



2311 Wilson Boulevard Suite 400 Arlington VA 22201 USA  
Phone 703 524 8800 | Fax 703 562 1942  
www.ahrinet.org

August 31, 2023

Department of Ecology  
Air Quality Program  
P.O. Box 47600  
Olympia, WA 98504-7600

***Re: Comments on Rulemaking - Chapter 173-433 WAC, Hydrofluorocarbons (HFCs)***

To Whom It May Concern:

The Air-Conditioning, Heating, and Refrigeration Institute (AHRI) is pleased to submit the following comments on the Department of Ecology's (Ecology) rulemaking under Chapter 173-433 on hydrofluorocarbons (HFCs).

AHRI is the trade association representing manufacturers of heating, cooling, water heating, commercial refrigeration equipment, and refrigerant producers. More than 300 members strong, AHRI is an internationally recognized 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 economic activity resulting from HVACR industry is approximately \$256 billion. In the United States alone, our member companies, along with distributors, contractors, and technicians, employ more than 1.3 million people.

AHRI's member companies strongly support the global transition from HFCs to substitute refrigerants with lower Global Warming Potentials (GWPs) and have consistently and significantly advocated for a robust national regulatory framework to do so.

That national regulatory framework now exists and will grow more stringent over time, making Ecology's proposed requirements for the State of Washington both unnecessary and counterproductive to our industry's climate policy goals. We therefore respectfully request Ecology to withdraw these proposed rules or, if finalized, refrain from, or cease administering or enforcing these rules pursuant to section RWC 70A.60.040 given the substantial overlap with current and prospective federal standards.

## **1. INTRODUCTION**

By way of background, our industry actively supported the Obama Administration in its pursuit of the Kigali Amendment to the Montreal Protocol and applauded the Kigali Amendment's adoption in October 2016. We then conceived and vigorously pursued what became the bipartisan federal legislation known as *The American Innovation and Manufacturing Act of 2020* (AIM Act), 42 U.S.C. § 7675, which ensures U.S. compliance with the terms of the Kigali Amendment and represents the most significant expansion of federal environmental statutory



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authority since the Clean Air Act Amendments of 1990. The AIM Act would not have become law were it not for our sustained efforts to foster bipartisan support during a resoundingly partisan time in Congress and across the country.

We then continued to advocate for the advice and consent of the U.S. Senate on the Kigali Amendment and take pride in being responsible for the historic vote on September 21, 2022, in which a broadly bipartisan group of senators voted to approve U.S. ratification of a treaty expressly dedicated to the mitigation of climate change and the avoidance of up to 0.5° C of projected temperature increase by 2100.<sup>1</sup>

We now are diligently and expeditiously transitioning to lower GWP substitutes in anticipation of forthcoming regulations by the U.S. Environmental Protection Agency (EPA) establishing GWP limits on the vast majority of our industry's product lines and equipment types manufactured after January 1, 2025.<sup>2</sup>

Indeed, many of these forthcoming federal requirements are in response to petitions AHRI and other trade associations in our industry submitted to EPA actively seeking new regulatory standards to speed the transition from high GWP HFC refrigerants. We prepared and submitted such petitions even as the upstream manufacture (production) and net import (consumption) already are significantly constrained pursuant to the Kigali Amendment's phase down schedule, in which overall HFC supply will contract beginning January 1, 2024, by 40 percent of the baseline period.<sup>3</sup>

This transition from high GWP HFCs is made possible by multi-billion-dollar investments by our industry and decades of research and development. Yet even with the benefit of such investment and innovation, the technical and commercial challenges remain so great that many manufacturers are racing the clock to shift product lines before EPA rules take effect at the end of next year. No low GWP substitutes are "drop in" replacements for their high GWP predecessors, instead often requiring complex design changes to ensure both consumer and worker safety and concomitant advances in energy efficiency and refrigerant management.

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<sup>1</sup> [Ex. Rept. 117-2-Amendment To Montreal Protocol \("Kigali Amendment"\)](#), [Record Vote Number 343](#), Yea-Nay Vote 69-27, 117<sup>th</sup> Congress, 2<sup>nd</sup> Session (September 21, 2022). See also Velders, et al., [The large contribution of projected HFC emissions to future climate forcing](#), 106 PROCEEDINGS OF THE NATIONAL ACADEMIES OF SCIENCES 10949-10954 (July 7, 2009).

<sup>2</sup> Phasedown of Hydrofluorocarbons: Restrictions on the Use of Certain Hydrofluorocarbons under Subsection (I) of the American Innovation and Manufacturing Act of 2020, 87 Fed. Reg. 76738 (Dec. 15, 2022).

<sup>3</sup> See Phasedown of Hydrofluorocarbons: Establishing the Allowance Allocation and Trading Program Under the American Innovation and Manufacturing Act, 86 Fed. Reg. 5516 (October 5, 2021). See also Phasedown of Hydrofluorocarbons: Allowance Allocation Methodology for 2024 and Later Years, 88 Fed. Reg. 46836 (July 20, 2023).

Moreover, AHRI and its members are doing the lion's share of the work in updating state and local building codes to remove prohibitions on the substitute refrigerants that our members are redesigning equipment to use. But for the efforts of AHRI and its members over the past two years, state and local building codes otherwise would have stopped the HFC transition in its tracks regardless of the AIM Act and EPA's implementing regulations.

All this is to say AHRI's opposition to Ecology's proposed standards is not grounded in antipathy to climate policy or recalcitrance in the face of ambitious regulatory requirements.

To the contrary, AHRI believes Ecology's proposed standards have been eclipsed by the AIM Act and EPA's implementation of it. Any meaningful environmental benefit asserted by Ecology is all but subsumed by current and forthcoming EPA regulations, including where Ecology has sought to require low GWP substitutes in some (but not all) types of new equipment one year earlier than that proposed by EPA, given that California already has finalized similar requirements and a material portion of manufacturers will transition to lower GWP substitutes over the course of 2024 in anticipation of EPA's proposed compliance deadlines.

Conversely, in the case of new AC applications (Table 3 of the proposed rule), Ecology's implementation date for lower GWP refrigerants in 'other types of air conditioning equipment used in residential and nonresidential applications' is proposed to begin three years later than proposed EPA compliance deadlines.

Additionally, AHRI believes Ecology's position on retrofits is likely to discourage transitions to low GWP substitutes, by effectively entrenching and sustaining the use of high GWP refrigerants by retailers in existing air conditioning and refrigeration equipment, since many retailers lack the financial resources or will otherwise be reluctant to invest in and install new equipment.

AHRI recognizes Ecology's pursuit of climate leadership on HFCs is in response to the Engrossed Second Substitute House Bill 1050 (House Bill 1050) mandating new requirements, although we note this state legislation was first read in January 2021, just *after* the AIM Act had become law, and was not signed by the governor until May 17, 2021 – more than five months after the AIM Act's final passage by Congress on December 27, 2020.<sup>4</sup>

Since Congress did pass the AIM Act, and since EPA is faithfully implementing its terms, AHRI respectfully requests Ecology to exercise the authority granted to it by the state legislature in House Bill 1050 in anticipation of EPA promulgating robust national standards for HFCs – specifically section RCW 70A.60.040, which authorizes Ecology:

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<sup>4</sup> [Engrossed Second Substitute House Bill 1050](#), State of Washington, 67th Legislature, 2021 Regular Session.

[T]o refrain from or cease administering or enforcing a requirement of this chapter if the United States environmental protection agency adopts requirements that: (a) Are substantially duplicative of the requirements of this chapter and that negate the additional emission reduction benefits of state implementation of any requirement of this chapter; or (b) Preempt state authority under this chapter.

EPA’s proposed GWP limits and transition dates under its so-called Technology Transitions rule are required by the AIM Act to be finalized by October 7, 2023. The requirements in this EPA rule are clearly “substantially duplicative” of Ecology’s proposed requirements and, as such, render Ecology’s requirements without meaningful environmental benefit. AHRI believes Ecology’s forbearance is in the best interests of all those working to transition from high GWP HFCs and solve the many technical, commercial, regulatory, and other practical barriers encountered along the way.

## **2. ADDITIONAL COMMENTS**

In addition to the general comments provided above, AHRI wishes to offer the following comments to Ecology’s proposal.

As an initial matter, AHRI has attached a copy of its comments to EPA in response to the agency’s proposed Technology Transitions rule. Because many of Ecology’s product category definitions, proposed GWP limits, and transition dates are substantially similar to those proposed by EPA, AHRI respectfully requests Ecology to review its detailed comments to EPA and consider the many technical, commercial, and practical issues AHRI members are grappling with as they work to transition to lower GWP substitutes.

More specifically, as described more fully below, AHRI wishes to highlight its comments below on the following issues, which AHRI believes to be especially counterproductive as our members work diligently to transition to HFC substitutes.

- The definition of “new” air conditioning and refrigeration equipment is highly problematic because of the inclusion of retrofits, as it is generally not possible to retrofit with refrigerants whose GWPs are below the proposed thresholds due to differences in refrigerant classification or significant pressure differences, effectively eliminating any potential to retrofit older systems in the state to a lower GWP refrigerant.
- No proposed regulation should prevent or otherwise restrict the ability of an owner of air conditioning or refrigeration equipment to be able to maintain existing systems, particularly those embedded in buildings, such as in data centers for commercial unitary air conditioning and heat pumps and variable refrigerant flow (VRF) equipment, as discussed more fully in the attached copy of AHRI’s comments to EPA’s proposed

## Technology Transitions rule.

- The proposed GWP values and dates are misaligned with proposed EPA regulations expected to be finalized by early October 2023, which increases cost and the likelihood of confusion without any material environmental benefit.
- The proposed labeling and management requirements similarly may conflict with or be contradicted by forthcoming EPA requirements, expected to be proposed by late September 2023 and finalized in the second half of 2024, also likely increasing cost and confusion with no material environmental benefit.

### *a. Definitions*

#### i. Cumulative Replacement

Ecology’s proposed definition of “cumulative replacement” removes the three-year time period, which was present in a prior version of the proposal and would be consistent with California. AHRI would recommend reinstating this three-year time provision.

#### ii. High GWP

In its proposal, Ecology defines a “[h]igh-GWP refrigerant” as a “compound used as a heat transfer fluid or gas that is: (a) a chlorofluorocarbon, hydrochlorofluorocarbon, hydrofluorocarbon, perfluorocarbon, or any compound or blend of compounds with a GWP value equal to or greater than 150; or (b) a regulated refrigerant as defined in this section.”

For convenience in discussion, including even in comments on regulatory proposals, use of modifiers such as “high” and “low” when referring to GWP values often helps draw distinctions between many HFCs currently in use and their prospective substitutes. But in hard regulatory definitions, AHRI opposes such modifiers as imprecise and potentially misleading and instead respectfully requests Ecology either to refrain from using such modifiers or to differentiate “high” and “low” GWPs based on the specific end use and the specific GWP limit established for each such end use.

#### iii. Retrofits

Ecology’s inclusion of retrofits in definitions of new air conditioning and new refrigeration equipment introduces significant barriers to the transition to HFC substitutes. AHRI respectfully requests Ecology amend such definitions to exclude retrofits.

In the definition of “[n]ew air conditioning equipment,” Ecology includes “[a] system in an existing facility that undergoes a retrofit.” In the definition of “[n]ew refrigeration equipment” Ecology includes both “[a] system in an existing facility that undergoes a retrofit,” and “[a]n addition or modification that increases the nominal compressor capacity of a system in an existing facility.”

Ecology’s draft definition for new equipment, discussed during a March 31, 2022, public meeting did not include retrofits. Then in a subsequent meeting on November 17, 2022, when Ecology included retrofits in a revised draft definition, AHRI members objected and generally understood from Ecology’s response that retrofits would be excised from the definition of new equipment in the proposed regulation.

This proved not to be the case with Ecology’s proposal. But, as proposed, Ecology’s definition of “new” equipment will work to discourage business owners from updating existing equipment out of concern over the costs of having to transition to an entirely new system, as retrofits to refrigerants meeting the GWP thresholds for “new” equipment are generally not possible because lower GWP refrigerants require increases in nominal compressor capacity. This is too significant a change to accomplish in a standard retrofit operation.

In other words: including retrofits in the definition of “new” equipment effectively prohibits retrofits or significantly increases their costs.

Many refrigeration units, for example, are retrofitted to replace R-404, with a GWP of 3,922, with R-448 or R-449, which have GWPs of 1,273 and 1,320, respectively. These exceed the proposed standards for equipment manufactured after January 1, 2024. But in these cases, these are not “new” systems. These are existing systems, whose owners are either unable, financially or otherwise, to replace with new systems yet are taking steps to reduce the GWP of the refrigerants used.

The incremental gains from these improvements likely disappear as a result of Ecology’s proposal. Unable to retrofit, owners are more likely to continue using older equipment with high GWP refrigerants. Moreover, in instances where a retrofit is required to sustain the operational life of existing equipment, Ecology’s proposal could force the closure of supermarkets and other businesses because the business owner cannot afford new equipment.

#### ***b. GWP Limits & Transition Dates***

AHRI respectfully requests Ecology to align its GWP limitations and compliance dates with those finalized by EPA in its Technology Transitions rule. These standards will apply to the vast majority of refrigeration and air conditioning end uses nationwide, with most proposed to take effect in less than 18 months. AHRI believes there is negligible environmental benefit to

mandating earlier requirements at the state level, but definite commercial hardship and compliance risks given the added complexity and likelihood of confusion among suppliers, retailers, and consumers.

AHRI recognizes California already has required transitions in some end uses and, in others, requires transitions in new equipment by January 1, 2024. But in California, manufacturers had more than two years to plan and prepare for these earlier compliance dates in the California market. By contrast, Ecology's standards for the Washington market seem likely to be finalized mere weeks before its proposed January 1, 2024, deadlines for certain end uses. AHRI believes this will complicate, not facilitate, ongoing efforts to transition in time to meet federal standards.

For specific comments on Ecology's proposed GWP thresholds and compliance dates, AHRI wishes to direct Ecology to AHRI's comments to EPA on the agency's proposed Technology Transitions rule, which are attached for reference. Given the substantial duplication between EPA's proposal and Ecology's proposal, AHRI believes its comments to EPA best reflect its members interests and objectives.

As a final matter regarding specific GWP limits, AHRI respectfully requests Ecology to exempt all medical, scientific, laboratory, and research applications and ultra-low temperature equipment with fluid leaving temperatures less than -58°F (-50°C) from any specific requirements related to this regulation, as they may require unique conditions and refrigerants to meet them in very small volumes. Innovation should not be stymied by limiting the ability to develop or research of new products or to protect medicines and vaccines. Equipment used for these purposes is well maintained with very low leak rates, and refrigerant is responsibly collected at end-of-life.

### ***c. Labeling Requirements***

AHRI seeks clarification of the on-product label: does the on-product label have to be labeled with only one refrigerant (and GWP, Refrigerant charge) or is the requirement only applied to the systems charged with refrigerant from the Manufacturing site?

If this requirement is applied to ALL the products, regardless of pre-charged or field erected, AHRI would recommend removing this requirement from the standard as it will cause unintended consequences. Since the Partial units (Evaporators and Condensing units sold separately, and field installed/charged) are intended for installation in a field erected system, the products are not pre-charged from the Manufacturing site, and it is not known to the Manufacturer on which refrigerant is going to be consumed. For partial units, since the refrigerant is not known to the Manufacturer while shipping the product, the GWP and refrigerant charge information cannot be applied as well.

If this requirement only applies to pre-charged systems, AHRI recommends adding the language to clarify on type of applications impacted due to this change.

***d. Wholesalers and Distributors***

The Preliminary Regulatory Analysis does not adequately consider the additional stocking and inventory cost that will impact wholesalers and distributors.<sup>5</sup> Currently, a wholesaler can use a unit in inventory for multiple refrigerants which translates to reduced inventory required. Labeling units with specific refrigerants will require that additional units for each refrigerant be stocked to maintain the same level of safety stock.

***e. Refrigerant Charge***

Some of the products would be on the borderline of the Charge limit (50 lbs.) and they can be used with R-454A (239 GWP) or R-454C (148 GWP) / R-455A (148 GWP) refrigerants. Since the Partial units (Evaporators and Condensing units sold separately, and field installed/charged) are intended for Installation in a field erected system, the products are not pre-charged from the Manufacturing site, and it is not known to the Manufacturer which refrigerant is going to be consumed.

***f. Refrigerant Management***

AHRI respectfully requests Ecology to withhold any proposed requirements regarding refrigerant management, including leak prevention and detection and the recovery and reclaim or destruction of recovered gas, until EPA has finalized federal standards in this space pursuant to subsection (h) of the AIM Act.

EPA has indicated it will propose extensive new requirements regarding refrigerant management by the end of September 2023 and finalize such requirements in the second half of next year. For the reasons stated above regarding the overlap between Ecology’s proposed standards and EPA’s proposed Technology Transitions rule, AHRI would ask Ecology to refrain from finalizing any requirement that would be “substantially duplicative” of forthcoming EPA requirements on refrigerant management pursuant to RCW 70A.60.040.

Moreover, AHRI objects to Ecology finalizing refrigerant management requirements that are different from those proposed by EPA yet offer no discernable or additional benefit. Such fragmentation between federal and state requirements would unduly burden our industry and our customers and create a material risk of undermining legitimate efforts to minimize leaks and

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<sup>5</sup> *Preliminary Regulatory Analyses*, AIR QUALITY PROGRAM WASHINGTON STATE DEPARTMENT OF ECOLOGY, Publication 23-02-081 (July 2023) at 30.





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maximize opportunities for reclaim.

AHRI would welcome dialogue with Ecology following EPA's subsection (h) proposal on this vitally important issue, as we believe we generally have a common interest in enhancing the overall profile and efficacy of refrigerant management practices.

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AHRI welcomes the opportunity for further discussion of its comments with Ecology. Please do not hesitate to contact me directly if I can provide any further information or answer any additional questions.

Sincerely,

A handwritten signature in black ink that reads "Samantha M. Slater". The signature is written in a cursive, flowing style.

Samantha M. Slater  
Senior Vice President, Government Affairs