FACT SHEET

Overview of Allowances and Exchange Values

What is the AIM Act and the HFC Phasedown?

The American Innovation and Manufacturing (AIM) Act was enacted by Congress on December 27, 2020. The AIM Act provides new authority for the U.S. Environmental Protection Agency (EPA) to address hydrofluorocarbons (HFCs). Specifically, the AIM Act directs EPA to phase down production and consumption[1] of HFCs to 15% of their baseline levels in a stepwise manner by 2036 through an allowance allocation and trading program.

How do Allowances Work?

An allowance represents the privilege granted to a company to produce or import regulated substances in a given year. Producing HFCs requires expending both "production allowances" and "consumption allowances." Importing bulk HFCs requires expending only consumption allowances. EPA intends to issue allowances by October 1 for use in the following year. Allowances are valid between January 1 and December 31 of a given year and thus they are also known as a "calendar-year allowances." Allowances may not be banked or carried over to another year.

A third category of allowances called "application-specific allowances" may be used to either produce or import HFCs for use in the six applications listed in the AIM Act. Application-specific allowances may be conferred as needed to effectuate the production or import of the HFC. More detail is provided in a separate fact sheet on application-specific allowances.

Purchasing or otherwise receiving bulk HFCs from a domestic chemical producer or an importer does not require an allowance.

How do Allowance Transfers Work?

Allowance holders may transfer their allowances to other entities. Transfers of production and consumption allowances are subject to a 5% offset. For example, if a company receives 100 allowances through a transfer, EPA will deduct 105 allowances from the balance of the company transferring the allowances. EPA must approve the transfer before it becomes effective to ensure that the transferor has sufficient allowances and that the offset is correctly calculated.

Different rules apply to the transfer of application-specific allowances, which require a 1% offset. Allowances provided through the set-aside to new market entrants cannot be transferred. More information on application-specific allowances and the set-aside is provided in other fact sheets.

What is an Exchange Value and Exchange Value Equivalent?

Allowances are allocated on an exchange value (EV)-weighted basis. The AIM Act assigns each regulated HFC with an exchange value. EPA has codified the exchange values of each regulated substance in Appendix A to Part 84 and they are reproduced in Table 1 below. The exchange values are the same as the 100-year Global Warming Potentials (GWPs) listed in the 2007 Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report.

[1] Consumption is the amount of HFCs newly added to the U.S. market through production and import, minus exports and destruction.

Exchange value equivalent (EVe) is used as a common unit of measure between HFCs. EVe is determined by multiplying the mass of a regulated HFC by the exchange value of that HFC. For example, 50 kilograms of HFC-134a would be 71,500 kgEVe (50 x 1,430), or 71.5 metric tons exchange value equivalent (MTEVe). Thus, an importer would need to expend 71.5 allowances to import 50 kg of HFC-134a. EPA issues allowances in units of 0.1 MTEVe. Given the variation in exchange values, one would need to expend between 5.3 allowances to produce 100 kg of HFC-152 and 1,480 allowances to produce 100 kg of HFC-23. HFCs with higher GWPs therefore require more allowances to produce or import. To calculate the number of allowances needed, see the exchange value calculator on EPA's website: https://www.epa.gov/system/files/documents/2021-10/hfc-allowance-calculator.xlsx

How do Exchange Values Work for Blends?

To import a blend containing one or more regulated HFCs, the importer will need to calculate an EV for the blend to determine the quantity of allowances needed. Only the components of the blend that are regulated HFCs under the AIM Act will be calculated into the EV for the blend. Any components that are not regulated HFCs (e.g., hydrofluoroolefins (HFOs)) do not factor into the EV of the blend.

Table 1: Exchange Values of Regulated HFCs and Common Blends

Substance Name	Exchange Value
Regulated HFCs	
HFC-134	1,100
HFC-134a	1,430
HFC-143	353
HFC-245fa	1,030
HFC-365mfc	794
HFC-227ea	3,220
HFC-236cb	1,340
HFC-236ea	1,370
HFC-236fa	9,810
HFC-245ca	693
HFC-43–10mee	1,640
HFC-32	675
HFC-125	3,500
HFC-143a	4,470
HFC-41	92
HFC-152	53
HFC-152a	124
HFC-23	14,800

Substance Name	Exchange Value
Common Blends	
R-401A	16
R-404A	3,922
R-407C	1,774
R-410A	2,088
R-448A	1,386
R-449A	1,396
R-449B	1,411
R-507A	3,985

HFC PHASEDOWN
American Innovation & Manufacturing (AIM) Act
A U.S. Environmental Protection Agency Program

Additional Resources

HFC Allowance Calculator: https://www.epa.gov/system/files/documents/2021-10/hfc-allowance-calculator.xlsx

Final Rule - Phasedown of Hydrofluorocarbons: Establishing the Allowance Allocation and Trading Program under the AIM Act: https://www.epa.gov/climate-hfcs-reduction/final-rule-phasedown-hydrofluorocarbons-establishing-allowance-allocation

Protecting Our Climate by Reducing Use of HFCs: https://www.epa.gov/climate-hfcs-reduction

Contact EPA: spdcomment@epa.gov