commonly referred to as “Repak subsidy payments”,
2. Administrative costs: including salaries, rents etc., and
3. Prevention, education and public awareness including Repak Prevent & Save Programme and various marketing and awareness initiatives.

As shown in Figure 7.11, direct recycling costs are the main source of expenditure. As the initial set-up cost were overcome the proportion of direct recycling costs increased over time.

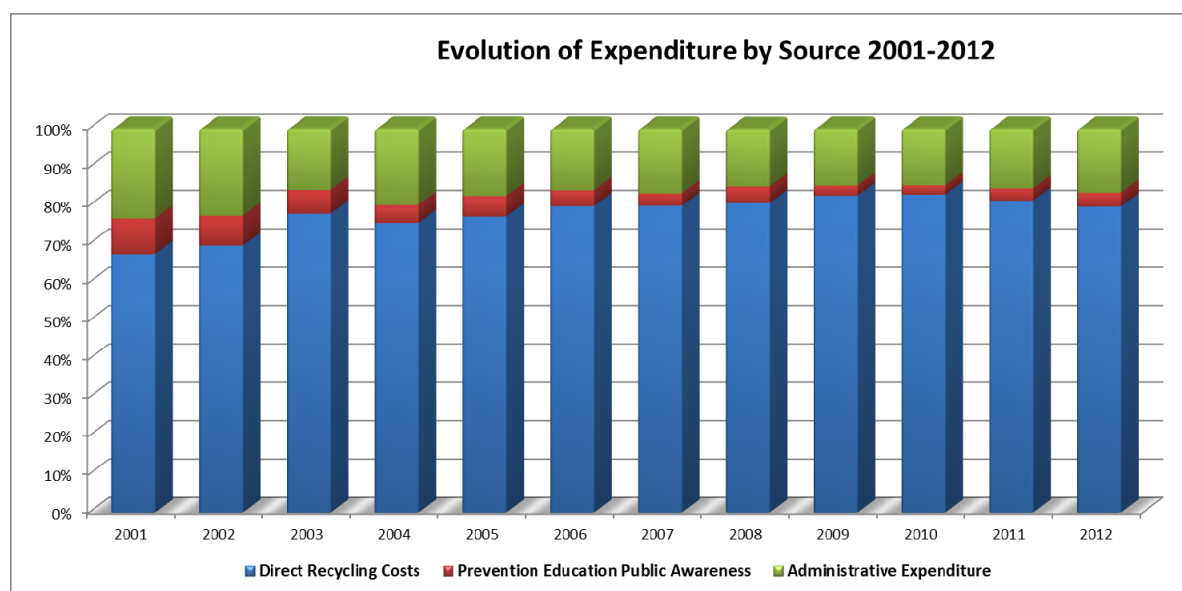


Figure 7.11: Evolution of Expenditure by Source from 1998 to 2012³²⁷

³²⁶ Repak Presentation 25/07/2012

³²⁷ Repak Presentation 25/07/2012

On average 3-4% of expenditure is spent on consultants including national and international recycling experts for research and development advice, legal advisors, Green Dot licence fees, and programme management consultants.

Repak expenditure (shown in Figure 7.12) has increased year on year up to and including 2009. The decrease in 2010 is due to the decrease in direct payment to waste operators as the tonnages recovered decreased due to the economic downturn. However, as the tonnage put on the market decreased even more, this has resulted in an increase in the overall recovery rate.

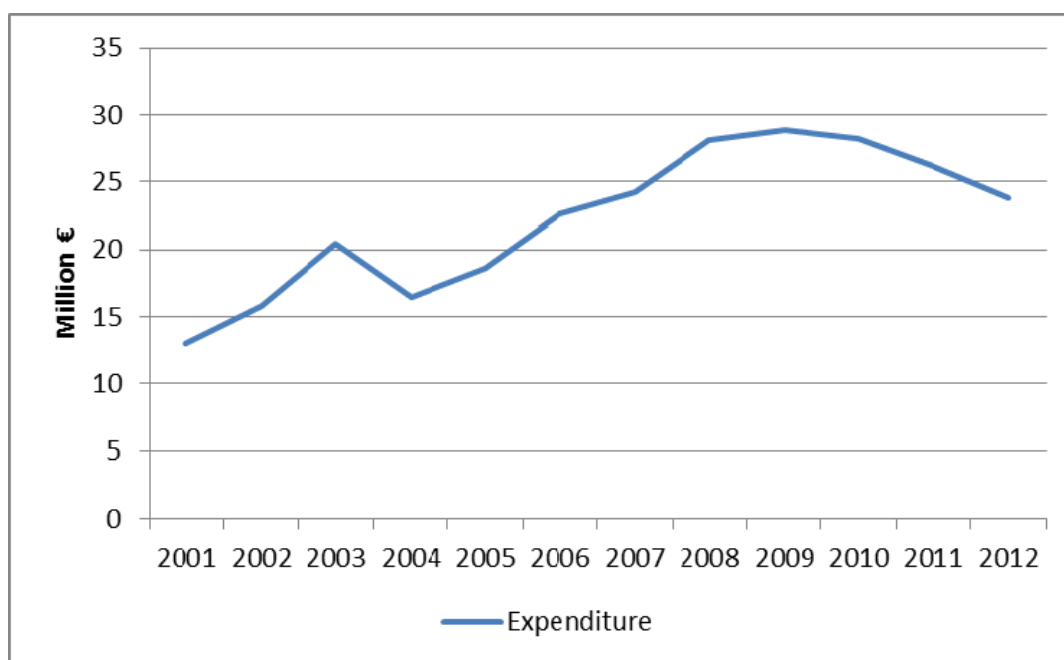


Figure 7.12: Repak expenditure from 2001 to 2012³²⁸

Overall the recycling cost in €/tonne decreased from 2001 to 2005 and increased from 2005 to 2010 and has since decreased again. The trend is similar to direct recycling costs and total expenditure (which also include administrative costs and costs of prevention, education & public awareness).

³²⁸ Repak Annual Reports 2001-2012

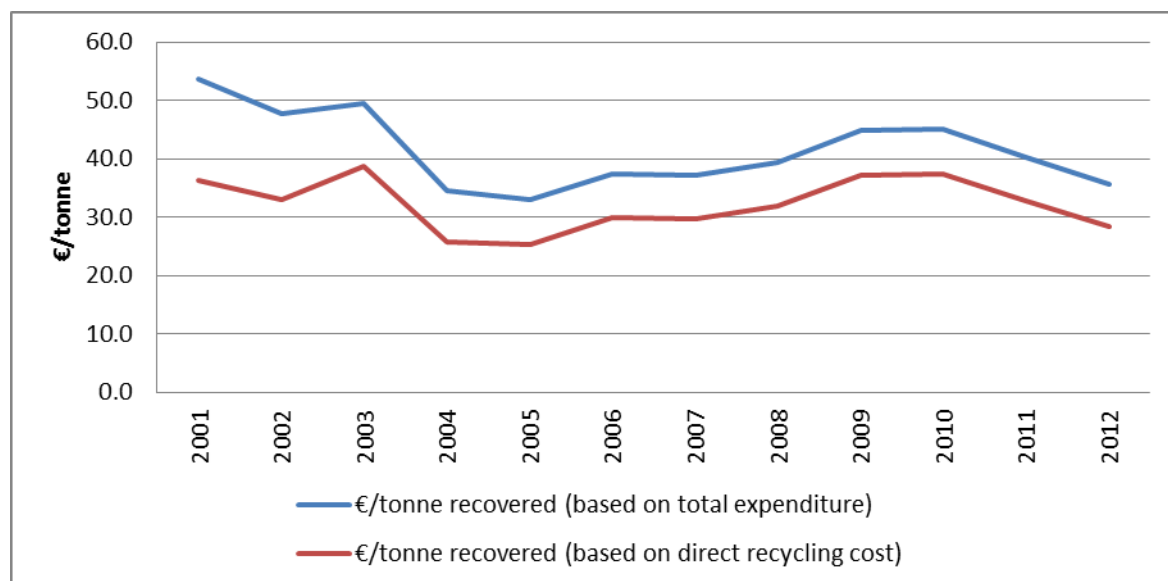


Figure 7.13: Evolution of Cost per Tonne Recovered from 2001 to 2012³²⁹

7.5.8 Direct Recycling Costs

Repak operates the Repak Payment Scheme (RPS) of subsidy payments to fund the recovery of waste packaging that is sourced by Service Providers from:

- Industry's back-door that comprises of packaging waste that arises on business premises that has been used to convey goods to the market, and
- Households - packaging waste that is collected via public bring and kerbside collection networks.

The level of subsidy is based on the material type and source, recovery activity for that material, landfill levy, the market value of that material and the recycling and recovery target that Repak is committed to achieving within the current year. Rates are agreed between Repak and the waste management industry each month after consultation with the Subsidy Steering Committee that consists of representatives from the waste management industry.

³²⁹ Calculated from Repak Annual Reports 2001-2012

Repak strategy is to target the heavier packaging waste and most cost-effective sources. However as the target increases, there is a need to expand collection to more costly materials (e.g. plastic bottles).

Household waste is the largest share of direct recycling cost for Repak as shown in Figure 7.14.

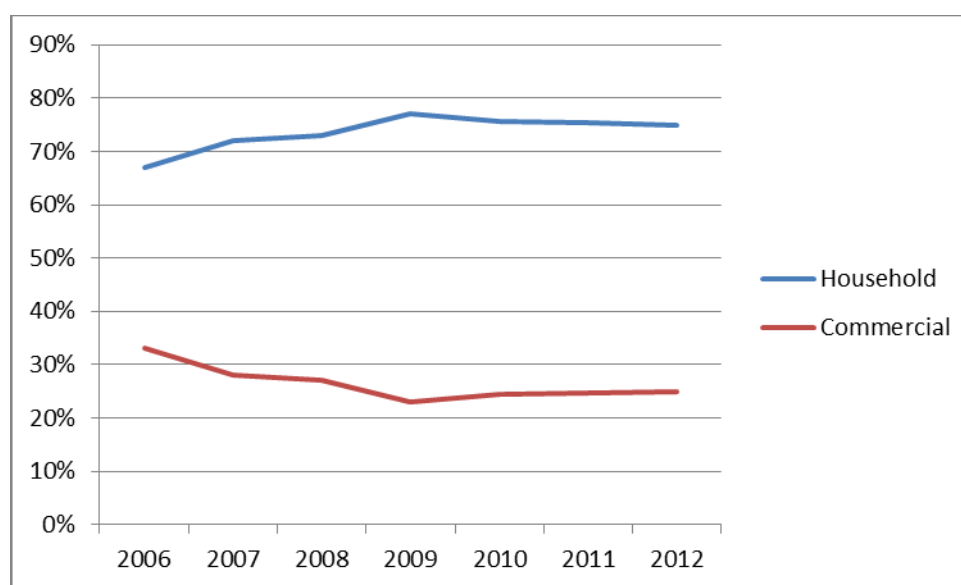


Figure 7.14: Backdoor (Commercial) and Household Waste Expenditure 2006-2010³³⁰

The quantities of household packaging waste recovered supported by Repak in 2012 accounted for 36% (242,559 tonnes) of total packaging waste recovered and 75% (€14.2 million)³³¹ of the total direct recycling expenditure. In 2012, the average support provided by Repak to household packaging waste recovery was €58.50/tonne.

By comparison, the quantities of commercial packaging waste recovered accounted for 64% (425,802 tonnes) of total packaging waste recovered and 25% (€4.6 million)³³¹ of direct recycling expenditure. In 2012, the average support provided by Repak to commercial packaging waste recovery was €11/tonne.

³³⁰ Repak Annual Reports 2006-2012

³³¹ Repak personal communications 26/06/2014

This reflects the higher subsidies paid by Repak to support the higher costs of household packaging waste recovery (mainly due to collection costs) as shown in Figure 7.13. It must be noted that Repak also differentiate between closed loop recycling (where the materials collected are used to make the same type of product), open loop recycling (a recycling process in which collected materials are made into a different product, generally lower grade) and energy recovery (e.g. Refuse Derived Fuel or RDF combusted in cement kiln or waste thermal treatment facilities³³²).

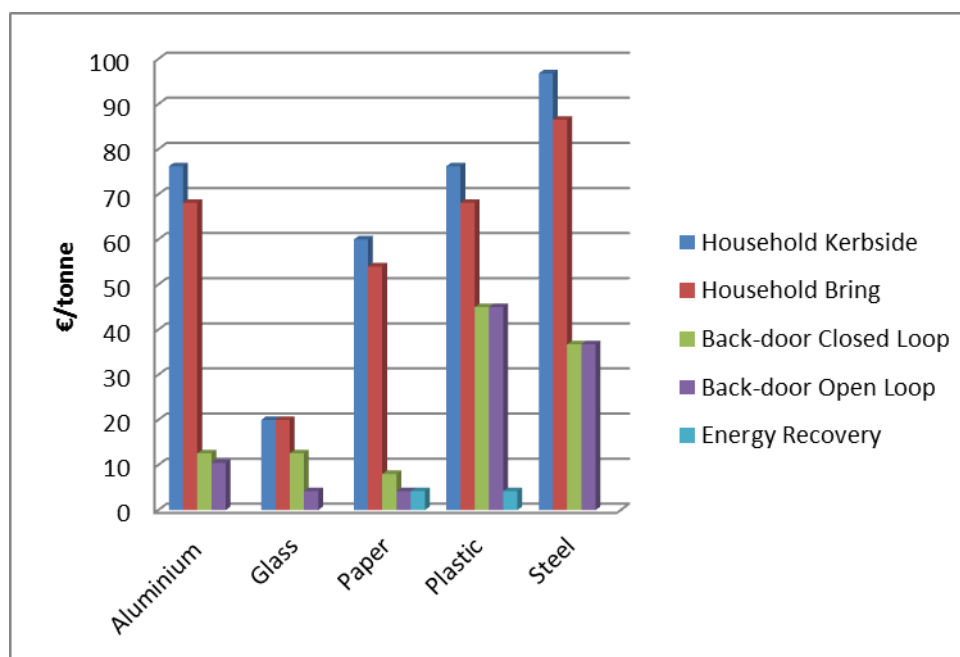
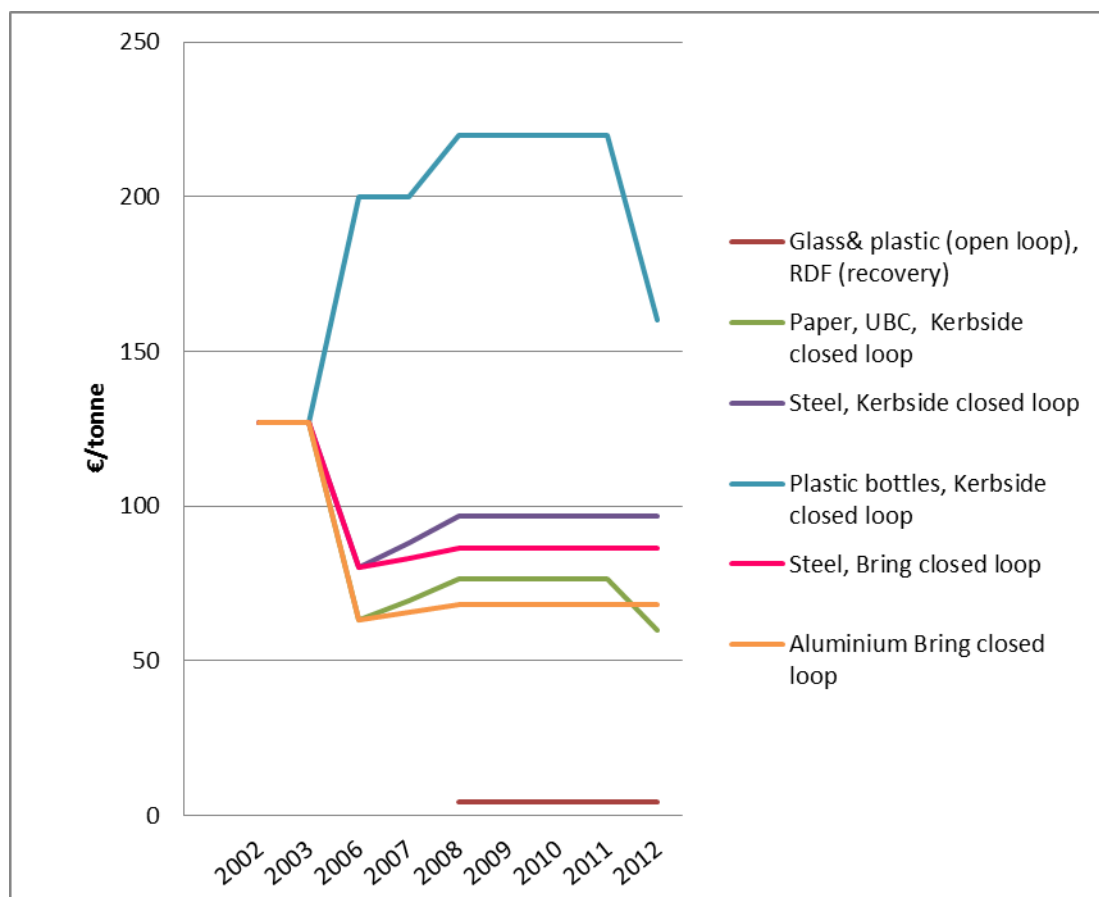


Figure 7.15: Packaging Material Recycled Subsidy Rate by Materials and Source 2012³³³

Figure 7.16 below shows the evolution of Repak subsidy by materials and source. It is interesting to note that for household waste the funding increased sharply in 2002 with a subsidy of €127/tonne to support the introduction of kerbside collection in Ireland. The subsidy rate was then differentiated to target specific materials.

³³² The Waste Framework Directive allows municipal waste incinerators to be classified as recovery operations provided they achieve a defined threshold of energy efficiency

³³³ Repak personal communications 18/06/2014



*Does not include subsidies for all materials by collection method

Figure 7.16: Household Waste Packaging Material Recycled Subsidy Rate 2001-2012³³⁴

It is the opposite for commercial/backdoor packaging waste, Figure 7.17 shows that the level of subsidy decreased for all materials except plastic and steel packaging.

³³⁴ Repak Annual Reports and personal communication

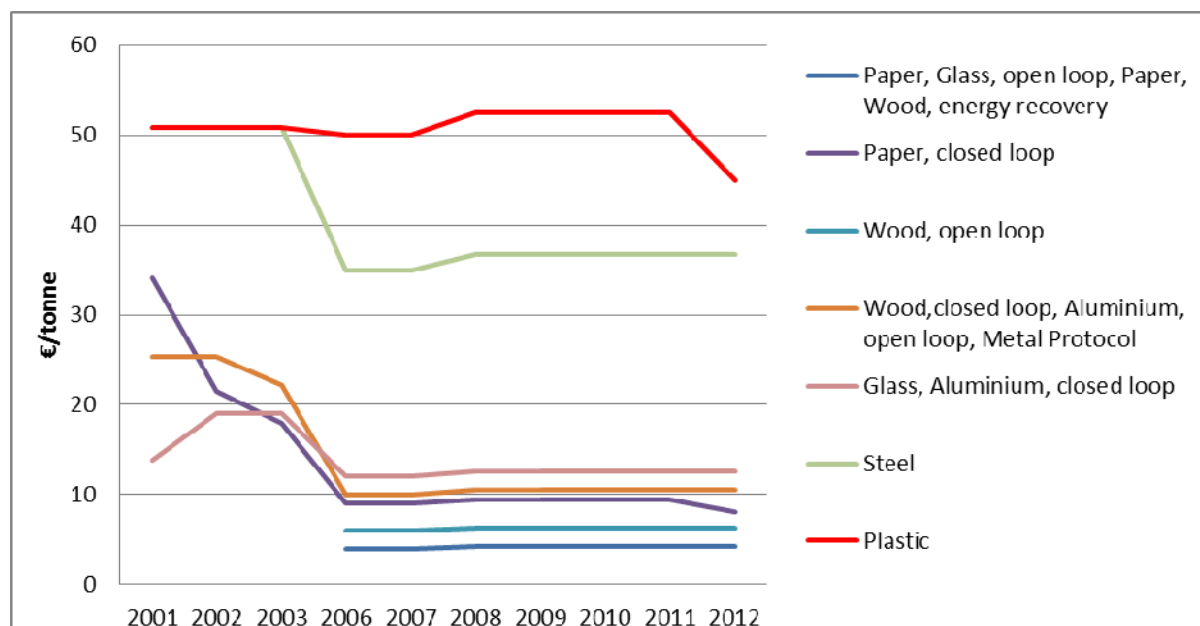


Figure 7.17: Backdoor Waste Packaging Material Recycled Subsidy Rate 2001-2012³³⁵

Repak also started funding energy recovery (Refuse Derived Fuel) in 2008. This is primarily sourced (c.80%) from the black bin and may be characterised as coming from the household waste stream. RDF is forecast to show high levels of growth over coming years, particularly with the increased in landfill levy and the coming online of R1 (recovery) waste-to-energy facilities. As the recycling and recovery targets were met in 2008, it is unclear why the level of subsidies did not reduce following the increase of the landfill levy which increased from €20/tonne to €50/tonne in 2011. There were subsidy reductions in some material groups in late 2011 however there have been further increases in the landfill levy since these subsidy reductions. It increased to €65/tonne in 2012 and to €75/tonne in 2013 and it is considered that further subsidy reductions could be made. In addition, in 2009, the EPA published guidance on municipal waste treatment obligations (EPA, 2009c). This guidance stipulated Biodegradable Municipal Waste (e.g. paper) limits in landfill intake as well as stability standards for treated Biodegradable Municipal Waste. These standards are increasing the costs of sending municipal waste to landfill as pre-treatment is expensive.

³³⁵ Repak Annual Reports and personal communications

7.5.9 Waste Packaging Recycling and Recovery

Figure 7.18 shows that the quantities of packaging recovered peaked in 2008 at 712,800 tonnes and decreased afterwards because of the economic downturn. However, the quantities of packaging recovered increased again in 2012 to reach 669,000 tonnes. This increase is likely to have been driven by a very significant increase in landfill levy between 2010 and 2012 (from €20/tonne to €65/tonne).

Paper/cardboard packaging accounted for 47% of all packaging materials supported by Repak in 2012, followed by glass and plastics at 19% respectively and then wood (12%) and metal (3%).

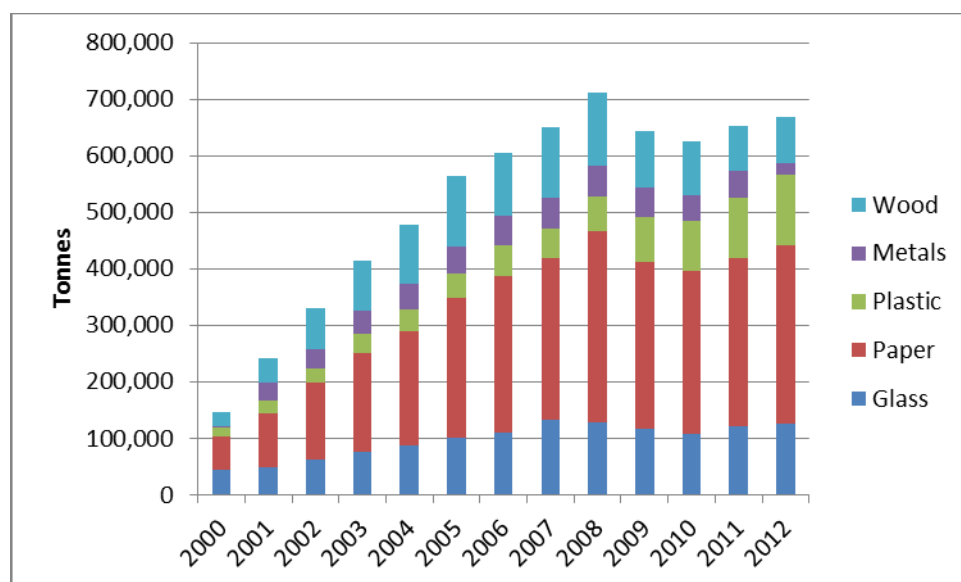


Figure 7.18: Quantities of Packaging Waste Recovered by materials 2000-2012³³⁶

In 2012, Repak data showed increases in packaging recovery/recycling for the following material types – plastic: 15%, paper: 7%, wood: 5% and glass: 3%.

The 15% increase in plastic packaging recovered primarily reflects strong growth in Refuse Derived Fuel. Over 87,000 tonnes of RDF were funded by Repak from contaminated paper

³³⁶ Repak Annual Reports 2001-2012

and plastic, which would have traditionally gone to landfill, representing an increase of 56% in 2012 versus the previous year.

7.6 SELF COMPLIANCE

Under the packaging regulations producers of packaging have the option to self-comply with the regulation requirements. The key point to note with self-compliers is that they only strive to meet their own targets, not the targets set for Ireland. There are also limited obligations and possibilities to contribute to education or awareness campaigns for the public.

Figure 7.19 shows how the main functions are allocated under the self-compliance regime. The producer has a more central role. The key difference compared with the compliance scheme regime is the more central role of producers.

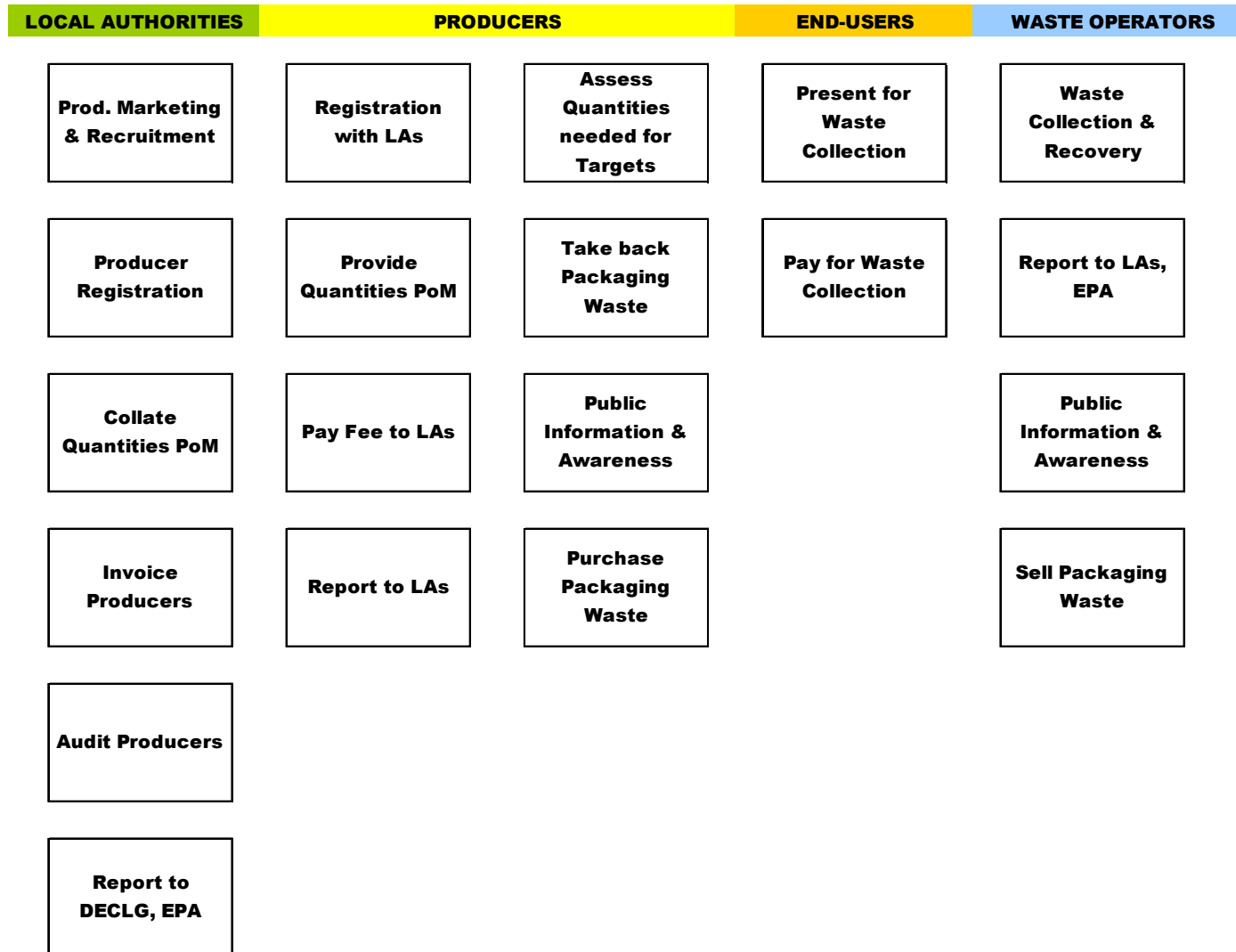


Figure 7.19: Overview of the Main Functions under Self-compliance

If a major producer chooses not to join Repak, they must register with their local authority and implement the following steps to fulfil their obligations:

- Apply for registration annually, in respect of each premises,
- Pay an annual fee of €15 per tonne of packaging waste supplied. The fee is subject to the limits of €500 minimum and €15,000 maximum,
- Provide adequate facilities for the public, free of charge, for acceptance, segregation and storage of packaging waste at their premises regardless of where it was purchased,
- Major producers who are importers or packer/fillers must achieve the recycling and recovery targets set in Article 11 of the Packaging Regulations (described in Section 2)³³⁷,
- Provide detailed quarterly statistics to the Local Authority on each type of packaging supplied and recovered from each of their premises,
- Prepare a plan specifying the steps to be taken to comply with the regulations,
- Make the above plans/reports available to the public on request,
- Display a notice at each entrance advertising take-back facilities, and
- Advertise take-back facilities in local papers twice yearly.
- Arrange for the collection of packaging on request to anyone whom the major producer's supplies.

Information on packaging self-compliers is gathered from local authorities and published by the EPA in the National Waste Reports for the years 2007-2011. Figure 7.20 compares the

³³⁷ This obligation is quite often omitted from local authority guidance documents on the Packaging Regulations.

quantities of packaging put on the market (2007-2011) and recovered (only 2009-2011 published) by the self-compliers.

In 2011, 139 self-compliers (representing 106 unique producers) put 57,462 tonnes of packaging on the market and recovered 20,423 tonnes of packaging waste (35.5%).

Four local authorities reported no registered self-compliers in their area in 2011 (Donegal, Leitrim, Sligo, Waterford County and Wexford). This was a change from 2010 when Sligo had 1 self-complier.

Local authorities reported that some self-complying producers also failed to provide all or some of their 2011 quarterly reports containing packaging recovery data, therefore the packaging recovered tonnage is an incomplete dataset.

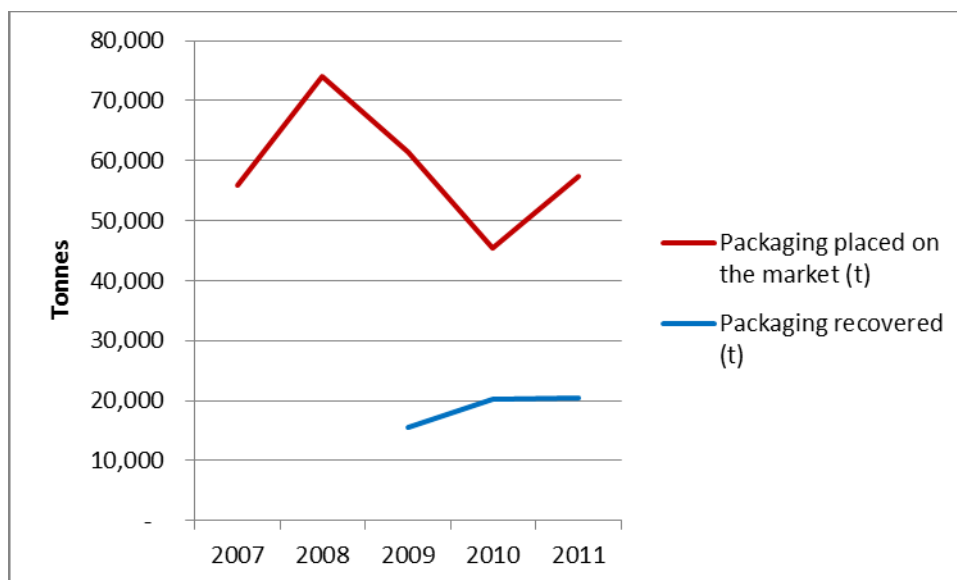


Figure 7.20: Self-compliers data 2007-2011³³⁸

³³⁸ EPA National Waste Reports 2007-2011

7.7 WASTE MANAGEMENT

7.7.1 Overview

The packaging waste management industry is comprised of a number of segmented activities shown in Figure 7.21: Generation, collection, separation, recycling and recovery, and disposal operations.

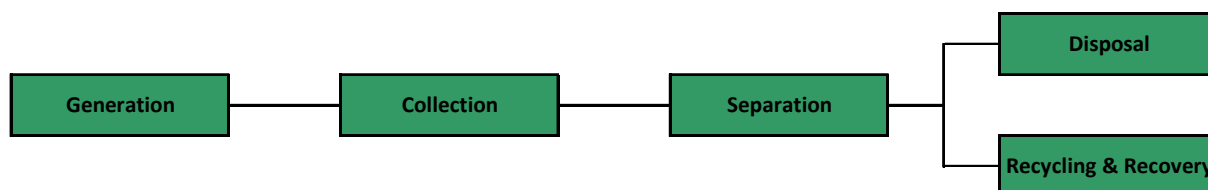


Figure 7.21: The Waste Management Industry

The DECLG³³⁹ Regulatory Impact Analysis - Household Waste Collection, published in 2012, estimated that the waste management industry, household, commercial and industrial, has a total annual turnover exceeding €0.5bn. The report also found that:

- The waste management industry is quite a fragmented industry, however this is changing owing to increased consolidation in recent times,
- The national household waste collection market is composed of a large number of local markets. These local markets overlap, in both the geographic and structural senses, and are connected with many other markets, including:
 - Commercial waste collection markets,
 - Regional, national and international waste treatment and disposal markets,
 - National and international markets for refuse derived fuel, solid recoverable fuel etc., and

- National and international markets for recyclates, and
- Several private sector household waste collection service providers exist, such as Greyhound, Panda, AES and Greenstar amongst others. AES is vertically-integrated along the chain of management of municipal waste, and as such, is present in several clusters of the waste markets. All four firms are present in the collection and treatment industries, with AES also in the disposal business.

Household waste collection was traditionally provided by local authorities, but in recent years their role has reduced. In 2011, 78% of household waste was collected by the private sector (EPA, 2013).

Owing to the economic downturn there have been a number of large private operators in financial difficulties in the past few years.

7.7.2 Value Chain

The costs and revenues to waste operators associated with the management of packaging waste in Ireland are shown in Table 7.2.

³³⁹ P8 DECLG (2012c) Regulatory Impact Analysis - Household Waste Collection. Accessed on 24/08/2012 at http://www.environ.ie/en/PublicationsDocuments/FileDownload_30784_en.pdf

Table 7.2: Costs and Revenues for Waste Operators

Costs	Factors Affecting Costs	Typical Costs (P. Bacon ,2008)
Collection from waste producers to MRFs*	Density of materials and mix Kerbside or drop-off Origin (backdoor or frontdoor) Population Density (e.g. urban / rural)	Kerbside Backdoor (commercial) €70/tonne Kerbside Frontdoor (household) €130/tonne
Processing at MRFs	Quality & contamination	€70/tonne for household waste ³⁴⁰
Transport from MRFs to recycling facilities	Variable Mainly road for recovery in Ireland. Include sea travel if export (except for Northern Ireland)	Up to €10/tonne for inland locations
Landfill		€130/tonne (incl. €20/tonne Landfill tax in 2008) ³⁴¹
Revenues		
Sale of segregated materials	Depend on raw materials prices	Estimated to an average of €80/tonne or 67% of the costs of collecting waste
Repak Subsidies	According to Repak depends on secondary materials market value, landfill levy and Repak strategic priorities	Average €12/tonne for commercial waste (17% of cost of managing waste) and €72/tonne for household waste (36% of cost of managing waste)

³⁴⁰ In general the quality of commercial recyclables is higher than that of household, hence the processing costs of commercial recyclables is lower.

³⁴¹ Repak reported in 2010 that landfill gate fee were at €30 /tonne (excl. Landfill tax). Landfill levy increased to €50/tonne in 2011, €65/tonne in 2012 and €75/tonne in 2013

		Average €33/tonne or 27.5% of cost of managing waste
Charges to customers	<p>Depend on waste type, presentation</p> <p>For household vary depending rural / urban locations</p> <p>For commercial depend on frequency of collection and quantities collected per lift</p>	The charges are mainly paid for residual household waste, but it is expected that some of this charge is used to cross subsidise recyclable collection – It was estimated to be €16 / tonne or 13% of the average cost

*MRFs: Materials Recovery Facilities

The key income stream to cover the costs of recycling is revenue earned from selling the materials that are recovered³⁴². The Bacon study estimated that the recycling of household packaging had a net cost of -€42/tonne and the recycling of commercial waste had a net revenue of €28/tonne.

If the operator decided to landfill the packaging waste it will result in the following additional costs:

- Household: €130/tonne for collection + €130/tonne for landfilling = €260/tonne
- Commercial: €70/tonne for collection + €130/tonne for landfilling = €200/tonne

7.7.3 Collection

The waste collection activity is the initial stage of a longer waste management process, involving waste disposal, treatment and the production and economic use of waste by-products.

³⁴² The Bacon study concluded that the fall in prices for paper, cardboard and plastics in 2008 could cost the Irish recycling sector €39 million.

Municipal and packaging wastes are collected for recycling and recovery via three main collection routes, commercial kerbside (62% of packaging waste), household kerbside (23% of packaging waste) and civic amenity sites/bring sites (15% of packaging waste) (Repak, 2012).

The **kerbside household waste collection** method is predominantly a two-bin service, which means that households are provided with one bin for residual and one bin for dry recyclables. In 2011 it was reported that 61% of households on a kerbside collection service were on a two-bin system, while 37% were on a three-bin service (residual bin, dry recyclable bin and organic bin) (EPA, 2013). The dry recyclables collection is generally collected free of charge. Most of the roll-out of the dry recyclables bin took place between 2002 and 2005, which resulted in increased quantity of household packaging waste collected and recovered.

Household packaging waste is collected mixed with other recyclables such as newspapers and magazines known in the industry as co-mingled collection. Initially household packaging waste collected by kerbside collections targeted mainly paper, steel and aluminium cans, but operators have now introduced plastic packaging materials (such as bottles and plastic films) and sometimes used beverage cartons. Some mixed recyclables collections also include glass, but this practice is not widespread. These materials require sorting at processing facilities (e.g. Materials Recovery Facilities).

Household waste is also collected separately at **bring banks and civic amenity sites**. The main types of packaging waste collected by these methods are glass, paper and cardboard, aluminium and steel cans, plastics. As shown in Table 7.3, the number of bring banks increased until 2008 to 1,989, but has been decreasing since 2009 to 1,891 in 2011. The number of civic amenity sites have been increasing steadily and reached 113 in 2011.

Table 7.3: Packaging Collection by Collection Method³⁴³

Collection Method	2005	2006	2007	2008	2009	2010	2011
% household serviced by two-bin system	N/A	N/A	N/A	95%	96%	95%	98%
Number of Civic Amenity Sites	79	86	90	96	107	107	113
Number of Bring Banks	1,921	1,919	1,960	1,989	1,962	1,922	1,891

N/A: Not available

Commercial kerbside recyclable collections are also collected using a two-bin service. However, packaging waste can also be collected separately from other recyclables where a wider range of plastics may be collected. In particular cardboard and packaging films such as LDPE tend to be collected separately for baling especially on larger commercial or industrial premises where high volumes are generated and storage space is available. Waste producers may receive a rebate/payment from waste operators for their recyclables depending on presentation, quantities for collection and market value.

7.7.4 Packaging Waste Recycling and Recovery

Two main routes exist for packaging recovery: mechanical recycling and energy recovery:

7.7.4.1 Mechanical Recycling

Following segregated collections, packaging waste is delivered to processing facilities or materials recovery facilities (MRF) where it is prepared for recycling. There are currently circa 20 MRFs in Ireland carrying out sorting of dry recyclables (rx3, 2009). Packaging waste is generally sorted, prior to bulking and transported for recovery to reprocessing facilities in Ireland or abroad. Currently most packaging waste is sent abroad. There are currently 16 MRFs in Ireland, with a variable level of reprocessing technology. The final stages of

³⁴³ EPA National Waste Reports 2005-2011

recycling generally takes place outside Ireland except for wood and plastics with 95% and 20% of total recovery of each material respectively. Most recyclable materials exported for recycling and recovery are green list materials and must follow the Transfrontier Shipment Regulations (TFS) procedure. This includes an annual administration fee (€250/annum) and a fee of €0.30/tonne for glass and €0.60/tonne for all other materials³⁴⁴.

7.7.4.2 Energy Recovery

In recent years there has been a significant growth in the use of refuse-derived fuels (RDF) in industrial boilers/furnaces (co-incineration). In 2008 a reported 88,000 tonnes of waste was used as a fuel, which grew to 259,429 tonnes in 2011. In 2008, the bulk of this refuse-derived fuel was timber, but in 2011, general municipal-waste-derived material was the dominant element (from processing of residual household and commercial bins) (EPA, 2013). There is now a national capacity to use over 267,875 tonnes of municipal-waste-derived fuels in national cement kilns. Such use replaces fossil fuel use, reduces the land-take for waste disposal and assists compliance with EU Packaging recovery targets and landfill diversion targets. A merchant municipal waste incinerator with a capacity of 200,000 tonnes per annum also commenced operation in 2011 and a further 600,000 tonnes per annum capacity is also planned in Dublin. Following the introduction of strict pre-treatment requirements for municipal waste sent to landfill and the increase of the landfill levy in 2011, much municipal waste is now exported for thermal treatment in Europe.

7.7.5 Unauthorised Waste Activities

The EPA indicated that in 2011 approximately 70% of occupied dwellings were serviced by waste collection services. In 2011, the national estimate of uncollected household waste was 276,665 tonnes (EPA, 2013). The uncollected household waste includes packaging waste that has been placed put on the market but which is currently not recovered. The new Government Policy Statement on Waste (DECLG, 2012a) aims to place the responsibility on householders to demonstrate that they are availing of an authorised waste collection service

³⁴⁴ Accessed on 04/06/2014 at

http://www.dublincity.ie/WATERWASTEENVIRONMENT/WASTE/NATIONAL_TFS_OFFICE/Pages/RevisedChargingStructureforAmberandGreenListedWaste.aspx

or are otherwise managing their waste in an environmentally acceptable manner, in accordance with legislation and the provisions of waste management plans, in order to combat illegal fly-tipping, littering and backyard burning of waste by a minority of households, and to avoid the compliant majority having to bear the costs of dealing with the consequences of such activities.

7.8 ENFORCEMENT

Local Authorities are responsible for the enforcement of the Packaging Regulations within their individual functional areas. The powers of the Local Authorities include the power to:

- Enter and inspect a premises,
- Serve a notice on an individual or company and require the production/ or proof of compliance through information and documentary evidence, and
- Take summary proceedings for an offence, and in the case of prosecution, recover the cost of the proceedings from the offender.

Table 10.1 shows the packaging producer responsibility inspections activities have reduced significantly since 2007.

Table 7.4: Producer Responsibility Inspection Activities by Local Authorities from 2007 to 2011³⁴⁵

Year	2007	2008	2009	2010	2011
Inspections	3,104	2,034	2,244	813	1,187*

* Not validated by the EPA

Local Authorities are also responsible for the permitting of recycling and recovery facilities located within their administrative area along with the permitting of the collection and transportation of recycled and recovered waste. Note, any facility recovering less than 50,000 tonnes per annum of non-hazardous municipal waste requires a certificate of

³⁴⁵ 2007 – 2008 data (EPA, 2009b), 2009-2011 personal communication with EPA 16/08/2012.

registration or a waste permit. For tonnages above this level an EPA waste licence is required.³⁴⁶

The EPA is responsible for licensing the major recovery operators. The EPA has supervisory control over all local authorities under Section 63 of the Environmental Protection Agency Act, 1992 and has been assigned a role in producer responsibility on a range of waste streams, including packaging. The EPA supports the role of the local authorities through the operation of the NIECE enforcement network discussed in Section 4.7.8.

Repak also contribute to enforcement activities by liaising with local authorities on self-compliers and non-compliers, and enforcing unlicensed use of the Green Dot by companies not members of Repak.

Economia estimated based on data provided by Repak that the number of non-compliers was about 1,050 in 2001, declining to an estimated 700 in 2004 and around 150 in 2008. According to Repak, 48 convictions have been secured by 8 Local Authorities over a ten year period, with the maximum fine being €15,000.

Under Section 10 of the Waste Management Act 1996-2012, non-compliance with the Packaging Regulations is liable on summary conviction to a fine not exceeding €3,000 and / or imprisonment of up to 12 months or on conviction on indictment to a fine not exceeding €15,000,000 and / or imprisonment for up to 10 years.

Awareness raising is also important to inform producers and buyers of their responsibilities and the risk of non-compliance. Local Authorities generally have prepared templates and guidance on various aspects of compliance with the Waste Management (Packaging) Regulations 2007. A Guidance Manual and Training Course has been prepared by the Environmental Services Training Committee which provides training for local authorities through its network of Training Centres. 6 courses have taken place and 64 participants have received training.

³⁴⁶<http://www.epa.ie/downloads/advice/process/New%20Licence%20Permit%20COR%20Tree%20-%20Private%20Section%20V15.pdf>

7.9 BENCHMARKING AND RECOMMENDATIONS

A benchmark review of the Packaging PRI has been undertaken and recommendations have been developed following this process. The review has included:

- A Review of relevant published information on packaging waste management in Ireland and abroad,
- Engagement with various stakeholders involved in the Packaging PRI³⁴⁷, and
- A review of the findings of national consultation.

7.9.1 Waste Management Performance

Ireland has achieved great success in recent years in recovering and recycling packaging waste. As shown in Figure 7.22 and Table 7.5, Packaging waste recovery rates have increased significantly since 1998 – up from less than 15% in that year to 79% in 2011. Ireland's current performance exceeds current targets for 2011.

However, while Ireland is in the top tier of the EU Member States for packaging recycling and recovery, some Member States exceed the Irish performance.

- For packaging recovery rates in 2011³⁴⁸ Belgium (97%), Germany (97%), the Netherlands (95%), Austria (91%) and Denmark (108%) were the best performers.
- For packaging recycling rates in 2011, Belgium (80%), the Netherlands (72%), Germany (72%) and Ireland (71%) were the best performers.

³⁴⁷ Repak, ERP, waste operator, self-compliant producer, IBEC representing compliance scheme members and self-compliers, EPA Office of Environmental Enforcement, EPA Resource Use Unit, and DECLG.

³⁴⁸ <http://www.euopen-packaging.eu/news-agenda/all-news/news/68-packaging-a-packaging-waste-statistics-1998-2011-.html>

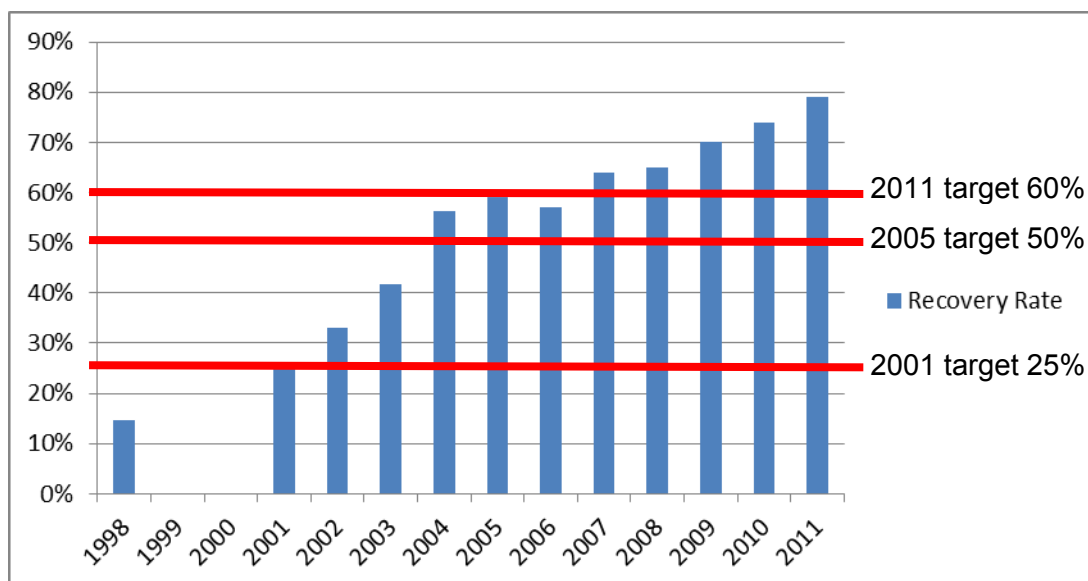


Figure 7.22: Packaging Waste Recovery Rates in Ireland

Table 7.5, below also shows that the 2011 materials specific Packaging Waste Directive Targets have been achieved.

Table 7.5: Progress towards EU Packaging Waste Directive Target³⁴⁹

Targets	2008	2009	2010	2011
60% as a minimum by weight of packaging waste will be recovered or incinerated at waste incineration plants with energy recovery.	65%	70%	74%	79%
55% as a minimum by weight of packaging waste will be recycled .	65%	65%	66%	71%
No later than 31 December 2011 the following minimum recycling targets for materials contained in packaging waste will be attained:				
(i) 60% by weight for glass ,	74%	76%	78%	81%
(ii) 60% by weight for paper and board ,	78%	81%	84%	92%
(iii) 50% by weight for metals ,	62%	50%	63%	67%
(iv) 22.5% by weight for plastics , counting exclusively material that is recycled back into plastics, and	28%	36%	39%	48%
(v) 15% by weight for wood .	77%	79%	83%	93%

Repak and its members are largely responsible for the achievement of the national targets. In 2011, Repak supported the recovery of 652,000 tonnes of packaging waste accounting for 95% of packaging recovered in Ireland³⁵⁰. Self-compliers had a very limited contribution.

³⁴⁹ DECLG, (2010d)

³⁵⁰ The EPA reported in the National Waste Report 2011 that 682,280 tonnes of packaging waste was recovered. This figure is derived from applying waste composition factors to the municipal waste recovered by waste operators).

Repak in their 2011 Annual Report stated that they financed the recovery of 652,000 tonnes. This figure is derived from packaging quantities sent for recovery submitted by the waste operators to Repak when they claim their subsidies. The packaging quantities from the waste operators are also calculated for each operator using waste composition factors agreed with Repak.

The success in achieving the targets is due to a combination of measures:

- Financial support from the packaging producers, PRO (introduced in 1997) and the Environmental Fund for the recovery of packaging waste,
- National Awareness campaign “Race Against Waste” (1999-2003),
- Landfill levy (introduced in 2002 and progressively increasing),
- Landfill bans for specified packaging materials from commercial sources (introduced in 2003),
- Obligation on producers to segregate packaging waste and have it recycled (introduced in 2003),
- Roll-out of household kerbside collection and development of bring banks and civic amenities infrastructure (2002-2004), and
- Enforcement (ongoing).

In addition, Ireland has also met the first EU Landfill Directive biodegradable municipal waste diversion target (due by July 2010), which was to landfill a maximum 75% of the biodegradable municipal waste generated in 1995.

There are a number of developments which should ensure that the existing packaging waste recycling and recovery target will continue to be met. The increase in energy recovery through the use of RDF/SRF in cement kilns and the thermal treatment of municipal waste at R1 (recovery) waste-to-energy facilities³⁵¹ could lead to an increase of up to 5% in the Irish packaging recovery rate.

At the same time, Ireland needs to be cautious that energy recovery does not have a negative impact on the recycling performance i.e. recycling will be sacrificed for the purpose of energy recovery. The use of the PRO financial incentives i.e. subsidies to waste

However Repak and the EPA methodologies differ which explain that the quantities of packaging waste recovered reported by the EPA is not equal to quantity recovered financed by Repak plus quantity recovered by self-compliers.

³⁵¹ Indaver estimated that up to 48,000t residual packaging waste in the MSW accepted will be recovered at the facility. Indaver Ireland Limited (2012)

management companies and hence market security for indigenous recycling and reprocessing facilities will be a useful tool to limit this negative effect.

7.9.2 Costs to producers

The cost to producers who are members of a PRO was €35.6 per tonne in 2012, these costs have reduced by approximately €10/tonne since 2010. These costs exclude any administrative costs to the producers linked to data collation and reporting to the PRO. As shown in Figure 7.23, when compared with other European countries, these costs are very much at the lower end of the spectrum. However a direct comparison of compliance cost may give an incomplete picture as costs may vary due to differences in packaging sources (domestic versus commercial), collection systems, the proportion of collection costs covered by the PRO, the recovery channels, and landfill levy (i.e. cost of alternatives) which are likely to vary by Member States.

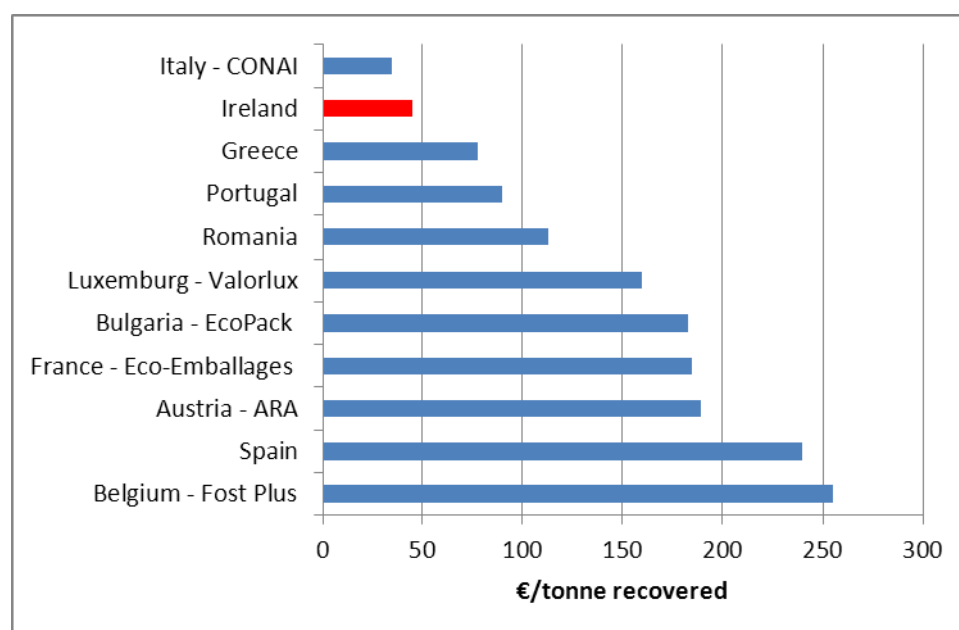


Figure 7.23: Producer Costs in other EU Member States³⁵²³⁵³

³⁵² Costs are calculated by dividing the total expenditure of the compliance scheme by the quantities recovered. Further details on these indicators are provided in Appendix C Working Paper on European PRIs.

The fees paid by self-compliers are not available from local authorities, therefore an estimate was calculated for a large self-complier (~2,440 tonnes) and a small self-complier (~22 tonnes) shown in Table 7.6. No similar European data was available for comparison. Certain figures are noted as limited, this is due to the site specific nature of certain aspects of self-compliance. From the table below it is obvious that partaking in the compliance scheme is possibly the most economically advantageous option for the small self-complier with costs reducing from €138 a tonne to €35 a tonne. Again these figures do not include administration costs which are likely to be lower if part of a compliance scheme. The cost difference between self-compliance and joining a compliance scheme for a large self-complier is mainly due to the low cost of taking back packaging waste, as the large self-complier benefits from high volume, its waste management costs are low. This is not the case for the small self-complier.

³⁵³ Year of data is 2010 for Hungary, Spain and 2011 for Austria, Belgium, Cyprus, France, Italy, Luxemburg, Portugal, Romania.

Table 7.6: Examples of Self-complier Compliance Costs³⁵⁴

Type	Large Self-complier	Small Self-complier
Packaging Waste put on the market	Cardboard: 2,000 tonnes Plastics: 300 tonnes Glass: 100 tonnes Aluminium: 20 tonnes Steel: 20 tonnes	Cardboard: 20 tonnes Plastics: 2 tonnes
Take-back obligations	1,292 tonnes	12.45 tonnes
Local Authority Fee	Max €15,000	Min €500
Advertising	€400	€400
Handling and storage costs associated with take back (assumed to be €5/tonne)	€6,458	€62
Waste management cost (depends on volume, segregation and type of packaging) ³⁵⁵	Limited	€1,540
Green Dot Costs	€25,474	€504
Total	€47,331 or €19.4/tonne	€3,007 or €137/tonne

7.9.3 State and Taxpayer Costs

The main sources of income to the State from the packaging PRI are:

³⁵⁴ In this scenario it is assumed that the self-complier meets its target by taking back packaging from customers. Costs are likely to increase if the self-compliers need to source packaging waste from waste management companies as they will have to pay a fee similar to Repak subsidy payments.

³⁵⁵ Large producers are likely to receive free collection for recyclables or to be paid a rebate by waste contractors if materials. For small producers €70 collection cost in Table 7.2 was used.

- The contribution that the self-compliers pay to the local authorities³⁵⁶, and
- The subsidies paid by Repak for the quantity of waste recovered collected by local authorities from kerbside, bring banks or civic amenity sites collection.

It must be noted that the landfill levy (applicable to packaging waste landfilled) and the plastic bag levy also generate revenues which are held by the DECLG Environmental Fund. This fund has been used to assist in the development of recycling infrastructure by the local authorities and for the costs incurred in the operation of the Recycling Centres.

Local authorities incur the following costs:

- Public packaging waste collection infrastructure (e.g. bring banks and civic amenities).
- Enforcement activities (813 inspections were carried out by local authorities in 2010 with associated enforcement actions and prosecutions initiated) and litigation costs³⁵⁷.
- Information and awareness.

As these costs and revenue are not easily accessible, it is not possible to calculate what proportion of the costs is recovered. However, one local authority confirmed that the Repak subsidies do cover the cost of collecting the bottle banks, but do not cover the cost of cleaning and maintenance of sites. For recycling centres, costs are dependent on each waste stream. Generally speaking Repak subsidies cover the cost of collection and processing by waste contractor but not the costs of providing the facilities, wages, rent for the site, electricity for the compactors, etc.³⁵⁸

³⁵⁶ In 2010, if every self-complier paid €15 / tonne for the quantity of packaging waste put on the market (45,387 tonnes) the contribution would be in the order of €680,000. This is likely to be an overestimation as there is maximum fee of €15,000 per self-complier.

³⁵⁷ Assuming two inspections per day, this equals 406.5 Man-days or a cost of €101,625 at €250/day.

³⁵⁸ Fingal County Council email 27/09/2012

7.9.4 Corporate Governance

Corporate governance must be assessed in relation to the two main stakeholders: the producers and the State. The issues related to Corporate Governance are examined in further details in Appendix F.

During the consultation phase, it was reported that a number of obligated firms have long-standing concerns over governance and transparency of the existing Packaging PRI³⁵⁹. In particular, the following issues were mentioned: board rotation, representativeness of board members and transparency.

Prior to the consultation the Repak Board of Directors was composed of 9 members in 2010. Four Directors were producers (from the Manufacturing / SME sector, the drink distribution sector, a food sector brandholder, from the retail sector) with another three being independent non-executive Directors. The Repak Chairman and CEO are also on the Board of Directors. The average length of service on the Board was over 9 years with the most recent appointment taking place in 2007 while the longest serving member was appointed in 1997.

It should be noted that since the consultation a number of changes have taken place on the Repak Board. A new Chairman was appointed in July 2013, new board members in October 2013 and a new CEO in April 2014.

Board Rotation

The analysis of the current directorships of Repak demonstrates that to date there has been limited rotation. The Memorandum of Articles of Association Repak Limited provides for Annual General Meetings (Article 9) and for the Appointment of Directors (Article 17). However the main point of Article 17 is that the board is reappointing itself on a rolling basis. Ideally, from a corporate governance point of view, there should be a transparent and independent appointment of the directors. There is no fixed best practice model as the appropriate length of tenure of a directorship will vary considerably from sector to sector and

³⁵⁹ IBEC Note 06/08/2012

depending on the nature of the company, its aims, ethos etc. This is also reflected in the Eversheds Report (2011) which concludes that adopting a rules-based approach to how long directors should serve is generally inappropriate.

Typically in companies where the directors are required to rotate the procedure would be that a portion (one quarter, for example) would be required to retire at each AGM and that those to retire should be those who have been longest in office since their last appointment. The new directors can then be elected by the members. The main advantage to obliging directors to rotate is that there is a guarantee that a fresh approach will be injected into a given Board at specified intervals, and that the Board is comprised of directors who are up to date with the latest technological and process developments.

Repak should have a plan for the rotation of board members. If mandatory rotation is the preferred option, retiring directors should be eligible for re-nomination and appointment to the Board up to a maximum of serving two consecutive terms or two terms over their life. We also recommend that Directors should not be permitted to sit on a Board indefinitely and consider that a maximum term of 10 years might be considered appropriate, subject to rotation (if applicable) as set out above. .

Board Representativeness

With regards to board representativeness, Article 16 of the Articles of Association provides for a maximum 20 Directors. There is therefore room to increase the number of Directors to increase representativeness. However, too many Directors could lead to very unwieldy board meetings and decision making. Therefore the balance of representativeness and number of persons must be considered carefully.

It is also not always advisable that the CEO is a director of the company (although this does occur fairly often in practice). From a corporate governance perspective the day to day management of the company should be undertaken by the executive of the company whilst the key strategic 'governance' is undertaken by the Board.

It is recommended to include a clause in the Code to the effect that the Board of each Scheme shall be representative of all relevant stakeholders, that any Board member who has resigned from or otherwise left a producer company shall immediately resign from the Board, and that each Board shall include a certain number of independent Board directors.

Transparency

With regards to transparency we note that the Repak annual report provides information on income, expenditure and how the expenditure is used. However, there is limited information on how the subsidy rate is calculated and agreed with the waste operators. This is an important share of the expenditure (83% in 2010) and would be of prime concern to Repak members. These procedures should be open and transparent in order to ensure that members of the compliance scheme, the Competition Authority and the DECLG can monitor them so as to ensure that appropriate techniques are being used.

Recommendations:

It is recommended that:

Repak provides more transparency on the procedures for the calculation of subsidies paid to waste operators.

Repak should have a plan for the rotation of board members. If mandatory rotation is the preferred option, retiring directors should be eligible for re-nomination and appointment to the Board up to a maximum of serving two consecutive terms or two terms over their life. We also recommend that Directors should not be permitted to sit on a Board indefinitely and consider that a maximum term of 10 years might be considered appropriate, subject to rotation (if applicable) as set out above.

State Monitoring

The mechanisms to ensure that the PRO is responsive to the DECLG are the schedule of conditions issued with Ministerial approval. We understand that Repak is currently complying with its terms and conditions and no particular issues were reported by the DECLG. Targets are met and audited accounts and annual reports are issued.

7.9.5 PRO Finance

The operational and financial planning of a PRO, in order to meet specific targets, can be challenging. Firstly, the quantities of packaging placed on the market and resultant

packaging waste generated vary annually. This is influenced by economic factors and technological developments. Secondly, the PRO must meet the target and additionally factor into the plan and budget for unforeseen events (e.g. higher quantities put on the market, failure of waste management system), but must take due care to not significantly exceed targets as it results in producers paying more for recovery and recycling than is necessary to achieve the targets.

Since 2009, Repak has been spending more than its income from producer fees. The deficit is covered by the contingency fund. The contingency fund was €14.9 million in 2012 or 63% of operational costs. This is currently below the general one year's operational costs to be held as a reserve to be set against recycling costs if the scheme ceases operating. It must be noted that no limits were specified in the Terms and Conditions issued by the DELCG in October 2013

In order to be financially sustainable Repak will need to increase income from obligated producers and/or reduce costs.

7.9.5.1 Increasing Income

There are two options to increase Repak's income. This can be achieved by increasing fees paid by producers who are already members of Repak or increasing the number of Repak's members.

Even though the current Repak membership fees seems to be at the lower end of the European spectrum, the option of increasing fees paid by producers, has to be considered carefully as it will increase producer compliance costs and may drive producers towards the self-compliance system.

As shown previously in Figure 7.5, the second option, the increase in Repak membership, has proven challenging. The change in the "*de minimis*" rule brought by the Waste Management (Packaging) Regulations 2007 did not bring the expected additional 3,000 members. The effect of a removal of this threshold proposed by Repak is examined further in Section 7.9.6. According to Repak³⁶⁰, the lack of enforcement is the main reason for the

³⁶⁰ Repak email 03.10.2012

ineffectiveness of the change in the “*de minimis*” rule. The issue of enforcement is examined further in Section 7.9.9, however it is clear that increased enforcement of non-compliant producers is required to help improve Repak’s finances.

7.9.5.2 Reducing Expenditure

There are a number of ways that Repak’s expenditure can be reduced. As most of the expenditure come from direct recycling costs as shown in Figure 7.11 a decrease in these costs are likely to have the most significant impact.

One option is for the DECLG to review the allocation of national targets between Repak’s member³⁶¹ and self-compliers. Assigning a share of the national targets to self-compliers based on the market share of packaging placed on the market could reduce Repak’s expenditure if Repak adjust its level of subsidies accordingly with the reduction of its obligations.

However, the performance of self-compliers (as a group) will need to be significantly improved in order to meet the packaging recovery targets. Recommendations made in 4.4.9 and 7.9.7 should assist in this regard.

Even if there is no change in the national targets’ allocation, Repak should consider decreasing the payments to waste operators. There are risks involved such as a reduction in Ireland’s performance in packaging waste recycling and recovery and an increased risk of falling below the thresholds set by the EU Packaging Directive. It would also reduce income from recycling for waste operators.

However, these risks are reduced because:

- The Packaging Directive Recycling and Recovery Targets were exceeded by a minimum of 11% for all materials in 2010,

³⁶¹ Currently notwithstanding the aggregate weight of packaging waste accepted by major producers (members of Repak) for recycling and recovery in accordance with Article 11 of the Waste Management (Packaging) Regulations 2007, Repak is responsible for the achievement of the national targets in accordance with its application for approval. This results in more demanding obligations for Repak’s member than for self-compliers or non-obligated businesses. Therefore Repak’s members must finance a larger share of packaging recovery than other obligated businesses.

- The landfill levy has increased from €30 to €50 per tonne in July 2011, €50 to €65 per tonne in July 2012 and €65 to €75 per tonne in July 2013 acting as a further disincentive to send packaging waste to landfill. This increase in landfill levy was not reflected in waste operators subsidy decrease.

If the subsidies were reduced in line with only the €10 per tonne increase in landfill levy in 2013, this would result in significant savings for Repak³⁶².

In addition, the decrease can be reversed at any time by the PRO if the recovery rate decreases significantly.

Other mechanisms could also be considered to reduce the direct recycling costs. Repak could examine the possibility of requiring the waste operators to tender for the subsidies. Whilst in a different context, the injection of competition has led to successful cost reductions for DSD in Germany³⁶³.

Recommendations:

It is recommended that Repak closes the gap between income and expenditure in order to maintain current levels of contingency funding. In order to do so:

- Repak should examine how to reduce direct recycling costs in order to balance income with expenditure. In particular in setting subsidy levels, the effect of the landfill levy should be considered.
- In combination with the improvement of the self-compliance system, the DECLG should investigate the allocation of a share of national targets to self-compliers.
- An increased enforcement of producers' obligations will also assist Repak's financial sustainability.

³⁶² Assuming an average 25% of packaging per tonne of residual waste landfilled, this is equivalent to a cost increase in $(€75-65)*25\%=€2.50$ per tonne of packaging landfilled. If this saving is applied to the tonnage recovered with Repak support in 2012 (669,000 tonnes), this results in €1,672,500 savings.

³⁶³ See p18 of Appendix A the German Packaging Example.

7.9.6 De Minimis Rule

The Brief Specific Requirements for the Packaging Waste Stream required that the economic and environmental implications of altering the “*de minimis*” rule be assessed.

First, we need to understand what the purpose of such changes would be. The change to the “*de minimis*” rule for obligated producers has a number of aims:

- Helping meeting increased recycling and recovery targets as implemented by Ireland in the Packaging Regulations 2007 or as recommended in the International Review of Waste Management (Eunomia, 2009) to help in achieve 75% packaging recycling.
- To spread the burden of compliance more equitably across all producers as proposed by Repak (2010, 2011b) in its submissions to the Proposed National Waste Policy.

By following Repak’s proposal for the removal of the current “*de minimis*” rule, all producers of packaging waste in Ireland would become “Major Producers”, irrespective of their size.

This proposal stems from the fact that Repak is responsible for achieving Ireland’s packaging recycling and recovery targets. Achieving higher targets becomes more and more costly as the marginal cost of recycling increases. Therefore an increased Repak income would in principle help increase support to waste management companies and recycling. Also Repak members are currently supporting the recovery of more packaging waste than they put on the market. 117% in 2010 and 125% in 2011, therefore some businesses (many self-compliers and all non-compliers) are not contributing their share.

The Statement on Regulatory Impacts on the Draft Waste Management (Packaging) Regulations 2007 (DECLG, 2007b) examined the effects of changing the “*De minimis*” thresholds for producers with a turnover greater than €1.27 million and who supply 25 tonnes to €1 million and who supply 10 tonnes.

In 2007, the Statement on Regulatory Impacts estimated that this change would affect 3,000 businesses and that 80,000 businesses would remain unaffected by the change in thresholds. While the number of businesses may have reduced due to the economic downturn, the proposed alteration of the “*De minimis*” rule will impact some of these 80,000 entities. The estimates for the number of businesses affected vary depending on sources (e.g. Repak in 2010 quoted an additional 11,000 approx. producers would become obligated

if the €1 million annual income threshold was retained, and a further 72,000 approximately if the income threshold was abolished).

The key implications listed by the Statement on Regulatory Impacts are summarised in 7.7.

Table 7.7: Implications of Altering the “*de minimis*” Threshold

Advantages & Benefits	Disadvantages & Costs
<ul style="list-style-type: none"> • Higher level of environmental protection by diverting more packaging waste from landfill • Encouraging the prevention and minimisation of this waste stream • Striking a better balance in terms of the responsibilities placed on those major producers • Provides increased funding to assist in accelerating packaging waste recovery levels, in particular packaging waste recovery from domestic households • Positive impact on Social Economy 	<ul style="list-style-type: none"> • Will impose additional costs on those producers that will be affected by the alteration in the <i>de minimis</i> threshold • Will have resource implications for local authorities in the performance of their enforcement functions • Possible competition issues with smaller entities finding themselves at a competitive disadvantage vis-à-vis larger enterprises

It is expected that the key implications of removing the current “*de minimis*” thresholds will be the same. However, a number of considerations must be taken into account:

- In 2007, when the Draft Waste Management (Packaging) Regulations 2007 were prepared, the EPA had published the 2006 packaging recovery data showing only 57.3% recovery rate for a 2011 target of 60%. The 2011 EPA packaging recovery data showed that the targets are well met with a recovery of 79% of packaging put on the market³⁶⁴. While EU level, it is expected that there will be new recycling targets, no new packaging targets have been set by the European Commission.
- While businesses below the “*de minimis*” thresholds are not confronted with recycling targets, they already have the obligations of segregating packaging waste on their own premises. Within this framework, the use of the Landfill Levy is likely to be a

³⁶⁴ In the Irish context, packaging put on the market is defined as packaging recovered + packaging sent for disposal

more effective tool to increase packaging recycling and recovery. It is unclear if the change in status will bring an increased recycling behaviour.

- It is interesting to note that the reduction in “*de minimis*” for major producers on 31st March 2008, led to a much lower increase in Repak membership (c. 150) than anticipated in the Regulatory Impact Assessment (3,000). As there was no central data on self-compliers at the time, it is not possible to assess the effect of the reduction in “*de minimis*” thresholds on the number of self-complier but the EPA estimated that in 2010 there were 106 self-compliers registered with local authorities. The increase in Repak membership and the number of self-compliers is much lower than the 3,000 businesses affected by the reduction in “*de minimis*” rule. Therefore with a removal of threshold it is unclear what proportion of businesses will comply and how this change can be enforced effectively and at what cost. Therefore it is unclear what net extra-revenue will be available to encourage recycling.
- The increase in numbers of major producers would have a very significant resource burden on Local authorities in meeting administration and enforcement requirements with the same number of staff. This may also distract attention from monitoring and enforcing larger producers. The removal in thresholds will not make enforcement more straightforward since it will increase the number of producers who are targeted by the policy.
- If more businesses become major producers, they will have their own recycling and recovery targets to achieve. Because these businesses will be small, it is unlikely that they will be able to achieve this using take back from customers, therefore, they are likely to join Repak. Depending on the proportion of businesses joining, Repak may see an increase in its income, while local authorities will see an increase in their enforcement functions.
- Industry stakeholders in the consultation process in the DECLG Statement of Regulatory Impacts and for the PRI Review were concerned with the issue of cost implications associated with the change in the “*de minimis*” rule under the revised packaging regulations. This cost could be in the order of €10 m.³⁶⁵

³⁶⁵ 2 hours to fill the registration form and report annually at €10 / hour + €100 registration fee = €120 / business multiplied by 80,000 = €9.6m.

Box 17: Example of costs to Businesses associated with removal of de minimis rule

The current minimum cost to be paid by a major producer is €500 to a local authority or €400 to Repak. Therefore we have assumed an average minimum fee of €100 per business to take into account that these businesses are smaller.

Businesses that are major producers must register and prepare an annual report. It was estimated that this will take 2 hours per business at €10 /hour.

Self-compliers may have additional costs linked to the take-back of packaging from customers.

Therefore the cost per business will be €120 or 9.6 m. for 80,000 businesses.

If businesses register with Repak the €100 contribution will be used for administration and supporting direct recycling cost

If businesses register with local authorities, the €100 contribution will be used for administration and enforcement.

Recommendations: In conclusion, it is not recommended to remove the “de minimis” rule as it will lead to cost increases to businesses, increase in administrative burden for local authorities without guarantees that it will result in an increase in recycling and recovery.

7.9.7 Self-compliance

Section 4.4.2 reviewing the performance of self-compliers found that the performance of packaging self-compliers has been poor with 25% recovery in 2009 and 44% recovery in 2010³⁶⁶. This is well below the Packaging Directive targets.

Section 4.5.2 made general recommendations applicable to the self-compliance system in general. With regards to packaging, there are some specific issues which are discussed in more detail.

The performance of the self-compliers is determined by their ability to take back at their premises packaging waste from the public regardless of where it was purchased. They must provide adequate facilities for the public, free of charge, for acceptance, segregation and storage of packaging waste. As most self-complying producers do not take back enough packaging waste from the public, they purchase packaging waste recovery evidence from waste operators.

This creates a monitoring problem for Repak which must ensure that the packaging waste recovery they are funding has not been allocated to self-compliers by the waste operator. Repak carries out audits of waste operators to ensure that there is no **double counting**, but without knowledge of what is used by self-compliers, there is room for abuse from the waste operators.

A number of stakeholders working with Packaging self-compliers have also reported that it has become difficult for packaging self-compliers to purchase the packaging waste recovery evidence from the waste operators as all the packaging waste recovery is allocated to Repak. If this is the case, this will have an effect on the performance of self-compliers as they will not be able to complement the quantities accepted from the public to achieve the packaging waste recovery targets. Obviously, self-compliers could outbid the Repak subsidies, but a waste operator may still decide to allocate all the packaging waste recovery to Repak to simplify Repak audits.

³⁶⁶ See Repak submission on self-compliance made to the Joint Oirachtas Committee

<http://www.oireachtas.ie/documents/committees3othdail/j-envherlocgov/correspondence/C2009-573.pdf>

One option which could solve both issues would be to adapt the self-complier reporting system to assess distance to targets and allow for financial compensation if the targets are not met. For example, each self-complier currently provides the local authorities with:

- The quantities of packaging waste accepted from the public,
- The quantities of packaging waste recovery purchased from each waste operator,
- The quantities put on the market.

With this information, it is possible to check if the self-complier is meeting the targets. If the self-complier is not meeting the targets, the self-complier should pay a sum based on the quantities missing (e.g. quantities by current Repak RPS subsidy). If this sum is paid to Repak, this will allow the self-complier to meet its obligations and Repak to receive funding for the excess quantities of packaging recovery they found.

Electronic reporting should be used as it would facilitate data sharing and data compilation. This system should be available to public authorities and Repak, thus facilitating the audit of waste operators by Repak and the reporting on self-complier performance.

As previously highlighted, the **cost of self-compliance** is comprised of the fee paid to the local authority, cost of packaging waste take-back and cost of green dot licence (where applicable). Table 7.6 showed that the costs vary depending on the size of the packaging producer. For large packaging producers, the cost per tonne of self-compliance is likely to be lower compared to the cost of Repak membership. However, for small producers the cost per tonne is likely to be higher when compared with Repak membership.

As a first step removing the minimum and maximum fee thresholds to ensure a level of contribution proportional to the quantity of packaging put on market would restore more balance. If applied to the example in Table 7.6 the large producer contribution would increase by 32% from €19.4/tonne to €25.6/tonne. However it will only have a limited effect on the small producer as the contribution would only decrease by 11% from €137/tonne to €122/tonne.

Recommendations: It is recommended to:

- Examine how the self-complier reporting system can be used to assess distance to targets and allow for financial compensation if the targets are not met.
- Review the fees paid by the self-compliers. In particular, this review should aim to provide a level playing field between large self-compliers, small self-compliers and compliance scheme members.

7.9.8 Information and Awareness

In comparison with other PRIs (e.g. WEEE, batteries, etc.), the packaging PRI is more mature as it was established 15 years ago. Significant information and awareness activities have taken place during this time. Based on quantities of packaging collected and recovered, public and business (as waste producers) participation in the recycling programme is very high. The current information and awareness programmes are now focused on maintaining awareness at current levels. The scope of awareness initiatives has also expanded into waste prevention targeting the public with the 'prevent and save' website and businesses through the Repak Packaging technologists targeting packaging manufacturers to reduce packaging. In addition, as recently illustrated by industry concerns³⁶⁷, there is a need to focus on reducing contamination and improving the quality of recyclables collected.

If the success of information and awareness of the packaging PRI is measured by its performance in achieving targets, it can be concluded that it has been very effective. However, it must be noted, the information and awareness initiatives were only one of the factors contributing to this success.

One of the key reasons for success was the shared responsibility in spreading the recycling message:

³⁶⁷John Dunne, Panda. Presentation at the National Waste Summit. 23.10.2012

- The DECLG Race Against Waste Campaign helped to raise general awareness with regards to the need to recycle,
- The local authorities have appointed Environmental Awareness Officers and in some cases Green Business Officers to encourage their citizens and businesses to use the infrastructure provided. Local authorities were instrumental in communicating to the public during the roll out of kerbside recycling collections. Other initiatives such as the Green Schools programme run by An Taisce also contributed.
- Repak has provided a range of integrated and targeted campaigns to increase specifically packaging waste recycling and recovery, and
- The EPA National Waste Prevention Programme has also been active by providing a number of social marketing initiatives to reduce packaging waste generation.

Whilst, the waste operators also played a role in raising awareness by providing information on the type of materials accepted in the recycling bin, this role was more limited. Awareness days would be carried out for larger blue chip or commercial customers and householders would be informed of material types to include in the recycling bin. Until recently, the waste operators may not have had sufficient incentive to motivate them to allocate resources to increase awareness. The introduction of competition in the market and the focus on low waste collection costs limited waste operators spend on information and awareness activities. The pricing system for residual waste (influenced by the landfill levy) has led to good public participation in the packaging recycling programme. However, recent issues of increased contamination of the household recycling bin is likely to lead to increased awareness initiatives from waste operators to improve the quality of materials collected as they are incurring the increased cost of contamination which is why action is being taken. Such initiatives include quality control at bin level, feedback to customers and penalty systems. Waste operators can communicate with customers at limited additional costs (e.g. awareness information can be sent to their customers with invoices).

While in other European Member States, the competition for the market in household waste collection provide public authorities with a mechanism to include awareness within the service provided by the waste operators. However, with the market structure in Ireland there is less scope for this awareness option.

The inconsistency in the types of materials accepted in the recycling bin is also limiting the effect of communication initiatives. The DECLG in combination with the waste operators should examine the possibility of rolling out a standard list of accepted items. This consistent

message should help to avoid customer confusion and improve the quality of recyclables collected.

The new waste policy document (DECLG, 2012a) may provide opportunities to address this through the Regulation of Household Waste Collection. The development of “customer charters” could include detailed information on PRI waste materials accepted and alternative collection system for PRI materials not accepted (e.g. WEEE and Batteries).

Recommendations: It is recommended that:

Provision of information to the waste producer is addressed as part of the Regulation of Household Waste Collection.

The DECLG in combination with the waste operators should examine the possibility of rolling out a standard list of accepted items.

7.9.9 Enforcement

Enforcement is an important instrument for ensuring the implementation of PRIs (OECD, 2001). The key enforcement challenge for the DECLG is to provide a framework which maintains a trade-off between effectiveness and administrative cost and also a dissuasive effect for non-compliers without going too far towards the imposition of disproportionate penalties.

While one might think that enforcement of the Packaging Regulations has been successful because the recycling and recovery targets are met, one indicator shows that there could potentially be a significant number of non-compliant businesses. The non-compliant businesses put compliant businesses at a competitive disadvantage and risk undermining the whole system.

It is estimated that 5,000 (EPA, 2009) to 5,200 (DECLG, 2007a) businesses were likely to be designated obligated major producers by the change in “de minimis” threshold under the Waste Management (Packaging) Regulations 2007. This was not reflected in the increase in Repak membership (circa 150 businesses) and the number of self-compliers registered (138 companies representing 106 unique producers). Therefore, we must assume that there are a

significant number of non-compliant businesses. Assuming the estimated increase in the number of producers (c. 3,000) due to the change in “de minimis” threshold in 2007 was correct, the enforcement does not appear to have been especially successful as it did not result in a significant increase in the number of compliant producers.

According to Repak³⁶⁸, there have been circa 50 prosecutions under the Packaging Waste Regulations between 1997 and 2010. These prosecutions have been secured by 8 Local Authorities, with Dublin City Council accounting for 64% of the prosecution. Most of the prosecutions have taken place prior to 2003.

The requirement for increased effort by the local authorities (and subsequent need for sufficient resources), in order to ensure that those subject to the Waste Management (Packaging) Regulations 2007 are compliant, was highlighted by the EPA (2009b) and Eonomia (2009). Increasing enforcement will require additional resources, which may be difficult to provide with the current public funding restrictions. Therefore, in addition to the recommendations made in Section 4.8³⁶⁹, the need for additional resources could be mitigated by:

- **Targeted enforcement actions** by local authorities at the estimated 3,000 producers known not to be a member of a compliance scheme or registered as a self-complier. Local authorities should consult the register of rateable property in their functional areas to identify businesses which may be obligated and also use intelligence work provided by the PRO.
- Setting **penalties** at an appropriate level to increase the risk to non-compliant producers. In the case of the Packaging PRI, while a conviction on indictment is likely to be a substantive deterrent for any producers, the summary convictions are not likely to be a significant deterrent. If we examine the example in Table 7.6 for a small producer, the annual cost of compliance is calculated to be €3,007. Therefore a summary conviction fine is less than the compliance fee for one year. Obviously

³⁶⁸ Repak email dated from 03.10.2012

³⁶⁹ For example, co-funding of enforcement by the compliance schemes, outsourcing of producers enforcement, centralisation of PRI enforcement and reallocation of enforcement resources freed by the use of shared services and the reduction in the number of regional formations.

there is a 12-month imprisonment which is quite substantial, but imprisonment is unlikely for an obligated producer putting small quantities on the market (e.g. 22 tonnes) and who is a first-time offender.

- The use of **civil sanctions** would also provide flexibility for the enforcement authority and reduce the cost of enforcement to public authorities.
- Improving the **identification of non-compliant producers** will also facilitate enforcement and reduce risk to the State. This would be facilitated if the list of compliant businesses was made publicly available. Currently, Repak publish a list of its members and some local authorities (e.g. Fingal County Council³⁷⁰) publish a list of self-compliers. Repak should continue to assist Local Authorities enforcement by facilitating the identification of non-compliant businesses. Section 4.8 also contains recommendations relating to the establishment of a central register for compliant businesses to allow more transparent and efficient tracking.

Recommendations: While the recycling and recovery targets are exceeded significantly, there are a significant numbers of obligated businesses which are not compliant with the Packaging Regulations. The non-compliant businesses put compliant businesses at a competitive disadvantage and risk undermining the packaging PRI. Therefore in combination with the recommendations made in Section 4.8, the enforcement effort on non-compliant packaging producers should be increased and prioritised.

7.9.10 Packaging Levy

The Brief Requirements for the Packaging Waste Stream required considering the feasibility, desirability and merits of a packaging levy as a method to reduce, reuse and recycle packaging and packaging waste. At the present time there is no packaging levy in Ireland. The issues above have been explored in details in Appendix G.

The introduction of a wide-ranging packaging levy is likely to generate a large number of costs – to the legislative process, to public administration, to business – with few, if any,

tangible benefits. It would be an example of double regulation, given the existence of the packaging EPR administered by Repak and the pricing of many externalities. This is not only likely to create additional administrative burdens on producers – which will be reflected in higher prices to consumers as well as putting Irish based business at a competitive disadvantage leading to job losses – but also result in suboptimal use of packaging, which performs many useful functions.

To avoid such problems, a packaging levy should only price existing unpriced externalities. In that way there would be no double regulation. However, the evidence suggests that there are few, if any, unpriced externalities and hence the potential for a packaging levy is limited. A packaging levy, given the administrative and other costs, is thus a less attractive option than it might be if more of the relevant externalities were unpriced. This does not mean that there may be narrow quite specific externalities where a levy could be introduced, such as the plastic bag levy.

Of course, it could always be argued that one option would be to replace one method of pricing these externalities with another (i.e. a packaging levy). However, in the face of no compelling set of reasons, this does not seem like sensible public policy. There are a number of practical administrative problems with this approach. For example, the pricing of some externalities is a matter for the EU and not the Member State.

To add a wide-ranging packaging deposit and return scheme to the current system is inappropriate in view of the operation of the existing EPR packaging scheme and proposed policies concerning household waste collection, combined with the high administrative costs of a deposit and return system and the limited experience with deposit and return schemes beyond drinks containers. There may be specific types of packaging waste or specific externalities, such as some forms of littering, where introduction of a deposit and return scheme might be appropriate. However, this would require careful examination through a cost-benefit analysis.

Recommendations: It is not recommended to proceed with the packaging levy as it is likely to generate a large number of costs, without resulting in significant environmental benefits as that there are few, if any, unpriced externalities with the current arrangements.

³⁷⁰ <http://www.fingalcoco.ie/Environment/WasteEnforcement/PackagingRegulations/>

7.10 CONCLUSIONS

The main findings from the PRI review for the packaging PRI are:

- Ireland has achieved great success in recent years in recovering and recycling packaging waste. One of the key reasons for success was the shared responsibility approach to the packaging PRI.
- Repak and its members are largely responsible for the achievement of the national targets. In contrast, self-compliers had a very limited contribution.
- The cost to producers who are members of a PRO was €35.6 per tonne in 2012, these costs have reduced by approximately €10/tonne since 2010. When compared with other European countries, these costs are in the lower end of the spectrum. However a direct comparison of compliance cost may give an incomplete picture as costs may vary due to differences in a number of factors.
- In the period 2009-2011 Repak spent more than its income from producer fees. The deficit was covered by the contingency fund. In 2012 expenditure was less than income. In order to preclude a reoccurrence of expenditure exceeding income it is recommended that Repak closes the gap between income and expenditure in order to maintain current levels of contingency funding. In order to do so:
 - Repak should examine how to reduce direct recycling costs in order to balance income with expenditure. In particular in setting subsidy levels, the effect of the landfill levy should be considered.
 - In combination with the improvement of the self-compliance system, the DECLG should investigate the allocation of a share of national targets to self-compliers.
 - An increased enforcement of producers' obligations will also assist Repak's financial sustainability.
- The self-compliance system is not performing well and should be improved. In particular the DECLG should:
 - Examine how the self-complier reporting system can be used to assess distance to targets and allow for financial compensation if the targets are not met.

- Review the fees paid by the self-compliers. In particular, this review should aim to provide a level playing field between large self-compliers, small self-compliers and compliance scheme members.
- With regards to corporate governance, Repak should have a plan for the rotation of board members and provides more transparency on the procedures for the calculation of subsidies paid to waste operators.
- While the recycling and recovery targets are exceeded significantly, there is a significant numbers of obligated producers (estimated to over 3,000) which are not compliant with the Packaging Regulations. The non-compliant businesses put compliant businesses at a competitive disadvantage and risk undermining the whole system. Therefore in combination with the cross-cutting recommendations on enforcement, the enforcement effort on non-compliant packaging producers should be increased.
- The review does not recommend removing the “de minimis” thresholds and introducing a packaging levy as it will generate a large number of costs, without resulting in significant environmental benefits.

8 ELV PRODUCER RESPONSIBILITY INITIATIVE

8.1 INTRODUCTION

This section and related appendix examines the following issues for the end-of-life vehicle (ELV) producer responsibility initiative:

- The suitability and effectiveness of the current statutory and regulatory arrangements particularly when compared against best practice in other Member States,
- The effectiveness of the current competitive dynamic in the ELV waste stream where PRI operates and how it can be maximised (i.e. existing schemes enhanced and / or additional schemes made subject to PRI) to increase competition, lower costs for producers and lower the potential for free-riders, and also bearing in mind the potential increase in costs which might arise due to the increases in the number of compliance schemes,
- The costs of recycling for Irish producers, including both the actual costs of recycling and the administrative costs of the compliance scheme,
- The effectiveness of the current use of information and awareness within the PRI and recommendations for its enhancement, and
- The suitability, availability and quality of waste recycling infrastructure and services, which are present in Ireland and relevant to PRIs including the practical potential for the use of emerging technologies.

It also answers requirements which are specific to the ELV producer responsibility initiative, namely:

- An examination of all aspects of the end-of-life vehicle system currently in operation is necessary and recommendations are required on how to improve the structure and environmental outputs of the end-of-life vehicle system.
- Examine examples of best practice for managing the end-of-life vehicle process in other Member States.
- Recommendations shall be provided for systems, including funding & reporting systems, which could be adopted for use here.
- As part of these recommendations, we require an analysis of the most beneficial uses for Auto Shredder Residue (ASR).

- A recommendation is also required as to whether a system of arrangements could be put in place that would benefit from the establishment by the producers (motor vehicle manufacturers) of a compliance scheme which would have responsibility for the oversight of the system and meeting the EU targets.
- Details regarding the regulatory regime, data collection, the option of self-compliance, information and awareness, and other relevant issues should also be provided.

8.2 POLICY FRAMEWORK

Directive 2000/53/EC of the European Parliament and of the Council on 18th September 2000 on end-of-life vehicles³⁷¹ applies to vehicles and end-of-life vehicles, including their components and materials. Directive 2000/53/EC defines 'end-of life vehicle' as a vehicle which is waste within the meaning of the Waste Framework Directive³⁷².

The overall aim of the ELV Directive 2000/53/EC is to minimise the impact of ELVs on the environment. This is principally achieved at the 'design phase' where the use of certain hazardous materials in the manufacture of new cars is controlled and at the 'waste phase' where appropriate treatment systems are conducted.

The EU ELV Directive sets out specific targets which are to be met by each Member State relating to the reuse, recycling and recovery of ELVs. The targets for each Member State are:

- By 1 January 2006 a minimum of 80% reuse and recycling and a minimum of 85% reuse and recovery; and
- By 1 January 2015 a minimum 85% reuse and recycling and a minimum of 95% reuse and recovery.

³⁷¹ Accessed on 03/09/2012 at

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2000:269:0034:0042:EN:PDF>

³⁷² Article 3(1) of the Waste Framework Directive defines waste as 'any substance or object which the holder discards or intends or is required to discard'.

There are basically two main routes to achieve the recycling rates targeted by the Directive: promoting more complete dismantling; or using post-shredder treatment technologies (PST) to treat automotive shredder residues. The Waste Management (End of Life Vehicles) Regulations 2006-2011 (S.I. No. 282 of 2006³⁷³, S.I. No. 661 of 2011³⁷⁴) which entered into force on 8th June 2006 transposes Directive 2000/53/EC. For the purpose of brevity, the Waste Management (End of Life Vehicles) Regulations will be referred to as the “ELV Regulations” below.

There are a number of other relevant regulations that complement the aims and objectives of the ELV Regulations. These are:

- **Landfill levy:** With effect from 1st July 2012, the Minister for the Environment, Community and Local Government increased the landfill levy, using the power available to him under the Waste Management Acts. The Waste Management (Landfill Levy) (Amendment) Regulations 2012 (SI No. 221 of 2012) increased the landfill levy by €15 to a total cost of €65 euro per tonne for each tonne of waste disposed of at authorised and unauthorised landfill facilities. The Regulations also removed the exemption from the levy for non-metallic residues arising from the shredding of end-of-life vehicles, white goods and other metal waste.
- **Waste Management Acts 1996-2011:** The Waste Management Acts include requirement for waste management planning, waste collection and movement, authorisation of waste facilities, measures to reduce the production of waste and measure to promote the recovery of waste. The Waste Management Acts also divide responsibility for the regulation of waste between the Local Authorities and the Environmental Protection Agency. Articles 53B, 53C and 53D introduce requirements relating to ELVs.
- **European Communities (Waste Directive) Regulations, 2011, S.I. No. 126 of 2011:** These Regulations provide for measures to protect the environment and human health

³⁷³ Accessed on 03/09/2012 at

<http://www.environ.ie/en/Environment/Waste/ProducerResponsibilityObligations/EndOfLifeVehicles/RHLegislation/FileDownload,1435,en.pdf>

³⁷⁴ Accessed on 03/09/2012 at

<http://www.environ.ie/en/Environment/Waste/ProducerResponsibilityObligations/EndOfLifeVehicles/RHLegislation/FileDownload,29231,en.pdf>

by preventing or reducing the adverse impacts of the generation and management of waste and by reducing overall impacts of resource use and improving the efficiency of such use by substantially amending the Waste Management Acts and transposing Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain directives, referred to in these Regulations as the waste directive. Of particular relevance to the ELV management systems are the articles relating to waste hierarchy, by-products, end-of-waste List of waste, extended producer responsibility, re-use and recycling, control of hazardous waste, ban of mixing of hazardous waste landfilling of hazardous waste.

- **Waste Collection Permit Regulations³⁷⁵**: Apart from where specified exemptions exist, the collection of waste on a commercial basis requires a waste collection permit from a relevant local authority in accordance with Section 34(1) of the Waste Management Act 1996 (as amended). The Regulations set out procedures for the making of permit applications, public consultation, consideration by local authorities of submissions in relation to permit applications, and the grant, refusal and review of permits by local authorities. Offaly County Council has been appointed the National Waste Collection Permit Office and is responsible for issuing waste collection permits nationally.
- **Waste disposal and recovery activities** in Ireland are required to hold an authorisation in accordance with the Waste Management Acts, 1996 to 2011. A three tier system of authorisation has been established for the regulation of such activities at a facility. A waste recovery or disposal activity at a facility is either:
 - A Waste (or IPPC) licence, or requires
 - A Waste Facility Permit, or requires
 - A Waste Certificate of Registration / Registration Certificate.

In very exceptional and highly specific circumstances, certain activities can be deemed an exempted activity (i.e. no waste authorisation required).

The principal legislative texts governing the form of authorisation required for waste facilities are:

- Waste Management (Licensing) Regulations 2004 to 2011

³⁷⁵ Waste Management (Collection Permit) Regulations 2007 & S.I. No. 87/2008 — Waste Management (Collection Permit) (Amendment) Regulations 2008

- Waste Management (Facility Permit & Registration) Regulations 2007, as amended³⁷⁶

Depending on the authorisation required these activities are controlled either by the Environmental Protection Agency (EPA) or by Local Authorities within their own areas. All non-exempted Local Authority waste facility activities are regulated by the EPA.

- **Batteries Regulations:** The substance restrictions in Part I of the Batteries Regulations (for the use of mercury and cadmium) indicate that these apply without prejudice to the ELV Regulations, which means that the prohibitions contained in Part II of the Batteries Regulations do not apply to batteries covered by the ELV Regulations³⁷⁷.
- **TFS (TransFrontier Shipments) Regulations:** Commission Regulation (EC) No. 1013/2006 on transfrontier shipments of waste, which sets out new notification procedures, specifies revised waste listings and strengthens enforcement provisions in relation to waste movements within, into and out of the EU. All transfrontier shipments of waste originating in any local authority area in Ireland are subject to the prior written notification procedures and must be notified to Dublin City Council at the National TFS Office established to implement and enforce the Regulations.
- **The Waste Management (Registration of Brokers and Dealers) Regulations 2008 (S.I. No. 113 of 2008):** These Regulations deal with the regulation of waste contractors who never actually take physical possession of waste but arrange for its shipment nationally and internationally, or buy and sell waste as a commodity. These regulations amend the Waste Management (Licensing) Regulations 2004.
- **Waste Management (Shipments of Waste) Regulations 2007, S.I. No. 419 of 2007:** The purpose of these Regulations is to streamline the administration of the Transfrontier Shipment of Waste legislation in Ireland so as to provide a better and more consistent level of implementation generally. They provide for the designation of Dublin City Council as the National TransFrontier Shipment Office (NTFSO) responsible for the implementation of the Waste Shipments Regulation (EC) No. 1013/2006 in Ireland with effect from 12 July 2007.

³⁷⁶ S.I. No. 821/2007 — Waste Management (Facility Permit and Registration) Regulations 2007 & S.I. No. 86/2008 — Waste Management (Facility Permit and Registration)(Amendment) Regulations 2009

³⁷⁷ Commission Services Document (April 2008) Questions and Answers on the Batteries Directive (2006/66/EC)

- **POP Regulations:** An objective of the Persistent Organic Pollutant Regulations (Statutory Instrument (S.I. 235 / 2010) and EC Regulation 850/2004³⁷⁸ is the protection of human health and the environment by prohibiting, phasing out as soon as possible, or restricting the production, placing on the market and use of POPs listed in the Convention and Protocol. In 2010 the annexes to the EU POPs Regulation were amended to include additional new POPs substances (EC Regulations 756 and 757 of 2010³⁷⁹). The presence and concentration of these new POPs will have an impact on how wastes containing them will be managed. The European Commission, in facilitating the addition of these new POPs to the Regulation has undertaken a study (BIPRO.2011) to estimate the levels of these substances in a variety of wastes. This study has highlighted that there is a potential for the newly regulated POPs to impact on the management of specific wastes including shredder residue which has been identified as one of the wastes that may contain PBDEs (Polybrominated diphenyl ethers). One of the main intentions of the Commission study is to justify proposals for low POP concentrations limits for these new POPs, above which such wastes will be required to be managed as POPs wastes.
- **Irish Road Traffic Regulations:** The Road Traffic (Construction, Equipment and Use of Vehicles) Regulations 1963 set out specific requirements for all vehicles using Irish public roads. In particular these Regulations prohibit the use of a vehicle on Irish roads if it represents a danger to any road user. This in some cases may be true of a written-off vehicle. The Road Traffic (Public Service Vehicles) (Amendment) Regulations, 1998 defines “qualified person” who is an appropriate person to assess the fitness and safety of a mechanically propelled vehicle.

³⁷⁸ Regulation (EC) No 850/2004 of the European Parliament and of The Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC

³⁷⁹ Commission Regulation (EU) No 756/2010 of 24 August 2010 amending Regulation (EC) No 850/2004 of the European Parliament and of the Council on persistent organic pollutants as regards Annexes IV and V and Commission Regulation (EU) No 757/2010 of 24 August 2010 amending Regulation (EC) No 850/2004 of the European Parliament and of the Council on persistent organic pollutants as regards Annexes I and III. Accessed on 03/09/2012 at http://ec.europa.eu/environment/pops/index_en.htm

8.3 OVERVIEW OF THE ELV SYSTEM

Currently, the ELV system overlaps with waste management legislation and Road Traffic legislation.

When a vehicle has reached an “end-of-life” status the registered owner is legally obliged to deliver the vehicle to an Authorised Treatment Facility (ATF). Following this, the registered owner is issued with a Certificate of Destruction (COD). The records on the National Driver Vehicle File (NDVF) are then updated by the Department of Transport, Tourism and Sport (DTTAS). When the NDVF records the vehicle as scrapped (a COD issued to the registered owner of the vehicle), certain transactions cannot be processed for that vehicle (e.g. renewal of motor tax, change of ownership etc.).

The ATF is obliged to depollute the ELV of hazardous components and remove parts for recycling and recovery. The depolluted vehicle hulk is then sent for further treatment to a shredder facility.

Following the shredding process, the shredded materials are separated into ferrous metals, non-ferrous metals and Auto Shredder Residues (ASR). The scrap metal is sold, while the residues which have a negative value are disposed in landfill. Post Shredder Treatment (PST) and thermal treatment technologies can also be used for further recycling and recovery of shredder residues. Without the processing of the shredder residues, the ELV recycling rate is likely to be limited to 75-80%, including dismantling, reuse, of spare parts and metal recovery at the shredder plants. Appendix H provides details of further ASR recovery processes.

Figure 8.1 gives an overview of the economic operators and stakeholders in the ELV waste management system.

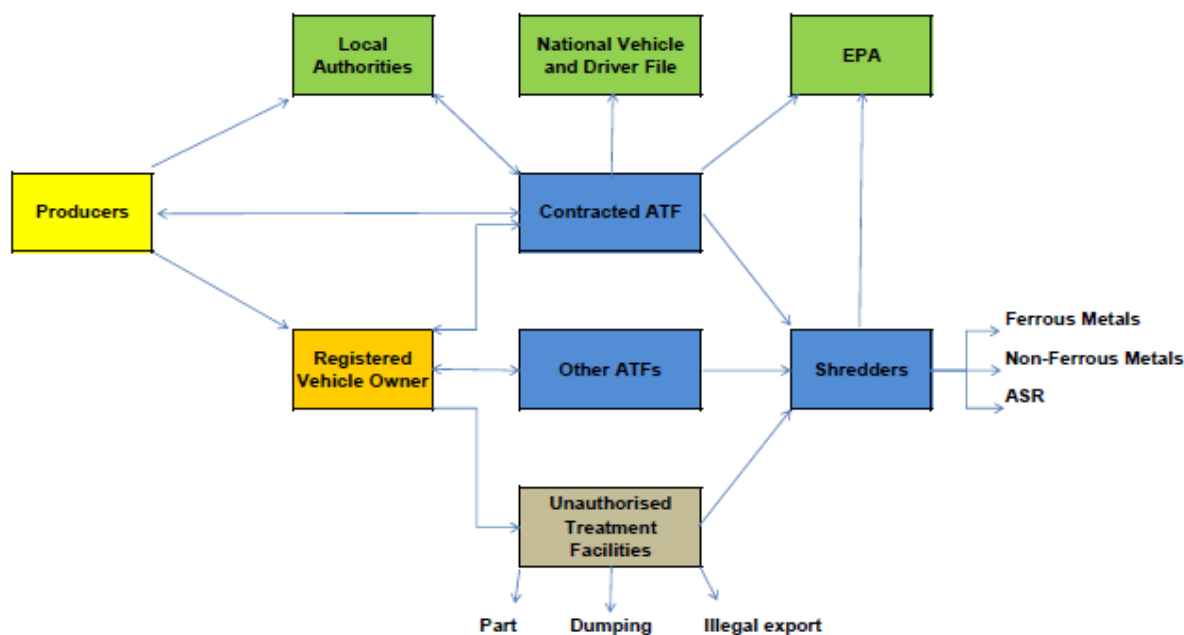


Figure 8.1: Overview of Economic Operators in ELV Waste Management

8.4 THE STATE

Central government through the DECLG performs a number of services that are important to the effectiveness of the ELV producer responsibility initiative. In particular, the DECLG is responsible for:

- The transposition of the ELV Directive into Irish Regulations. This involves assigning targets achievement to the producers, deciding on the structure in which the responsibility initiative will be implemented (e.g. voluntary / regulatory, self-compliance only or compliance scheme, etc.),
- The monitoring of target achievement. In this role the DECLG is assisted by the EPA for data collection and reporting.

The DECLG is also responsible for setting the overall national policy and regulatory framework (waste permitting, enforcement, etc.) in which the producer responsibility initiative operates.

The DECLG is assisted in its role by implementation bodies such as local authorities (monitoring and enforcement of self-compliers, permitting and enforcement of waste operators, TFS) and the EPA (competent authority for the implementation of the prohibited substances, waste statistics, guidance and enforcement of waste operators).

The DECLG has a role in relation to CODs and also handle public and DTTAS queries on ELVs.

The DTTAS has a wide range of functions relating to roads. These include:

- The promotion of the safer use of roads through a combination of policy, education and legislative measures.
- The promotion of road safety.
- The overseeing activities of implementing agencies (The Road Safety Authority (RSA), the National Roads Authority (NRA) and local authorities).
- The legislative framework governing motor insurance and for monitoring the cost and availability of motor insurance in Ireland.
- Motor Tax / Vehicle Registration through the management of the National Vehicle and Driver File (NVDF). This database is central to the processing of motor tax and driving licence business through which in excess of 1 Billion euro is collected annually. The NVDF also fulfils legal obligations in relation to the national driver and vehicle registers.

8.5 PRODUCT / WASTE CHARACTERISTICS

Article 4(3) of the ELV Regulations defines an ELV as a specified vehicle which is discarded by its registered owner as waste. Article 4(3) also makes reference to Article 4 of the Waste Management Acts and article 1(a) of the Waste Framework Directive (75/442/EEC). The term “specified” vehicle is also defined in article 4(3).

The vehicles specifically targeted by the ELV Regulations are:

- Motor vehicles with at least four wheels for transporting passengers and with a maximum of nine seats (category M1);
- Motor vehicles with at least four wheels for transporting goods which weigh no more than 3.5 tonnes (category N1); and
- Three wheel motor vehicles.

Typically, an ELV will be a passenger car or a light commercial van that the registered owner wishes to dispose of as waste. The ELV Regulations apply to both new and second-hand vehicles which have been professionally imported.

Vehicles with more than eight passenger seats, goods vehicles over 3.5 tonnes and a number of other vehicle types are excluded from the scope of the Regulations. These provisions result in motorcycles, trucks, lorries, tractors, larger mini-buses and other similar equipment not to be subject to the ELV Regulations. Therefore importers and operators of dismantling facilities involved solely with such vehicles need not to comply with the specific provisions of the ELV Regulations. However, they would still have to treat any waste arising from their process in an environmentally sound manner in accordance with the waste hierarchy.

Contrary to packaging waste, ELVs can be easily identified by brand and the brand can be assigned to a producer. The average age of an ELV in Ireland was 12.65 years in 2007 (RPS, 2010). The composition of an ELV is complex as shown in Table 8.1.

Table 8.1: Average Composition of an ELV

Material	% of Total Mass	
	Range*	Ireland**
Ferrous metal	65.4 - 71	69.4
Non-ferrous metals	7.0-10.0	6.3
Plastics	7.0-9.3	6.7
Rubber (incl. Tyres)	4.0-5.6	4.7
Glass	2.9-3.0	2.3
Fluids	0.9-6.0	0.9
Battery	1.0-1.1	0.9
Process polymers	1.0-1.1	7.4
Electrical electronics	0.4-1.0	0.0
Other	1.0-5.9	2.3

* Vermeulen et al., 2011

** RPS, 2010

A range of wastes may arise as a result of the depollution and treatment of ELVs. Appendix I, though not exhaustive, provides the most likely residual wastes arising from ELV treatment.

According to a study carried out in 2006 by GHK for the DG Environment, the nature of ELV arisings in 2015 compared to 2006 in terms both of weight and composition will have changed.

The share of an ELV by weight accounted for by plastics and aluminium is expected to increase at the expense of ferrous metals, because plastics are lightweight and have some desirable mechanical and physical properties resulting in the reduction of the total mass of the car and of its fuel consumption (GHK, 2006). According to Zorpas (2012) the trend for the next 5 years is of an increase of plastics (about 15%)³⁸⁰ and non-ferrous metals (about 10%), resulting in a reduction of 8% in weight of ferrous metals, which will reach a final value of about 60%.

However, while more lightweight materials are being used, statistics show that vehicles are also increasing in size, with the average weight of an ELV, despite the use of lighter materials projected to increase from 951 kg in the baseline to 964 kg in 2006 and to 1025 kg in 2015 (GHK, 2006).

These changes in vehicle composition and weight are driven by a range of factors such as:

- Safety,
- Fuel efficiency,
- Consumer preferences.

GHK also reported that part of the reason for the move from ferrous (steel) to non-ferrous (aluminium) metals in construction has been to increase the value of ELVs, thus enabling some financing of the take back provisions and related treatment. The possibility of future vehicle design changes as a result of the ELV Directive cannot be ruled out, but the pressure of other drivers means that it can only be one of several factors for change.

There is also an increasing share of electrical vehicles, but the producers' trade association, the Society of the Irish Motor Industry (SIMI) members do not expect significant change in the overall composition of ELVs due to this trend.

With regards to the reduction of hazardous substances, there is limited information publicly available. A report published by the European Parliament (2010) found that there is no

³⁸⁰ Some commentators expect the share of plastics to reach 20% in the future Identiplast conference 2012, Tom Emans European Plastics Recyclers (EuPR)

evidence suggesting that requirements of Article 4 of the ELV Directive (ban of certain hazardous substances (Cd, Hg, Pb, and CrVI) in new cars) are not fulfilled as the internal quality assurance systems of the manufacturers allow compliance monitoring of these provisions. However, when the report was published no external monitoring of the provisions was conducted.

8.6 PRODUCERS

The motor industry includes companies in the importation, distribution, retailing, repair and maintenance of motor vehicles and their components. It is estimated that the turnover of the sector was approximately 2 billion euros in 2011. The motor industry currently employs in the region of 35,000 people (SIMI, 2012).

In the context of the ELV Regulations, a “**producer**” in relation to a vehicle, means the person who imports into, or manufactures in, the State the vehicle. As no vehicles are actually built in Ireland, it follows that the obligations for compliance with the legislation fall on manufacturers of vehicles imported into the State.

There are 21 Producers registered with local authorities under Article 10 the ELV Regulations. These producers are large importers of new vehicles operating in Ireland. These importers are all members of SIMI³⁸¹. SIMI estimate that its members have 95% of the market share for new vehicles. There are also independent retailers which would have the remainder of the new vehicle markets and also trade second hand vehicles. These producers are not registered with the local authorities.

Figure 8.2 provides an overview of the change in registration since 2000 and shows that a total of 161,074 vehicles were registered Motor Vehicles Licensed for the First Time in 2011³⁸². This accounts for 51% of the Motor Vehicles Licensed for the First Time licensed at the peak in 2007. The number of vehicles registered shows a downward trend since the

³⁸¹ SIMI is the trade association and representative body of over 1,200 member companies whose business includes the distribution, retailing, repair and maintenance of motor vehicles and their components.

³⁸²

http://www.cso.ie/Quicktables/GetQuickTables.aspx?FileName=TEA01.asp&TableName=Motor+Vehicles+Licensed+for+the+First+Time&StatisticalProduct=DB_TE

economic downturn began in 2009. The introduction of a scrappage scheme³⁸³ in 2010 has led to some increases in the registration of new private car in 2010 and 2011.

In 2011, Private cars (category M1) account for 80% of vehicles licensed, with new private cars and second hand cars account for 54% and 26% of vehicles licensed respectively. Heavy Goods Vehicles (category N1 and goods vehicle heavier than 3.5 tonnes) account for 10% of vehicles licensed.

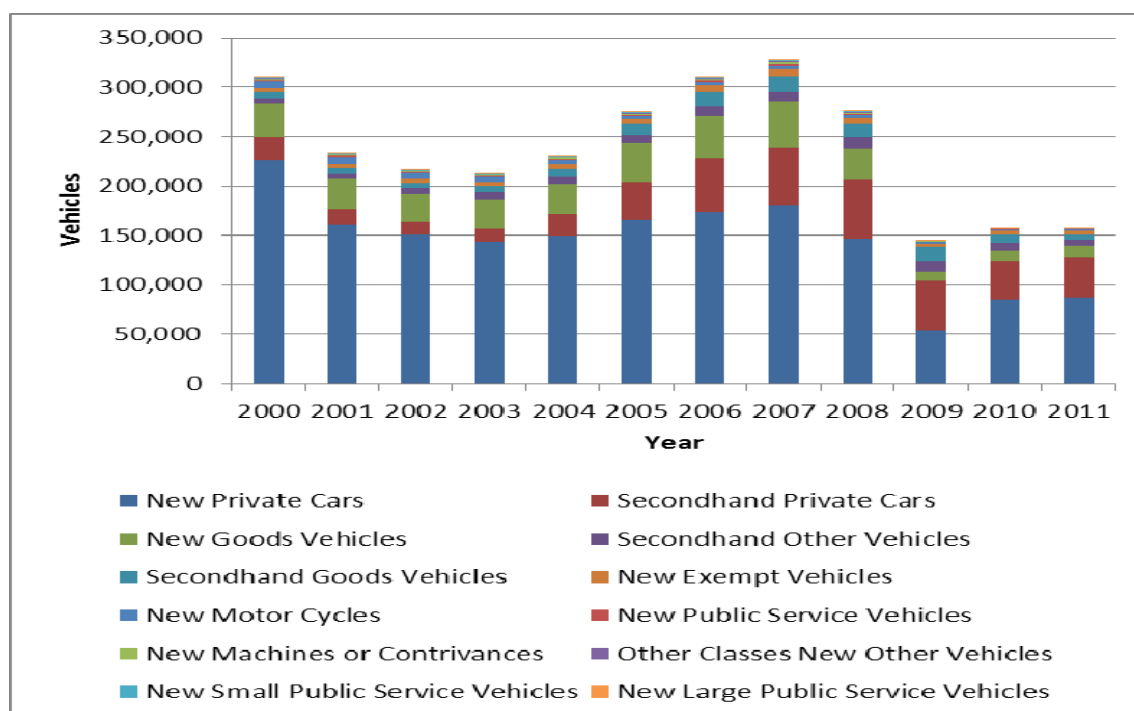


Figure 8.2: Motor Vehicles Licensed for the First Time³⁸⁴

Figure 8.3 provides an overview of private cars licensed for the first time by car make in 2011. 14 manufacturers account for 84% of private cars licensed.

³⁸³ The Car Scrappage Scheme ran from 1st January 2010 to 31st December 2010. The scheme provided VRT relief of up to €1,500 available to qualifying purchasers of new vehicles. The car scrappage scheme was extended at a reduced rate of up to €1,250, until 30 June 2011. The old car had to be taken to an official End of Life Vehicles (ELV) authorised treatment facility and a Certificate of Destruction is issued by the facility in respect of the car in order to claim VRT relief. Accessed on 15/10/2012 at <http://www.finance.gov.ie/viewdoc.asp?DocID=6664>

³⁸⁴ Source: http://www.cso.ie/Quicktables/GetQuickTables.aspx?FileName=TEA01.asp&TableName=Motor+Vehicles+Licensed+for+the+First+Time&StatisticalProduct=DB_TE

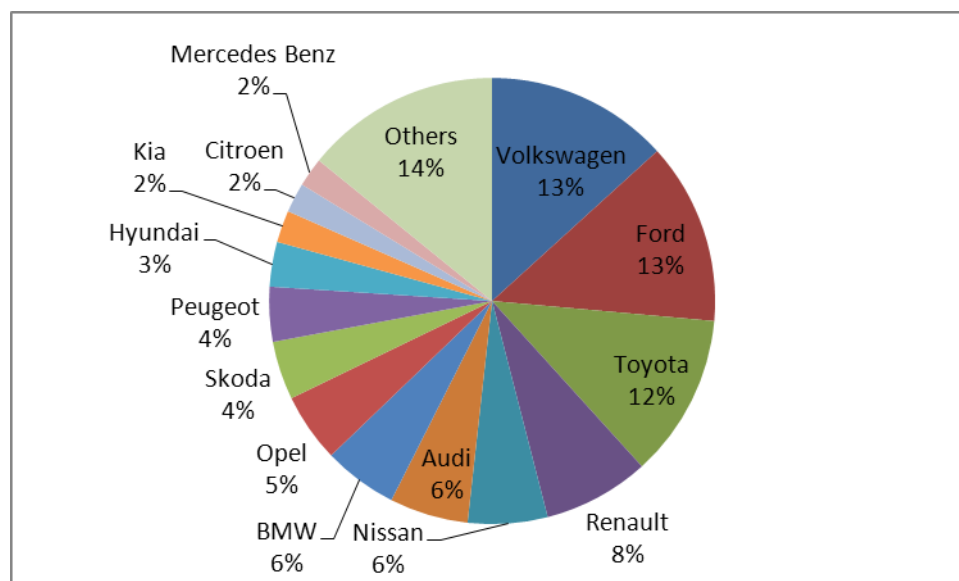


Figure 8.3: Private Cars Licensed for the First Time by Car Make 2011 (source: CSO)

The Waste Management (End-of-Life Vehicles) Regulations 2006 place obligations on producers - vehicle manufacturers and professional importers. These are as follows:

- To achieve the required ELV re-use, recycling and recovery targets prescribed by the ELV Directive (Article 16),
- To establish national collection systems for the recovery and treatment of end-of-life vehicles. Typically, an end-of-life vehicle will be a passenger car or a light commercial van that the registered owner wishes to discard of as waste. From 1st January 2007 owners of intact end-of-life cars and vans can deposit them free-of-charge at authorised treatment facilities. An exception to the free take-back principle is provided where a vehicle is missing its essential components or where waste has been added to the vehicle. The free take-back obligation only applies to the deposit of ELVs by the registered owner, but do not apply to the collection of ELV by the ATF which could be subject to a charge.
- Each producer's national collection system is required to have at least one authorised treatment facility in every city and county council area that will provide free take-back for vehicles of that producer's brand or for which that producer has responsibility. Producers are required to have additional authorised treatment facilities in place in those counties and cities with a larger population base (i.e. one additional facility for each additional 150,000 persons in the relevant county or city). Different vehicle importers may use the same ATF in each county; likewise, each importer may use different ATFs or more ATFs may be part of the network than the

minimum numbers set down. However, the ELV Regulations links to the local authority population figures implies that there must be a minimum of 45 ATFs nationally (European Parliament, 2007). The ELV Regulations require that the importer-ATF system be formalised by written contracts between the parties. These agreements should last not more than 3 years. The importer – rather than the registered owner of the vehicle – has to fund the cost of appropriate treatment. Due to the residual value of the ELVs, it is understood that currently ATFs are not reimbursed by the producers for the cost of depollution and treatment of the ELVs accepted. The ELV Regulations place a duty on vehicle importers to ensure that the ATFs they employ comply with the legislation, particularly in respect of operating standards and record-keeping.

- Each producer is required to register with each local authority and to provide specified information to the local authorities to accompany their registration³⁸⁵. Depending on the annual turnover of the importer, the following fees must be included in each application for registration:
 - €1,000 for importers with a turnover of less than €50m
 - €2,500 for an importer with a turnover of between €50m to €100m
 - €6,000 for an importer with a turnover of greater than €100m.

These fees are payable to each of the 34 local authorities in Ireland. Hence an importer with an annual turnover in excess of €100m will face a total fee payment of €204,000 each year.

Greenstreets estimated that the total fee paid by the SIMI members to date is €13,192,000. An annual breakdown is provided in Table 8.2.

³⁸⁵ A template Application form for Registration under Article 11(2) or Article 11(8) of the Regulations is present on the DECLG Website. Accessed on 15/10/2012

<http://www.environ.ie/en/Environment/Waste/ProducerResponsibilityObligations/EndOfLifeVehicles/PublicationsDocuments/FileDownload,1437,en.pdf>

Table 8.2: Annual Registration Fee 2007-2012

Year	2007	2008	2009	2010	2011	2012	Total
Fee (€)	2,754,000	2,856,000	2,686,000	1,547,000	1,547,000	1,802,000	13,192,000

The fees paid by producers in 2007 are lower than the €3.4 million estimated in the Statement on Regulatory Impact on (S.I. No. 282 of 2006) (DECLG, 2006).

Small-scale vehicle importers who have an annual turnover of less than €1m and are involved in importing less than 10 vehicles in the previous year only need make one registration application and only one fee is payable normally to pass to the local authority where the organisation's registered office is located.

- Vehicle Design Requirement: To ensure that the materials and components of specified new vehicles (8th June 2006) do not contain lead, mercury, cadmium or hexavalent chromium other than in cases specified in the Fourth Schedule of the regulations and that technical documentation must be made available by the producer to verify compliance with these requirements.
- To compile and maintain appropriate documentation, for a period of seven years, to verify that the materials and components of vehicles are in compliance with the provisions of the regulations.
- Each producer, in liaison with vehicle material and equipment manufacturers, use component and material coding standards to facilitate the identification of those components and materials which are suitable for reuse and recovery.
- Producers are also obliged to make available to authorised treatment facilities dismantling information for each type of new specified vehicle put on the market in Ireland within six months of these vehicles being put on the market in Ireland.
- Keep records of the aggregate weight of materials for reuse, recycling, recovery and disposal arising from end-of-life vehicles and report to local authorities on an annual basis.

8.7 END-USERS

According to the DTTAS (2010) the vehicle fleet in Ireland has increased steadily over recent years from 1,682,221 vehicles in 2000 to 2,418,397 vehicles in 2010, including 1,872,715 private cars and 327,096 commercial vehicles. Figure 8.4 provides an overview of the vehicle stock per type.

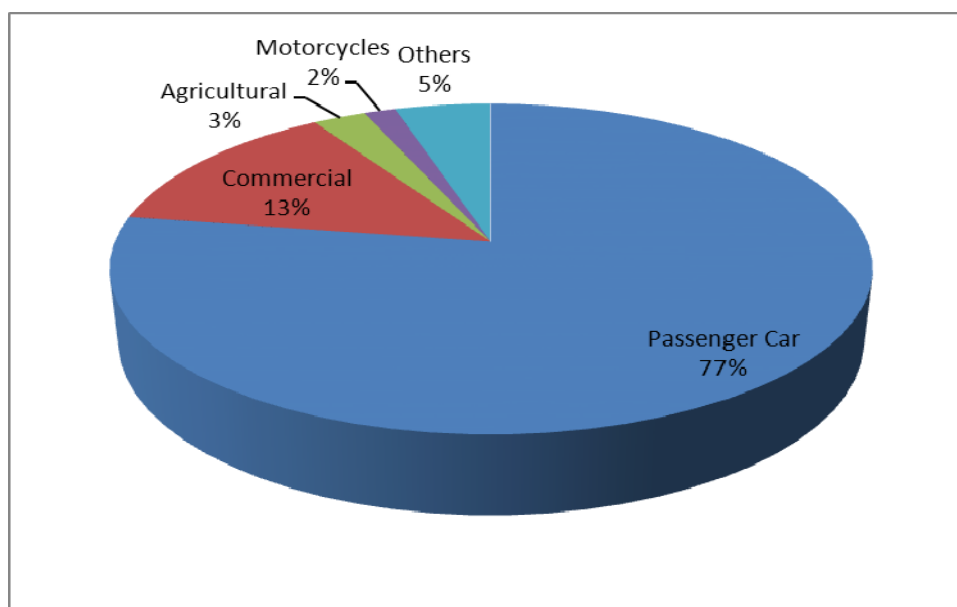


Figure 8.4: Mechanically Propelled Vehicles in 2010 (DTTAS, 2010)

Section 53D(2) of the Waste Management Act and Article 35 of the ELV Regulations contain provisions which affect vehicle owners. When an owner has decided that it is time to “discard” his or her vehicle “as waste”, such a person is legally obliged to take it to an ATF. Non-compliance with Article 35 and Section 53D (2) is an offence under, respectively, Article 35(2) in the regulations and Section 53F of the Act. As it is an offence to discard a vehicle to anybody other than to an ATF operator, these provisions create an additional provision for the prosecution of persons who abandon vehicles.

According to Article 25 of the ELV Regulations the only people who can deliver a vehicle for scrapping at an authorised treatment facility and be given a COD are:

- The registered owner of the vehicle;
- Member of An Garda Síochána (they can drop off a vehicle for scrapping if it has been seized under Section 41 of the Road Traffic Acts and was not claimed within 42 days; or

- Any person authorised under the Regulations by the Minister for the Environment (e.g. local authority personnel).

The registered owner of the vehicle must provide to an ATF their full name and address, nationality and an ELV registration document. The signature by the registered owner is also required for the ATF to issue a COD.

With the current system, vehicles can be de-registered (and stop paying road tax) by the last owner before the vehicle reaches 'ELV Status'. The last owner only needs to inform the DTTAS that the vehicle has been sold or has been scrapped³⁸⁶. The DTTAS following notification updates the NDVF. A requirement on a vehicle owner to present a COD if reclaiming motor tax on a scrapped vehicle was introduced in 2007.

If a COD is not issued by the ATF or if the vehicle owner fails to inform the DTTAS, this may result in the DTTAS overestimating the vehicle fleet. This is discussed further in Section 8.8.2.3.

8.8 WASTE MANAGEMENT

Unlike the legislation for other compliance schemes such as packaging and waste electrical and electronic equipment (WEEE), the ELV Regulations do not make provision for an approved body or compliance scheme. Therefore the responsibility for compliance with the legislation rests with each of the vehicle importer individually.

However in 2012, the producers' trade association, SIMI indicated that it had recently submitted to the DECLG a proposal for the establishment of an ELV compliance scheme to improve target achievement funded by the SIMI members. The need for a compliance scheme and this proposal will be discussed in Section 8.10.4.

An overview of a vehicle through the different end-of-life operations is shown in Figure 8.5.

³⁸⁶ If the last owner does not have proof of payment or paperwork, the vehicle owner is still responsible for what happens to the vehicle afterwards.

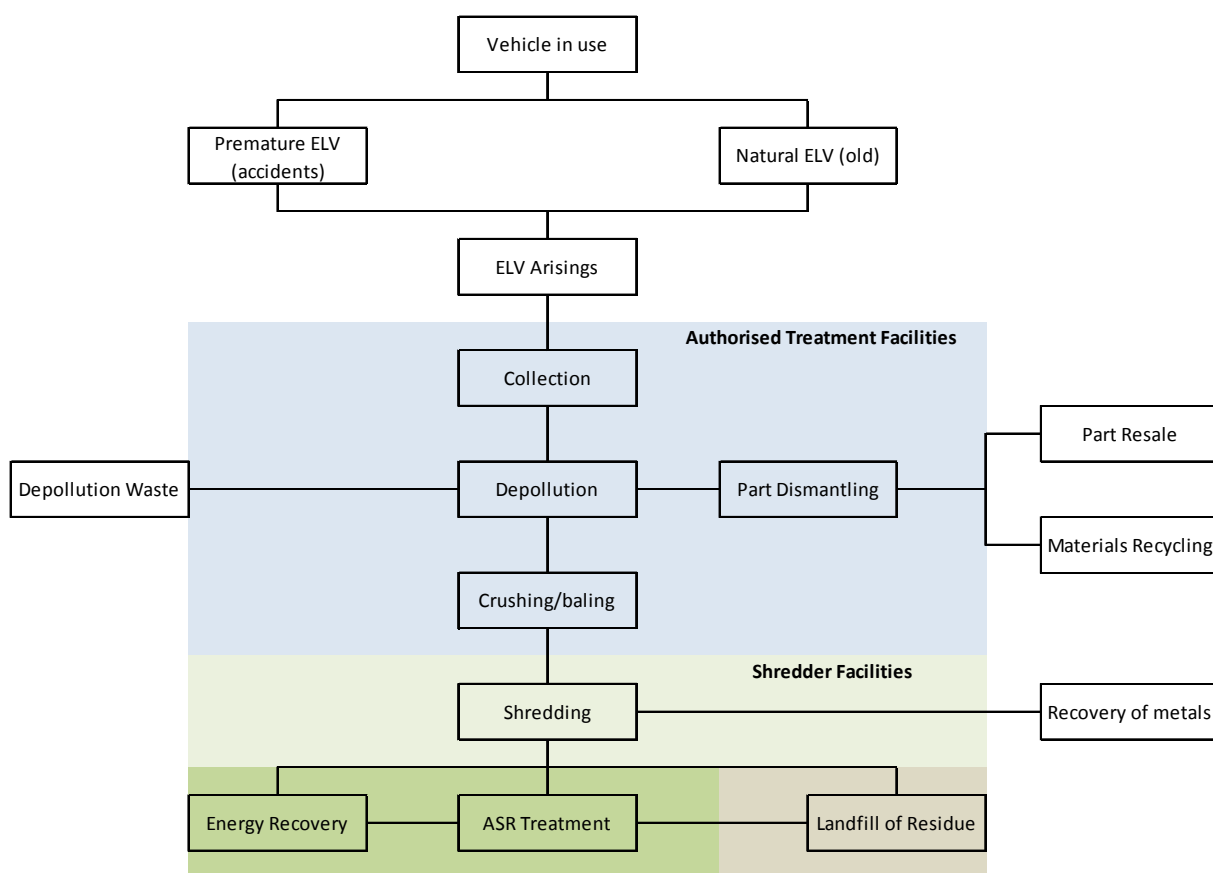


Figure 8.5: Flow of a Vehicle through the Different End-of-life Operations (adapted from Vermeulen, 2011)

The ELV recycling and recovery infrastructure in Ireland consist mainly in:

- Authorised Treatment Facilities (ATFs)
- Shredder Facilities

There are also a number of other legal economic operators (e.g. landfill facilities and post shredder treatment facilities and other on the fringes of the main ELV waste management channel (e.g. dismantlers, scrap metal sites, and unauthorised waste facilities).

8.8.1 Value Chain

Owners of intact vehicles reaching their end-of-life can deposit these vehicles free-of-charge at ATFs but in some instances, ATFs may also pay a fee to access ELVs from the public³⁸⁷.

There is no provision in the ELV Regulations which ensure that the contracted ATF operator can recoup the dismantling cost from the vehicle importer. The economics of ELV waste management are largely influenced by the price of metals. This means that, when the scrap metal price is poor – and hence where the net value of an ELV is negative – it is the ATF operator who must cover the dismantling cost of any vehicle accepted. However, because of the high value of metal commodity prices this also means that ATFs have the potential to make returns on treating end of life vehicles, both from parts resale, reuse and resale of oils and fuels and from metals from which steel is the lowest value content with aluminium, copper and other precious metals generating even greater returns.

With the implementation of the ELV Regulations, vehicle dismantlers and ATFs have made investment to upgrade recycling and recovery infrastructure to meet the standards required by the Second Schedule of the ELV Regulations.

The Statement on Regulatory Impact on (S.I. No. 282 Of 2006) (DECLG, 2006) estimated this cost to be €39,534³⁸⁸ on average. However, the Irish Motor Vehicle Recyclers Association has indicated that investment costs were significantly higher than the estimates in the Statement on Regulatory Impact.

The EPA reported that in 2010, 158,237 ELVs³⁸⁹ with a total weight of approximately 169,155 tonnes were accepted for depollution. If we divide the number of ELVs treated by the number of ATFs (139 in operation), on average an ATF would treat 1,138 ELVs annually. According to industry sources large ATFs need to process a minimum of 3,000 ELVs to be

³⁸⁷ A range of fees were mentioned by stakeholders ranging from €50/ vehicle to public or €140 /vehicle when several vehicles are delivered.

³⁸⁸ Based on a total of €1.7 million for 43 ATFs

³⁸⁹ It is not clear if all these ELVs were fully depolluted to the ELV Regulations standard.

profitable³⁹⁰, this indicates that some ATFs may be struggling to make a return on their investment. However, the Irish Motor Vehicle Recyclers Association pointed out that the return on investment also depends on the business model with some specialists ATFs being profitable with only treating 100 high end ELVs annually.

The Statement on Regulatory Impact (DECLG, 2006) estimated the actual costs for the treatment of ELVs to be in the region of €60 to €80 / vehicle. ATFs generate their income from the sales of parts for reuse and from the sales of shells, batteries, etc. for recycling.

Once the vehicle is depolluted, the ELV hulk is sold to a shredder facility. The price paid by the shredder will be scrap metal price (€200-250 / tonne) minus the cost of treating an ELV. Current market value ranges from €65 to €100/tonne. The metallic outputs from the shredder facilities are generally sold for recycling and recovery abroad. The shredder residues are currently sent off-site for disposal or recovery in Ireland or abroad.

8.8.2 Authorised Treatment Facilities

Article 4(3) of the ELV Regulations defines an “authorised treatment facility” as a facility at which the collection, the storage and the appropriate treatment and recovery of vehicles may take place”.

The DECLG indicated that there were 165 ATFs in 2012. Of these ATFs, 156 facilities had issued CODs in 2012³⁹¹. Figure 8.6 shows that only 20% of the ATFs surveyed by the EPA in 2011 treat more than 3,000 ELVs per annum. The total number of ATFs processed by these large ATFs account for 72% of the total ELVs reported to the EPA.

³⁹⁰ Interview with Hammond Lane

³⁹¹ DTTAS listing of COD issued January to August 2012.

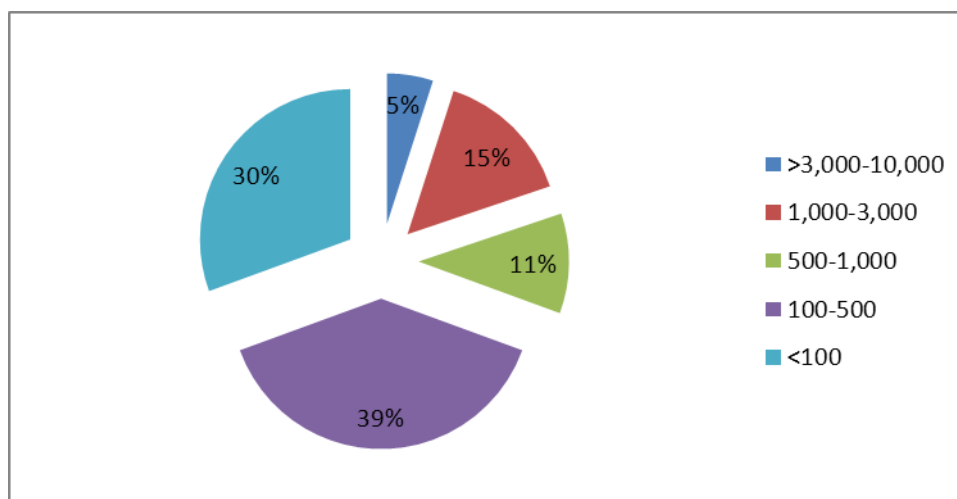


Figure 8.6: Distribution of ELV Throughput per ATF 2011³⁹²

Three local authorities reported no ATFs in their functional areas in 2010 (Dun Laoghaire, Longford and Waterford City), which means that producers selling vehicles in these local authorities are in breach of Article 9 of the ELV Regulations.

Once a vehicle has been deposited to an ATF and a COD issued, the ELV becomes the responsibility of the ATFs.

8.8.2.1 Difference Contracted ATFs and Not Contracted ATFs

There are 66³⁹³ ATFs contracted to producers and 99 independent ATFs.

Where an authorised treatment facility (not under agreement with a producer) accepts ELVs for appropriate treatment and recovery the owner or operator of that ATF shall be responsible for the achievement of the appropriate targets for the reuse, recovery and recycling of those end-of-life vehicles. For ATFs contracted to producers, the producers are responsible for the achievement of reuse, recovery and recycling targets.

There is no obligation for a non-contracted ATF operator to accept vehicles if it does not want to.

³⁹² Personal communication EPA 24.09.2012. Based on 121 respondents

³⁹³ A list of contracted ATFs can be found at http://www.elvire.ie/pdf/gser_producer_atflist_2012.pdf

8.8.2.2 ATF Obligations

Article 14 and 15 of the ELV Regulations also contain provisions for the operators of an authorised end-of-life vehicle treatment facility. They are obliged to:

- Accept ELVs free of charge: Section 53D (3) of the WMA (Waste Management Act) requires that the deposit, treatment and recovery of an ELV at an ATF must be done without a charge being made to the registered owner. Charging in these circumstances is an offence under Section 53F of the Waste Management Act. The only exception is where “essential components” are missing from the vehicle or where waste has been added to it,
- Ensure the facility is operated under an appropriate waste licence or permit;
- Meet the minimum technical requirements for the storage, treatment and recovery of end-of-life vehicles and the storage of components containing fluids, spare parts, etc.; (Schedule 2 of the ELV Regulations),
- Keep records of end-of-life vehicle materials for reuse, recycling, recovery and disposal and report these records to local authorities annually;
- Forward the details of the certificate of destruction to the National Vehicle and Driver File, maintained by the Department of Transport,
- The vehicle must be treated within 10 days of being deposited at the facility.

Article 23(1) of the ELV Regulations mandates that an ATF operator cannot transfer an ELV to anyone other than to another ATF operator. Article 15 of the ELV Regulations requires that, for an ELV is to pass from one ATF to another prior to depollution, this transaction must take place rapidly, with depollution occurring no later than ten days from the ELV’s date of delivery to the first ATF.

Once an ELV has been depolluted, it can be exported as Green List Waste subject to the Waste Management (Shipments of Waste) Regulations 2007³⁹⁴.

³⁹⁴ S.I. No. 419 of 2007 Waste Management (Shipments of Waste) Regulations 2007 accessed on 04/10/2012 at <http://www.environ.ie/en/Legislation/Environment/Waste/WasteManagement/FileDownload,14662,en.pdf>

8.8.2.3 Certificate of Destruction

From the 1st January 2007, on the deposit of an end-of-life vehicle at an authorised treatment facility for appropriate treatment and recovery, the owner or operator of that facility is required to:

- Issue a certificate of destruction to the registered owner, an authorised person of a local authority or a member of An Garda Síochána in order to ensure that any ELV is completely removed from service.
- All relevant information relating to that certificate of destruction shall be noted on the National Vehicle and Driver File³⁹⁵.

Once a COD has been issued, Article 23(3) of the ELV Regulations forbids the affected vehicle from being reregistered, licensed, used again in a public place or exported.

The DECLG Circular WPR (Waste Permit Regulations) 11/06 of 19/12/06 requires that all conditions of waste permits for ATFs be changed to require operators to comply with national guidelines issued on CODs. These guidelines take the form of the Department's publication entitled Certificates of Destruction – Operational Guidelines for Authorised Treatment Facilities.

In 2010, the Driver and Vehicle Computer Services Division reported that a total of 43,378 certificates of destruction were formally received from authorised treatment facilities; this is an increase of approximately 50% on the number of CODs issued in 2009. This figure would indicate that approximately 27% of all specified vehicles recovered in 2010 received a formal certificate of destruction, again an increase of approximately 50% on 2009 figures. However, the DTTAS (Department of Transport, Tourism and Sport) indicated that there was no significant increase in CODs issued in 2011 and the number of CODs received from January to August 2012 was 28,224. Factors explaining the low numbers of CODs issued are:

- The fact that treatment facilities continue to receive end of life vehicles but do not issue a certificate of destruction,

³⁹⁵ The National Vehicle and Driver File (NVDF) is a database maintained and supported by the Department of Transport Tourism and Sport containing details of all 2.5 million registered vehicles and their owners as well as the 2.6 million licensed drivers in the country.

- Low level of awareness among the public of the need to acquire a certificate of destruction when disposing of an end-of-life vehicle, and
- Difficulty to enforce car owners obligations.

Issues are also emerging with regards to the private sales of vehicles, with vehicles being purchased showing up on the NVDF records as ELVs. It is unclear how vehicles recorded as ELVs can change hands in later private transactions³⁹⁶.

8.8.3 Shredder Facilities

Shredder operators perform many of the same functions as metal merchants but also operate large scale shredding machinery to shred vehicles and other metal waste.

There are three shredders (Dublin, Cork and Limerick) in operation in the Republic of Ireland and one in Belfast, Northern Ireland. These facilities process ELVs with other materials shredded (i.e. white goods). ELVs processed by shredder facilities must have been treated prior to shredding at ATFs in accordance with the minimum treatment requirements in the Second Schedule of the ELV Regulations.

The shredder facility in Cork only shreds ELVs and other materials, while the facilities in Dublin, Limerick and Belfast carry out a separation process. These facilities produce a shredded ferrous product known as fragmented scrap and a mix of non-ferrous metals, all of which are exported for further processing.

Another waste stream known as shredder residue is also produced which contains all of the dust, dirt, rubber, plastic, foam and other materials which were contained in the vehicles and equipment. In Ireland, this shredder residue has historically been landfilled but now subject to €65 per tonne landfill levy. An examination of the use of shredder residues is presented in Appendix H.

³⁹⁶ Personal Communication with J. Kennedy, DECLG.

8.8.4 Scrap Metal Sites

The ELV Regulations dictate that, facilities which are authorised as scrap metal sites under the Waste Permit Regulations cannot accept whole used vehicles which are delivered by members of the public. Instead, they must pass first to ATFs that are authorised as appropriate treatment and recovery of vehicles vehicle dismantlers so that they can be depolluted.

Scrap metal sites buy and sell scrap, old, broken, worn-out, defaced or partly manufactured articles made wholly or partly of metal. A certain amount of processing, for example chopping, crushing or coarse shearing, is sometimes carried out by scrap metal sites.

8.9 ENFORCEMENT

The responsibilities of the producers for the ELV Regulations are enforced by the local authorities, with the EPA having a very limited role - a significant contrast to the legislation on waste electronic and electrical goods.

8.9.1 Local Authorities

Article 33 of the ELV Regulations requires local authorities to enforce Parts II Producer Responsibility Obligations and III Certificate of Destruction of the legislation. This covers the provisions relating to the establishment of the system for free public access to the ELV dismantling network, vehicle importer registration, the requirement that owners only dispose of their vehicles at ATFs, ATF operating standards and procedures and the system for the issue of CODs.

In the absence of any national collective compliance scheme, each motor vehicle importer subject to the ELV Regulations will be dealing with every one of the 34 local authorities in Ireland on an individual basis. It also follows that each local authority regulate 21 or more different importers of new motor vehicles, and should be regulating a much larger number of commercial bodies and sole-traders involved in the purchase of second-hand vehicles mainly from Britain.

Table 8.3 shows the producer responsibility inspection activities by local authorities from 2007 to 2011.

Table 8.3: ELV Producer Responsibility Inspection Activities by Local Authorities from 2007 to 2011³⁹⁷

Year	2007	2008	2009	2010	2011
Inspections	445	640	546	561	352*

* Not validated by the EPA

8.9.2 EPA

The EPA has three main functions relating to the enforcement of the ELV system:

- Licensing and enforcement of ELV treatment facilities if they fall into the EPA waste licensing system.
- Oversight of local authority environmental activities, including the enforcement of the ELV Regulations by such bodies.
- S.I. No. 142 of 2010 appoints the Environmental Protection Agency as the competent authority for the enforcement of Part IV of the Waste Management (End-of-Life Vehicles) Regulations 2006 relating to design requirements.

The EPA also collates statistics relating to compliance with the ELV Directive's reporting requirements.

8.9.3 Producers

The ELV Regulations place a significant duty on vehicle importers to ensure that the ATFs they employ comply with the legislation, particularly in respect of operating standards and record-keeping. This is in direct contrast to those ATFs that are not subject to a contract with any importer, where the onus for compliance with the regulations' technical standards is placed solely on the operator of the facility. This means that local authority enforcement activities relating to poor ATF operating standards can be directed, depending on circumstances, towards importers as well as against ATF operators.

³⁹⁷ Source: EPA (2009) 2007 and 2008 data, Cormac Mac Gearailt, EPA for 2009, 2010 and 2011 data

8.9.4 Closure of Unauthorised ELV Sites

On 26th April 2005, the European Court of Justice (ECJ) delivered its judgment in Case C-494/01 and found that Ireland had failed to fulfil its obligations under the Waste Framework Directive. Centred on 12 separate complaints, the judgment found that the Irish administrative and enforcement systems were inadequate to guarantee compliance with European Community law³⁹⁸.

Ireland in responding to the ECJ judgment has consequently introduced a programme of measures (DECLG, 2012b). One of the measures included dealing with the issue of unauthorised ELV sites, with the objective to bring such facilities into the waste permitting system or close the facilities down. In addition a number of legislative and institutional changes were also introduced:

- Ministerial Directions under Section 60 of the Waste Management Acts in relation to unauthorised waste activities,
- Identification and regularisation of historic landfill sites and production of code of practice,
- Revised Waste Permit Regulations, and
- Forming a single TFS authority for more consistent application of TFS Regulations.

These enforcement programmes were organised within the Environmental Enforcement Network thus bringing a consistency of approach, and all of the actions are being supervised by the Office of Environmental Enforcement (OEE), an office of the EPA.

Specifically targeted actions took place to:

- Identify and inspect suspected unauthorised facilities,
- Bring these activities to cessation or to regularise them through a waste permit, for example.

³⁹⁸ <http://curia.europa.eu/juris/liste.jsf?language=en&num=C-494/01>

This has resulted in a significant decline in unauthorised facilities from over 300 in December 2008 to less than 5 in September 2013. Table 8.4 shows that an increase in the number of ATFs occurred in parallel with the decrease in authorised waste sites

Table 8.4: Number of Unauthorised ELV Sites (DECLG, 2012b)

Time period	No of ATF's	Total unpermitted sites	Sites less than 20 ELV's	20-50 ELVs	50-100 ELVs	100-1000 ELVs	> 1,000 ELVs
Dec 2008	99	329	77	108	135	9	0
May 2009	108	340	237	60	31	12	0
Jan 2010	111	225	154	57	9	5	0
Nov 2010	129	157	64	39	35	16	3
March 2011	133	132	56	38	20	16	2
December 2011	166	20 ⁷	6	4	8	1	1

8.9.5 Penalties and Offences

Non-compliance with the ELV Regulations incurs the penalties set down in Section 10 of the Waste Management Act. In summary, a maximum fine of €3,000 can be imposed at the District Court along with a term of imprisonment not exceeding 12 months.

Where indictable offences are prosecuted by the DPP, the relevant penalties are extended to fines not exceeding €15m and prison terms not greater than 10 years.

The ELV Regulations prescribe a variety of offences in respect of:

- The management of ATFs. These are contained in Articles 18 and 26.
- The imports of new vehicles. These are contained in Articles 18 and 32.
- The management of ELVs by vehicle owners. These are set down in Articles 26 and 35.

Article 36 of the Waste Management (Facility Permit and Registration) Regulations 2007 (S.I. 821 of 2007) also provides for the revocation of a waste facility permit.

To date enforcement activities have been prioritised to target the closure of unauthorised ELV sites, rather than the activities of ATFs, producers or vehicles owners.

8.10 BENCHMARK AND RECOMMENDATIONS

In order to carry out a benchmark of the ELV system and develop recommendations we have:

- Reviewed published waste statistics on the ELV system, which are unfortunately scarce because of the limited number of years on record.
- Met with the various economic operators and regulators³⁹⁹ involved in the ELV system, and
- Reviewed the findings of the consultation.

The review has identified two high level indicators of poor performance revolving around ELV leakage from the ELV system and the performance of the ELV system with regards to meeting the reuse, recycling and recovery targets set by the ELV Directive. There are a number of root causes (e.g. lack of coordination in the ELV system, enforcement, etc.) which are investigated below.

8.10.1 Difference between Vehicles Licensed and ELVs Arising

Figure 8.7 compares the annual number vehicles sales⁴⁰⁰ since 1998 with the number of ELVs arising.

³⁹⁹ SIMI, SIMI& producers & Greenstreet, one ATF, one shredder, EPA Office of Environmental Enforcement, EPA Resource Use Unit, DTTAS, DECLG, IMVRA, CCMA.

⁴⁰⁰ The number of Vehicles up to 2,033 kgs and 4,064 kgs unladen weight are used as a proxy for the number of M1 and N1 vehicles. Strictly speaking N1 category is limited to 3.5 tonnes.

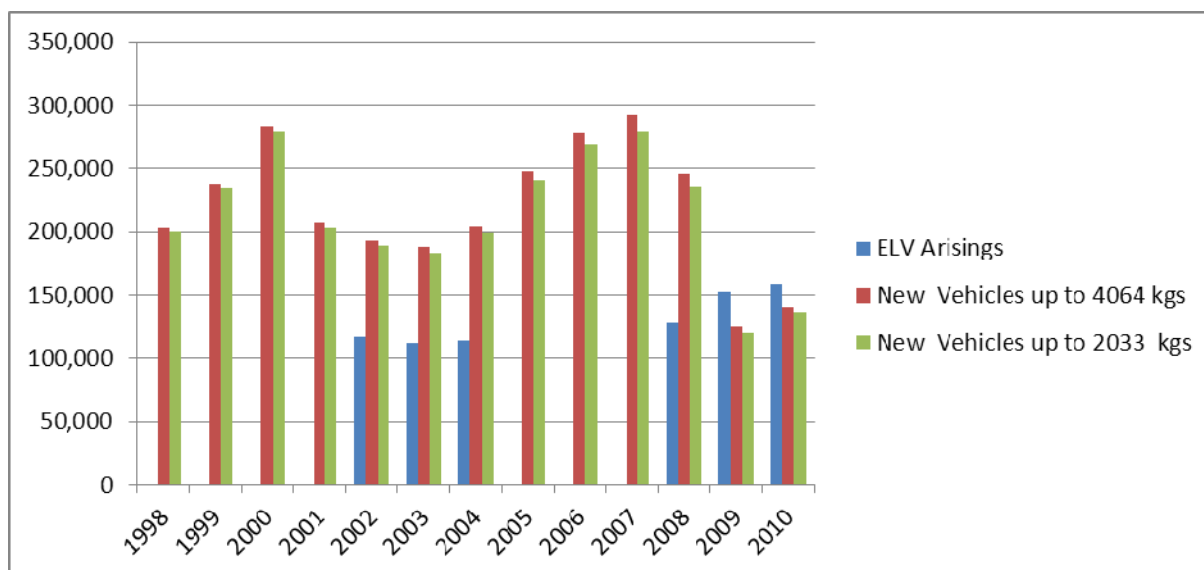


Figure 8.7: Comparison of Vehicles Sold and ELVs Arisings⁴⁰¹

The first observation is the difference between vehicles licensed and ELVs arising. If we assume an average age of 12 years for a vehicle to become an ELV, it is expected that vehicles sold in 1998 will become ELVs in 2010. While it is unlikely that there will be an exact match (as not all vehicles become ELVs at the same time), the shortfall between vehicles sold in 1998 (200,083 for vehicles up to 2,033 kgs unladen weight) and ELVs recovered in 2010 (158,237) seem to indicate that some ELVs escape the ELV system set up by the ELV Regulations⁴⁰². This is sometimes referred to as leakage⁴⁰³.

As shown in Figure 8.8, the leakage from the ELV system can occur at three stages of the ELV waste management chain:

⁴⁰¹ EC (2007) for ELV arisings in 2002, 2003 and 2004. DECLG (2010, 2011 and 2012a) for ELVs arisings in 2008, 2009 and 2010. CSO for the number of Vehicles Licensed for the First Time.

⁴⁰² Two other factors may also affect the 12 years lifespan of an ELV. First, the economic recession may mean people keep their cars longer. Second, the scrappage scheme means people replace their car sooner than they otherwise would have done so.

⁴⁰³ Data on ELV arisings is provided to the DECLG by the EPA. To gather data on ELV arisings and treatment, the EPA carried out in 2010 a survey of 139 ATFs in Ireland and all three ELV shredders facilities operational in 2010. ELVs not accepted by ATFs or shredder facilities are not reported as ELV arisings.

- First leakage point: Vehicle owners are not delivering their vehicles to ATFs, therefore unauthorised operators gain access to the vehicle.
- Second leakage point: ATFs may carry limited treatment, which does not meet minimum standard. The leakage is made of the materials which are not removed as required by the ELV Regulations for reuse, recycling or recovery. There are also ATFs accepting ELV, but not issuing a CoD, then putting the vehicle on the market.
- Third leakage point: undepolluted or partially depolluted ELVs may be exported in breach of the ELV and TFS Regulations.
- In addition, vehicles 1st licensed in Ireland but then subsequently exported as 2nd hand vehicles.

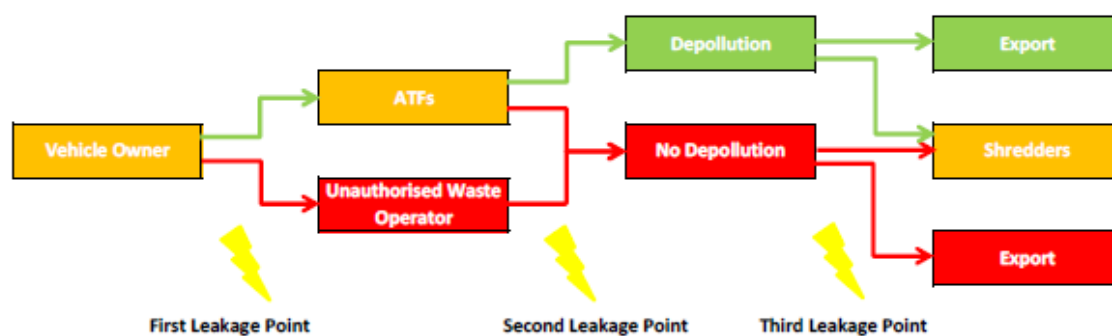


Figure 8.8: Leakage in the ELV System

Irish vehicles used abroad that reach ELV status may also be scrapped in other EU Member States e.g. Northern Ireland. In this case, the DTTAS generally receive notifications of these ELVs from other EU Member States – but not when shipped outside the EU, which happens quite regularly⁴⁰⁴.

These leakages are not unique to Ireland but they are difficult to quantify (ARN, 2011; Smink, 2007). Even the best-performing schemes have difficulty ensuring the responsible management of all ELV (not just those being recycled and recovered through the systems established for the purpose). For example in 2008, Austria had a 96% ELV reuse and

⁴⁰⁴ The main exports of ELVs from Ireland are to West Africa and the Middle East (Dublin City Council

recovery rate but only 25% of deregistered cars were treated as ELVs. 15% were exported as second hand cars while the destiny of the remaining 60% was unknown (BIOS, 2012)

8.10.1.1 First Leakage Point: Vehicle Owner – ATF

Vehicles can be delivered to ATFs from a variety of sources: directly from vehicle owner or from corporate organisations (e.g. Garda, insurance companies, and local authorities).

Vehicle owners may choose not to deposit their vehicle at an ATF because:

- They are not aware of their obligations, or
- There is more financial gain in selling to unauthorised dismantlers. A scrap car is worth more when it is sold to an unauthorised operator⁴⁰⁵. The Cash-for-Scrap reported by many consultation submissions for the WEEE waste stream⁴⁰⁶ also negatively impacts on directing ELVs to ATFs.

As highlighted by Ireland's response to the European Commission Judgement Case C 494/01 (DECLG, 2012b), the unauthorised ELV dismantling was widespread in Ireland with 329 recorded unpermitted sites in 2008.

These unauthorised operators remove valuable elements (e.g. battery, parts) of the ELVs for resale. The remains of the ELVs may be abandoned or sold in Ireland or abroad.

These practices can result in serious environmental damages as the sites where these activities take place do not meet the minimum required environmental standards. These practices are an offence under article 18 to 26 of the ELV Regulations. This can also make it difficult for ATFs to operate at a viable capacity.

Article 53D(2) of the Waste Management Acts 1996-2012 and Article 35 of the End of Life Vehicle Regulations, makes it an offence if the registered owner of a vehicle who decides to

⁴⁰⁵ Meeting with Thorntons Recycling, ARN (2011)

⁴⁰⁶ Limerick, Clare, Kerry Waste Management Region submission and Prime Time Investigates 14th August 2012 accessed on 09/09/2012 at www.youtube.com/watch?v=ovgK9odaftQ

discard that vehicle as waste does not deposit that vehicle at an ATF. It is unclear if any prosecution have been taken against vehicle owners not complying.

Decreasing the potential leakage areas will have significant benefits as it will remove the main supply of ELVs to unauthorised dismantling sites. This will also have knock-on effects on some of the other issues such as exports of undepolluted ELVs and the existence of free-riders. The increased supply of ELVs to ATFs should also increase ATF revenue and return on investment for the infrastructure developed.

While the regulations provide a framework to reduce the leakage, with limited enforcement and awareness raising with vehicle owners, these measures are not enough to encourage the owners to deposit their ELVs at ATFs. A number of additional measures need to be implemented to support the legislative framework.

Awareness Measures

Stating the vehicle owner obligations under ELV regulations⁴⁰⁷ in all relevant information materials (e.g. the RSA “Rules of the Road”⁴⁰⁸, the Driver Theory Test, Motor Tax Renewal Forms and the NCT) would help to raise public awareness. New drivers in particular are more likely to buy older vehicles and it is reasonable to assume they are more likely to be dealing with ELVs.

Also other useful information should be clearly displayed in public (e.g. at car dealerships and on the internet). This information could include a current listing of all ATFs, a number for the motor tax office, Environment Enforcement Officer (EEO) in each Local Authority and compliance scheme if established.

Other measures such as a national advertising campaign using TV or Radio could be considered. However, they are likely to be more costly and temporary. Such a campaign was

⁴⁰⁷ In particular that ELVs should be deposited at ATFs and will not be accepted without presentation of a Vehicle Registration Certificate (VRC). Those without a VRC can obtain one from Transport for a small cost.

⁴⁰⁸ Accessed on 03/09/2012 at <http://www.rulesoftheroad.ie/>

run in the UK and it was reported to be instrumental in increasing COD numbers (Cartakeback, 2012)⁴⁰⁹.

Vehicle Owner Enforcement Measures

Increased enforcement (with associated awareness) measures may increase the number of ELVs deposited at ATFs, however it may require a significant amount of resources to enforce article 53D(2) of the Waste Management Acts 1996-2012 and Article 35 of the End of Life Vehicle Regulations on vehicle owners.

A simple comparison of the CODs issued against the vehicles deregistered would provide a list of potential offenders. Although the absence of CODs does not always imply that the vehicle owner did not deposit its vehicle at an ATF. This is explored in Section 8.10.2.

Unauthorised ELV Sites Enforcement Measures

It is our understanding that the major programme of enforcement against unauthorised ELV sites continues to receive priority in the waste enforcement actions being undertaken by local authorities and it is showing a significant and progressive reduction in the numbers of such facilities from 329 in 2008 to 20 in 2011 (DECLG,2012b).

The EPA reported that multi-agencies (Garda, Revenue Commissioners, and Veterinary Services) action was a successful approach to tackle these sites⁴¹⁰. An example of such approach is shown in Box 18.

Box 18: Limerick City & County Councils take action against Unauthorised Scrap Facility (EPA, 2011)

A scrap yard of approximately 2 hectares within an industrial estate (occupied by up to 30 inhabitants) on a main approach to Limerick has been the subject of ongoing enforcement actions over a number of years. Successful prosecutions for breaches of Section 34 & 39 of

⁴⁰⁹ The advertisement can be viewed at <http://www.youtube.com/watch?v=7SO0jHINO6o>

⁴¹⁰ EPA OEE meeting 07/08/2012

the Waste Management Act had failed to close down the activity leaving the only viable option to physically confiscate the waste, associated equipment and collection vehicles under Section 56.

A multi-agency approach was deemed the most appropriate format following on from our colleague's example in Cork County Council, who assisted in providing planning advice and observers. Other agencies, including The Garda Síochána, Customs, Revenue and The Department of Social Protection fully supported the operation without which it would not have happened. 70 officials entered the site at 7am and stayed until the site was cleared after 7pm. Nearly 30 Vehicles and 90 tonnes of scrap metal, engines and other vehicle parts were removed along with 7 horses and 20 dogs.

The operation took 6 weeks of regular meetings with the other Agencies to plan. Background intelligence included CCTV surveillance and Aerial Surveys to map out an exact strategy. The area was divided up into quadrants with team leaders who managed, identified, photographed and recorded all actions taken. The logistics also included providing welfare facilities, food and drink, first aid, traffic management and press releases.

The successful operation took place on the 5th July 2011; it made National TV and was reported in all the National newspapers and sent an important message out to the wider community. The Councils have received a lot of positive feedback from legitimate collectors and facilities who for a long time were at a disadvantage while this unauthorised facility continued to function.

Other Measures

Other measures in which could increase the number of vehicles delivered to ATFs include on the supply side:

- The use of economic instruments such as an annual fee (see Danish example in Box 19) or scrappage schemes⁴¹¹,

⁴¹¹ Ireland did have such a scheme quite recently but that did not seem to resolve the problem of leakage.

- Use of vehicle taxation system as a mean of incentivising vehicle owner to dispose of their vehicle in the appropriate manner (see UK example in Box 20).
- The use of Fixed Penalty Notices instead of normal infringement action through the Courts.

Unfortunately there is a lack of published data which would confirm the effectiveness of such measures.

Box 19: Vehicle Annual Environmental Fee in Denmark (Moakley et al.,2010)

During a cars life span, the owner must pay an annual environmental fee of roughly DKK 90 which is approximately €12. The fee is paid to insurance companies as a mandatory tax, but is then transferred from the insurance agency to the recycling fund of Danish authorities.

This tax helps offset the fee that is refunded to the last owner of the car whom, when the car is brought to a certified dismantling facility, is paid approximately DKK 1800 (approximately €240) from the recycling fund. This financial incentive discourages Danes from improperly disposing of ELVs.

Box 20: Continuous Registration in the United Kingdom⁴¹²

One of the Driver and Vehicle Licensing Agency's (DVLA) key aims is to reduce vehicle related crime. The DVLA achieves this by a number of measures it has put in place including the continuous registration system.

Under the continuous registration system, the vehicle's registered keeper remains financially responsible for the vehicle, until the DVLA is formally notified of its transfer or disposal. This makes it possible to carry out enforcement from the record, instead of relying on a sighting on the public road. It also encourages individuals to notify DVLA of any changes in keeper details.

After an ELV is scrapped by an ATF, an official DVLA Certificate of Destruction is issued, which proves the vehicle has been removed from the DVLA database. Without this, the last vehicle owner is still liable for road tax and could receive an £80 fine from the DVLA.

Both systems should have a positive effect in increasing the number of ELVs deposited to ATFs. Reducing the level of abandonment of vehicles will in turn reduce the cost to the

⁴¹² Accessed on 03/10/2012 at http://www.direct.gov.uk/en/Motoring/VehicleCrime/DG_4022920

public sector to collect these abandoned vehicles. It will also reduce crime by reducing the scope for running vehicles illegally and abandoning vehicles with impunity.

The continuous registration system may be more easily implemented in Ireland as the Motor Vehicles (Duties And Licences) Act 2012 introduced the concept of using continuous road tax to ensure that vehicles reaching 'ELV Status' are sent to ATFs. It is our understanding that in addition to this bill there will be a need for further regulatory changes to link the road tax with the CODs⁴¹³.

In addition the continuous registration approach is also currently supported by the producers and the recyclers and may be more publicly acceptable than introducing a new Annual Environmental Fee for ELV treatment.

On the demand side, making the collection system more accessible to the public could also reduce leakage (see Box 21).

Box 21: FebelAuto Case Study on using Car Dealers (BIO Intelligence Services, 2012)

In Belgium, automobile retailers are obliged to take back one ELV for each new vehicle sold, and to provide a certificate documenting this transaction to the final owner of the ELV. ELVs are taken back free-of-charge to the owner, provided that specific preconditions are met (e.g. the ELV is still operative). Manufacturers and importers of automobiles are obliged to establish an adequate number of collection points throughout the regional territory, and for 90% of the Belgian population, there is at least one collection point within a maximum distance of 30km.

Recommendations:

The DECLG should implement the Continuous Vehicle Taxation System as a matter of priority.

⁴¹³ Personal Communication Marie Gleeson DECLG 26/09/2012

All stakeholders (DECLG, DTTAS, and Producers) should ensure that vehicle owner obligations under ELV regulations are published in all relevant information materials.

To achieve maximum effectiveness, Producers & Government funded public awareness campaigns should also be examined including stating in all relevant information materials the vehicle owner obligations under ELV regulations and making other useful information (e.g. list of ATFs) publicly available (e.g. at car dealerships and on the internet).

8.10.1.2 Second Leakage Point: ATF Level Depollution

Articles 14 and 15, and Second Schedule of the End of Life Vehicle Regulations give ATFs minimum technical requirements for appropriate treatment and recovery of an ELV.

ATFs may choose not to follow these requirements because they can reduce their operating costs by only removing valuable parts for sales and selling or exporting the remaining partially treated ELV hulks to shredders. If this is the scenario, then they would be in breach of the ELV Regulations.

To date, enforcement and monitoring by local authorities has focused mainly on the removal of the hazardous fractions and the ATFs infrastructure provision, it is expected that ATFs followed the minimum technical requirements on removal of fluid, battery, catalytic converter and tyre non-metal recycling and recovery. This is confirmed by the EPA, which is using the shredder trial⁴¹⁴ information as representative of the Irish situation in 2010.

However, regarding other non-metal materials (e.g. glass and plastic) removed during depollution and dismantling, the EPA pointed out that the data described by ATFs in 2010 in accordance with the statistical returns were not in accordance with the situation in the shredder trial. This means that the ATFs are not removing these materials at depollution stages. For glass this is in breach of the requirements of the Second Schedule of the ELV

⁴¹⁴ The shredder trial followed closely the requirements of Article 14 and 15 and Second Schedule of the End of Life Vehicle Regulations.

Regulations⁴¹⁵. For large plastic components (bumpers, dashboard, fluid, containers, etc.), this is a breach of the Second Schedule only if it is not segregated in the shredding process (using post-shredder treatment as described in Appendix H).

Except for compliance with the ELV Regulations, there is little financial incentive for ATFs to remove these materials as it increases labour costs⁴¹⁶. The glass once segregated has a net cost to be sent for recovery and the large plastic parts may be sold for a small fee.

It is unclear if it is economically feasible for the ATFs to comply fully with the ELV Regulations without funding from the producers as the removal of glass and plastic will result in additional costs for ATFs. However, if there is funding available from the producers it is likely to be provided only to contracted ATFs as producers have responsibility for contracted ATFs. Non-contracted ATFs will not have this opportunity and enforcing these requirements strictly may result in ATFs closure.

Without post shredder treatment at shredder facilities, the resulting breach of the ELV Regulations by the ATFs has direct effect on the overall achievement of recycling and recovery targets (plastics can account for 6-7% of an ELV and glass 2-3%).

Enforcement and monitoring of all ATFs from producers and local authorities will need to focus on these elements to ensure compliance with the ELV Regulations. All ATFs need to clarify the fate of the depolluted hulk that they send to shredder facilities and if the shredder residues are undergoing further recovery using post shredder treatment. If resources are available, these facilities should be visited by enforcement authorities at least once per year.

⁴¹⁵ To promote recycling, Second Schedule of the ELV Regulations requires removal of catalysts and glass. If not segregated in the shredding process it also requires removal of copper, aluminium, magnesium, tyres and large plastic components (bumpers, dashboard, fluid, containers, etc.).

⁴¹⁶ the costs of recycling material from ELVs through dismantling is highly variable, reflecting the steep marginal cost curve for dismantling operations. Some larger parts (e.g. plastic bumpers and larger sections of glass) may be removed relatively cost effectively, while marginal costs rise steeply as more material is removed. The figures suggest that small quantities (maximum 30-40kg) of more easily removed materials may be dismantled at a moderate cost of 0.2 to 0.3 euro per kg, while removal of larger quantities is likely to raise marginal costs to more than 1 euro per kg (GHK, 2006)

In addition, the EPA and the DECLG should develop Joint Guidance on the 2nd schedule requirements and the restriction it imposes on certain materials (if glass/plastics are not removed there is a need to demonstrate that they were sent for PST etc.)

Recommendations:

Local authorities with supervision from the EPA should increase enforcement of ATFs to ensure depollution in line with the requirements in the ELV Regulations.

In addition, the EPA and DECLG should develop Joint Guidance on the 2nd schedule requirements and the restriction it allows on certain materials (if glass/plastics are not removed there is a need to demonstrate that they were sent for PST etc.)

8.10.1.3 Third Leakage Point: Illegal Export and Acceptance by Shredder of Undepolluted ELVs

The third leakage point from the Irish ELV system is ELVs that have been treated by unauthorised dismantlers, which can be exported or sent to Irish shredders. Again, Ireland is not in a unique situation.

Shredder facilities

Shredder facilities cannot accept ELVs from unauthorised sources or directly from the public or ELVs which have not been depolluted. The only exception is if the shredder facility contains a permitted ATF also.

However, undepolluted ELVs that are not exported must finish their journey at one of these facilities. Without a COD, it may be difficult for these facilities to determine if the ELVs have been depolluted or not. In particular, it may be difficult to make an assessment at the point of inspection as the ELVs may be delivered baled on a flatbed trailer or a closed or open top container.

Irish shredder facilities, which have ATFs on their premises may accept ELV pre-depollution as well as depolluted ELVs. This situation makes it very difficult for enforcement authorities to monitor how much depollution takes place at these sites prior to shredding. In the hypothetical situation that the existing environmental controls are not sufficient to ensure that

ELV depollution is taking place, shredder facilities and ATF activities should maybe not be allowed to operate on the same site and considerations should also be given to put in place an EPA waste licensing regime for these joint activities⁴¹⁷.

Export

ELVs which have been depolluted can be exported as Green List Waste under the Waste Management (Shipments of Waste) Regulations 2007⁴¹⁸. 22,060 tonnes of ELVs, containing neither liquids nor other hazardous components (EWC Code 16 01 06) were exported in 2010⁴¹⁹.

Vehicle wrecks that are not depolluted (EWC Code 16 01 04*) are not allowed for export.

However, it may be difficult to differentiate between undepolluted ELVs and used second hand vehicles that are in need of repair. These second hand vehicles are allowed for export if there is a certificate from a motor assessor or authorised vehicle mechanic. The European Commission provided guidance on this issue in the Correspondents' Guidelines No 9 on shipment of waste vehicles⁴²⁰.

“Where the holder of a vehicle claims that he intends to ship or is shipping an operational used vehicle (type 1) or a repairable used vehicle (type 2) and not waste, and the competent authority, or any other state authority such as customs, police or other relevant bodies, has a reasoned concern that the used vehicle may be classified as waste, then the following should be provided to the relevant

⁴¹⁷ There is a new activity class under the Directive 2010/75/EU of the European Parliament of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (Recast) which may bring these facilities into the EPA licencing regime.

⁴¹⁸ S.I. No. 419 of 2007 Waste Management (Shipments of Waste) Regulations 2007 accessed on 04/10/2012 at <http://www.environ.ie/en/Legislation/Environment/Waste/WasteManagement/FileDownload,14662,en.pdf>

⁴¹⁹ From TFSO Green Waste Register 2010

⁴²⁰ http://www.dublincity.ie/WaterWasteEnvironment/Waste/National_TFS_Office/Documents/correspondents_guidelines9_en.pdf

authority, where requested upon the relevant competent authorities' decision, either generally and prior to the shipment, or on a case-by-case basis, in order to back up the holder's claim:

(i) In the case of an operational used vehicle (type 1): Evidence of evaluation/ testing in the form of copy of the records as to proof of roadworthiness, conducted shortly before the shipment takes place (e.g. not more than one month before) and performed by an authorised inspector under the national technical roadworthiness test regime, or alternatively upon the relevant competent authorities' decision, a motor assessor, vehicle mechanic or any other type of authorised inspector;

(ii) In the case of a repairable used vehicle (type 2), one of the following two options may be used:

A "vehicle is repairable" certificate in order to decide if a repair is minor. A sample certificate is attached as Appendix 3 together with criteria for the assessment,

Evidence referred to under (i) above in case it is applicable for the decision to be made as to whether a repair is minor."

Spare parts and vehicle components can also be exported and the NTFSO has developed a specific testing procedure for these.

There are challenges in monitoring exports of ELVs. The level of treatment/depollution and the number of ELVs exported can be very difficult to determine at the point of inspection. Prior to the publication of the Waste Management (Shipments of Waste) Regulations 2007, the issue of burden of proof to determine whether a vehicle is waste or not was also unclear. This has been clarified by the Regulations.

The NTFSO in Dublin has developed an inspection procedure which has been successful in diverting unauthorised export from Dublin Port. However, this has led to exporters relocating in other ports to export ELVs and second hand vehicles (IMPEL, 2008). This statement has been corroborated by industry sources which estimated that 20 to 30,000 non-depolluted ELVs were exported in 2011. These ELVs are collected by a Northern Irish registered HGV and brought to Warrenpoint in Co. Down for shipment. The move to Warrenpoint followed an increased level of enforcement at Dublin Port.

This indicates that while it is relatively straightforward to enforce at national port facilities as it is tightly controlled, it may be more difficult to inspect export which takes place by road as they are more diffuse.

It also indicates the need for collaboration with Northern Ireland in order to reduce unauthorised export.

Recommendations:

Increase monitoring (to establish if they are depolluted or not) of the origin and fate of ELVs accepted by Irish shredders.

Increase enforcement on ELV export (using TFS) and not using TFS, in collaboration with Northern Ireland.

8.10.2 Difference between the ELV Arisings and the CODs Issued

CODs are an official document issued by ATFs to ensure that any ELV is completely removed from service. The COD will be issued to the last owner or holder of the vehicle and will end the keeper's responsibility by updating NVDF's records. Without a COD it is difficult to confirm that a vehicle has been treated in an environmentally sound manner by an ATF.

A new electronic system was introduced by the DTTAS in 2010 to enable approved ATFs to notify ELV notifications to the National Vehicle and Driver File (NVDF) over the internet. The service at www.motorelv.ie is available as an alternative to existing paper based arrangements which involve sending completed COD's to the DTTAS offices at Shannon Co. Clare for manual processing there. Transactions processed online are extracted from the online database each evening and subsequently transferred to the NVDF for immediate

updating. The COD is then issued by post from Shannon to the registered owner on the following day⁴²¹.

Figure 8.9 compares the number of CODs issued with the number of ELV Arisings.

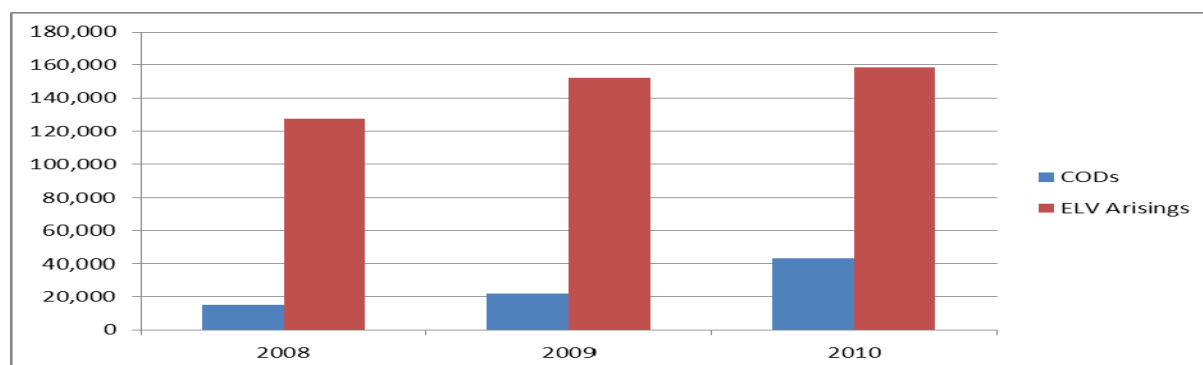


Figure 8.9: Comparison of ELVs Arisings and CODs Issued⁴²²

The first observation from Figure 8.9 is the **difference between the ELV arisings (158,237) and the number of CODs issued (43,378)**.

The difference shows that ATFs continue to receive end of life vehicles but do not issue a certificate of destruction. There can be several reasons for this:

- The ATF can issue a COD but choose not to because it is extra paperwork. This is a breach of Article 19, 21 and 22 of the ELV Regulations.
- The ATF chooses to issue a COD but is not able to because it is missing certain details from the registered owner (e.g. the Vehicle Registration Certificate).
- Low level of awareness among the public of the need to acquire a COD when disposing of an ELV,
- The ELV Arisings figure may also include ELVs accepted by shredders which did not come from ATFs.
- Scrappage of Irish registered ELVs in other EU Member States e.g. Northern Ireland.

⁴²¹ In 2011, there were thirteen ATFs participating in a trial of the system and just over 2,200 transactions have been processed. In August 2012, 21 ATFs were using the system and 7,945 transactions took place since the start of 2012.

⁴²² DECLG (2010, 2011 and 2012a) for ELVs Arisings and CODs.

- Acceptance of depolluted ELVs as scrap metal under general scrap metal classification

While the ELV Regulations provide a framework to incentivise ATFs to issue CODs, there are specific barriers which prevent them to do so.

In order to increase awareness among the vehicle owners on the need to be issued CODs, the awareness measure described in Section 8.10.1 should also provide information on the need to obtain a COD when scrapping a vehicle. In particular, the public should be made aware that without a COD they remain liable for their vehicle and they will not be able to claim tax back from the DTTAS.

Enforcement of ATFs should also target specifically the issue of CODs. It must be quite straightforward for an enforcement officer to compare the record of the number of ELVs accepted by an ATF with the number of CODs issued.

Options to reduce the amount of information to be provided by the vehicle owner should be examined to facilitate the issue of CODs by ATFs. CODs could be processed without Vehicle Registration Certificate (this is generally the missing paperwork). However, if this Certificate is not presented it is difficult to know if the person delivering the vehicle is the last registered owner.

With the implementation of the Continuous Vehicle Taxation System, vehicle owners would require CODs to deregister and stop paying motor tax.

Recommendations:

Implement awareness measures and Continuous Vehicle Taxation System as a matter of priority.

Increase enforcement of ATFs to ensure CODs are issued.

8.10.3 Achieving EU ELV Directive Targets

Ireland has still **not achieved the EU ELV Directive targets for 2006** as shown in Figure 8.10. These targets apply to the ELVs deposited at ATFs.

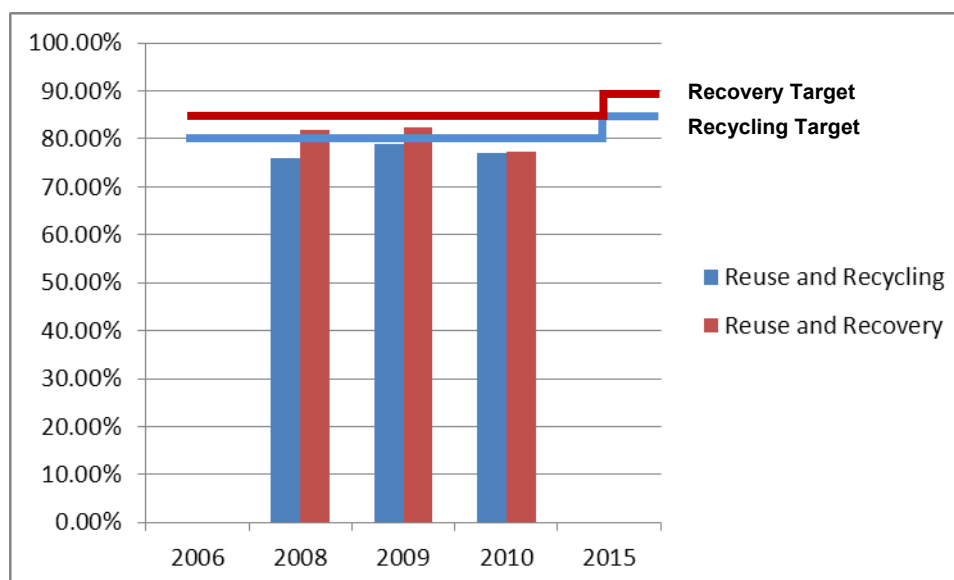


Figure 8.10: ELV Reuse, Recovery and Recycling Rates 2008-2010 Compared to ELV Directive Targets

In 2010, total reuse and recycling was 77% and total reuse and recovery was 77.4% down 2% and 5% respectively from 2009 (EPA, 2012a). The main reason for the approximate 5% decrease in total reuse and recovery rates in 2010 in comparison to 2009 figures is because auto shredder residue went for disposal to landfill in 2010 whereas previously it had been used as landfill cover (and therefore recorded as recovery). The EPA's Office of Environmental Enforcement has determined that automobile shredder residue is not a suitable landfill cover material. These percentages are below the EU targets of 80% reuse and recycling and 85% reuse and recovery which have been in force since January 2006.

Table 8.5: Contribution of ATFs and Shredders to Reuse, Recycling, Recovery and Disposal in 2010 in Tonnes (DECLG, 2012a)

Tonnes	Reuse	Recycling	Recovery	Disposal	Total	Total recycling	Total recovery
ATFs	1,358	5,010	756	149	7,273	6,368	7,124
Shredders		122,132		16,167	138,299	122,132	122,132
Exported		1,716		21,867	23,584	1,716	1,716
Total	1,358	128,858	756	38,183	169,156	130,216	130,972
Performance						77.0%	77.4%
Shortfall 2006 targets (tonnes)						5,108	12,810
Shortfall 2015 targets (tonnes)						13,566	29,726

Table 8.6: Contribution of ATFs and Shredders to Reuse, Recycling, Recovery and Disposal in 2010 in kg per ELV ⁴²³.

Kg/ELV	Reuse	Recycling	Recovery	Disposal	Total	Total recycling	Total recovery
ATFs	9	32	5	1	46	40	45
Shredders	-	772	-	102	874	772	772
Exported	-	11	-	138	149	11	11
Total	9	814	5	241	1,069	823	828
Performance						77.0%	77.4%
Shortfall 2006 targets (kg/ELV)						32	81
Shortfall 2015 targets (kg/ELV)						86	188

⁴²³ Quantities in Table 8.5 divided by 158,237 ELVs

Table 8.5 and 8.6 show that the shortfall to achieve the 2006 EU targets of 80% reuse and recycling and 85% reuse and recovery was 5,108 tonnes (or 32 kg per ELV) for reuse and recycling and over 12,810 tonnes (or 86 kg per ELV) or for reuse and recovery. Only 7,720 tonnes (or 54 kg per ELV) can come from recovery only.

The shortfall increases to 13,566 tonnes (or 81 kg per ELV) for reuse and recycling and over 29,726 tonnes (or 188 kg per ELV) for reuse and recovery to achieve the 2015 EU targets of 85% reuse and recycling and 95% reuse and recovery. Only 16,160 tonnes (or 107 kg per ELV) can come from recovery only.

Table 8.5 indicates that:

- ATFs treatment removed approximately 4% of ELV tonnages (or 46 kg/ELV) and achieved reuse and recycling rates of 88% and reuse and recovery rates of up of 98%.
- Shredders facilities in Republic of Ireland and abroad treated the remaining 96% of the ELV tonnages (1,023 kg/ELV) and achieved reuse and recycling rates of 77% and reuse and recovery rates of up of 77%. The recovery rate reduced in 2010 as explained previously. In 2010, the main materials exported by shredders facilities were auto shredder residues.

Since these performances were reported to the EC, a number of developments will have a positive impact on the achievement of the ELV Directive's targets:

- **Abolition of the exemption from landfill levy for shredder residue:** the current exemption from the landfill levy for shredder residue was abolished with effect from 1st July 2012. This will increase the costs of shredder residue disposal in Ireland by €65/tonne.
- **Energy Recovery:** The use of thermal treatment for shredder residue can provide a viable alternative to improve recovery rates. This option must have an energy efficient R-status for energy recovery as per Directive 2008/98/EC. Indaver Waste to Energy Facility in Co. Meath has commenced full-scale operations and the EPA has permitted the ASR related wastes to be treated in this facility. ASR is now being sent to this facility for energy recovery since December 2011. This development will have a positive recovery target attainment.

The increase in the costs of disposal by €65/tonne will have two main consequences:

- It will incentivise shredder operators in Ireland to find other waste management options than landfill disposal for ASR e.g. energy recovery or post-shredder

treatment. It may also encourage these facilities to investigate the possibility of investing in their own post shredder treatment (PST) system⁴²⁴. However, one shredder facility operator indicated that it was unlikely they will develop a PST in Ireland because of the slow planning process⁴²⁵.

- The increased cost to shredder facilities will also lead to reduced payments for ELVs to ATFs. This may in turn results in more export of depolluted ELVs from ATFs as they may obtain better value abroad in countries with a lower landfill levy.

In 2010, it was not clear what level of treatment exported ELVs and ASR received. UK shredder companies issue recycling/recovery credits to UK ATFs that supply them with depolluted ELVs annually. Irish ATFs had not claimed auto-shredder residue recycling/recovery allocations as part of their output⁴²⁶. Limiting export to facility meeting a certain recycling and recovery standard with burden of proof to be provided prior to export should improve this situation.

There is also a risk that energy recovery of the complete shredder fraction becomes one of the main alternatives to landfilling of ASR, but it is not a long term solution because of the sub-quota for energy recycling/recovery, i.e. only a maximum of 10% (or 107 kg per ELV)

⁴²⁴ The typical minimum capacity for a fully operational PST plant is between 60,000-100,000 tonnes per year. Typical capital cost depending on the PST process varies between €7-€15 million. Enough feedstock could be provided if this facility is designed to process shredder residues from ELVs and other sources (RPS, 2010).

⁴²⁵ It would be a negative outcome if one of the shredder operators in ROI develop a PST facility in NI because of planning issues. There is an argument that this piece of infrastructure could qualify under the strategic infrastructure act which should help to fast track its planning. The planning issues could also be a smokescreen when in reality the reason to relocate abroad is avail of an environment of lower enforcement and regulation.

⁴²⁶ Producer contracted Irish ATFs who sent depolluted ELVs to UK shredders have been instructed to approach these shredder operators as a matter of urgency to seek allocations of recycling/recovery from ASR going forward. To ensure that Irish ATFs and by extension, the State, are credited with recycling/recovery tonnages from ASR from 2011 on, producers have been instructed to ensure that all contracted ATFs alert any shredder facilities in other Member States of the fact that Irish ATFs need written evidence of the amount of recycling/recovery from ASR obtained on their behalf annually. On foot of this request one ATF has already been in a position to confirm that through a UK shredder they have recycled 40 kg of non-metals per ELV for a quantity of 10,120 ELVs which originated from ELVs imported from Ireland in the year 2010. The types of materials recycled were aggregates and plastics, the total quantity being 404.8 tonnes (0.4 x 10,120). These amounts will be credited to Ireland and will be reflected in the next annual report and serves to demonstrate that once Ireland has been properly credited with allocations from shredders in other Member States that his will have a significant impact on target attainment.(DECLG, 2012a)

shall be classified as energy recovery by 2015. Control will need to be put in place to ensure that the energy recovery quota is not exceeded.

The examination of the use of shredder residues (in Appendix H) demonstrates that enhanced recycling and recovery of ELVs, possibly in combination with incorporation of ASR into products, can technically allow Ireland to meet the European 85% target for reuse and recycling. Moreover, the 95% reuse and recovery target can be met by applying in addition thermal incineration techniques or emerging technologies such as pyrolysis or gasification.

As a minimum, in order to meet the 2006 reuse and recovery targets an additional 81 kg of materials per ELV (including 32 kg of materials per ELV to be reused and recycled exclusively), there will be a need for a combination of waste management options including ATFs, shredder facilities, post shredder technologies and energy recovery.

In the Irish context, an additional 30kg per ELV⁴²⁷ could be further recycled through increased dismantling, but the costs may be prohibitive. This could also be achieved in a more cost-effective manner by post shredder treatment abroad (UK shredders can achieve 41 kg per ELV⁴²⁸). In both cases there will be a need for energy recovery to fill the shortfall for the reuse and recovery targets.

However, to meet the 2015 reuse and recovery targets an additional 188 kg of materials per ELV (including a minimum of 81 kg of materials per ELV to be reused and recycled exclusively) will be need to be diverted from landfill. The current performance of UK shredders will not be enough to meet these targets.

Further research and investment will be required to increase the recycling and recovery performance of PST technology in the UK. If post shredder technology is developed in

⁴²⁷ 3,444 tonnes of glass (21.5 kg /ELV) and 1,283 tonnes (8.1 kg /ELV) of large plastic parts were not removed at ATFs in 2010 (DECLG, 2012a).

⁴²⁸ <http://uk.simsmm.com/news-and-resources/sims-news/sims-achieves-elv-target-in-house>

Ireland, learning from other countries such as in Belgium with high PST performance will be important⁴²⁹.

As the costs of the PST processes are subject to significant economies of scale, these technologies may need to be developed on an all-island basis.

In order to encourage shredder facilities in Ireland to explore the most cost-effective technique to improve recycling and recovery of depolluted ELVs accepted at their facilities, explicit recycling and recovery targets should be inserted in their permit conditions. These targets will need to vary depending on the level of treatment carried out by ATFs delivering ELVs to the shredder facilities (e.g. shredder reuse and recycling target for ELV from ATFs not removing glass and large plastic part should be 76% of the ELV received, while target for ELVs from facilities carrying the full treatment should be 73%⁴³⁰, the best Belgian facility achieves 89.3%). These targets should be met by the facilities onsite treatment or by offsite facilities as long as evidence of performance is provided. The limitation on export by ATFs to sub-standard facilities is important to prevent unfair competition by facilities abroad.

As the costs of the PST processes are subject to significant economies of scale, these technologies may need to be developed on an all-island basis.

⁴²⁹ Performance of Belgian shredders can be found at

http://www.febelauto.be/userfiles/Recyclagepercentages%20shredders%202009_2011.pdf

Febelauto regularly updates a benchmarking tool on its website where producers and waste operators can see the recycling performances of all authorised facilities. Recycling rates have thus become a key performance indicator for ELVs in Belgium. This benchmarking tool, plus the fact that ELVs is a profitable business in Belgium has encouraged waste operators to continually improve their efficiency.

The recycling performance results allow shredder operators to differentiate themselves from the competition, which in turn helps car owners to make an informed choice. This in turn gives recycling rates a boost

⁴³⁰ The difference is based on 30 kg per ELV or 3% of an ELV.

Recommendations:

Impose explicit minimum recycling and recovery targets on shredder facilities.

Limit export of ELVs and ASR to facility meeting the required recycling and recovery standard with burden of proof to be provided prior to export.

8.10.4 Structure of the ELV PRI and Need for Compliance Scheme

The current structure of the ELV system does not provide producers with the option of joining a compliance scheme. This is in contrast with other waste stream PRIs (packaging, WEEE, batteries, tyres and farm plastics).

At European level, ELV PRIs have been found in 24 Member States (including Luxembourg). There is a wide range of ELV PRI options including producer led system (e.g. Austria), government led (Germany), compliance scheme with producer responsibility organisations (Belgium). For example, the following countries have recorded high targets for reuse and recovery in 2009⁴³¹:

- Austria (84% reuse and recycling, 96% reuse and recovery),
- Belgium (88% reuse and recycling, 91% reuse and recovery) and
- Germany (89% reuse and recycling, 93% reuse and recovery)

These countries are amongst the best-performing member states in the European Union with regards to ELV waste management performance⁴³². There is no current evidence of correlation between the success of a Member State in achieving the ELV Directive targets and whether there is a compliance scheme present.

⁴³¹ Eurostat extrapolation, last updated 19 March 2012:

<http://epp.eurostat.ec.europa.eu/portal/page/portal/waste/data/wastestreams/elvs> .

⁴³² In 2009 (Bios, 2012)

Producer Responsibility Organisations (PRO) in compliance schemes performs three main functions. These are:

- Meet EU and/or national environmental targets;
- Contract with firms to collect, sort and recover waste;
- Educate and create awareness.

Additional services offered by PROs include reducing the administrative burden of producers and public authorities.

Allocation of Targets

It is difficult to classify the Irish ELV system as government led or producer led as no organisation seems to be fully leading it. While the DECLG prepared the current ELV Regulations, they allocated the responsibilities for achieving targets to two groups: the producers and some of the ATFs.

In the current system, targets only apply to ELVs deposited at ATFs. It should be noted that this system does not encourage producers to assist in the increase of the delivery of ELVs to ATFs.

According to Article 16 of the ELV Regulations, the responsibility for achieving the ELV Directive targets rests principally with the producers. However, the producers' influence is restricted to ELVs that are deposited at ATF subject to producers and ATFs contracts initially in place (66 ATFs⁴³³, accounting for c. 25% ELVs arising treated⁴³⁴).

For ELVs deposited at ATFs outside the producers and ATFs contracts, (approximately 88 active ATFs and 11 inactive ATFs^{435, 436}) the ATF operators are responsible for achieving the target. Currently, shredder facilities are not responsible for achieving targets.

⁴³³ Accessed on 03/10/2012 at http://www.elvire.ie/pdf/gser_producer_atflist_2012.pdf

⁴³⁴ Personal Communication with Fiacra Quinn, Greenstreet

⁴³⁵ Calculated from list provided by the DECLG and list provided by the DTTS

Using the contractual obligations, producers can exert a certain level of control on contracted ATFs, but they will have no influence on non-contracted ATFs⁴³⁷.

Also, while ATFs have an important role to play in depolluting ELVs, it is unclear how facilities which only remove approximately only 4% of the weight of an ELV can influence significantly the achievement of the targets in the ELV regulation. In order to do this, ATFs will need to be in a position to influence the treatment of the remaining 96% of the ELVs at shredder facilities, but as shredder facilities are in an oligopoly⁴³⁸ situation in Ireland, it is unlikely that ATFs will be able to do so.

With the current system, it is difficult for the DECLG to monitor the performance of the groups who have responsibility for target achievement (i.e. ATFs reporting is generally in need of improvement and contracted ATFs do not distinguish between producers brands when reporting etc.). Therefore it is difficult to allocate responsibilities and enforce these responsibilities with regards to target achievement.

In order to facilitate the monitoring of target achievement by the DECLG, targets will need to be allocated to one entity.

Because the targets are based on ELVs deposited at ATFs, this entity will need to from its inception contract with all the recovery operators to meet the targets for all ELV arisings. This will encourage the entity to have a more proactive role in ensuring that ELVs are delivered to the best performing facilities. This entity will need to be assisted by the enforcement of public authorities.

⁴³⁶ It is not possible to determine exactly how many ELVs are processed by the ATFs as we do not know the share of undepolluted ELVs sent directly to shredder facilities in the ELV arisings estimated by the EPA.

⁴³⁷ The ELV Regulations place a significant duty on vehicle importers to ensure that the ATFs they employ comply with the legislation, particularly in respect of operating standards and record-keeping. However this is not the case for those ATFs that are not subject to a contract with any operator, where the onus for compliance with the regulations technical standards is placed solely on the operator of the facility.

⁴³⁸ An oligopoly is similar to a monopoly, in which only one company exerts control over most of a market. In an oligopoly, there are at least two firms controlling the market.

Contracting with ATFs and shredder facilities

In the current system, the producers are responsible for contracting ATFs. There are currently 66 contracted ATFs with producers. In some case, producers have a choice between ATFs to contract with within each local authority. There is a significant variation in the distribution and concentration of ATFs in each local authority. For example, there are

- 12 ATFs in Kerry County Council, one per 12,000 inhabitants,
- 13 in Limerick County Council, one per 10,000 inhabitants.
- There is only one ATF in Cork City Council (i.e. 1 ATF per 119,000 inhabitants), while there are none in Dun Laoghaire-Rathdown County Council or Waterford City Council.

With the current system, there is oversupply of ATFs in some local authorities and shortage in others. This gives significant negotiating powers to ATFs which are the sole operators in their local authority.

At the same time in local authorities where there are too many ATFs, market conditions may be difficult for these ATFs and lead to reduced compliance level.

Considerations should be given to a more flexible approach and using perhaps car dealers as ELVs collection point (see example in Box 21). According to Article 5(3) of the ELV Directive, Member States may permit producers, dealers and collectors on behalf of an ATF to issue CODs provided that they guarantee that the end-of life vehicle is transferred to an authorised treatment facility and provided that they are registered with public authorities.

According to Article 5.4 of the ELV Directive, producers should meet all or a significant part of the costs of the take-back of ELVs. Currently ELVs have a positive market value and are a well sought waste. However, if the market value of ELVs reduces to a level which does not allow ATFs to be economically viable this could impact negatively the free take back of ELVs by ATFs. In this case, producers will need to fund the take-back by contracted ATFs. Non-contracted ATFs will not be profitable anymore and are likely to close as they will not be the recipient of producers funding. This may also result in ELVs being abandoned or in contracted ATFs accepting a higher number of ELVs, as they will be supported financially by the producers.

The effect of the reduction or negative market value of ELVs should be considered by the producers and the DECLG in the establishment of a compliance scheme. Some of the risks could be mitigated by provision made in the contingency funding. Considerations should also be given to allow all ATFs to be contracted to the compliance scheme (as long as they meet the treatment and reporting standard).

With the current system, producers do not have contracts with shredder facilities for the processing of the depolluted hulk, which are the main facilities with the ability to increase recycling and recovery rate.

A structure which would improve the producers' ability to increase ELV supply to ATFs and influence ELV treatment will be beneficial to the ELV System. A compliance scheme could provide such a structure. A number of mechanisms could be used by the compliance scheme to improve the standard of treatment (e.g. using car dealership to increase supply of ELVs to the best performing facilities, financial incentives, monitoring ATFs, sharing technical knowledge, etc.).

Education and Awareness

There are a number of dysfunctional elements relating to education and awareness in the ELV system. This revolves around the provision of public information and communication with the recovery operators. This is discussed in more details in Section 8.10.5. The establishment of a compliance scheme could assist the DECLG, the DTTAS, and the local authorities by enhancing the ability of producers to raise public awareness and support authorities in communicating with the recovery operators.

In addition the establishment of a compliance scheme presents several benefits to producers:

- Reduction of transaction costs with ATFs and local authorities
- Increase control on the use of producers' fees paid to the ELV PRI.
- Increase negotiating power with ATFs and shredder facilities

If the issues described above are addressed by the compliance scheme, there will also be a number of benefits to the state, including:

- Decrease in administrative burden,

- Improved monitoring and transparency.

Overall the establishment of a compliance scheme to assist producers to manage ELV waste management will be beneficial to the ELV system.

SIMI, on behalf of all its members, has submitted to the DECLG an outline of a pro-active proposal for a group compliance scheme. This entity will be funded by the producers. The entity will:

- Engage partner ATFs,
- Identify and implement solutions to assist with target achievement and recycling industry development,
- Fund ongoing public awareness and marketing campaigns,
- Undertake shredder trials to develop protocols to that will be the basis for reporting and target achievement.

SIMI will need to provide more specific details in their proposal especially regarding

- How they intend encourage the supply of ELVs to the ELV system (developing an online quote for ELV similar to cartakeback.com could be considered),
- How compliance with Article 5.4 of the ELV Directive will be achieved,
- How they will engage with ATFs and shredders to improve recycling and recovery rates.
- How the producers will fund the system.
- How more producers can be recruited.

The SIMI Members agreed to provide a level of funding similar to the level of registration fee they are currently paying the local authority (assuming that by funding the compliance scheme they become exempt of local authority registration fee as is the case for other waste streams' PRIs).

If the level of funding provided to the compliance scheme on a voluntary basis is not enough to improve recycling and recovery rates, the DECLG should consider making provision in the revised Regulations for a scrapping fee, this fee could paid by the first owner of the vehicle and be used to fund the compliance scheme (see Dutch example in Box 22).

Box 22 : Auto Recycling Nederland Ltd. (ARN) in The Netherlands⁴³⁹

The Netherlands, for example, established the Auto Recycling Nederland Ltd. (ARN) in 1995. ARN is a 'third party' organisation representing car-dismantling companies, car manufacturers and importers, car dealers and workshops, and car repair companies. The producer responsibility system is expressed in the ARN system by a levy scheme. Every time a new car is purchased, the buyer pays a waste disposal fee of €45 down from €115 per vehicle when originally introduced. ARN Auto Recycling uses these fees to process the cars in a sustainable manner at the end of their life. The car owner does not pay any fee when surrendering his/her car for scrappage.

In order to establish such an entity, the current regulatory requirements will need to be amended.

An Approved Bodies Section will need to be added to provide the opportunity to exempt producers joining the compliance scheme from certain requirements, make provision for application to the Minister for approval, gives the power to the Minister to grant or refuse approval, review and revoke approval.

Part II Producer Responsibility Obligations will also need to be amended to reflect the change in the allocation of targets.

The current option of self-compliance will also need to be retained to ensure that producers not willing to join the compliance scheme have this option. Funding from the self-compliers should cover the cost for local authorities to administer and monitor the self-compliance system and the cost for the compliance scheme to meet the national targets for the recovery of the self-compliers vehicles.

⁴³⁹ Accessed on 03/09/2012 at <http://www.arn.nl/english/ARN-Auto-Recycling/Waste-disposal-fee>

Recommendations:

It is recommended to establish a compliance scheme for the ELV PRI. The compliance scheme should have responsibility for achieving the national targets.

The compliance scheme should be funded by producers by agreement but provision should be made in the revised Regulations to fund the compliance scheme when the first owner purchases the vehicle.

8.10.5 Information, Education and Awareness

The role of information and awareness in the ELV system relates to the needs to:

- Inform the public / vehicle owners of their obligations with regards to the ELV Regulations and provide useful information to help vehicle owners to discharge their obligations.
- Inform producers of their obligations starting with the need to register with each local authority where they are selling vehicles (or compliance scheme if this option is established).
- Inform facilities treating ELVs of any specific requirements useful to meet the regulatory requirements.

Currently information on the ELV System is communicated by four groups:

- By the producers who inform the public of their collection network using newspapers advertisement (two per year) and promotional literature, including catalogues and brochures, associated with the marketing of new specified vehicles of that producer's brand. Producers also provide information to ATFs on depollution steps using the IDIS information system for pre-treatment and dismantling information for ELV⁴⁴⁰,
- By local authorities who inform the public of their obligations (sometimes) and provide details of ATFs in their own areas.

⁴⁴⁰ Accessed on 03/09/2012 at <http://www.idis2.com>

- By the DECLG on its website⁴⁴¹ which gives an overview of the Regulations and each economic operator obligations. The website also provides a number of templates to producers for registration application, implementation plan and annual reports.
- By the DTTAS website⁴⁴² which informs vehicle owners of the need to bring the vehicle registration certificate when depositing an ELV at an ATF in order to obtain a COD.

In addition, the EPA provides information on progress towards meeting ELV Directive targets (EPA, 2012b).

However, the system presents a number of gaps which are discussed below.

The DECLG pointed out that there is still limited awareness (DECLG, 2012) from the public about their obligations under the ELV Regulations. For vehicle owners delivering to ATFs, there is still a lack of awareness that a vehicle registration certificate needs to be provided when depositing an ELV at ATF. Awareness measures discussed in Section 8.10.1 should help solve these issues.

While the IDIS information system provides details on how to treat an ELV, it does not prescribe what level of treatment is required. This is prescribed in the waste permit with reference to the ELV Regulations. Also, as there is a low level of compliance with regards to the removal of glass or large plastic parts there is a need for increased awareness raising in advance of enforcement measures. This should be undertaken by the local authorities or the compliance scheme if established. Inclusion of the Second Schedule of the ELV Regulations in the waste permit conditions could assist in raising awareness of these obligations.

Similarly in the UK, shredder companies issue recycling/recovery credits to UK ATFs that supply them with depolluted ELVs annually. Irish ATFs had in 2010 claimed auto-shredder residue recycling/recovery allocations as part of their output. Producer contracted Irish ATFs

⁴⁴¹ Accessed on 03/09/2012 at

<http://www.environ.ie/en/Environment/Waste/ProducerResponsibilityObligations/EndOfLifeVehicles/>

⁴⁴² Accessed on 03/09/2012 at <http://www.transport.ie/roads/motortax/?lang=ENG&loc=2468>

who sent depolluted ELVs to UK shredders have been instructed by the DECLG to approach these shredder operators as a matter of urgency to seek allocations of recycling/recovery from ASR going forward (DECLG, 2012a). However, there does not seem to be any similar communications to non-contracted ATFs. This requirement should be communicated by the local authorities as a matter of urgency.

Local authorities should write to all ATFs to highlight the ELV Regulations minimum technical requirements for non-metal materials removal during depollution and dismantling. They should also request ATFs to confirm where they are sending depolluted ELVs to and if that shredder is facilitated with post shredder treatment or not. For ATFs sending depolluted ELVs to shredders with post shredder treatment, these facilities should provide evidence of their reuse, recycling and recovery performance.

The setting up of a national scheme would be beneficial for awareness. A compliance scheme could be tasked with targeting all actors in the system, raising awareness and informing the public in relation to the disposal of ELVs.

Recommendations:

See Section 8.10.1 Recommendations on awareness measures

Local authorities to write to all ATFs with regards to the ELV Regulations minimum technical requirements for non-metal materials removal and enforce these requirements.

Current Public Awareness Campaigns should be examined and improvements should be made where possible.

8.10.6 Data Collection and Reporting

Under the ELV Regulations producers and ELV treatment facilities must report on indicators which reflect the environmental performance of a business in the context of achieving the targets set in the ELV Regulations. This information is in turn used by the EPA and the DECLG to monitor the ELV system and report to the European Commission on the national performance in implementing the ELV Directive.

An overview of the reporting system is shown in Figure 8.11. ELV treatment facilities are central to the system.

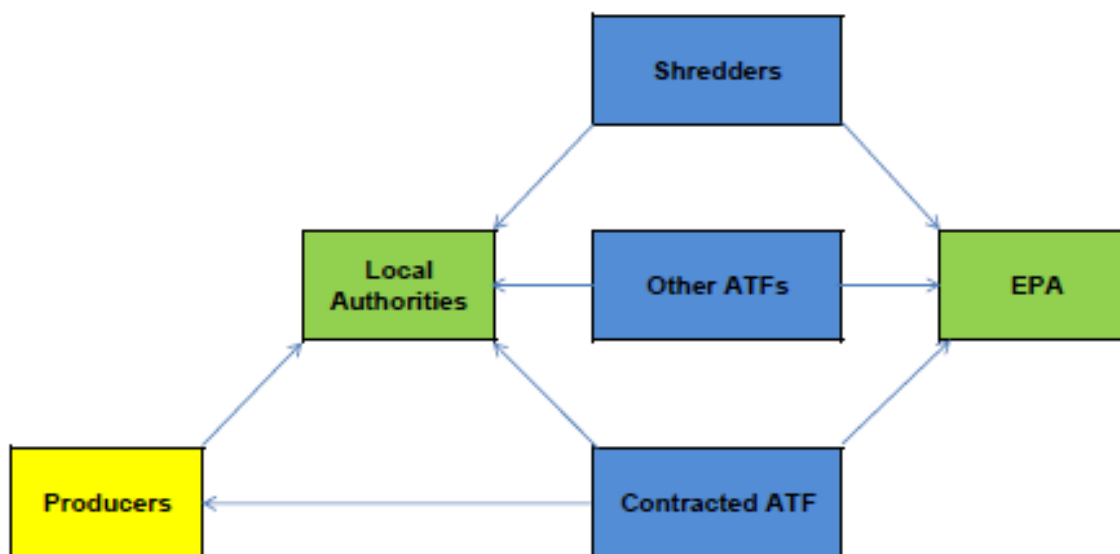


Figure 8.11: Shows an Overview of the Reporting System

8.10.6.1 Record Keeping by Producers of ELVs Deposited at ATFs

Vehicle producers must keep records of the number and weight of vehicles placed on the market, the number of ELVs that have passed to the importer's contracted ATF infrastructure and the weight of materials that have been recycled, recovered and disposed of from these ELVs. This information has to be provided by each local authority area and must be submitted by the vehicle importer yearly⁴⁴³. Each producer has an obligation to obtain these details from the ATF operators it uses. All of this information must be sent to the EPA if the Agency requests it.

⁴⁴³ See template Annual report accessed on 03/09/2012 at

<http://www.environ.ie/en/Environment/Waste/ProducerResponsibilityObligations/EndOfLifeVehicles/PublicationsDocuments/FileDownload,1440,en.pdf>

Review of annual reports submitted by producers indicate that the information from the ATFs is either not provided or provided in aggregate numbers for all producers in the local authorities. It is therefore not possible to estimate the ELV arisings for a specific brand.

8.10.6.2 Record Keeping by ATF Operators

ATF operators are required by the conditions of their waste permits⁴⁴⁴ to maintain records relating to the:

- Type, description and quantities of waste accepted, vehicle registrations, number of ELVs in the load, details of where the waste originated (including name of carrier and waste collection permit).
- Type, description and quantities of waste removed from the facility, number of ELVs in the load, details of destination.

The ATF operator must also submit an annual environmental report including information on tonnage and EWC codes of waste materials accepted and/or sent off-site for disposal/recovery.

ATF operators subject to producer contracts are required to pass specified records to the producer. This information is collated by an environmental consultancy, Greenstreets, on behalf of the producers. The quality of data and the level of details provided by ATFs could be improved.

In addition, the EPA carries out a survey of ATFs annually. The information requested from the ATFs include: number and quantities of ELVs accepted onsite (depolluted, undepolluted), ELVs sent off-site (depolluted, non-depolluted), materials removed (e.g. batteries, plastic bumpers etc.)⁴⁴⁵.

⁴⁴⁴ Issued under S.I. No. 821/2007 — Waste Management (Facility Permit and Registration) Regulations 2007 & S.I. No. 86/2008 — Waste Management (Facility Permit and Registration)(Amendment) Regulations.

⁴⁴⁵ Accessed on 03/09/2012 at http://www.epa.ie/downloads/forms/wreport/nwr/EPA_ELV_survey_2011.xls

Discussion

Several bodies collecting data from the ATFs have noted that the ATFs reporting needs improvement. The main issues relate to ATFs response rates (EPA, 2012, Greenstreets, 2012, n.p.) and quality of reporting (DECLG, 2012a). These issues are of particular concern to the EPA and the DECLG, as this information is used to report on EU target achievements and monitor the effectiveness of the ELV system. Inaccurate reporting may lead to under or over reporting resulting in the State and the European Commission taking inappropriate or disproportionate measures. One may also wonder what power producers have on contracted ATFs as there are limited financial incentives for the ATFs to make resources available for reporting. The compliance scheme should examine ways for incentivising the reporting of any ATFs under its contract and sanctioning these if they fail to report in a satisfactory and timely manner.

The data collection and reporting system contained in the ELV Regulations is rather complicated (Laurence, 2007). In some cases ATFs must produce one report for each producer they are contracted with, one report the local authorities and complete the EPA survey. The duplication in the number of reports to be prepared by the ATFs is an additional administrative burden. Simplification of the reporting requirements would help improving response rate and quality of reporting. Also, if there was one body rather than three (e.g. a compliance scheme) responsible for following-up and validating thoroughly this information it would in turn reduce the burden on the state bodies collecting this information.

For example, one standard report based on the EPA data requirements (which are typically the most comprehensive). Other data to meet permit conditions could also be included. A copy of the report would still be needed by all bodies.

One approach which could also assist ATFs with reporting would be to expand the functions of www.motorelv.ie to attach a waste reporting module. A similar system developed by CarTakeBack exists in the UK (See Box 23). This could be developed and managed by the compliance scheme in association with the relevant state bodies (DTTAS, DECLG, EPA and local authorities).

Box 23: Cartakeback.com

CarTakeBack is an ELV service provider to vehicle manufacturers and Authorised Treatment Facilities (ATFs). CarTakeBack provide an instant online scrap car valuation, a choice of scrap car recycling centres in the vehicle owner local area and the opportunity to arrange for the scrap car to be collected. After the recycling centres scrap the vehicle, CarTakeBack send an official Certificate of Destruction by e-mail. Recycling and Recovery data information can also easily be extracted from the system.

Recommendations:

Examine the possibility of simplifying ATF reporting requirements to one standard report, which satisfy the EPA, the Local authorities and the producers' requirements.

Investigate the expansion of the online COD system to integrate a waste reporting module.

Increase follow-up of ATF reporting with one dedicated body (e.g. compliance scheme).

The compliance scheme should examine ways of incentivising or sanctioning the reporting of any ATFs under its contract.

8.10.7 State and Taxpayer Costs

The main sources of income to the State from the ELV PRI are:

- The registration fee that the producers pay to the local authorities, and
- The waste permits costs paid by ATFs to local authorities (€5,000 / annum).

It must be noted that the landfill levy (applicable to shredder residues since July 2012) will also generate revenues which are held by the DECLG Environmental Fund.

Local authorities incur the following costs:

- Administer producer registration;

- Enforcement activities (including litigation) by local authorities and collection costs of abandoned ELVs;
- Information and awareness (mainly information on website).

The PRI unit in the DECLG also handles a number of queries from the DTTAS relating to ELVs.

As these costs are not easily accessible, it is not possible to calculate what proportion of the costs is recovered. However, it is very likely that the current ELV producer responsibility initiative covers a large proportion to the State of the cost of managing ELV waste.

Section 8.6 indicated that only 21 SIMI members are registered with local authorities as producers under the ELV Regulations. There are a large proportion of producers which are currently not compliant. This is a significant source of income to the State which is lost through current and back fees. Traders selling vehicles must register with the Revenue Commissioner as VRT Traders. Comparing the list of producers registered with the local authorities with the traders registered for VRT with the Revenue will help to identify non-compliers.

Recommendations:

Increase enforcement by local authorities of non-compliant producers.

8.10.8 Costs to producers

The costs to producers which are registered with the local authorities come from a number of sources:

- Registration fees paid to local authorities: according to SIMI the total fee paid to local authorities to date is €13.6 million and €1.5 million was paid in 2010⁴⁴⁶. It is unclear if the registration fee paid by the producers is used by the local authorities on activities relating directly to the ELV producer responsibility initiative (producer registration,

⁴⁴⁶ SIMI Meeting 07/09/2012

producer and ATF enforcement, public awareness etc.). If a compliance scheme is not introduced, there needs to be more transparency in terms of the use of the producers fees paid to local authorities.

- Administrative costs: SIMI also quoted that with current systems producers had more than 1,000 contractual agreements with ATFs. According to Articles 10 and 11 of S.I. 282 of 2006, each producer also has to register with and report to each local authority.
- Design changes cost to comply with the vehicle design requirements in the ELV Regulations.

The first observation is that most of the costs to producers are used for administrative purpose and not to encourage ELV reuse, recycling and recovery. A more effective system would see a minimum use of the producer funding for administrative purpose and an increased use of this funding to directly encourage reuse, recycling and recovery at ELV treatment facilities (e.g. subsidies similar to the packaging PRI). The transfer of producer responsibility to a compliance scheme could provide this opportunity.

The second observation is that the current level of funding (€10- €100 per vehicle sold⁴⁴⁷) while higher is in the same order as cost paid by producers in Belgium (€8/tonne in 2010) and Portugal (€6/tonne in 2011). It must be noted that there is limited available information of cost to producers for other EU Member States. Also a direct comparison of compliance costs may give an incomplete picture as costs may vary due to a number of factors⁴⁴⁸. However, this indicates that the current level of funding if used effectively is in the same order as countries like Belgium⁴⁴⁹ which have been successful in achieving the ELV Directives targets.

⁴⁴⁷ Greenstreets Meeting 04/07/2012

⁴⁴⁸ E.g. differences in collection systems, the proportion of recovery costs covered by the compliance scheme, the recovery channels, and landfill levy which are likely to vary by Member States

⁴⁴⁹ It may also be interesting to point out that according to the representative of Febelauto interviewed the ELV scheme in Belgium is highly profitable for ATF and producers. ATF pay producers for the ELVs – due to the high value of the post shredded material.

The establishment of a compliance scheme would reduce significantly the administrative burden on producers as the compliance scheme would remove the need for producers to register, report and pay separately fees to each local authority and also contract separately with each ATF.

Recommendations:

Reduce the administrative burden of producer responsibility and by establishing a compliance scheme, use producers funding to encourage ELV reuse, recycling and recovery rather than for administrative activities.

8.10.9 Enforcement

Enforcement is an important instrument for ensuring the implementation of PRIs (OECD, 2001). The key enforcement challenges for the DECLG is to provide a framework which maintains a trade-off between effectiveness and administrative cost and also a deferring effect for non-compliers without going too far towards the imposition of disproportionate penalties.

The current focus on unauthorised ELV sites should be maintained until the Continuous Vehicle Taxation System linked to the issue of COD is implemented.

In our review, we have identified a number of areas affecting the performance of the ELV PRI. These issues relate to:

- Producers which are not complying with the ELV Regulations: As only SIMI members are registered with local authorities, there are many producers selling second hand vehicles which are in breach of the ELV Regulations.
- ATFs which are not complying with the minimum treatment requirements and reporting obligations.
- ELVs which are exported through unauthorised channels.
- Increased monitoring of shredders facilities should also take place to ensure that all shredded ELVs are depolluted.

In addressing these issues, there is a need to consider the following:

- Resourcing issues: the requirement for increased effort by the local authorities in order to ensure that those subject to the ELV Regulations are compliant.
- Penalty levels: Are the current levels likely to deter offenders?
- Identification of non-compliant producers and ATFs: how easy is it to identify non-compliant producers.

With regards to the **resourcing issue**, a number of options could be examined:

- Require local authorities to increase the level of priority afforded to ELVs in their Recommended Minimum Criteria for Environmental Inspections Plans⁴⁵⁰ and allocate dedicated resources. These resources may have to be taken from other sectors where the environmental risks are higher (e.g. water, illegal waste operation). Also it is our understanding that the current level of enforcement staffing is unlikely to change in the near future, therefore there is limited scope to increase inspections level in this way. Any additional inspections will need to be targeted with clear projected outcomes.
- Establishment of a central PRI enforcement unit: The main benefits would be to have a team with specialised skills fully dedicated to the enforcement of the ELV PRI (or other PRIs) providing one point of contact for the DECLG, compliance schemes and the EPA. It would be easier to coordinate inspection campaigns and monitor the effect of these campaigns. A disadvantage to this would be the loss of the relationships built up between the local authorities and the businesses in their own areas. However, a central PRI enforcement unit enforcing all PRIs could bring different types of inspection activity together in a single or harmonized process which increases coherence and reduces costs to business and authorities⁴⁵¹.
- This role could be fulfilled by a nominated local authority or nominated waste management Region. This model has been successful for the issue of waste collection permits and for the management of the TFS Regulations.

⁴⁵⁰ The Analysis of the effectiveness of enforcement arrangement through an evaluation of RMCEI plan will be carried out as part of the cross-cutting section on enforcement in the Final report of this project.

⁴⁵¹ This is one of the best practice recommended by IMPEL following a Better Regulation Principles in Improving the Efficiency and Effectiveness of Environmental Inspection Authorities (IMPEL, 2009).

- Inspections could also be outsourced as is currently the case for the EPA WEEE inspections⁴⁵², local authorities' fat, oil and grease inspections etc. This would provide a more flexible approach to enforcement without increasing demand on local authority personnel.
- It may also be worthwhile considering how the establishment of a compliance scheme proposed by SIMI could assist public authorities' enforcement. For example, the proposed compliance scheme can assist in the identification and recruitment of non-compliers. It can also incentivise ATFs to improve their standards. The compliance scheme could fund enforcement inspection campaigns from local authorities.
- These considerations should be examined in conjunction with the local authorities' redeployment of resources following the rationalisation of the waste management regions and in line with the review of waste regulation and enforcement roles of the EPA and local authorities which are proposed in the waste policy document published by the DECLG (2012c).

Setting **penalties** at an appropriate level is also part of a successful enforcement framework. In the case of the ELV PRI, while a conviction on indictment is likely to be a substantive deterrent for any producers, the summary convictions may not be a significant deterrent. It may also be worthwhile to incentivise local authorities to enforce the PRI by, for example, requiring that those not in compliance with the Regulations pay fines to the local authorities themselves. This would require specific provisions to be made in the legislation for that purpose. **Civil sanctions** could be used by the local authorities for this purpose. An example is provided in Box 24.

⁴⁵² http://www.etenders.gov.ie/search/show/search_view.aspx?ID=SEP170017

Box 24: Civil Sanctions in the United Kingdom⁴⁵³

In January 2011, the civil sanctions powers of the Environment Agency (EA) were extended. They include now:

- **Variable Monetary Penalties (VMPs).** The EA can choose to fine a non-compliant company based on the severity of the offence. This can be anything up to the maximum of £250,000 per offence committed. The fine is calculated on a number of factors, which include the costs avoided through non-compliance, a deterrent factor and aggravating circumstances (e.g. if the company contacted a compliance scheme in the past but failed to sign up to that scheme).
- **Enforcement Undertaking (EU):** Businesses can complete an Enforcement Undertaking Offer Form which can be submitted voluntarily to the EA. The business must offer a sum of money and put forward a suitable environmental project which they agree to fund with the money. They will also need to demonstrate that they have put in place a number of internal systems / processes to ensure they are complying with the relevant regulations and will remain compliant in the future.

Improving the **identification of non-compliant producers and ATFs** will also facilitate enforcement and reduce the risk to the State. Peer group pressure can be expected to play an important role in reducing non-compliance by producers. There is an economic incentive to report competitors who cheat the system so that they can be identified. A number of methods can be used for example:

- The establishment of a central register for complying companies would facilitate more transparent and efficient tracking of this sector of industry. At present this information is only on an ad-hoc basis from local authorities. This register should be held in a publicly accessible location and updated frequently. The compliance scheme, for example, could host this service on its website.

⁴⁵³ Accessed on 30/09/2012 at <http://www.environment-agency.gov.uk/business/regulation/116844.aspx>

- The Public disclosure of producers who have been successfully prosecuted may be an additional tool to encourage compliance. There are precedents with the Health and Safety Authority⁴⁵⁴.

All local authorities or state bodies tendering out contracts should also require all tendering organisations to furnish proof of compliance with Irish Regulations including compliance with PRIs⁴⁵⁵. In March 2009, the DECLG also wrote to each public body to draw their attention to the obligations of producers (manufacturers, importers, etc...) and distributors (retailers) under the Waste Management Acts. This letter highlighted the buyer's obligation under the WEEE, Batteries and Tyres Regulations. A similar exercise could be repeated and advertised for the purchase of vehicles.

Recommendations: The following measures would improve the enforcement of the ELV PRI.

- The current focus on unauthorised ELV sites should be maintained until the Continuous Vehicle Taxation System linked to the issue of COD is implemented.
- The local authorities should increase enforcement focus on non-compliant producers, ATFs not meeting the minimum technical requirements, illegal export of ELVs and monitoring of shredder facilities activities.
- The DECLG should establish a central PRI enforcement unit,
- The DECLG should review the penalty levels to reflect the costs of non-compliance,
- The DECLG should increase the range of civil sanctions to provide more flexible enforcement,

⁴⁵⁴ <http://www.hsa.ie/eng/enforcement/Prosecutions/>

⁴⁵⁵ The DECLG document Green Tender: An Action Plan on Green Public Procurement recommends that organisations seeking to integrate GPP considerations into their procurement policies and practices must first ensure compliance with all the relevant laws. In the GPP context, five topical instances of such legal requirements concern energy efficiency; packaging waste; waste electrical and electronic equipment (WEEE); volatile organic compounds (VOCs); and the Clean Vehicles Directive.

- Local authorities, compliant producers and compliance scheme if established should collaborate to improve the identification of non-compliant businesses.

8.11 CONCLUSIONS

The Irish ELV system is not performing well. There is leakage at a number of stages in the ELV system, which results in limited ELVs delivered to facilities meeting the minimum treatment standards and in the reuse, recycling and recovery targets not being met.

The system needs structural changes regarding the allocation of responsibilities, which should be given solely to the producers, with minimum recycling and recovery standards set for all waste operators in the ELV system.

In order for the producers to meet their responsibilities, they need to be assisted by the Irish public authorities with increased enforcement of non-compliant producers and waste operators. While enforcement has led to a decline in unauthorised ELV facilities, the implementation of continuous vehicle taxation and link with the COD system is also paramount to improve the system.

Finally the establishment of a producer compliance scheme will have beneficial effects by providing improved coordination in the ELV system, reducing administrative burden to the state and businesses, and improving ELV recycling and recovery rates. However the SIMI proposal needs to provide more details in this regards.

If the level of funding provided by the producers is not sufficient, the DECLG should consider introducing a scrappage fee on the vehicle first owner to be used to fund the ELV system and compliance scheme.

The implementation of the recommendations in this report and the reliance on waste-to-energy and UK PST treatment will help in meeting the 2006 ELV Directive targets. However the 2015 ELV Directive targets will be more challenging and further research will be required to further improve the performance of the system. The recommendations in this report should be implemented as a matter of priority to help Ireland in achieving the ELV Directive targets. However, because of the structural changes required and considerations for other measures implemented by the government, the sequencing of the measures needs to be considered.

The first step in improving the Irish ELV system is to implement the Continuous Vehicle Taxation System and provide a framework to set up the compliance scheme by the producers. Until the Continuous Vehicle Taxation System is in place, the enforcement focus on unauthorised ELV sites should be maintained.

The recommendations regarding enforcement should be also implemented urgently, but in conjunction with the local authorities redeployment of resources (following the rationalisation of the waste management regions) and in line with the review of waste regulation and enforcement roles of the EPA and local authorities which are proposed in the waste policy document published by the DECLG in July 2012.

Some awareness measures should be implemented as soon as possible (e.g. owner obligations in all relevant materials), while other recommended measures will benefit from the establishment of compliance scheme (larger awareness campaign, simplification of reporting, research and development).

9 TYRES PRODUCER RESPONSIBILITY INITIATIVE

This section and related appendices provide a review of all aspects of the current system for the management of tyres and waste tyres producer responsibility initiative and make recommendations to ensure that waste is managed according to best environmental practice.

Unlike other PRI schemes (such as WEEE schemes or Repak) the existing PRI schemes for tyres do not fund or subsidise the collection and treatment of tyres or provide for specific recycling or recovery targets. Instead, these schemes were established largely as tracking / data gathering systems. Estimates of the percentage of waste tyres unaccounted for in Ireland range from 24% (PRO data) to 51% (EPA estimate). The corresponding figure for the EU 27 (plus Norway and Switzerland) is just 4% (i.e. 96% of waste tyres are accounted for). Our performance is below the EU average and the current system is clearly not functioning as intended. A number of recommendations are therefore made regarding future producer responsibility initiative for the management of tyres and waste tyres, including, inter alia, the introduction of a full PRI with producers and importers taking on responsibility for the financing and collection of waste tyres from tyre suppliers. It is also recommended that the current self-compliance option be ended.

9.1 POLICY FRAMEWORK

The Waste Management (Tyres and Waste Tyres) Regulations 2007 (S.I. 664 of 2007)⁴⁵⁶ became law in Ireland on 1st January 2008. These regulations provide a number of options for producers to meet their obligations, either through self-compliance or by joining a compliance scheme.

The Regulations support the environmentally sound management of waste tyres by providing a regulatory framework for comparing quantities of waste tyres arising with the quantities placed on the market and tracking the movement of waste tyres from the time they are discarded until they are either reused or processed for recycling and /or recovery. The Regulations impose obligations on persons who supply tyres to the Irish market (producers

⁴⁵⁶ Accessed on 17/08/2012 at www.environ.ie/en/Legislation/.../FileDownload,16459,en.pdf

and suppliers) and waste tyre collectors to submit quarterly reports on tyre flows to either their local authority or the compliance scheme they are participating in.

An exemption from the reporting requirements of these Regulations (Article 25) is available to persons who participate in a compliance scheme operated by a PRO. Those who do not participate in a compliance scheme are described as self-compliers and are obliged to register with their relevant local authority, pay fees and fulfil prescribed reporting requirements.

A number of policies / regulations exist to complement the aims and objectives of the 2007 Tyres and Waste Tyres Regulations, the Waste Framework Directive, and A resource Opportunity. These complementary policies include:

- **Landfill Directive 1999/31/EC:** This requirement became law in Ireland through the Waste Management (Licensing) Regulations 2004 (S.I. 395 of 2004)⁴⁵⁷. The Landfill Directive bans whole and shredded waste tyres from being deposited at landfill sites. However, the legislation allows whole tyres to be used for landfill engineering purposes.
- **End-of-Life Vehicles (ELV) Directive 2000/53/EC:** According to Annex I to the ELV-Directive, removal of tyres is mandatory if these materials are not segregated in the shredding process in such a way that they can be effectively recycled as materials. Tyres derived from ELVs represent a minor proportion (approximately 6%) of the overall tyre placed on the market in Europe⁴⁵⁸.
- **Commission Decision 2005/293/EC:** Commission Decision 2005/293/EC sets out detailed rules on the monitoring of the reuse / recovery and reuse / recycling targets stated in the ELV Directive. Member States shall calculate the reuse / recovery and reuse / recycling targets set out in the first subparagraph of Article 7(2) of the ELV Directive on the basis of the reused, recycled and recovered materials arising from de-pollution, dismantling and (post)-shredding operations. Member States shall

⁴⁵⁷ Accessed on 17/08/2012 at www.irishstatutebook.ie/2007/en/si/o664.html

⁴⁵⁸ Accessed on 17/08/2012 at <http://ec.europa.eu/environment/waste/pdf/study/elv.pdf> p61

ensure that for materials entering further treatment, the achieved recovery rate is taken into account.

- **Waste Incineration Directive:** The Waste Incineration Directive (2000/76/EC), which will be revoked and replaced in January 2014 by Directive 2010/75/EU on Industrial Emissions, aims to prevent and limit the negative effects on the environment through pollution by emissions into air, soil, surface water and ground water and the resulting risks to human health from the incineration and co-incineration of waste. This will be done through setting emission limit values for waste incineration and co-incineration plants and by meeting the requirements of Directive 2008/98/EC on waste. In particular, the Directive provides fixed emission standards for all cement kilns from 2002 with older cement kilns prohibited from burning end of life tyres from 2008. The Directive also contains new provisions from cement kilns, from December 2008, on the co-incineration of waste including waste tyres.
- **Technical Guidelines on Environmental Sound Management of Used Tyres (UNEP Basel Convention, 2011):** The parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal have considered the difficulties involved in identifying and managing used and waste pneumatic tyres, given their potential harmful effects on human health and the environment. Accordingly, technical guidelines on the identification and management of used tyres were prepared. Since the publication of these guidelines additional knowledge and experience in handling used and waste pneumatic tyres was gained in many countries, and attention turned to technological, economic and environmental factors broader than those discussed in the original version of the guidelines. Consequently, these guidelines were updated to assist national authorities in the environmentally sound management of used and waste pneumatic tyres within their national territories.
- **Road Traffic (Construction, Equipment and Use of Vehicles) (Amendment) (No. 2) Regulations, 1991 (S.I. No. 358 of 1991)**⁴⁵⁹: These regulations require most

⁴⁵⁹ Accessed on 17/08/2012 at <http://www.irishstatutebook.ie/1991/en/si/o358.html>

vehicles on the road to have a minimum thread depth of 1.6 mm over the main threads. For motorcycles and vintage vehicles the minimum thread depth is 1 mm.

- **Road Traffic (Construction and Use of Vehicles) Regulations 2003 (S.I. No. 5 of 2003)**⁴⁶⁰: These regulations prescribe the maximum permitted weights and dimensions of mechanically propelled vehicles and trailers. In addition, Article 55 prohibits a vehicle to be used on the road if it is fitted with unsuitable pneumatic tyres and restrict the use of recut tyres⁴⁶¹.
- **Road Traffic (Retreaded Tyres) Regulations 2008 (S.I. 118 of 2008)**⁴⁶²: These regulations govern the sale and supply of retreaded tyres in Ireland. These regulations also give effect to Council Decision 2006/443/EC, which says retreaded tyres must conform to UNECE Regulation 109 (retreaded tyres for commercial vehicles and their trailers) and UNECE Regulation 108 (retreaded tyres for private cars, light goods and light trailers).

⁴⁶⁰ Accessed on 17/08/2013 at <http://www.irishstatutebook.ie/2003/en/si/0005.html>

⁴⁶¹ "recut pneumatic tyre" means a pneumatic tyre in which all or part of its original tread pattern has been cut deeper or burnt deeper or a different tread pattern has been cut deeper or burnt deeper than the original tread pattern

⁴⁶² Accessed on 17/08/2013 at <http://www.irishstatutebook.ie/pdf/2008/en.si.2008.0118.pdf>

9.2 OVERVIEW OF THE TYRES AND WASTE TYRES WASTE MANAGEMENT SYSTEM

An overview of the tyres and waste tyres management system is shown in Figure 9.1.

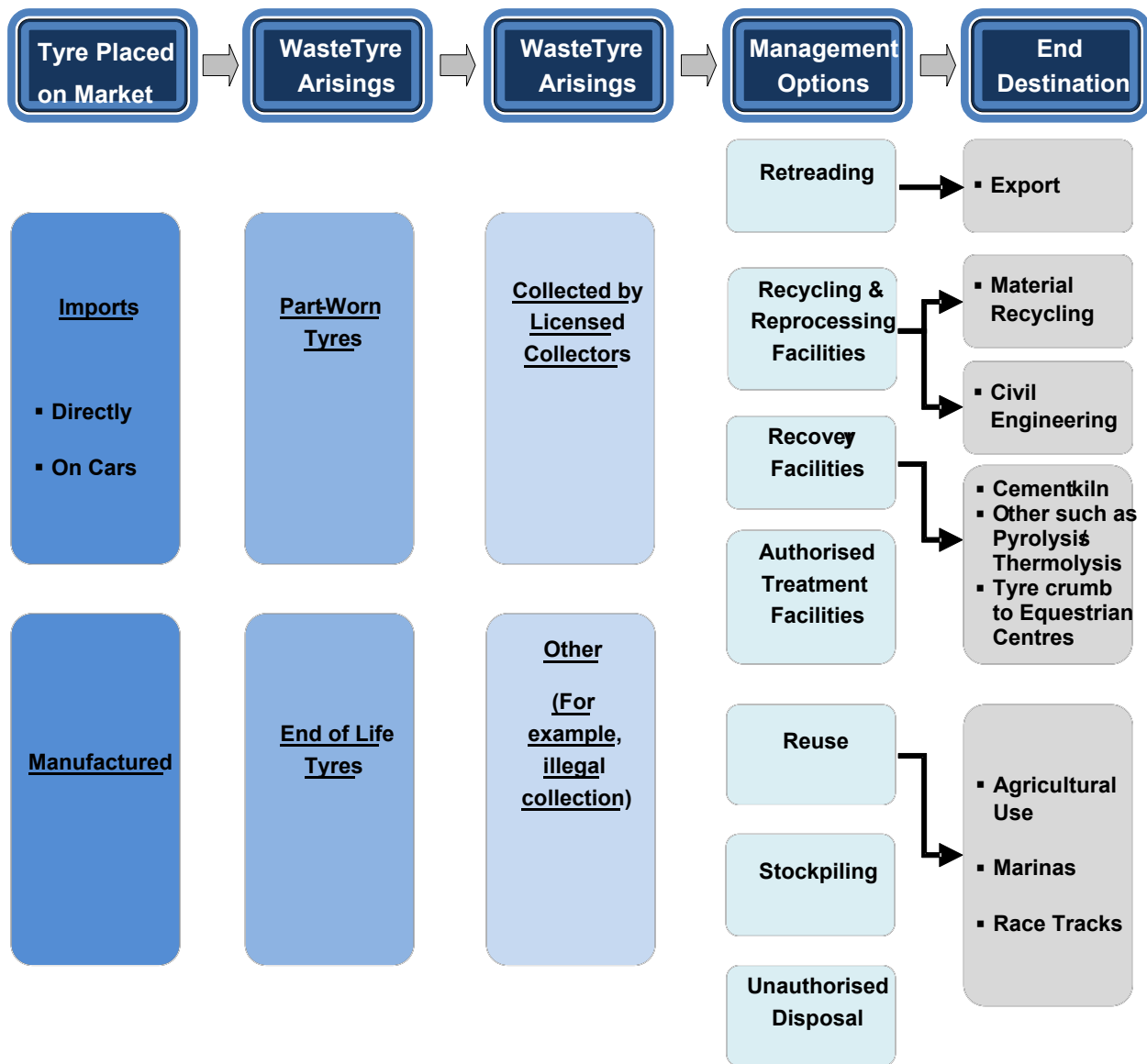


Figure 9.1: Overview of the Tyres and Waste Tyres Management System

New or second hand tyres that are placed on the market in Ireland are either imported directly or imported on vehicles.

When a tyre is taken off a vehicle, several end-use markets exist to manage them. These include:

- Export of used tyres and waste tyres
- Rethreading and remoulding of used tyres

- Recycling and Recovery of waste tyres

Waste tyres that do not enter the above end-use markets are typically disposed of illegally into a stockpile or by the roadside.

There is a network of economic operators operating in the tyre industry in Ireland. These economic operators include:

- Producers of tyres – persons who manufactures and sells tyres under their own brand, resells tyres produced by other suppliers, rethreads or remoulds tyres, imports tyres on a professional basis into the State or exports waste tyres for the purposes of recovery;
- Suppliers of tyres – persons who, for the purpose of trade or otherwise in the course of business as a manufacturer, wholesaler, supplier, trader, or retailer, sells or otherwise supplies tyres or, as appropriate, waste tyres to other persons;
- End-users – persons who purchase tyres from suppliers of tyres;
- Authorised Waste Collectors – holders of a waste collection permit that is in force and which allows for the collection of waste tyres;
- Recovery Operators – a person engaged in waste recovery or waste collection for the purposes of recovery including reuse, subject to that person having obtained all necessary licences or permits under the Waste Management Act 1996 (as amended);
- Farmers – a person who derives his livelihood from the pursuit of agriculture. Waste tyres are typically used as a weight to hold down polythene film on silage pits.

Nearly 3.4 million of replacement tyres were placed on the market in Ireland in 2011 with 72% of these being car tyres and 9% being new bus or lorry tyre⁴⁶³. In 2011, over 600,000 tyres were also imported on vehicles. Once a tyre has been replaced it can be sold as a second hand tyre or become a waste tyre. Waste tyres are collected from tyre suppliers by authorised collectors and sent for recycling and recovery in Ireland or abroad. A proportion of heavy goods vehicle tyres were also rethreaded and remoulded in Ireland, but this type of

⁴⁶³ CSO Email 05/09/2013 includes SITC Codes 62510, 62520, 62530, 62541, 62542, 62551, 62559, 62591, 62592, 62593 and 62594. Statistics based on Import minus Export.

activity has stopped since 2013. There is an extensive cross-border movement of waste tyres to other EU states and to other countries.

At present, there are two approved PROs in Ireland for waste tyres; Tyre Recovery Activity Compliance Scheme (TRACS) and Tyre Waste Management (TWM) which were approved by the Minister for the Environment in 2007 (TRACS) and 2009 (TWM).

The challenge for all stakeholders is to ensure that waste tyres are managed according to best environmental practice.

9.3 PRODUCT / WASTE CHARACTERISTICS

9.3.1 Tyre Products Definition

Article 3 and Schedule 1 of the 2007 Tyres and Waste Tyres Regulations provide a definition of the types of tyres that are subject to this legislation.

Table 9.1: Tyres within the Scope of the 2007 Tyres and Waste Tyres Regulations

Category	Code	Description
1	62510	Tyres, pneumatic, new, of a kind used on motor cars (including station wagons and racing cars).
2	62520	Tyres, pneumatic, new, of a kind used on buses or lorries
3	62541	Tyres, pneumatic, new, of a kind used on motorcycles
4	62551	Other new pneumatic tyres having a "herring-bone" or similar thread
5	62559	Other new pneumatic tyres
6	62592	Rethreaded tyres
	62593	Used pneumatic tyres
7	62542	Other new pneumatic tyres of a kind used on bicycles
	62591	Inner tubes or rubber
	62594	Solid or cushion tyres, tyre threads and tyre flaps of rubber
	62530	Tyres, pneumatic, new, of a kind used on aircraft

Certain types of tyre are not subject to the 2007 Tyres and Waste Tyre Regulations due to the exclusions set down in Article 3(2). These categories relate to new aircraft tyres, rethreaded aircraft tyres, bicycle tyres and rethreaded pneumatic tyres that are not used on aircraft, cars, vans, trucks, buses or for other specified uses.

9.3.2 Tyre Products Composition

A conventional tyre is a product with a complex structure and composition, which can be made using various variants of high-quality synthetic rubbers, mainly butyl rubber or styrene-butadiene rubber, and natural rubber, along with a host of other compounds added to obtain the final utilitarian form or the high mechanical strength of the tyre. A tyre consists not only of rubber, which makes up some 70–80% of the tyre mass, but also of steel belts and textile overlays, which give the tyre its ultimate form and utilitarian properties (Sienkiewicz et al., 2012). However, the presence of the latter two components is a serious problem, from a waste perspective, because they have to be separated from the rubber during tyre recycling.

Table 9.2 shows the basic raw material composition of tyres, together with the percentage content of the various components used in the manufacture of passenger and truck tyres in USA and Europe.

The widely differing chemical compositions and the cross-linked structures of rubber in tyres are the prime reason why they are highly resistant to biodegradation, photochemical decomposition, chemical reagents and high temperatures. It is for this reason that the management of used tyres has become a serious technological, economic and ecological challenge.

Table 9.2: Materials used in Tyre Manufacturing⁴⁶⁴

Materials	In Europe		In USA	
	Passenger Type	HGV Type	Passenger Type	HGV Type
Natural rubber	22%	30%	14%	27%
Synthetic rubber	23%	15%	27%	14%
Carbon black	28%	20%	28%	28%
Steel	13%	25%	14-15%	14-15%
Fabric, fillers, accelerators, antiozonants, etc.	14%	10%	16-17%	16-17%
Average weight	New 8.5kg, scrap 7kg	New 65kg, scrap 56kg	New 11kg, scrap 9kg	New 54kg, scrap 45kg

9.3.3 Tyres Placed on the Market

The quantity of tyres placed on the market between 2001 and 2011 is shown in Figure 9.2 below. In 2010, it was estimated that the net import of tyres was 48,341 tonnes (42,547 tonnes as replacement tyres and 5,794 tonnes on vehicle import) (RPS, 2013).

⁴⁶⁴ Sienkiewicz et al (2012).

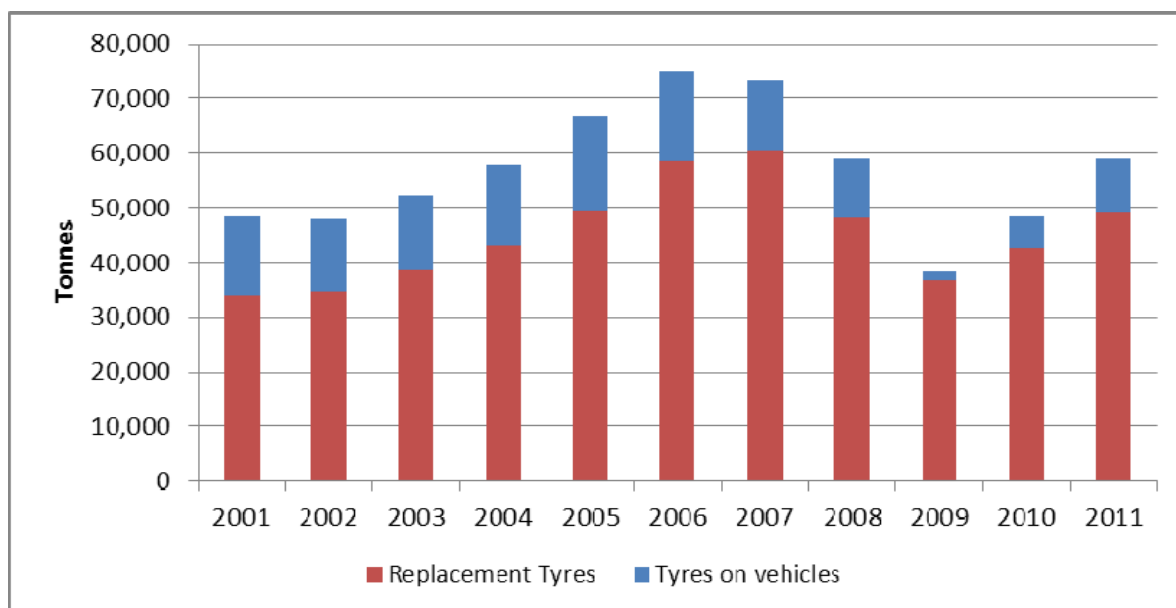


Figure 9.2: Tyres Placed on Market from 2001 to 2011⁴⁶⁵

The trend in tyres placed on the market is in line with trends from the main European producing countries which show a sharp fall in 2008 and 2009, followed by a recovery in 2010 which remains below the pre-crisis levels (ERTMA, 2012)⁴⁶⁶.

Figure 9.3 shows that tyres from private cars, buses and lorries account for 90% of the tyres put on the market.

⁴⁶⁵ The methodology used in the calculation is based on the methodology used in All Island Used Tyre Survey (RPS, 2013), except for the year 2007 and 2011 where the calculations were based on the total value of goods was used instead of the quantity of tyres supplied. For these years the quantities reported by the CSO did not show good correlation with the number of units supplied and the value of transactions.

⁴⁶⁶ The decrease in tyres placed on the market in 2011 is due to the reported export of 8,000 tonnes of used pneumatic tyres. Confirmation of this data has been requested from the CSO, but no response has been received yet.

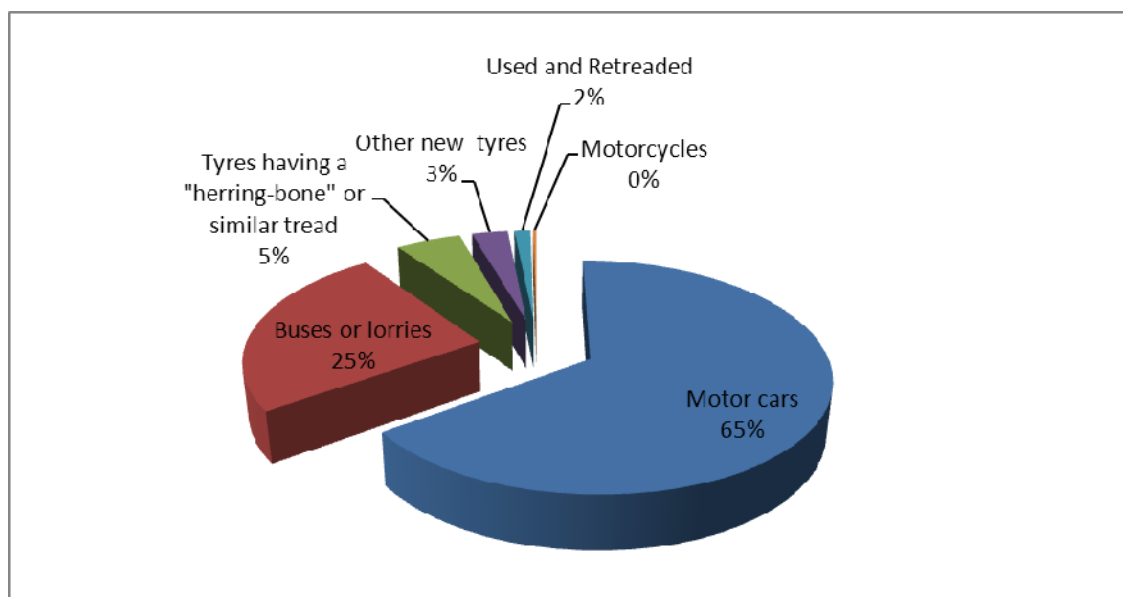


Figure 9.3: Tyres Placed on Market, by Weight 2010, (48,341 tonnes)⁴⁶⁷

9.3.4 Waste Tyres

Tyres generally are replaced because they have been worn and the thread depth is near or below the minimum thread depth required by S.I. No. 358 of 1991. **Used or part worn tyres** are generally 20% lighter than **new tyres**.

Used or partly worn tyres can be reused for the same purpose (e.g. on vehicles) without further treatment and in such cases would not be considered waste under the Waste Framework Directive as reuse is a waste prevention activity⁴⁶⁸. Vehicles fitted with part worn tyres used on the road in Ireland must comply with Regulations S.I. No. 358/1991⁴⁶⁹ and S.I.

⁴⁶⁷ CSO

⁴⁶⁸ See Definitions for Reuse and Preparing for Reuse in Article 3 of the Waste Framework Directive.

⁴⁶⁹ This regulation requires most vehicles on the road to have a minimum thread depth of 1.6 mm over the main threads. For motorcycles and vintage vehicles the minimum thread depth is 1 mm.

No. 5/2003⁴⁷⁰. If the used tyres are exported, they must meet the relevant standards in the destination countries (if they exist).

If the used tyres cannot be used for its intended purpose (on a vehicle), it then becomes a **waste tyre**. Tyres that are rethreaded or remoulded can be used for their intended purpose, but they have to be prepared for reuse, otherwise they have become waste under the Waste Framework Directive.

According to S.I. No. 664 of 2007, waste tyres can also be reused for a different purpose without the need for reprocessing (e.g. on farm).

Sometimes used tyres can also be sold to countries which have lower minimum thread depth requirements. The decision on the waste / non-waste status can be made at several levels of the chain: retailer, waste collector and recovery operator.

The definition of waste tyres in the 2007 Tyres and Waste Tyres Regulations is rather complicated as the Regulations do not define explicitly a “waste tyre”. The Regulations refer instead to the primary legislation, Waste Management Act 1996 (as amended). A tyre becomes a waste if, as defined in Section 4 (1) (a) of the Act, the holder discards or intends to, or is required to discard it.

The lifespan of a tyre depends on the condition of the car, the roads on which it is driven, the annual mileage of the car and the actual quality of the tyre itself. It is difficult to determine when tyres that became waste were first imported into the country. According to tyre suppliers, the lifespan of a tyre ranges from a low of 10,000 km up to a high of 32,000 km.

The average annual mileage in 2011 was 16,971 kilometres for private cars (SEAI, 2012b) and 16,482 km for goods vehicles (CSO, 2012). This suggests an average replacement rate of 1-2 years. A replacement rate of 1:1 is used by the industry; a replacement rate of 1 year is used for the purposes of this report.

⁴⁷⁰ This regulation prohibits vehicles to be used on the road if it is fitted with unsuitable pneumatic tyres and restrict the use of recut tyres.

Therefore using the above assumptions (1 year lifespan, 20% weight loss), it was estimated that 38,673 tonnes of waste tyres was generated in 2011 from the tyres placed on the market in 2010. It must be noted that the accumulation or clearance of waste tyres at illegal storage or disposal sites may also affect the waste arisings. These variations are not included in the estimates of waste arisings. Figure 9.4 compares tyres placed on the market and waste tyres arising from 2001 to 2011. Waste tyre arisings increased from 38,700 tonnes in 2002 to 59,832 tonnes in 2007, prior to decreasing to 30,791 tonnes in 2010. Waste tyres arising increased again to 38,673 tonnes in 2011.



Figure 9.4: Comparison of Tyres Placed on Market and Waste Tyre Arisings from 2002 to 2011

9.3.5 Potential risks to health and the environment

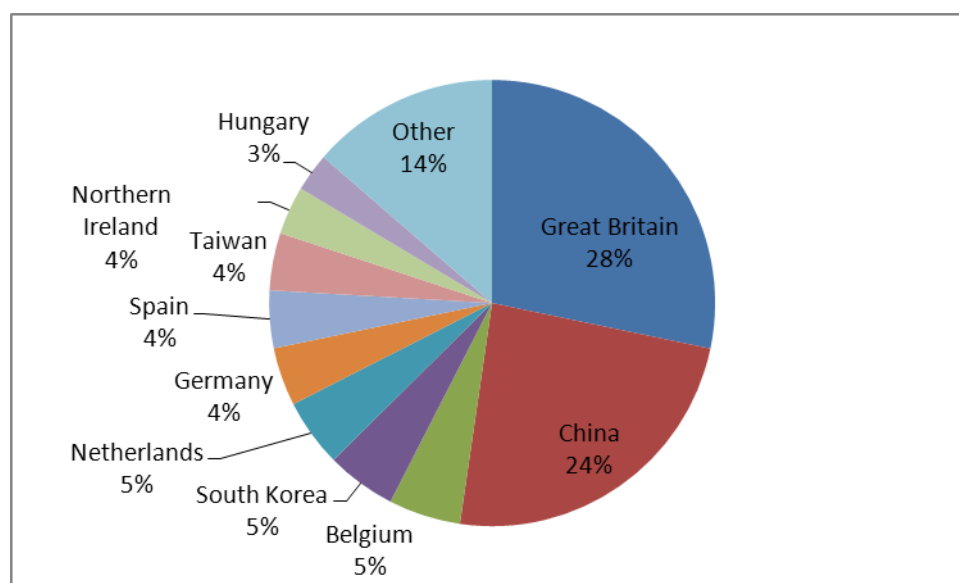
Tyre components have no hazardous properties and are therefore not intrinsically hazardous. If, however, they are improperly managed and disposed of, they may pose risks to public health and the environment.

Tyres are not biodegradable because the time that they take to decompose is indeterminate. Used and waste tyres can have a significant visual impact as they take up much physical space and are difficult to compact, collect and eliminate. In addition to the visual impact, inadequate disposal can block water channels, creeks and storm water drains, resulting in changes in flow patterns. These changes can lead to erosion, the silting up of water flows, and contribute to increasing flooding risk.

Prone to heat retention and owing to their own open structure, piled tyres increase the risk of fires, by arson or due to accidental causes such as lightning, which, once ignited, are difficult to control and put out. Tyre fires can burn for months, generating smoke, oil and leachate toxic contaminants that affect the soil, waterways and air. In landfills, tyres occupy valuable space, represent a fire hazard, are not biodegradable, and frequently rise to the surface, creating a new set of landfill management concerns (UNEP, 2011). It is for this reason that tyres have been banned from disposal in landfills in the European Union.

9.4 PRODUCERS AND SUPPLIERS OF TYRES

Producers and suppliers of tyres placed on the market approximately 3.4 million tyres in 2011⁴⁷¹. It must be noted that there are no manufacturers of new tyres in Ireland. In the past, the manufacturing activity consisted only in the rethreading of truck tyres but this activity stopped in 2013. TRACS (2012) estimated that tyres were imported by five main tyre manufacturers, as well as by 23 wholesalers and distributors. Individual tyre shops also import new tyres. Figure 9.5 shows the main countries of import for replacement tyres in 2011.



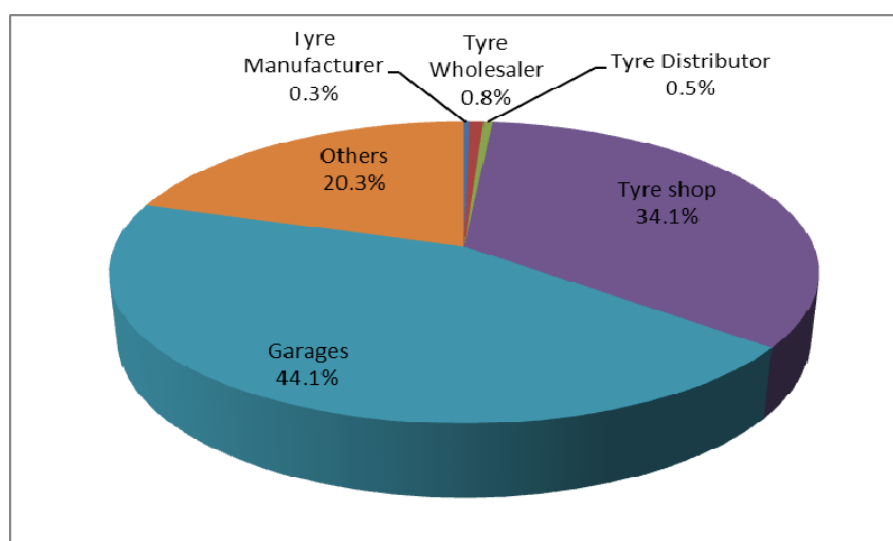
⁴⁷¹ CSO Email 05/09/2013 Includes SITC Codes 62510, 62520, 62541, 62551, 62559, 62592, 62593, 62591, 62594, 62530 and 62542.

Figure 9.5: Replacement Tyres Imports as Percentage of Unit Supplied by Country of Origin in 2011⁴⁷²

New tyres can also be imported on vehicles but vehicles importers are not obligated under the 2007 Tyres and Waste Tyres Regulations.

In total, some 623 outlets supply tyres to customers. TRACS estimate up to 1,176 other businesses such as car distributors, garages, hauliers, ATFs etc. also fall under the 2007 Tyres and Waste Tyre Regulations.

It has also been reported that logistics companies also import tyres for their own use. While they are obligated under the current waste tyre regulations, they are not participating in the compliance schemes and because of the low rate of self-compliance, they may not be self-complying either.

**Figure 9.6: Producers and Suppliers of Tyres, 2012⁴⁷³**

Producers, suppliers (including retailers) are obligated under the 2007 Tyres and Waste Tyres Regulations. Their obligations are presented in the next sections.

⁴⁷² CSO

⁴⁷³ TRACS, (2012)

9.4.1 Producers

Articles 2 of the 2007 Tyres and Waste Tyres Regulations defines a “**producer**” as a person who manufactures and sells tyres under his or her own brand, resells tyres produced by other suppliers, rethreads or remoulds tyres, imports tyres⁴⁷⁴ on a professional basis into the State or exports waste tyres for the purposes of recovery⁴⁷⁵.

Producers who are self-compliant must comply with Articles 4 to 7 which provide obligations regarding registrations, fees, reporting and record keeping.

A producer that is a member of a compliance scheme is absolved from the requirements of Articles 4 to 7 of the 2007 Tyres and Waste Tyres Regulations.

9.4.2 Suppliers

Articles 2 of the 2007 Tyres and Waste Tyre Regulations also define “**Supplier**” of tyres as a person who, for the purpose of trade or otherwise in the course of business as a manufacturer, wholesaler, supplier, trader, or retailer, sells or otherwise supplies tyres or, as appropriate, waste tyres to other persons.

Articles 8 to 11 (registrations, fees, reporting and record keeping) place obligations on self-compliant tyre suppliers, which are somewhat similar to the producers.

A retailer that is a member of a compliance scheme is absolved from the requirements of Articles 8 to 11 of the 2007 Tyres and Waste Tyre Regulations.

Regardless if a retailer joins a compliance scheme or is self-complier, Article 12 of the 2007 Tyres and Waste Tyre Regulations places additional obligations on such businesses.

⁴⁷⁴ Regardless of the quantity of tyres purchased outside the State.

⁴⁷⁵ This implies that waste brokers exporting waste tyres are also obligated producers under the 2007 Tyres and Waste Tyres Regulations.

- Tyre suppliers that take back waste tyres must pass them to a collector that is subject to a waste collection permit and that is either a member of a compliance scheme or is registered as a self-complier.
- Suppliers that do not take back tyres must take prescribed steps to inform their customers of that fact and of where customers can consign waste tyres. The supplier must also record the name, address and vehicle registration number of each of these customers.

When a retailer retains waste tyres that it has replaced, the 2007 Tyres and Waste Tyre Regulations require that these must be passed to someone who satisfies all of the following requirements:

- The recipient must hold a collection permit.
- That permit must explicitly authorise the collection of waste tyres.
- The collector must either be acting on behalf of a PRO such as TRACS or TWM or, alternatively, must be registered as a self-complier under Part IV of the 2007 Tyres and Waste Tyre Regulations (see Section 9.8.2 on tyre collectors later in this guidance note).

Article 33 of the 2007 Tyres and Waste Tyre Regulations also put storage limits on waste tyres at suppliers' premises. All tyre retailers can only store waste tyres for a period of six months on the premises where they are produced and awaiting collection⁴⁷⁶. Retailers that are members of a compliance scheme and other retailers that have registered their premises with a local authority are subject to additional restrictions listed below:

- The storage of waste tyres must take place at the location where new tyres are supplied
- Only "temporary storage" of waste tyres must take place.
- No more than 180 cubic metres of waste tyres can be stored at any one time.
- Only waste tyres that arise as a consequence of "one-for-one" replacement with new tyres are to be stored.

⁴⁷⁶ Under Article 39 of the Waste Management Act 1996 (as amended), the temporary storage of waste on the premises where it is produced and pending its collection is allowable. This storage period cannot exceed six months. However, unlike the case with Article 33(1), there are no limits that affect the quantities of waste tyres that can be stored.

There are no requirements in the regulations regarding the security of tyre storage facility.

9.5 TYRES END-USERS

When replacing the tyres on a vehicle, the tyre supplier may dispose of the waste tyres for the end-user. Some companies include the price of disposal in the price of the new tyre. Other companies charge a separate disposal fee.

The vehicle owner is subsequently legally responsible for the environmentally sound management of the tyre. The options for persons that retain waste tyres when obtaining replacements are restricted. They can only transfer waste tyres to third parties that satisfy the requirements of the 2007 Tyres and Waste Tyre Regulations in respect of being duly authorised by the Waste Management Act 1996 (as amended) or under an IPPC licence.

9.6 COMPLIANCE SCHEMES

Articles 25 to 30 of the 2007 Tyres and Waste Tyres Regulations provide guidance for the establishment of “approved bodies” and sets out the requirements for an application to the Minister in this regard.

There are two approved PROs that are operating compliance schemes in the Republic of Ireland, namely the Tyre Recovery Activity Compliance Scheme (TRACS) and Tyre Waste Management (TWM). TRACS and TWM were approved by the Minister for the Environment, Community and Local Government in 2007 and 2009 respectively. Both are not-for-profit bodies.

Tyre Producers, tyre suppliers and waste collectors can become members of a compliance scheme and through membership of one of these bodies they are absolved from some of the requirements of the Regulations. Membership of a compliance scheme greatly reduces the administrative burden of compliance with the 2007 Tyres and Waste Tyres Regulations. Besides complying with the obligations covered below, such bodies only need to erect a site notice board on their premises stating that they are members of a compliance scheme.

9.6.1 Terms and Conditions

Following approval of the Minister for Environment, PROs are issued terms & conditions by the DECLG (2007b, 2009). Table 9.3 provides a summary of the main provisions for TRACS and TWM. Differences in conditions are shown in bold.

Table 9.3: Summary of Schedule of Conditions for TRACS and TWM

Headings	TRACS	TWM
General	<p>Submit before 31st March each year, the following: Statement of audited accounts Annual report including:</p> <ul style="list-style-type: none"> • the quantities of tyres (weight & units) placed on the market by their members • the quantities of (weight & units) recovered, • the quantities of tyres (both weight and units) recycled together with quantities of: <ul style="list-style-type: none"> ○ materials recovered ○ residues and details of disposal methods • the quantities of tyres (both weight and units) diverted for reuse: civil engineering, on farms, marinas, export to other member states of the EU and the world countries • other <p>Make available annual report Adopt environmental best practice in the procurement of goods and services</p>	<p>Submit before 31st March each year , an annual report including:</p> <ul style="list-style-type: none"> • Statement of audited accounts • the quantities of tyres (weight only) placed on the market by their members • the quantities of tyres (weight only) recovered, • the quantities of tyres (both weight and units) recycled together with quantities of: <ul style="list-style-type: none"> ○ materials recovered ○ residues and details of disposal methods • the quantities of tyres (both weight and units) diverted for reuse: civil engineering, on farms, marinas, export to other member states of the EU and the world countries • other <p>Make available annual report Adopt environmental best practice in the procurement of goods and services</p>
Board of Directors and Corporate Governance	<p>Min. 7 directors Min. 3 independent non-exec directors Directors reflective of membership Establish Nomination, Remuneration and Audit Committees</p>	
Audits	<p>Producers: 2 per year, Collectors: 1 per year, Retailers: 4 per quarter</p>	
Memorandum and Articles of Association	<p>A number of amendments were requested.</p>	
Dissemination of information	<p>Submit a programme of information to stakeholders and members of public</p>	

9.6.2 PROs Services

In order to acquit its obligations, the PROs provide a number of services to its members and the State.

These functions are grouped into a number of categories as follows:

Membership Services

- Registration of producers, suppliers of tyres and waste collectors
- Collation of data from producers
- Invoicing of producers, suppliers and waste collectors: PROs raise funds from obligated members.

Audit Services

- Collation of data from waste operators on tyres collected
- Audits of waste operators
- Audits of producers and suppliers of tyres

Sales and Marketing Services

- Marketing to producers: this includes direct awareness raising (press adverts, radio, mail shots) and engagement with trade bodies focusing on obligations of businesses under the Waste Management (Tyres and Waste Tyres) Regulations 2007
- Awareness campaign to educate the general public on how to manage waste tyres.

There are also a number of **support services** including:

- Management of the reporting at a national level from their members to the DECLG.
- Liaison with enforcement authorities about producers who joined or left the compliance scheme.

Under Article 30 of the 2007 Tyres and Waste Tyre Regulations, each local authority is expected to receive information from each compliance body on:

- Details of all producers, suppliers and authorised collectors that have been granted registration with the compliance body.
- Details of any registrations revoked by the compliance body.
- Details of any farmer affected by the revocation of a waste collector's registration and of the collector that has been re-assigned to service that farmer.

Unlike the WEEE and Packaging PRIs, the Tyre compliance schemes do not fund or subsidise the collection and treatment of waste tyres, nor is there any commitment to meet specified recycling/recovery targets as these schemes were established as tracking systems rather than full PRIs.

9.6.3 Membership to an Approved Body

TRACS and TWM had 718 (TRACS, 2012) and 285⁴⁷⁷ members respectively in 2011. TRACS estimate that they represent 90% of the market in volume and 40% of the obligated producers.

Table 9.4: TRACS Membership from 2008 to 2011

Economic Operators	2008	2009	2010	2011
Manufacturers	43	44	5	5
Distributors			9	9
Wholesalers			6	6
Shops	312	380	344	344
Others	6	7	333	333
Collectors	13	13	21	21
Total	374	444	718	718

⁴⁷⁷ Personal Communications TWM 23rd January 2013

Table 9.5: TWM Membership from 2008 to 2011

Economic Operators	2008	2009	2010	2011
Importers	Not Applicable		12	13
Retailers			255	269
Collectors			3	3
Total			270	285

The total membership of compliance schemes increased significantly from 361 producers and retailers and 13 collectors in 2008 following the rolling out of the Regulations to 979 producers and retailers and 24 waste collectors in 2011. Given the estimated total numbers of economic operators in provided in Section 9.4, it would suggest that 848 producers⁴⁷⁸ and retailers and 59 waste collectors⁴⁷⁹ should be registered with local authorities under the 2007 Tyres and Waste Tyre Regulations. However, this is not the case. In 2010, 21 local authorities following a request from the EPA (2010a) reported that only eight operators were registered with them. Therefore, there seems to be a large number of non-compliant businesses.

9.6.4 Membership Fee

The PROs are solely funded by its members and the fees they pay.

Table 9.6 shows the various fees paid by the members of the schemes and to the local authorities under the self-compliance regime. Both schemes charge on the type and amount of tyres placed on the Irish Market.

⁴⁷⁸ This is in line with the EPA (2010) estimate of 800 operators known not to be a member of a compliance scheme or registered as a self-complier.

⁴⁷⁹ TRACS estimated that 85 waste collectors have waste collection permit authorizing the collection of waste tyres.

Table 9.6: Membership Fee

	Local Authorities (i.e. self-compliers)	TRACS⁴⁸⁰	TWM⁴⁸¹
Membership	Must fill out a registration form. General company details, location of premises at which tyres will be stored, basic historical tyre collection information from previous year.	Must fill out a membership form. General company details, number and locations of premises at which tyres will be stored, basic historical tyre collection information from previous year.	Must fill out a membership form. Name, address and telephone number.
Registration Fee	Same as renewal fees	€55.35 plus €36.90 for every additional site.	€75
Renewal Fee	Producer		
	Levy of €25 per tonne reported (minimum of €750 must be paid)	€0.10 (ex VAT) per unit imported Minimum fee of €20.00 (ex VAT) applies plus €5.00 (ex VAT) per additional premises	See below
Renewal Fee	Supplier		
	€100 a site.	Flat fee of €20.00 (ex VAT) per annum plus €5.00 (ex VAT) per additional premises	€50 for a retailer with no additional charges for importing of tyres unless they import sufficient tyres to be considered a wholesaler. Membership fee for Wholesalers is free but are charged a levy of €7 per tonne with a maximum charge of €6,000 in any one year thus ensuring that Members provide accurate data.
	Waste Collectors		

⁴⁸⁰ Accessed on 23/10/2012 at <http://www.tracsireland.ie/fees>

⁴⁸¹ Personal Communications TWM February 2013

	Same as suppliers	Same as suppliers	€100 / year
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PROs Income

In 2011, member fees amounted to €229,518 for TRACS and €35,039 for TWM. Table 9.7 shows the evolution of TRACS and TWM income from 2010 to 2012.

Table 9.7: PRO Incomes from 2008 to 2011

	2008	2009	2010	2011
TRACS	170,252	330,230*	194,146	229,518
TWM	N/A	N/A	59,900**	35,039
Total	170,252	330,230	254,046	264,557

* 15 months ** Includes 5 months in 2009

9.6.5 PROs Expenditure

As the PROs do not procure or support recycling services, their expenditure can be divided in two categories:

- Administrative costs (including salaries, rents etc.) 80-85% of total expenditure.
- Education and public awareness (including various marketing and awareness initiatives) 15-20% of total expenditure.

9.6.6 PROs Contingency Funding

Even though the current approval conditions of the PROs does not require that funding is held as a reserve, TRACS and TWM held in reserve in 2011 a deferred income of €134,066 and €15,343, accounting for 76% and 85% of 2011 expenditure respectively.

9.7 SELF COMPLIANCE

Under the 2007 Tyres and Waste Tyres Regulations, producers and suppliers of tyres have the option to self-comply with the regulation requirements. The number of

operators registered as self-compliers with local authorities is negligible (EPA, 2010a).

9.7.1 Producers

Articles 4 to 7 place the following obligations on tyre producers:

- A yearly registration certificate must be obtained from each local authority.
- The application and renewal fee to be paid to each local authority is set at €25 per tonne of new tyres, with the minimum amount payable being €750. In general, this figure is generated from the weight of new tyres supplied in a local authority's area in the previous year. Where no tyres have been supplied previously, the fee is calculated from an estimate of tyre sales.
- A tyre waste management plan and an annual report must be submitted.
- Quarterly records must be submitted to each local authority where tyres are supplied and annual data must be submitted to the EPA (see Table 9.8 for details).
- A Site Notice Board must be erected at all of the producers' premises.

Table 9.8 provides an overview of the information to be provided by producers.

Table 9.8: Information to be provided by tyres producers

Information Required	Waste Management Plan	Annual Report	Article 6(1) Records	Article 6(3) Records
Frequency	Annual	Annual	Quarterly	Annual
Distribution	All Local Authorities, PROs	All Local Authorities, PROs	Local Authority where tyres are supplied	EPA
Details of the principal place of business of the supplier	Y	Y	Y	Y
Location(s) of premises where tyres were supplied by the producer	Y	Y		Y
Quantities of tyres supplied	Y	Y	Y	Y
Details of tyres supplied to each premises in each local authority			Y	
Quantities of waste tyres that will arise from tyres supplied by	Projected	Y		

the producer				
Quantities of waste tyres arising that were re-used, recovered or recycled	Projected	Y		Y
Quantities of waste tyres arising that were disposed of and the nature of the disposal operations involved.	Projected	Y		Y
Quantities of waste tyres handled				Y

9.7.2 Suppliers

Articles 8 to 11 place the following obligations on self-compliant tyre suppliers, which are similar to obligations for tyres producers except for the following:

- The application and renewal fee to be paid to each local authority is set at €100.
- Suppliers are not required to erect a Site Notice Board on their premises.
- Records to be provided shown in *italic* in Table 9.9.

Table 9.9: Information to be Provided by Tyre Producers

Information Required	Waste Management Plan	Annual Report	Article 10(1) records	Article 10(3) records
Frequency	Annual	Annual	Quarterly	Annual
Distribution	All Local Authorities, PROs	All Local Authorities, PROs	Local Authority where tyres are supplied	EPA
Details of the principal place of business of the supplier		Y	Y	Y
Location(s) of premises where tyres were supplied by the producer		Y		Y
Quantities of tyres supplied	Y	Y	in each local authority	Y
Quantities of waste tyres that will arise from tyres supplied by the supplier	Projected	Y		
Details of tyres supplied to each supplier's premises			Y	
Summary details of tyres			Y	

Information Required	Waste Management Plan	Annual Report	Article 10(1) records	Article 10(3) records
supplied to end users and of tyres taken back from end users				
Details of waste tyres retained by end users, as well as the actual details of each end user who has retained waste tyres			Y	
Summary details of tyres collected by authorised waste collectors			Y	
Details of tyres collected by each authorised waste collector			Y	
Details of authorised waste collectors and any recovery operators used for the treatment of waste tyres		Y		Y
Quantities of waste tyres recovered by or on behalf of the supplier and/or accepted by recovery operators	Projected	Y		Y
Quantities of waste tyres disposed by the supplier and the nature of the disposal operations involved.	Projected	Y		Y

9.8 WASTE MANAGEMENT

Typically the tyre waste management system can be divided into four main steps:

- Tyre user to supplier / retailer: Tyre users dispose of used tyres at authorised collection points, which may be a tyre dealer or a designated collection point.
- Tyre collector: Used Tyres are transported from the collection point and sorted into used tyres or waste tyres (according to standards to ensure the safe handling of the product or waste).
- Tyre reprocessing: Processing companies shred and/or grind tyres, i.e., they process waste tyres for alternative energy for use by recovery companies, or they process waste tyres as a secondary raw material for use by recycling companies.

- Tyre recovery: alternative energy recovery by cement kilns or use as input in production process to make new products (asphalt, turf, steel plants, thermoplastics etc.)

Rethreading can also happen during step 1 and 2, and stockpiling can happen at every stage. In addition farmers may also provide an outlet for waste tyres.

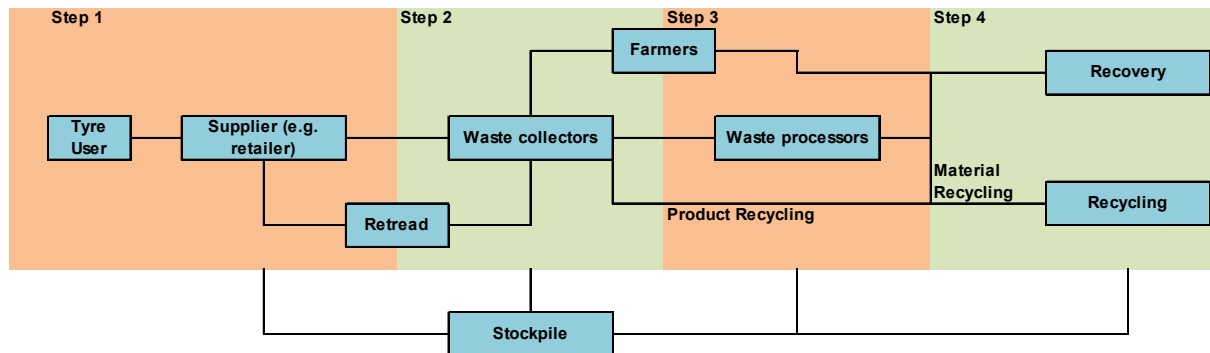


Figure 9.7: Used Tyres Waste Management System

Some facilities process the tyres, whilst others simply store the tyres for onward transfer. The movement of these tyres is dependent on the market for such waste. Most Authorised Treatment Facilities (ATF's) under the End of Life Vehicle Regulations 2007 forward their tyres to other permitted facilities.

9.8.1 At the Retailers Premises

When tyres are replaced, retailers fitting the new tyres may offer a take back service. Generally this service is charged at €2 per tyre for a car and €8 per tyre for a HGV (ITIA, 2012).

The used tyre can be collected by an authorised waste collector, which is registered with the local authorities or member of a compliance scheme under the 2007 Tyres and Waste Tyre Regulations. The costs of collection are broadly similar to the fee charged to the public.

Used tyres may also be collected from the retailers by a wholesaler using reverse logistics.

There has been anecdotal evidence of retailers providing tyres directly to farmers and to unauthorised operators as it reduces their waste management costs. Used and waste tyres could also be taken freely from certain sites as they are sometimes stored in unsecured areas.

9.8.2 Waste Collectors

Articles 13 to 18 and 25(1) of the 2007 Tyres and Waste Tyres Regulations contain obligations that fall on “authorised waste collectors”⁴⁸². TRACS (2012) estimates that there are 83 holders of a waste collection permit which allows for the collection of waste tyres (this does not mean they all collect waste tyres).

All waste tyre collectors must either join a compliance scheme or elect to self-comply and be subject to the additional requirements contained in the legislation. Only 24 authorised waste collectors are members of a compliance scheme. It is unclear if any authorised waste collectors have elected to self-comply.

If a collector elects to self-comply, a registration certificate must be issued in respect of the applicant’s principal place of business and other locations where waste tyres are stored. This must be issued by each local authority responsible for the area where tyres are collected. Self-compliant collectors must erect a notice board and also submit a tyre waste management plan, an annual report and quarterly data returns to each local authority where waste tyres are collected, as well as obtaining a certificate of recovery from a recovery operator. Each self-complying waste tyre collector is also required to make an annual return to the EPA about its waste collection activities undertaken in the previous year.

Article 17 of the 2007 Tyres and Waste Tyres Regulations requires all authorised waste collectors to pass waste tyres only to a recovery operator, to another waste collector, to a farmer or to a person involved in waste tyre re-use. Waste tyres cannot be sent for disposal in landfill.

⁴⁸² “Authorised waste collector” means a holder of a waste collection permit that is in force and which allows for the collection of waste tyres.

Waste tyres can be collected by dedicated separate collection or sometimes are also found in skips with other waste.

Collectors that pass waste tyres to others or export waste tyres for recovery or re-use may, where they are relevant, be subject to additional requirements in the legislation which relate, respectively, to tyre “suppliers” and “producers”.

9.8.3 Tyre Recovery

The definition of “recovery operator” in the 2007 Tyres and Waste Tyre Regulations is very wide-ranging. It covers persons that are involved in tyre recovery and collection. It also embraces anyone that re-uses waste tyres. The definition makes clear that all these activities have to be duly authorised by an IPPC or waste licence, waste facility permit or waste collection permit. If they are not, a person or organisation cannot be classed as a “recovery operator”.

The 2007 Tyres and Waste Tyre Regulations contain a small number of provisions that apply to persons defined as “recovery operators”. A certificate of recovery must be handed over when waste tyres are delivered by a third party. Records must be held for seven years and an annual return must be made to the EPA on the volume of waste tyres being handled. There is, however, no obligation for a recovery operator to join a compliance scheme.

9.8.3.1 Waste Tyre Processing

Tyre processing is undertaken by mechanical chipping or grinding of tyres, which yields rubber materials of different size. These materials can be used for material recycling or recovery.

Chipping or grinding for recycling is not easy, since the steel belts and textile overlays used in the production of the tyres have to be separated from the granulate during grinding. Once separated, however, these materials can be put to use again.

Its usefulness for particular applications is determined primarily by the grain sizes of the various fractions and its degree of purity. In Europe, the European Committee for

Standardization (CEN) has classified products of grinding waste tyres according to their size (CEN/TS14243:2010 - Materials produced from end of life tyres — Specification of categories based on their dimension(s) and impurities and methods for determining their dimension(s) and impurities).

9.8.3.2 Material Recycling

The main aspect of tyre recycling is obtaining the crumb rubber.

The chipping or grinding of waste tyres enables rubber granulates which can be used in the production of new materials, from which multifarious objects of practical use can be made. For example, this process produces eco-innovative products for the agriculture, horticulture, construction, childcare, equestrian, leisure, golf and field sports industries⁴⁸³

The scrap steel is sent for smelting, whereas the textile cord, after cleaning up, is either combusted (then energy is recovered) or used to produce thermal insulation materials for the construction industry.

9.8.3.3 Product Recycling

Product recycling is a separate form of material recycling that is based on the recycling of entire used tyres, in their original form, without any physical or chemical treatment. Because of their shape and sizes, high elasticity, good damping properties of vibrations, noise and shocks, tyres are used as a cheap material in construction engineering. They can be used to form protective barriers along roads and highways and to protect sloping waterfront banks and roadsides. They can also be used as fenders for boats, artificial reefs offering protection to marine organisms, as a material for road substrates and as insulation for the foundations of buildings (Sienkiewicz et al., 2012).

Tyre Bales in Engineering Applications

⁴⁸³ Accessed on 23/10/2012 at <http://www.crumb rubber.ie/>

The baling of waste tyres and their subsequent use in engineering (e.g. fill material in road construction) is a practice that is sometimes used. An EPA end-of-waste position paper was published in 2009⁴⁸⁴. Under Article 6 the Commission have determined end of waste criteria for some waste streams (glass and scrap metal) and in cases where criteria are not set at Community level Member States may decide on a case by case basis whether certain waste has ceased to be waste. Subsequently, the EPA had determined in 2010 that tyre bales can achieve end-of-waste status in accordance with article 6 of EU Directive 2008/98/EC on waste if certain criteria have been met, including a restriction of 50 tonnes in each application and adherence to a standard (PAS 108:2007 – Specification for the production of tyre bales for use in construction, BSI, 2007). The proposed end-of-waste criteria have been subject to a number of submissions and this position was reversed on 8th December 2010⁴⁸⁵. Tyre bales remain classified as waste in all circumstances and subject to control and regulation as waste.

9.8.3.4 Cement Kilns

Another potential outlet for waste tyres is as a fuel in cement kilns. There are two facilities in the country authorised to burn waste tyres which could provide significant capacity. Prior to burning in a cement kiln, tyres must be chipped to a consistent 50mm, clean cut shred. These facilities are licensed to accept up to 125,000 tonnes of waste fuel (including tyres). Practice in Europe includes a “gate fee” by the industry for accepting tyres.

9.8.4 Waste Tyres Reuse

The 2007 Tyres and Waste Tyre Regulations provide for a legitimate re-use on silage pits, in marinas and on race tracks, although there is a limit on the number of tyres that can be accepted at such outlets. The reuse activity is subject to the approval of

⁴⁸⁴ Accessed on 23/10/2012 at

<http://www.epa.ie/downloads/advice/waste/waste/environmental%20considerations%20arising%20from%20the%20reuse%20of%20baled1.pdf>

⁴⁸⁵ Accessed on 23/10/2012 at <http://www.epa.ie/downloads/advice/waste/waste/Tyres>

the local authority in the functional area the tyres are to be reused and in compliance with the storage provisions of Section 39 of the Act.

9.8.4.1 Reuse by Farmers

It was estimated that in 2011 1,958 tonnes of waste tyres were used by farmers (TRACS, 2012).

Articles 20 to 24 of the 2007 Tyres and Waste Tyre Regulations contain a number of provisions that apply to persons defined as “farmers”⁴⁸⁶. Farmers are allowed to store waste tyres that have been produced as part of their normal farming activities. On-site storage is limited to six months. The 2007 Tyres and Waste Tyre Regulations place restrictions on the ability of farmers to pass waste tyres to other persons. Subject to certain limits, farmers are also permitted to store and use waste tyres as part of silage production. Farmers storing waste tyres for silage-making must either register this activity with a local authority annually or join a compliance scheme. Farmers requiring waste tyres for anchorage of silage pit covers are allowed up to eight tyres per square meter of the floor area of their silage pit.

9.8.4.2 Rethreading

Rethreading is a process for extending the lifetime of tyres. It is based on the preliminary preparation of a tyre for regeneration, by stripping it of its thread and then applying a new one. Only tyres that have passed a wear and tear inspection, and have been certified to have no damage to the tyre carcass, may be rethreaded.

9.8.4.3 Other Reuse

There is no data available on waste tyres that have been sent to marinas and racetracks. However, this is not considered to be significant (EPA, 2010a).

⁴⁸⁶ “farmer” means a person who derives his livelihood from the pursuit of Agriculture”

9.8.5 Part Worn Tyres⁴⁸⁷

Part worn tyres can be reused without further treatment and in such cases would not be considered waste under the Waste Framework Directive as reuse is a waste prevention activity. Sources of such tyres include:

- (a) Tyres fitted to second-hand vehicles that are sold, or obtained from vehicles that are scrapped;
- (b) Old (out-of-date) tyres that are used for less demanding applications;
- (c) Tyres that are exchanged for reasons other than that of having reached the end of their life, such as the vehicle owner fitting a set of high-performance tyres or new wheels.

Some countries allow the resale of used, partly worn tyres (for their original purpose). Part worn tyres accounted for 0.8% of tyre imports in Ireland (by units) in 2011. Import of part worn tyres has shown a 77% increase from 16,309 units in 2010 to 28,555 units in 2011⁴⁸⁸. Figure 9.8 shows the country of origin of part worn tyre imported in Ireland in 2011. Switzerland, Great Britain and The Netherlands are the main countries of import. However, industry sources believe that CSO data is an underestimate and that import of part worn tyres account for 10 to 20% of tyres placed on the market.

⁴⁸⁷ Accessed on 23/10/2012 at <http://www.tyretrade.ie/index.php/part-worn-tyres-are-some-elses-waste-tractamotors/1142>

⁴⁸⁸ CSO data for SITC 62593

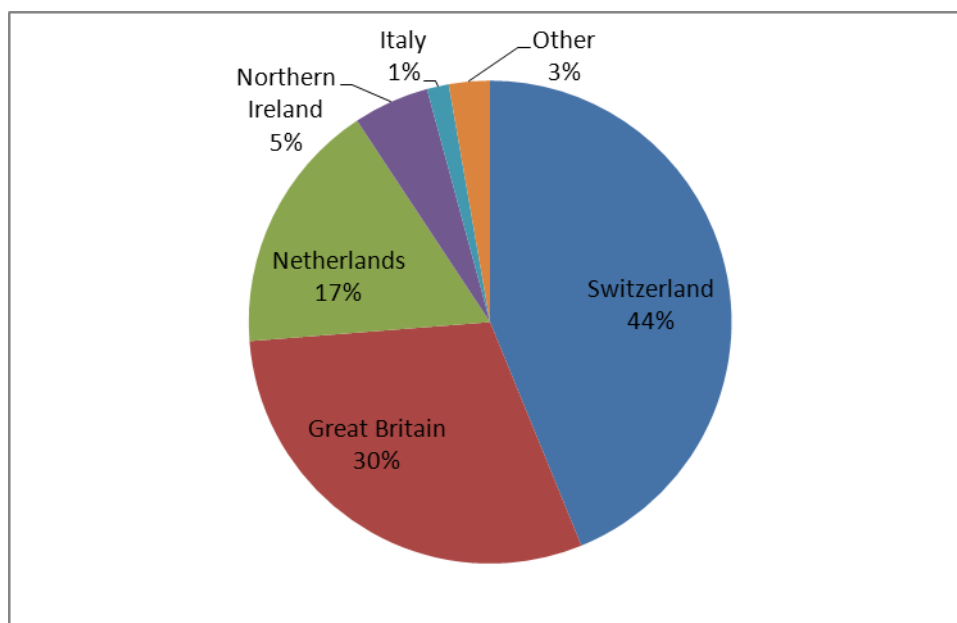


Figure 9.8: Import of Used Tyres in Ireland as a Percentage of Total Units Supplied by Country of Origin in 2011

Part worn tyres used by vehicles on road are a source of concern for road safety⁴⁸⁹. Part worn tyres should be purchased with great care, as there are risks involved. Such tyres could have originated from vehicles that had been involved in accidents, damaged by potholes or other obstacles, used without the appropriate pressure calibration or incorrectly repaired. Vehicles fitted with part worn tyres must comply with S.I. No. 5 of 2003. The Road Safety Authority (RSA) is reviewing the issue of the sale and fitness of part worn tyres and is working on proposals on the subject in the context of the 2013 – 2020 Road Safety Strategy.

Export of part worn tyres have increased six times from 8,551 units in 2010 to 49,379 units in 2011⁴⁹⁰. Figure 9.9 shows that Honduras, The United States and Northern Ireland are the main countries of export.

⁴⁸⁹ Tyre Trade Journal June 2012

⁴⁹⁰ CSO

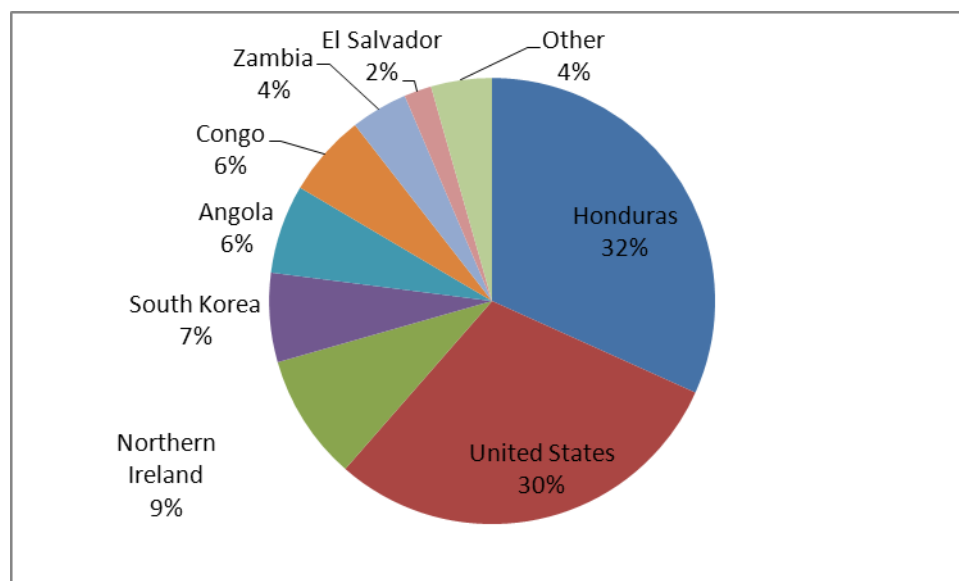


Figure 9.9: Export of Used Tyres by Units and by Country of Destination in 2011

Illegal exports of tyres were reported by a number of industry sources. It is possible that part worn tyres export from Ireland in 2011 is a way to avoid TFS Regulations. As the minimum thread depth is 1.6 mm in Ireland, these tyres are likely not to be safe to use anymore.

9.8.6 Tyre Waste Management Statistics

Information on waste tyre management in Ireland can be obtained from a number of sources, but none seems to offer a complete picture.

To obtain information on waste tyre management in the Republic of Ireland during 2011, the EPA (2013) summarised data contained in National Waste Report survey returns and contacted a number of additional organisations involved in the handling of waste tyres. As some of these organisations failed to provide information regarding waste tyres handled during 2011 the reported tonnage of waste tyres arising is therefore likely to be an underestimate.

Table 9.10 shows that the majority of waste tyres arising in the State in 2011 were exported in 2011.

Table 9.10: Waste Tyres Treated and Exported in 2011

Waste tyre activity	Quantity (t)	Percentage
Exported	10,253	53.7%
Chipped	7754	40.6%
Ballast	843	4.4%
Baled	207	1.1%
Rethreaded	35	0.2%
Total (t)	19,092	100%

(Source: EPA, 2013)

In 2009, the EPA estimated that a total of 24,500 tonnes of waste tyres was received by waste permitted facilities. Five of these facilities handled approximately 95% of the total waste tyres reported by local authorities (EPA, 2010a). The decrease in tonnage managed between 2009 and 2011 can be due to a number of reasons e.g. decrease in waste tyres arising as shown in Figure 9.4, different methodology, etc.

Regarding export, information from the National TFS Office indicated that in 2010 and 2011, 4,056 tonnes and 8,078 tonnes of waste tyres were exported. Even though the total quantity exported varies, the TFS information provides more details on the destinations and it is shown in Figure 9.10. The main countries of destination in 2011 were South Korea (2,974 tonnes), United Kingdom (852 tonnes) and Northern Ireland (20 tonnes).

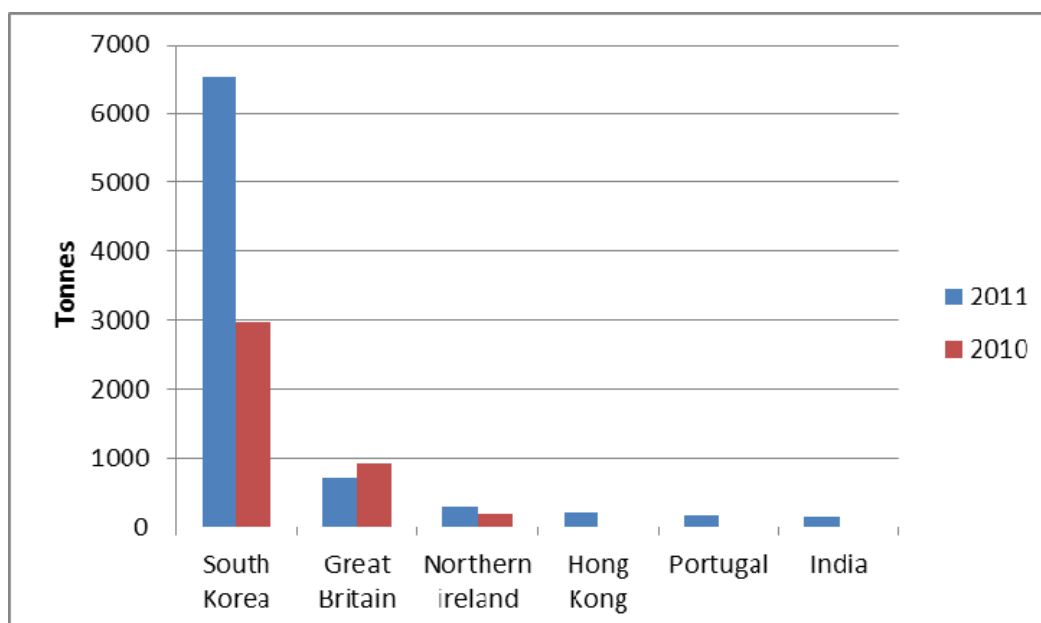


Figure 9.10: Destinations of Waste Tyre Exports (2010-2011)⁴⁹¹

The EPA (2013) in its National Waste Report 2011 indicated that 611 tonnes of waste tyres were imported into the Republic of Ireland for recovery.

The EPA (2013) also reported that:

- 7,754 tonnes, accounting for 40.6% of total waste tyres arising in the State, were chipped. TRACS reported that 60.3% of the waste tyres collected by its members are shredded or crumbed. From the 60.3%, one third is exported. TWM reported that 90% of the waste tyres collected by its members are shredded.
- 843 tonnes of waste tyres were used as ballast or 4.4% of total waste tyres arising in the State.
- 207 tonnes or 4.4% of total waste tyres arising in the State were baled and processed into concrete blocks. This differs from TRACS and TWM data which does not report any similar use in the State. However TRACS reported that 21.5% of waste tyres collected were baled prior to export either for further treatment or for energy recovery.

⁴⁹¹ TFS Office Email 13/11/2012

- 35 tonnes of waste tyres were rethreaded (0.2%). TRACS reported that 0.13% of waste collected were used rethreaded.

Tyres that are in good condition may be sold for reuse⁴⁹² and, in accordance with the Waste Framework Directive (2008/98/EC), they are not considered to be waste. In 2011, 189 tonnes of tyres were reported as sold for reuse. TRACS reported that 1.1% of tyre units collected by its members were sold for reuse and 6.4% were delivered to farmers. TWM reported that 188 tonnes of waste tyres were also delivered to farmers.

9.9 ENFORCEMENT

Local authorities are responsible for the enforcement of the provisions of the Regulations within their functional areas.

Local authorities should be regularly receiving up-date information relating to members of compliance schemes. Each local authority must establish a register of all tyres producers, suppliers, collectors and other obligated bodies.

Local authorities are required to inspect all sites that are identified on this register. Table 9.11 shows the producer responsibility inspection activities by local authorities from 2007 to 2011.

Table 9.11: Tyres and Waste Tyres Producer Responsibility Inspection Activities by Local Authorities from 2007 to 2011

Year	2007	2008	2009	2010	2011*
Inspections	124	449	585	717	594*

* Not validated by the EPA

The highest number of inspections took place in 2010.

In 2009, five local authorities reported illegal tyre storage operations to the EPA, some of these were associated with permitted facilities. The quantity of tyres illegally stored is estimated by the five authorities at 10,000 tonnes. Enforcement actions were underway by the local authorities with a site in Kerry now cleared of tyres and legal action underway against facilities in Mayo and Galway.

A number of local authorities also reported cross-border movement of waste tyres to Northern Ireland.

Local Authorities are responsible for the permitting of recycling and recovery facilities located within their administrative area along with the permitting of the collection and transportation of recycled and recovered waste.

The EPA is responsible for licensing the major waste recovery operators. The EPA has supervisory control over all local authorities under Section 63 of the Environmental Protection Agency Act, 1992 and has been assigned a role in producer responsibility on a range of waste streams, including waste tyres.

A breach of the 2007 Tyres and Waste Tyre Regulations is subject to the penalties set down in Section 10 of the Waste Management Act 1996 (as amended). The enforcement powers contained in the Waste Management Act 1996 (as amended) can be used to police the 2007 Tyres and Waste Tyre Regulations.

A breach of the 2007 Tyres and Waste Tyre Regulations is an offence under the Waste Management Act 1996 (as amended)⁴⁹³. In general, the maximum fine at the

⁴⁹² In S.I. 664 of 2007 reuse is defined as the use of a waste tyre, either for the same purpose or, as appropriate, a different purpose without the need for reprocessing. This is a different definition for reuse than in other waste legislation.

⁴⁹³ The 2007 Tyres and Waste Tyre Regulations were made via powers contained in Sections 7, 18, 19, 27, 28, 29, 32, 34, 36 and 39 of the Waste Management Act 1996 (as amended). Non-compliance with regulations made under Section 18(3) in relation to record-keeping is an offence under Section 18(8), non-compliance with regulations made under Section 28 in relation to the prevention/minimisation of waste is an offence under Section 28(6), non-compliance with regulations made under Section 29 on the recovery of waste is an offence under Section 29(6), non-compliance with regulations made under Section 32 on the holding of waste is an

District Court for non-compliance will be €3,000 or 12 months imprisonment (or both); however, in respect of the indictable offences the maximum penalties are €15 million and 10 years imprisonment (or both).

The Waste Management Act 1996 (as amended) also contains provisions for lesser offences in Section 10 (2). These are only dealt with at the District Court. It is not absolutely clear which elements of the 2007 Tyres and Waste Tyre Regulations are subject to this provision and local authorities may need to obtain legal advice on this matter⁴⁹⁴.

A tyre enforcement guidance was developed by TRACS for local authorities, but it has not been finalised.

9.10 BENCHMARKING AND RECOMMENDATIONS

The structural and environmental effectiveness of all aspects of the current system was reviewed to assess whether this system is ensuring the appropriate environmental management of waste tyres.

In order to carry out a review of the tyres and waste tyres PRI and develop recommendations to ensure the environmental effectiveness of the system for the management of all waste tyres, RPS have:

- Reviewed relevant published information on tyre waste management in Ireland and abroad.

offence under Section 32(6)(a), non-compliance with regulations made under Section 34 on waste collection permit-related requirements is an offence under Section 34(1)(c), non-compliance with regulations made under 36 on the movement of waste is an offence under Section 36(3) and non-compliance with regulations made under Section 39 on the recovery and disposal of waste is an offence under Section 39(9).

⁴⁹⁴ The main provisions that are affected by Section 10(2) of the Waste Management Act 1996 (as amended) would seem to be those elements of the 2007 Tyres and Waste Tyre Regulations that emanate from powers contained in Section 32(4) of the Act. This is because non-compliance with regulations made under Section 32(6) of the Act is subject to the lesser penalties set down in Section 10(2).

- Met with various economic operators and regulators⁴⁹⁵ involved in the tyres and waste tyres PRI, and
- Reviewed the findings of the consultation.

When reviewing the tyres and waste tyres PRI, it is important to understand that the tyres and waste tyres PRI is limited in its scope. The aim of the 2007 Tyres and Waste Tyres Regulations is to support the environmentally sound management of waste tyres. The regulatory framework allow for quantities of waste tyres arising to be compared with the quantities placed on the market as well as tracking the movement of waste tyres from the time they are discarded until they are either reused or processed for recycling and / or recovery. Unlike a full PRI the tyre compliance schemes are not required to fund/subsidise the recycling or recovery of waste tyres nor do they have to meet recycling or recovery targets.

9.10.1 Waste Management Performance

The All Island Used Tyre Survey (RPS, 2013) estimated that the tonnage of tyres placed on the market in Ireland was 48,341 tonnes in 2010. The PROs reported that 35,147 tonnes of tyres were placed on the market by their members. There is therefore a gap of 13,194 tonnes of tyres or 27% of tyres placed on the market. The number of economic operators (which is over 800), not registered with local authorities or members of a compliance scheme as shown in Table 9.12, is likely to be a significant contributor to the quantities of tyres unaccounted for.

Table 9.12: Level of producers and suppliers compliance

Producers and Suppliers	Compliance Scheme	Self-compliers	Non-compliant	Total
Number	979	8	848	1,827
Percentage	54%	0.4%	46%	100%

⁴⁹⁵ Thornton's Recycling, Crumb Rubber, Good Year Dunlop, ITIA, TRACS, TWM, UCC Depotec, EPA Office of Environmental Enforcement, EPA Resource Use Unit, and DECLG.

It is estimated that a total of 38,673 tonnes of waste tyres was generated in 2011. The waste collectors who are members of compliance schemes collected 29,343 tonnes⁴⁹⁶ of waste tyres accounting for 76% of the waste tyres arising. However, according to the EPA (2013) only 19,092 tonnes of waste tyres have been managed in the State in 2011 accounting for 49% of the waste tyres.

The extent of waste tyres unaccounted for ranges from 24% (PROs data) to 51% (EPA data) of the waste tyres arising in 2011 (38,673 tonnes). This range is lower than the previous 2009 estimate (EPA, 2010a) which reported that 42,350 tonnes of waste tyres were “unaccounted” for in Ireland in the order of 60% of the waste tyres arising (70,011 tonnes) at the time⁴⁹⁷.

According to the European Tyre and Rubber Manufacturers Association (ERTMA) the EU 27 countries (plus Norway & Switzerland) accounted for 96% of their waste tyres arising on average in 2010 (ETRMA, 2012b). Therefore Ireland is performing below the European average.

Figure 9.11 shows that the profile of waste management options in Ireland differs from Europe. There are two estimates for the Irish information: one based on the EPA data and one based on the PROs data. In comparison to other European Member States, Ireland has a similar (EPA data) or higher proportion (PROs) of material recycling with a limited energy recovery and rethreading. There is also a large proportion of Irish waste tyres collected whose fate is unknown (PROs). The EPA data shows that 53% of waste tyres are exported, but no details on the type of treatment are provided.

⁴⁹⁶ This estimate was generated from TRACS using information on number of units collected and TWM using information on quantities collected by the waste collector members of the compliance schemes. Other waste collectors also collect waste tyres and are not members of compliance schemes (e.g. ATFs), therefore the quantity collected is an incomplete dataset. As a waste collector can pass waste tyres to another, there is also potential for double counting in this estimate. While this may affect the accuracy of the calculations as pointed out during the consultation, this does not alter the conclusion or the recommendations contained in the report.

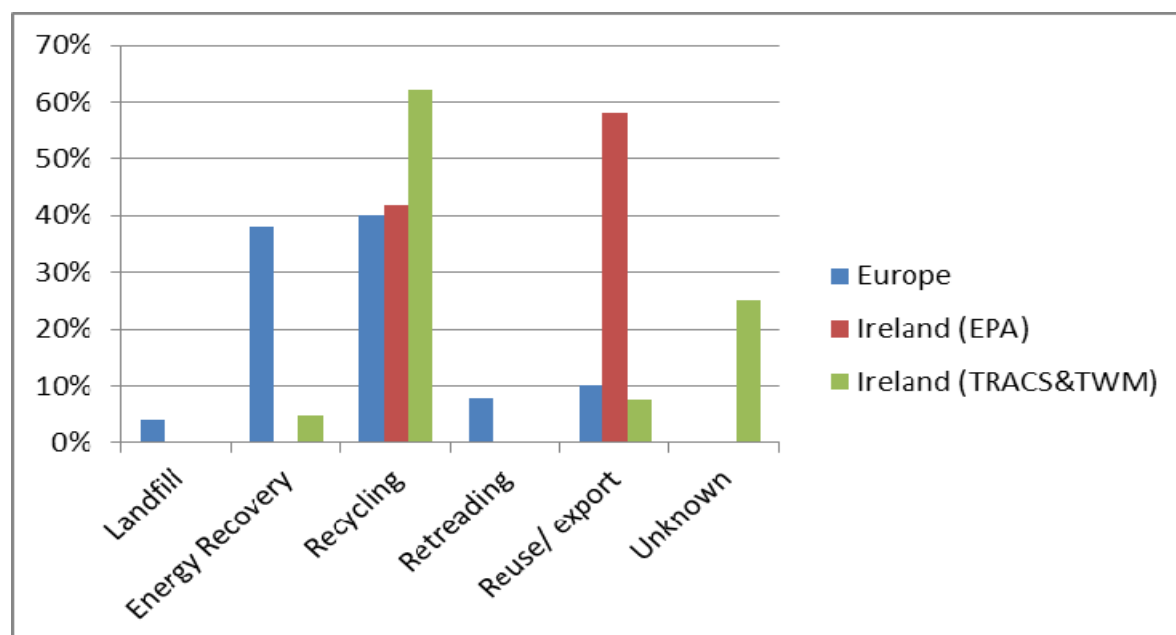


Figure 9.11: Waste Tyres Waste Management Options Europe (2010)⁴⁹⁸ and Ireland (2011)⁴⁹⁹

In 2010, 23 of the EU27 countries (plus Norway & Switzerland) recovered 90% and more of their annual used tyre arising with 18 of those 23 countries recovered 100% while Italy and the Czech Republic are between 70% and 90%. Only Bulgaria and Cyprus are still depending on landfilling (ETRMA, 2012b)⁵⁰⁰. Despite the heterogeneous nature of these rates, in 2010 the EU27 (plus Norway and Switzerland) had an average used tyre recovery rate of 96%.

⁴⁹⁷ The EPA and RPS methodologies to estimate waste tyres arisings differed. The EPA assumed average tyre lifespan of 2 years and no weight loss between new and used tyres while RPS used an average tyre lifespan of 1 year and 20% weight loss between new and used tyres.

⁴⁹⁸ ERTMA, (2012b)

⁴⁹⁹ Ireland (EPA): see Table 32 of the National Waste Report 2011 (EPA, 2013).

Ireland (Compliance Scheme): From information provided by waste collectors to the compliance schemes it is estimated that 8% of waste tyres collected are reused, 62% are recycled, 5% are used as a fuel. For the 25% of the waste tyres collected, the fate is unknown as they are reported: baled and exported (15%), exported as a whole (3%) or transferred to another collector (7%).

Sufficient capacity in terms of approved recovery infrastructure exists in Ireland for managing the tyre waste stream for present and projected arisings (EPA, 2010a). But there are concerns among Irish authorised recovery operators that their supply is being undercut by export of waste tyres and illegal activities.

However, there seems to have been a decrease in the scale of identified illegal activities since 2009 when three facilities (one each in Galway, Mayo & Kerry) were identified as illegally stockpiling an estimated 10,000 tonnes of tyres (EPA, 2010a). As part of the work on the All Island Used Tyre Survey for the DOENI, RPS collected data from local authorities on fly tipping of waste tyres. There were 17 local authorities who responded and reported 181 incidents. The majority of the incidents involved small numbers of tyres. The main causes were small fly tipping which represented 88% of the respondents and illegal burning / bonfires for 24% of the respondents. There were only three reported occurrences of larger storage / dumping of waste tyres, but they were smaller in scale than the incidents reported in 2009.

Due to the lack of consistent and accurate data on tyres and waste tyres it is difficult to monitor certain aspects of the performance of this PRI. The current system is not tracking waste tyre flows well. While the level of illegal storage seems to have reduced, there is a high level of non-compliant businesses (estimated to over 46%) and significant quantities of tyres and waste tyres unaccounted for.

9.10.2 Costs to Producers

Under the Waste Management (Tyres and Waste Tyres) Regulations 2007 (SI 664 of 2007) the cost to producers is shown in Figure 9.12. The cost of self-compliance is significantly higher to a producer than the costs of joining a compliance scheme. These costs exclude any indirect administrative costs to the producers linked to data collation and reporting to the local authorities or PRO.

⁵⁰⁰ The ETRMA reported a recovery rate of 91% for Ireland. This estimate was not used as it was based on the UK situation..

Limited data was available on costs of other European PRIs, but data per tonne of waste tyre collected from Aliapur (France) and Recytyre (Belgium) indicates €163 / tonne and €260 / tonne respectively. The higher costs of these schemes compared to the Irish system is due to the fact that they fund the separate collection and recovery of waste tyres. By comparison, there is no cost to producers in Northern Ireland as there is no producer responsibility in place and the current costs of compliance in the Republic of Ireland is low enough to prevent market distortion. The situation regarding Northern Ireland is important as the risks of market distortion could increase if the compliance costs in ROI were significantly higher.

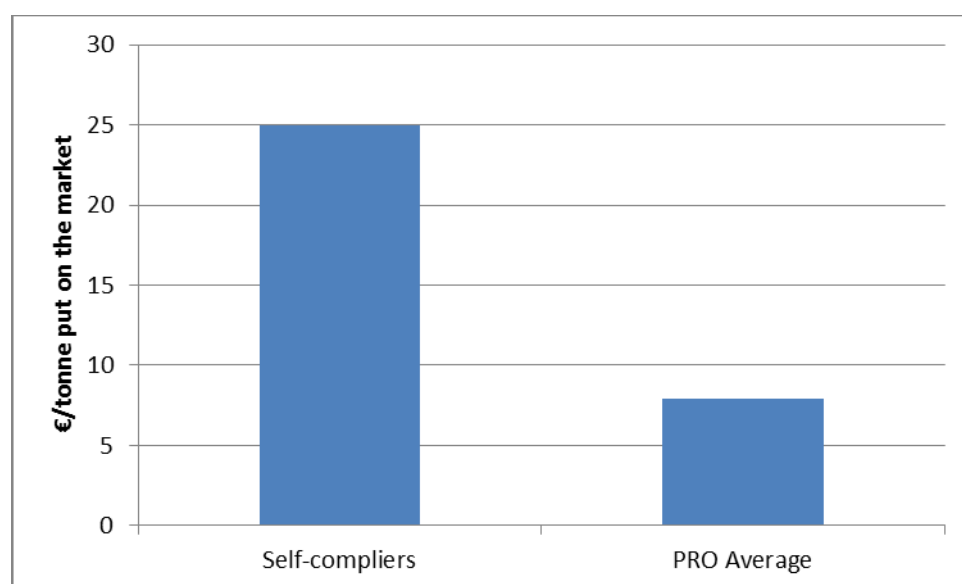


Figure 9.12: Producers Compliance Costs

9.10.3 State and Taxpayer Costs

Because of the low numbers of self-compliers (EPA, 2010a), there is limited income to the State from the tyres and waste tyres PRI. Some income may come from enforcement activities, but this amount is unknown.

Local authorities incur the following costs:

- Enforcement activities (717 inspections were carried out by local authorities in 2010 with associated enforcement actions and prosecutions initiated) and litigation costs⁵⁰¹.
- Removal of waste tyres following fly-tipping or identification of illegal disposal sites. One local authority quoted a cost of €2,000 in 2010.
- Information and awareness (mainly providing information on their website).

The enforcement activities and the cleaning up of illegal sites and fly-tipping are the largest State and taxpayer cost. While these costs will not disappear, they can be reduced by increasing compliance levels (e.g. by making the compliance system more appealing to economic operators).

9.10.4 Improving the Current System

As pointed out in Section 9.10.1, the waste management performance of the current system has been poor. There are a number of contributing factors affecting the effectiveness of the current PRI:

- The lack of quickly accessible and accurate information on tyres, part worn tyres and waste tyres placed on the market is a hindrance to understanding the effectiveness of current arrangements. The Waste Management (Tyres and Waste Tyres) Regulations 2007 (SI 664 / 2007) impose detailed reporting obligations on persons who supply tyres to the Irish market, but the information from each economic operator is held by a number of bodies (local authorities, PROs and the EPA) who do not share this data. In addition, within the current framework, the PROs may not be able to access the relevant data from waste operators enabling them to compile tyre waste statistics (e.g. power to request and audit). The compilation and analysis of waste statistics can be complex, requiring skills that the PROs may not have if they are too small.

⁵⁰¹ Assuming two inspections per day, this equals 358.5 Man-days or a cost of €89,625 at €250/day. Kilkenny County Council was awarded €480 following a successful prosecution, but costs €5,000 for preparation and €5,000 for legal representation have been quoted by the local authorities.

- The 2007 Tyres and Waste Tyres Regulations are purely an administrative activity. While the aim of the waste tyres regulations was to support the environmentally sound management of waste tyres by improving the tracking of waste tyres flows, they do not encourage economic operators to reuse tyres or process waste tyres for recycling and /or recovery⁵⁰².
- Two compliance schemes operating in a single national market results in difficulty for the DECLG to monitor the effectiveness of the current system and hold the PRO to account and for the PRO to comply with the waste tyres regulations.⁵⁰³ There may be problems of double counting, particularly when a producer switches from one PRO to another and of misreporting when a firm involved in collecting, sorting and/or recovery does not file information correctly. Furthermore there is a need to ensure that systems used to record and verify recycling and recovery rates are compatible between the different PRO's. If there are shortcomings in meeting the target, negotiation and discussion with several PROs is likely to be more difficult and time consuming compared to a single PRO.
- There are many types of obligated economic operators (producers, suppliers, waste collectors, recovery operators, and farmers), which creates implementation challenges for the PRI (e.g. information and awareness, enforcement, administrative burden etc.).

In order to improve the current system, it is necessary to review the scope of the current PRI and improve compliance of obligated economic operators.

⁵⁰² The Landfill Directive bans fulfil this role by banning whole and shredded waste tyres from being deposited at landfill sites.

⁵⁰³ For tyres the PROs are responsible for the "operation [of] a system with the objective to ensure the proper management of all waste tyres by tracking tyre and waste flows" (Schedule of Conditions to letter from Minister approving TRACS as a PRO, 19 December 2007). TRACS, the first PRO licensed in the tyre waste stream, maps the flow of tyres from their importation into Ireland and their subsequent movement through the supply chain from wholesaler, retailer to waste tyre collectors. However, with a second PRO, TWM, licensed in 2009, not surprisingly holes and gaps began to appear in recording the flow of tyres through the supply chain. As a result TRACS (2011, p. 3) claim that the operation of a second PRO "has compromised overall data collection and reconciliation."

Decisions from businesses are largely driven by economic considerations. When deciding on compliance, economic operators examine the costs and benefits of their options and select the option with the higher net benefits. Therefore to improve compliance levels one should aim to:

- Increase the benefits of being compliant and decrease the costs of compliance.
- Increase the costs of being non-compliant and decrease the benefits of non-compliance.

Recommendations:

It is recommended that the following approaches are used in combination to improve the current system:

- Improving the regulatory system with the dual objectives of increasing incentives for the economic operators to comply, and reducing unnecessary administrative burden of compliant businesses thus reducing the level of monitoring by public authorities.
- Increased enforcement activities to increase the risks of non-compliance.
- Improved communication to make economic operators aware of their obligations (e.g. the benefits of being compliant and the risks associated with the lack of compliance). The provision of practical information can remove the barriers to compliance and reduce the costs of compliance.

9.10.5 Changing Scope of Current PRI

Why do we need to change the Scope of the Existing PRI?

Section 9.10.1 has indicated that the environmental effectiveness of the current arrangements is limited with significant quantities of waste tyres unaccounted for, lower proven recycling and recovery rates than other European countries, fly-tipping and stockpiling of waste tyres.

A “Primetime Investigates” programme, aired on Monday the 17th of May 2010 on RTE1, highlighted similar issues relating to unauthorised disposal and recovery of

waste tyres. On foot of a subsequent investigation, the EPA's Office of Environmental Enforcement (OEE) recommended aligning the management of waste tyres with other PRIs (EPA, 2010a)⁵⁰⁴. The EPA submission to this review consultation recommended that *"the tyre PRI scheme should be underpinned by legislation placing obligations on tyre producers/compliance schemes to register with a registration body and finance the take back and management of waste tyres in a manner similar to the obligations that exist in the WEEE and batteries regimes. Most importantly, levies on new product should only be disbursed where appropriate treatment of waste tyres is taking place and can be demonstrated to have taken place."*

Most of the consultation respondents (except the Irish Tyre Wholesalers and Retailers Association⁵⁰⁵ which feels it will create a further black economy) are in agreement that having a full PRI for tyres would lead to greater transparency and accountability although the respondents questioned what would the extent of the PRI costs be and how it would be determined. The Irish Tyre Industry Association (ITIA)⁵⁰⁶ and the UK Tyre Recovery Association (TRA)⁵⁰⁷ submissions also highlighted the risk of trade distortion with Northern Ireland.

What Options are Available?

There are a number of options through which the PRI can achieve these outcomes (product take-back, end-of-life management fees, advance disposal fees, mandatory deposit refund system, recycling incentives, and disposal incentives) but for waste tyres a system where the producers finance the collection of waste tyres seems to be the most successful according to the ETRMA (see Box 25).

⁵⁰⁴ In the other PRIs, the producers take responsibility for the collection and treatment of the PRI waste

⁵⁰⁵ The I.T.W.R.A. was set up to support the interests of tyre wholesalers, retailers, importers, and waste collectors in Ireland. See <http://itwra.com/>

⁵⁰⁶ The trade association representing members with interests in the tyre industry. See www.itia.ie/

⁵⁰⁷ Accessed on 24/08/2012 at <http://www.tyrerecovery.org.uk/>

Producers organising the collection of waste provide a separate and more controlled channel for waste management, which in turn helps to tackle problems of illegal dumping or improper disposal, and discourage litter and dumping (OECD, 2006).

Box 25: European Model for Tyre Producer Responsibility Initiative

The ETRMA provides an overview of the European experience in dealing with waste tyres (ERTMA, 2012). In 2011, European countries with PRIs in place accounted for 57% of used tyres in the EU. Bulgaria and Cyprus still depend on landfilling to some extent. In 2010, EU-27 (plus Norway & Switzerland) had an average used tyre recovery rate of 96%, which is remarkable compared with the recovery rates of some other sectors. Countries where a full PRI has been operating for over 10 years (e.g. Nordic countries) tend to have recovery rates of 100% and no stockpiles. There is generally only one PRO in each country.

According to the ERTMA, the PRI system shown in Figure 9.13 appears to be the most suitable and robust for addressing and resolving end of life tyre arisings, in a sustainable manner for the long term, and to achieve a 100% recovery rate, in the most economical way.

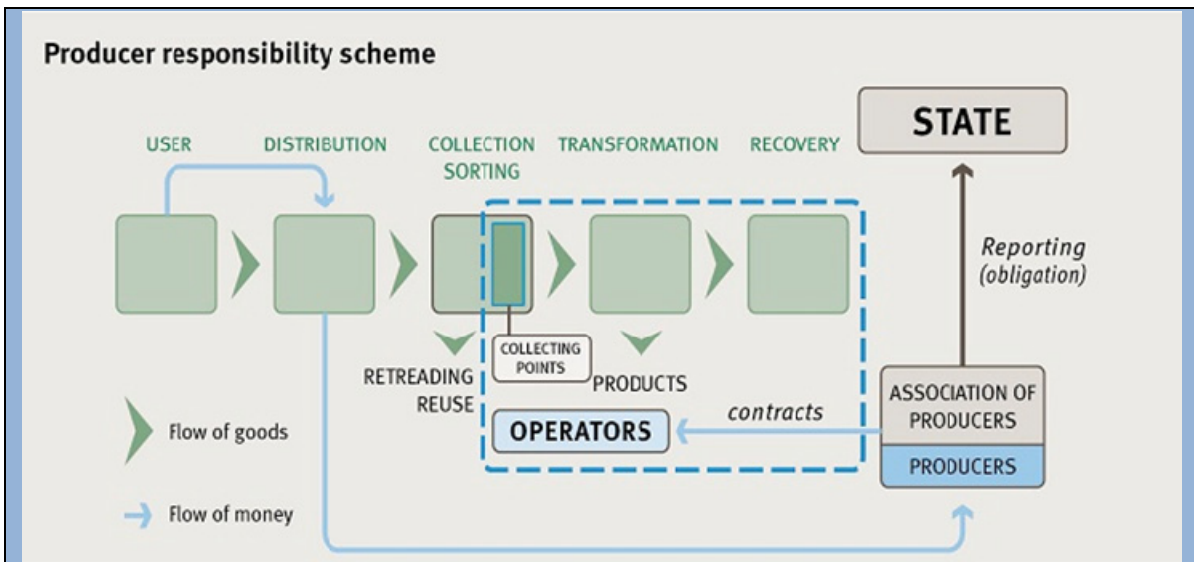


Figure 9.13: Producer Responsibility Initiative for Tyres⁵⁰⁸

PROs set up by the tyre manufacturers are mandated to collect and organize the treatment to the equivalent amount in volume (according to the principle ‘one new tyre sold one worn tyre recovered’) of tyres sold collectively by these companies. The process is financed through an environmental fee generally applied to the product price, regardless of the location of the collection point. Thanks to the success of the approach, the fee has decreased over time. The chain is managed by the PROs, from collection to recovery or recycling, with the support of a reliable and transparent traceability or auditing system.

Producers can take financial or physical responsibility for the collection of waste tyres. In the case of **financial responsibility**, the producers would finance part or all of the waste tyre collection costs from tyre suppliers and local authorities. A system similar to the packaging PRI could be implemented where a subsidy is paid on proof of adequate recovery. In the case of **physical responsibility**, the producers would organise free collection from tyre suppliers and local authorities. A system similar to the farm plastics or WEEE PRI could be implemented where producers contract recovery operators for the collection and treatment of waste tyres.

If the producer was taking (either fully or partially) responsibility for the management of waste tyres, they may decide to bear the corresponding financial burden of waste management costs themselves or to shift it to consumers through higher prices. This will of course depend on the impact of the PRI costs on producers' pricing behaviour. The scope for this will be determined by the conditions of supply and demand in the product market.

Costs, Benefits and other Impacts

In the current system, producers and retailers pay a fee to a PRO or local authorities the fee is used for purely administrative activity. Each economic operator (end-users, retailers, producers, recovery operators) pays for the waste management of waste tyres that they own. In the context of waste tyres, it is assumed that most waste tyres are already taken back by tyres suppliers when they fit new tyres. There is generally a disposal charge paid by the vehicle owner for this service. One of the main issues is that the fee paid by the vehicle owner may not be used to ensure proper management of the waste tyres.

Giving explicit responsibility to the producers and importers for organising the take back free of charge of the waste tyres from the suppliers would reduce the incentive for suppliers to use “illegal” channels. The option of physical responsibility will fully negate this incentive, while the financial responsibility options may only reduce a proportion of this incentive.

As this approach would result in the decrease in waste tyres fly-tipping, this will also **reduce State costs for removal and investigations.**

However, the free collection of waste tyres at suppliers' premises may lead to **possible import of waste tyres from Northern Ireland and the influx of waste tyres from historic illegal sites** to benefit from the free collection. This would increase the PROs' expenditure and may affect the financial sustainability of the

⁵⁰⁸ Accessed on 24/08/2012 at www.etrma.org/tyres/ELTs/ELT-management/producer-responsibility

PRI⁵⁰⁹. The PROs will need to setup systems to monitor suppliers and waste collectors to ensure that the waste tyres from historical stockpiles are not entering the system to benefit from cheap collections. A separate approach to identify and decrease the historical stockpile is proposed in Section 9.10.9.

While the proposed arrangements will decrease the need for suppliers' enforcement, **the need for producers' enforcement will increase** as the producer cost of compliance will increase.

The ITIA pointed out that a full PRI would result in the cost of disposing of waste tyres rising from €2 to €4-5 per waste tyre for car and from €8 to €20-30 per waste tyre for HGV. The increase in costs is based on the assumption that a limited number of waste collectors will be appointed, resulting in higher collection costs.

It is not anticipated that the producer compliance costs will reach the levels suggested by the ITIA, which seem high for the following reasons:

- First, the PRO(s) responsible for coordinating the collection will aim at procuring the most cost-effective waste management solution for its members. This means that the PRO(s) will aim at striking a balance between the number of waste collectors required and traceability. In this regards, having one compliance scheme rather than two may lead to a decrease in cost of collection and treatment due to economy of scale.
- Second, a waste management cost of €2 per tyre (assuming an average weight of 10kg per tyre) is equivalent to €200 per tonne, which is similar to the waste management costs in Belgium (see Box 26) and France. If this cost increased to €4-5 per tyre, this would be well in excess of similar schemes in Europe.

⁵⁰⁹ A similar scenario happens for farm plastics where more plastic film was being presented for recycling than the scheme was funded to collect and recycle in 2005. This led to collections ceasing in the second half of 2005. Upon consultation with the Government free one off collections were arranged through the Local Authorities rather than through the compliance scheme to accommodate the backlog.

Box 26: RECYTYRE, Belgium

The implementation of the take-back obligation for waste tyres is realised through the development of waste tyres regulations in 2003 and the establishment of RECYTYRE.

RECYTYRE was founded by six of the world's largest tyre producers in 2006. Waste tyres are collected by almost 5,000 garages, tyre specialists and distributors. In some municipalities, waste tyres are also collected at CASs. The financing of the collection is paid by the consumer (depending on the type and size of the tyre; e.g. €2.4 per tyre for cars, €12.46 per tyre for lorries and buses). RECYTYRE subsequently collects the waste tyres at the collection points (www.recytyre.be, Dutch).

The operators of collection points have to take back the waste tyres for free, even if the consumer does not buy a new tyre. The collection points are exempt from this obligation, when collection of waste tyres is possible in a nearby CASs.

Like other industrial bodies, RECYTYRE is required to achieve collection and recycling percentages, to monitor and report collection and recycling percentages, to draw up prevention plans, amongst other functions.

However as pointed out by the ITIA and TRA submissions the increase in producer compliance cost could lead to potential effects which could undermine the PRI. Such effects include:

- Unscrupulous operators buying tyres for cash outside Ireland, and selling on tyres in the Republic of Ireland for cash, thereby avoiding both the PRI charge and VAT charges.
- The ITIA also believe most truck tyres would be therefore shipped directly from Northern Ireland and the UK, or imported directly by fleets to avoid the PRI charge. Importers who can ship out of Northern Ireland (avoiding the levy) will be converting their customers (tyre suppliers) into the importers of tyres. This would pass the responsibility from the 45 or so current importers in the country, to the 1,300 tyre suppliers in the country, creating a “*compliance nightmare*” according to the ITIA.

- The ITIA is also concerned that these tyres would also subsequently end up in the waste stream, with no waste management fee having been paid. The cost of disposal would have to be paid by the compliant producers and importers. This in turn will put the compliant importers at a competitive disadvantage with unscrupulous operators who ignore responsibility to pay the levy.

These effects are possible, but there are a number of factors which may influence their likelihood:

- Producer deciding to move their businesses from the Republic of Ireland to Northern Ireland will not only consider the PRI compliance costs but other factors in their decision (e.g. taxation, supply chain etc.).
- With regards to HGV tyres, while the DECLG develops or reviews the regulations, the producers have opportunities to input and make innovative proposals. There is scope for the producers to make proposal for different approaches for HGV tyres.
- The “*compliance nightmare*” described by the ITIA will not be worse than with the current system as suppliers are already obligated and subject to enforcement. With the proposed system, if suppliers become producers by importing tyres, they will be incentivised to be part of the PRI to benefit from the collection offered by the PROs.
- The PROs will have an important role in ensuring that waste tyres collected from suppliers have come from compliant producers.
- While the EU has currently no recycling targets for waste tyres, however this issue may be addressed in the review of the Waste Framework Directive in 2014. Such targets could lead to a change in the future cost of tyre waste management both in Northern Ireland and in the Republic of Ireland. While waste policy in Northern Ireland is largely driven by UK waste policy the DECLG should continue to engage with the Department of the Environment in Northern Ireland to explore the possibilities of standardising approaches for an all-island management of waste tyres. If similar developments in Northern Ireland are too slow, the DECLG should progress with the establishment of PRI responsible for the collection and treatment of waste tyres in any case.

- In the absence of a waste tyre PRI in Northern Ireland it is important to utilise other means of collaborative enforcement such as the TFS office in the DOE. Also Revenue and Customs in Northern Ireland may be interested in potential illegal exports from Northern Ireland into Ireland where they may be losing revenue to the exchequer.
- Finally it is recommended that self-compliance be removed as a full PRI scheme will facilitate better enforcement of the Tyres and Waste Tyres Regulations. Currently the self-compliance system is not working as there are only a very limited number of economic operators choosing the self-compliance route. This will make enforcement easier as entities not in the compliance schemes will be readily identifiable. Also, the general public will be able to identify legitimate operator dealing in the proper manner with waste tyres.

Setting Collection, Recycling and Recovery Targets

In the current system, there is no commitment to meet specified recycling or recovery targets. As the Landfill Directive bans waste tyres from being deposited at landfill sites, there are currently no European specific recycling targets set for tyres.

In order to ensure that the proposed arrangements are implemented by the compliance schemes, collection targets should be set by the DECLG in consultation with the tyres industry. Because of the short tyre lifespan and because of the inaccuracy of data on waste tyres arising, consideration should be given to use tyres placed on the market to set targets.

The establishment of national recycling and recovery targets can be used as a policy instrument to favour recycling compared to recovery for example. However, with regards to waste tyres the environmental outcomes of such approaches are not clear. Life Cycle Assessment (Aliapur, 2009) shows that the environmental impact of material recycling methods is not systematically better than that of energy recovery ones. End use applications must be assessed on a case-by-case basis. As there is a landfill ban and Life Cycle Assessment results are unclear it is not recommended to have recycling and recovery targets at this stage.

Stakeholders Monitoring Group

In PRIs which have operated effectively all parties are clear about their roles and responsibilities and more importantly work collectively to achieve the objectives of the PRI. Stakeholders monitoring groups in Irish PRIs such as WEEE and batteries were instrumental in providing a mechanism for stakeholder engagement and discussion on any issues arising. With the degree of changes proposed for the waste tyres PRI, it is recommended that a similar group be set-up to facilitate the implementation of the PRI.

Recommendations:

In conclusion, considering all the above, it is recommended that the scope of the current Tyres PRI should be changed to improve the environmentally sound management of waste tyres. It is recommended that the DECLG changes the 2007 Tyres and Waste Tyre Regulations to make producers and importers responsible for financing the collection of waste tyres from tyre suppliers. To ensure the effectiveness of the proposed arrangements, collection targets should be set with input from the industry and other relevant stakeholders.

9.10.6 Enforcement

As highlighted by the EPA (2010a) there is a need for increased enforcement of the 2007 Tyres and Waste Tyres Regulations. This will raise the costs of non-compliance and encourage economic operators towards the compliance route.

However, increasing enforcement will require additional resources, which may be difficult to provide with the current public funding restrictions. Therefore, in addition to the recommendations made in Section 4.7⁵¹⁰, the need for additional resources could be mitigated by:

⁵¹⁰ For example, co-funding of enforcement by the compliance schemes, outsourcing of producers enforcement, centralisation of PRI enforcement and reallocation of enforcement resources freed by the use of shared services and the reduction in the number of regional formations.

- Using intelligence work provided by the PROs, targeted enforcement actions by local authorities at the estimated 800 operators known not to be participating in a compliance scheme or registered as a self-complier. Within the current arrangements, the consultation process identified compliance from suppliers and collectors as a particular issue. Should the proposed arrangements in 9.10.5 be implemented, the focus of enforcement actions should move to the producers.
- Setting penalties at an appropriate level is also part of a successful enforcement framework. In the case of the Tyre PRI, while a conviction on indictment is likely to be a substantive deterrent, the summary convictions are not likely to be a significant deterrent. The example in Table 9.13 for a supplier selling 20,000 units or 200 tonnes of car tyres per annum shows that the annual cost of compliance is over €41,000. A non-compliant tyre supplier using an illegal waste tyre collector could save up to an estimated €21,000. Therefore a summary conviction fine, which is less than the compliance fee for one year may not be a sufficient deterrent. Obviously there is a 12-month imprisonment which is quite substantial, but imprisonment is unlikely for an obligated producer putting small quantities on the market (e.g. 200 tonnes) and who is a first-time offender.

Table 9.13: Comparison of End-of-life Tyres Management Costs for a Tyre Supplier (supplying 20,000 tyres per annum, one site, not an importer)

Cost item	Compliant Tyre Supplier	Non-Compliant Tyre Supplier
Registration and annual fee with PRO	With PRO – €20- €50 Self-compliant – €100	€0
Administrative cost (e.g. time for reporting)	4 days at €250 / day	€0
Waste management costs	€40,000 (20,000 tyres at €2/tyre) paid to an authorised collector	€20,000 assumed €1/tyre paid to an unauthorised operator
Total	Over €41,000	€20,000

- The use of civil sanctions would also provide flexibility for the enforcement authority and reduce the cost of enforcement to public authorities.

- Improving the identification of non-compliant producers will also facilitate enforcement and reduce risk to the State. This would be facilitated if the list of compliant businesses was made publicly available. Currently, only TRACS publish a list of its members. TWM should also publish a list of its members and local authorities publish a list of self-compliers. PROs should continue to assist Local Authorities enforcement by facilitating the identification of non-compliant businesses. Section 4.7 also contains recommendations relating to the establishment of a central register for compliant businesses to allow more transparent and efficient tracking. In addition the removal of the self-compliance systems will facilitate the identifications of non-compliant businesses.

In parallel with increasing enforcement, the enforcement of the 2007 Tyres and Waste Tyres Regulations should be made easier for local authority enforcement personnel.

With the current arrangements, enforcement of the 2007 Tyres and Waste Tyre Regulations is complicated because:

- There are many offences which could apply to a wide range of economic operators (producers, suppliers, waste collectors, recovery operators, and farmers).
- It is difficult to separate used tyres and waste tyres.
- There are a number of potential loopholes, which were identified by TRACS Enforcement Guide (Laurence, 2010) in the 2007 Tyres and Waste Tyre Regulations⁵¹¹.

The enforcement of the 2007 Tyres and Waste Tyres Regulations could be facilitated if the distinction between used tyres and waste tyres was made easier, for example by using a minimum thread depth (1.6 mm) to classify waste tyres as waste.⁵¹²

⁵¹¹ For example, compliance scheme supplier members are also subject to a maximum of 180 cubic metres of waste tyres to be stored at any one time on their premises (Article 33 of the 2007 Tyres and Waste Tyre Regulations). However, for suppliers not members of a compliance scheme unlike the case with Article 33(1), there are no limits that affect the quantities of waste tyres that can be stored.

Local authorities have pointed out that the enforcement of the 2007 Tyres and Waste Tyres Regulations is particularly challenging and the development of template documentation for enforcement and training for enforcement officers would be useful. These guidance documents could be developed by NIECE.

Waste collectors are authorised to collect waste tyres under the Waste Collection Permits Regulations, but are not always registered with the local authorities or participating in a compliance scheme under the 2007 Tyres and Waste Tyre Regulations. In order to provide consistency, waste collectors which are not registered with the local authorities or participating in a compliance scheme under the 2007 Tyres and Waste Tyre Regulations should have the EWC code relating to waste tyres removed from their waste collection permits.

All tyre retailers can only store waste tyres for a period of six months on the premises where they are produced and awaiting collection, but there is currently limited guidance relating to the storage of used and waste tyres. In a number of supplier outlets (mainly in rural areas), these used/waste tyres are stored in the open and are freely accessible. In order to reduce fly-tipping and the use of tyres for bonfires, storage guidance for used and waste tyres at suppliers' outlets should be developed by the PROs. In March 2009, the DECLG also wrote to each public body to draw their attention to the obligations of producers (manufacturers, importers, etc.) and distributors (retailers) under the Waste Management Acts. This letter highlighted the buyer's obligation under the WEEE, Batteries and Tyres Regulations. A similar exercise should be repeated. Public bodies should also be made aware of their obligations when disposing of waste tyres.

Recommendations:

In summary the recommendations relating to enforcement are as follows:

- Using intelligence work provided by the PROs, targeted enforcement actions

⁵¹² This would have implications for a number of activities (rethreading, reuse by farmers) and the inclusion of exceptions for certain activities should be considered.

should be carried out by local authorities.

- Setting penalties at an appropriate level and the use of civil sanctions.
- Improving the identification of non-compliant producers.
- The enforcement of the 2007 Tyres and Waste Tyres Regulations should be made easier. The development of template documentation for enforcement and training for enforcement officers. A clear distinction between used tyres and waste tyres should be made.
- Waste collectors which are not registered with the local authorities or participating in a compliance scheme under the 2007 Tyres and Waste Tyre Regulations should have the EWC code relating to waste tyres removed from their waste collection permits.
- Storage guidance for used and waste tyres at suppliers' outlets.

All of the above recommendations should be examined by the review of the respective waste regulation and enforcement roles of the EPA and local authorities which will take place in 2013.

9.10.7 Information and Awareness

Combined with enforcement, information and awareness initiatives have a central role in improving the performance of the tyre waste management system.

Because of the range and diversity of the economic operators targeted by the tyre PRI, there are many messages which need to be communicated to the public and these operators (see Table 9.14).

Table 9.14: Information to be Provided to Economic Operators

Information	Economic operators targeted
Obligations	All obligated businesses
Risk of non-compliance	All obligated businesses
Practical information (e.g. registration etc.)	Producers, suppliers, farmers, waste collectors and recovery operators
How and where to dispose of waste tyres	Suppliers, public, farmers
Environmental impacts	All obligated businesses including general public

If the success of information and awareness of the tyres PRI is measured by its performance in achieving the objectives of the 2007 Tyres and Waste Tyres Regulations, we can conclude that it has not been very effective. However, the information and awareness initiatives were only one of the factors contributing to the failure.

In comparison with other PRIs (e.g. packaging, WEEE), the tyres PRI is less mature as it was only established 4 years ago. The budgets for information and awareness from the tyres PROs (less than €40,000) is also limited compared with the packaging (€880,000) and WEEE PROs (€2.9 million). These figures are from 2011.

A review of data collected on information and awareness activities for the tyres and waste tyres PRI indicate that:

- TRACS had a frequent, traceable and quantifiable⁵¹³ media presence in the trade and regional media informing obligated businesses of their duties with 58 articles and advertisements in 2011.

⁵¹³ See TRACS Annual Reports. an example of coverage is shown at <http://www.irishtrucker.com/news/making-tracs-in-tyre-compliance-009201> or

<http://www.tyretrade.ie/index.php/tracs-warns-of-increase-in-tyre-premises-inspections/865> accessed on 23/10/2012

- TWM reported a more limited local advertising but it was not possible to quantify as no details were provided in the annual report and no articles appeared following an internet search.

Local Authorities provided information on their website, but it was inconsistent as shown in Table 9.15. The DECLG website provides comprehensive guidance to assist with compliance with the 2007 Tyres and Waste Tyres Regulations, but only lists TRACS as the approved PRO. To increase the effectiveness of the PRI, consistent information such as listed in Table 9.14 should be provided by the local authorities and the DECLG.

Table 9.15: Information provided on local authorities websites⁵¹⁴

Type of Information	Provided
Introduction to regulations	50%
Information on approved bodies	53% (21% only mentioning TRACS ⁵¹⁵)
Information for farmers	35%
Information for Garages	21%
Information for Waste Tyre Collectors	26%
FAQ section	9%

Recommendations:

In line with the recommendation made by the EPA (2010a), and to support the implementation of the proposed arrangements, a national campaign to inform the tyre industry of its obligations and promote better compliance with the 2007 Tyres and Waste Tyres Regulations should be undertaken.

The campaign needs to highlight:

⁵¹⁴ Websites reviewed by RPS in July 2012

⁵¹⁵ The DECLG website also only makes reference to TRACS and not TWM.

- The environmental impacts of illegal practices in the management of waste tyres (fly-tipping, burning etc.). The campaign should be targeted at all obligated producers and to a lesser degree at the public (if the supplier take-back system is not used). Information should be available on the EPA, local authorities and PROs websites. The tyre industry should also consider funding a short video highlighting the impacts of bad practice and the need for the public to report fly-tipping. The campaign should be linked to the enforcement plan.
- When targeting the public, joint communication initiatives with the Road Safety Authority (RSA) should also be explored.
- The risk of non-compliance and successful court cases need to be advertised more broadly on local authorities, PROs and EPA websites, and potentially on national and/or sectoral press to act as a deterrent⁵¹⁶.
- Consistent information should be made available on the local authority websites providing information to all obligated economic operators and the general public. The list of economic operators which are not participating in a compliance scheme or registered with the local authorities should also be available on a publicly accessible website.

Any future campaign needs to be cost-effective and to target economic operators which have the most influence (suppliers). There is potential to use a wider variety of traditional media (e.g. T.V., radio) and social media. The campaign should be funded by the producers (or PROs) and supervised by the DECLG or the EPA.

⁵¹⁶ See

http://www.inarchive.com/page/2011-10-04/http://www.kilkennycoco.ie/eng/Services/Environment/Environment_News_Events/Tyre_Retailer_Prosecuted.html accessed on 07/11/2012

9.10.8 Reporting and Closing Data Gaps

In addition to making producers and importers of tyres responsible for organising the collection of waste tyres from tyre suppliers, a reliable reporting system is required to monitor the performance of the PRI. Reporting requirements are also an administrative burden to businesses and can act as a deterrent to compliance if excessive, therefore a balanced approach is required taking into account the impact on businesses and the regulatory needs. Reporting can have two main functions:

- At the micro level, the information reported can be used by the public authorities and PROs to determine the financial liabilities of obligated producers and to monitor individual business compliance. While the current arrangements are working well to determine the financial liabilities of producers, they are less effective to monitor individual business compliance as the ability to track the movement of waste tyres is limited. For example, a supplier can be a member of TWM, but uses a collector member of TRACS and therefore as the two schemes do not share the information provided by the supplier, the quantities of waste tyres collected from the suppliers cannot be properly checked.
- At the macro level, the information is used to compile national waste statistics showing the proportion of waste managed in an environmentally sound manner and the preferred waste treatment options. This information is useful to identify if there is leakage from the waste management system, can provide evidence to inform policy and also be useful for businesses who want to develop further capacity. Currently due to the inaccuracy of data on waste tyres, it is difficult to monitor the performance of the waste management system.

The Waste Management (Tyres and Waste Tyres) Regulations 2007 (SI 664 / 2007) impose detailed reporting obligations on persons who supply tyres to the Irish market whether as manufacturers, wholesalers, suppliers, traders or retailers and on the collectors of waste tyres to provide information regarding tyres placed on, tyres supplied to and taken back from, the market, retained by end users and tyres collected by authorised waste collectors. Information is provided to the PROs (TRACS and TWM) by their members. Local Authorities and the EPA receive information from producers and suppliers which are self-compliers and are not members of either PROs.

The information from each economic operator is held by a number of bodies (local authorities, PROs and the EPA) who do not share this data. Monitoring would be simplified if there were fewer organisations involved in the management of this data (e.g. one PRO instead of two) or if measures were taken to share this data and an organisation made responsible for compiling the information.

In addition, within the current framework, it is unclear if the PROs have the ability to access the relevant data from waste operators enabling them to compile tyre waste statistics (e.g. power to request and audit). This is in contrast to the packaging and WEEE / batteries PROs which have financial incentives (payment or subsidies) in place for the waste operators to provide information. In addition, the compilation and analysis of waste statistics can be complex, requiring skills that the PROs may not have if they are too small.

Reporting on used / waste tyres creates an additional administrative burden for waste collectors and recovery operators as they already report the quantities of waste managed, their fate (recycling, recovery and disposal) and destinations to the relevant authorities (Local authorities and EPA) through the waste permitting and licensing system.

The DECLG should assign responsibility for the collation and compilation of data on waste tyres from the PROs and the local authorities to the EPA. The local authorities and PROs should provide all relevant information in relation to the collection and management of waste tyres to the EPA for the compilation and use in the National Waste Report.

With regards to tyre placed on the market, and in line with the recommendation in Section 4.1.3.2, a centralised electronic producer registration system should be used. Similar to the WEEE Register, the register should record the quantities of tyres put on the market. This register should be managed centrally by one organisation that will provide information on tyres placed on the market by producers participating in the compliance schemes and provide national data required for the monitoring of targets. The register would also facilitate the disclosure of lists of compliant businesses. An independent body needs to run the 'tyre register' which ultimately will report ultimately to the DECLG and the EPA.

Recommendations:

A reliable reporting system is required to monitor the performance of the PRI:

- The DECLG should assign responsibility for the collation and compilation of waste tyres from the PROs and the local authorities to the EPA.
- A centralised electronic producer registration system to be operated by an independent body (e.g. the WEEE Register Society)

9.10.9 Dealing with Historic Waste Tyres

In 2009, a number of large waste tyres stockpiles were identified by the EPA (2010a) across the country. There are also an unknown number of tyres used by farmers. Smaller stockpiles are often located on the roadside. New sites have also been discovered so it is evident that the problem is constantly changing making it difficult to have an up to date record of all stockpiles.



Figure 9.14: Fly-tipped Waste Tyres near Blessington, Co. Wicklow, 2012

In addition to environmental risks, waste tyres stockpiles present a financial risk to a compliance scheme. The owners of these stockpiles, who may be non-compliant members, may attempt to reduce their stockpiles by using the compliance schemes collection channels. This could have a significant negative impact on the finance of the PRO and controls need to be put in place to mitigate this risk.

International experience (WBCSD, 2010) shows that legacy stockpiles should be treated in parallel to annual generation of end-of-life tyres, within an end-of-life tyres management system (e.g. producer responsibility initiatives). Stakeholder communication is of paramount importance to gain trust and credibility on this.

There are two main steps to stockpile abatement. The first step is to set up an end-of-life tyres system to treat the annual generation of end-of-life tyres and to stop the creation and increase of stockpiles. It may take several years to create the conditions to arrive at this point for companies/countries starting from zero. It is necessary that this goal is addressed gradually. This goal can be achieved by implementing a full producer responsibility initiative (as described in Section 9.10.5) taking financial or physical responsibility for the collection and treatment of end-of-life tyres.

The second step of stockpile abatement can be achieved in one of three ways:

- The landowner takes responsibility for abatement of the stockpile at their own expense.
- The government entity takes direct responsibility for abatement and may or may not seek reimbursement from the stockpile owner. This is usually done when a government has established a funding source for this effort (this may be a tax as in the USA)
- Abatement responsibility is shared between different organizations e.g. France (see Box 27), Japan, Portugal

International experience (WBCSD, 2010) also shows that the decision regarding who is responsible depends on the local context, but, nearly always, the government makes the first move. If stockpile abatement is government-sponsored (e.g. if funded through taxes), a coordinated joint effort is required. No matter which end-of-life tyres management system is developed, the process of stockpile assessment and abatement will remain virtually identical.

Box 27: Recyvalor, France (ADEME, 2012b)

In 2003, Aliapur (French PRO for waste tyre), ADEME (French Agency for Energy and Environment) and the NGO Robin Des Bois identified 114 sites with end-of-life tyres stockpiles accounting for 240,000 tonnes. In order to reduce these stockpiles, the authorities investigated first the landowners' responsibility, which led to the abatement of 130,000 tonnes of end-of-life tyres between 2004 and 2008. Aliapur financed the abatement of 30,000 tonnes.

For the remaining stocks, Recyvalor was developed by the tyre industry as a voluntary agreement supported by the public authorities to organise and finance the abatement of the remaining 80,000 tonnes within 8 years. In 2011, 20,000 tonnes of end-of-life tyres have been collected by Recyvalor.

Recommendations:

It is recommended that:

- The DECLG should develop a programme for end-of-life tyres stockpile abatement in consultation with the tyre producers, local authority and the PRO.
- Landowner responsibility should be pursued wherever possible.
- PROs should ensure they have control systems in place to ensure that the end-of-life tyres from stockpiles are not funded as part of the retailer collection of end-of-life tyres as it may put the financial sustainability of the scheme at risk.

9.10.10 Competition

The tyres waste market is a single national geographic market, therefore in accordance with discussion in Section 4.1.1 and Appendix D, only one PRO should serve this market. This will provide the dual benefits of improving the monitoring of the PRI performance and holding the PRO to account. In parallel, the DECLG should implement the recommendations set out in Section 4.3, to ensure that the PRO is responsive to its members.

9.11 CONCLUSIONS

Due to the lack of consistent and accurate data on tyres and waste tyres it is difficult to monitor the performance of this PRI but we can draw the following clear conclusions. The current system is not tracking waste tyre flows as well as intended. While the level of illegal storage seems to have reduced, there is still a high level of non-compliant businesses (estimated to be over 800) and significant quantities of tyres and waste tyres unaccounted for.

Contrary to the WEEE and Packaging PRIs, the PROs do not fund or subsidise the collection and treatment of waste tyres and this is one of the main factors affecting performance.

For these reasons, it is recommended that the DECLG changes the 2007 Tyres and Waste Tyre Regulations to make producers and importers responsible for financing the collection of waste tyres from tyre suppliers as a matter of priority. However, to prevent trade distortion with Northern Ireland, it would be beneficial if similar arrangements were implemented in Northern Ireland. The DECLG should therefore explore the establishment of the revised arrangements with the DOENI. If similar developments in Northern Ireland are too slow, the DECLG should progress with the establishment of a PRI responsible for the collection and treatment of waste tyres in any case. To ensure the effectiveness of the proposed arrangements, collection targets should be set with input from the industry.

There is a significant, but unknown level of waste tyre stockpiles. The DECLG should develop a programme for end-of-life tyre stockpile abatement in consultation with the tyre producers, local authorities and the compliance schemes. This programme

should first assess the extent of the problem, then ascertain who is responsible for the abatement and proceed gradually with the abatement.

There is limited reliable information available on waste tyre arisings and waste management in Ireland. This is a barrier to monitor the performance of the waste management system, develop policies and for business investment in the sector. The DECLG should assign responsibility for the collation and compilation of tyre and waste tyre arisings from the PROs and the local authorities to the EPA. The EPA should be supported by the PROs and the local authorities.

Enforcement is an important instrument for ensuring the implementation of PRIs. Enforcement is necessary to increase the costs of non-compliance and encourage economic operators towards the compliance route. The recommendations regarding enforcement should be also implemented urgently. The main recommendations are:

- As part of the review of the respective waste regulation and enforcement roles of the EPA (office of environmental enforcement) and local authorities to take place in 2013, the DECLG should examine the establishment of a central PRI enforcement unit,
- The DECLG should review the penalty levels to reflect the costs of non-compliance and ,
- The DECLG should increase the range of civil sanctions to provide more flexible enforcement,
- The DECLG should coordinate the establishment of a central register of compliant business, which should be made publicly available on the PROs websites. In addition the PROs should make the list of their members publicly available in their annual report.
- Targeted enforcement actions by local authorities, or their agents, at the estimated 800 operators known not to be participating in a compliance scheme or registered as a self-complier.
- PROs should develop Storage Guidance for used and waste tyres to reduce fly-tipping.
- Public disclosure of successful prosecutions should also be considered.
- All tyres that have a thread depth less than 1.6 mm should be considered waste.

- NIECE to develop template document for enforcement and arrange training for local authority enforcement personnel.

It is recommended that a national campaign to inform the tyre industry of its obligations and promote better compliance with the 2007 Tyres and Waste Tyres Regulations be undertaken in parallel with the enforcement recommendations. The campaign should be funded by the PROs and coordinated by the DECLG or the EPA. To increase the effectiveness of the PRI, consistent information should be provided by the local authorities and the DECLG.

The tyres waste market is a single national geographic market, therefore in accordance with discussion in Section 4.1.1 and Appendix D, only one PRO should serve this market. This will provide the dual benefits of improving the monitoring of the PRI performance and holding the PRO to account. In parallel, the DECLG should implement the recommendations set out in Section 4.3, to ensure that the PRO is responsive to its members.

10 FARM PLASTICS PRODUCER RESPONSIBILITY INITIATIVE

This section and related appendices provide a review of all aspects of the current system for farm plastics recycling and the waste farm plastics producer responsibility initiative.

The term “farm plastics” refers to sheeting, bale wrap or bale bags composed mainly of polyolefins, including polyethylene, polypropylene or polyvinyl chloride, suitable for use for the conservation of fodder. Ireland has had a PRI for farm plastics in place since 1998, following the introduction of the Farm Plastics Regulations in 1998. Prior to this time there were few recovery options for waste farm plastic and it was disposed of to landfill, possibly underwent backyard burning or ended up as rural litter. The recycling of farm plastic has grown significantly since this time and in the region of 27,500 tonnes was collected for recycling in 2013. Building on the success of the recycling of non-packaging farm plastic a collection system for “other farm plastics” has also been set up. There are 2 options for compliance with the regulations: membership of the existing PRO (Irish Farm Films Producers Group – IFFPG) or self-compliance. This report concludes that the existing arrangements are functioning effectively and that the targets in place are being achieved.

However, it also concludes that a number of areas require further attention in order to improve the operation of the PRO. A number of recommendations are made in relation to, inter alia, enforcement against illegal activity, the need for greater cross-border cooperation and costs of the existing PRO.

10.1 POLICY FRAMEWORK

The first piece of legislation in Ireland relating to farm plastic recycling was the Waste Management (Farm Plastics) Regulations 1997, S.I. No. 315 of 1997. These have since been replaced by the Waste Management (Farm Plastics) Regulations, 2001, S.I. No. 341 of 2001⁵¹⁷. The regulations are designed to promote the recovery and

⁵¹⁷ Accessed on 24/08/2012 at <http://www.irishstatutebook.ie/2001/en/si/0341.html>

collection of farm plastics waste (silage wrap and sheeting). The Regulation requires a producer of farm plastics (manufacturers, importers and/or suppliers) to either:

- Become directly involved in the recovery of farm plastics waste from customers through offering a deposit and refund scheme or
- Participate in a government approved recycling scheme.

A number of other policies / regulations exist, which complement the aims and objectives of the Farm Plastics Regulations. These complementary policies are presented in Section 2.

10.2 PRODUCT / WASTE CHARACTERISTICS

Due to intensification and changes in farming practices, more and more plastic is being used on farms. Farm plastics are used for packaging, silage-making, horticultural and other purposes. They generally have a short lifespan (less than three years) and because of the way they are used, collected and stored, the level of contamination can be over 70% of the weight recovered (UK Environment Agency, 2001).

Agri-plastic waste arisings in 2010 were estimated to be 32,000 tonnes⁵¹⁸. Silage wrap and sheets account for 75% of agri-plastic waste arisings. Other agri-plastic waste, accounting for 25% of agri-plastic waste arisings, includes fertiliser bags, animal feed bags, netting / twine and chemical containers.

⁵¹⁸ Personal Communication EPA 20.08.2012

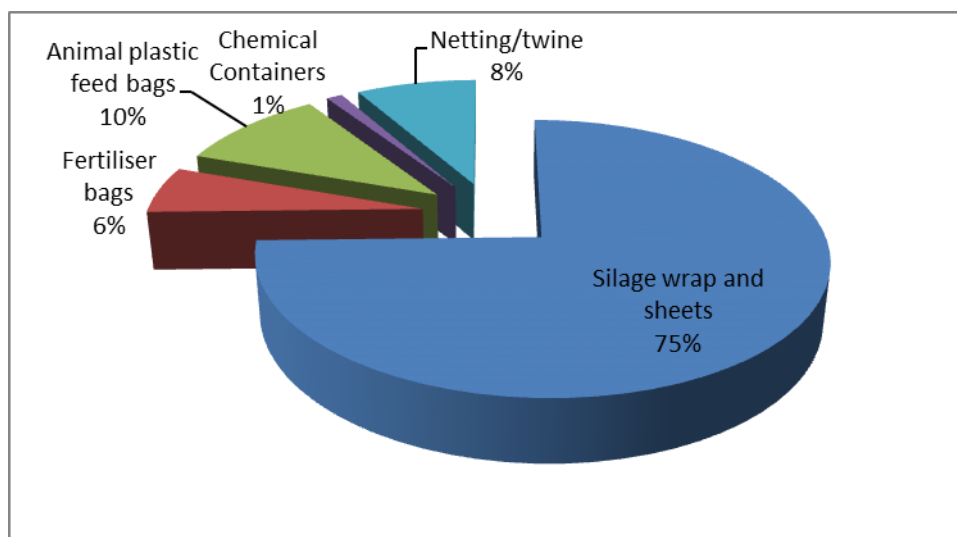


Figure 10.1: Agri-Plastic Waste Arisings 2010⁵¹⁹

The largest fraction, silage wrap and sheets, is covered by the Farm Plastics Regulations. Other agri-plastic wastes are generally packaging in form, these are covered by the Packaging Regulations. Other agri-plastic wastes may include hazardous waste which is covered by specific regulations and guidance^{520 521}.

Under the Regulations “**farm plastics**” are defined as sheeting, bale wrap or bale bags composed mainly of polyolefins, including polyethylene, polypropylene or polyvinyl chloride, which is or are suitable for use for the conservation of fodder.

Bale wrap is a plastic which is used to cover and wrap grass crops to produce a high moisture animal fodder called “Silage”. Bale wrap is typically made from a plastic called LLDPE (Linear low density polyethylene) which has a higher tensile strength than LDPE (Low density polyethylene).

⁵¹⁹ Ibid

⁵²⁰ Section 42 (4) of the European Communities (Animal Remedies) (No. 2) Regulations 2007 – S.I. No. 786 of 2007 put obligations on the person in charge of an animal to return the unused or out of date animal remedy to the person from whom the animal remedy was purchased.

⁵²¹ EPA.(2012e)



Figure 10.2: Photo of Bale Wrap

Silage sheets are used to either cover wrapped bales or to cover a silage pit. These are made from polyethylene often HDPE (High density polyethylene).



Figure 10.3: Photo of Silage Sheet

The bale wrap is typically used for one season only owing to the method of application, nature of its use and contamination levels post use. The sheeting may be reused depending on the level of wear and tear it underwent in the previous season.

As farm plastic materials such as bale wrap and sheeting are homogenous by nature this facilitates recycling. Plastic film recycling is a well established industry activity but the challenging film characteristics and contamination issues associated with farm plastics can make recycling more complex.

10.3 PRODUCERS AND SUPPLIERS

The Farm Plastics Regulations define a “producer” of farm plastics as a person who, for the purpose of trade or otherwise in the course of business, imports or manufactures farm plastics for supply to suppliers or other persons.

The regulations define a “supplier” as a person who, for the purpose of trade or otherwise in the course of business as a wholesaler, retailer, trader or contractor sells or otherwise supplies to other persons farm plastics or goods wrapped in farm plastics.

The legislation is such that producers (importers and manufacturers) and suppliers (merchants and contractors) of farm plastic **must either operate a deposit and refund system** for the collection and recovery of farm plastic that is sold to persons in the Republic of Ireland **or the producer/supplier can meet their obligations by joining an approved body** which states that the producer/supplier is participating in a scheme for the recovery of farm plastic waste. Figure 10.4 provides an overview of the compliance options under the Farm Plastic Regulations.

There are 46 producers/suppliers in Ireland and 5 make up 80% of the Irish market. All of these producers/suppliers are members of the IFFPG compliance scheme, which represents essentially 100% of the bale wrap and sheeting producers selling in the Irish market.

The IFFPG membership broken down by activity shows:

- 22 members involved in the manufacture of farm film
- 6 members involved in the distribution / wholesale of farm film
- 18 members involved in the retail / co-op sale of farm film

[This information has been redacted due to its commercially sensitive nature].

Table 10.1 shows the quantity of farm plastic placed legally on the market in 2013. There may be other small scale traders placing product illegally on the market.

Table 10.1: Farm Plastics Placed on the Market in 2013 by IFFPG Members

Farm Plastics	Tonnes	%
Bale Wrap	14,145	84
Sheeting	2,742	16
Total	16,887	100

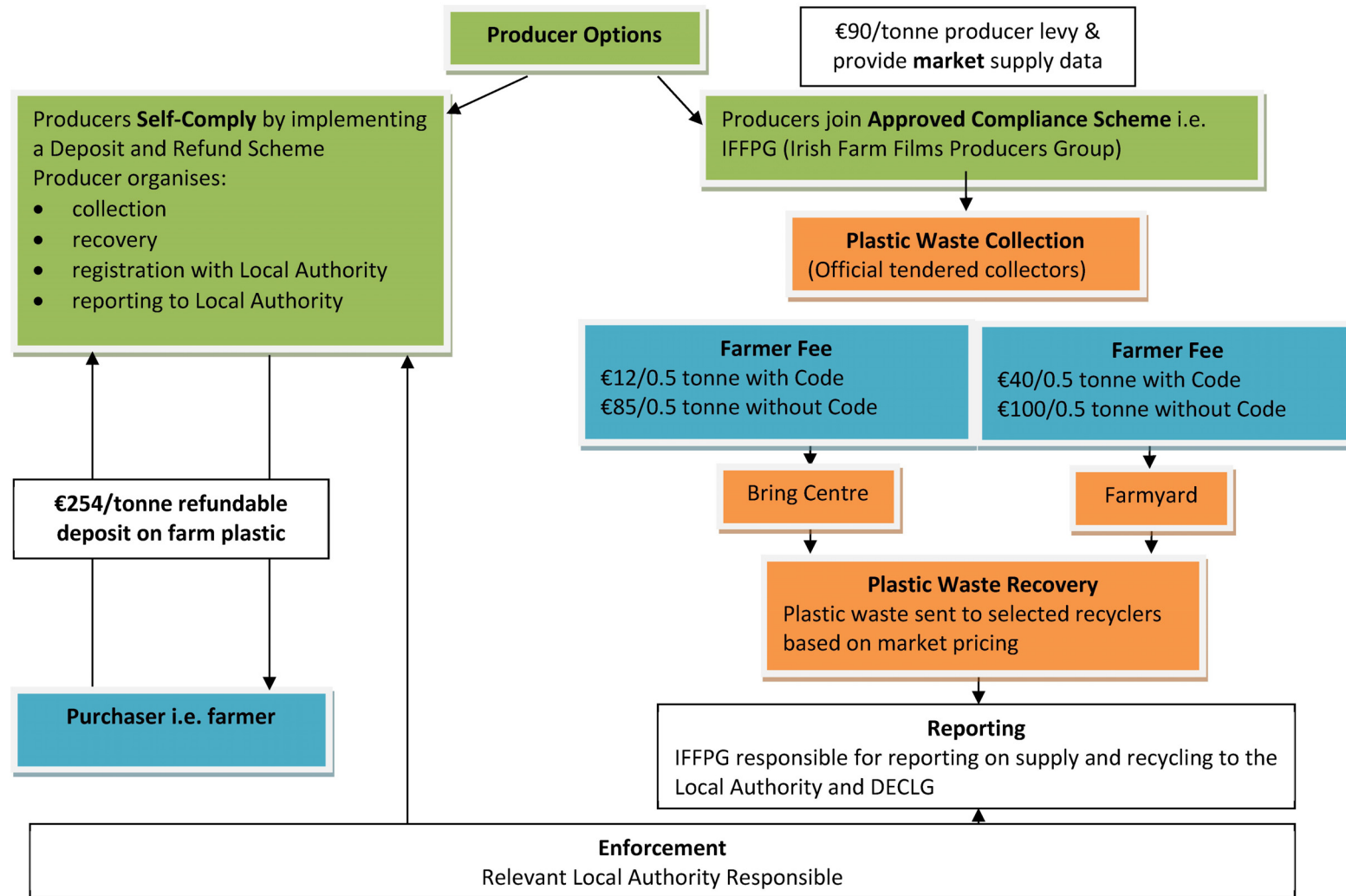


Figure 10.4: Schematic of the Compliance Options under the Farm Plastic Regulations

10.3.1 Self-Compliance

There is no publically available information on self-compliers and their involvement in target achievement, awareness raising or effectiveness regarding environmental protection. The IFFPG indicated that they are not aware of any farm plastic self-compliers.

The cost of collection, recycling, registration and reporting would be excessively high for an individual producer. In particular arranging collection from farms or organising bring centres would be of significant cost in terms of time and money to the self-compliant producer, in particular smaller scale producers.

The cost of joining a compliance scheme brings benefits of economies of scale. The producer meets their obligation for €90/tonne (covering collection, recycling, compliance, and reporting) without being directly involved. In addition, this cost covers awareness, marketing and support regarding compliance and enforcement to ensure that only producers putting legally compliant product on the market are protected from the activity of illegal traders.

Producers are obligated under Articles 3 to 12 of the Farm Plastics Regulations. A summary of the obligations is shown in Table 10.2.

Table 10.2: Producers Obligations under the Farm Plastics Regulations

Producers Obligations under the Farm Plastics Regulations
<ul style="list-style-type: none"> • Charge a refundable deposit of €254 per tonne of farm plastic to the purchaser of their farm plastics – the deposit is repaid to the purchaser depending on the quantity of plastic waste returned to the producer. • Provide information to purchasers on their obligations and the arrangements operated by the producer for the collection after use of farm plastic supplied by that producer. • The producer must make arrangements for the collection and transport of farm plastic within six weeks of a request by the purchaser. • The producer must obtain a written statement from each person who returns farm plastic including the weight of the returned plastic and retain these records for 2 years. • Ensure waste farm plastics collected are recovered. • Each producer must register with the Local Authority within which they will supply plastic. • Provide the Local Authority in whose functional area they carry on business with monthly information relating to the supply of farm plastics and the collection / recovery of waste plastics as per Part 3 of the Schedule of the Farm Plastics Regulations and retain records for a period of three years. • Submit to each Local Authority in whose functional area farm plastics have been supplied for sale a certificate from an independent auditor in relation to the operation of a deposit and refund scheme by that producer in respect of the preceding financial year. • Maintain a separate account in respect of the operation of a deposit and refund scheme by that producer. • Prepare a Waste Management Plan in accordance with Part 4 in the Schedule of the Farm Plastics Regulations and submit an Annual Report containing at least the information set out in Part 5 in the Schedule of the Farm Plastics Regulations.

Suppliers who are engaged in the sale of farm plastics that have been supplied by a producer who is not participating in a compliance scheme are obligated under article 13 to 17 of the Farm Plastics Regulations.

In accordance with the provisions of a deposit and refund scheme, they must require each purchaser to pay to the supplier such deposit as is appropriately proportionate to the quantity of farm plastics purchased.

They must also:

- Be registered with each Local Authority where they supply farm plastics and receive a Certificate of Registration from each Local Authority.
- Provide the Local Authority in whose functional area they carry on business with monthly information relating to the supply of farm plastics and the collection / recovery of waste plastics as per Part 3 of the Schedule of the Farm Plastics Regulations and retain records for a period of three years.

10.3.2 Members of Compliance Scheme

A producer that is participating in a compliance scheme can transfer their obligations under the regulations to the PRO. Where producers are participating in an **approved compliance scheme** they must:

- Pay a €100 annual subscription fee
- Pay the Environmental Protection Contribution, which is a levy of €90 for every tonne of plastic placed on the market
- Provide data regarding product placed on the market

This fund is used by the IFFPG to fund the collection and recovery of farm plastics on behalf of the producers. The Environmental Protection Contribution was reduced to €100/tonne in 2012, previously it was €127/tonne; and in 2013 it was further reduced to €90/tonne. VAT on the Environmental Protection Contribution is applied at a rate of 13.5%.

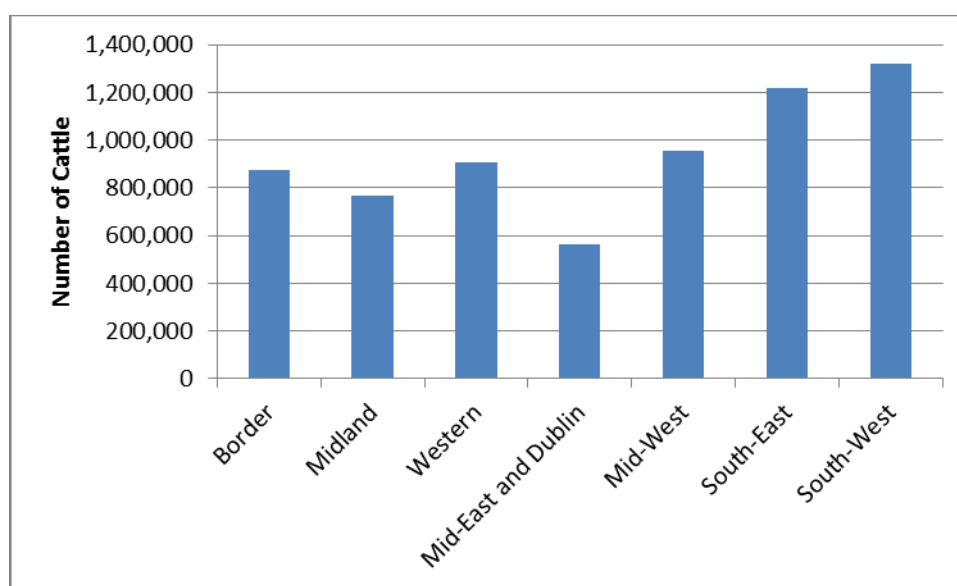
The IFFPG also takes responsibility for the recovery of the farm plastic and for all relevant compliance and reporting. The IFFPG is set specific recovery targets and

must meet a recovery target of 65% of all farm plastics placed on the market by its members in 2014.

The IFFPG submit an annual report to DECLG on behalf of producers.

10.4 END-USERS

According to the agricultural census carried out in 2010 there were 139,800 family farms in Ireland⁵²². However not all of these farms will produce silage and therefore will not be involved in farm plastic recycling. Silage is used mainly on cattle farms but also in a more limited manner to feed sheep and goats. The amount of silage used is broadly correlated to the number of cattle requiring feed. Therefore regions with the highest number of cattle shown in Figure 10.5 will produce more silage and use more farm plastics.



⁵²² Accessed on 23/10/2012 at

<http://www.cso.ie/en/newsandevents/pressreleases/2012pressreleases/pressreleasencensusofagriculture2010preliminaryresults/>

Figure 10.5: Number of Cattle per Region⁵²³

The IFFPG has indicated that the number of farmers using the farm plastic collection service is growing year on year and it is anticipated that [This information has been redacted due to its commercially sensitive nature] farmers will use the scheme in 2014.

The Farm Plastics Regulations place an obligation on farmers to recover farm plastic waste generated. Farmers pay a contribution towards the collection and recovery of the waste farm plastic, as outlined below.

All waste producers (households and corporate organisations) also have responsibilities under the Waste Management Act 1996-2012.

The IFFPG organises a collection network for farm plastic. Plastic can be brought to Bring Centres within a given Local Authority area where a charge of €12 per half tonne of plastic film applies. The Bring Centre fee was reduced by 25% to €15 per half tonne in 2012 with a further reduction to €12 per half tonne in 2013. This fee applies where farmers produce a specific 6 digit label code, a higher charge of €85 per half tonne is applied in the absence of the code. Farm collections are also organised and the charge is €40 per half tonne of plastic with the code, and €100 per half tonne of plastic without the code.

In 2013, 93% of farm plastic was collected through the bring centre system and 7% was collected direct from the farm.

Farmers build up sufficient quantities of farm plastics and go to the bring centre every two or three years. [This information has been redacted due to its commercially sensitive nature].

⁵²³CSO, (2012)

10.5 COMPLIANCE SCHEME

The IFFPG, the approved PRO operating the farm plastics compliance scheme, was established in 1997 and its membership includes manufacturers, importers and suppliers. It is a not-for-profit organisation and is at present the sole compliance scheme for the recovery of farm plastics in Ireland. Under the terms of its approval the IFFPG is required to meet specified targets for the recovery of farm plastics. An overview of its functions is set out in Figure 10.6.

The current target set for the IFFPG is to recover 65% of all farm plastics placed on the market by its members in 2014. This target was achieved in 2013. Targets are measured against the quantity of product placed on the market by members in the previous year i.e. the 2014 waste recycling target is based on the tonnes of product placed on the market in 2013.

The IFFPG is the only body with a set recycling target and the current target of 65% has been achieved and is being exceeded. The IFFPG has since 1997 engaged in a number of awareness raising campaigns to increase the participation in the farm film recycling scheme. Marketing, promotion and awareness has been through newsprint media, database development, mailshots, website, brochures, events such as the Ploughing Championships, collaboration with the IFA (Irish Farmers Association) on an anti-litter programme, radio, SMS and one of the latest methods is through “Farm TV”. This awareness has helped to raise the recycling of farm film plastics from 1,980 tonnes in 1998 to 27,578 tonnes in 2013.

10.5.1 Approval and Terms and Conditions

Article 19 of the Farm Plastics Regulations outlines how an organisation can apply to become an approved body. Following approval of the Minister for the Environment, Community and Local Government, the PRO is issued a schedule of terms & conditions by the DECLG (2011d). The current approval covers the period from 1st January 2011 to 31st December 2015. Table 10.3 provides a summary of the main provisions for the IFFPG.

Table 10.3: Summary of Schedule of Conditions for the IFFPG

Headings	Description
General	<ul style="list-style-type: none"> • Operate the system with the objective to ensure the environmental sound management of farm plastics waste and comply with the Farm Plastics Regulations. • Take steps to ensure compliance with the memberships rules of the IFFPG Ltd. Scheme by each member producer (including appropriate auditing). • Provide open and transparent procedures for the applications from any producers. • Bank accounts to be held in the State and only used to discharge the liabilities in respect of the Farm Plastics Regulations. • Proposals for contribution to meet the objectives of the National Climate Change Strategy 2007-2012 by reducing transport based greenhouse gas emissions having regards to the proximity principle. • Min. 2 independent directors.
Reporting	<p>Annually submit by 30th June, the following:</p> <p>Audited statements of accounts and;</p> <p>Environmental report including:</p> <ul style="list-style-type: none"> • Annual statistics relating to the collection and treatment of waste farm plastics and the quantities of farm films placed on the market. • Review of the take-back system and updated list of collection points. • Information relating to sub-contractors for collection and treatment including list of contacts and responsible area. • List of affiliated companies for the preceding year. • Any special project or key developments in the preceding year and projects to be undertaken in the coming year. • Details of Marketing and Promotion activity undertaken in the preceding year. <p>The annual report and financial report should be made available to all stakeholders, including members of the public.</p> <p>Respond to requests for information from the DECLG in a transparent way and within the timescale set by the DECLG.</p>
Management of Financial Resources	<p>The contingency reserve should provide for 12 months operational costs of IFFPG, deemed to be in order of [This information has been redacted due to its commercially sensitive nature]. To be reviewed in the context of increased operational costs or increase in volume of plastic placed on the market.</p>

Headings	Description
	<p>Make proposals to reduce the reserve to an appropriate level. Proposals should demonstrate how they will increase collection rates.</p> <p>Contingency reserve is to be held in a separate interest bearing investment account in the State, ring-fenced from any other fund and not used for current operational purposes.</p> <p>If this approval lapses all reserves including the contingency must be transferred to the body approved by the Minister.</p> <p>No loans from the IFFPG to any person(s).</p>
Cooperation with other bodies	The IFFPG shall work in cooperation with any other PROs that may be approved by the Minister to maximise synergies and offer the public efficient and effective collection and recycling services. Details to be provided to the DECLG.
Achievement of Targets	Meet the set annual (gross and net of contaminants) farm plastics recycling targets for the period 2011-2014 as a percentage of farm film placed on the market.
Avoidance of Doubt	Approval is based on article of association, corporate governance rules and rules of membership submitted. The IFFPG should consult with the Minister prior to any amendment.

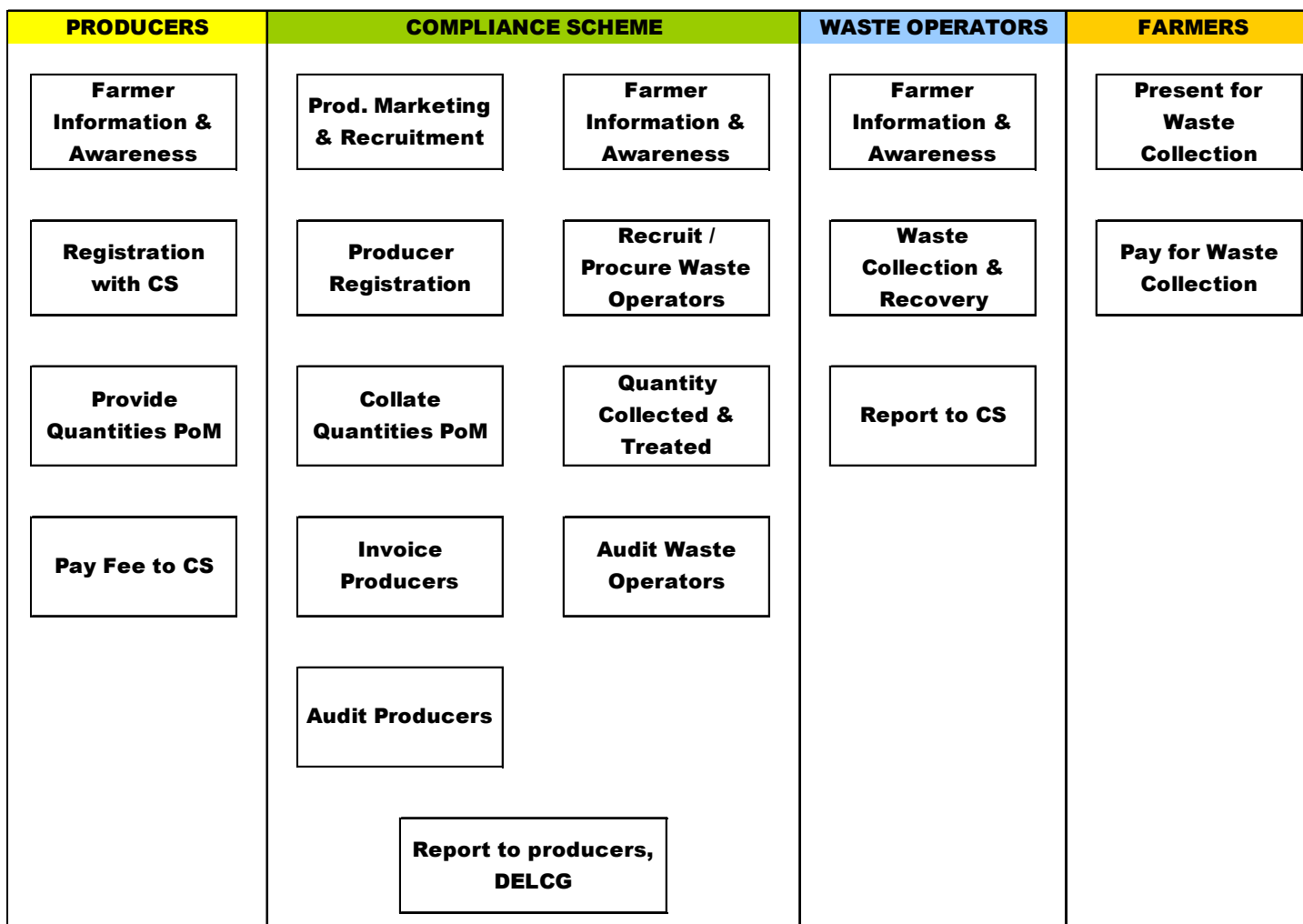


Figure 10.6: Overview of the main PRO main services

10.5.2 IFFPG Income

The IFFPG income⁵²⁴ was €2,339,328 in 2013 and comes from a number of sources such as:

- Producer fees and member subscriptions: Producer membership fees are mentioned in section 1.3.2. The income from member fees / levy in 2013 was €1,458,979 and the income from member subscriptions was €4,500.
- End user (farmer) fees: In 2013 the income from collection charges was €700,367.
- The sale of waste plastic in 2013 generated income of €152,830 for the IFFPG.
- Subsidies and grants income totalled €22,643 in 2013.

Figure 10.7 shows the trend of income by source from 2007 to 2013. It is interesting to note that the end user (farmer) portion increased from 13% in 2007 to 30% in 2013. The sales of waste plastic which was a new source of income in 2011 accounted for 6.5% in 2013.

⁵²⁴ The income excludes the deferred income utilised, to facilitate comparison.

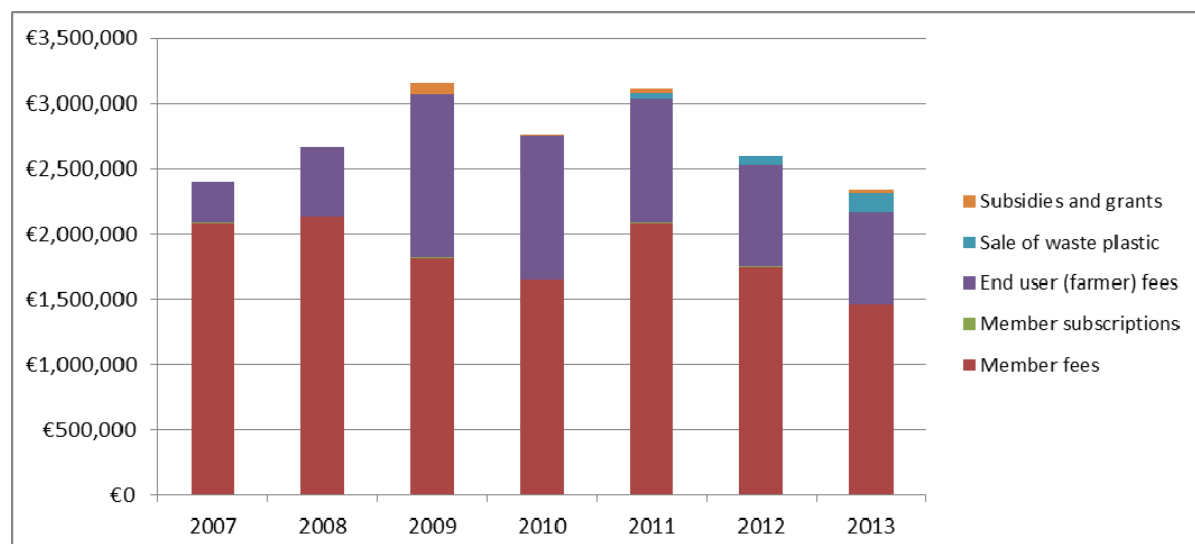


Figure 10.7: IFFPG Sources of Income 2007-2013⁵²⁵

10.5.3 IFFPG Expenditure

Figure 10.8 shows the IFFPG expenditure from 2007 to 2013. IFFPG expenditure increased from €1,355,272 in 2007 to €3,013,125 in 2013. Expenditure can be divided into two broad categories:

- **Direct Recycling Costs:** Represented around 80% of the total spend and totalled €2,403,694 in 2013. Figure 10.9 shows that collection and baling and shipping and transport account for 91% of the direct recycling costs.
- **Administrative costs (including Prevention, Education and Public Awareness Costs):** In 2013 these were €609,431. These costs as a percentage of total cost decreased from 37% in 2007 to 20% in 2013.

The IFFPG is not responsible for enforcement however they do engage in activities that relate to enforcement which are included in the overheads figures, as are the administration and information and awareness costs.

⁵²⁵ IFFPG Audited Accounts 2007-2013. The income excludes the deferred income utilised, to facilitate comparison.

There is no specific spend on prevention but the IFFPG work with their members to encourage them to investigate and research opportunities for prevention such as light weighting of product etc. In 2013 a total of €89,006 or 3% of expenditure was spent on printing, stationary and advertising and the ploughing championship and subscriptions.

In 2013, €616,503 of the contingency reserve deferred income was utilised.

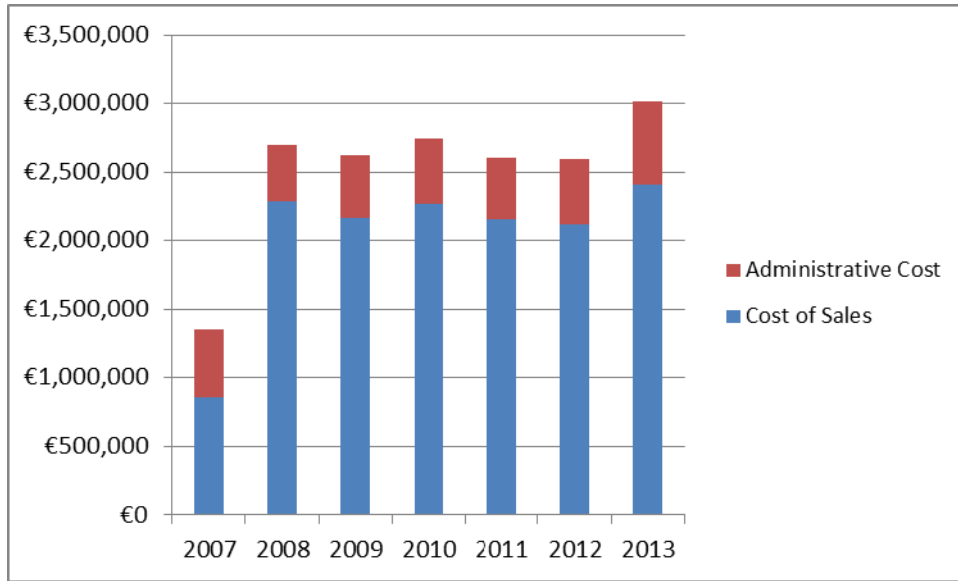


Figure 10.8: IFFPG Expenditure from 2007 to 2013⁵²⁶

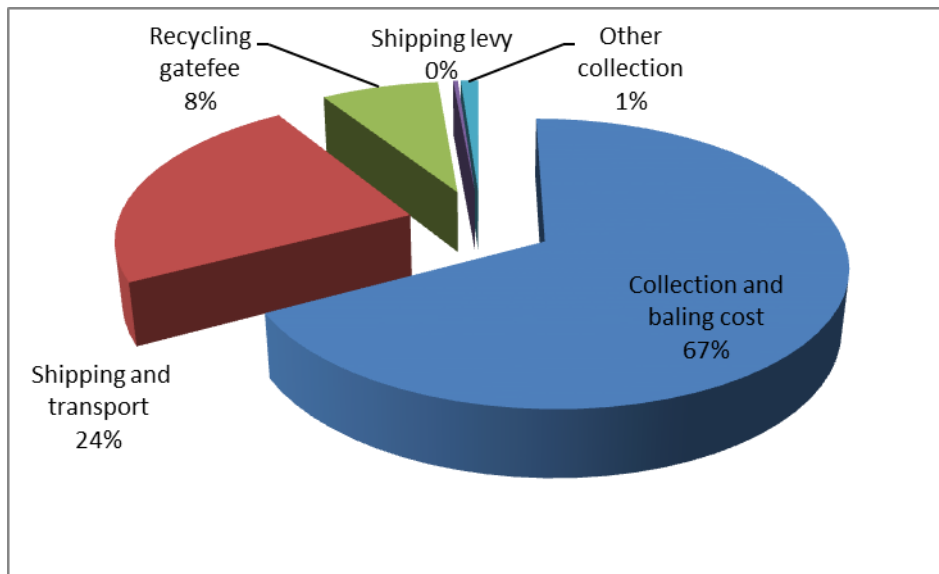


Figure 10.9: Direct Recycling Costs Breakdown⁵²⁷

⁵²⁶ Ibid

⁵²⁷ From 2010 IFFPG Application for renewal of the approved compliance scheme.

10.5.4 Contingency Funding

The DECLG specified in their renewed approval of the IFFPG as an approved body in 2011 that the IFFPG must hold in place a 12 month contingency reserve of [This information has been redacted due to its commercially sensitive nature]. Table 10.4 shows the status of the reserve from 2007 to 2013.

Table 10.4: Changes in Contingency Reserves from 2007 to 2013

[This information has been redacted due to its commercially sensitive nature].

10.5.5 Corporate governance

The IFFPG was originally set up as a subsidiary of an English company and administered under the umbrella of Repak, the Approved Body for packaging waste. Its offices were based at Repak, but it operated completely separately from Repak. On December 18th 2003, a new Irish company IFFPG Ltd. was set up and a new board was established.

The IFFPG is a not for profit organisation and is limited by guarantee.

The IFFPG has a set of Corporate Governance guidelines in place, which have been reviewed. In developing its corporate governance policy, the IFFPG Ltd., referred to the Code of Practice for the Governance of State Bodies, as originally issued by the Department of Finance in 2001.

An annual report is produced each year and published on the IFFPG website (www.farmplastics.ie).

Procurement for collection services is by tender process to ensure fairness, equity and value for money to members. The remaining IFFPG procurement does not go through such a formal process as the goods and services procured are of lower value but value for money is still a key consideration in the process.

The IFFPG Ltd. has a green procurement policy that incorporates sustainability to meet the following objectives:

- Reduce environmental impacts
- Drive social improvements
- Achieve financial efficiency

There were some changes to the board in 2011. However there is not a strict rotation of the board after a defined period of time. The board is comprised of 11 persons, 1 chairman and 10 directors (including 2 independent members).

Board members are drawn from four membership categories representing all levels of the farm plastics trade in Ireland, namely:

- Manufacturers of farm film
- Distributors/wholesalers of farm film
- Retailers/co-op sale of farm film
- The Irish Farmers Association

Each category has the right from time to time to appoint 2 Directors to the Board. Members of the IFFPG have the opportunity to change representatives for their sector every year at the scheme's AGM. If more than 2 nominations are made from a sector, then those nominees will be put to an ordinary vote of the AGM to decide the nominations. The Chairperson is appointed by the Directors and does not need to be a member of the company.

The company is controlled through its Board of Directors. In broad terms the role of the Board can be summarised as follows:

- To oversee the operation of the company
- To provide leadership
- To approve strategic objectives
- To ensure that the necessary financial and other resources are made available to enable objectives to be met

The IFFPG applied for renewal of the approved body status in 2011. The DECLG has approved the PRO and approval is in place from the start of 2011 until the end of 2015. There will be an interim review 3 years from the start of the approval period.

10.6 WASTE MANAGEMENT

10.6.1 Collection

10.6.1.1 IFFPG

In 2013, 27,578 tonnes were collected. Figure 10.10 shows the increase in the quantities collected from 2004 to 2013.

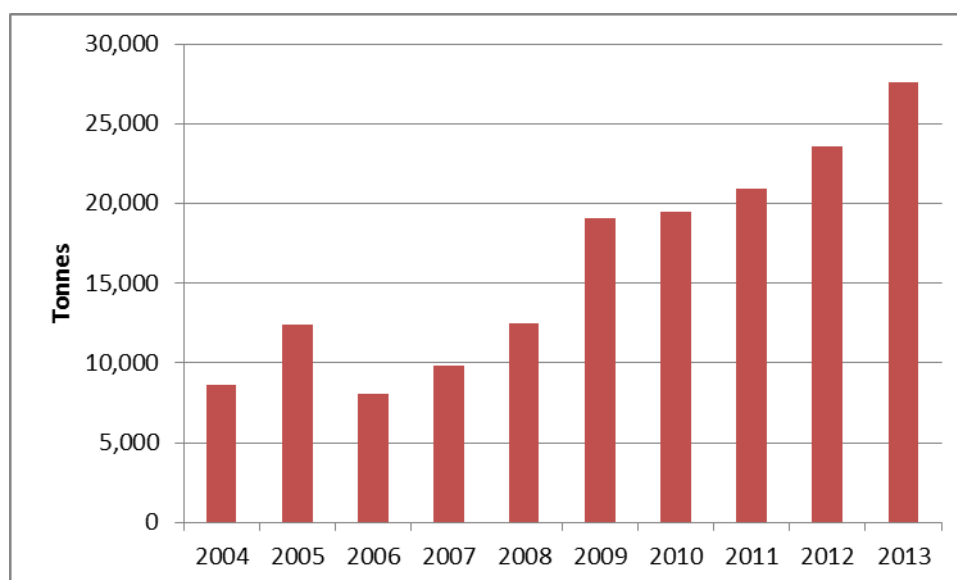


Figure 10.10: Farm Plastic Waste Collected for Recycling by IFFPG 2004-2013⁵²⁸

A decrease in the tonnes collected is observed in 2006. This occurred due to a backlog of material in 2005. More plastic film was being presented for recycling than the scheme was funded to collect and recycle, based on their annual targets. This led to collections ceasing in the second half of 2005. To address this and tackle the

⁵²⁸ IFFPG Annual Reports 2004-2013

backlog free one off collections were arranged through local authorities rather than through the IFFPG, hence the lower collection tonnages reported by IFFPG. The fee structure was changed after this with the introduction of a fee to the farmer to recycle their plastic waste in order to support recycling of all plastic.

As shown in Table 10.5, there are 2 options in the IFFPG collection system with, the farm plastic either being delivered to a bring centre with a small weight based gate fee, or collected from farms at an additional cost. Collections are tendered for defined periods. There are currently 7 collection contracts all with Irish companies.

Table 10.5: Material Collected 2013⁵²⁹

Collection Method	Tonnes	%
Bring-centres	25,568	93
Farmyards	2,010	7
Total	27,578	100

In 2013, 25,568 tonnes of material were collected at 206 bring-centres nationally. This accounted for 93% of all material collected (See Table 10.5). Facilities used as bring-centres included marts, co-op yards, GAA fields and local authority recycling facilities.

10.6.1.2 FRS (Farm Relief Service)

FRS Recycling offers a nationwide waste farm plastic collection and recycling service⁵³⁰. The range of materials collected and recycled are:

- Silage plastic
- Bale wrap
- Large fertilizer / seed bags

⁵²⁹ IFFPG Annual Report 2013

- Net wrap
- Rigid drums

Operating across Ireland via the FRS Network of affiliated co-operatives, FRS Recycling offers a closed loop service from supply of recycled plastic products to the management of waste plastics for recycling. FRS Recycling recommends the Solway Bin & Liner System to collect four different streams of waste farm plastic. The collected plastic is pre-processed by their recycling partners in Ireland. Some of the plastic is sent to Solway Recycling in Scotland where they use the fully recycled plastic to manufacture a wide range of agricultural and garden products. FRS distributes these products in Ireland via a network of affiliated co-operatives.

It is not certain how many tonnes FRS collect annually, however there is anecdotal information that FRS collect between 1,000-2,000 tonnes of farm plastic per year. FRS started their separate farm plastic collection in 2006. Up until 2006 the IFFPG worked with and through FRS offices, whose agents or sub-contractors handled collection.

10.6.1.3 Other Farm Plastic

Farm Plastics Recycling, a sister organisation to the IFFPG which is a not for profit company, was formed in 2010⁵³¹ by the agri-supply and farming sectors to recycle fertiliser bags, feed bags, chemical containers, netting and twine. This was established due to the demand from farmers. For the convenience of farmers, bring centres are jointly operated by Farm Plastics Recycling and the IFFPG, with silage plastics waste also accepted loose. The presentation of the plastic waste is dependent on the category of plastic. Drums should be brought to the bring centres in the large specially branded “Farm Plastics Recycling Bag”, available from Local Coop's. This bag can be purchased for €7 and disposed of for €30 per bag. All other categories can be brought to the bring centres, segregated, in bulk fertiliser bags with

⁵³⁰ Accessed on 23/10/2012 at <http://www.frsrecycling.com>

⁵³¹ Accessed 28/05/2014 <http://recycling2.farmplastics.ie/>

the liners removed. Disposal cost is only €15 per bag.

10.6.2 Waste Recycling Infrastructure

In Ireland, there are currently a number of different organisations involved in the reprocessing of farm films. To date there has been mainly intermediate reprocessing of farm films. A number of companies have engaged in farm film recycling however it is a technically challenging material and many companies have left the market. Presently there are two companies that are developing and refining a process to recycle farm film. There is a further company that is exploring the use of farm film for the purposes of energy recovery. These organisations indicated that lower levels of contamination in farm plastic would be of benefit and create greater opportunities for recycling and recovery activity in Ireland.

However as the IFFPG is a members based organisation it is important that they present value for money to their members; and they must select end recycling markets on a number of criteria including cost. While the IFFPG prefers to use indigenous organisations where feasible as this supports the local economy, is in line with the proximity principle and avoids additional TFS requirements, it sends material for recycling both within Ireland and in Europe.

From an indigenous end recycler perspective technical understanding of the material, contamination, volume of material and consistency of supply are the main considerations informing decisions to develop recycling infrastructure. Table 10.6 below shows the destination of farm plastics collected for recycling in 2009-2013. The figures indicate an overall rise of the plastic waste was processed to some level in Ireland.

Table 10.6: End Destination of Recycled Farm Plastics 2009-2013⁵³²

Recycling Location	2009	2010	2011	2012	2013
Abroad	70%	45%	63%	40%	55%
Ireland	30%	55%	37%	60%	45%
Total Tonnes	15,829	17,400	21,861	23,556	27,578

There are also organisations in Northern Ireland that collect and reprocess farm films. However there is no producer responsibility scheme in place in Northern Ireland. The onus is on the farmer to recycle as per the Waste Management Regulations (NI) 2006 S.I. 2006/280.

The end use markets for recyclate produced from farm plastic waste are typically low to medium grade applications. The recyclate is suited to outdoor applications in order to mitigate any potential odour issues, items such as farm animal pens, pet shelters, fencing etc. are examples of products made from farm plastic waste. Recycled plastic from farm film waste would not be used in high grade applications such as medical, electronic or food grade packaging etc. However, good opportunities exist for recyclate of farm plastic origin.

10.7 ENFORCEMENT

Local authorities are responsible for enforcing the Farm Plastics Regulations. Local authorities are also responsible for maintaining a register of self-compliers and receive information annually from the self-compliant producers.

In 2009, there were 140 inspections, the number of inspections has since decreased with 65 in 2010, 92 in 2011 and 78 in 2012⁵³³. The border counties remain a particular challenge as there is no producer responsibility initiative for farm plastic in Northern Ireland. Illegal export of collected waste farm plastic is an issue. There is evidence to suggest that some of this material is being brought across into Northern

⁵³² Source: IFFPG

⁵³³ http://www.epa.ie/pubs/reports/enforcement/OEEFoEE2014_FINAL_Jun2014.pdf

Ireland under a green list waste classification when in fact the material should be categorised as amber list waste⁵³⁴. Once this material is in Northern Ireland it is then exported to the UK under duty of care and can be exported further afield. It is important that this material is treated in accordance with the TFS Regulations in order to ensure a level playing field for waste collectors and operators and ensure that material is handled compliantly.

The IFFPG works closely with the Local Authorities to identify illegal operators and free riders. There is particular emphasis in early summer when the farm film products go on the market. The IFFPG developed a site inspection protocol for Local Authorities to assist them identify unlevied product (which results in loss of revenue through the environmental contribution levy and the loss of VAT to the Exchequer). The Office for Environment Enforcement (OEE) was also involved. The IFFPG has also engaged in an awareness campaign with farmers to encourage them to report plastic that is unlevied.

The consequence of illegal suppliers of farm plastic to the market results in loss of revenue through the environmental contribution levy and the loss of VAT to Revenue.

The IFFPG has also engaged in an awareness campaign with the farmers to encourage them to report plastic that is unlevied.

The IFFPG appointed a compliance officer in 2012. The role of the compliance officer is to gather intelligence on illegal suppliers to the market i.e. neither self-compliers nor members of an approved scheme, and pass this on to the Enforcement Section of the relevant local authority.

There have been no prosecutions to date, however there has been success through the labelling code system, awareness of farmers and Local Authorities and close co-operation with Local Authorities in reporting unlevied product, where the Local

⁵³⁴ See Guidance from the TFS Office. Accessed on 23/10/2012 at

http://www.dublincity.ie/WaterWasteEnvironment/Waste/National_TFS_Office/Documents/Farm_Plastics_Guide_NTFSO.pdf

Authorities act on this information and develop an awareness campaign to improve the situation.

The IFFPG also has internal compliance mechanisms such as penalties on members who submit late returns and sanctions for non-pass rates on audits. The label code system in place for farmers incentivises farmers to buy levied product as they receive a much reduced recycling charge for presenting farm film that they can prove is levied product.

10.8 INFORMATION AND AWARENESS

Since 1997 the IFFPG has engaged in a number of awareness raising campaigns to increase the participation in the farm film recycling scheme. Marketing, promotion and awareness has been through newsprint media, database development, mailshots, newsletter, website, brochures, events such as the Ploughing Championships, collaboration with the IFA (Irish Farmers Association) on an anti-litter programme, radio, SMS and one of the latest methods is through “Farm TV”

With regard to prevention of material the IFFPG does not have a dedicated packaging prevention team, such as Repak, to advise on material gauge appropriate to functionality. However, the IFFPG engages with their members to highlight material prevention such as lightweighting of products. The IFFPG has worked with the IFA on an anti-litter campaign. The IFFPG previously engaged with FRS on collections prior to FRS setting up their own unapproved collection and recycling scheme.

As technology has advanced, the IFFPG has used certain technologies such as website and SMS messaging. The IFFPG is exploring the potential of using social networking as a communications tool. However, their target audience is not necessarily to be reached through this form of media.

10.9 BENCHMARKING AND RECOMMENDATIONS

10.9.1 Waste Management Performance

Since the introduction of the Farm Plastics Regulations in 1997 and the approved compliance scheme in 1998 recycling of farm plastic has increased from 1,980

tonnes in 1998 to 27,578 tonnes in 2013. The recycling rate for 2013 was 80% significantly exceeding the target of 65%.

There is a wide difference in recovery and recycling rates between European countries. The European recovery rate for agricultural plastics was only 54.8% in 2012⁵³⁵. In terms of farm film recycling, Ireland is one of the top performers in the EU. Only a small number of countries, including Ireland and Iceland, have specific legislation. Others including France, Norway, Sweden, Spain, the UK, Belgium and Germany have introduced voluntary or industry based systems.

Targets in France are broadly in line with those in Ireland with a collection target of 70% of agricultural film by 2014 and a 100% recycling / recovery target of the material collected⁵³⁶. While there are good levels of recycling, the contamination of farm plastics could have a negative effect on recycling and recovery if the demand or prices for recycled plastic falls. Further research should be carried out with farmers and all relevant stakeholders to explore the reduction of contamination at source.

10.9.2 Costs to Producers and End-users

The cost to producers which are participating in the compliance scheme is €90 per tonne in 2013 down from €127 per tonne in 2011. Producers pay an annual fee of €100 (excl. VAT 13.5%). There is also a fee charged to farmers, with the charge determined by whether the plastic is dropped to a bring centre or collected at the farm, and on whether a unique identification code is provided by the farmer which proves the waste plastic is levied. The ratio of producer: farmer per tonne cost is 70:30. The revenue generated covers all the costs of collection and recycling on behalf of the producers and farmers.

It was not possible to compare producer costs with other European schemes as no cost data was available. However, the costs can be compared with the costs charged by the packaging PRO which charges a fee of €89 (excl. VAT 23%) per tonne to

⁵³⁵ Accessed on 27/05/2014 at http://www.epro-plasticsrecycling.org/pages/75/epr_statistics

⁵³⁶ Accessed on 23/10/2012 at <http://www.adivalor.fr/en/will/key-targets.html>

major producers of plastic packaging and has similar recycling and recovery targets. The Bacon Report (2008) stated that 27.5% of the cost of managing packaging waste was covered by Repak subsidies.

It would demonstrate that the cost to farm plastics producers is similar to the charge to packaging producers. However, the farm plastic PRO covers the full cost of collection and recycling whereas the packaging PRO covers just a portion of the waste management cost. This would suggest that the IFFPG collection system based largely on bring centres is providing value for money. It should also be noted that the differences in the management requirements of farm film and packaging such as the volume and range of material types handled, additional sorting requirements etc. can result in the disparity in value for money.

10.9.3 Need for the Levy which Operates in the Farm Plastics PRI

The current funding mechanism for farm plastic collection is in line with the polluter pays principle with the cost of managing end-of-life farm plastics shared between the farm film producer and the farmer. This has dual benefits: It incentivises producers to reduce the weight of the farm plastics products as they pay a levy based on the quantity placed on the market and it incentivises farmers to reduce the level of contamination as they pay a weight based fee for disposal of their waste.

The current producer levy is used to cover 70% of the farm plastics collection cost and the end-users (farmers) pay for 30% of the collection cost. Without this levy the cost of waste management would have to be borne fully by the end-users. Increasing the cost of waste management for the farmer may lead farmers to resort to other disposal practices such as burning, burial, stockpiling or inclusion in household waste collection⁵³⁷. This would lead to a decrease in the quantities of farm plastics collected by the IFFPG and the IFFPG would no longer be able to meet its recycling targets. Some of the farm plastic waste may be collected by other authorised waste collectors not affiliated to the IFFPG, but the viability of such collection could be affected by the

⁵³⁷ For comparison, [This information has been redacted due to its commercially sensitive nature] % of the collection costs of fertiliser bags is borne by the end-users (farmers) resulting in Farm Plastics Recycling only collecting 20% (550 tonnes) of the fertiliser bags placed on the market (2,629 tonnes).

volatility in the price of recycled materials. It would be more difficult to track on the flow of farm plastic waste (e.g. as per waste tyres reporting issue). Illegal disposal of farm plastics will also take place resulting in negative environmental outcomes.

Recommendation: To ensure the ongoing viability of farm plastic collection and associated environmental benefits, it is recommended that the levy be maintained, however the level of the levy should be monitored to ensure that it does not generate funding higher than that required for the operations of the compliance scheme.

For the operations of the compliance scheme this issue is already being monitored by both IFFPG and DECLG with the commencement in 2011 of a five year Reserve Management Strategy designed to reduce the contingency reserve level from just over [This information has been redacted due to its commercially sensitive nature] down to [This information has been redacted due to its commercially sensitive nature] by no later than 2016. See sections 10.5.1, 10.5.3, 10.5.4 and 10.9.7.

10.9.4 Developing Indigenous Capacity

A number of submissions from the Irish recycling and recovery sector⁵³⁸ called for a share of the levy to be used to assist the development of an indigenous treatment infrastructure. These submissions highlight the benefits of this approach (in terms of, for example, the proximity principle, supporting job creation in Ireland, reducing disease risk associated with the pathogens on the farm plastic contamination). However, while there may be benefits associated with the treatment of farm plastics in Ireland, it is likely to come at a higher cost per tonne⁵³⁹ for the IFFPG and the producers.

Some stakeholders have expressed the view that the State should intervene to stimulate job creation in this area, by, for example, seeking to control the export of the waste treatment elsewhere. However, this is complex as any such efforts would

⁵³⁸Filmco, Cynar and IWMA submissions.

⁵³⁹One of the submissions indicated that Irish reprocessors will not be able to compete with the prices abroad from large conglomerates in the UK and mainland Europe.

need to avoid the imposition of an explicit restriction on the free movement of goods and services across EU borders, contrary to internal market rules.

There are examples of PROs committing to and supporting the development of indigenous capacity (see Box 10 in Section 4.9) by funding research to develop cost-effective technologies. It must be noted that these projects generally happened in larger countries and it is unclear if a similar approach in Ireland would be as successful due to the smaller scale. However, similar research could be explored by the IFFPG in order to support the dual goals using indigenous organisations where feasible and providing value for money to its members. Other funding partners could also be interested such as Enterprise Ireland or the EPA STRIVE.

10.9.5 State and Taxpayer Costs

The current farm plastics producer responsibility initiative covers the full cost of managing farm plastics waste. Both the producers and the farmers contribute to the management cost.

Some aspects not covered by the current system include:

- **Enforcement activities:** it is the role of the local authorities to carry out and fund enforcement activities. This cost is not covered by the PRO. As the total cost of enforcement is unknown, it is not possible to assess the cost incurred by the State.
- **Information and awareness:** there is a shared responsibility between the PRO, their chosen contractors and bring centre partners and the State. The State provides environmental awareness officers, website information and funds various awareness programmes (Green-Schools etc.). However, similar to enforcement it is unclear what level of cost is incurred by the State.

10.9.6 PRO Finance

The IFFPG operates on a not-for-profit basis. This has been verified by audited accounts. The PRO uses competitive tendering of waste services to provide value for money.

The farmer fee was introduced in order to raise funds to cover the additional demand for farm plastics recycling which was higher than the targets set for recycling. Therefore the cost of handling the additional tonnes presented for recycling has not been passed on to the producer but has instead been supported by the farmers in order to meet their recycling needs.

Both the producer levy and farmer fee have been reduced since 2012. Details are in Section 10.3.2 and 10.4.

10.9.7 Contingency Funding

A 12 month contingency fund of [This information has been redacted due to its commercially sensitive nature] million has been set by the DECLG. This figure was agreed in the PRO renewal approval of 2011. The current IFFPG contingency fund is 36% higher than the [This information has been redacted due to its commercially sensitive nature] million and a strategy is in place with the IFFPG and DECLG to reduce this sum to the revised level. It is considered that an annual contingency fund of [This information has been redacted due to its commercially sensitive nature] million is appropriate to cover the cost of 1 year's farm film collection in the event of any circumstances that may impact on collection and recycling of farm film.

10.9.8 Illegal Imports and Exports of Farm Plastics

The IFFPG estimates that approximately [This information has been redacted due to its commercially sensitive nature]⁵⁴⁰ tonnes of bale wrap/silage sheeting products are placed illegally on the Irish market each year. The illegal import of plastic films and farm plastic waste account for less than [This information has been redacted due to its commercially sensitive nature] % of the overall quantities on the Irish market but this results in a VAT loss to the Irish exchequer on these goods, which is estimated to be in the region of € [This information has been redacted due to its commercially sensitive nature]. There is also additional PRO levy loss of € [This information has been redacted due to its commercially sensitive nature]. This is a total estimated

⁵⁴⁰ The estimate is based on the estimate of sales in Northern Ireland which is [This information has been redacted due to its commercially sensitive nature] tonnes

annual revenue loss of € [This information has been redacted due to its commercially sensitive nature]⁵⁴¹.

Because of the reported low level of illegal imports, it is not recommended widespread increase in enforcement as it is likely to have a high administrative cost with limited effectiveness. The enforcement actions should focus on coordinated and targeted actions using intelligence work collected by the IFFPG to counter illegal activity to send a strong message to illegal operators that this activity will not be tolerated.

The financial savings made by stamping out these illegal activities can be used to finance any greater task force group or enforcement work carried out in the area of farm plastic.

It is also critical that inspections are carried out in:

- All local authority areas that share a border with Northern Ireland, as this would send a more consistent message to those involved in illegal activity.
- In counties where there is a high silage usage.

As well as farm plastic being illegally imported into Ireland, the IFFPG reported waste farm plastics that have not undergone any form of treatment are being collected in Ireland and transported across the border without the appropriate fees, transfrontier shipment paperwork or financial bonds in place. They are being transported under green list classification instead of amber list classification which carries a more onerous cost and administrative burden. This activity puts compliant recyclers at a competitive disadvantage and also poses an environmental risk regarding the end destination for the farm plastics.

In 2009 / 2010 Defra carried out a consultation into the possibility of a farm plastic PRI in the UK⁵⁴². The feedback was not in favour and Defra made the decision not to proceed with a PRI. In the absence of a PRI and specific farm plastic regulations in

⁵⁴¹ Sources: IFFPG

⁵⁴² Accessed on 23/10/2012 at <http://www.defra.gov.uk/news/2010/10/18/agri-plastics/>

Northern Ireland it is important to utilise other means of collaborative enforcement such as the TFS office in the DOE. Also Revenue and Customs in Northern Ireland may be interested in potential illegal exports from Northern Ireland into Ireland where they may be losing revenue to the exchequer.

It is important that the relevant enforcement bodies in Ireland and Northern Ireland investigate illegal activity in particular where hard intelligence is received on these matters.

Recommendations: It is recommended that:

The IFFPG continues its intelligence work into illegal activities and report these activities to the relevant enforcement bodies.

In the absence of a farm plastics PRI in Northern Ireland it is important to utilise other means of collaborative enforcement such as the TFS office in the DOE.

Inspections are carried out in all local authority areas that share a border with Northern Ireland and in areas with high silage usage.

10.9.9 Record Keeping

Currently under the Regulations the producer must obtain a written statement from each person who returns farm plastic including the weight of the returned plastic and retain these records for 2 years. It is recommended that the record keeping period is in line with other PRIs and consistent among all PRIs.

Recommendations: It is recommended that:

The record keeping period is in line with other PRIs and consistent among all PRIs.

10.9.10 Other Agri-Plastic Wastes Collection

Other agri-plastic waste account for an estimated 25% of agri-plastic waste arisings and include fertiliser bags, feed bags, chemical containers, netting and twine⁵⁴³. This waste stream is currently collected by “Farm Plastics Recycling”, a sister organisation of the IFFPG. “Farm Plastics Recycling” is a not for profit and self-funding company. It was formed in 2010 due to the demand from farmers⁵⁴⁴ by the agri-supply and farming sectors.

For the convenience of farmers, bring centres are jointly operated by Farm Plastics Recycling and the IFFPG, with silage plastics waste also accepted loose. The presentation of the plastic waste is dependent on the category of plastic. Drums should be brought to the bring centres in the large specially branded “Farm Plastics Recycling Bag”, available from Local Co-op's. This bag can be purchased for €7 and disposed of for €30 per bag. All other categories can be brought to the bring centres, segregated, in bulk fertiliser bags with the liners removed. Disposal cost is only €15 per bag.

The majority of these items are packaging and a flat rate subsidy of € [This information has been redacted due to its commercially sensitive nature] per tonne is paid by the packaging PRO Repak to Farm Plastics Recycling.

“Farm Plastics Recycling” has indicated that the funding they receive from Repak covers [This information has been redacted due to its commercially sensitive nature] % of the cost to collect and recycle farm plastic packaging and the farmer is paying for the remaining [This information has been redacted due to its commercially sensitive nature] %. The cost of the service is therefore estimated to be € [This information has been redacted due to its commercially sensitive nature] per tonne collected.

⁵⁴³Personal Communication EPA 20/08/2012.

⁵⁴⁴Accessed on 23/10/2012 at <http://recycling2.farmplastics.ie/Home/tabid/874/language/en-GB/Default.aspx>

A decrease in the share of costs financed by the end-users would make recycling of the farm packaging plastics more affordable for farmers and is likely to increase the uptake of the service which will have positive environmental outcomes and can reduce overall costs of the service (on a per tonne basis).

If we take the example of fertiliser bags, discussions with the IFMA (Irish Fertiliser Marketing Association) indicated that in 2013 their members placed [This information has been redacted due to its commercially sensitive nature] tonnes of plastic packaging on the market and pay Repak an average € [This information has been redacted due to its commercially sensitive nature] per tonne of plastic packaging placed on the market, which is equivalent to a contribution of € [This information has been redacted due to its commercially sensitive nature].

In 2013 in the region of 550 tonnes of non-silage farm plastics, the majority being packaging, were collected for recycling by “Farm Plastics Recycling”. This is in the region of 20% of the fertiliser packaging placed on the market. Repak provided € [This information has been redacted due to its commercially sensitive nature] to support “Farm Plastics Recycling”, which is [This information has been redacted due to its commercially sensitive nature] % of the IFMA members’ contribution. The remainder of the fertilisers’ producers contribution is therefore used by Repak to fund the collection of packaging from household and commercial origins.

It is recommended that Repak consider the per tonne subsidy rate that they currently pay “Farm Plastics Recycling” to incentivise increased recycling of farm plastic packaging which is currently under-represented in terms of producer fee payments. An increase in the subsidy rate would make recycling of the farm packaging plastics more affordable for farmers and is likely to increase the uptake of the service. This will contribute to the packaging targets, the plastics specific targets and assist the development of infrastructure for these materials. Therefore it will be of benefit to Repak, Farm Plastic Recycling, farmers, producers of farm plastic packaging and the environment.

There would be a benefit to Repak and to Farm Plastics Recycling if Repak inserted a link or details of the “other farm plastic” collection points on their website. Currently Repak has links to regular recycling centres and ELV recycling centres, as the “other farm plastics” are mainly packaging it would be a good fit on the Repak website.

It is also recommended that “Farm Plastics Recycling” investigate methods of reducing the cost of collection (e.g. using mobile compactors) and recycling of these “other farm plastics” in order to make it more cost effective for farmers and producers.

Recommendation: It is recommended that:

- The share of the cost of Other Agri-Plastic Wastes collection covered by the producers increase in order to stimulate take up of the service.
- This increase should not be funded by additional producers contribution as they are already contributing to the packaging PRI but through an increase in the current Repak subsidy paid to “Farm Plastics Recycling”.
- Repak should also provide information and links on their website to the Farm Plastics Recycling service in order to promote and increase the uptake of farm plastic packaging recycling.

10.10 CONCLUSIONS

Farm plastic recycling has been in place in Ireland since 1998, following the introduction of the Farm Plastics Regulations in 1997 and has grown significantly since this time.

The IFFPG has met the targets set by the DECLG and 27,578 tonnes of farm plastic was collected for recycling in 2013.

The current funding mechanism used by the IFFPG for farm plastic collection is in line with the polluter pays principle and should be maintained. However, it is recommended that the producer levy charged by the IFFPG be monitored and reduced if this leads to an increase in deferred income.

There is some illegal activity, but this issue is not widespread. In order to tackle this problem it is recommended that:

- The IFFPG continues its intelligence work into illegal activities and report these activities to the relevant enforcement bodies.
- Inspections are carried out in all local authority areas that share a border with Northern Ireland and in areas with high silage usage.
- Use of collaborative enforcement such as the TFS office in the DOE.

Building on the success of the recycling of non-packaging farm plastics, a collection system for “other farm plastics” has also been set up. This system is currently funded by the farmers ([This information has been redacted due to its commercially sensitive nature] %) and Repak ([This information has been redacted due to its commercially sensitive nature] %). It is recommended that:

- The share of the cost of Other Agri-Plastic Wastes collection covered by the producers increase in order to stimulate take up of the service.
- This increase should not be funded by additional producers contribution as they are already contributing to the packaging PRI but through an increase in the current Repak subsidy paid to “Farm Plastics Recycling”.
- Repak should also provide information and links on their website to the Farm Plastics Recycling service in order to promote and increase the uptake of farm plastic packaging recycling.

11 CONSTRUCTION AND DEMOLITION WASTE

11.1 INTRODUCTION

The brief for the review of the C&D PRI model specifically requested recommendations on the following:

- Categories of waste material that should be included in a PRI for C&D waste.
- The manner in which a PRI could operate successfully in the C&D sector.

The brief highlighted that the Programme for Government contains a commitment to examine the establishment of a PRI for C&D projects over a certain threshold, which would be reinforced through compliance bonds. Consequently, the brief requires the following:

- An analysis of how a system of compliance bonds could operate successfully.

The brief also requested that any recommendations for future changes be supported by details setting out the necessary regulatory regime, operational requirements, self-compliance issues, information & awareness requirements and other relevant issues.

Section 11.2 provides background details on policy, the management and producer responsibility for C&D waste in Ireland along with details on current rates of recovery.

Section 11.3 details the Construction industry supply chain and responsibilities.

Finally, Section 11.4 examines recommendations for the industry.

11.2 C&D WASTE MANAGEMENT

11.2.1 Policy Framework

Construction & Demolition (C&D) waste can be defined as all waste that arises from construction, renovation and demolition activities and includes all wastes listed in Chapter 17 of the EWC (European Waste Catalogue), which includes hazardous and non-hazardous waste types.

In 1998, the policy document on 'Waste Management - Changing Our Ways' set a target of 85% recycling of C&D waste over a 15 year period, which finished in 2013. In 2008, the EU Waste Framework Directive (2008/98/EC), required Member States to take the necessary measures to achieve the minimum target of 70% by weight for non-hazardous C&D waste excluding naturally occurring material (soils & stones (not containing dangerous substances)) defined in category 17 05 04 in the EWC Code. The Directive includes an overall 70% target but does not include targets for individual waste types belonging to C&D waste. The Directive specifies that such a target should be achieved by 'preparing for re-use, recycling and other material recovery, including backfilling operations using waste to substitute other materials'⁵⁴⁵. In 2002, the National Construction & Demolition Waste Council (NCDWC) was set up as an industry led, voluntary initiative to assist in achieving compliance with the 85% policy target set by 'Changing Our Ways'. The Council was also given the task of implementing 66 recommendations set out in 'Recycling of Construction and Demolition Waste' prepared by the 'Forum for the Construction Industry' in 2001. In 2006, the NCDWC contributed to the preparation of 'Best Practice Guidelines on Preparation of Waste Management Plans for Construction and Demolition Projects'. These guidelines, which promote waste prevention, re-use and recycling across the sector, provide guidance on the preparation of Project Construction and Demolition Waste Management Plans for certain classes of project, which exceed specified threshold limits.

Initially the Best Practice Guidelines were introduced on a voluntary basis, however planning authorities and An Bord Pleanála could at their discretion include conditions on construction and demolition waste management in planning permissions. However, since June 2007, Planning Guidelines (Guidelines 13 – Development Management – Guidelines for Local Authorities (DEHLG, 2007)), were issued under Section 28 of the Planning and Development Acts. These Guidelines require planning authorities to have regard to the Best Practice Guidelines to ensure the proper management of construction and demolition wastes. These planning

⁵⁴⁵ Backfilling is not considered 'recycling' according to the European Commission's Guidance on the interpretation of key provisions of Directive 2008/98/EC on waste (2008b) but is covered under 'other recovery'.

guidelines also require waste audits be undertaken and that summary audit reports be submitted to the relevant local authority.

Around the time of the publication of the Best Practice Guidelines, support and interest in the NCDWC, which was a voluntary initiative, declined, mainly due to funding issues and the huge decline in the industry due to the unfavourable economic conditions. Currently, there is no Producer Responsibility Initiative for C&D waste in Ireland.

11.2.2 Recovery Rates for 2011

Just over 3 million tonnes of C&D waste was reported as collected in 2011, 66% of which relates to soil and stones and 34% of which includes other non-soil and stones fraction of C&D waste (rubble, metals, timber, plastic, glass, wood and mixed C&D waste) (EPA, 2013a). This is a 71% decrease in the figure reported in 2008 and a decrease of 13% since 2010.

In 2011, there were high rates of recovery, reporting 98% recovery for soil & stones. This does not include C&D waste in storage at the end of 2011 (11,957 tonnes) and estimates of waste of 92,870 tonnes in non reporting waste permitted facilities .

Equally high rates of 97% recovery were reported in 2011 for the other fraction. This does not include C&D waste in storage at the end of 2011 (45,968 tonnes).

These recovery figures do not take into consideration the discrepancies in quantities reported as collected and quantities treated, which resulted in a 22% gap for soil and stones and 2.1% gap for the other C&D waste fraction, resulting in an overall gap of 458,777 tonnes (compared to a discrepancy of 900,000 tonnes in 2010). If you take this gap into consideration, the recovery rate for soil and stones drops to 71% and 91% for the other C&D waste fraction. However, the EPA⁵⁴⁶ have outlined that the main reasons for the discrepancy is due to the following:

- Estimates are provided instead of weighed data for the soil and stones fraction (as there are no weighbridge records).

⁵⁴⁶ EPA personal communication 20/11/2012 & National Waste Report (EPA, 2011)

- The soil and stone fraction is recorded as a waste at landfills instead of a material for reuse as engineering fill, etc.
- The lack of attention to good record keeping and reporting.
- The unreported net storage of C&D waste at facilities.
- The fact that data was not surveyed in the 2011 National waste report for facilities licensed by the EPA under Certificate of Authorisation. In addition, material used for backfilling at IPPC licensed mines and quarries was not reported.

The EPA has advised that the data for C&D waste should be treated with caution.

Overall there are high recovery rates for the C&D waste that is reported as being managed. The discrepancy in data particularly for the soil and stone fraction results in a lower rate of 71%, which is above the Waste Framework Directive of 70%. However, as the soil and stones fraction is seen as a resource and it is costly to produce and transport, it is likely that the 97% recovery rate is being achieved but this is not reflected in the data as outlined above.

The discrepancy in data for the other fraction results in 91% recovery rate which is above both the policy target and the 70% target set by the waste framework directive.

11.3 CONSTRUCTION INDUSTRY SUPPLY CHAIN AND RESPONSIBILITIES

The responsibility for the generation of C&D waste does not just rest with the Building Contractor. Decisions taken by Developers, Designers, etc. can result in the largest contributions to waste generation in the C&D sector. Figure 11.1 outlines those responsible for waste generation in the C&D sector along with examples of factors that can influence the generation of waste. In addition the enforcement of waste collection, recovery and disposal activities is outlined. Figure 11.2 outlines those responsible for waste management in the C&D sector.

Building contractors are responsible for managing the waste they produce on site and to ensure they have the relevant waste permit or licence to recover or dispose of the waste. Currently, there is no initiative to minimise C&D waste generation and the main driver for waste recovery is the high cost associated with disposal at landfill.

Designers are responsible for the prevention of waste and should implement best practice at the outset of projects to prevent and minimise the production of waste as much as possible. Similarly, the high costs associated with disposal should influence design decisions along with consideration of sustainable development through reuse of materials where possible.

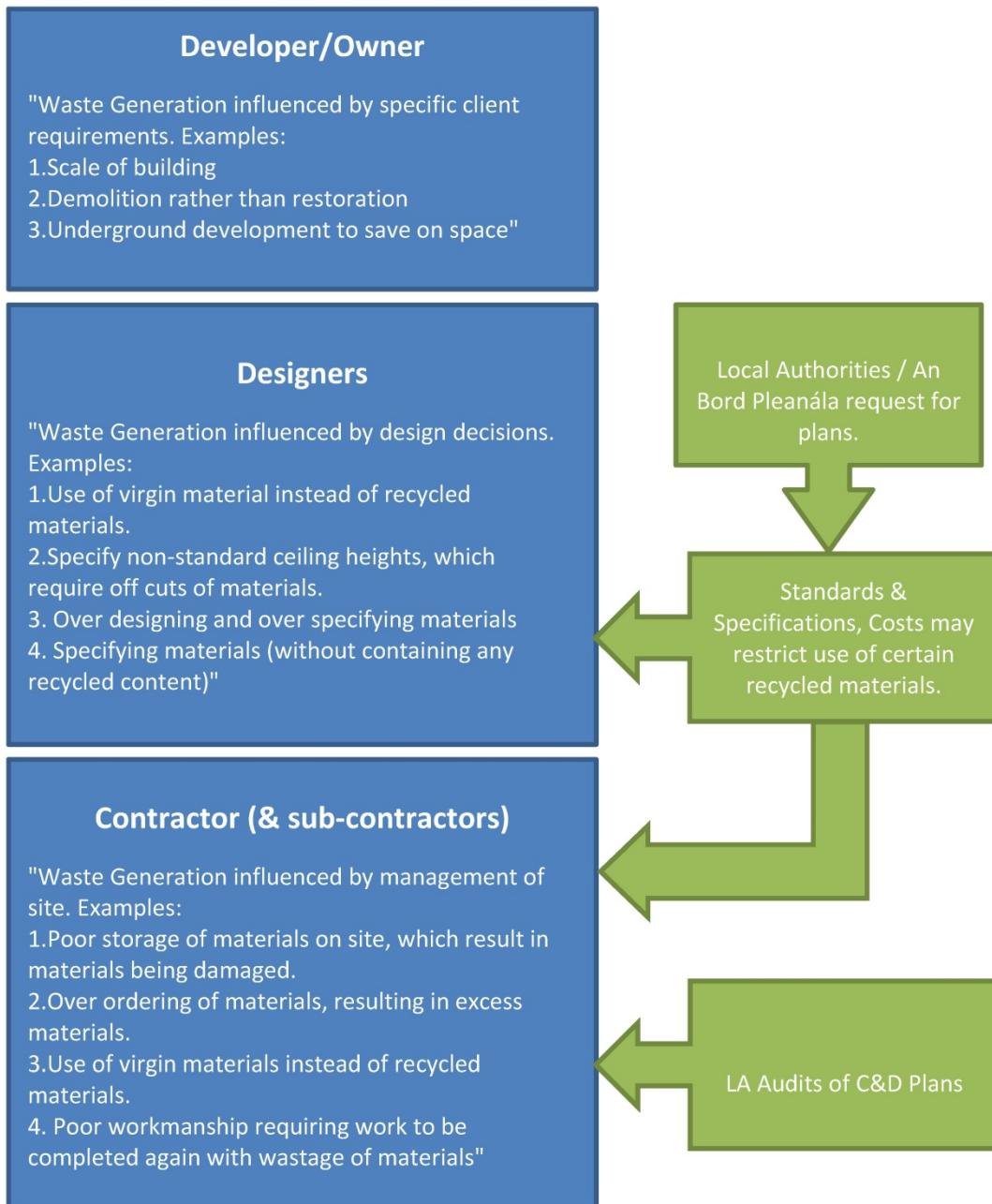


Figure 11.1: Responsibility for Waste Generation in the C&D Sector

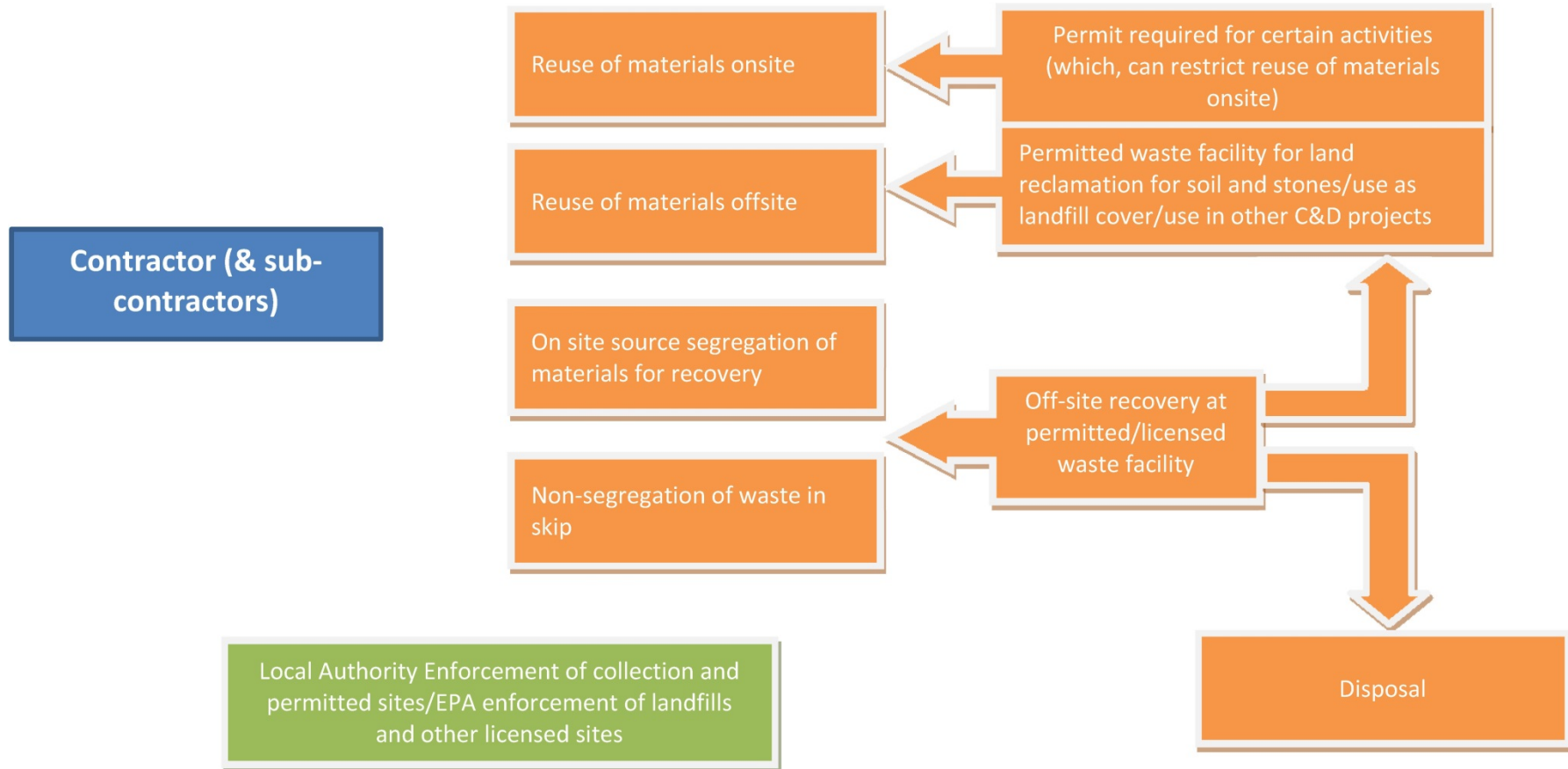


Figure 11.2: Responsibility for Waste Management in the C&D Sector

11.3.1 Costs to the State

There is currently no PRI in place for C&D waste. The current high rates of recovery mean that costs to the state are mainly in the form of enforcement of waste permits and licenses, enforcement and auditing of C&D waste management plans (although it is understood that this is not happening in practice), and those associated with the fraction of waste requiring landfill disposal. However, there are also costs associated with the clean-up of sites where illegal dumping has occurred, which have to be covered by the State. The discrepancies in data give the perception that illegal activities may still be occurring.

11.3.2 Waste Prevention

The NCDWC did run a successful waste prevention programme when it was in operation. This included the setting up of C&D Waste Management Taskforces to recommend improvements to C&D waste management through planning, prevention and reclamation, development of awareness and training programmes, the publication of a handbook for site managers on C&D waste management (Fás & Construction Industry Federation, 2002) and best practice guidelines for the preparation of waste management plans for C&D projects (Department of the Environment, Heritage & Local Government, 2006).

No such programmes specific to C&D waste are known to be running at present. The National Waste Prevention Programme promotes resource efficiency and the sustainable use of natural resources, but there are no specific activities in place at present which focus on the C&D industry.

11.4 RECOMMENDATIONS

11.4.1 Consideration of a PRI for C&D Waste

Internationally, there is limited published evidence of a correlation between better management of C&D waste and the implementation of a PRI. Many countries with high C&D waste recycling rates have not implemented a PRI for C&D waste (e.g. The Netherlands, Denmark etc.). While other countries with existing PRI for C&D waste (e.g. Spain) have low C&D waste recycling rates. High C&D waste recycling rates are more influenced by the cost of landfilling in combination with good practices such as the implementation of environmental management systems for demolition activities, which are the major driver towards better

management of C&D Waste. Other factors such as the inclusion of dredging soil, track ballast amounts also have a strong contribution to high recycling rates (European Environment Agency, 2009).

Vlakglas Recycling Nederland (VRN)

A voluntary recycling scheme does exist in the Netherlands which is for sheet glass. Both the residential and commercial construction sector generates many thousands of tonnes of waste glass every year. Sustainable demolition and renovation techniques mean that more and more used sheet glass is now being separated at source for recycling.

The scheme is run by Vlakglas Recycling Nederland (VRN), which is a non-profit organization that coordinates all the activities associated with recycling and collecting waste glass. It is financed by means of a waste disposal fee of € 0.50 for every m² of insulated glass that is produced in or imported into the Netherlands. All producers and/or importers of double glazing who sell their products in the Netherlands are required to pay the waste disposal fee. This is the result of a policy decision by the Ministry of Infrastructure and the Environment and is legally binding. VRN supports and coordinates the participating companies and agencies, oversees the collection of the waste disposal fee and acts as an information point for all those involved. It also promotes awareness of recycling glass.

VRN is a good example of how a voluntary initiative can work. However, the initiative is for just one type of C&D waste.

There are challenges in implementing PRI for C&D waste compared to other waste streams. The PRI model used for products such as packaging and WEEE works well when there is one product type and the producers can be easily identified. However, the difficulty with C&D waste is that instead of one product there are several by-products. Also, as outlined in Figure 11.1, there is not just one economic agent but several who can play a decisive role in the management of C&D waste. It is therefore difficult to allocate responsibilities on the economic agents who have the most influence. Both the Construction Industry Federation (CIF) and EPA highlighted these difficulties with the operation of a PRI for C&D waste. The CIF also highlighted that a voluntary scheme was not fully successful previously and recommended that there should be some form of an incentive for all who contribute to C&D waste i.e. designers, builders, etc. to partake in an initiative or it should be worth their time to partake for financial reasons. Otherwise a penalty should be imposed.

Consultations with both the CIF and EPA directed RPS to examine the existing building regulations and planning regulations with a view to incorporating obligations regarding C&D waste management instead of recommending the introduction of an entire new PRI. In any case the reintroduction of a PRI for C&D waste or a category of C&D waste should be kept under review particularly if there is an increase in construction nationally.

11.4.2 Planning & Development Requirements

As described above, a system for the preparation and implementation of C&D waste management plans already exists. It is very important that where conditions are imposed relating to C & D waste management issues, that they are complied with by developers and that in the event they are not complied with that the relevant planning authority uses its enforcement powers. It should be noted that there is a legal obligation for Planning Authorities under Section 26(1) (2) of the Protection of the Environment Act (2003):

“In performing their functions under the Planning and Development Acts 2000 to 2002, and, in particular, their functions under Part III and sections 175 and 179 of the Planning and Development Act 2000, planning authorities and An Bord Pleanála shall ensure that such measures as are reasonably necessary are taken to secure appropriate provision for the management of waste (and, in particular, recyclable materials) within developments, including the provision of facilities for the storage, separation and collection of such waste (and, in particular, such materials) and the preparation by the appropriate persons of suitable plans for the operation of such facilities.

The Minister may issue guidelines as to the steps that may be taken to comply with this subsection”.

Furthermore, Section 34(4)(1) of the Planning and Development Act (2000) provides that a Planning Authority may attach

“Conditions for requiring construction and demolition waste to be recovered or disposed of in such a manner and to such extent as may be specified by the planning authority.”

It is important that all Planning Authorities give consideration to the enforcement of the Planning Conditions, which set obligations for C&D recovery. Where developers do not

comply with C&D waste management plans, then Planning Authorities should use their enforcement powers. It is also recommended that the Minister issue guidelines to ensure Planning Authorities and An Bord Pleanála are fully aware of their obligations. Such guidelines should address the requirement for the monitoring and auditing of C&D Waste Management Plans by Local Authorities (see section 11.4.3 below also).

11.4.2.1 Designer Obligations

At the design stage, all designers should ensure that the principles of the Best Practice Guidelines on the preparation of C&D waste management plans be considered at all stages of design to avoid the generation of waste as much as possible. The preparation of a Preliminary C&D Waste Management Plan outlining where waste generation has been minimised as part of the design and outlining how the Building Contractor should further minimise or prevent waste generation on site should be considered, similar to the requirements of the Safety, Health and Welfare at Work (Construction) Regulations (2006), Regulations, which require the designer to prepare a preliminary Health & Safety plan and place obligations on clients and designers to ensure that safety and health is taken into account before any construction work begins. Contractors must then ensure that the work on site is properly co-ordinated and carried out in a safe manner. A similar structure for the implementation of preliminary waste management plan could be considered.

It is recommended that guidelines be issued to all designers & building contractors regarding the generation of C&D waste and its consideration in design decisions and the requirements for the preparation of preliminary C&D waste plans at the design stage followed by a construction phase plan. A system to examine what thresholds to set for such developments to require a preliminary and construction phase plans should also be considered particularly as much of the current building activity involves house extensions which are currently exempt from the requirements. C&D waste plans prepared at the design stage should be submitted as part of the planning application process.

The Best Practice Guidelines recommend thresholds for particular projects including new residential development of 10 hours or more. For single dwelling renovation or new one off housing projects, an option of preparing a one/two page template could be considered to document C&D waste management rather than the preparation of a full C&D waste management plan (which would be more appropriate to larger scale developments). These could be completed by the engineer/architect to accompany planning applications and broadly indicate the expected waste to be generated during the works and how it could be

managed. Currently, for small scale developments the waste industry does not offer differential pricing. One recommendation that could improve this situation is to request the Irish Waste Management Association to look at options that could provide some differential pricing for small scale developments like one off houses .e.g offer lower prices for skips if waste is segregated/uncontaminated

The EU Construction Product's Regulation (305/2011/EU), which lays down harmonised conditions for the marketing of construction products introduced in its Annex I 'Basic Requirements for Construction Works'. This Annex includes the following new requirement on the 'Sustainable use of natural resources' which will impact designer obligations:

The construction works must be designed, built and demolished in such a way that the use of natural resources is sustainable and in particular ensure the following:

(a) reuse or recyclability of the construction works, their materials and parts after demolition;

(b) durability of the construction works;

(c) use of environmentally compatible raw and secondary materials in the construction works.

Currently, there are over 420 harmonised European standards hENs covering a broad range of construction products. In time, the hENs for construction products will be broadened to translate the above requirement.

The European Union (Construction Products) Regulations (S.I. No. of 225 of 2013) facilitate the implementation in Ireland of the EU Construction Product's Regulation (305/2011/EU).

Part 1 of these Regulations provides that the Regulations apply to construction products the essential requirements of Annex I, which includes the above requirement on the sustainable use of natural resources.

11.4.3 Building Regulations

In Ireland, the Building Regulations are set by the government to ensure that each building is to a minimum standard. They are intended to ensure the safety, health and welfare of people in and around buildings. The responsibility of compliance with these regulations rests with the designers, contractors and building owner and the Building Control Authority has the

power to check and inspect buildings for compliance and powers to prosecute with the possibility of penalties.

The use of a similar model could be considered for ensuring compliance with C&D waste management plans and could be used in association with the requirement for the preparation of C&D waste management plans as outlined above in Section 11.4.2.1 but with the Building Control Authority overseeing enforcement.

It is recommended that the feasibility for enforcement options by Local Authorities for C&D waste management be examined further as part of a review of the respective waste regulation and enforcement roles of the Environmental Protection Agency (Office of Environmental Enforcement) and local authorities currently underway by the DECLG.

11.4.3.1 Categories of Waste

Based on the recommendations in Sections 11.4.1.1 and 11.4.1.2 above, the establishment of a new PRI for C&D waste is not recommended at this stage, instead it is recommended that the enforcement of existing obligations (or amendment of existing obligations to include C&D waste management) to ensure all producers of C&D waste are involved in its prevention and minimisation. Therefore, all categories of C&D waste would be considered in the above recommended proposals. However, consideration should be given to the types of waste like waste glass arising from construction & demolition projects and potential schemes like that implemented by VRN in the Netherlands (see Section 11.4.1).

11.4.3.2 Waste Data Recording

Reliable waste data is essential to benchmark the performance of the C&D industry in meeting policy targets. As part of the EPA Strive programme 2007-2013 a report title 'Development of an Audit Methodology to Generate Construction Waste Production Indicators for the Irish Construction Industry' was prepared (Kelly et al., 2009). Recommendations from this report included the integration of an audit tool into construction and demolition waste management plans, which would provide a basic methodology to measure waste performance on-site and the submission to the local authorities of audit reports during the construction phase in fulfillment of the planning requirement. The use of such tools should be considered in the development of C&D waste management plans.

11.4.4 Awareness Campaigns

As outlined above there is no programme in place to raise awareness to reduce C&D waste. It is therefore recommended that the National Waste Prevention Programme consider schemes to raise awareness on waste management in C&D industry. It is recommended that such campaigns could be funded by organisations like the CIF through the EPA Cleaner Greener Production Programme (CGPP). The EPA launched the CGPP in 2001 as a grant scheme to encourage Irish organisations to implement cleaner greener practices. The philosophy of the programme is that prevention is better than cure.

It is also recommended that industry stakeholders (including designers, engineers, construction contractors) be convened to discuss how current practice is leading to unnecessary C&D waste generation and how such waste can be reduced.

The generation of C&D waste and ways of reducing it, should be a subject included in relevant engineering university courses and training courses provided to the construction industry.

11.4.4.1 Building Certification Schemes

The promotion of Building Certification Schemes such as LEED would also promote C&D waste management. LEED is an internationally recognised green building certification system that provides third-party verification that a building was designed and built using strategies aimed at increasing performance, reducing waste, and improving quality of life.

11.4.4.2 Procurement

The consideration to specify the use of recovered materials (instead of raw materials) into construction of new buildings or the avoidance of demolition waste in renovation projects should be considered under Green Public Procurement (GPP) programmes. GPP is the consideration of environmental criteria when contracting goods and services such as construction products. The European Commission has asked that all EU Member States publish National Action Plans for green public procurement. In 2012, the Department of the Environment, Community & Local Government and the Department of Public Expenditure and Reform published 'Green Tenders – An Action Plan on Green Public Procurement' to assist public authorities to successfully plan and implement green public procurement

(GPP). The Plan nominates eight product/service groups as priority groups for GPP which includes Construction.

The Office of Public Works (OPW) are currently preparing a guidance document for Green Public Procurement in the Construction Sector. This document will focus on six key aspects including Design, Energy, Refurbishment, Materials, Ecology & Site Utilities, Specification.

In Ireland, the availability of recovered materials may be limited due to the existing downturn in the construction sector and therefore a recommendation to reuse recovered materials might be better placed when such materials are more readily available. In addition, quality standards and regulation for use of such materials would require consideration to ensure it is fit for use.

11.4.5 Compliance Bonds

The 'International Review of Waste Management Policy: Summary Report' published on the DECLG website (Hogg et al., 2009) included a policy recommendation on refunded compliance bonds payable by the Developers for C&D projects. The report states the following:

Under this arrangement, contractors would be required to pay, to the local authority, a financial sum related to the size of the project at its commencement in addition to a small administrative fee (intended to cover the administrative costs of the system). The financial sum would be retained as a bond to ensure that the project exceeded a specified recycling rate, which could be set higher (in line with green procurement principles) for public sector projects.

The size of bond paid would vary by project size, and all of the bond, excluding the administrative fee, would be returned on demonstrating that the desired recycling rate had been achieved. A proportion of the fund would be refunded for partial compliance with the desired target.

The Construction Industry Federation recommended a similar approach where the owner of the development would supply the bond which is refundable on demonstration of compliance. This would put the responsibility on the Local Authority to manage the bond and ensure the implementation of C&D Waste Management plans. This would most likely

require additional resources to manage the bond and implementation of auditing compliance for C&D waste management plans.

It is recommended that a review of the existing legislation be carried out to examine how best to facilitate compliance bonds for the implementation of C&D waste management and what changes would be necessary in this regard would provide clarity to all parties. A system on how best to determine the additional fees to provide a bond to include for C&D waste management needs to be considered. It may be required that projects need to be considered on a case by case basis considering proximity of sites to recycling infrastructure and markets for reuse of materials and what is best practice for a waste management and environmental impact perspective e.g. carbon footprint. In any case, the relevant authority should request developers that a Final Compliance Report be completed and submitted for assessment. This could include details of all receipts for recycled materials and details on how compliance with the C&D Waste Management Plan was met. This report would then be used to determine if the full bond, part of the bond or none of the bond be returned to the developer.

11.5 SUMMARY OF RECOMMENDATIONS FOR C & D WASTE

Summary of Recommendations:

Review and update of existing guidelines on the 'Preparation of Waste Management Plans for Construction & Demolition Projects' to ensure they address the consideration of waste generation in making design decisions (for consideration by Developers and Designers). In addition, thresholds requiring the preparation and submission (at Planning Application Stage) C&D Waste Management Plans for use on site by Building Contractors should also be reviewed.

- Preparation of guidelines for Planning Authorities to address the following:
 - Requirements for the management of C&D waste and preparation of C&D waste management plans at the design and construction stages.
 - Review of the current thresholds for which a C&D waste management plan is required to be prepared.
 - Enforcement and auditing of C&D waste management plans (and the administration and funding of such enforcement (to facilitate compliance

bonds)).

- Penalties if C&D plans are not implemented or waste not disposed of appropriately.
- National Waste Prevention Programme to consider promotion of awareness of C&D waste management.

12 NEW AREAS FOR PRODUCER RESPONSIBILITY INITIATIVES

This section considers and identifies other waste streams that might be suitable for the development of further producer responsibility initiatives (PRIs) or agreements with industry to govern the handling of end of life waste.

12.1 IDENTIFICATION OF WASTE STREAMS

The products covered by PRI are primarily products that pose problems for recycling or recovery operations when they are discarded in mixed waste streams, and which generate high management costs (OECD, 2001) because:

- The quantities involved are significant, as for packaging,
- They contain hazardous materials, as for WEEE,
- Their recovery operations are costly, as for tyres.

The extent of the challenge is aggravated by factors including the complex material makeup of products like electrical and electronic equipment, and by the wide dispersion of products such as batteries and accumulators, that make management more costly.

Two main sources were used for the identification of new waste streams suitable for the development of further PRIs or agreements with industry regarding the handling of end of life waste. These are the National Hazardous Waste Management Plan (NHWMP), published by the EPA in 2008 and the consultation on the review of producer responsibility initiatives in Ireland⁵⁴⁷.

The NHWMP recommended the use of PRIs, among other measures, to capture “unreported” hazardous waste from households, small business and farms. This material

⁵⁴⁷ A list of the stakeholders who made written submission can be found in Appendix B.

was quantified at 26,024 tonnes in 2006⁵⁴⁸, where “unreported” or not managed means not being recorded as having entered the formal waste management industry.

The implementation of a number of the NHWMP recommendations that promote more accessible collection points and the continued implementation of existing statutory obligations on producers (such as Waste Electrical & Electronic Equipment/Restriction of Hazardous Substances, Batteries, Packaging Essential Requirements, Solvents, Deco-paints and End-of-Life Vehicles) have probably helped reduce the hazardous components in waste streams and also assisted with the collection/reduction of unreported hazardous waste (EPA, 2011d)⁵⁴⁹.

The waste streams identified by the EPA and the respondents to the consultation of the PRI review are combined in Table 12.1 as a list of possible waste streams which could be subjected to producer responsibility initiatives. In compiling the list, waste streams that are already covered by PRIs (e.g. batteries, ELVs etc.) were excluded.

⁵⁴⁸ The 2006 figure (29,888 tonnes) indicated in the National Hazardous Waste Management Plan (NHWMP), published by the EPA in 2008 was revised in the Proposed Revised National Hazardous Waste Management Plan published in February 2014.

⁵⁴⁹ Accessed on 24/08/2012 at

<http://www.epa.ie/downloads/pubs/waste/haz/ImplementationReport2011.pdf>

Table 12.1: Waste Streams Identified for Future Assessment of Suitability for PRI

Waste Stream	Hazardous	PRIs in other Countries*
Animal remedies and human medicines	Yes	Austria, Belgium, Bulgaria, Estonia, France and Slovenia
Plant Protection Products	Yes	France and Slovenia,
Plant Protection Products Packaging	Yes	As part of Packaging PRIs in some EU MS, common in US, New Zealand, Canada.
Paint and paint packaging	Yes	No, but common in the US
Ink and ink containers	Yes	France
Waste oils and oil filters	Yes	13
Food Waste	No	None
Newsprint & Magazines	No	Belgium and Scotland
Junk Mail	No	None
Disposable catering ware and packaging from Takeaway	No	Belgium
Mattresses	No	As part of bulky waste PRI in Austria

* See Table 3 in Appendix C for further details.

In assessing if a producer responsibility approach should be applied to the waste streams listed in Table 12.1, the OECD (2005) recommends that the **costs of operating a PRI** (administration, collection costs, treatment costs) be weighed against the benefits of **reduced social costs of waste management** (e.g. reduced landfill external costs, reduced external costs of virgin materials production) including the various externalities associated with landfilling or incineration and the environmental risks associated with “doing nothing” by maintaining existing practices.

PRIs can also be used in combination with other policy instruments (e.g. deposit and refund, levy, landfill taxes or bans etc.) to achieve desired environmental outcomes.

In commissioning this review, the DECLG requested that the position of newspapers, magazines and farm plastic chemical containers be examined and assessed as to whether there would be social, environmental and economic benefits associated with the implementation of a PRI. This assessment has been conducted, and the work is presented in the rest of this section of this report. For the other potential candidate waste streams set out in Table 12.1, existing published information has been evaluated to indicate whether there would be significant potential to increase collection rates has compiled.

12.2 NEWSPAPERS AND MAGAZINES

The collection system for newspapers and magazines in Ireland is well established through the pre-consumer and post-consumer routes. Newspapers and magazines are collected post-consumer using kerbside collection systems (mainly run by private waste operators) and bring sites (mainly run by local authorities). The industry, in conjunction with distributors, developed a system to collect unsold pre-consumer newspapers at retail level. These measures for the separate collection of newspapers and magazines led to a recycling rate reported by National Newspapers of Ireland in excess of 80% in 2011⁵⁵⁰.

While the Irish newspaper and magazine industry is not contributing to the costs of managing post-consumer Newspapers and Magazine paper, the industry has developed a press industry environment programme (Green Press Partnership - GPP). The GPP has run advertising campaigns across Ireland's daily and Sunday newspapers with an estimated opportunity value of €500,000 in advertising space. Since 2007, the GPP has also formally offered free advertising space to the DECLG to the value of €1.875 million per year to encourage consumers to be more environmentally responsible and recycle a greater proportion of post-consumer newspapers. It is the understanding of RPS that only a fraction of this free advertising space offered has been used.

The volume of hardcopy paper newspapers and magazines (traditional media) sold have been reducing steadily in line with the increase in electronic media. Indeed, some sources forecast that the paper editions of newspapers and magazines will be discontinued in the near future⁵⁵¹.

Therefore, due to the existing high recycling rate, the establishment of a PRI to finance the collection of newspapers and magazines is unlikely to add significant environmental benefits.

The cost of Newspapers and Magazines recovery appears to be free to end-users using the recycling waste collection system. However, Newspapers and Magazines recovery does not necessarily always generate positive or zero revenue for collectors. It is likely that a share of

⁵⁵⁰ Accessed on 24/08/2012 at <http://www.nni.ie/v2/broad/environment.php>

⁵⁵¹ Accessed on 24/08/2012 at http://futureexploration.net/Newspaper_Extinction_Timeline.pdf

the residual waste charges is used to cross subsidise the recyclable collection (Bacon, 2008). The costs (or revenues) of collection of Newspapers and Magazines are borne by the State when collected in bring sites.

Bacon (2008) points out that a considerable amount of the material that is separately collected and processed by waste operators for sale as paper comes from producers who are not members of Repak, including non-Repak producers of packing but also producers of Newspapers and Magazines. The report recommends that a mechanism similar to Repak with responsibility for funding the recovery of the “news and pams” grade of paper (as Newspapers and Magazines are termed) be put in place to ensure that newspaper producers contribute to the costs of post-consumer recycling on a similar basis as producers of packaging waste. While the Bacon report is correct in pointing out the considerable amount of the non-packaging material separated by waste operators, the reasons why newspaper producers should contribute to the same costs as the producers of packaging waste is not made clear. The inclusion of newspapers in the recycling bin with packaging is likely to increase the bulk density of the co-mingled material collected resulting in overall lower cost per tonne for collection and sorting (Eunomia, 2001)⁵⁵².

In conclusion, as it is unlikely that further funding from producers will lead to increased environmental benefits, it is not recommended to implement a PRI. However there may be other environmental impacts such as littering for which other instruments could be used^[1].

As it is not used to its full extent, the current contribution in free advertising offered by the Irish newspaper and magazine industry should be reviewed by the DECLG to evaluate the effectiveness of this arrangement. The aim of this review would be to determine the impact of the advertising and identifying more effective ways that the newspaper and magazine industry can contribute proportionately to the sustainable management of waste newspapers and magazines placed on the market.

⁵⁵² Accessed on 24/08/2012 at <http://ec.europa.eu/environment/waste/studies/pdf/eucostwaste.pdf>

^[1] The national litter composition survey indicates that paper litter, which could include a proportion of junk mail, accounted for 4.12% in 2010. Accessed on 13.03.2013 at

http://www.litter.ie/system_survey_results/index.shtml

12.3 JUNK MAIL

Unsolicited commercial material, as advertisements and requests for donations are likely to be collected through the same routes as the newspapers and magazines using kerbside collection systems and bring sites. While there is no published data on junk mail waste management, the recycling rate is likely to be similar to paper packaging or Newspapers and Magazine paper.

Because of the high recycling rate, it is not recommended to proceed with a PRI for this waste stream as the cost of implementing such a system is likely to exceed the benefits. However, there may be other environmental impacts such as littering for which other instruments could be used⁵⁵³.

12.4 PHARMACEUTICAL PRODUCTS AND MEDICINES

The occurrence and effects of residues from pharmaceutical products, such as medicines, discharging into the general environment is an emerging global concern (EPA, 2012d). Waste medicinal products should be incinerated and it is not appropriate to dispose of these products through municipal waste collections or the mains water/wastewater drainage systems. However unwanted/out-of-date medicines are often disposed of through municipal waste collections, poured down the sink or flushed down the toilet. In order to improve the management of this waste stream, standard procedures, increased separate collection points and public awareness on safe disposal is required.

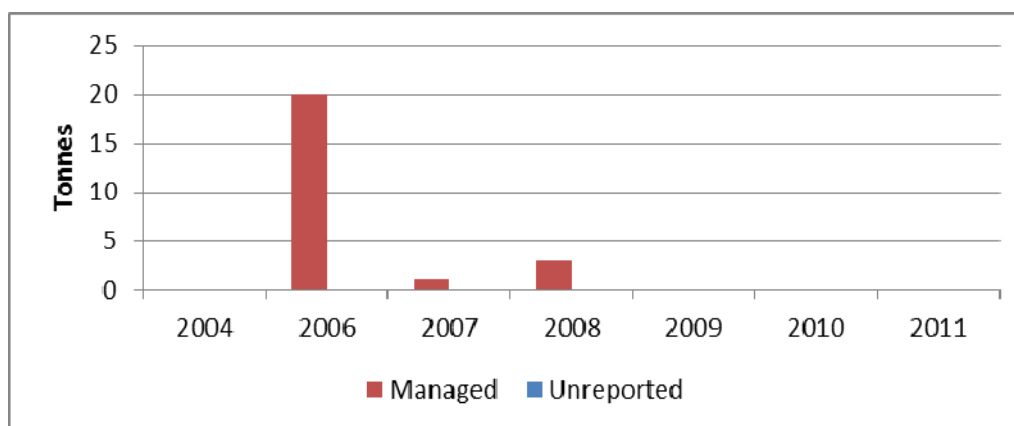
A concern with regard to the environmental impacts of unused medicines is the development of resistance to antibiotics in bacteria. This is recognised as a major public health problem. Other toxicological and endocrine-disrupting effects have also been documented. Additionally if waste medicines enter the environment in an uncontrolled manner they can have an impact on aquatic life.

⁵⁵³ The national litter composition survey indicates that paper litter, which could include a proportion of junk mail, accounted for 4.12% in 2010. Accessed on 13.03.2013 at

http://www.litter.ie/system_survey_results/index.shtml

The two main categories in this sector are human and animal pharmaceutical products.

Figure 12.1 shows the quantities of waste medicines (human and animal) reported as managed by the EPA.



Source: Managed Data – National Waste Reports 2006-2008 EPA; Unreported Data – National Hazardous Waste Management Plan 2008-2012 EPA, 2008

Figure 12.1: Quantities of Medicine Waste (Human and Animal) Managed and Unreported⁵⁵⁴

With requirements under waste legislation to hold a waste licence for the storage of waste pending onward treatment, certain outlets (such as veterinary practices/pharmacies) may be reluctant to take back certain wastes from customers under take-back schemes. To encourage take-back of hazardous wastes from certain sources the EPA has recommended, in the recently published *National Hazardous Waste Management Plan 2014-2020*, that a review of waste licensing legislation be carried out to establish an appropriate and proportionate regulatory mechanism, or relief, to facilitate the take-back of certain hazardous wastes from smaller sources (e.g. unused or expired animal remedies and human medicines)⁵⁵⁵.

⁵⁵⁴ There are no estimates of unreported medicine waste. This however does not mean that all medicine waste is managed.

⁵⁵⁵ <http://www.epa.ife/pubs/reports/waste/haz/nhwmp.pdf>

12.4.1 Unused Human Medicines

Unused Human Medicines (UHD) are generated in very small quantities by many waste producers. Waste medicines can be hazardous or non-hazardous, depending on the active agents. The quantity of UHD put on the market is unknown, but it is estimated that as much as 10% of all prescribed drugs are wasted⁵⁵⁶.

Directive 2004/27/EC (relating to medicinal products for human use) requires that Member States shall ensure that appropriate collection systems are in place for medicinal products that are unused or have expired⁵⁵⁷. In Ireland the Regulation of Retail Pharmacy Businesses Regulations, S.I. No. 488 of 2008 states that a pharmacy may accept return medicines for proper disposal.

The existing collection system for UHDs is not very well developed and awareness of such systems is generally low. Many recycling centres accept waste medicines, some offer a free service or a small charge may apply.

Dispose of Unused Medicines Properly (DUMP) is a regional scheme started in 2002 in Counties Cork and Kerry and has been replicated in Dublin and the Midland Region. The scheme is organised by the HSE and pharmacists providing a free service to the public for the return of unused and out of date medicines to pharmacies. The main focus of the scheme is the prevention of suicide and self-harm, but there are other benefits associated with the decrease in accidental poisoning of children and to ensure their proper management to ensure a reduction in environmental pollution.

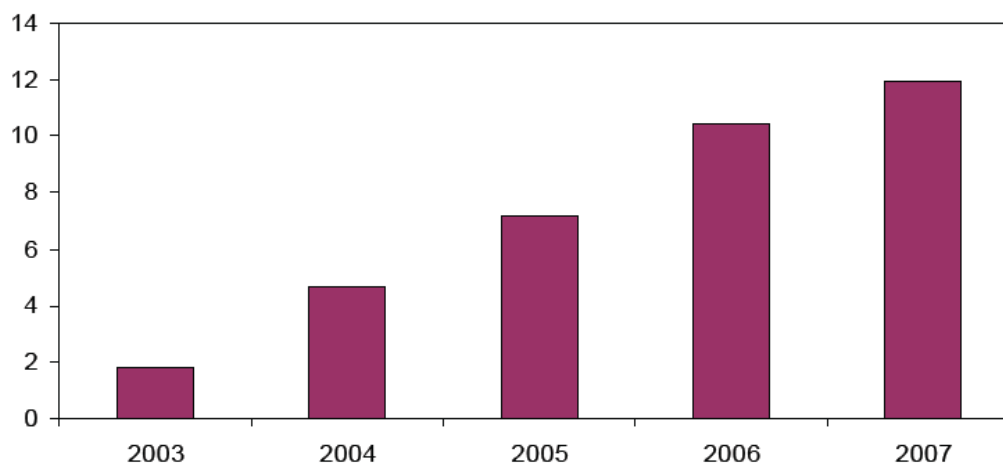
The most common reasons recorded by DUMP for returning medicines included the medications being out of date, not required or being unwanted. Most returned medicines are 'general' types including antibiotics, diuretics, corticosteroids, cardiovascular and respiratory drugs.

⁵⁵⁶ Accessed on 13.03.2013 at

http://www.counterintelligence.ie/imgdir/docs/26174_economies_drug_usage.pdf

⁵⁵⁷ Accessed on 24/06/2014 <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32004L0027:EN:HTML>

Figure 12.2 shows that the amount collected in the former South Western Area Health Board (SWAHB) increased from 4.47 tonnes for the first full year of collection (2004) to 12 tonnes in 2007. The last DUMP free collection in Mid-West pharmacies took place in November 2012.



Source: South Western Area Health Board (SWAHB)

Figure 12.2: The Amount of Unused and Out-of-Date Medication Returned from Community Pharmacies in the Former South Western Area Health Board

PRIs for unused and out-of-date medication management exist in five European countries (See Appendix C). Box 28 shows an example of a successful scheme called Cyclamed.

Assuming that collection rate and costs are similar to Cyclamed, implementing a similar scheme could lead to the collection of 1,000 tonnes of unused and out-of-date medication at a total cost of over €410,000.

Changes in society and medical practice have resulted in increased usage of non-prescription medication coupled with intensive therapeutic approaches to disease management (EPA, 2012d). Significant potential environmental benefits and associated health benefits could be achieved by extending the DUMP scheme nationally. The French

example shows that the cost to the industry could be relatively small compared to product price and compared to the volume and value of trade in pharmaceutical products⁵⁵⁸.

Box 28: Cyclamed, France⁵⁵⁹

In France, the professionals involved in the drug supply chain (dispensing pharmacists, wholesale distributors and drug companies) have made a joint commitment to set up a nationwide collection and disposal programme for unused and out-of-date medication: Cyclamed. This non-profit organisation collects unused and out-of-date medication which patients bring back to the pharmacies for disposal and energy recovery.

This collection effort, which pharmacists have voluntarily engaged in for the past 15 years, has become mandatory (French law 2007-248, art.32, Official Journal of 27/2/2007 and decree n°2009-718, Official Journal of 19/6/2009). Pharmacists check returned unused and out-of-date medication and put them in a dedicated box which is sealed and collected by wholesalers and distributors.

In 2011, 14,565 tonnes of returned unused and out-of-date medication were disposed of by French pharmacies and by wholesale distributors to energy recovery. On average 223 grams of unused medication was collected by capita.

The manufacturers of medicines finance the operation of Cyclamed based on the number of boxes of medicines sold. In 2011, the average contribution was €0.0014 (excl. tax) per box. Adelphe (glass packaging PRO) provide financial support to Cyclamed for the recovery of glass packaging accounting for 20% of Cyclamed income.

Cyclamed's total expenditure was €5.98 million in 2011 divided into:

⁵⁵⁸ In 2009, the value of export was €20.7 billion and import €2,848 billion (IHPA, 2012) <http://www.ipha.ie/alist/healthcare-facts-and-figures.aspx> (Accessed on 24/08/2012)

⁵⁵⁹ Accessed on 13.03.2013 at <http://www.cyclamed.org/images/fichier/rapport-annuel-2011.pdf>

- Purchasing: 17% (collection boxes accounted for 93% of purchasing expenditure at €0.7 per box).
- Treatment costs: 58% or €208 / tonne of medicine waste treated.
- Communication costs accounted for 18%
- Administrative costs 7%

It is recommended that a PRI for unused medicines is established to ensure a formal system is in place to protect the environment and human, animal and plant health from inappropriate disposal of waste medicines and to meet EU obligations.

Successful collection schemes in other EU countries have demonstrated that unused medicines can achieve good participation and recovery rates at reasonable cost. It is proposed to build on the existing collection infrastructure in place in Ireland through the segregated collection at pharmacies and recycling centres bringing increased opportunities for collection and reduced cost through economies of scale. Awareness support could be accessed through the Green Healthcare and Green Homes Programmes.

There are also additional benefits such as reducing the risk of accidental poisoning, overdose/suicide attempts and medicine sharing. Analysis of data derived from a formal scheme can also bring greater understanding of prescription and usage patterns which can be used to reduce the quantities of drugs dispensed which can save individuals and the State money. A system that promotes and ensures the safe and effective recovery of unused medications can also contribute to a pharmaceutical company's Corporate Social Responsibility (CSR) objectives.

12.4.2 Veterinary Medicines

As with human medicines, improperly managed veterinary medicines can be a cause of environmental concern. The Department of Agriculture, Fisheries and Food oversees and implements strict controls in relation to veterinary medicines and residues, in order to safeguard public health and also animal health and welfare.

Section 42 (4) of the European Communities (Animal Remedies) (No. 2) Regulations 2007, implemented in Ireland as S.I. No. 786 of 2007⁵⁶⁰ requires that “*The owner or person in charge of an animal shall return an unused animal remedy or an animal remedy which has reached its expiry date to the person from whom he or she purchased that animal remedy and shall record this in the Animal Remedies Record*”.

Teagasc has developed a guidance document in association with Veterinary Ireland to inform farmers about the safe use of livestock medicines⁵⁶¹.

There is no data on the volumes of unused and out-of-date medication livestock medicines managed. The lack of information on the quantity returned is a concern as it is not possible to assess the effectiveness of the current arrangement. The IFA⁵⁶² states that the take-back of animal remedies is working, but there is a need to increase awareness and education to make farmers aware that such a service is available. This could take the form of having an easily recognised box in retail premises such as vet practices, pharmacies and co-op’s (similar to the batteries boxes that are widely used) and promotion of the service in farming media.

The current take back scheme should be expanded to address the shortcomings cited above and should be led by the producers of animal remedies in the form of a producer responsibility agreement.

The possibility of using the IFFPG collection infrastructure, as suggested in the recently published STRIVE Report on *Pilot Farm Hazardous Waste Bring Centres in 2013*, in addition to increased take-back opportunities at retail premises such as vet practices, pharmacies and co-op’s and the existing local authority recycling centre system should be explored.

⁵⁶⁰ Accessed on 24/08/2012 at

<http://www.agriculture.gov.ie/media/migration/legislation/statutoryinstruments2007/SI786-2007.pdf>

⁵⁶¹ Accessed on 24/08/2012 at

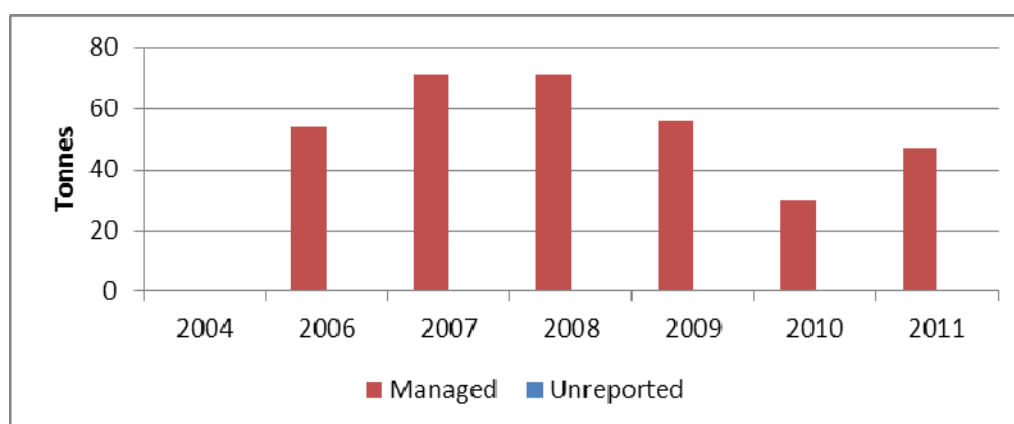
<http://www.apha.ie/Safe%20Use%20of%20Livestock%20Medicines.pdf>

⁵⁶² IFA Meeting 02.08.2012

12.5 PLANT PROTECTION PRODUCTS

Plant protection products (PPPs) or pesticides are active substances used to protect plants or plant products against all harmful organisms or prevent the action of such organisms⁵⁶³. Without pesticides, crop yields would be greatly reduced and quality would be reduced.

Generally farmers in Ireland use pesticides in the form of herbicides, insecticides and fungicides as part of their farming activities on crops and grassland. Householders may also use pesticides. Figure 12.3 shows the evolution of the quantities of PPP waste managed.



Source: Managed Data – National Waste Reports 2006-2011 EPA; Unreported Data – National Hazardous Waste Management Plan 2008-2012 EPA, 2008

Figure 12.3: Quantities of Pesticides Reported by the EPA as Managed and Unreported⁵⁶⁴

Handling and storage of PPPs, mixing operations to dilute the PPPs and cleaning of PPP application equipment after use, as well as recovery and disposal of tank mixtures, empty packaging and remnants of PPPs create a high potential for unwanted exposure of PPPs to humans and the environment. There is therefore a strong existing regulatory system

⁵⁶³ See for full definition http://ec.europa.eu/food/plant/protection/evaluation/borderline_en.htm (Accessed on 03/03/2013)

⁵⁶⁴ There are no estimates of unreported pesticides waste. This however does not mean that all pesticides waste is managed.

designed to ensure a very high level of protection for man, animals and the environment⁵⁶⁵. The monitoring programme for pesticide residues in food is designed to ensure that illegal residue levels in food do not occur.

For the agricultural sector, the costs of PPPs are such that there is an economic incentive to ensure PPPs are applied as efficiently as possible and waste is minimised. Therefore it is likely that the environmental benefits will be maximised through training of the end-users and the provision of guidance in the form of Good Plant Protection Practice to enable the use of PPPs in an optimal manner.

For the non-professional users, while guidance is generally provided, on the safe disposal of remnants and packaging of PPPs, inappropriate handling is more likely to occur in this group of users due to their lack of knowledge and underdeveloped collection system (only few civic amenity sites accept pesticide waste). The *National Action Plan for the Sustainable Use of Pesticides*⁵⁶⁶ sets out the obligations regarding training and provision of information.

A PRI or product tax could be used to help the development of the collection system but further research is needed to provide data on potential waste arisings and their fate.

The possibility of using the IFFPG collection infrastructure, as suggested in the recently published STRIVE Report on *Pilot Farm Hazardous Waste Bring Centres in 2013*, in addition to the existing local authority recycling centre and mobile chemcar systems should be explored.

12.6 PLANT PROTECTION PRODUCTS PACKAGING

The Pesticide Registration and Control Division (PRCD) of the Department of Agriculture, Food and the Marine (DAFM) has estimated that approximately 365 tonnes of plant

⁵⁶⁵ Directive 2009/128/EC of the European Parliament and of the Council of 21 October 2009 establishes a framework for Community action to achieve a sustainable use of pesticides.

⁵⁶⁶

<http://www.pcs.agriculture.gov.ie/Docs/National%20Action%20Plan%20for%20the%20sustainable%20use%20of%20pesticides.pdf>

protection product (PPP) containers were placed on amateur and professional markets in 2006 (EPA & DAFM, 2012). Producers of plant protection products (PPPs) packaging are obligated under the Packaging Regulations.

Plant protection products (PPPs) packaging used in the amateur market are collected in civic amenity sites and by kerbside collection recycling (or residual).

Plant protection products (PPPs) packaging used in the professional market can, since 2010, be presented for collection at bring centres operated by Farm Plastics Recycling Ltd. (a sister organization of the IFFPG) if completely emptied, triple rinsed, drained and punctured⁵⁶⁷. Farm Plastics Recycling Ltd. collects in the region of 30-35 tonnes annually⁵⁶⁸.

The collection system currently operated by Farm Plastics Recycling Ltd. is partly funded through farmer collection charges and by Repak. As shown in Section 10.9.10, the Repak support covers [This information has been redacted due to its commercially sensitive nature] % of the collection costs. There is therefore some level of producer responsibility with regard to PPPs.

The system operated by Farm Plastics Recycling Ltd. in tandem with the IFFPG offers synergies with regards to advertising and collection and should continue. As discussed in Section 10.9.10, an increase in the share of the cost of farm plastic containers collection covered by the producers is likely to stimulate further take up of the service by farmers and result in environmental benefits. This could be achieved by increasing Repak financial support.

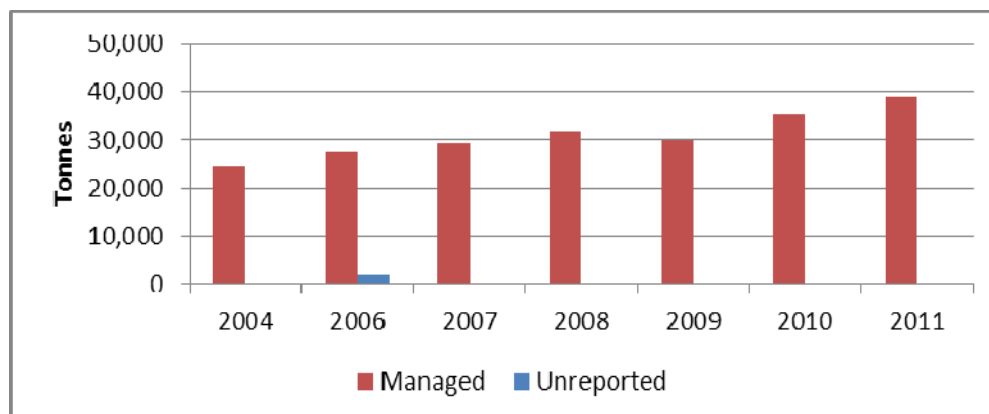
12.7 WASTE MOTOR OIL

Waste motor oil is generated by a wide range of users including the agricultural and vehicle services sector. Figure 12.4 shows that a significant quantity of waste motor oil is managed and that the 2006 estimate of uncollected waste motor oil only accounts for 5% of the

⁵⁶⁷ Accessed on 24/08/2012 at <http://www.epa.ie/downloads/advice/waste/farm/name,33266,en.html>

⁵⁶⁸ Farm Plastics Recycling Ltd. also collects fertiliser bags, feed bags, PPP and other chemical containers, netting and twine.

quantities managed. Uncontaminated waste motor oil can have a positive value - authorised waste oil collectors collect waste motor oil in quantities higher than 300 litres without charge and pay for quantities higher than 3,000 litres.



Source: Managed Data – National Waste Reports 2006-2008 EPA; Unreported Data – National Hazardous Waste Management Plan 2008-2012 EPA, 2008

Figure 12.4: Quantities of Waste Motor Oils Reported by the EPA as Managed and Unreported⁵⁶⁹

Large generators of hazardous waste are regulated through IPPC licensing. Households, garages and farms also generate waste oils and are also regulated⁵⁷⁰.

The inappropriate disposal of these materials with non-hazardous domestic waste, down the drain or illegal burning may pose a risk to the environment.

The “Garage and Vehicle Servicing Sector Report” (CTC, 2009) notes that burning of waste oil by garages is a concern in the management of waste motor oil in Ireland⁵⁷¹. The

⁵⁶⁹ There are no estimates of unreported waste oil after 2006. This however does not mean that all waste oil is managed by the appropriate channels.

⁵⁷⁰ S.I. No. 324/2011 - European Communities (Shipments of Hazardous Waste exclusively within Ireland) Regulations 2011 requires waste producers to keep records of waste oils and other hazardous waste which must be made available to the EPA or local authorities on request.

The Waste Management (Prohibition of Waste Disposal by Burning) Regulations 2009 ban the disposal of waste by burning, either indoors or outdoors. Fine of up to €3,000 or 1 year in jail apply. Only burning in licensed/permited facilities is allowed.

associated pollution arising from waste oil burners and space heaters generates increased concentrations of particularly harmful substances e.g. heavy metals and particulates. The burning of waste oil falls under the scope of the Industrial Emissions Directive (Directive 2010/75/EU) and the operation of used oil burners in Ireland requires a licence from the EPA for Hazardous Waste Incineration⁵⁷². Waste oil burners are legal in Britain under licence and waste oil burners are advertised for sale in UK trade journals. The report found that the advertising of these burners, which may not include details on the requisite licence requirements, caused confusion and a lack of understanding, in particular for smaller garages, of the Irish legal position regarding waste oil burners.

The “Garage and Vehicle Servicing Sector Report” suggests that a PRI for specific materials may be effective, for example waste oils and spent oil filters. It reports that a similar system has been very successful in Canada and is based on a combined recycling subsidy program: oil sales are subject to a fee that funds collection and recycling programs.

A PRI on waste motor oil could take the form of a fee on the sales of oil products, which would be paid to a PRO to organise or financially support the collection of waste oil at garages. If established, a PRI would likely finance the collection of waste oil which is currently collected and paid for by garages, leading to potentially higher costs to the waste oil producers. In addition, because the estimate of uncollected waste oil only accounts for 5% of the quantities managed, the implementation of a PRI will only result in limited decrease in the quantity. Therefore it is not recommended to proceed with the establishment of a PRI for this waste stream. However, if further information shows that the proportion of uncollected waste oil increase significantly, this recommendation should be reviewed.

Environmental benefits are more likely to be achieved through increased awareness, enforcement and the implementation of an Accredited Inspection Contractor (AIC) to review garages operation and produce a report on the level of compliance. The Accredited

⁵⁷¹ Accessed on 24/08/2012 at

<http://www.epa.ie/downloads/pubs/waste/haz/Garage%20Study%20final%20report.pdf>

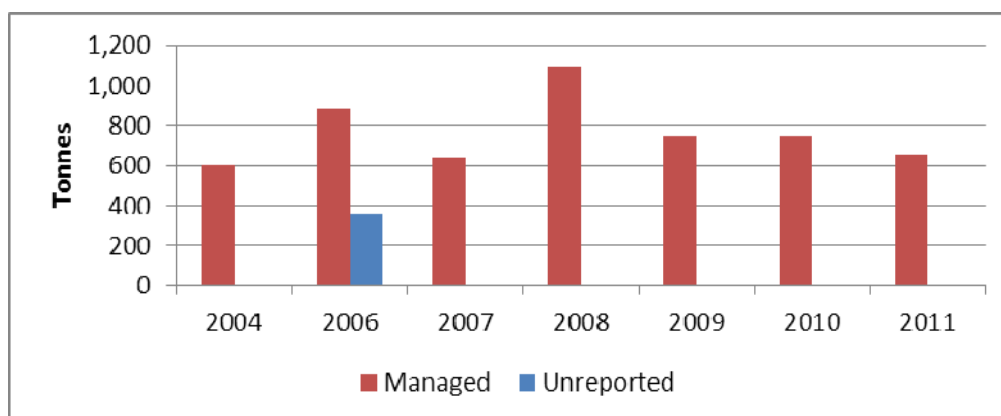
⁵⁷² <http://www.epa.ie/pubs/reports/waste/haz/nhwmp.pdf>

Inspection Contractor could be financed by the vehicle servicing industry and will cover a number of waste streams generated by garages.

A number of awareness raising measures have been carried out in recent years such as the production and dissemination of the EPA *Smart Garage Guide* and advertising in trade journals by the EPA to counter illegal burning of waste oil in burners. The *Garage and Vehicle and Servicing Sector Report* also contains additional measures to potentially mitigate against illegal waste oil burning. The recently published *National Hazardous Waste Management Plan 2014-2020* indicates that illegal burning of waste oil is still an issue, and therefore it is recommended that continued awareness measures are used to improve the management of waste motor oil.

12.8 OIL FILTERS

As with waste motor oils, oil filters are generated in large volumes by the vehicle servicing sector and by the agricultural sector. Figure 12.5 shows that there is a significant quantity of waste oil being managed and that the 2006 estimate of uncollected oil filters account for 55% of the quantities managed.



Source: Managed Data – National Waste Reports 2006-2008 EPA; Unreported Data – National Hazardous Waste Management Plan 2008-2012 EPA, 2008

Figure 12.5: Quantities of Oil Filters Waste Reported by the EPA as Managed and Unreported⁵⁷³

⁵⁷³ There are no estimates of unreported oil filter waste after 2006. This however does not mean that all oil filter waste is managed by the appropriate channels.

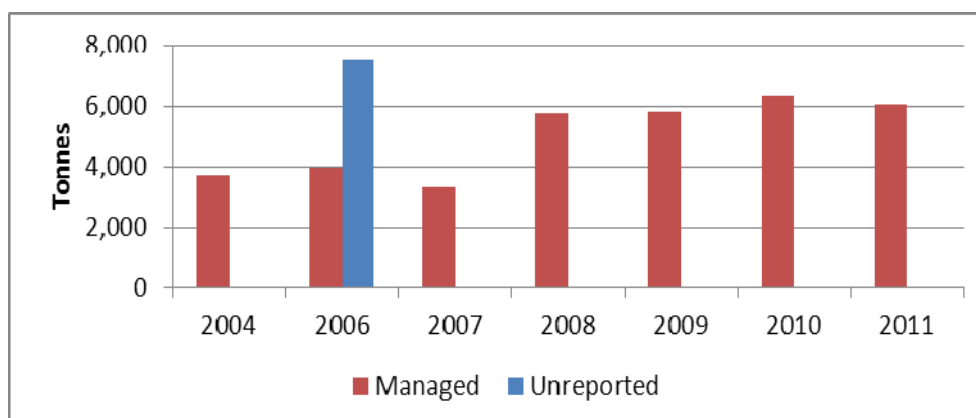
While the unreported quantities of oil filters accounted for 55% of the quantities managed, because of the small scale of the market it is not recommended to proceed with a PRI. An AIC style scheme should be established instead.

12.9 PAINT AND INK WASTE AND ITS PACKAGING

The main source of ink and ink packaging are households, offices and printers. Potential collection routes for the public include civic amenities and reverse logistics within the office, publishing and printing industry supply chain.

As shown in Figure 12.6, the quantity of paint and ink waste and its packaging managed has increased significantly since 2007, with the level of collection rising by 50% over the period 2006 to 2011. A significant amount of this waste stream still not being managed; a poor collection infrastructure for householders and the trade contributes to the problem,

Paints and ink can be a source of volatile organic compounds (VOCs) and heavy metals (EPA, 2012d and Miller, 2008). In order to reduce the risk of VOC exposure to the user and the environment, *Directive 2004/42/EC on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products*, limits the VOC content of these widely used products.



Source: Managed Data – National Waste Reports 2006-2008 EPA; Unreported Data – National Hazardous Waste Management Plan 2008-2012 EPA, 2008

Figure 12.6: Quantities of Paint and Ink Waste and its Packaging Managed and Unreported⁵⁷⁴

While data on paint and ink waste (and its packaging) is not reported separately, there are two separate product chains for paint products and ink products.

There is potential to reduce the quantities of paint and ink waste (and its packaging) which is not managed, however further research is needed to provide data on potential waste arisings and their fate.

Any funding model should incentivise consumers to bring back paint tins and old paint. Paint and paint tins could be returned to retail outlets (perhaps with reuse of paint tins by refilling). A large paint manufacturer operates a can take back scheme in Dublin where paint cans in a suitable condition for reuse are refilled, and unsuitable cans are recycled. It should be noted that paint tins are packaging and in principle should qualify for the Repak subsidy.

The support of a paint reuse scheme should be considered in a paint PRI. There are a number of paint reuse schemes in operation in Ireland. A few recycling centres have a dedicated paint reuse section where members of the public can drop off their unused paint which can be taken by other members of the public for their use. Some recycling centres have more formal arrangements in place where the paint dropped off by the public is collected by a paint reuse partner usually for use within the community. A paint reuse scheme may also be of interest to commercial users of paint.

A “reward-for-refill” scheme may be appropriate for retail or wholesale take back of ink and ink packaging. In Ireland the ink cartridge refill option has grown in popularity due to lower costs paid for refills. Larger commercial users of ink should be encouraged to reuse ink in their processes as it is easier to reuse directly rather than to recycle ink for future use. These measures should be supported through greater awareness and marketing.

A best practice guide is due to be published under a Green Print and Packaging Initiative 2012-2013 funded by the EPA which should be distributed to all relevant stakeholders. The

⁵⁷⁴ There are no estimates of unreported paint and ink waste after 2006. This however does not mean that all paint and ink waste is managed by the appropriate channels.

National Hazardous Waste Management Plan 2014-2020 also recommends that environmental considerations should be included in green public procurement criteria, in particular the specification of inks; and that the sector should be supported in responding to environmental criteria in green public procurement and for training and education of staff in the sector.

12.10 FOOD WASTE

Food waste is produced in large quantities by every household (on average 16.6% of household waste arising) and in quantity by a number of commercial facilities (on average 31.3% of commercial waste arising) (RPS, 2009).

Food waste is a subset of biodegradable waste and there are specific targets for diversion of biodegradable waste from landfill in the Landfill Directive. The EPA (2013) has reported that the Republic of Ireland is achieving its current EU obligations but the achievement of 2013 and 2016 targets remains at risk.

The European Union (Household Food Waste and Bio-Waste) Regulations 2013 (S.I. No. 71 of 2013)⁵⁷⁵ and Waste Management (Food Waste) Regulations 2009 (S.I. No. 508 of 2009)⁵⁷⁶, which place obligations on waste collectors to provide a food waste collection service and obligations on the commercial sector and householders to segregate food waste and make it available for separate collection, will be key to ensuring Ireland meets future Landfill Directive targets. The EPA (2013) indicated the 2009 Waste Management (Food Waste) Regulations which place obligations on the commercial sector to segregate food waste have yet to result in appropriate behavioural change. Table 12.2 shows an estimated 16% of food waste is recovered. There is therefore significant room for progress.

⁵⁷⁵ Accessed on 24/08/2012 at

<http://www.environ.ie/en/Legislation/Environment/Waste/WasteManagement/FileDownload,32686,en.pdf>

⁵⁷⁶ Accessed on 24/08/2012 at

<http://www.environ.ie/en/Legislation/Environment/Waste/WasteManagement/FileDownload,21970,en.pdf>

The implementation of a PRI for food waste, based on the same model as the packaging PRI could lead to an increase in the amount of food waste collected and recovered. Due to the high level of food going to landfill, this could potentially result in significant environmental benefits. This option should be examined further if the enforcement of the food waste regulations does not yield the anticipated results. As no successful PRI is operating anywhere for this waste stream, it is unclear if a full PRI is a viable option. However there may be scope for producers to pay a contribution towards the Environment Fund to enable better enforcement of the Regulations which have significant potential for landfill diversion.

Table 12.2: Food Waste Managed and Recovered in 2011

Waste stream	Total waste managed (Tonnes)	% food waste	Total food waste managed (Tonnes)	Recovered (Tonnes)	% recovery
Source	EPA, 2013	RPS, 2009	Calculated	EPA, 2013 RPS, 2009	Calculated
Household waste	1,406,576	16.60%	233,492	32,786 ⁵⁷⁷	14.04%
Commercial waste	1,114,829	31.30%	348,941	63,000	18.05%
Municipal sweepings & parks waste	25,172	16.60%	4,179	0	0.00%
Total	2,546,577	23.04%	586,612	95,786	16.33%

12.11 MATTRESSES

It is estimated that 800,000 mattresses⁵⁷⁸ are disposed of annually. At an average weight of 37 kg per mattress, this equates to 29,600 tonnes of material. Mattresses are generally collected at civic amenity sites or in skip waste. A small but unknown portion is recycled however mattresses are mostly landfilled with perhaps some incineration. Illegal disposal is a problem and frequently involves dumping in a sensitive remote rural area and/or burning.

⁵⁷⁷ 77,494 tonnes of Kerbside organic and 37,545 tonnes of home composting at 28.5% food waste content.

⁵⁷⁸ Accessed on 24/08/2012 at <http://www.irishpressreleases.ie/2012/02/08/recycling-company-looking-landfill-ban-on-mattresses/>

Mattresses are problematical when it comes to disposal because they are a composite made of textiles, foam, wood and metal and are bulky taking up significant space in landfill. In addition older mattresses may contain POPs in the polyurethane foam, requiring them to be destroyed or irreversibly transformed if the POPs concentration levels exceed specified levels. However, according to an industry websites⁵⁷⁹ ⁵⁸⁰, 100% of the components of mattresses can be recycled if dry and each mattress recycled saves over 23 cubic yards of landfill space.

There are a small number of organisations involved in mattress recycling on the island of Ireland. Mattresses are collected from both commercial and domestic sources. Given the quantity of waste mattresses generated on an annual basis and the current small number of recyclers there is an opportunity for further recycling initiatives to be developed. The mattress recycling process is particularly suited to 3rd sector and not-for-profit organisations activities. The current mixed bulky waste collection system is a cause of contamination, in order to support recycling retailer take-back collection systems and dedicated mattress collection areas at recycling centres should be established to allow clean and dry segregated items for collection.

There may also be mattress reuse/preparing for reuse opportunities. However there are greater obstacles to overcome in terms of perceptions towards mattress reuse; and issues such as hygiene concerns can be a deterrent. Options such as deep steam cleaning and re-covering of mattresses can help to alter the mind-set towards reuse. The collection systems in place for reuse must also allow for segregated clean, dry and non-damaged items. There is currently reuse of mattresses through the prevention website Freetrade Ireland and other online reuse forums.

Due to the existing high level of disposal, the implementation of a PRI or voluntary industry agreement for mattresses leading to increased recycling and reuse/preparing for reuse, decreased disposal to landfill and reduced illegal dumping could yield significant environmental benefits.

⁵⁷⁹ Accessed on 24/08/2012 at <http://envirogreenrecycling.com/>

⁵⁸⁰ <http://ecomattressrecyclingireland.com/about/>

12.12 DISPOSABLE CATERING WARE AND CUTLERY PACKAGING FROM TAKEAWAY

This category includes disposable cups, trays, plates and cutlery. There is a proliferation of these items at food take-aways and deli counters, and in many cases in staff canteens. Furthermore, items can be found for sale in supermarkets and hardware store for home use. After a single use, all these items are obviously discarded.

While there is no dedicated separate collection systems for these items, producers of packaging used in takeaway are obligated under the Packaging Regulations.

There is a lack of published data on the quantities of these materials placed on the market and their fate when they become waste. Because of the presumed limited quantities, their size⁵⁸¹, their dispersion and potential contamination (e.g. contact with food) they offer limited potential for recycling therefore the implementation of a PRI are unlikely to yield significant environmental benefits. However, there may be other environmental impacts such as littering for which other instruments could be used.

12.13 RECOMMENDATIONS

Table 12.3 provides a summary of what other waste streams might be suitable for the development of further PRIs or voluntary agreements. These waste streams are grouped in four categories.

Table 12.3: Suitability of Waste Streams for the Development of Further PRIs

Significant potential benefits of PRI approach	Other approach recommended	Limited benefits or costs of PRI approach	Further data needed
<ul style="list-style-type: none"> • PPP Packaging* • Human Medicines • Food waste • Mattresses 	<ul style="list-style-type: none"> • Waste oil • Oil filters 	<ul style="list-style-type: none"> • Newspapers and magazines • Junk Mail • Disposable cups, trays, plates and 	<ul style="list-style-type: none"> • Animal remedies • Plant protection products • Paint and ink

⁵⁸¹ Some items are too small to be sorted by recycling equipment at Materials Recycling Facilities.

		cutlery	waste and its packaging
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*This comes under the Packaging Regulations which has an existing PRI (Repak) and a collection system has been put in place in recent years by Farm Plastics Recycling.

For the waste streams where the outline assessment in this Section shows that there are potential significant potential benefits of using a PRI approach, should the DECLG wish to proceed with these waste streams, a detailed cost benefits analysis in comparison in conjunction with other policy instruments with PRI should be conducted. This analysis should consider the practical challenges of the PRI implementation (e.g. it may be difficult to identify the producer of a waste stream or to enforce obligations along a complex product supply chain) and consult with the economic operators affected by the PRI.

13 CONCLUSIONS

The objective of the PRI Review has been to address the role of PRIs in developing further measures for the prevention of waste, while securing an efficient and effective collection, sorting and recovery of waste streams such as WEEE, packaging, batteries and so on, so as to improve the competitive position of firms and business that need to pay for such services, while at the same time meeting binding EU environmental targets.

The topics and issues covered by the review are many and complex reflecting the concept of the PRI which is built around shared responsibility and involves many economic operators. In reviewing the Producer Responsibility Model in Ireland, it is important to recognise the context within which the various initiatives for individual waste streams were developed. All parties were faced with the need to accept new responsibilities. A set of desired environmental outcomes were identified by governments; and governments and producers' industry groups negotiated how to share co-responsibility in the area of waste management. In this context, important progress has been made with the establishment of effective, workable and least-cost arrangements for the management of the various PRI waste streams.

The majority of these PRIs have operated very successfully and have enabled Ireland to reach our domestic and EU recycling targets. In 2011 Ireland had the 4th highest recycling rate for packaging in Europe, was among the top tier of European recyclers of agricultural plastic, collected nearly double the target quantity of WEEE and exceeded the collection targets for portable batteries. The recycling of farm plastic has also grown significantly and building on the success of the recycling of non-packaging farm plastic a collection system for "other farm plastics" has also been set up, which contributes to packaging recycling rates. The PRIs have also successfully contributed to Ireland meeting overall national environmental goals and have diverted substantial amounts of waste from landfill.

While it is right to note achievements, it is imperative to address the issues that have been identified in order to meet the new economic and regulatory challenges.

In particular, regarding tyres, our performance is below the EU average and the current system is clearly not functioning as intended. A number of recommendations are therefore made regarding the future producer responsibility initiative for the management of tyres and waste tyres, including, inter alia, the introduction of a full PRI with producers and importers

taking on responsibility for the financing and collection of waste tyres from tyre suppliers. It is also recommended that the current self-compliance option be ended.

Another area of concern is the performance of the Irish ELV system which is not performing well. The system needs structural changes regarding the allocation of responsibilities, which should be given solely to the producers, with minimum recycling and recovery standards set for all waste operators in the ELV system. The establishment of a producer compliance scheme will have beneficial effects by providing improved coordination in the ELV system, reducing administrative burden to the state and businesses, and improving ELV recycling and recovery rates.

The PRI review has also identified other waste streams that may be suitable for the development of further producer responsibility initiatives (PRIs) or agreements with industry to govern the handling of end of life waste. The effectiveness of the PRI system (ability to meet the desired environmental outcomes) depends on a number of factors such as monitoring of Producer Responsibility Organisations (PROs), interrelationships between PROs, the effectiveness of the self-complier system, information and awareness activities, enforcement, prevention and reuse and development of indigenous reprocessing capacity.

The efficiency of the PRI system is based on the amount of inputs required by the various parties participating in the shared responsibility model (e.g. producers, public authorities etc.) to achieve the desired environmental outcomes. The review focused on three topics relating to efficiency: the role of competition, the role of contingency reserve and how to reduce administrative burden on producers and government.

In PRIs which have operated effectively all parties are clear about their roles and responsibilities and more importantly work collectively to achieve the objectives of the PRI. Stakeholder monitoring groups, established as an integral part of Irish PRIs such as for packaging⁵⁸², WEEE and batteries, have been instrumental in providing a mechanism for stakeholder engagement and discussion on any issues arising. With the degree of changes proposed for the waste tyres PRI, it is recommended that a similar group be set-up to facilitate the implementation of the PRI.

⁵⁸² The packaging stakeholder monitoring group is no longer in existence.

The findings and recommendations in the PRI review were reached only after a careful examination of the issues and engagement with the economic operators.

Implementation of the Review recommendations will not happen automatically or without all relevant parties taking the necessary active measures. New financial and personnel resources need to be put in place to ensure that recommendations in the Review are implemented. The principal implementation measures and monitoring bodies are as follows:

- The DECLG should adopt a policy leadership and sponsoring role for the implementation of the PRI Review's recommendation by:
 - Making resources available for its role in the PRI Review recommendation implementation
 - Fulfil specific implementation role as identified in the PRI Review
 - Make new regulations where necessary and appropriate
 - Ensure that other Government Departments and public bodies fulfil their roles and responsibilities as identified in the Review
- There are a number of recommendations which will require further involvement from the EPA in the PRIs. The implementation of these recommendations will require resources to be allocated.
- The self-compliers and PROs in the provision of service for their members should reflect Irish policy and implement recommendations relating to:
 - Waste Prevention and Reuse
 - Waste collection and treatment
 - Information and awareness
 - Corporate Governance
 - Collaboration
 - Funding
- Retailers will in the future play an increased role in the collection of WEEE and other PRI waste.

- The recommendations relating to enforcement should be examined further as part of the review of the respective waste regulation and enforcement roles of the EPA (Office of Environmental Enforcement) and local authorities in 2013.