DEPARTMENT OF ECOLOGY
State of Washington

Hydrofluorocarbons (HFCs) Rulemaking Chapter 173-443 WAC

July 6, 2022

Hydrofluorocarbons (HFCs) Rulemaking Team

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Agenda

- Welcome, today's agenda
- May meeting recap
- Updated draft rule language
- Refrigerant management program
- Wrap up, future meetings

May Meeting Recap

- Draft rule language review
- Dedicated Q & A session with grocery retailers

Updated Draft Rule Language

- Definitions
- New refrigeration and air conditioning equipment
  - Maximum GWP thresholds

“Chiller”

“Chiller” means a water or heat transfer fluid chilling equipment package custom built in place or a factory-made and prefabricated assembly of one or more compressors, condensers and evaporators, with interconnections and accessories including controls, designed for the purpose of cooling or heating water or a heat transfer fluid. A chiller is a machine specifically designed to make use of a vapor compression cycle or absorption refrigeration cycle to transfer heat from a cold water or heat transfer fluid circulating system to the air, a heat transfer fluid, or other heat exchange media. Chillers can be water-cooled, or evaporatively cooled. Chillers include, but are not limited to, rotary chillers, centrifugal chillers, and positive displacement chillers, including reciprocating, scroll, and screw chillers. **Chillers used for comfort cooling are considered air conditioning equipment except for purposes of applying a maximum GWP threshold for refrigerants used in new equipment under WAC 173-443-040. Chillers used for industrial process refrigeration are considered a type of refrigeration application except for purposes of applying a maximum GWP threshold for refrigerants used in new equipment under WAC 173-443-040.**

**New language

“Air Conditioning” & “Refrigeration Equipment”

DEPARTMENT OF ECOLOGY
State of Washington

“Air conditioning” means the process of treating air to meet the requirements of a conditioned space by controlling its temperature, humidity, cleanliness, or distribution. Air conditioning includes chillers, except for purposes of Section 8 of this act. Air conditioning includes heat pumps. Air conditioning applies to stationary air conditioning and does not apply to mobile air conditioning, including those used in motor vehicles, rail and trains, aircraft, watercraft, recreational vehicles, recreational trailers, and campers.

RCW 70A.60.010

“Refrigeration equipment” or “refrigeration system” means any stationary device that is designed to contain and use refrigerant. “Refrigeration equipment” includes refrigeration equipment used in retail food, cold storage, industrial process refrigeration and cooling that does not use a chiller, ice rinks, and other refrigeration applications.

RCW 70A.60.010

“Industrial Process Refrigeration”

“**Industrial process refrigeration**” means to cool process streams at a specific location in manufacturing and other forms of industrial processes and applications. These complex, customized systems are directly linked to the industrial process. Industrial process refrigeration using a chiller is considered a type of refrigeration application except for purposes of applying a maximum GWP threshold for refrigerants used in new equipment under WAC 173-443-040, Table 4. Industrial process refrigeration not using a chiller is considered industrial process refrigeration. Where one appliance is used for both industrial process refrigeration and other applications, it will be considered an industrial process refrigeration systems if 50 percent or more of its operating capacity is used for industrial process refrigeration.

**New sentence

“Comfort Cooling”

“**Comfort cooling**” means the air conditioning appliances used to provide cooling in order to control heat and/or humidity in occupied facilities, including but not limited to residential, office, and commercial buildings. Comfort cooling appliances include but are not limited to chillers, commercial split systems, and packaged roof-top units.

****New definition**

“Consumer”

“**Consumer**” means the ultimate purchaser, recipient, or user of a product. For purposes of the refrigerant recharge prohibition under WAC 173-443-040, Table 4, a person who purchases automotive refrigerant in a small container for purposes of servicing or repairing another person’s MVAC system (e.g., MVAC technician) is considered a “consumer.”

**New sentence

“Stand-Alone Unit”

“**Stand-alone unit**” means retail refrigerators, freezers, and reach-in coolers (either open or with doors) where all refrigeration components are integrated and, for the smallest types, the refrigerant circuit is entirely brazed or welded. These systems are fully charged with refrigerant at the factory and typically require only an electricity supply to begin operation. **Stand-alone unit does not include commercial ice machines.**

****New definition**

040: Table 2, New Refrigeration Containing >50 Pounds Refrigerant

Refrigeration End-Uses > 50 Pound Charge	Prohibited Substances (Refrigerant GWP)	Effective Date
Retail food refrigeration (new and existing facilities)	150+	January 1, 2026
Cold storage warehouses (new and existing facilities)	150+	January 1, 2026
Industrial process refrigeration excluding chillers (new facilities)	150+	January 1, 2026
Industrial process refrigeration excluding chillers (existing facilities)	2,200+	January 1, 2026
Ice rinks (new facilities)	150+	January 1, 2024
Ice rinks (existing facilities)	750+	January 1, 2024

040: Table 3, New Air Conditioning

Air Conditioning End-Uses	Prohibited Substances (Refrigerant GWP)	Effective Date
Room/wall/window air conditioning equipment, PTACs, PTHPs, portable air conditioning equipment, and residential dehumidifiers (new) (New and existing facilities)	750+	January 1, 2024
Other types of air conditioning equipment (new) used in residential and nonresidential applications (New and existing facilities)	750+	**January 1, 2026**
Variable refrigerant flow (VRF) or volume system (new) (New and existing facilities)	750+	January 1, 2026

040: ~~Table 4 Chillers (industrial process~~)

End-use	Prohibited Substances	Effective Date
~~Chillers – industrial process refrigeration designed for chilled fluid leaving the chiller at temperatures of > +35 degrees Fahrenheit~~	~~Refrigerants with a GWP of 750 or more~~	~~January 1, 2025~~
~~Chillers – industrial process refrigeration designed for chilled fluid leaving the chiller at temperatures of ≤ 35 degrees Fahrenheit and > -10 degrees Fahrenheit~~	~~Refrigerants with a GWP of 500 or more~~	~~January 1, 2025~~
~~Chillers – industrial process refrigeration designed for chilled fluid leaving the chiller at temperatures of ≤ -10 degrees Fahrenheit and > -58 degrees Fahrenheit~~	~~Refrigerants with a GWP of 2,200 or more~~	~~January 1, 2025~~

Summary of Recent Changes

- **Definitions:** Chiller, comfort cooling, consumer, industrial process refrigeration, stand-alone unit
- **Commercial ice machines:** Removed from maximum GWP thresholds and SNAP-like prohibitions
- **Chillers**: Removed from maximum GWP threshold requirements
  Comfort cooling and industrial process refrigeration purposes
- **Effective dates (GWP thresholds):** Moved from Jan. 1, 2025 to Jan. 1, 2026
  - All new refrigeration equipment except for ice rinks
  - Other types of air conditioning equipment used in residential and nonresidential applications

Questions or Comments

Refrigerant Management Program (RMP)

Why is Ecology establishing a RMP?

- Ecology shall establish a refrigerant management program to reduce emissions of refrigerants, including regulated substances and their substitutes, from activities of equipment responsible for significant volumes of such emissions.

What equipment must the RMP include?

- The program must include, at a minimum, larger stationary refrigeration systems and larger commercial air conditioning systems. Ecology must adopt rules to implement and enforce the requirements of this section.

When may the RMP start?

- Ecology may require compliance with the program no earlier than Jan. 1, 2024 and no earlier than the adjournment of the regular legislative session following submittal of the legislative report (leak report) estimating leakage of refrigerants from existing systems in WA.

Refrigerant Management Program

RMP applies to refrigeration and air conditioning systems using 50 pounds of refrigerant or more (in a single circuit):

- Registration
- Reporting
- Recordkeeping
- Leak inspections
- Leak repair

Refrigerant Management Program (continued)

Exemptions:

- Systems that use low-GWP refrigerants (<150 GWP) and that do not use Class I or Class II substances
- Systems that have auto-leak detection systems
  - Auto-leak detection removes leak inspection requirements only

Required Components

Registration: Phase in based on system charge size; will apply to all systems using 50 or more pounds of high-GWP refrigerant

Reporting: Equipment owners/operators and refrigerant wholesalers, distributors, and reclaimers

Recordkeeping: Equipment owners/operators and refrigerant wholesalers, distributors, and reclaimers

Leak inspections: Frequency based on system charge size; always required when significant amounts of refrigerants are added

Leak repair: Require repair within specified time period; require retrofit, replacement, or retirement when leaks are not capable of repair

Ecology must apply leak rates and other thresholds that reflect:

- greater emission reductions than EPA
- superior levels of performance established for EPA's voluntary GreenChill Program

Registration

Breakdown of system charge sizes

- Large = 1,500+
- Medium = 200 to 1,499
- Small = 50 to 199

Registration start dates – phase in based on system charge size

- Earliest date to start program is Jan. 1, 2024
- Largest category systems register first – few months after start of program

Leak Inspections, Reporting, and Recordkeeping

Frequency of leak inspections – based on system charge size

- Monthly, quarterly, annually

Who must report

- Owners/operators
- Refrigerant wholesalers, distributors, and reclaimers

What must be reported

- TBD

Who must keep records

- Owners/operators
- Refrigerant wholesalers, distributors, and reclaimers
- Service technicians (if Ecology adopts service requirements)

What records must be kept? And for how long?

- TBD

Leak Repair

- What is the appropriate leak threshold to require further action?
- What corrective action to require and when to require it?
- Whether to require service practices – certified technicians, reporting, recordkeeping

Other Notable Items

Exemptions: Potential to apply for exemptions in some instances

- Operators
- Wholesalers, distributors, reclaimers

Fees

- Depends on number of systems and estimated cost of program

Consistency with other state and federal programs, to the extent practicable

Future Meeting Dates

- August 16 – Date will change. Check HFC rulemaking web page for updates.
- September 29 – Date will change. Check HFC rulemaking web page for updates.

All meeting times: 9:30 a.m. – noon PDT

Leak Report Webinar

Join us!

Our technical expert will share and review preliminary estimations, and emission factors and methodologies used to calculate the leakage from equipment in Washington.

July 27, 9 a.m. PDT

Ecology Contacts

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General questions

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More Information

HFC Web Pages

Compliance assistance, submitting reports

https://ecology.wa.gov/Air-Climate/Climate-change/Reducing-greenhouse-gases/Hydrofluorocarbons

Rulemaking

https://ecology.wa.gov/Regulations-Permits/Laws-rules-rulemaking/Rulemaking/WAC-173-443-455

Informal comments

https://aq.ecology.commentinput.com/?id=6FM8R