

Natural Refrigerant Training Summit

Building a Sustainable Workforce

**Next Generation Compliance for Next
Generation Regulations**

Keilly Witman

Refrigerant Management Solutions



NORTH AMERICAN
Sustainable
Refrigeration
Council



Next Generation Compliance for Next Generation Regulations

November 14th-15th, 2023

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EVERY ASPECT OF REFRIGERATION MANAGEMENT, AT EVERY LEVEL,
EXACTLY WHEN YOU NEED IT



Agenda

- The role of HVACR service contractors in the food retail industry
- Effect of EPA/state regulatory expansion on the food retail industry
- What you need to know about current regulations to do your job
- Federal changes due to the Aim Act
- State overview
- Business opportunities
- New/increased pressures on contractors/techs



Role of Contractors/Techs in Food Retail

Role of Service Contractors in the Food Retail Industry

- Two main groups of customers:
 - Customers who rely on you and your techs completely for compliance
 - Customers with compliance people who rely on you for most of compliance
- What's the difference?
 - Your techs and record keepers are the front line in compliance
 - You enter the records
 - Garbage in, garbage out
 - Lack of training
 - Time pressure
 - Very little supervision
 - Retailers with their own compliance people
 - Establish policies, specs
 - Try to catch mistakes

Role of Service Contractors in the Food Retail Industry

- Legal liability lies with end user, but ...
- Enforcement actions affect contractors negatively too
 - Reputation
 - HR consequences
 - Financial consequences
 - Pulling records
 - Backtracking to find/correct records
 - Answering questions
- Enforcement actions can last 3-5 years
- Consent decrees usually last 3 years
 - Mandatory actions
 - Leak rate reductions
 - Required technologies



Effect of Federal EPA/State Regulatory Expansion



EPA Announces Federal Enforcement Priorities to Protect Communities from Pollution

The 2024-2027 National Enforcement and Compliance Initiatives are:

Mitigating Climate Change - Tackling the climate crisis is an urgent priority. EPA will use its enforcement and compliance tools to reduce greenhouse gas emissions, helping to limit the worst effects of climate change. The initiative will focus on three separate and significant contributors to climate change: (1) methane emissions from oil and gas facilities; (2) methane emissions from landfills; and (3) the use, importation, and production of hydrofluorocarbons (HFCs). EPA has documented widespread noncompliance in all three of these areas, resulting in potentially tens of thousands of tons of unlawful emissions of greenhouse gases and other pollutants. This initiative will help achieve EPA's goals to combat climate change while also addressing significant noncompliance in specific industry sectors.

<https://www.epa.gov/newsreleases/epa-announces-federal-enforcement-priorities-protect-communities-pollution>

EPA Compliance and Enforcement

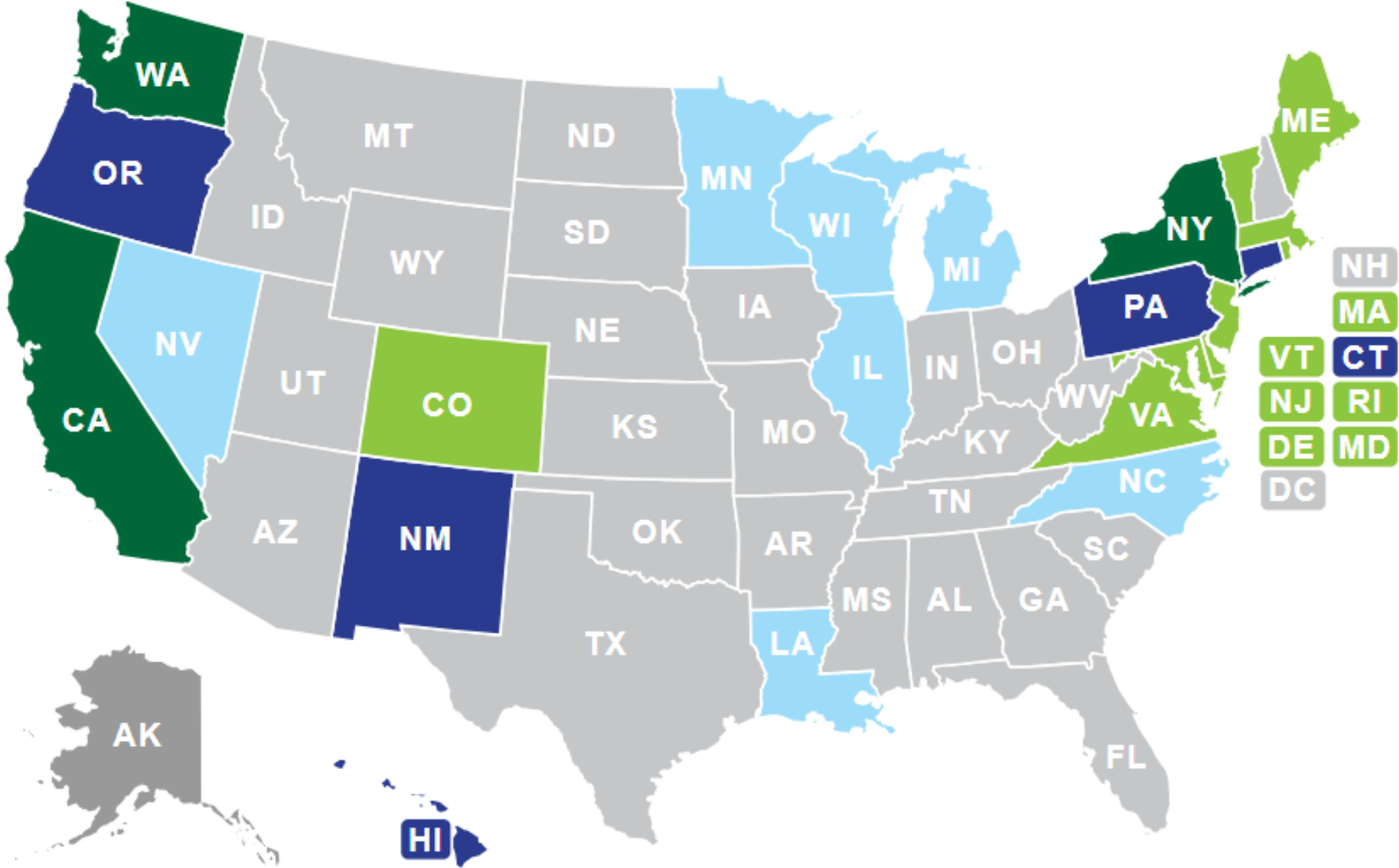


The 2024-2027 National Enforcement and Compliance Initiatives

Mitigating Climate Change - Tackling the climate crisis is an urgent need. EPA is using new enforcement and compliance tools to reduce greenhouse gas emissions, helping to limit the worst effects of climate change. The initiative will focus on three separate and significant contributors to climate change: (1) methane emissions from oil and gas facilities; (2) methane emissions from landfills; and **(3) the use, importation, and production of hydrofluorocarbons (HFCs)**. EPA has documented widespread noncompliance in all three of these areas, resulting in potentially tens of thousands of tons of unlawful emissions of greenhouse gases and other pollutants. This initiative will help achieve EPA's goals to combat climate change **while also addressing significant noncompliance in specific industry sectors.**

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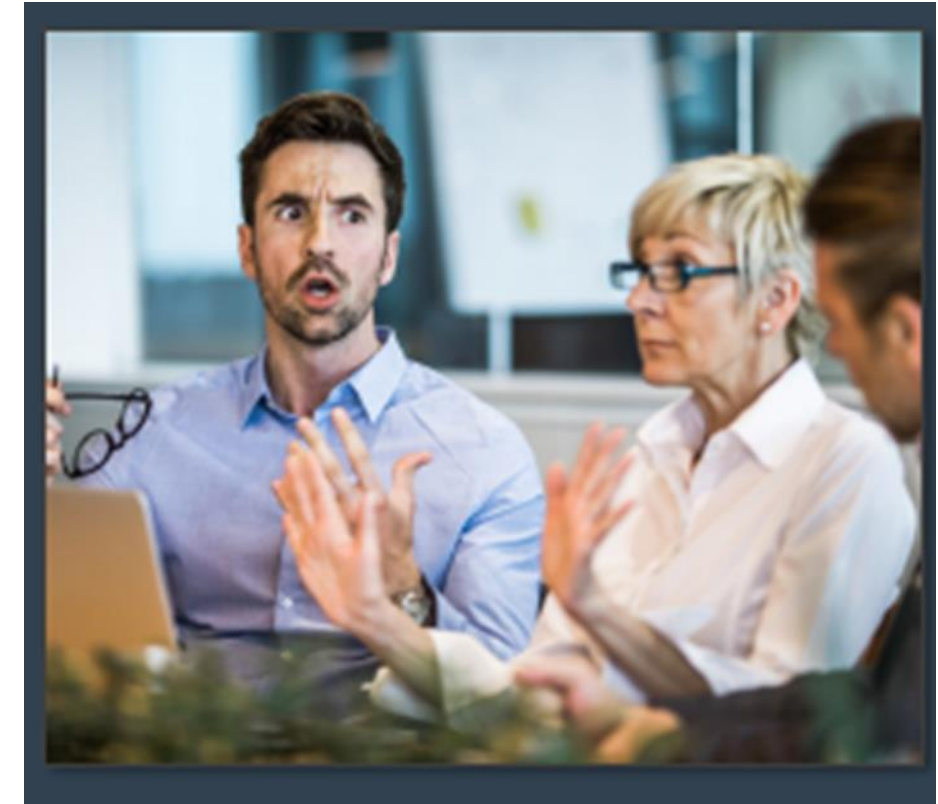
State Refrigerant Regulations



■ SNAP + Additional GWP Limits ■ SNAP 20/21 Signed Into Law ■ SNAP 20/21 Pending
■ US Climate Alliance Member

What is the EPA looking for in enforcement?

- Bad actors!
- EPA enforcement target lists
 - Used to rely on tips from the public
 - Now they have the chronically leaking appliance rule
- It's not illegal to leak
- Repeat leaks – when the same appliance leaks over and over again
 - Huge watch out!
 - How many different leak locations on a rack?
 - Misleading leak locations
- Chronically leaking
- Unresolved leaks
- No leak found
- Topped off refrigerant
- Seasonal adjustments
- Missing leak inspections
- Late leak inspections





What You Need To Know about Regulations To Do Your Job

What Technicians Need to Know

- Section 608 – still a lot of HCFCs in use in supermarkets
 - Definition of an appliance
 - Leak repair
 - Initial verification testing
 - Follow-up verification testing
 - Leak inspections
 - Current record-keeping requirements for small appliances
 - The chronically leaking appliance rule
 - Retirements vs equipment disposal/shutdowns
 - Seasonal adjustments

What Technicians Need to Know

- Significant New Alternatives Policy Program (SNAP)
- HCFC Phaseout
- The Aim Act
 - HFC phasedown
 - Technology transitions rule
 - Emissions Reduction and Reclamation Rule (proposed)
- Installation Leak Tightness Guidelines

Service Tech Watch-Outs

- Adding refrigerant + “No leak found”
- “Topping off refrigerant”
- Seasonal adjustments
- Repeat leaks – incorrect/incomplete repairs
- Missing verification testing
- “Impossible” verification testing
- Unidentified leaks
 - Looking for a leak until you find one and repairing only that leak
 - Finding and repairing the “wrong” leak
- Installation contractors that are under warranty + unreported leaks because there is no invoice
- Service/maintenance contractors doing retirements
- Mismatched leak inspections vs. appliance lists
 - Appliances inspected that don’t exist
 - Existing appliances with no inspections
- Newly installed appliances with leaks
- Retrofits on leaky appliances
- Inappropriate notes



Changes Due To the AIM Act



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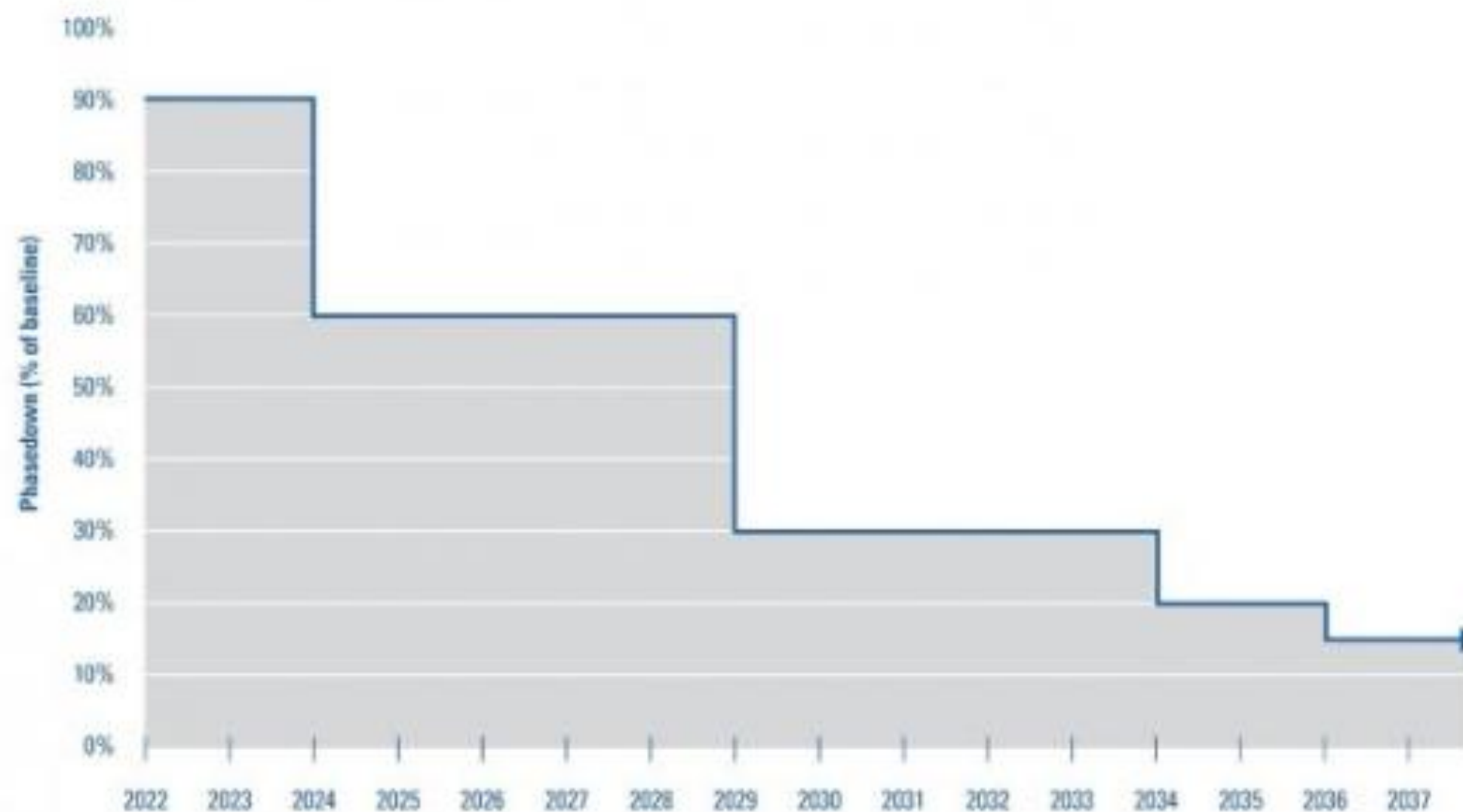


AIM Act: HFC Phasedown/Allocation Rules (Final)



Phasedown Schedule

The following illustrates the HFC production and consumption phasedown schedule as outlined in the AIM Act.



- Maximum annual production volumes allocated to chemical manufacturers

AIM Act: HFC Phasedown/Allocation Methodology



- Allocations in metric tons of exchange value equivalent (MTEVe) = metric tons of CO2 equivalent
- Chemical manufacturer profits will lead to shortages
- Example: 1,000,000 MTEVe

Refrigerant	GWP	Metric Tons Multiplier	Pounds Manufactured
R-404A	3922	2204.62	~560,000
R-449A	1396	2204.62	~1,600,000

AIM Act: HFC Use Restrictions/Technology Transitions Rule (Final)

- Applies to all HVACR equipment, regardless of charge size
- Existing high-GWP systems can continue to operate
- New terms/new definitions
 - *Product* is functional upon leaving a factory (e.g. packaged rooftop units)
 - *System* is assembled and charged in the field (e.g. refrigeration rack systems)
 - *Install* means to complete a field-assembled system's circuit, including charging with a full charge, such that the system can function and is ready for use for its intended purpose
- Replacing 75% or more of evaporators (by number) and 100% of the compressor racks, condensers, and connected evaporator loads, or increasing the cooling capacity (BTU/hour) will trigger refrigerant bans for systems.

AIM Act: HFC Use Restrictions/Technology Transitions Rule

GWP Limits for New Self-Contained Refrigeration Products in New/Existing Facilities (functional upon leaving a factory)

Products ¹	Prohibited Refrigerants	Manufacture & Import Compliance Date ²
Retail food – refrigeration stand-alone units & vending machines	GWP ≥ 150	1/1/25

¹ Additional requirement for refrigerated food processing and dispensing equipment, automatic commercial ice machines, and refrigerated transport.

² Sale, distribution, and export of these products is prohibited 3 years after the manufacture & import compliance date.

AIM Act: HFC Use Restrictions/Technology Transitions Rule

GWP Limits for New Refrigeration Systems in New/Existing Facilities (assembled and charged in the field)

Sector ¹	Systems	Prohibited Refrigerants	Installation Compliance Date
Cold storage warehouses ²	≥ 200 lb. charge, excluding high temperature side of cascade system	GWP ≥ 150	1/1/26
	< 200 lb. charge	GWP ≥ 300	1/1/26
	High temperature side of cascade systems	GWP ≥ 300	1/1/26
Retail food – remote condensing units	≥ 200 lb. charge, excluding high temperature side of cascade system	GWP ≥ 150	1/1/26
	< 200 lb. charge	GWP ≥ 300	1/1/26
	High temperature side of cascade systems	GWP ≥ 300	1/1/26
Retail food – supermarkets ²	≥ 200 lb. charge, excluding high temperature side of cascade system	GWP ≥ 150	1/1/27
	< 200 lb. charge	GWP ≥ 300	1/1/27
	High temperature side of cascade systems	GWP ≥ 300	1/1/27

¹ Additional requirement for automatic commercial ice machines and refrigerated transport.

² Compliance date for installation is extended 1 year when an approved building permit issued prior to 10/5/23 specifies the use of a regulated substance in a system.

AIM Act: HFC Use Restrictions/Technology Transitions Rule

GWP Limits for Self-contained Air Conditioning & Heat Pump Products in New/Existing Facilities (functional upon leaving a factory)

Products	Prohibited Refrigerants	Manufacture & Import Compliance Date ¹
Light commercial air conditioning & heat pumps	GWP ≥ 700	1/1/25
Chillers – Comfort cooling (as a stand-alone product)	GWP ≥ 700	1/1/25
Data centers, computer room air conditioning, & information technology equipment cooling	GWP ≥ 700	1/1/27

¹ Sale, distribution, and export of these products is prohibited 3 years after the manufacture & import compliance date.

AIM Act: HFC Use Restrictions/Technology Transitions Rule

GWP Limits for Air Conditioning & Heat Pump Systems in New/Existing Facilities (assembled and charged in the field)

Systems	Prohibited Refrigerants	Installation Compliance Date
Light commercial air conditioning & heat pump systems	GWP \geq 700	1/1/25
Chillers – Comfort cooling	GWP \geq 700	1/1/25
Variable refrigerant flow systems	GWP \geq 700	1/1/26
Data centers, computer room air conditioning, & information technology equipment cooling	GWP \geq 700	1/1/27

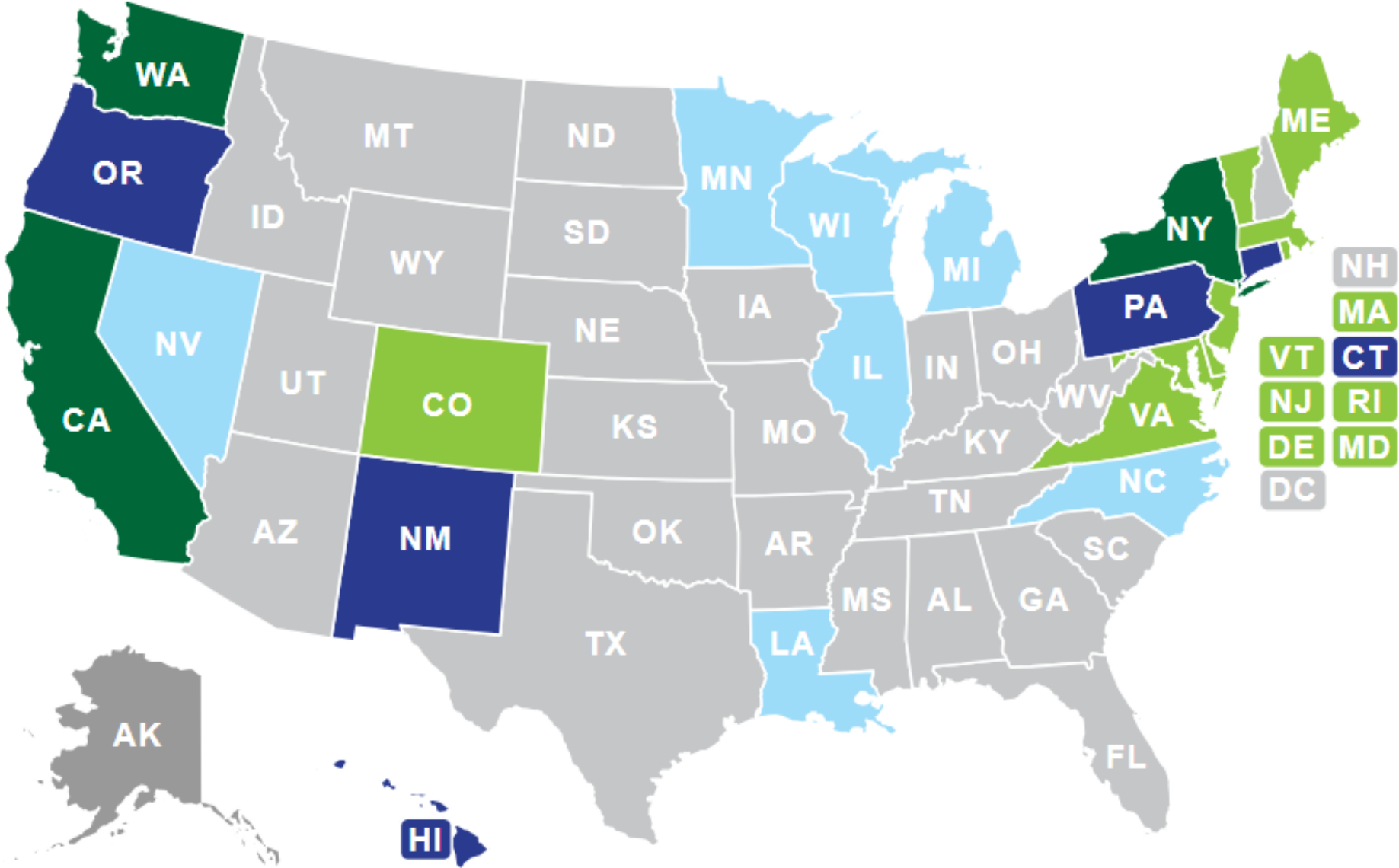
AIM Act: Emissions Reduction and Reclamation Act (Proposed)

- Appliances with full charge of 15+ lbs. of a HFC refrigerant or a substitute with a GWP > 53
- Might not apply to appliances used in residential/light commercial AC and heat pumps sector
- Most requirements are consistent with Section 608
 - Leak repair thresholds, deadlines, requirements
 - Mandatory leak inspections
 - Chronically leaking appliance annual reporting
 - Mandatory record-keeping
- Mandatory automatic leak detection systems (ALDS) for new and existing systems with full charge of 1500+ lbs. of a HFC refrigerant or a substitute with a GWP > 53
- Mandatory use of reclaimed refrigerant for servicing HFC systems starting 01/01/28
- Disposable Cylinders must be sent to reclaimer for removal of refrigerant heel starting 01/01/2025



State Overview

State Refrigerant Regulations



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Business Opportunities

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What Food Retailers Need To Do

- Start surveying stores and adding appliances with 15-49 lbs to your recordkeeping
- Start training construction teams – they normally don't think this all has anything to do with them
- Start banking HFCs
 - Requirement to use reclaimed refrigerant for servicing
 - Establishes a relationship with a reclaimer
 - Hedging against shortages
 - NOT because it makes financial sense in the traditional way of thinking
 - Figure out the logistics of accessing your banked refrigerant
- Prepare for shortages of R-404A and R-507A
- Track changes to original system design to determine when you trigger the switchover to “new” equipment

What Food Retailers Need To Do

- Accurate charge sizes
- Metrics to ensure compliance
- Start monitoring leak rates
- Get earlier leak records from service providers
- Learn what a retrofit/retirement plan is
- Pay attention to the chemical manufacturers, reclaimers, CO2 suppliers
- Pay attention to newer, leaky equipment
 - Installation leak tightness testing
 - Identify and monitor all newly installed appliances and put any that leak on a task force list

Business-Building Opportunities

- Record-keeping requirement threshold lowered from 50+ lbs to 15+ lbs – store surveys
- Cylinder heel – cylinder return
- Chronically leaking appliance rule
 - Tracking leak rates
 - Appliance replacement
 - Appliance retirement
 - New appliances
- R-404A/507A shortages = retrofits
- Leak inspections
- Modular equipment replacement
- Start bringing construction team into the regulations
 - Installation
 - Refrigerant choice
 - Tracking changes to existing systems vs original installed system
- Washington State – retrofits only allowed until end of 2024



New/Increased Pressure on Contractors/Techs

AIM ACT – New/Increased Pressure

- Record-keeping, record-keeping, record-keeping
 - Fast records
 - Accurate records – THE FIRST TIME!!!!
- New policies, procedures
- Surveying every store to add equipment with 15 lbs + charge size
- Accurate charge sizes
- Cylinder heels
- Reclaimed refrigerant mandate

Thank you!!

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Questions??

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