



REEF

REFRIGERANT EMISSIONS ELIMINATION FORUM

Refrigerant Reality Check: AIM Act, Codes, and Standards

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Executive Director
REEF





Refrigerant gasses are powerful and overlooked drivers of climate change. They are EVERYWHERE. Collectively, refrigerants are also the world's fastest growing category of greenhouse gases.



Agenda

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- 1. Welcome + Reality Check (10 min)**
- 2. AIM Act Overview + What Changed in the TT Program (15 min)**
- 3. NRDC Case Against EPA (10 min)**
- 4. State & Local Policy Update + OO Action Plan (15 min)**
- 5. Audience Q&A (10 min)**

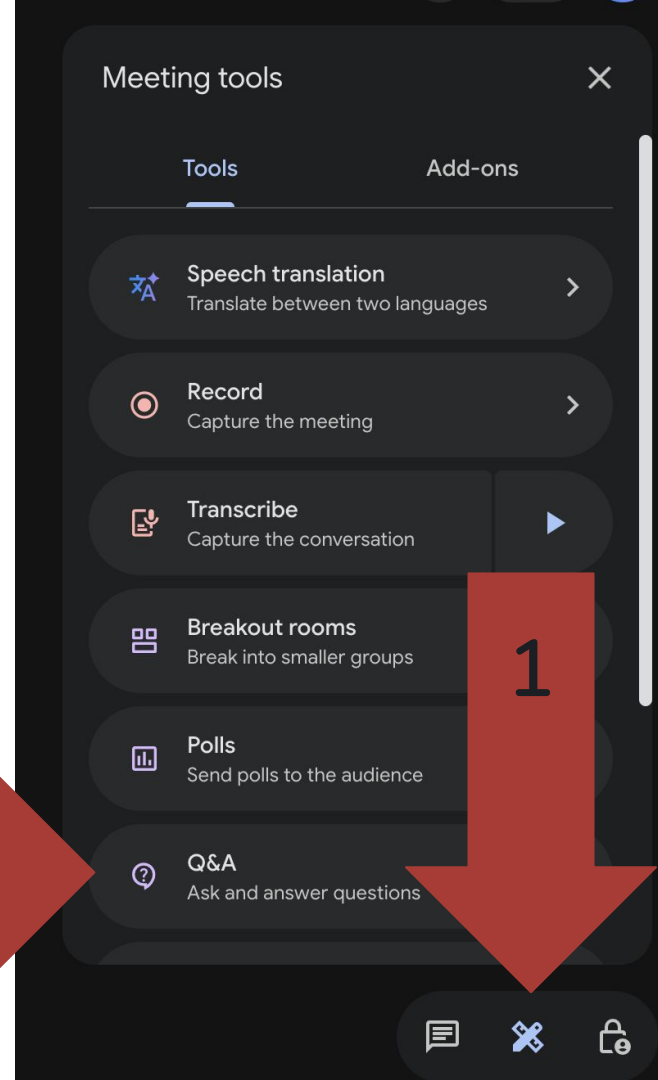


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How to Submit Questions for Speakers

Feel free to “upvote” questions for faster responses





- **Product Safety Standard**
 - UL 60335-2-40 – AC
 - UL 60335-2-89 - Ref



- **Application Standard**
 - ASHRAE 15



- **Building Codes**
 - State / local level adoption
 - Typically rely on model codes

U.S. Regulations

Refrigerants & technologies are changing



Reality Check: More than Headlines

Despite some recent misleading headlines, the refrigerant transition is still happening! This session separates fact from fiction and explains what recent federal and state policy developments mean for most owners and operators.

FEDERAL

The AIM Act

The AIM Act remains federal law, driving the structured phasedown of HFCs. Despite shifting timelines, the core statutory mandates and reduction targets survive, anchoring the national transition strategy.

STATE

Local Action

Individual states continue advancing independent refrigerant policies and building codes. Dynamic state-level regulations mean compliance remains localized, requiring close tracking of regional targets.

STRATEGY

Resilience

Owners and operators must move beyond short-term reactions and focus on building long-term business resilience. Strategic equipment lifecycle choices and early adaptation mitigate policy volatility risks.

Julius Banks

Senior Technical Lead
Environmental Investigation Agency
(EIA)



THREE DECADES OF CLIMATE INVESTIGATIONS

SUPERMARKET SCORECARD

Leaking Havoc

Exposing Your Supermarket's Invisible Climate Pollution



HOW DOES YOUR SUPERMARKET STACK UP?



presents

On Thin Ice

How the NHL is Cheating the Climate

Meeting the Moment

Securing the Montreal Protocol's
Legacy in this Decisive Decade for
Climate Action

October 2023



The American Innovation and Manufacturing (AIM) Act

- Signed into law under Trump Administration on December 27, 2020
- Bipartisan bill authorizing EPA to address emissions of HFCs
 - 85% HFC reduction by 2036 based on historical production and consumption (P+I-E);
 - manage HFCs during maintenance, service, and disposal of refrigeration and air conditioning (RAC) equipment; and
 - facilitate the transition to next-generation technologies through sector-based restrictions (i.e., EPA's TT Rulemaking).



Common HFC refrigerants and their Global Warming Potentials

GWP is the measure of the climate impact based on heat trapping properties of a GHG compared to CO₂.

GWPs normally measured in 100 year to normalize atmospheric lifetimes of chemical compounds

HFC refrigerants are synthetics developed as alternatives to ozone-depleting substances

HFC blends (e.g., R-410A)

HFOs (e.g., R-1234yf)

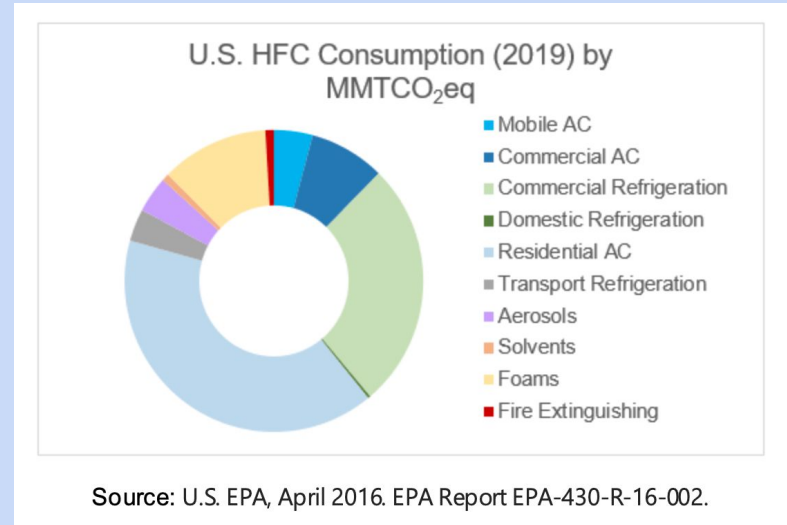
HFO/HFC blends (e.g., R-454B)



Substance Name	100-Year GWP	Reference
HFC-134a	1,430	IPCC 2007
HFC-32	675	IPCC 2007
HFO-1234yf	1	WMO 2022
HFO-1234ze(E)	1	WMO 2022
R-404A (HFC blend 143a/125/134a)	3,922	Calculated
R-407C (HFC blend 32/125/134a)	1,774	Calculated
R-410A (HFC blend 32/125)	2,088	Calculated
R-454B (blend HFC-32/HFO-1234yf)	465	Calculated
R-448A (blend HFC/HFO)	1,386	Calculate
R-290 (propane)	3.3	IPCC 2007
R-600a (isobutane)	1	WMO 2022
R-744 (carbon dioxide)	1	IPCC 2007

AIM Act - Technology and Transfer Regulation

- Oct 2023 - EPA finalized [a rule](#) restricting the use of higher-GWP HFCs in refrigeration and air conditioning equipment (based on GWP/equipment manufacture date).
 - Stationary air conditioning and heat pumps - 700 GWP by 2025
 - Household refrigerators and freezers - 150 GWP by 2025
 - Supermarket racks (>200lb charge) 150 GWP by 2027
 - Cold storage warehouses GWP 100 or 300 depending on charge size (200lbs) by 2026
 - MVAC & retail reach in- 150 GWP by 2027
 - Reefers (road systems)- HFC blend ban by 2025
 - Reefers/Intermodal containers with exiting fluid temperature -58 °F - GWP 700 by 2025



Recent Rule Reconsideration of 2026

- May 1, 2026, EPA finalized a rule reconsidering provisions of the TT rulemaking
 - The rule extends compliance deadlines
 - Changes transition GWP and timeframes for residential and light commercial air conditioning and heat pump systems, supermarket systems, remote condensing units, cold storage warehouses, semiconductor manufacturing, residential, some reefer systems



Recent Rule Reconsideration of 2026 (cont'd)

2026 Tech Transitions Rule [Reconsideration](#) extends compliance dates and GWP limits for certain refrigeration sectors

Retail food - supermarkets	Changes GWP limit from 150 - 300 to 1,400 starting Jan 1, 2027 until Jan 1, 3032 and then 150 - 300 thereafter Allows supermarket systems to increase cooling capacity up to 15% without being considered new installation
Reefers (intermodal containers)	Changes the lower bound temperature exclusion threshold from -50°C to -35°C
Cold storage warehouses	Changes GWP limit from 150 -300 to 700 until Jan 1, 2032 and then 150 - 300 thereafter
Stationary air conditioning and heat pumps	Removes the January 1, 2026, installation compliance date for equipment using refrigerants above the 700 limit that were domestically manufactured or imported into the United States before January 1, 2025 • Allows pre-2025 inventory of air conditioning systems to be installed until supply runs out



Recent Rule Reconsideration of 2026 (cont'd)

The reconsideration is facing multiple legal challenges from industry trade groups, State Attorney Generals, and Environmental NGOs.

Legal challenges based on arguments that the TT reconsideration violates the AIM Act and undermines the 85% reduction in HFC production and consumption by 2036.

What the Reconsideration **DOESN'T MEAN**

U.S. has rescinded the AIM Act...didn't Congress repeal it?	FALSE , The AIM Act is law and remains in place. The AIM Act is a statute — not a regulation — meaning it cannot be repealed by Executive Order or Agency rulemaking. Congressional action would be required to modify its core requirements. NO , Cong. Review Act window closed.
Ban on existing RAC equipment?	No . EPA has not banned the use or service of existing equipment. Existing equipment can continue to be used, although reliance on reclaimed refrigerant in the future is likely.
Warehoused/existing RAC equipment inventory cannot be sold	FALSE , Sale, distribution, and export of equipment is prohibited three years after the manufacture and import compliance date (e.g., 1/1/2025)
Equipment owners/operators cannot repair existing systems	FALSE , Uncharged components used to repair existing systems are not subject to restrictions. HFC refrigerant reclamation + production consumption allowances designed to meet current service needs (NODA mention)
State regulations have replaced AIM TT requirements	NO , State regulations have not replaced EPA regulations. Note that refrigeration regulations are in effect in California , New York and Washington

Jeremy Arling

Senior Fellow, Super Pollutants
Natural Resources Defense Council
(NRDC)



Challenges to EPA's TT Reconsideration Rule

RACHP Industry

- Alliance for Responsible Atmospheric Policy
- Air Conditioning, Heating, and Refrigeration Institute (AHRI)
- Heating, Air-conditioning, and Refrigeration Distributors (HARDI)
- Air Conditioning Contractors Association (ACCA)
- Plumbing Heating Cooling Contractors (PHCC)

Environmental Groups

Leading the environmental advocacy challenge:

Natural Resources Defense Council (NRDC)

Challenging provisions that weaken environmental protections and transition timelines.

State Coalition

Attorneys General from 19 States:

California, Colorado, Delaware, Hawaii, Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota, Nevada, New Jersey, New York, Oregon, Rhode Island, Vermont, Washington, Wisconsin, the District of Columbia, and the City of New York.



Supermarkets, retail food remote condensing units, and cold storage warehouse subsectors

Different petitioners likely to focus on different issues



Failure to analyze AIM Act statutory factors



Insufficient technical basis for policy change



Insufficient consideration of economic costs and reliance interests



Insufficient consideration of environmental impacts



Effective date sooner than statutory requirement

Organizations representing the retail food industry have intervened in defense of the rule



Retailers

Retail Litigation Center, representing Retail Industry Leaders Association (RILA)



Food Industry

Food Industry Association (FMI)



Frozen Food

American Frozen Food Institute (AFFI)



Grocers

National Grocers Association (NGA)

Challenges to EPA's TT Reconsideration Rule



In the DC Circuit Court of Appeals

AIM Act follows Clean Air Act procedures



The petitions have been consolidated into a single case



Litigation is in early stages

Opening briefs have yet to be filed



Full proceedings can take a year or more

Tom Kacandes

Senior Consultant
Vermont Energy Investment
Corporation
(VEIC)





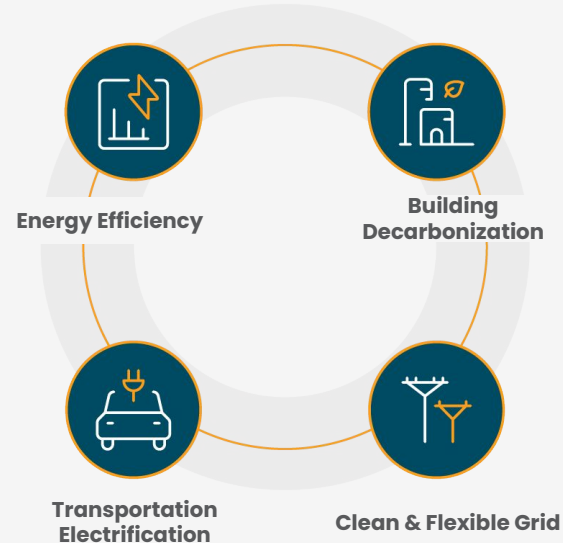
State Programs



VEIC delivers solutions that decarbonize buildings, transportation, and utility grids, today.

- Nonprofit founded in 1986 – 40 years!
- We provide data analysis and action to advance GHG-reduction policy
- National consulting practice working across over 75% of the country
- Design & manage award winning energy efficiency programs
- Conduct research & demonstration of technology and new applications

GHG Reduction is VEIC's Mission



Reducing refrigerant
emissions is a key part of
our GHG metric:

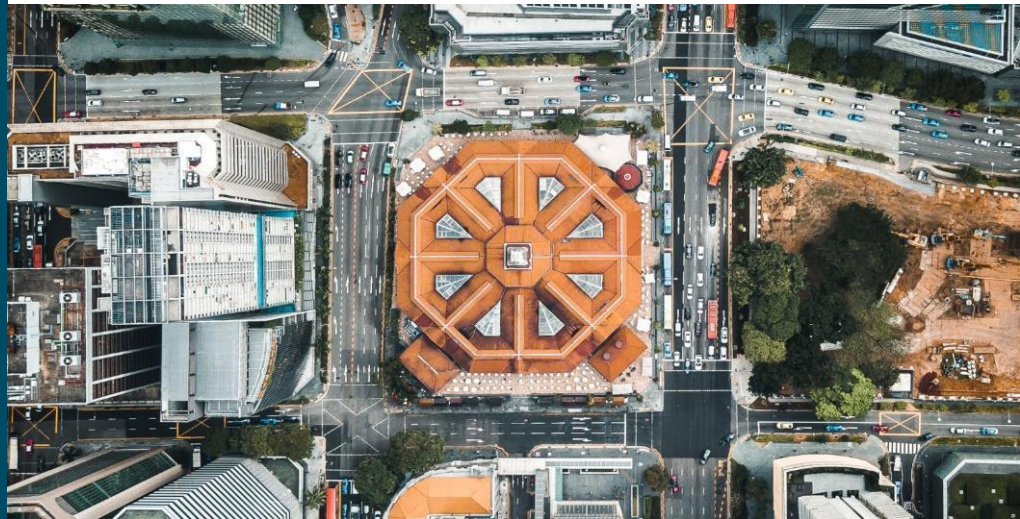
Action that moves us forward.



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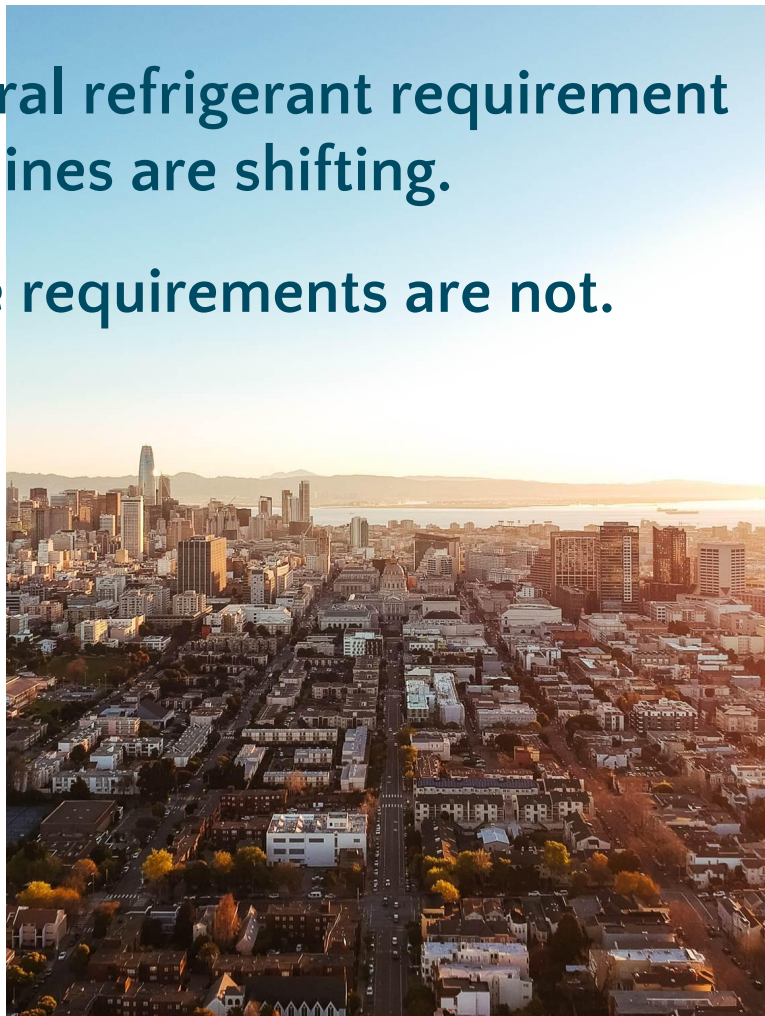
115,147,494 MTCO₂e

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tons of GHG emissions since 2000.



Federal refrigerant requirement timelines are shifting.

State requirements are not.



State policy efforts:

- **California:** Bulk HFC sales limits + reclaim requirements
- **New York:** Refrigerant inventory, reporting, leak management
- **Washington:** Transition planning + future rulemaking

Key Takeaway: Multi-state operators should focus on common best practice even while managing compliance by asset location, not federal requirements alone.

Common approach across states is best practice

DATA:

- Inventory
- Register
- Update Records
 - Repairs
 - Leak rate
- Report as required

PROCESS:

- Label Equipment
- Update Vendor Process
- Regular leak testing
- Gather leak data
 - ← • send to office
- Repairs within 14 days
- Reclaim and on-site stocking plan

TRANSITION:

- Make a transition plan
- Seek out exempt equipment
- Make an emergency replacement plan

California

Senate Bill 1206

Bulk virgin HFC limits, making reclaim, recovery, service strategy, and replacement timing more urgent.

Year	Bulk Virgin HFC Limit
2025	>2,200 GWP prohibited
2030	>1,500 GWP prohibited
2033	> 750 GWP prohibited

- Reclaimed refrigerants allowed
- State-owned equipment: reclaimed only for refrigerants above 750 GWP
- \$66M FRIP incentives support lower-GWP technologies
- By 2035, CARB must assess how to transition California's economy to ultra-low-GWP or no-GWP alternatives.

New York

NY Part 494 & 495

Better refrigerant data, leak management, recordkeeping, and, for supermarket chains, a long-term transition strategy.

Refrigerant Management Program (RMP)

Supermarket Refrigerant Program (SRP)

The two tracks of NY Part 494:

Manage and report equipment

- ≥ 50 lbs. systems
- Requires registration, labeling, leak management, records, and annual reporting.
- Phase by charge size:
 - Large: $\geq 1,500$ lbs.
 - Medium: 200-1,499 lbs.
 - small: 50-199 lbs.

Transition or reduce emissions

- Applies to covered supermarket chains.
- By 2035:
 - GWP20 < 10 OR
 - $\leq 5\%$ annual refrigerant loss OR
 - approved Transition Plan

Washington

House Bill 1462

Refrigerant sales restrictions with a structured transition-planning process.

Year	Requirement
2026 - 2028	Transition Task Force & rulemaking
2030	Virgin HFCs >1,500 GWP prohibited
2033	Virgin HFCs >750 GWP prohibited

- Bulk virgin HFC thresholds, similar to California's approach.
- Refrigerant Transition Task Force Report due 2027, likely to shape future rules on low-GWP equipment, recovery, reclamation, training, and incentives.

Owners & Operators Action Plan

What to do now

1. **Map exposure:** What refrigerants, charge sizes, locations, and replacement dates are in the portfolio?
2. **Update service & procurement strategy:** Do contracts require recovery, leak tracking, reclaim access, and compliant documentation?
3. **Plan capital timing:** Which assets are at risk of becoming harder or more expensive to service?
4. **Track other states to watch:**

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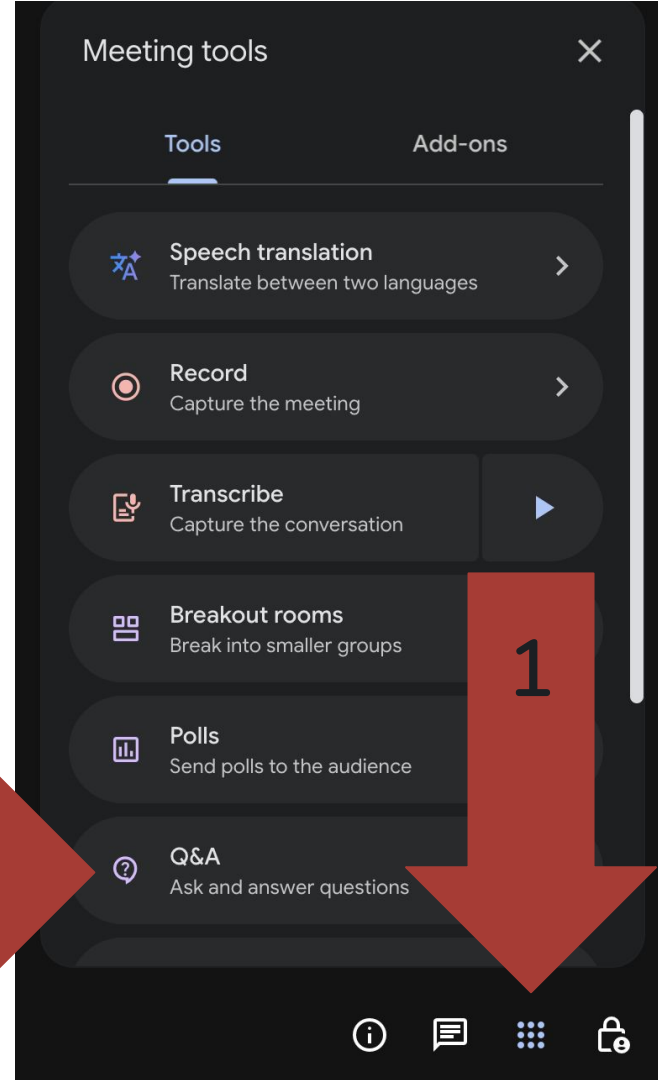
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