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December 7, 2020

Elizabeth Scheele
California Environmental Protection Agency
California Air Resources Board
1001 I Street
P.O. Box 2815
Sacramento, California 95814

Re: Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Chillers, Aerosols-Propellants, and Foam End-Uses Regulation

Dear Ms. Scheele:

Rheem Manufacturing Company (Rheem) appreciates the opportunity to comment on the revised California Air Resources Board (CARB) Draft Proposed Regulation: *Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Stationary Air-conditioning, and Other End Uses*.

Rheem is headquartered in Atlanta, Georgia and operates multiple facilities for the manufacture or support of one of the most comprehensive lines in the U.S. of residential and commercial air conditioners and heat pumps with nationwide distribution through various channels. Rheem manufactures heat pump water heaters and heat pump pool heaters, with many under the Raypak® brand, through its Water Heating Division. Rheem also designs, manufactures and markets energy-efficient commercial and industrial refrigeration equipment and system solutions via its Heat Transfer Products Group (HTPG).

Rheem is a long-standing proponent of reducing greenhouse gas (GHG) emissions in California and truly values the efforts of the Air Resources Board to reduce the consumption and production of hydrofluorocarbons (HFCs). We strongly support the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer to phase down HFC usage as an established and practical approach to a move away from refrigerants with high global warming potential (GWP). Rheem has made every effort to work cooperatively with CARB staff in the development of the HFC regulation and to provide both direct input to CARB as well as indirect feedback via industry organizations. We would like to thank the CARB technical staff for acknowledging several of our concerns throughout the rulemaking process, and we respectfully offer the following comments.

Stationary Air Conditioning (AC)

Rheem supports the transition to the 750 GWP limit for new stationary AC equipment, but opposes the 1/1/2023 compliance deadline on the grounds that achieving the standard by that date is untenable because (i) current building codes prohibit the use of refrigerants with low flammability in stationary AC equipment, (ii) there is a lack of a commercially-available group A1 refrigerant with GWP < 750, and (iii) the COVID-19 pandemic is taking an ongoing toll on our industry. Rheem favors an orderly refrigerant transition for stationary AC on 1/1/2025 and strongly encourages CARB to adopt this as the effective date of a 750 GWP limit for new AC equipment in California. Recognizing that additional measures would be necessary to meet the stated GHG emissions reductions goal for California, Rheem recommends that the 1/1/2025 effective date be coupled with a service



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ban on the use of new R-410A refrigerant in existing equipment beginning in 2023. Rheem has contributed to the several industry attempts to submit reasonable proposals for CARB's consideration that advance the important cause of GHG reduction while accounting for the real implementation challenges that manufacturers cannot reasonably control. Our understanding is that neither the July 30, 2020 AHRI proposal nor the September 18, 2020 AHRI proposal were deemed acceptable by CARB staff, but we are encouraged by the most recent conversations between CARB and industry organizations and are confident that we can arrive on a mutually acceptable solution. The solution should take into account the following considerations:

- **Progress is possible in 2023-2024.** Although a compliance date of 1/1/2025 for new equipment is recommended, GHG reduction progress is possible much earlier. Rheem suggests that CARB:
 - Implement the previously suggested service ban on refrigerants >750 GWP but advance the effective date to 1/1/2023, which results in substantial environmental benefits for years 2023 and 2024 and, equally importantly, is achievable and enforceable. Rheem is willing to help bring about increased refrigerant reclamation in its distribution channels and downstream customers by promoting the program and providing training on the importance and value of refrigerant recovery.
 - Permit the use of nationally-recovered refrigerant in any state-level reclaim credit program. There is not enough supply of reclaimed R-410A within the state of California now, nor projected to be available in 2023, to supply the demand from new AC equipment.
 - Award credit for all high-GWP refrigerants recovered for reclamation, reuse or destruction in order to have greatest environmental benefit and account for the scarcity of reclaimed R-410A within the state of California.
 - Avoid requiring segregation of "California Only" units destined for California, which would impose onerous labeling requirements and increased inventory that result in additional cost to manufacturers and ultimately, consumers.
- **Compliance with the draft regulation as written is unfeasible.** The burden to mitigate the unfeasibility of compliance cannot fall to manufacturers, especially when the readiness of equipment is not at issue. While it remains possible for small segments of ductless AC equipment to transition earlier, it is not reasonable to require a transition for residential and commercial ducted air conditioning -- which represents the large majority of AC equipment for California -- where there is no broadly applicable compliance option. Furthermore, there is no group A1 refrigerant replacement with GWP <750 that is commercially available today for use in stationary AC end-use. Both updated codes and replacement refrigerants need to be available well in advance of effective date of the regulation to allow for proper design.
- **Building codes are not ready.** The proposed limit of 750 GWP on refrigerants in stationary AC end-use involves the transition from non-flammable to flammable refrigerants in most cases, and the installation of all ducted and some ductless AC equipment containing flammable refrigerants is prohibited by state building code. California building codes will not be updated to permit the installation of AC equipment containing flammable refrigerants in time for a 1/1/2023 effective date. Rheem is confident that adoption of safety standards into model and state building codes will be achieved in time to support a 1/1/2025 transition. Rheem continues to participate in revision of safety standards (ASHRAE, UL) and update of model codes (IAPMO, ICC) for the timely update of model codes in the upcoming 2024 development cycle.



- **Coronavirus has impacted the HVACR industry.** Finally, COVID-19 is a human and economic tragedy on a global scale, and the HVACR market has experienced its share of the impact. Manufacturers have had to make adjustments in all aspects of operations and supply to adapt to the situation, which has put a strain on resources across the board. Despite enormous investment to date in the development of low-GWP offerings, product development remains affected due to availability of components and labor. An effective date in 2025 for the regulation will allow for development of a broader selection of products and avoid overlap with the product development plans for the revised U.S. Department of Energy revised Test Method and Energy Conservation Standards and which go into effect on 1/1/2023.

Rheem recommends that CARB continue to consider the practical feedback from manufacturers and adopt the revisions currently being discussed in order to effect an achievable and enforceable program.

Refrigeration

Rheem generally considers the proposed GWP limits and timing with respect to refrigeration equipment to be reasonable and achievable, but would like to make suggestions that will provide manufacturers of refrigeration equipment more refrigerant options as they design and implement changes across similar product lines, while still allowing California to meet its objectives in driving transition to lower-GWP refrigerants.

- Rheem expresses support for the revisions to the disclosure statement that were included in the October 22, 2020 regulatory text.
- With respect to the proposed prohibition on refrigerants with a GWP of 150 or greater from use in new remote condensing units (RCUs) containing more than 50 pounds refrigerant, effective January 1, 2022, Rheem suggests revising to:
 - Prohibit refrigerants with a GWP of 150 or greater from use in new RCUs containing **more than 150 pounds** refrigerant, effective January 1, 2022
 - Prohibit refrigerants with a **GWP of 1500 or greater** from use in new RCUs containing **up to 150 pounds** of refrigerant, effective January 1, 2022.
- The above-suggested requirement would apply to RCUs below 50 pounds, which are not covered by the current proposed regulatory order. This provides the benefit of a greater scope of emissions reductions while avoiding the unintended consequence of encouraging the use of multiple <50-pound systems in a single structure, a situation that increases potential for leaks and energy consumption.
- Although carbon dioxide (CO₂) is a viable solution for smaller RCUs, technology challenges remain when applying its use to all systems. For example in low-temperature remote condensing units, compressors are not available to handle CO₂ compression in a single step. Rather, CO₂ compression must be accomplished by using either (i) a low-side compressor plus a high-side compressor or (ii) a two-stage compressor with intercooling, both of which would negatively impact efficiency versus single-step compression with a group A1 or A2L refrigerant. For walk-in coolers and freezers (WICF), this situation makes it difficult, or at the very least very costly, to comply with the federal energy requirements applicable to WICF.

Rheem suggests these improvements, not only to allow greater refrigerant selection and efficiency for smaller RCUs, the average size of which Rheem believes to be greater than 50 pounds, but also to unlock additional emissions reduction potential.

Rheem would like to take this opportunity to thank Chair Mary Nichols for her tenure and dedication to the Air Resources Board and wish her all the best in her future endeavors. Rheem reiterates its appreciation of the CARB Board and staff for consideration of the above comments, and we look forward to working together on the



remaining steps of the rulemaking process. If you have any questions regarding this submission, please do not hesitate to contact me at allison.skidd@rheem.com.

Sincerely,

A handwritten signature in black ink that reads "Allison J. Skidd".

Allison J. Skidd
Sr. Manager, Global Regulatory Affairs – Air
Rheem Manufacturing Company

CC: Karen Meyers

