



Proposed Emissions Reduction and Reclamation Rule under the American Innovation and Manufacturing (AIM) Act

November 13, 2023

Call-in Details 1-978-806-0340 ID: 139 051 981#

Note: EPA will not accept public testimony on the proposed rule during this webinar
Submit comments through [regulations.gov](https://www.regulations.gov), Docket: EPA-HQ-OAR-2022-0606

Today's Host



Annie Kee

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Annie is an Environmental Protection Specialist in SPD within EPA's Office of Atmospheric Protection, where she works on rulemakings under the AIM Act and partnership programs. Prior to SPD, she also worked on EPA's SmartWay program, which helps companies advance supply chain sustainability by improving freight transportation efficiency.

Questions

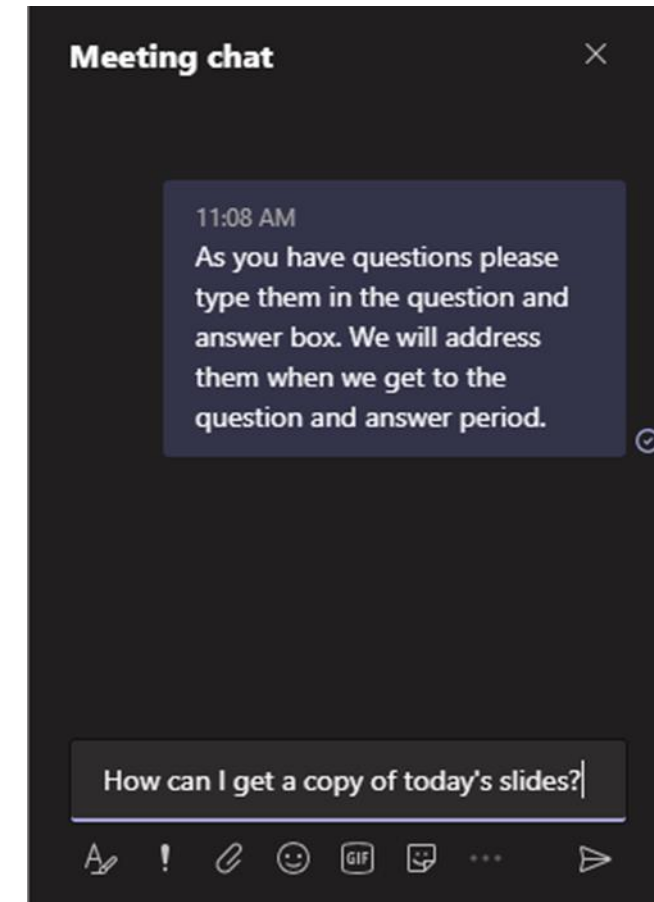


Question and Answer (Q&A) Session

- Participants are muted
- Questions will be moderated at the end
- To ask a question, enter your comment into the chat box

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Written comments may be submitted through
December 18, 2023

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Docket: EPA-HQ-OAR-2022-0606



Webinar Feedback and Materials



Feedback Form

- We value your input!
- The link to a feedback form will appear in the chat window

Recording and Slides

- Webinar is being recorded
- Materials will be posted on the GreenChill website under Events and Webinars: www.epa.gov/greenchill
- To receive notification when materials are posted email: EPA-GreenChill@abtassoc.com

Program Overview



www.epa.gov/greenchill

GreenChill is a voluntary partnership program that works collaboratively with the food retail industry to reduce refrigerant emissions and decrease stores' impact on the ozone layer and climate system

GreenChill works to help food retailers:

- Lower refrigerant charge sizes and eliminate leaks
- Transition to environmentally friendlier refrigerants
- Adopt green refrigeration technologies and best environmental practices

Become a GreenChill Partner!



**Join your
Industry Peers!**

*GreenChill is
actively recruiting
new Food Retail
Partners*



Request a
partnership packet



Sign the partnership
agreement



Meet eligibility
requirements



Become a GreenChill
partner!

The GreenChill Partnership Process

epa.gov/greenchill/about-greenchill-corporate-emissions-reduction-program

Upcoming GreenChill Webinars

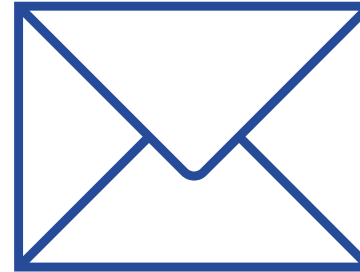


- **November 17**, 1 pm Eastern: Final Technology Transitions Rule under the AIM Act
- **December 13**, 3 pm Eastern: Leak Detection with presenters from Matelex
- **January 17**, 1 pm Eastern: Refrigerant Management Systems with presenters from DC Engineering

We are planning GreenChill's 2024 webinar series. Have ideas for a webinar or would you like to present? Email GreenChill@epa.gov

To join our webinar invitation list, email EPA-GreenChill@abtassoc.com

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Today's Speakers...

Christian Wisniewski



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Christian is an Environmental Protection Specialist in SPD within EPA's Office of Atmospheric Protection, where he works on rulemakings under the AIM Act. Prior to EPA, Christian worked in the State of Delaware's Department of Natural Resources and Environmental Control, where he worked on the state's greenhouse gas inventory and Climate Action Plan and helped to establish the state's hydrofluorocarbon (HFC) regulation.



PROPOSED EMISSIONS REDUCTION AND RECLAMATION RULE

Emissions Reduction Branch, Stratospheric Protection Division
U.S. Environmental Protection Agency

GreenChill Program Webinar
November 13, 2023

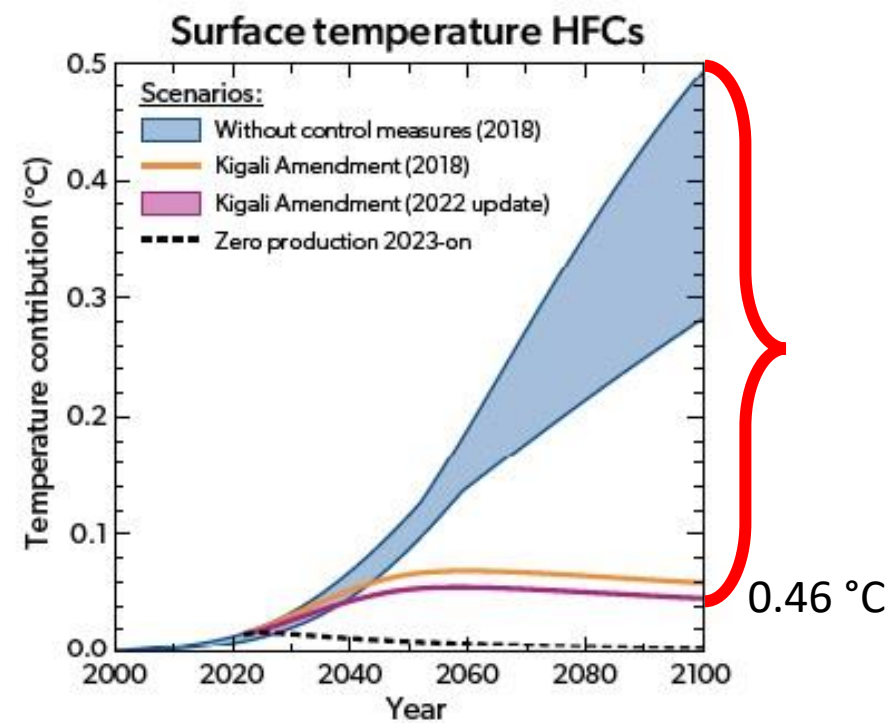
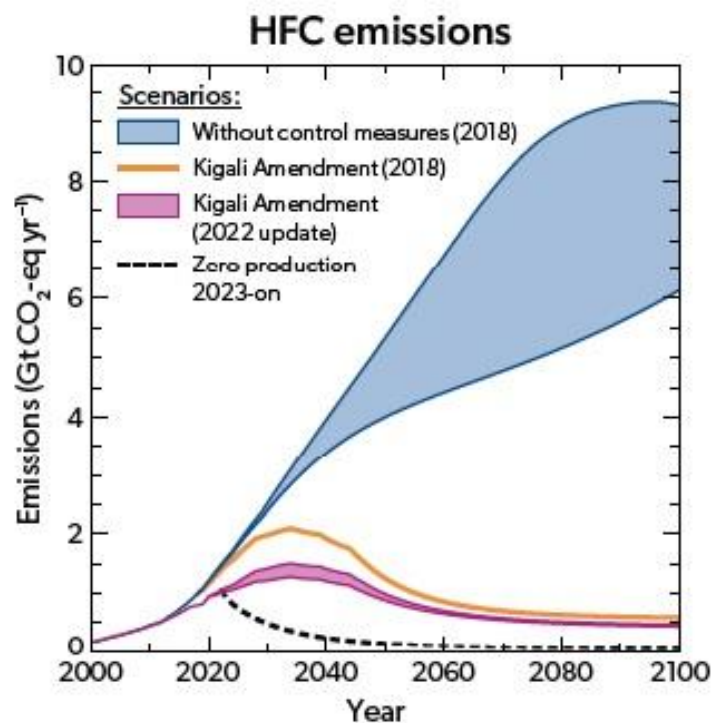
Outline

- Background
- AIM Act Overview
- Proposed Emissions Reduction and Reclamation Rule
- Next Steps
- Questions



A global HFC phasedown is expected to avoid up to 0.5 °C of global warming by 2100

- Hydrofluorocarbons (HFCs) are used as replacements for ozone-depleting substances (ODS) in refrigeration, air conditioning, foam blowing, aerosols, and fire suppression
- HFCs are climate-damaging greenhouse gases with global warming potentials (GWPs) hundreds to thousands of times higher than carbon dioxide (CO₂)
- Absent effective regulations, HFC use and emissions are expected to continue increasing rapidly worldwide



WMO Scientific Assessment of Ozone Depletion: 2022, GAW Report No. 278, Figure ES-4

American Innovation and Manufacturing (AIM) Act

Enacted on December 27, 2020, the AIM Act lists 18 HFCs as regulated substances, and authorizes EPA to address HFCs in three main ways:

1. Phase down HFC production and consumption, including import, through an allowance allocation and trading program
2. Facilitate sector-based transitions to next-generation technologies through restrictions on HFCs
3. **Promulgate certain regulations for maximizing reclamation and minimizing releases of HFCs and their substitutes**

Schedule and Dates for U.S. Production and Consumption HFC Limits*	
Date	Percent of Baselines Allowed
2022–2023	90%
2024–2028	60%
2029–2033	30%
2034–2035	20%
2036 & after	15%

*The Kigali Amendment to the Montreal Protocol (ratified by the U.S. on October 31, 2022) has an identical schedule for non-A5 parties.




Consumption Baseline = 302.5 MMTEVe = 302.5 MMTCO₂e
 Production Baseline = 382.5 MMTEVe = 382.5 MMTCO₂e



MMTCO₂e: Million metric tons CO₂ equivalent

MMTEVe: Million metric tons of exchange value equivalent

Overview of Regulatory Actions to Date

Program	 HFC Allocation Program		 Technology Transitions Program		 Emissions Reduction and Reclamation Program	
AIM Act Section	Subsection (e) – Phasedown of Production and Consumption of HFCs		Subsection (i) – Technology Transitions		Subsection (h) – Management of Regulated Substances	
Regulatory Actions	“HFC Allocation Framework Rule”	Published 10/5/2021 (86 FR 55116)	“Technology Transitions Rule”	Published 10/24/2023 (88 FR 73098)	Notice of Data Availability	Published 10/17/2022 (87 FR 62843)
	“Allocation Rule for 2024 and Later Years”	Published 7/20/2023 (88 FR 46836)			“Emissions Reduction and Reclamation Proposed Rule”	Proposal published 10/19/2023 (88 FR 72216)

Overview of AIM Act Subsection (h), “Management of HFCs and Substitutes”

General

- Subsection (h) directs EPA to establish regulations to control, where appropriate, practices, processes, or activities regarding the servicing, repair, disposal, or installation of equipment for purposes of:
 - Maximizing the reclamation and minimizing the release of certain HFCs from equipment
 - Ensuring the safety of technicians and consumers

Reclaiming

- Provides for the Agency to consider using authority to increase opportunities for the reclaiming of regulated substances used as refrigerants
- Requires that recovered refrigerant must be reclaimed before ownership changes, with a few exceptions

Coordination

- EPA may coordinate with any other similar EPA regulations (e.g., CAA 608 and 609 regulations)

Inapplicability

- Regulations under subsection (h) shall not apply to HFCs or their substitutes contained in foams

Proposed Rule – Emissions Reduction and Reclamation

- Published in Federal Register on October 19, 2023 ([88 FR 72216](#))
- Would establish an Emissions Reduction and Reclamation program for the management of HFCs and certain substitutes
- Certain provisions would apply to both new and existing equipment
- As proposed, the rule is estimated to prevent at least 142 MMTCO₂e in HFC emissions
 - Avoided emissions beyond the expected benefits from the HFC Phasedown Program
- Net incremental benefits from 2025-2050 are estimated to be at least \$6.1 billion

Overview of Proposed Rule

EPA is proposing:

- Leak repair provisions for certain appliances
- Use of automatic leak detection (ALD) systems for certain new and existing equipment
- A reclamation standard
- Requirements for use of reclaimed HFCs for certain types of equipment in certain refrigeration, air conditioning, and heat pump (RACHP) subsectors and for use of recycled HFCs in fire suppression equipment
- Certain requirements for the fire suppression sector, including technician training

Overview of Proposed Rule, cont.

EPA is proposing (cont.):

- Recovery of HFCs from disposable cylinders prior to disposal
- Container tracking for HFCs that could be used in the servicing, repair, and/or installation of refrigerant-containing equipment or fire suppression equipment
- Recordkeeping, reporting, and labeling
- Modifications to certain regulations under the Resource Conservation and Recovery Act (RCRA) to exclude certain HFCs and substitutes as hazardous waste if they are sent to an EPA-certified reclaimer

Proposed Rule – Leak Repair and ALD

- Leak repair requirements for appliances that contain at least 15 pounds of a refrigerant that contains an HFC (neat or blends) or substitute for an HFC with a GWP greater than 53
 - Proposed applicable leak rate for commercial refrigeration: 20%
- Appliances that would be required to have an ALD system
 - New and existing commercial refrigeration and industrial process refrigeration (IPR) appliances with 1,500 or more pounds of a refrigerant that contains an HFC or substitute for an HFC with a GWP greater than 53



Proposed Rule – Reclamation

- Reclaimed refrigerants that contain HFCs (neat or blends) may contain no more than 15 percent, by weight, of virgin HFCs
 - In an HFC/non-HFC [e.g., hydrofluoroolefin (HFO), hydrocarbon] blend, only the HFC portion would need to meet this requirement
- Labeling requirements for containers of reclaimed HFCs

Proposed Rule – Reclamation (cont.)

- Beginning January 1, 2028, equipment in certain RACHP subsectors would be required to use reclaimed HFC refrigerants
 - **Initial charge:** residential and light commercial air conditioners and heat pumps, cold storage warehouses, IPR, **stand-alone retail food refrigeration, supermarket systems, refrigerated transport, automatic commercial ice makers**
 - **Servicing/repair:** **stand-alone retail food refrigeration, supermarket systems, refrigerated transport, automatic commercial ice makers**



Proposed Rule – Fire Suppressant Recycling

- Beginning January 1, 2025, recycled HFCs would be required to be used in the initial charge and servicing and/or repair of fire suppression equipment
 - Would apply to total flooding systems and streaming applications
 - Would not apply to mission-critical military end-uses and systems used in deployable and expeditionary situations and space vehicles (as defined in 40 CFR 84.3)
 - Would not apply to other on-board aerospace fire suppression applications so long as they qualify for application-specific allowances under 40 CFR 84.13
- One-time required training for fire suppression technicians
- EPA is also proposing certain reporting and recordkeeping requirements for HFCs used as fire suppressants

Proposed Rule – Disposable Cylinders

- Beginning January 1, 2025, disposable cylinders of HFCs that have been used must be sent to an EPA-certified reclaimer or fire suppressant recycler for the remaining heel of HFCs to be removed prior to disposing the cylinder
- Reclaimers or fire suppressant recyclers who receive these cylinders and remove the heel must reclaim or recycle the HFC

Proposed Rule – Container Tracking

- EPA is proposing requirements to track the movement of HFCs in containers that would be used in the servicing, repair, and/or installation of refrigerant-containing equipment or fire suppression equipment through the use of machine-readable tracking identifiers
- Phased in schedule for who is required to affix tracking identifiers to containers
 - January 1, 2025: Producers and importers
 - January 1, 2026: Repackagers, including reclaimers, fire suppressant recyclers, and other fillers
 - January 1, 2027: Everyone
- EPA is proposing to require tracking of used cylinders of HFCs as they are sent to reclaimers and/or fire suppressant recyclers to remove and reclaim/recycle the remaining HFC heels

Proposed Rule – RCRA

- Under RCRA authority, EPA is proposing certain regulatory amendments
- Would modify reclamation exclusion under RCRA to exclude certain HFCs and substitutes as hazardous waste if they are sent to an EPA-certified reclaimer under CAA section 608
 - Applies to substances that are ASHRAE 34-2022 class 1, 2L, or 2 (i.e., no flame propagation to low flammability)
 - Seeks comment on ASHRAE 34-2022 class 3 substances

Schedule and Next Steps

- October 5, 2023: Proposed Emissions Reduction and Reclamation rule was signed
- October 19, 2023: Published in the Federal Register ([88 FR 72216](#))
- November 2, 2023: EPA held a virtual public hearing
- December 18, 2023: 60-day public comment period ends
 - Comments may be submitted through [regulations.gov](#) by searching Docket ID number: EPA-HQ-OAR-2022-0606
- Summer 2024: EPA intends to complete the rulemaking process

Additional Information

Reminder:

- Upcoming GreenChill Webinar on the final Technology Transition rule on November 17 at 1 pm
- Please register via our website at: www.epa.gov/greenchill/events-and-webinars



www.epa.gov/climate-hfcs-reduction



www.epa.gov/ozone-layer-protection

Thank you!

Stratospheric Protection Division
Office of Atmospheric Protection, Office of Air and Radiation
U.S. Environmental Protection Agency

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Reminders

EPA will not take testimony today. Written comments may be submitted through December 18, 2023

Submit comments through [regulations.gov](https://www.regulations.gov),
Docket: EPA-HQ-OAR-2022-0606

www.epa.gov/climate-hfcs-reduction/managing-use-and-reuse-hfcs-and-substitutes

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