Honeywell

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:

Honeywell International Inc. ("Honeywell") appreciates the opportunity to provide these comments regarding the Washington State Department of Ecology's ("Ecology's") proposed rule, Chapter 173-443 WAC Hydrofluorocarbons (HFCs) and Other Fluorinated Greenhouse Gases (the "Proposed Rule"). Honeywell supports the overall goals and intent of Ecology, as stated in the Proposed Rule, to "transition to less damaging refrigerants and refrigerant substitutes in the air conditioning and refrigeration, aerosol propellant, and foam end-use categories in Washington in a manner similar to rules adopted under EPA's Significant New Alternative Policy (SNAP) program and HFC rules adopted by states around the country." However, Honeywell has identified two areas of particular concern in the Proposed Rule: (1) The proposed definitions of "new air conditioning equipment" and "new refrigeration equipment" would include retrofitted equipment and systems, deviating from similarly defined terms employed by the U.S. Environmental Protection Agency ("EPA") and state governments with HFC emission reduction programs; and (2) Ecology's inclusion and proposed definition for "high GWP". In sum, and as explained below, Honeywell recommends that Ecology establishes definitions and restrictions that are consistent with other state and federal programs and to not include an unnecessary definition for "high GWP."

Honeywell Requests Ecology Exclude Retrofits Under Definitions for New Equipment

The Proposed Rule contains definitions for "new air conditioning equipment" and "new refrigeration equipment" that would include, among other situations, "a system in an existing facility that undergoes a retrofit." This proposed approach differs dramatically from states with HFC reduction programs and from EPA and erroneously combines two separate types of refrigeration and air conditioning equipment into one category. Further, the Proposed Rule sets a global warming potential limit ("GWP") of 150 for refrigerants used in these systems with refrigerant charges greater than 50 pounds. As drafted, this proposal may require supermarkets seeking to retrofit existing refrigeration equipment with new refrigerants to incur significant cost; or supermarkets may elect to avoid these costs altogether by continuing to use inefficient and very high GWP systems.

The typical supermarket has a large complex refrigeration system with refrigerant charges between 2,500 to 3,500 pounds that cannot be practically retrofitted to any known commercial refrigerant with a GWP below 150. For a variety of technical and mechanical reasons, these supermarket systems will need to be entirely replaced to meet the proposed 150 GWP limit, a

costly endeavor. In a 2019 Factsheet,[1] North American Sustainable Refrigeration Council (NASRC) estimated the cost of a new CO2 system to be $1.05 million for a mid-size 30,000 square foot supermarket. In addition to the high cost of replacing these systems, it typically requires the supermarket to be closed for weeks or months to remove the old system and install the new refrigeration system. Supermarkets typically have very low profit margins, typically one to two percent of sales,[2] and cannot afford the massive cost of replacing all of their systems. In light of this constraint, if the rule is finalized as proposed, this inclusion of retrofits under the definition of new equipment and setting a GWP limit of 150 for retrofits could cause supermarkets to continue to use high GWP refrigerants like R-404A (GWP 3,922) and R-507 (GWP 3,985). Therefore, Honeywell strongly recommends that Ecology exclude retrofits under its proposed definition for "new air conditioning systems" and "new refrigeration systems" and provide supermarket owners and operators with the flexibility and the affordable option to retrofit systems instead of replacing their existing systems with a new, costly system.

Many supermarkets are in the process of replacing higher GWP refrigerants with reduced GWP "drop-in refrigerants" such as R-448A (GWP 1,387) that typically reduce the direct GWP by approximately 65%. An added benefit is that the retrofit refrigerants are generally more energy efficient and can reduce the energy consumption of these systems. A 2017 research project conducted by Oak Ridge National Laboratories found an average reduction in energy consumption of 16% when retrofitting a supermarket system from R-404A to R-448A.[3] These retrofits can often be performed overnight without requiring an extended store closure and typically cost a fraction of the cost of replacing the entire refrigeration systems. The 2019 NASRC Factsheet indicated that the cost of retrofitting an existing system is only 10% of the cost to replace the systems with a new CO2 system. Honeywell believes that allowing supermarkets to retrofit their systems to drop-in refrigerants with lower GWPs than their predecessors will provide the most rapid and cost-effective near-term reduction of the impact of higher GWP refrigerant emission from supermarkets. Retrofitting also avoids the scrapping of existing equipment before the end of its useful life and further avoids the grey carbon emissions from the manufacture of the new system.

Additionally, treating retrofitted air conditioning and refrigeration equipment separately from new equipment would align Ecology with similarly established federal and state programs, which appears to be the intent of HB 1050, Hydrofluorocarbons – Emissions Reduction (Chapter 70A.60 RCW) ("HB 1050"). HB 1050 directs Ecology to "…adopt rules…. that are consistent with similar programs in other states that reduce emissions from refrigerants." No other state with an HFC emission reduction program conflates "new" and "retrofit" air conditioning and refrigeration equipment; rather, states with HFC reduction programs maintain a distinction between the two types of equipment and, in several cases, establishes different HFC restrictions

[1] NASRC, 2019. Available at https://static1.squarespace.com/static/55a672f1e4b06d4dd52f83de/t/5d24ecccdb81a40001c34414/1562701008125/NASRC+Financial+Fact+Sheet_053019.pdf.

[2] FMI-The Food Industry Association, 2023. The Food Retailing Industry Speaks 2023, pg. 66.

[3] Oak Ridge National Laboratory, June 2017. Low Global Warming Potential Refrigerants for Commercial Refrigeration Systems.

or GWP limits for each respective group.[4] EPA also maintains a distinction between new and retrofit refrigeration and air conditioning equipment in its proposed regulation.[5] Therefore, Honeywell requests that the final rule be consistent with similar programs addressing HFC emissions from air conditioning and refrigeration equipment by regulating retrofitted air conditioning and refrigeration equipment separately from new air conditioning and refrigeration equipment.

Lastly, HB 1050 provides Ecology with the discretion to "adopt rules to prohibit the use of refrigerant substitutes that have a global warming potential of greater than 150 for use in refrigeration equipment containing more than 50 pounds of refrigerant" (70A.60.020 (3)(a)); however the legislation restricts application of a restriction only "…to new refrigeration equipment manufactured after December 31, 2024…" (70A.60.020 (3)(b)(i)). Equipment in existence prior December 31, 2024, and undergoing retrofits as defined in HB 1050 and in the Proposed Rule, should not be subject to the proposed GWP limit of 150, and should be regulated as a different class of equipment.

Ecology's Proposed Definition for High-GWP Refrigerant is Unnecessary

The Proposed Rule defines "High-GWP Refrigerant", in short, as a refrigerant having a GWP greater than 150. Honeywell finds this proposed definition as unnecessary and recommends that Ecology uses another descriptor to describe these refrigerants. Ecology appears to only use the term in the context of the proposed refrigerant management program, where HB 1050 directs Ecology to exempt from refrigerant management requirements "equipment that uses refrigerants with a global warming potential of less than 150 and that are not class I or class II substances." (70A.60.030(2)(a)). This exemption can be provided without establishing a relative and subjective term to describe the GWP of the refrigerant as "high." Further, there is currently no universally accepted definition for "high" or "low" GWP refrigerants—in large part due to the diversity of industries and applications with differing technological requirements and constraints which use refrigerants. For example, while some applications such as chillers have multiple technically feasible, safe, cost effective and available refrigerant options with GWP's less than 10, other applications such as residential and light commercial air conditioning applications have so far only identified widely suitable, near-term refrigerant options in the 400 to 750 GWP range such as R-454B (GWP 466) or R-32 (GWP 675). Therefore, Ecology should not codify a relative term with a clear, bright line to distinguish between GWPs of refrigerants without consensus between stakeholders and other regulatory bodies—Ecology should exclude this term and should consider using an alternative descriptor such as "regulated refrigerant" for its refrigerant management program.

Conclusion

[4] According to Honeywell's knowledge to date, states with HFC reduction programs are California, Colorado, Delaware, Massachusetts, Maine, Maryland, New Jersey, New York, Rhode Island Washington, Virginia and Vermont.

[5] See EPA's proposed rule, Phasedown of Hydrofluorocarbons: Restrictions on the Use of Certain Hydrofluorocarbons Under Subsection (i) the American Innovation and Manufacturing Act of 2020 (87 FR 76738). In this proposed rule, EPA distinguishes its proposed restrictions for new equipment from retrofits and provides a definition for "retrofit" taken directly from the AIM Act.

Honeywell believes that the Proposed Rule should support the identification and utilization of refrigerants in different types of equipment with the optimal balance of GWP, energy efficiency, safety, and cost, based on the currently available technologies. As technologies advance over time, it will be possible to use refrigerants with lower GWPs, but this should not be at the expense of other important considerations such as energy efficiency, safety or affordability due to the societal importance of refrigeration and air conditioning.
Honeywell respectfully submits these comments and supports Ecology's effort to develop thoughtful regulations to address HFC usage and emissions by seeking industry involvement in the rule making process.

Sincerely,

DocuSigned by:
John Keating
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John Keating
Vice President and General Manager
Honeywell Stationary Refrigerants