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December 7, 2020

Chair Mary Nichols
Executive Officer Richard Corey
California Air Resource Board
1001 I Street,
Sacramento, California 95814
Electronic submittal: <https://www.arb.ca.gov/lispub/comm/bclist.php>

RE: Proposed Amendments to the Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Chillers, Aerosols-Propellants and Foam End-Uses

Dear Chair Nichols and Mr. Corey:

Carrier provides fire safety, security, building automation, heating, ventilation, air conditioning and refrigeration systems and services to promote integrated, high performance buildings that are safer, smarter and sustainable. Carrier is the founder of the modern HVAC industry and operates across the globe. Our range of products includes unitary residential and commercial products, including ducted and ductless, transport refrigeration products, air and water cooled chillers, and HVAC building services.

Carrier is committed to improving the environmental performance of our products through lower GWP refrigerants and sustainable HVAC and Refrigeration technologies. Carrier's history of driving these improvements and being an industry leader is evidence of this commitment. Carrier led the industry in phasing out ozone-depleting refrigerants more than 20 years ago and was among the first companies to pledge to transition stationary air conditioners in 2023.

Carrier supports the transition of chillers to lower GWP refrigerants per the regulatory language included in this proposal. While Carrier originally supported a January 1, 2023 transition for stationary air conditioners, by no fault of manufacturers this is no longer achievable and a January 1, 2025 transition is now the earliest possible date. Outlined in the following pages are the reasons a transition date change is required, the reasons CARB's alternative compliances in the ISOR are not achievable. As further explained below, Carrier is committed to support the proposal presented by CARB staff to AHRI and The Alliance for Responsible Atmospheric Policy representatives on December 4th.



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January 1, 2025 Transition Date

Due to the lack of completed building codes, the January 1, 2023 transition is no longer feasible. The leading candidates for lower GWP refrigerants are classified as A2L refrigerants according to the ASHRAE 34 standard. Use of these refrigerants require updated product safety standards and installation standards to ensure the safety of HVAC technicians, building occupants, and homeowners. These standards must be adopted into the California Building Standards Code before the product can be installed. The Initial Statement of Reason released with the regulatory proposal describes the process and activity thoroughly.

Carrier has been an active contributor in the process, investing significant research to support a safe transition to low GWP refrigerants. This investment has helped inform the UL and ASHRAE safety standards. Carrier has also been an active participant in the model code process, as well as the State Fire Marshall's A2L working group. Carrier's goal has been to help California update the code in the Triennial Code Adoption Code Cycle to enable a January 1, 2023 effective date. Unfortunately, efforts have been unsuccessful, and the code will not be updated until the intervening code cycle, which would become effective mid-2024. Accordingly, January 1, 2025 is the first feasible date to transition to low GWP refrigerants. To attempt to do so in mid-2024 during the cooling season is not achievable by manufacturers, distributors, or HVAC contractors. It would cause significant disruptions in the supply chain and could therefore harm consumers.

It is important to note a January 1, 2025 transition is only achievable if ASHRAE Standard 15, ASHRAE 15.2, and UL-60335-2-40 are adopted into the building code as written. There has been extensive work in the development of these standards. Deviation from these standards could require manufacturers to redo much of the work that has been completed to date. It would not leave enough time for adequate training of HVAC contractors and therefore would delay the transition beyond January 1, 2025. The state of California, consumers, and industry stakeholders all benefit from relying on the extensive work that has gone into these standards.

Carrier believes the impact of Covid 19, while not the primary reason to shift the date to January 1, 2025, should also be considered. Carrier, like other manufacturers, provides a complete portfolio of stationary air conditioners and heat pumps for residential and commercial buildings in California. This includes equipment with different capacity outputs to meet the application requirements. For each capacity, there are multiple efficiencies ranging from federal minimums to much higher efficiencies. To ensure that all capacities and all efficiencies were ready for transition on January 1, 2023, manufacturers needed to start development in 2020. Unfortunately, the COVID-19 pandemic has impacted this effort. Some product development engineers have been required to shift focus to solve supply chain issues



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to ensure Carrier's activities as an essential business can continue. Additionally, all engineers shifted to working from home to promote workplace safety, which slowed the development process. Manufacturing engineers shifted focus to rearranging production lines to limit the risk of COVID-19 transmission. All these changes impact the release schedule of low GWP product and will result in a limited amount of choice for California consumers, specifically a limited choice in higher efficiency alternatives.

As state previously, Carrier supported a transition to low GWP refrigerants in 2023. The building codes not being complete, and the impact of the COVID-19 pandemic are two reasons outside of manufacturers control that no longer make that possible. Therefore, Carrier recommends the transition date of January 1, 2025 be established provided ASHRAE 15, ASHRAE 15.2, and UL-60335-2-40 standards are adopted into the building code as written.

Alternative Compliance Methods Not Viable

CARB staff stated they are considering additional compliance paths for manufacturers that cannot transition product until January 1, 2025. It is Carrier's position that neither of the options outlined by CARB staff in the ISOR are achievable. The first involved manufacturers using reclaimed R410A in new units produced in 2023 and 2024. This path is unachievable because of a lack of R410A reclaimed refrigerant available. According to estimates by AHRI, there are approximately 1600-1800 metric tons of R410A that will come out of service per year in California from 2021 to 2027. The need for new equipment per year during this time is approximately 4000 metric tons per year. If the amount of reclaim nationally is considered, there is still a shortage of refrigerant available. According to a report from the EPA, there was approximately 1200 metric tons of R410A reclaimed in 2019. Considering these quantities, it is not feasible to generate enough supply of reclaim to include in new product in 2023 and 2024.

The other compliance path CARB staff presented in the ISOR was for manufacturers to offset the CO2 equivalent amount of refrigerant equal to the initial charge plus the anticipated additional service gas for the lifetime of the exempted equipment within five years. Carrier has several objections to this alternative. First, it is unclear how a manufacturer is intended to comply. Carrier sells stationary units to distributors who sell to contractors. Carrier is far removed from the sell and handling of refrigerant with these units in the field. Therefore, it is unreasonable to hold a manufacturer accountable for recovering or purchasing this level of refrigerant. Second, the reasoning for requiring the recovery or purchase of the initial charge plus the anticipated additional service gas is unclear. This appears to be penalizing a manufacturer for not transitioning to low GWP refrigerants or using reclaim in their new product in the years 2023 and 2024. Considering the low GWP transition cannot occur because of codes and considering there will be a lack of reclaim available to meet market demand, it is



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Carrier's opinion that this penalty is unreasonable. Finally, Carrier objects to including anticipated additional service gas because it is impossible for Carrier to know these quantities. For these reasons, Carrier objects to this alternative compliance as written in the ISOR.

Carrier Supports CARB Staff Proposal to AHRI

Carrier has been actively engaged within AHRI to help define a regulation that enables early action in California to reduce emissions, maintains affordable product choices for consumers, and is achievable for contractors, distributors, and manufacturers. It is Carrier's opinion that these are key principles for a successful regulatory structure. As such, Carrier supports the proposal that has been recently presented by CARB staff to AHRI and The Alliance because it achieves these principles.

Carrier supports a transition date of January 1, 2025 provided ASHRAE Standard 15, ASHRAE 15.2, and UL-60335-2-40 are adopted into the building code as written. Carrier is committed to continued participation in the State Fire Marshall's A2L working group and will invest time and research dollars to continue development of the standards to promote adoption into the building codes. Carrier will continue participation in the AHRI Safe Refrigerant Transition Task Force as well as its internal activities to achieve the goal of transitioning to low GWP refrigerants as safely and swiftly as possible.

Carrier supports California's goal to increase the use of reclaimed refrigerant in California and agrees to support this effort by leveraging the means available to Carrier. Carrier also supports giving a credit to manufacturers that transition to a refrigerant with a lower GWP than 750. This recognizes efforts by manufacturers to exceed California's emissions goals and will incentivize choices to further reduce emissions by the industry.

Conclusion

Carrier appreciates the opportunity to provide these comments and contribute to helping California achieve its emission reduction goals. To achieve this goal, it is critical consumers have many affordable choices in the market, and implementation is achievable for manufacturers, distributors, and contractors. As such, Carrier recommends the transition date is moved to January 1, 2025 for stationary AC. The alternative compliance paths presented by CARB in the ISOR are not achievable by manufacturers and will not meet emission reduction targets. Carrier instead recommends approving staff's proposal as presented to AHRI and The Alliance for Responsible Atmospheric Policy, which includes giving credit for the use of refrigerants with GWP levels below 750. This proposal is achievable manufacturers to implement and will therefore ensure there are many affordable products for consumers and CARB's emission reduction goals will be met.



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If you have any questions regarding this submission, or wish to discuss further, please do not hesitate to contact me.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Jason Thomas".

Jason Thomas
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Carrier

CC: Mr. Matthew Thornblad, Director, Government Relations, Carrier

CC: Mr. Todd Nolte, Sr. Director, Product Strategy and Regulatory