



Shaping Tomorrow's
Built Environment Today

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**Written Testimony of
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**to the
U.S. Senate Committee on Environment and Public Works
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S. 2754, American Innovation and Manufacturing Act of 2019

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Chairman Barrasso and Ranking Member Carper, thank you for accepting written testimony on S. 2754, American Innovation and Manufacturing Act of 2019 (AIM Act).

ASHRAE, founded in 1894, is a technical society advancing human well-being through sustainable technology for the built environment. The Society and its more than 57,000 members focus on building systems, energy efficiency, indoor air quality, refrigeration and sustainability within the industry. ASHRAE does this through research, standards writing, publishing, certification and continuing education. Additionally, the Society focuses on public safety and health concerns and provides guidance for a safe environment during extraordinary events.

ASHRAE supports passage of the AIM Act, as it provides industry with a clear and orderly path to transition out of high-polluting hydrofluorocarbons (HFCs) and into a next generation of refrigerants. The AIM Act also creates an element of certainty needed for the heating, ventilation, air-conditioning and refrigeration (HVACR) sector, which employs 1.3 million people in the U.S. alone. The transition will also help U.S. manufacturing companies to export products, as this transition is already taking place in Europe.

Refrigeration and air conditioning are technologies that provide a broad range of benefits to society, including enabling the production and preservation of foodstuffs, manufacture of pharmaceuticals, heating and cooling for human comfort, and temperature/humidity control for industrial processes. Because HFCs are widely used as working fluids in these systems, their selection has significant impacts on the cost, safety, reliability, performance, and energy consumption of the equipment. The AIM Act will enable industry to transition from the current HFC refrigerants to a next generation of refrigerants without disruption to the end-users that rely on refrigeration and air conditioning technologies.

ASHRAE stands ready to apply its technical expertise and leadership in support of the transition to a next generation of refrigerants, similar to the contributions we made in the successful phase-out of ozone-depleting CFC and HCFC refrigerants in the past. ASHRAE can leverage the breadth and depth of its expertise to encourage the proper and safe use of next-generation refrigerants to replace high global warming potential HFCs into the future.

For more than a century, ASHRAE has been at the forefront of refrigeration technology. Two of its oldest standards have become essential industry standards:

- ANSI/ASHRAE 15-2019, *Safety Standard for Refrigeration Systems*; and
- ANSI/ASHRAE 34-2019, *Designation and Safety Classification of Refrigerants*.

ASHRAE 15 and 34 are two standards critical to the transition to next generation refrigerants, as they establish safeguards to protect people and property and provide a uniform system for assigning reference numbers, safety classifications and refrigerant concentration limits to refrigerants.

ASHRAE's refrigeration safety standard 15 was first developed in 1915. Since its initial publication, it has undergone numerous revisions and improvements. The most recent versions published in 2019 include new requirements specific to A2L refrigerants, which are a lower toxicity and lower flammability class of refrigerants.

In order to accurately characterize these A2L refrigerants and develop standards for their safe use, ASHRAE engaged in a three-year \$5.2 million research program, leveraging financial contributions from the U.S. Department of Energy (\$3 million), ASHRAE (\$1.2 million), and Air-Conditioning, Heating, and Refrigeration Institute (\$1 million). This integrated research program consisted of multiple projects, and it provided a more robust fact base that established properties and proper use of lower flammability refrigerants in refrigeration and air conditioning applications. The findings from this research were used to update ASHRAE Standards 15 and 34.

As one of only six standards-developing organizations in the U.S. that can self-certify its standards have met the American National Standards Institute (ANSI) requirements, ASHRAE has a well-established and rigorous standards development process. ASHRAE's consensus standards are developed through the participation of any and all interested and affected stakeholders, open for public review, and informed by independent research. ASHRAE's refrigerant standards projects committee members are comprised of an appropriate balance of engineering designers, academics, refrigerant producers, air-conditioning component manufacturers, government officials, air-conditioning and refrigerant systems manufacturers, trade associations, and users. Should future industry standards be required in this area, ASHRAE stands ready to serve the nation's needs.

As the world transitions out of HFCs and as we witness rapid growth in the international market for refrigeration and air conditioning, an orderly transition to the next generation of refrigerants is crucial. The AIM Act would help provide for that orderly transition and ensure that next generation products and equipment can be safely and effectively deployed.

ASHRAE has a direct interest in refrigerant transitions because the operation of much of the HVAC&R equipment depends on refrigerants. We would be pleased to answer any questions you might have. Thank you.