AIR-CONDITIONING, HEATING, & REFRIGERATION INSTITUTE
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September 18, 2020

Elizabeth Scheele
California Air Resources Board
1001 I Street, Sacramento, CA 95814
P.O. Box 2815, Sacramento, CA 95812

Re: AHRI Comments Regarding California Air Resources Board Draft Proposed Regulation*: Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Stationary Air-conditioning, and Other End Uses*

Dear Ms. Scheele,

On behalf of the Air-Conditioning, Heating and Refrigeration Institute (AHRI) I respectfully submit the following proposal in response to California Air Resources Board (CARB) Draft Proposed *Regulation: Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Stationary Air-conditioning, and Other End Uses.*

AHRI is the trade association representing manufacturers of heating, cooling, water heating, and commercial refrigeration equipment. 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 has worked to support regulations to reduce the consumption and production of hydrofluorocarbons (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 to a transition away from refrigerants with high global warming potential (GWP). We have worked cooperatively with state regulators and environmental non-governmental organizations (E-NGOs) in an attempt to harmonize regulations, and we are working closely with both foreign and domestic governments to prepare and successfully execute the safe and orderly transition to low-GWP refrigerants.

We thank the CARB technical staff for working with AHRI and for addressing many of our concerns during the rule-making process.

The California state legislature mandated a reduction of emissions of hydrofluorocarbons by 40% by 2030 compared to 2013 through Senate Bill (SB) 1383 signed into law in September 2016. Although the California state legislature mandated specific HFC transitions (SB-1013 enacted in 2018), those provisions were insufficient to reach this ambitious goal, which requires a transition faster than the timeline included in the Kigali HFC Amendment to the Montreal Protocol. As a result, CARB has included a provision in the draft regulation (July 22, 2020) limiting the use of air conditioning refrigerants having a global warming potential of 750 or greater on January 1, 2023.[1]

"Air-conditioning (new) equipment, residential and nonresidential Refrigerants with a GWP of 750 or greater Prohibited as of January 1, 2023"

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[1] Proposed Regulation Order Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Stationary Air-conditioning, and other end uses https://ww2.arb.ca.gov/sites/default/files/2020-07/DRAFT%20CA%20SNAP%20Amendments-Reg%20Text.pdf

In 2018, AHRI and the Natural Resources Defense Council (NRDC), along with several individual companies, requested that CARB adopt a January 1, 2023 transition date in response to CARB's 2017[2] workshop proposing a transition date of January 1, 2021. The January 1, 2023 date was proposed to align with the date of a Department of Energy (DOE) efficiency standards change which mandated a transition in the same timeframe to enable manufacturers to make a single transition.

This transition will require the use of refrigerants with a different flammability classification than the incumbent refrigerant (R-410A). Although the suitable alternatives are considered as having lower flammability (Class A2L) according to the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE),[3] a modification to the building codes is required to enable the use of these alternatives. Code modifications must be made far enough in advance that manufacturers, who work with a three- to five-year design cycle, have the certainty necessary to design and produce compliant equipment.

The consensus safety standards that need to be adopted into code are:

- Underwriters Laboratories (UL) 60335-2-40, which is a product listing standard
- ASHRAE 15, which describes installation requirements for equipment
- ASHRAE 15.2 (proposed), which extracts the residential installation requirements from ASHRAE 15.

It is important to note that industry's proffer of a 2023 transition date was premised on the expectation that safety standards and building codes would be timely, and orderly, updated to reflect changing technology. That did not occur.

The building codes do not yet enable the use of low GWP refrigerants.

The air conditioning industry is now in a challenging situation in the State of California. In 2019, the Uniform Mechanical Code (UMC) was not updated through the International Association of Plumbing and Mechanical Officials (IAPMO) process to enable the use of low GWP refrigerants by adopting the necessary safety standards. California traditionally adopts the UMC on a three-year cycle and then makes modifications as needed. Although AHRI strongly advocated for the UMC to be updated to include the relevant safety standards during this cycle, the modifications did not receive the necessary votes in favor of the proposed changes.

California normally adopts modifications to the building code on a triennial cycle, but the state also has an off-cycle process for proposing and adopting modifications to the building codes, known as the intervening code adoption cycle, between each triennial code update. A handful of state agencies, including California Department of Forestry and Fire Protection (CalFIRE), have the authority to propose code changes during the intervening code adoption cycle. Neither CalFIRE, nor any other agency, submitted a proposal to adopt the relevant safety standards into the California building code update that will go into effect in July 2021.

The next available California Building Standards Commission (CBSC) code cycle to ensure safety standard adoption, will have an effective date of January 1, 2023. These delays mean that the earliest new building codes will be available for review by manufacturers will be January 2022. With the design changes necessary to transition to low GWP refrigerants, January 2022 is too late to prepare for the transition.

There are over 4 million products listed in AHRI's Directory of Certified Product Performance with over 9 million new products sold and installed annually in homes and businesses maintained by over 400,000 technicians. All products are regulated by the U.S. Department of Energy and must meet federal energy standards Federal regulations recognized complexities in stationary air conditioning products by requiring 5-year lead times from

[2] Public Workshop on Rulemaking Proposal: High Global Warming Potential Refrigerant Emissions Reductions California Air Resources Board October 24, 2017 https://ww3.arb.ca.gov/cc/shortlived/meetings/10242017/public_workshop_snap-california_10-24-17_presentation.pdf?_ga=2.182187808.621576105.1573738237-276427812.1565094831

[3] ASHRAE 34 documents refrigerant classifications.

promulgation of final efficiency regulations versus 3 years for other regulated products to allow for sufficient time to redesign, test, manufacturer, distribute, educate, and install equipment. Twelve months[4] is simply not enough time to design, build, certify and bring a compliant product to market.

AHRI has worked tirelessly to develop and disseminate information related to the safe transition to low GWP refrigerants.

Over the past five years, AHRI, in cooperation with the U.S. Department of Energy (DOE), CARB and other concerned stakeholders have invested nearly $7 million in research[5] into the behavior and safe use of next generation refrigerants. This research has been used in the development of the safety standards as well as in development of training and in preparation for the transition.

In 2019, AHRI also launched the Safe Refrigerant Transition Task Force[6,7] to address concerns related to the transition evaluating the end-to-end supply chain for conversion readiness, to identify needs, and resolve issues or make recommendations to enable the safe use of low-GWP refrigerants in a timely manner to meet regulatory requirements.

AHRI has provided significant information to CalFIRE, which has convened a working group to discuss the safety standards and the changes needed to the building codes to enable the use of low GWP refrigerants in hopes that harmonizing legislation would have enabled the necessary code changes by year end to comply with the January 2023 transition.

However, due to the pandemic, legislation is no longer a practicable option, and the best outcome from CalFIRE's working group is a code change that will be only be finalized by January 2022.

The entire supply chain is facing the challenge of the COVID-19 pandemic.

The pandemic has disrupted businesses and preparations for the 2023 transition. Based on an AHRI member survey, with representation from the entire industry of essential heating and cooling equipment manufacturers, the pandemic had directly led to at least temporary closures of manufacturing facilities for sixty percent of members by April 2020 and over eighty percent of members are experiencing reduced manufacturing capacity. Most members have been forced to furlough staff to address the economic impact of the COVID-19.

The pandemic has also changed the long-term outlook of the industry. Half of the industry has experienced lower availability of resources for research & development, resulting in the postponing of 2020 investment for new products as planned. Some resources have been reallocated to address supply chain disruptions (e.g. qualification of alternate components). Other resources have been unavailable for other reasons (e.g. furlough or social distancing requirements). Over 80 percent of respondents are experiencing supply chain disruptions. By mid-April, one-third of AHRI members were already unable to consistently source parts, components, and supplies needed to manufacture equipment. Additionally, almost half of the respondents were experiencing delays in equipment safety and performance certifications.

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[4] Unions and contractor organizations have indicated to AHRI that they need eighteen to twenty-four months for training prior to the transition.

[5] Research results can be found at this website. http://www.ahrinet.org/Resources/Research/AHRI-Flammable-Refrigerants-Research-Initiative

[6] Differences in the properties of next generation refrigerants (e.g., flammability and toxicity) may require changes to current practices to minimize risk while meeting regulations. Some new refrigerants are historic products that have not been used in some time or that will be used with larger charge sizes (e.g. ammonia and hydrocarbons)

[7] More information about the AHRI Safe Refrigerant Transition Task Force see the following website. http://www.ahrinet.org/SafeRefrigerant

To combat COVID-19, manufacturers have taken important steps like social distancing, moving to remote work, and providing additional healthcare support to ensure the safety and wellbeing of their employees, prevent the spread of illness, and comply with state requirements. These steps, however, have led to reduced staffing and resources.

AHRI proposes that CARB delay the 750 GWP limit until January 1, 2025 with the following provisions and commitments.

As a result of the challenges related to the building codes and the pandemic, AHRI is seeking a delay in the January 1, 2023 transition date limiting GWP of refrigerant to below 750 to January 1, 2025 with a limit of 750 GWP. AHRI understands that CARB still needs to meet the statutory mandate and makes the following proposal to compensate for a delay until January 1, 2025.

AHRI Proposal

Air conditioning (AC) original equipment manufacturers (OEMs) will enable refrigerant recovery from 2022 to 2030 to offset the quantity of refrigerant higher than 750 GWP the OEM placed in new equipment shipped to and not exported from California in 2023 and 2024 in carbon dioxide (CO2) equivalent (eq) units (using CARB's Standardized Regulatory Impact Assessment (SRIA) leak rates and equipment lifetimes), GHG_I). The amount to be offset will be adjusted up or down (GHG_A) to recognize the refrigerant used in new equipment sold between 2023 and 2030 by: (1) Changes in refrigerant charge size and (2) Refrigerant GWP less than 750 GWP.

OEMs may facilitate recovery, purchase or use reclaimed refrigerant, or enable the destruction of recovered refrigerant in the equivalent quantity in CO2 eq units from 2022 to 2030 to compensate.

Details of the proposal are provided in Attachment 1. The proposal will enable the recovery and use of reclaimed refrigerant for servicing which will encourage best practices necessary for a safe transition to lower GWP refrigerants and to prepare for the Kigali HFC phase-down nationally. It also broadens industry engagement in the effort to reduced HFC emissions to those most able to reduce them.

Finally, AHRI thanks CARB for the continued dialogue to find a practical way forward to meet California's ambitious climate goals. Please contact Helen Walter-Terrinoni at hwalter-terrinoni@ahrinet.org or 302-598-4608.

Sincerely,

Helen Walter-Terrinoni

Helen Walter-Terrinoni
Vice President, Regulatory Affairs
Air-Conditioning, Heating, and Refrigeration Institute