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Factsheet: US EPA AIM Act Regulations Phasedown of HFCs

TL;DR

- A new set of rules from the EPA aligns the US to the global phase down of HFCs (potent GHGs) under the Montreal Protocol
- HFCs are factory-made chemicals that are primarily used in air conditioning, refrigeration & heat pumps
- Complying with the new rules alone still leaves a business open to high risk of not achieving a Net Zero target



What are Refrigerants/HFCs?

- Refrigerants are heat transfer mediums used in refrigeration, air conditioning and heat pumps
- The most common refrigerants are Hydrofluorocarbons (HFCs) and their use has been rapidly increasing worldwide
- HFCs are human-made fluorinated chemicals, and extremely potent greenhouse gasses, with global warming potentials (GWPs) that can be hundreds to thousands of times more potent than carbon dioxide (CO₂) in contributing to global warming



Why do HFCs/Refrigerants matter?

- Refrigerants offer the single biggest solution to reverse global warming according to Project Drawdown
- F-Gases are already the fastest growing Greenhouse Gas, globally. This is set to accelerate as more cooling is needed in a warming world, and as heat pumps are adopted at scale in the race to decarbonize heat
- Refrigerant emissions (aka. Scope-1 Fugitive Emissions) are often overlooked as a significant GHG reduction pathway and climate change lever



U.S.EPA AIM Act Regulations: Overview



Production & Consumption Phasedown



- Cuts supply of bulk refrigerants, weighted by GWP
- Highest GWP refrigerants to be affected first
- 2024 will be the next big step-down (40% reduction compared to baseline)

Reduces HFC Supply

Technology Transitions Subsection (i)



- EPA has set GWP limits for new equipment of various types
- Regulation finalized October 2023
- Restrictions begin Jan-1 2025

Reduces HFC Demand

Refrigerant Management Subsection (h)



- The goal is to minimize leaks and maximize reclamation
- Regulation finalized October 2024
- Requirements take effect Jan-1 2026

Reduces HFC Demand

U.S.EPA AIM Act Regulations: Summary



US EPA AIM Act Regulations	Full Rule Name	Rule Status	Publication Date	Effective Date	Key Details	What is it?	What will it do?	Why does it matter?	Who does it impact?
1. Production & Consumption Phasedown	Phasedown of Hydrofluorocarbons: Allowance Allocation Methodology for 2024 and Later Years	Final Rule	Jul-20 2023	Sep-18 2023	Authorizes EPA to phase down production and consumption of HFCs in the US by 85 percent by 2036. This phasedown is consistent with the Kigali Amendment to the Montreal Protocol, a global agreement to phasedown HFCs. To accomplish this, EPA has established a methodology for allocating HFC production and consumption allowances.	The HFC Allowance Allocation Program , allocates allowances for six specific applications listed in the AIM Act. EPA is phasing down regulated HFCs to 15% of their historic baseline levels in a stepwise manner by 2036	Reduces HFC Supply. Phases down the production and consumption of HFCs below historic levels starting 2024 until 2028 by 40%. Establishes a baseline and methodology for allocating and trading HFC allowances, and creates a robust, agile, and innovative compliance and enforcement system.	Due to restrictions on the supply of HFCs , reduced availability of HFCs and higher prices of HFCs are a significant risk, particularly between 2024-2027	Primary: Refrigerant manufacturers Secondary: Supply Chain using refrigerants, anyone procuring equipment containing refrigerants.
2. Technology Transitions Subsection (i)	Phasedown of Hydrofluorocarbons: Restrictions on the Use of Certain Hydrofluorocarbons under Subsection (i) of the American Innovation and Manufacturing Act of 2020	Final Rule	Oct-23 2023	Restrictions begin Jan-1 2025	EPA's Technology Transitions Program sets limits on the use of climate-damaging hydrofluorocarbons (HFCs) in specific technology sectors and subsectors, including refrigeration, air conditioning, and heat pumps. Facilitating the transition to next-generation technologies through sector-based restrictions on HFCs is one way that EPA and stakeholders are working together to meet ambitious climate protection goals.	The Technology Transitions Program restricts the use of HFCs in various sectors and subsectors, by setting GWP limits on new equipment, where lower-GWP technologies are available, or will be available in the near term.	Reduces HFC Demand. Driver for innovation facilitating the transition to climate friendly alternatives. Beginning January 1, 2025, manufacturers and importers of certain products and equipment that use HFCs must comply with restrictions on the use of certain HFCs or blends containing HFCs.	A transition to next-generation technologies for new equipment . Real world requirements will include step-changes in equipment product lines, equipment specifications and additional workforce training requirements.	Primary: Equipment manufacturers, importers, exporters & distributors Secondary: Owner/operators, designers, installers and service providers
3. Refrigerant Management Subsection (h)	Phasedown of Hydrofluorocarbons: Management of Certain Hydrofluorocarbons and Substitutes under Subsection (h) of the American Innovation and Manufacturing Act of 2020	Final Rule	Oct-19 2024	Jan-1 2026	Authorizes EPA to promulgate rules for the purposes of maximizing reclamation and minimizing releases of hydrofluorocarbons (HFCs) and their substitutes from equipment. Managing HFCs includes activities related to servicing, repair, installation, and disposal of equipment containing HFCs and their substitutes.	The Emissions Reduction & Reclamation Program establishes implementing refrigerant management regulations to control practices, processes, or activities regarding the servicing, repair, disposal, or installation of equipment containing HFCs and their substitutes. It applies to both new and existing equipment in certain sectors and subsectors.	Reduces HFC Demand. Directly affects end-users managing the use and reuse of HFCs and substitutes. The regulations are intended to maximize reclaiming and minimize the release of regulated substances from equipment.	The first federal rule under the AIM Act that directly affects existing equipment using HFCs. Mandates maximizing reclaiming and minimizing releases of HFCs to further cut demand and thus emissions of the super-polluting GHGs that are used as refrigerants today.	Primary: End users, owner/operators & service providers. Secondary: Companies that recycle, dispose, or install equipment containing HFCs or their substitutes, as well as those that recover, recycle, or reclaim HFCs or their substitutes

Key Takeaways



Risks

1. Expect volatility in availability and prices of high-GWP refrigerants
2. New federal rules for refrigerant retrofits and refrigerant management for end-users are likely
3. Progressive tightening / lowering of GWP limits for new equipment is possible
4. States are taking the PFAS issue seriously and evaluating policy measures to support environmentally benign refrigerant alternatives; federal action not imminent but not impossible either
5. AIM Act compliance is very likely not sufficient to achieve Net Zero goals

Recommendations

1. A robust refrigerant inventory and good data management is vital
2. Develop and maintain a “gas bank”
3. Adopt refrigerant management best practices (periodic leak inspections etc.) to minimize regulatory and financial risks
4. Develop and implement a refrigerant roadmap that helps plan the transition to lower-GWP alternatives
5. Follow the signs – Use natural refrigerants for new equipment.

Please get in touch to learn more

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