



2311 Wilson Boulevard Suite 400 Arlington VA 22201 USA  
Phone 703 524 8800 | Fax 703 562 1942  
[www.ahrinet.org](http://www.ahrinet.org)

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Linda Kildahl  
Rulemaking Lead  
Washington Department of Ecology  
Air Quality Program  
P.O. Box 47600  
Olympia, WA 98504-7600  
[Linda.kildahl@ecy.wa.gov](mailto:Linda.kildahl@ecy.wa.gov)

Re: AHRI Comments Regarding Washington Proposed Rule Update - Chapter 173-443 WAC, Hydrofluorocarbons (HFCs).

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Dear Ms. Kildahl,

On behalf of the Air-Conditioning, Heating, and Refrigeration Institute (AHRI), I respectfully submit the following comments in response to the Washington Department of Ecology (Ecology) Proposed Rule Update - Chapter 173-443 WAC, Hydrofluorocarbons (HFCs).

AHRI is the trade association representing manufacturers of heating, cooling, water heating, and commercial refrigeration equipment, including many small businesses. More than 300 members strong, AHRI is an advocate for the industry and develops standards for and certifies the performance of many of the products manufactured by our members. In North America, the annual output of the HVACR and water heating industry is worth more than \$44 billion. In the United States, the industry supports 1.3 million jobs and \$256 billion in economic activity annually.

For more than a decade, AHRI worked to support regulations to reduce the consumption and production of HFCs. Our members strongly supported the agreement to amend the Montreal Protocol on Substances that Deplete the Ozone Layer to phase down HFC production and consumption as a proven, predictable, and practical approach. We demonstrated that support in our work with state regulators and environmental non-governmental organizations (E-NGOs). Our industry has worked closely with local governments both foreign and domestic to prepare and successfully execute the safe and orderly transition to low-GWP refrigerants. We thank the Ecology staff for working with AHRI throughout the Department's rulemaking processes and for addressing many of our concerns. AHRI appreciates Ecology's robust stakeholder outreach and is eager to provide additional technical input and suggestions to ensure the success of Washington's environmental goals.

AHRI recommends the inclusion of language acknowledging an exemption under WAC 173-443-050 for Automatic Commercial Ice makers to be permitted to use refrigerants R-404A and R-134a. Automated commercial ice makers (ACIM) have been granted an exemption in the U.S.

Environmental Protection Agency’s (EPA) Significant New Alternatives Program (SNAP) 19 and 20 rules. ACIM manufacturers are working on alternatives to refrigerant R-404A for Canada and are also likely to identify a viable refrigerant alternative for R-134a. It is important that the language in the Proposed Rule Update for WAC 173-443-050 explicitly delineate an exemption for ACIM.

## Definitions and Regulatory Alignment

AHRI is pleased to update Ecology on the status of federal HFC phasedown rulemakings expected to be promulgated by the EPA. In 2021 and 2022, AHRI and other organizations submitted petitions<sup>1</sup> to EPA requesting that the agency hasten its phasedown of HFCs and provide clarity to manufacturers by implementing sector-based controls. EPA agreed to consider these petitions and has started its rulemaking process to effectively regulate HFCs in the U.S.

In light of this good news, AHRI strongly urges Ecology to align its regulatory structure with the anticipated federal regulations to reduce burden on manufacturers, increase clarity for the market, and support the success of the HFC phasedown schedule. AHRI understands that Ecology has given special consideration to its drafted definitions to promote alignment with existing regulations both federally, and in other states such as California. Some definitions and requirements could still benefit from some modifications to increase harmonization with other regulatory structures. Principally, AHRI recommends that Ecology update its definitions to match those used by EPA in its SNAP<sup>2</sup>, the American Innovation in Manufacturing Act<sup>3</sup> (AIM Act), and the California Air Resources Board (CARB) in its HFC rulemaking.<sup>4</sup>

### **Residential and Light Commercial Air Conditioning and Heat Pumps**

#### ***AHRI Recommended Definition: EPA SNAP Definition of Residential and Light Commercial Air Conditioning and Heat Pumps***

This end-use includes equipment that cools enclosed spaces in households and commercial industries but excludes chillers<sup>5</sup>. It includes room air conditioning such as window units, packaged terminal air conditioners (PTAC) and heat pumps (PTHP), and portable air conditioners; central air conditioners (i.e., ducted); non-ducted systems (both mini and multi splits); packaged rooftop units; water-source and ground-source heat pumps; and other products. Residential and light commercial air conditioning and heat pumps are often distinguished from chillers by the fact that they condition the air directly, rather than cool (or heat) water that is then used to condition air.<sup>6</sup>

### **Air Conditioning**

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<sup>1</sup> [Technology Transition Petitions under the AIM Act | US EPA](#)

<sup>2</sup> [Significant New Alternatives Program](#)

<sup>3</sup> [American Innovation in Manufacturing Act](#)

<sup>4</sup> [HFC rulemaking](#)

<sup>5</sup> A minor modification has been made to EPA’s definition.

<sup>6</sup> [Substitutes in Refrigeration and Air Conditioning | US EPA](#)

### **Department of Ecology Definition of “Air Conditioning”**

“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 GWP thresholds under WAC 173-443-040, and heat pumps. Air conditioning applies to stationary equipment 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).

### **CARB Definition of Air Conditioning**

“Air-conditioning (AC) Equipment” or “Air-conditioning System” means equipment that cools, heats or dehumidifies spaces in residential or non-residential settings for comfort cooling and other purposes, including, but not limited to, room air conditioning such as window units, packaged terminal air conditioners (PTACs), packaged terminal heat pumps (PTHPs), residential dehumidifiers, and portable air conditioners; ducted central air conditioners and heat pumps; non-ducted air conditioners and heat pumps (both mini- and multi-splits); packaged rooftop units; water-source and ground-source heat pumps; and other dehumidifiers. “Air-conditioning equipment” also includes computer room and data center cooling and remote condensing units for comfort cooling applications. Chillers are defined separately from “air-conditioning equipment.” “Air conditioning equipment” refers to stationary air-conditioning equipment and does not include mobile air-conditioning equipment, including that used in vehicles, rail and trains, buses, aircraft, watercraft, recreational vehicles, recreational trailers, and campers.<sup>7</sup>

### **Applicant**

AHRI asks the Department of Ecology to recognize that distribution channels are complex and there may be equipment that enters and leaves the state of Washington without installation.

### **Department of Ecology Definition of “Applicant”**

“Applicant” means, for purposes of this regulation, any person who sells, leases, rents, installs, uses, or otherwise enters into Washington commerce any substance in end-uses listed in WAC 173-443-040(2) or (3) "who applies for a variance under WAC 173-443-080.

### **AHRI Recommended Definition: Edited Department of Ecology Definition of “Applicant”**

“Applicant” means, for purposes of this regulation, any person who sells, leases, rents, installs, uses, or otherwise enters into Washington commerce **without subsequently**

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<sup>7</sup> [Air-conditioning Equipment | California Air Resources Board](#)

transporting out of Washington commerce any substance in end-uses listed in WAC 173-443-040(2) or (3) "who applies for a variance under WAC 173-443-080.

## **Chiller**

### **Department of Ecology Definition of “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,<sup>8</sup> 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.

### **CARB Definition of “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 (1) 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 refrigeration 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 another heat exchange media. “Chillers” can be water-cooled, air-cooled, or evaporatively cooled, and include, but are not limited to, rotary chillers, centrifugal chillers, and positive displacement chillers, including reciprocating, scroll, and screw chillers. “Chillers” include those used for comfort cooling, space and area cooling, or industrial process cooling. A chiller used for refrigeration in a retail food facility is considered an indirect type of “supermarket system.”<sup>9</sup>

### **AHRI Recommended Definition: EPA SNAP Definition of Chillers**

Chillers typically cool or heat water, which is then circulated to provide comfort cooling throughout a building or other location. Chillers can be classified by compressor type, including centrifugal and positive displacement (which includes heat pump chillers). Chillers used to cool or heat industrial processes are discussed under Industrial Process Refrigeration.<sup>10,11</sup>

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<sup>8</sup> A compressor is mechanical device that increases the pressure of a gas or liquid by reducing its volume. Similar to pumps, compressors increase the pressure on a fluid or gas and can transport it through a pipe or ductwork.

<sup>9</sup> [Chillers | California Air Resources Board](#)

<sup>10</sup> [Industrial Process Refrigeration](#)

<sup>11</sup> [Substitutes in Refrigeration and Air Conditioning | US EPA](#)

AHRI notes that EPA specifically differentiates between chillers for comfort cooling/heating and chillers used in indirect refrigeration systems as noted below and recommends that the Department of Ecology use these separate definitions so that there is harmonization with action taken by EPA.

Indirect supermarket designs include secondary loop systems and cascade refrigeration. Indirect systems use a “chiller” (not to be confused with the “chiller” end-use) or other refrigeration system to cool a secondary fluid that is then circulated throughout the store to the cases.<sup>12</sup>

### **Commercial Ice Machines**

#### **Department of Ecology Definition of “Commercial Ice Machines”**

“Commercial ice machine” means a nonresidential ice machine or ice maker used in a commercial establishment to produce ice artificially for consumer use, including but not limited to, a hotel, restaurant, or convenience store.

#### **AHRI Recommended Definition: EPA SNAP Definition of “Commercial Ice Machines”**

“Commercial ice machines” are used in commercial establishments (e.g., hotels, restaurants, convenience stores) to produce ice for consumer use. Ice machines produce ice in various sizes and shapes, and with different retrieval mechanisms (e.g., dispensers or self-retrieval from bins).<sup>13</sup>

### **Commercial Refrigeration Equipment**

#### **Department of Ecology Definition of “Commercial Refrigeration Equipment”**

“Commercial refrigeration equipment” means equipment designed to store and display chilled or frozen goods for commercial sale or use, including, but not limited to, stand-alone units, refrigerated food processing and dispensing equipment, remote condensing units, supermarket systems, and vending machines.

#### **AHRI Recommended Definition: EPA SNAP Definition of “Commercial Refrigeration Equipment”**

“Retail food refrigeration”, or “commercial refrigeration”, includes equipment designed to store and display chilled or frozen goods for commercial sale. This end-use includes the following categories of equipment: stand-alone equipment, remote condensing units, and supermarket systems.

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<sup>12</sup> [Retail Food Refrigeration | US EPA](#)

<sup>13</sup> [Substitutes in Refrigeration and Air Conditioning | US EPA](#)

“Refrigerated food processing and dispensing equipment” dispenses and often processes a variety of food and beverage products. This equipment can be self-contained or can be connected via piping to a dedicated condensing unit located elsewhere. Equipment within this end-use category include but are not limited to: chilled and frozen beverages (carbonated and uncarbonated, alcoholic and nonalcoholic); frozen custards, gelato, ice cream, Italian ice, sorbets and yogurts; milkshakes, “slushies” and smoothies, and whipped cream.<sup>14</sup>

## **Date of Manufacture**

### **Department of Ecology Definition of “Date of Manufacture”**

“Date of manufacture” means:

- (1) For air conditioning and refrigeration equipment, the date the manufacturer affixed an equipment label indicating the equipment’s date of manufacture;
- (2) For refrigeration and air conditioning equipment built up and completed onsite, the date that the refrigerant circuit was completed and initially filled with refrigerant; or
- (3) For foam products imported into the state from outside the United States, the date the foam was originally manufactured, or the date of import if the original manufacture date is not known.

### **AHRI Recommended Definition: EPA SNAP Petition Definition**

A clarification must be made for the transition date of refrigerants. Date of manufacture should be used for compliance purposes. In field erected systems, the date of manufacture should coincide with the date on which the building permit request is submitted. Many jurisdictions vary in the length of time between permit requests and pulling of the actual permit. This will provide manufacturers with certainty around the permissible products for each application.

In recognition that it may be difficult to amend the date of manufacture used in previous regulations, alternatively, a similar approach used previous rules to address continued construction could be considered for a period of one year past the effective date. Both the 2010 and 2020 EPA allocation rules provided grandfathering provisions for systems that had all components constructed but were not yet field charged or therefore “manufactured”. Either approach would address the concerns around the date of manufacture applicable to field-erected systems.<sup>15</sup>

AHRI requests the Department of Ecology to harmonize with the AIM Act in the regulation for technology transitions, that will likely be published by October 2022. If the Department of Ecology is unable to wait for that information, AHRI asks for the following:

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<sup>14</sup> [Retail Food Refrigeration | US EPA](#)

<sup>15</sup> [Technology Transition Petitions under the AIM Act | US EPA](#)



## **New**

### **Department of Ecology Definition of “New”**

"New" means:

- (a) Products or equipment that are manufactured after the effective date of this chapter;
- (b) Products or equipment first installed for an intended purpose with new or used components;
- (c) Products or equipment expanded by the addition of components to increase system capacity after the effective date of this chapter; or

Products or equipment replaced or cumulatively replaced such that the cumulative capital cost after the effective date of this chapter of replacement exceeds fifty percent of the capital cost.

### **CARB Definition of New**

“New Refrigeration Equipment” means either of the following:<sup>16</sup>

- (1) Any refrigeration equipment that listed in Table 1, section 95374(a) or Table 2, section 95374(b) that is:
  - (A) First installed using new components, used components, or a combination of new and used components; or
  - (B) Modified such that:
    - 1. The nominal compressor capacity is increased.
    - 2. The system has undergone cumulative replacements, within any three-year time period, of components in full or exceeding 50 percent of the capital cost of replacing the entire refrigeration system, excluding the cost of refrigerated display cases.
- (2) Any refrigeration equipment in a new facility that is first installed using new components, used components, or a combination of new and used components, applicable to refrigeration end-use sectors listed in Table 3, section 95374(c) or Table 4, section 95374(d), in the following:
  - (A) New construction;
  - (B) An existing facility not previously used for cold storage, retail food refrigeration, commercial refrigeration, industrial process refrigeration, or ice rinks; or
  - (C) An existing facility used for cold storage, retail food refrigeration, commercial refrigeration, or industrial process refrigeration that has undergone replacement of 75 percent or more of its evaporators (by number) and 100 percent of its compressor racks, condensers, and connected evaporator loads.

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<sup>16</sup> [2019 California Refrigeration Regulations | Zero Zone, Inc. \(zero-zone.com\)](https://www.sos.ca.gov/air/air-quality/2019-california-refrigeration-regulations)

**AHRI Recommended Definition: Edited Department of Ecology Definition of “New”**

"New" means:

- (a) Products or equipment that are manufactured after the effective date of this chapter, **excluding field erected systems;**
- (b) ~~Products or equipment first installed for an intended purpose with new or used components;~~ **For field erected systems, the date on which the building permit request is submitted;**
- (c) Products or equipment expanded by the addition of components to increase system capacity after the effective date of this chapter; or
- (d) Products or equipment replaced or cumulatively replaced such that the cumulative capital cost after the effective date of this chapter of replacement exceeds fifty percent of the capital cost of replacing the whole system.
- (e) An existing facility used for cold storage, retail food refrigeration, commercial refrigeration, or industrial process refrigeration that has undergone replacement of 75 percent or more of its evaporators (by number) and 100 percent of its compressor racks, condensers, and connected evaporator loads.**

**Regulated Refrigerant****Department of Ecology Definition of Regulated Refrigerant**

“Regulated refrigerant” means a class I or class II substance as listed in Title VI of section 602 of the federal clean act amendments of November 15, 1990 (RCW 70A.60.010).

**AHRI Recommended Definition:**

“Regulated refrigerant” means a class I or class II substance as listed in Title VI of section 602 of the federal Clean Air Act amendments of November 15, 1990 (RCW 70A.60.010).

**Comments on Sufficient Disclosure**

AHRI asks that the Department of Ecology ensure that there is a mechanism to keep disclosed information confidential. Confidential Business Information (CBI) can include market sensitive information and intellectual property that is critical to ensure continued consumer benefit of competitiveness among suppliers.

As defined by Ecology, “‘Sufficient disclosure’ means providing the name of the substitute or a compliance disclosure statement or providing alternative disclosure that meets the conditions of WAC 173-443-060(5)”

- (4) Alternative disclosure.
  - (a) A manufacturer may use an alternative disclosure method to an on-product label described in WAC 173-443-060(4) provided the conditions in subsections (i) and (ii) and (iii) of this subsection are met.



- (b) A manufacturer submits a written statement to ecology describing the condition that prevents use of an on-product label and proposing an alternative disclosure method for the particular product or equipment.
- (c) Ecology determines that use of an alternative disclosure method is warranted and that the proposed disclosure method satisfactorily communicates the substitutes used or the compliance status of the particular product or equipment.
- (d) The manufacturer receives written confirmation from ecology that the proposed disclosure method may be used to satisfy WAC 173-443-060(4) for the particular product or equipment.
- (e) Ecology will provide a written response to a request for use of an alternative disclosure method by approving or denying the request, or requesting additional information, within thirty (30) days of receipt.

## Conclusion

AHRI appreciates the Department of Ecology's efforts to harmonize with other regulations. AHRI asks that the Department of Ecology incorporate the provision, allowed under House Bill (HB) 1050, to eliminate administration and enforcement of requirements of these regulations if the U.S. EPA adopts requirements that are substantially duplicative of requirements of any HFC regulation, which would eliminate additional emissions reduction benefits.

Please do not hesitate to contact me with any questions.

Sincerely,



Vivian Cox  
Regulatory Analyst  
Air-Conditioning, Heating and Refrigeration Institute (AHRI)  
[vcox@ahrinet.org](mailto:vcox@ahrinet.org)