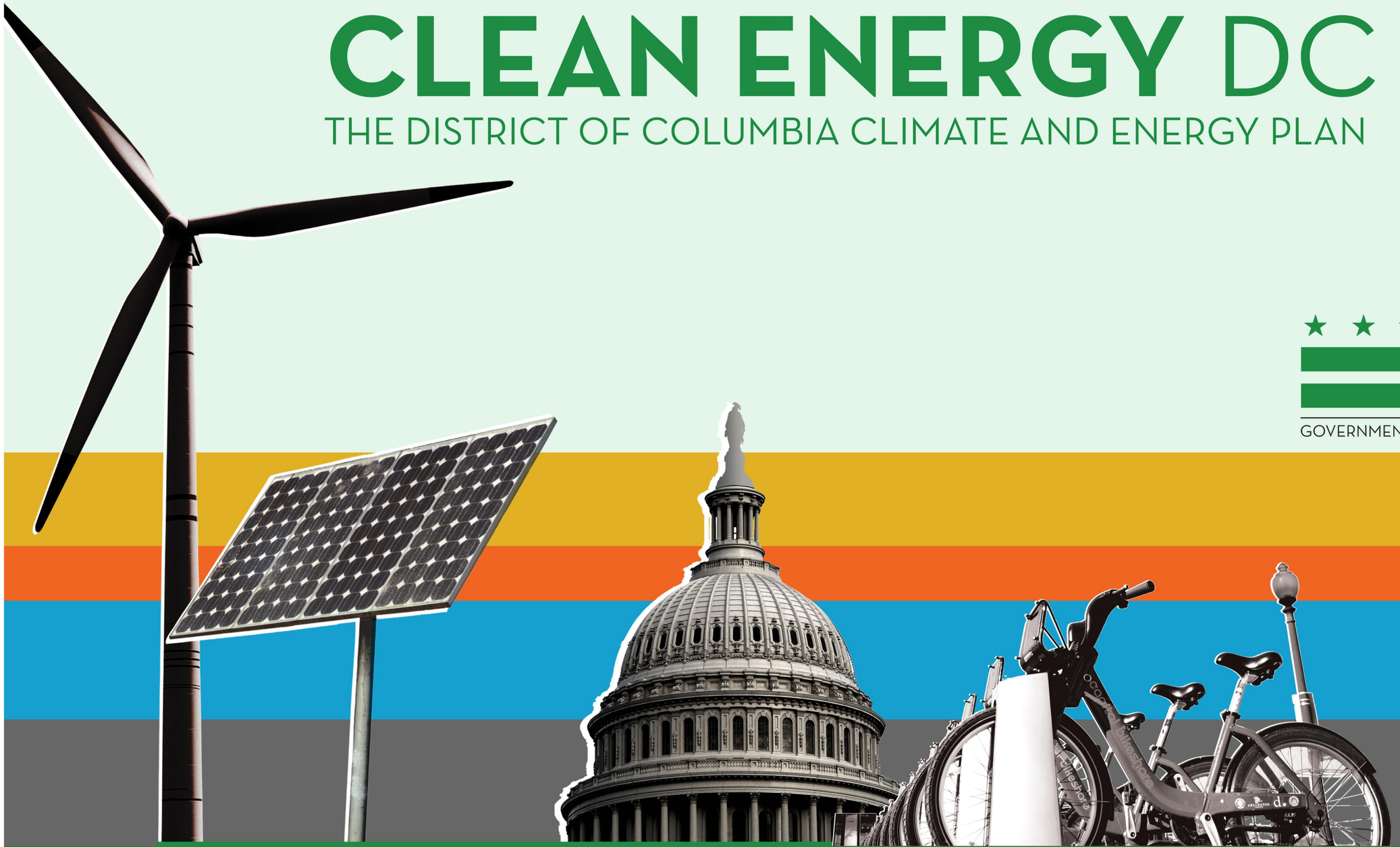
CLEAN ENERGY DC

THE DISTRICT OF COLUMBIA CLIMATE AND ENERGY PLAN



DEPARTMENT OF ENERGY & ENVIRONMENT

GOVERNMENT OF THE DISTRICT OF COLUMBIA

WHAT IS CLEAN ENERGY DC?

WHAT IT IS

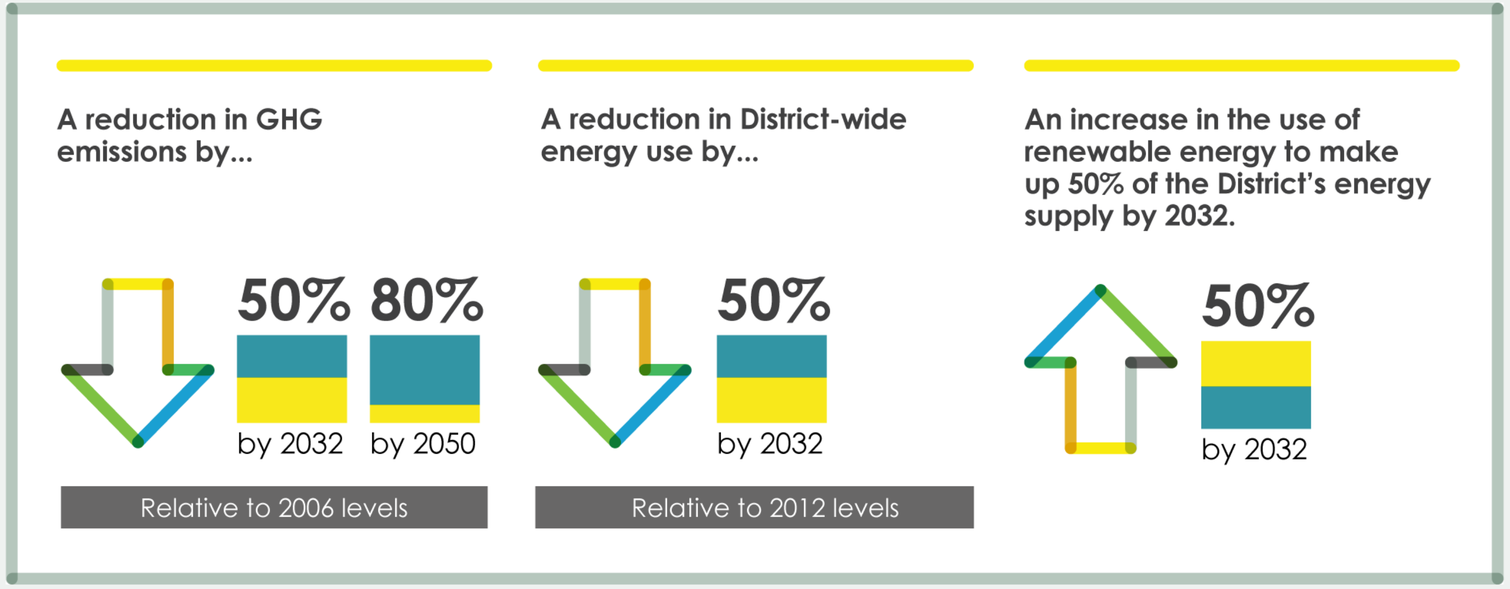
- The District's new climate and energy plan
- Roadmap for achieving the **Sustainable DC** 2032 climate & energy targets
- Companion to **Climate Ready DC**
- Both a visionary and action-oriented plan
- Beginning of a conversation

WHAT IT IS NOT

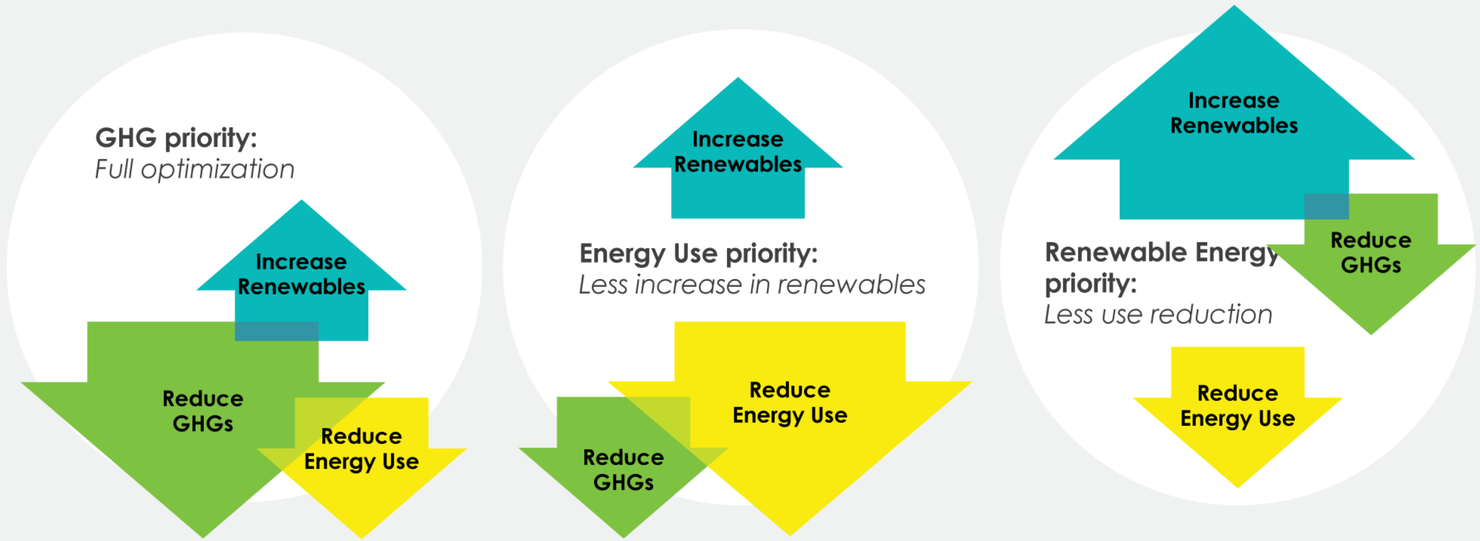
- Not a detailed business or economic plan
- Not a collection of bylaws
- Not a measure-driven engineering plan
- Not "shovel-ready"

DC CLIMATE AND ENERGY GOALS

Clean Energy DC is the District's first quantified roadmap to meet the Sustainable DC climate and energy goals.

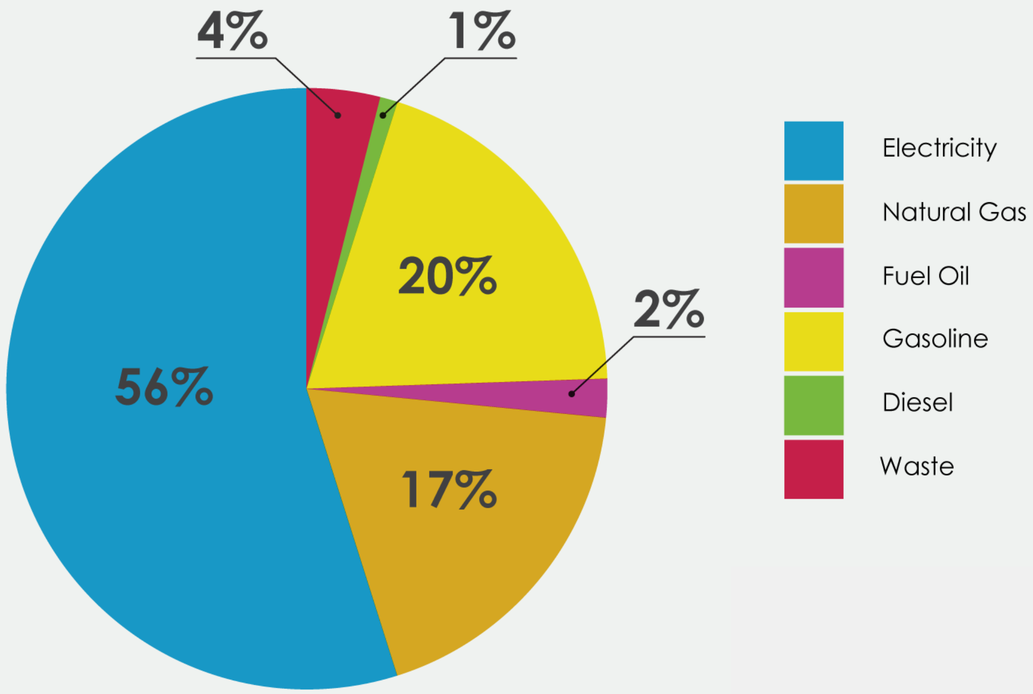


The greenhouse gas goal was prioritized.

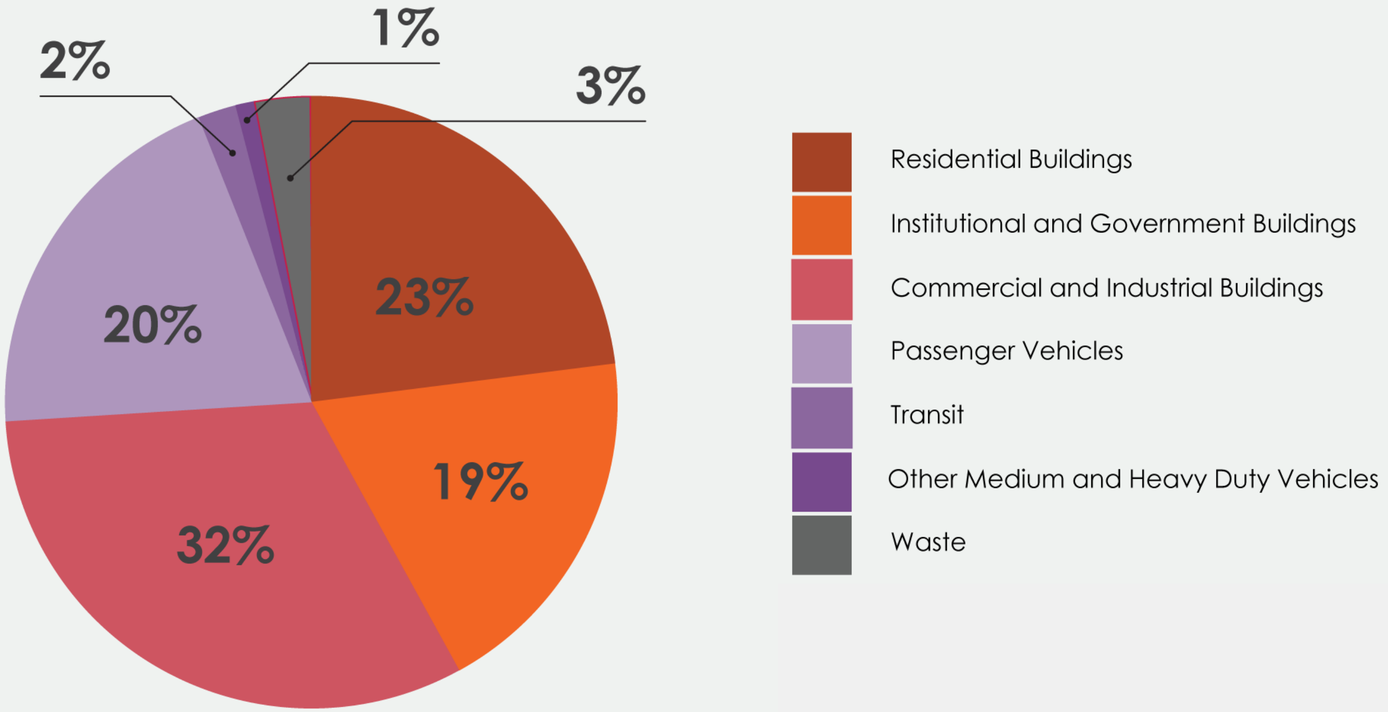


ENERGY USE AND EMISSIONS IN DC

PROPORTION OF GHG EMISSIONS BY SOURCE

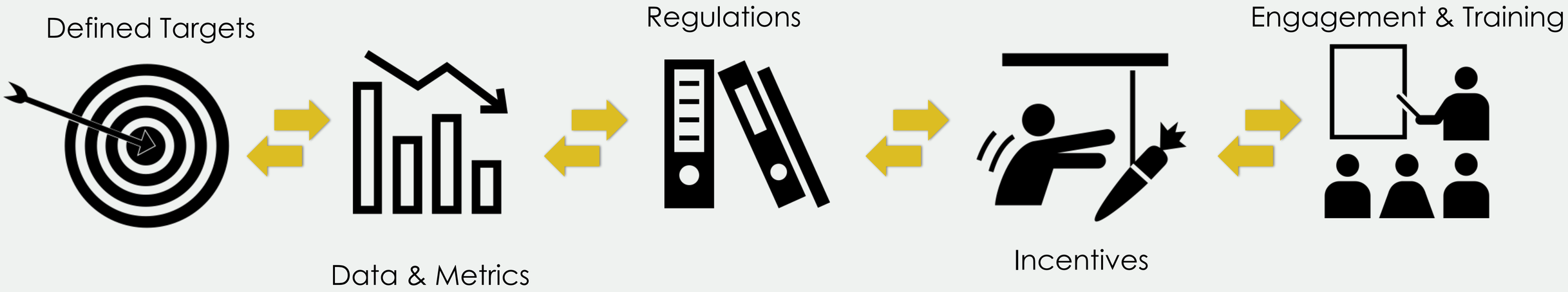


MODELED PROPORTION OF GHG EMISSIONS BY SECTOR



HOW TO TRANSFORM AN ENERGY SYSTEM

Achieving the District's 2032 goals requires a comprehensive market transformation.



PLAN DEVELOPMENT PROCESS SO FAR

Visioning Workshops

Interviews

Global Best Practices

Grantee and DOEE's own ideas

90+ Actions

Community Energy Modeling

Interactive Workshops

Interviews

Analysis

Iterative Modeling

Peer Review Draft

Peer Review

Revision

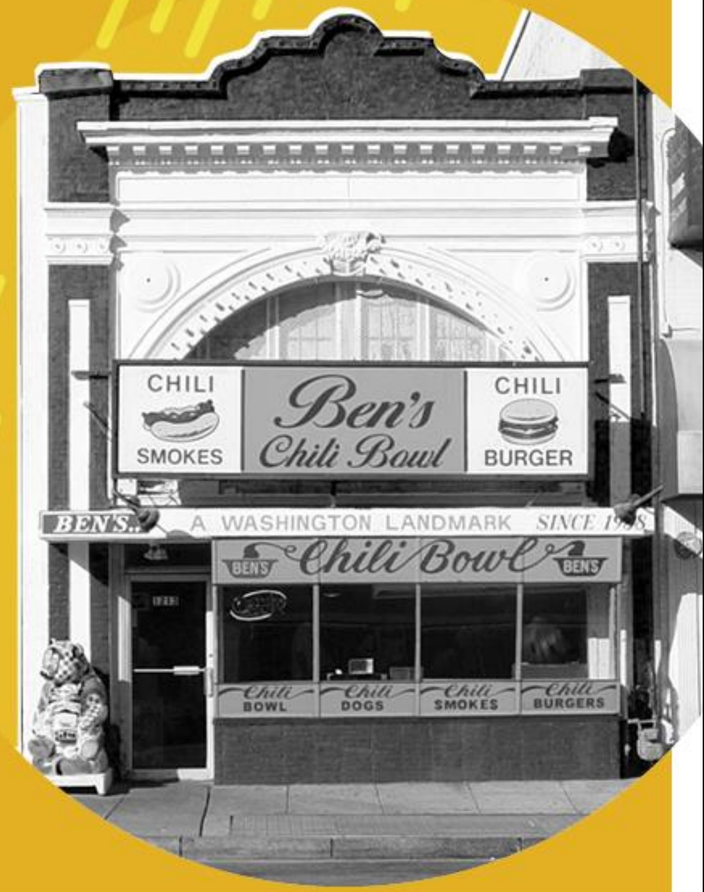
Published Draft Plan with 55 Actions and Summary Report

CLEAN ENERGY DC OUTLINE

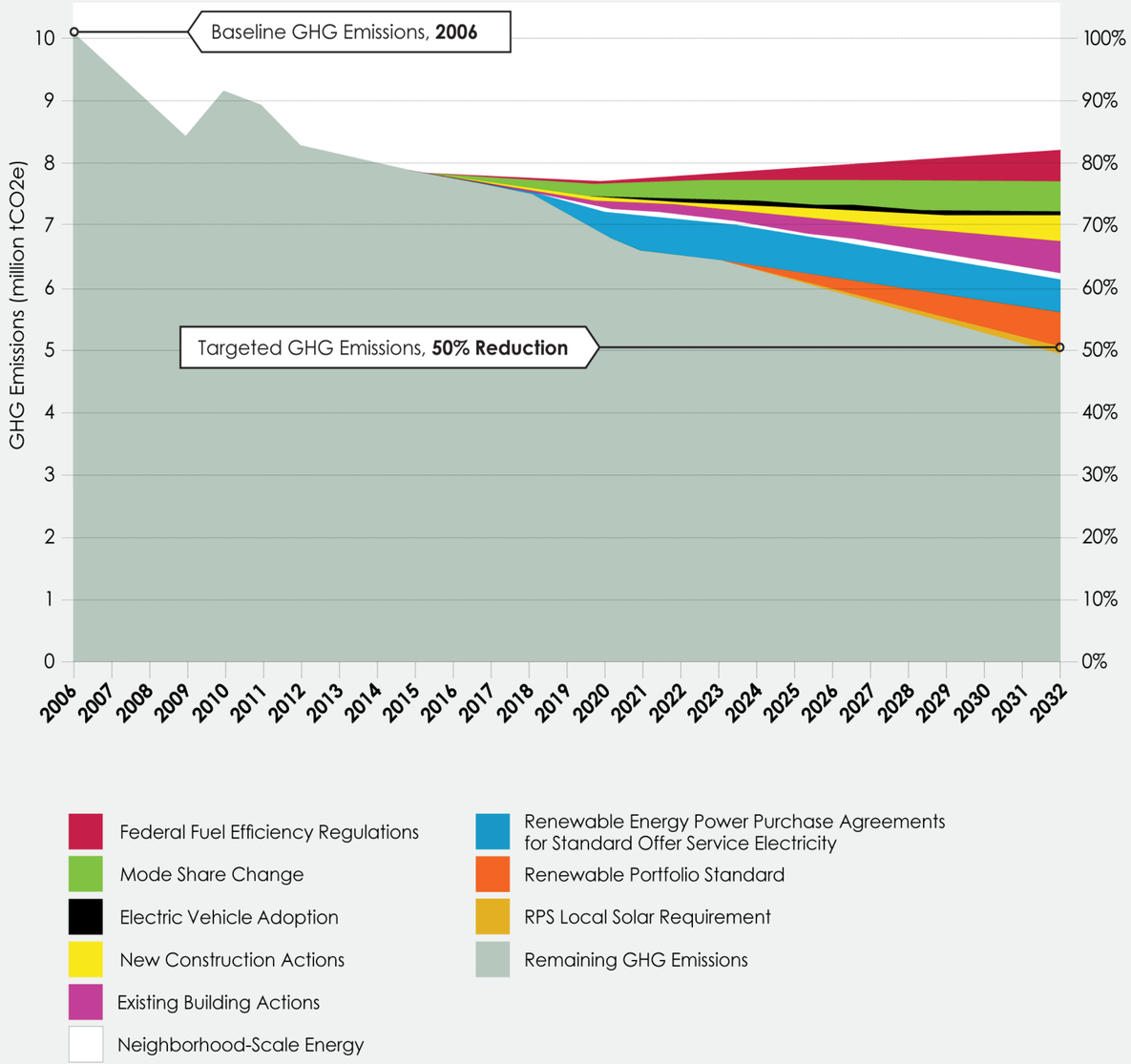
BUILDINGS
- New construction
- Existing buildings
- Cross-cutting building actions

ENERGY SUPPLY SYSTEM
- Clean and renewable energy supply
- Electricity system modernization

TRANSPORTATION
- Electric vehicle readiness and adoption



ESTIMATED GHG SAVINGS



GHG Reduction Wedge	GHGs Reduced from 2032 BAU (tCO_2e)	Percent GHGs Reduced from Total 2032 BAU
Federal Fuel Efficiency Regulations - Corporate Average Fuel Economy (CAFE) Standard	473,000	5.8%
Walking, Cycling and Public Transit (mode share change)	528,000	6.4%
Electric Vehicle Adoption	34,000	0.4%
Getting to "Net-Zero" in New Construction (New Construction Actions)	430,000	5.2%
Energy Efficiency in Existing Buildings (Existing Buildings Actions)	544,000	6.6%
Neighborhood-Scale Energy Systems	44,000	0.5%
Prioritizing low carbon energy in electrical Standard Offer Service (Power Purchase Agreements for Standard Offer Service)	543,000	6.6%
Mandating electricity suppliers to Procure Renewable Energy (Renewable Portfolio Standard)	581,000**	7.1%
Renewable Portfolio Standard's Local Solar Requirement	87,000**	1.2%
Total GHGs Avoided vs. 2032 BAU	3,277,000	39.8%
Total GHGs Reduced vs. 2006 Baseline	5,664,000	51%

NEW CONSTRUCTION

1. Establish pathway to Net-Zero Energy building codes between 2020 and 2026

2. Provide Net-Zero Energy incentive package

3. Issue Net-Zero Energy innovation challenge to the federal government

EXISTING BUILDINGS

- **ENERGY EFFICIENCY INCENTIVES AND MANAGEMENT**
  1. Increase access to building energy performance data
  2. Increase DCSEU flexibility
  3. Coordinate district-wide energy retrofit program
  4. Coordinate efficiency and finance programs
- **POLICY AND PROGRAM RECOMMENDATIONS**
  5. Lead by example
  6. Implement Building Energy Performance Standard
  7. Drive efficiency at tenant build-out
  8. Encourage Green Leases
  9. Develop virtual energy audit program

CROSS CUTTING BUILDING ACTIONS

18 SUPPORTING ACTIONS IN FOUR AREAS:

- Increasing and improving access to funding
- Policy and program recommendations
- Education and training
- Leadership and catalyzing change

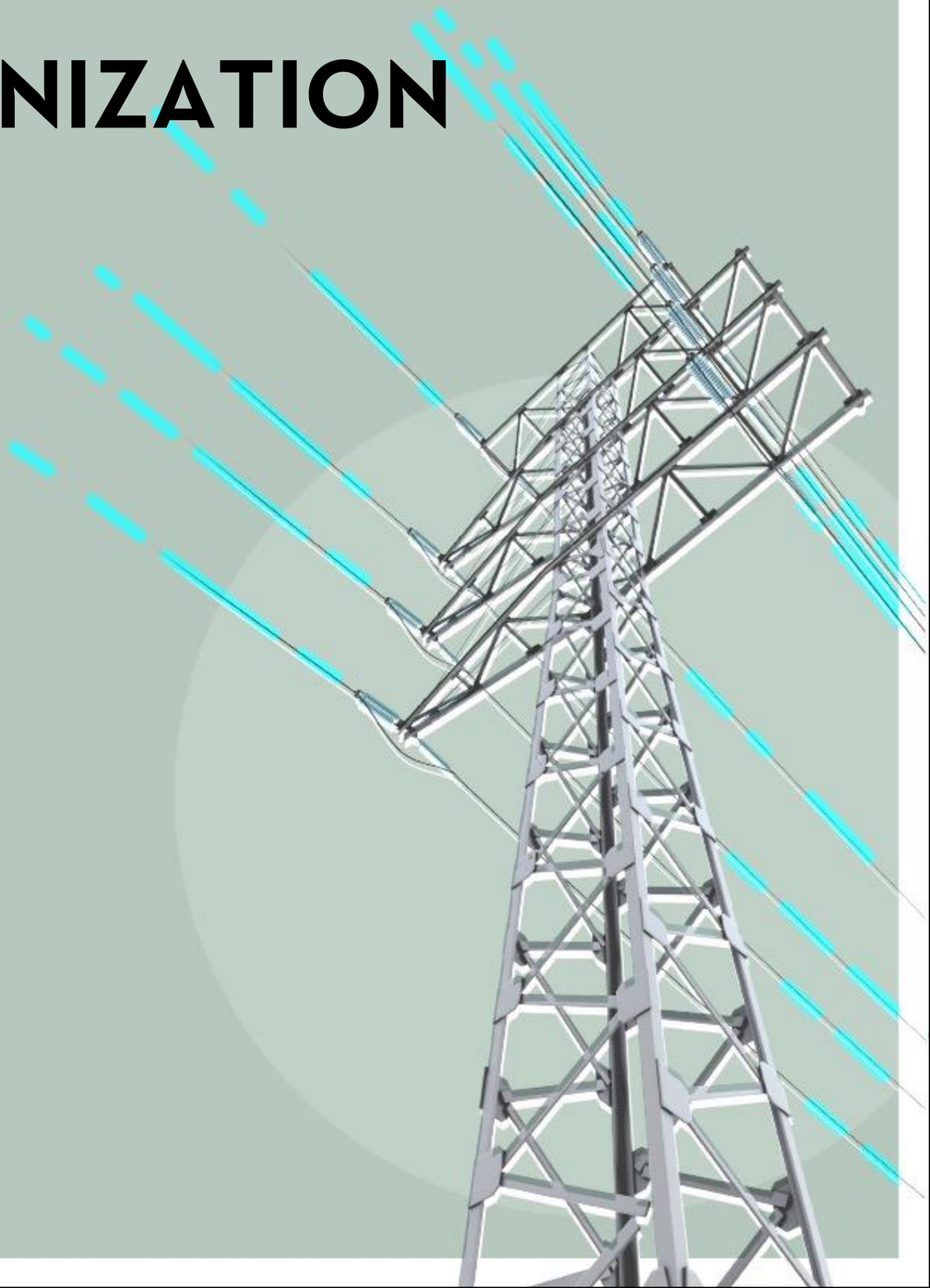
CLEAN & RENEWABLE ENERGY SUPPLY

- **RENEWABLE ENERGY OUTSIDE DC**
  1. Set 100% RPS target for 2050
  2. Provide default Standard Offer Service through a long-term Power Purchase Agreement
  3. Set GHG targets for electricity supply
- **RENEWABLE ENERGY WITHIN DC**
  4. Develop centralized solar platform
  5. Implement solar proliferation strategy
  6. Adopt solar-ready building code requirements
- **THERMAL ENERGY & MICROGRIDS**
  7. Undertake thermal decarbonization study
  8. Develop neighborhood-scale energy strategy

ELECTRICITY SYSTEM MODERNIZATION

11 SUPPORTING ACTIONS IN FOUR AREAS:

- Planning and coordination
- Analysis of the electricity system needs and capabilities
- Immediate no regrets actions
- Proof of concept projects



TRANSPORTATION

- **TRANSPORTATION DEMAND MANAGEMENT AND MODE-SHIFTING ACTIONS FROM MOVE DC**
- **ELECTRIC VEHICLE READINESS**
  1. EV-ready building code
  2. EV-ready parking lot requirement
- **ELECTRIC VEHICLE ADOPTION**
  3. Implement an EV bulk buy program
  4. EV showcase and purchase center
  5. Provide EV purchase incentives
  6. Pursue an EV-only car share fleet

NEXT STEPS

- Public engagement will continue throughout September 2017
- Final draft to be published in early 2018
- Intended to serve as living document
- Will be closely coordinated with Climate Ready DC and other plans
- Download the Clean Energy DC plan at: **www.cleanenergydc.org**

THANK YOU

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doee.dc.gov

Clean Energy DC Produced for:

DEPARTMENT OF ENERGY & ENVIRONMENT
GOVERNMENT OF THE DISTRICT OF COLUMBIA

Clean Energy DC Produced by:

INTEGRAL GROUP

IMT
INSTITUTE FOR MARKET TRANSFORMATION

INTERNATIONAL LIVING FUTURE INSTITUTE

EXTRA SLIDES

CROSS CUTTING BUILDING ACTIONS (1/2)

- **INCREASING AND IMPROVING ACCESS TO FUNDING**
  1. Establish a Green Bank and increase EE funding
  2. Enhance DC PACE Commercial & add PACE Residential
- **POLICY AND PROGRAM RECOMMENDATIONS**
  3. Increase energy code compliance
  4. Incentivize and require submetering
  5. Develop centralized platform for residential EE
- **EDUCATION AND TRAINING**
  6. Deep energy efficiency education series
  7. Host energy efficiency and renewable energy tours
  8. Training/certification of building contractors/managers
  9. Expand existing energy conferences to focus on NZE
  10. Integrate home energy performance information

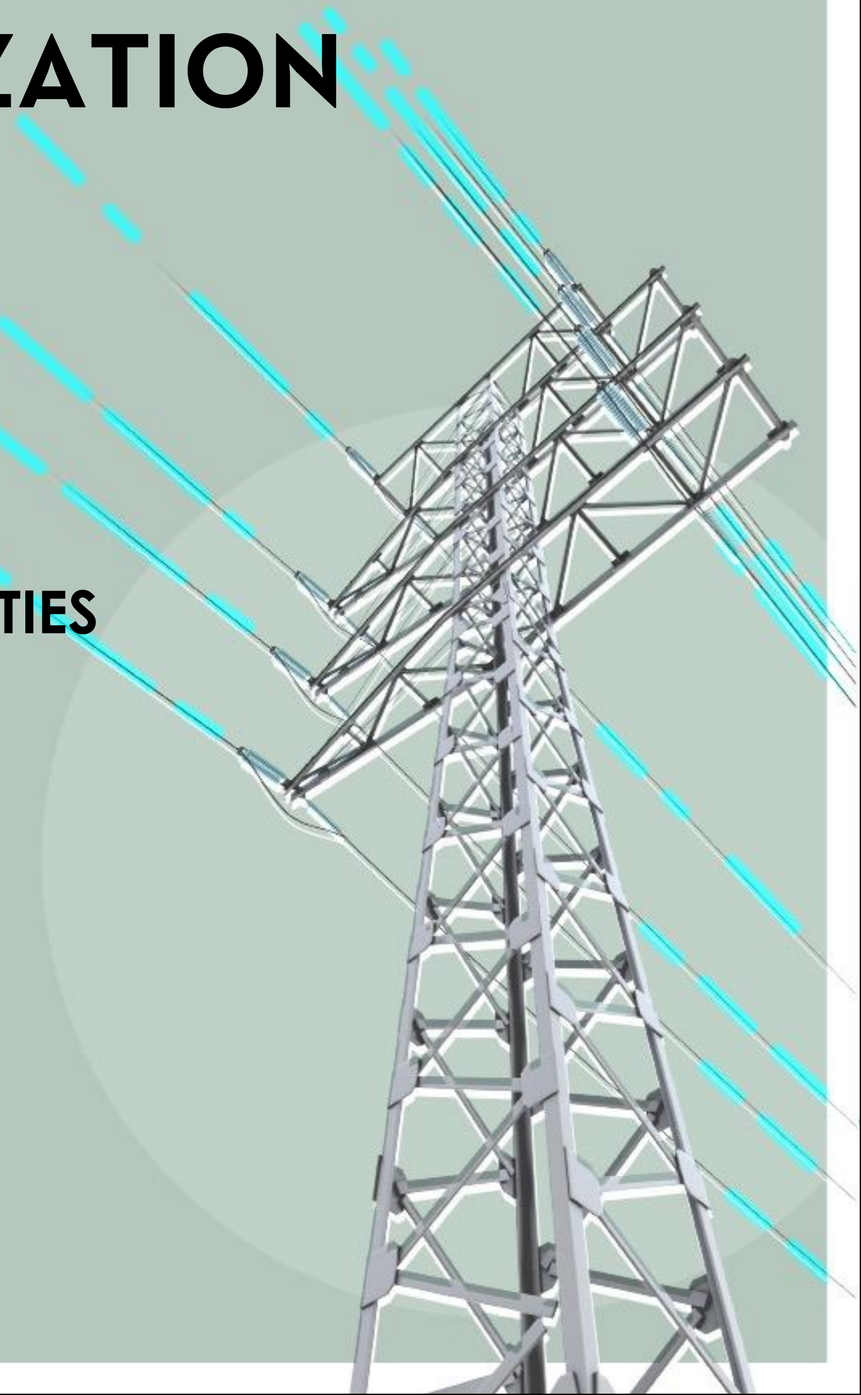
CROSS CUTTING BUILDING ACTIONS (2/2)

- **LEADERSHIP AND CATALYZING CHANGE**

11. Mid-Atlantic Government Leadership Groups
12. Build examples of breakthrough design
13. Create catalog of best-in-class performers
14. Create home and business of the future tours
15. Deep energy efficiency communications strategy
16. Sustainability award for climate solutions
17. Net-Zero Energy leadership cohorts
18. Green jobs and & workforce development platform

ELECTRICITY SYSTEM MODERNIZATION

- **PLANNING AND COORDINATION**
  1. Define vision of future grid
  2. Adopt framework for valuing distributed energy
  3. Support integrated distribution planning
  4. Intervene in PSC grid modernization cases
- **ANALYSIS OF ELECTRICITY SYSTEM NEEDS AND CAPABILITIES**
  5. Outline bath to overcome barriers
  6. Conduct hosting capacity study
  7. Develop location-based profile of energy use
- **IMMEDIATE NO REGRETS ACTIONS**
  8. Prioritize list of actions that can be taken now
  9. Leverage existing smart meter data
  10. Identify near-term projects
- **PROOF OF CONCEPT PROJECTS**
  11. Pursue pilot projects



EXISTING DC ENERGY LAWS

- Green Building Act (2006)
- Energy Benchmarking & Transparency (2008)
- DC Sustainable Energy Utility (2008)
- DC PACE (2010)
- Community Renewables Act (2013)
- Green Area Ratio (2013)
- Energy & Green Construction Code (2014/2017)
- Incentives for Net Zero & LBC Projects (2015)
- Renewable Portfolio Standard Amendment (2016)
- Green Bank Legislation Introduced (2017)
- Net Zero Energy Code (Pending)