



2111 Wilson Boulevard Suite 500 Arlington VA 22201-3001 USA
Phone 703 524 8800 | Fax 703 562 1942
www.ahrinet.org

January 17, 2017

Mr. Richard Corey
Executive Officer
California Air Resources
1001 I Street
Sacramento, CA 95814

RE: AHRI Comments on California Air Resources Board Revised Proposed Short Lived
Climate Pollutants Reduction Strategy

Dear Mr. Corey,

These comments are submitted by the Air-Conditioning, Heating and Refrigeration Institute (AHRI) in response to the California Air Resources Board (ARB) revised proposed short-lived climate pollutants (SLCP) reduction strategy.

AHRI is the trade association representing manufacturers of heating, cooling, water heating, and commercial refrigeration equipment. 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 output of the HVACR industry is more than \$20 billion. In the United States alone, our members employ approximately 130,000 people, and support some 800,000 dealers and contractors.

AHRI and its members have supported measures that reduce emissions of high Global Warming Potential (GWP) refrigerants for a very long time. We supported the U.S. Environmental Protection Agency (EPA) when it proposed to extend the provisions of Section 608 of the Clean Air Act (CAA) to hydrofluorocarbons (HFCs). We also supported ARB when it strengthened its regulations on the management of high GWP refrigerants several years ago. At the international level, we embraced efforts to phase down HFCs under the Montreal Protocol. We see the agreement reached in Kigali, Rwanda, last October as a major policy step forward in the global effort to reduce greenhouse gas emissions.

Last year, we cautioned ARB against the implementation of the HFC provisions contained in the Short Lived Climate Pollutants Reduction Strategy. We noted that federal requirements and international agreements have proven to be the most effective way to reduce emissions of high GWP refrigerants. Our position has not changed. We strongly believe that a uniform federal mandate is more desirable and effective than a

state-by-state effort which could lead to inconsistent requirements between regions with significant added costs of compliance being passed to consumers.

Several years ago, the HVACR industry committed to an orderly transition to lower GWP refrigerants. This commitment is even stronger today. Industry has spent and continues to spend considerable resources researching alternative refrigerants and developing lower GWP technologies. The industry is also committed to the U.S. implementation of the Montreal Protocol amendment on HFCs. Consequently, we urge ARB to consider the points raised below before finalizing its strategy on HFCs.

Assessment of the Montreal Protocol Agreement

We understand that ARB is currently assessing the impact of the Montreal Protocol agreement on HFC emission reductions in California. We urge ARB to make the analysis publically available and to solicit stakeholders' input and comments.

Transitioning to Lower GWP Refrigerants Will Take Time

AHRI appreciates ARB's further evaluation of the GWP limit of 150 for commercial refrigeration equipment and 750 for air conditioning products and their effective dates. As previously noted by AHRI, industry has been researching alternative refrigerants for several years, and while viable alternatives have been identified, it will take several years before these refrigerants could be safely used in equipment.

Most of the alternative refrigerants being considered are flammable. This presents unique challenges to the industry as products must be completely redesigned to safely use these refrigerants. The use of flammable refrigerants in air conditioning and refrigeration products increases the complexity because it requires the update of product and equipment room safety standards which then need to be included in state building codes.

Our industry has mobilized to accelerate the update of these safety codes and companies are dedicating personnel and significant funding for research to ensure these standards are updated in a timely manner. AHRI is leading a research program that will provide risk assessment and mitigation methods to allow these refrigerants to be used safely in air conditioning and refrigeration equipment. ASHRAE, the Department of Energy (DOE) and ARB have joined AHRI in funding this research program.

However, even with this unprecedented effort, these safety standards will not be available for use before 2018 and are unlikely to be included in model building codes before 2021. Given that equipment cannot be redesigned before the completion of safety standards and the time it takes to redesign compliant equipment; manufacturers are unlikely to transition product lines to these alternatives until well after 2021.

Many of the low GWP alternative refrigerants are not EPA SNAP approved

Moving to lower GWP alternatives will require the use of refrigerants that are not yet approved under the EPA SNAP program in the air conditioning and refrigeration

sectors. Therefore, and until such a time when EPA approves them, they cannot be legally used by manufacturers. EPA's SNAP approval of these refrigerants hinges on the availability of safety codes and standards that properly address their use. As stated above, these safety codes and standards will not be ready until around 2021 at the earliest.

Minimum energy efficiency standards effective dates must be taken into consideration to avoid multiple equipment redesign

The energy efficiency of most air conditioners and commercial refrigeration equipment is currently regulated by the Department of Energy (DOE) and/or the California Energy Commission (CEC). These minimum energy efficiency standards are updated on a regular basis and their effective dates must be taken into account to avoid having to redesign products twice in a short period of time to meet the energy efficiency minimums and to accommodate low GWP refrigerants. For example, federal energy conservation standards for residential central air conditioners and heat pumps are on a 6-year schedule and the next minimum efficiencies will become effective in 2023. However, given that the dates of completion and adoption of safety standards is not expected until 2021 at the earliest, new products using flammable refrigerants are unlikely to be available in meaningful quantities by 2023. Manufacturers are more likely to redesign for flammable refrigerants around 2029 when the next round of minimum efficiencies will be effective. The same is true for a variety of products including commercial air conditioners and commercial refrigeration equipment.

Training gaps pose challenges to the safe adoption of flammable refrigerants

The majority of technicians servicing air-conditioning and refrigeration equipment in the United States have not been trained to service equipment with flammable refrigerants. Prior to installing equipment with flammable refrigerants, a comprehensive standardized training program must be developed and implemented to ensure technician and building occupant safety. Additionally, service trucks must be modified and equipped to transport flammable refrigerants and include the necessary tools and equipment to ensure safe charging, recovery, and recycling. Manufacturers can only control the training of their own service technicians, whereas, independent service providers also need to adopt best practices and certify employees.

Refrigerant Management

AHRI believes that refrigerant management including reclamation is a very effective tool in reducing refrigerant emissions. To that end, the EPA published a final rule last November extending provisions of Section 608 of the Clean Air Act to HFCs. We strongly recommend that ARB assess the potential reduction in HFC emissions in California from this industry supported final rule. In addition, AHRI and other industry associations launched the Global Refrigerant Management Initiative (GRMI). This effort will identify and implement opportunities to educate the HVACR industry's global supply chain on ways to improve the management of refrigerants to reduce leaks and service emissions, and to promote the, recovery, reclamation, reuse, and appropriate end of life destruction of refrigerants and foam blowing agents. This initiative, once fully operational within the next year or two, will further reduce emissions in California.

Summary

Industry is committed to an orderly transition to lower GWP refrigerants governed by the HFC phasedown schedule agreed to under the Montreal Protocol. When finalizing its strategy, we urge ARB to take into consideration the points raised in the letter which can be summarized as follows:

- The required safety standards will not be ready until 2018-2020
- Model building codes will not be ready until 2021-2024
- Manufacturers require approximately 5 years to design and launch dramatically new and different air conditioning and refrigeration products. This process cannot occur until safety standards and building codes are finalized.
- Necessary and significant service training is unlikely to be completed until 1-2 years after products are commercially available.

AHRI appreciates the opportunity to provide these comments. If you have any questions regarding this submission, please do not hesitate to contact me.

Sincerely,



Karim Amrane
Senior Vice President
Tel: 703/524-8800 ext.307
Email: kamrane@ahrinet.org