

**Before the Committee on Environment and Public Works
United States Senate**

Hearing on S. 2754, American Innovation and Manufacturing Act of 2019

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1. INTRODUCTION

The Air-Conditioning, Heating, and Refrigeration Institute (AHRI) is grateful for the opportunity to submit testimony to the Committee on Environment and Public Works of the United States Senate concerning *The American Innovation and Manufacturing Act of 2019* (AIM Act) (S. 2754).

AHRI is the trade association representing manufacturers of heating, ventilation, air-conditioning, refrigeration, and water heating (HVACR) equipment within the global industry. AHRI's more than 300 member companies account for more than 90 percent of HVACR residential and commercial equipment manufactured and sold in North America.

AHRI is mindful of the concerns expressed by Chairman Barrasso regarding the AIM Act and intends this testimony to provide detailed responses to those concerns, grounded in more than three decades of our industry's experience with transitions in refrigerant technologies.

2. TRANSITIONS IN REFRIGERANT TECHNOLOGIES**A. HFCs and the U.S. HVACR Industry**

Hydrofluorocarbons (HFCs) are chemical compounds used in a range of applications, including as refrigerants, foam-blowing agents, etchants, solvents, propellants, and fire suppressants.

HFCs were commercialized in the 1990s as substitutes for chlorinated and brominated chemical compounds such as chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), and halons. CFCs, HCFCs, halons, and other compounds were phased out over the course of the 1990s and early 2000s due to their impacts on the stratospheric ozone layer. HFCs are the principal substitutes for these ozone-depleting substances (ODS).

In the United States, an estimated 230,000 tons of HFCs are produced and imported each year.¹ Of this amount, the U.S. HVACR industry uses an estimated 70 percent for refrigeration and air conditioning applications in American homes and businesses. This industry annually contributes 2.3 million jobs and \$158 billion in goods and services to the U.S. economy.²

B. Historical Background

In the 1980s, the U.S. HVACR industry worked constructively with the Reagan Administration and the George H.W. Bush Administration to develop policies capable of guiding an orderly transition into next generation refrigerant technologies.³

These policies took the form of the Montreal Protocol on Substances that Deplete the Ozone Layer, negotiated by President Reagan in 1987 and ratified by the United States Senate in 1988 by a vote of 83-0.⁴ The Montreal Protocol was implemented in the United States under Title VI of the Clean Air Act, which was signed into law by President George H.W. Bush as part of the Clean Air Act Amendments of 1990.⁵

For the past three decades, the U.S. HVACR industry has benefited from the unwavering bipartisan support of presidential administrations and leadership in Congress in the development, implementation, and administration of sensible federal policies involving refrigeration and air conditioning products and equipment.

Indeed, there are few areas where American companies can make multi-billion-dollar investments in research and development (R&D) fully confident the policy landscape will evolve in step with American innovation and technology leadership.

Today, that 30-year tradition of bipartisan support has never been more important. The U.S. HVACR industry is facing a growing, but increasingly competitive, global market. The issue of climate change challenges refrigeration and air conditioning manufacturers both in the types of refrigerants they use and in the energy efficiency of the equipment they manufacture. The only path forward for our industry is to embrace these challenges and to innovate to address them; otherwise we will be unprepared and ill-equipped to face a future of disparate regulatory risk, rising shareholder concerns, and increasingly environmentally conscious consumers.

Fortunately, the U.S. HVACR industry has significant experience with refrigerant choice and equipment design in the face of an environmental problem. In the 1980s, the issue of stratospheric ozone depletion led to our industry making substantial investments in R&D to develop new classes of refrigerants that had no effect on the ozone layer – namely, HFCs.

In transitioning to HFCs in the 1990s and early 2000s, we introduced improvements in equipment design and performance, including smaller refrigerant charge sizes, fewer leaks, and greater energy efficiency.

By leading the way with innovation and technology, we addressed an important environmental issue, expanded our market share at home and abroad, and provided American consumers with world-leading refrigeration and air conditioning equipment without meaningful increases in cost. Indeed, new equipment generally costs less to operate, due to energy efficiency gains made in conjunction with the transition, and also less to service and maintain, due to smaller refrigerant charge sizes and fewer leaks.

The transition from HFCs into next generation refrigerant technologies – many of which are made in the United States – represents an opportunity to continue to lead the world in these technologies and reap the benefits this leadership affords to American manufacturers, workers, and consumers.

As discussed more fully below, the U.S. HVACR's technology leadership and the benefits it affords to Americans are seriously jeopardized by the lack of a federal standard for HFCs. Our past success rested in significant part on the enactment of federal legislation in 1990. Our future success now depends on the enactment of federal legislation in 2020.

C. The AIM Act

In a nutshell, the AIM Act establishes a federal framework to guide an orderly transition to next generation refrigerant technologies. This framework is based to a substantial degree on the federal regulatory programs developed by the Reagan and Bush Administrations that guided earlier orderly transitions from CFCs, HCFCs, and halons – without materially increasing costs for consumers or imposing overly burdensome requirements on manufacturers.

The AIM Act phases down HFC production and consumption over the next 15 years, preserving 15 percent of baseline production and consumption levels for existing equipment and for applications for which appropriate substitutes are not available. The AIM Act also includes other provisions to protect such applications, thereby eliminating the risk of commercial and consumer hardships, price shocks, and supply shortages.

The AIM Act also gives those sectors ready and able to move quickly out of HFCs the chance to do so in an orderly, market-friendly manner, while providing flexibility to those sectors that need more time to plan before making a successful transition.

Importantly, the AIM Act does not prohibit the use of existing equipment, which consumers and business owners remain free to use through the equipment's lifetime; nor does it mandate the purchase of new equipment. HFCs will remain available for servicing and maintenance for decades, due to the 15 percent tail at the end of the phase down period and from the provisions in the AIM Act that enhance the recovery, recycling, and reclaim of used HFCs.

The AIM Act is discretely drafted, providing a highly limited grant of authority to the U.S. Environmental Protection Agency (EPA) that cannot be used for any purpose other than guiding an orderly transition from HFCs.

D. The HFC Transition

More than 15 years ago, the U.S. HVACR industry began investing billions of dollars in R&D to be the first to bring to market next generation refrigerant technologies. More than a decade

ago, the U.S. HVACR industry began working with the George W. Bush Administration to initiate discussions under the Montreal Protocol for a global phase down of HFCs. After nearly a decade of advocacy by the U.S. HVACR industry, these discussions culminated in the Kigali Amendment to the Montreal Protocol in 2016.

The Kigali Amendment intensified the global competition over next generation refrigerant technologies in the fast-growing international HVACR market. American-based companies have invested the most and are the best prepared to benefit from a global transition out of HFCs and into American-made next generation refrigerant technologies.

But over the past three years, the lack of a federal standard for HFCs has made it feel as though American-based companies are standing at the starting line, while foreign competitors race around the track. Hence the urgent need for the AIM Act.

One common question is why federal legislation is so important if this transition has already started. It is true that markets respond to innovation. The AIM Act does not change that. However, there is a significant difference between an orderly transition, guided by federal legislation, and a disorderly transition, which is now occurring in the absence of legislation.

With an orderly transition, the U.S. HVACR industry has certainty, stability, and predictability with regard to product lines, supply chains, distribution networks, and legal and regulatory requirements. Basically, all the variables a well-run company would consider before making a significant investment become known quantities. This is where the economic benefits reside – the 33,000 new jobs, the \$12.5 billion in direct manufacturing output, the positive swing in balance of trade, and the 25 percent boost in exports.⁶

In an orderly transition, the U.S. HVACR industry has a clear picture of how the transition from HFCs will proceed, so American companies can plan, invest, hire, and build.

With a disorderly transition, as is happening today, where there is no federal framework, the U.S. HVACR industry knows none of these things. It is in uncharted waters, since all prior transitions were guided by federal frameworks.

And with this uncertainty comes two things: cost and hesitation. The costs come from the potential of being caught “in the middle” of the transition, where, to remain competitive, a company has to maintain two product lines instead of one – one with HFCs and one with HFC substitutes. This is double the warehousing, double the supply chains, double the distribution networks, double the regulatory compliance efforts. This creates additional costs, which either hollow out a company’s profitability or get heaped on consumers – or, sometimes, both.

The hesitation is just as bad, because it means companies feel too uncertain about the future and therefore do not hire, do not invest, and do not build in the United States – so all those economic benefits associated with the HFC transition never materialize in U.S. markets.

Finally, there has been the suggestion that the AIM Act would create a “monopoly” for certain producers of HFC substitutes or otherwise afford insurmountable commercial advantages to a few large equipment manufacturers.

In fact, the opposite is true. The AIM Act would accelerate the already healthy competition over HFC substitutes, which feature some new entries, including new technologies such as HFOs and HFO blends, and also a range of existing products, such as ammonia, carbon dioxide, hydrocarbons, and others – all of which have been available for decades.

Moreover, the orderly transition created by the AIM Act will help smaller manufacturers remain competitive against larger firms. This is because, in a disorderly transition, these smaller companies will lack the resources to sustain duplicative product lines and be forced to operate in some regions and not in others due to the extra costs. Therefore, a disorderly transition, with no new federal standard, will be what leaves the United States with a commercial landscape where only large manufacturers can survive (and even then, a disorderly transition hurts large manufacturers, too).

3. THE AIM ACT: AN INDUSTRY VIEW

The AIM Act is based on Title VI of the Clean Air Act, enacted in 1990 as part of the Clean Air Act Amendments of 1990. Title VI sought to transition the U.S. economy out of ozone-depleting substances (ODS) and into substitutes and alternatives, such as HFCs, that did not deplete the stratospheric ozone layer.

Title VI did so by gradually restricting the production and consumption of ozone-depleting substances over a roughly 20-year period, by a “closed” allowance allocation and trading program. The program was “closed” in that allowances were distributed to regulated entities largely based on historic data and not subject to auction or trading on a secondary market.

Looking back over 30 years, the transition from ozone-depleting substances is considered a regulatory and commercial success.⁷ It produced transitions to substitutes and alternatives without material increases in costs for consumers and without supply shortages or other hardships for manufacturers.⁸ Many sectors experienced a growth in market share as a result of the transition and, particularly in the HVACR sector, the transition to HFCs and other substitutes was accompanied by significant improvements in equipment design and performance, creating savings for consumers through reduced operational and maintenance costs.⁹

As with Title VI and ozone-depleting substances, the AIM Act treats HFCs as *products* that are developed, marketed, and sold for value, rather than as *byproduct emissions* from a smokestack or as *equipment* that must be designed to a certain standard, such as for fuel economy.

The AIM Act makes it easier for companies to transition to substitutes not subject to regulatory restrictions. In practice, this means the phase down schedule in the AIM Act applies only to the U.S. economy as a whole – and not to individual users of HFCs. Few, if any, companies will reduce their use of HFCs in steps, according to the phase down schedule – *e.g.*, dropping to 60 percent of baseline levels in 2024 and then, eventually, 15 percent by 2036.

Instead, nearly all companies will seek to make a single transition from HFCs and into one or more substitutes by a date certain – again, because HFCs are used as products and not emitted

as by-products, with significant costs in having to maintain two lines of the same equipment, one with HFCs and one with HFC substitutes.

And that date certain is, for many users of HFCs, likely to occur sooner rather than later, as the economic benefits primarily reside in the growing market for next generation technologies. In other words: companies will look to the market, not to the phase down schedule. And, many markets are expected to transition early in the phase down schedule because it is most advantageous from a business perspective to do so.

Importantly, once a company has transitioned from HFCs, there is nothing further for the AIM Act to regulate. There also is nothing further a state can regulate. A state cannot “one up” the federal government in any meaningful way on HFCs, since over the course of the AIM Act’s implementation, more and more companies will be moving into substitutes and alternatives not subject to regulatory restrictions. It is the lack of a federal standard, and not the presence of state standards, that is the most significant challenge facing our industry with regard to HFCs.

4. ECONOMIC BENEFITS

The economic benefits at stake are significant, for the American HVACR industry and for the U.S. economy. An orderly transition from HFCs is expected to:

- Create 33,000 new jobs and sustain 138,400 existing jobs between now and 2030;
- Increase direct U.S. manufacturing output by \$12.5 billion, and total (direct and indirect) U.S. manufacturing output by \$38.8 billion between now and 2030;
- Improve the U.S. trade balance in equipment and chemicals by \$12.5 billion; and
- Increase the U.S. share of the global HVACR market by 25 percent.¹⁰

In addition, according to Senator John Kennedy (R-La.), the EPA’s analysis of the AIM Act shows the HFC phase down will save American consumers and businesses \$3.7 billion over 15 years.

Beyond these specific benefits, the AIM Act, as discussed more fully in section 2(D), above, would fill the void at the federal level regarding HFCs, settling the regulatory landscape and providing a clear direction for American manufacturers to plan, invest, hire, and build over the coming decade. Absent a federal standard, our industry will struggle to grow.

The future of the U.S. HVACR industry lies in the manufacture of next generation refrigerant technologies, and the AIM Act puts our industry on a market- and consumer-friendly path toward that future.

5. CONSUMER BENEFITS

A. Overview

For decades, consumers and business owners have benefitted from the technological innovation of the U.S. HVACR industry. Fears of higher costs accompanied past transitions from

CFC and HCFC refrigerants, but in fact refrigerant and equipment prices did not increase materially over the course of those transitions.¹¹ Indeed, such fears proved to be unfounded.

B. Past Transitions Produced Innovation in Equipment Design and Improved Performance

Consumers and business owners rarely noticed the CFC and HCFC transitions, as costs declined and supplies of CFC and HCFC refrigerants remain available to this day for servicing.¹² In a home air conditioning system, the refrigerant is less than one percent of the cost of the overall system.¹³ In a building chiller system, the refrigerant cost is less than 0.5 percent of the system's overall cost.¹⁴

New equipment is more energy efficient, uses smaller amounts of refrigerant, and has fewer leaks – meaning it costs less to run and to service. Indeed, we anticipate that many consumers and business owners will choose to replace older equipment due to improvements in energy efficiency, irrespective of the type of refrigerant used. (But, as noted above, the AIM Act does not in any way prohibit the use of existing equipment; nor does it in any way mandate the purchase of new equipment.)

C. Predictions of Consumer Harm in Past Refrigerant Transitions Proved Totally Wrong

When HFC-134a was introduced in the early 1990s, the predictions for its long-term pricing were between \$4 and \$12 per pound (\$7 to \$20 per pound in today's dollars, adjusted for inflation).¹⁵ Today, bulk HFC-134a is priced at approximately \$3 per pound in today's dollars.¹⁶

Also, in the early 1990s, some predicted the cost of recharging an automobile's AC system would be \$200 by the middle of the decade (\$318 in today's dollars, adjusted for inflation).¹⁷ Today, that cost is between \$123 and \$156 in today's dollars.¹⁸

D. Consumers and Small Business Owners Benefit from an Orderly Transition Out of HFCs

Many U.S. manufacturers have already announced new product and equipment lines using next generation refrigerants, such as HFOs. With an orderly transition from HFCs, the average price among all refrigerants is expected to be approximately \$7 per pound.¹⁹ HFO refrigerants are currently priced 2 percent to 7 percent higher than HFCs but are expected to be priced approximately the same as soon as 2022.²⁰

Experience with past transitions has shown that as a transition progresses, manufacturing costs and consumer prices are reduced due to economies of scale, with larger facilities coming online to produce new classes of refrigerants to meet growing demand. Plus, some next generation refrigerants are simpler versions of current products, which also yields reductions in cost.

Moreover, new HFO-based products and equipment can be up to 18 percent more energy efficient, which lowers operational costs.²¹ New products and equipment also will have smaller refrigerant charge sizes and lower leak rates, which lowers maintenance and servicing costs.²²

Because refrigerants comprise such a small part of overall system cost, estimates show no significant increases in equipment prices even if substitute refrigerants costs are multiples of current HFC costs.²³

6. TRADE & COMPETITIVENESS

The AIM Act is fundamental to the competitiveness of the U.S. HVACR industry. The slower the United States moves in phasing down HFCs, the greater the opportunity for foreign-based manufacturers to seize the mantle of technology leadership from the U.S. HVACR industry. Once lost, that mantle is virtually impossible to regain.

Moreover, the AIM Act would put an immediate end to a harmful and potentially illegal practice known as “dumping,” whereby foreign-based manufacturers export inferior products and equipment to the United States priced below the cost of manufacture. This predatory practice essentially kills American jobs, closes American factories, and bankrupts American companies.

The U.S. International Trade Commission affirmatively determined in 2017 that HFC products were being sold in the United States at prices below the cost of manufacture.²⁴ The Department of Commerce assigned “anti-dumping” duties, but this failed to stop this injurious practice, as foreign-based manufacturers simply relabeled and re-routed the products so as to appear to be coming from other jurisdictions not subject to the anti-dumping duties.²⁵

The AIM Act, once enacted, would restrict the import of HFCs as part of the production and consumption phase down, thereby allowing the Trump Administration to put an immediate end to this deleterious trade practice and reestablish a level playing field for American-made products and equipment.

7. ACCELERATING THE PHASE DOWN SCHEDULE

Title VI of the Clean Air Act includes a provision to accelerate the schedules for ozone-depleting substances. The U.S. HVACR industry utilized this provision during the transitions from CFCs in the 1990s and from HCFCs in the 2000s.²⁶

Under Title VI, accelerating the schedule helped a number of sectors plan for equipment conversions. It also helped U.S. manufacturers stay ahead of the curve in global markets, which often lagged U.S. transitions and thus were more accessible as export markets for American-made products.

Nevertheless, the presence of the accelerated schedule provision does beg the question: will it undermine claims that the AIM Act provides regulatory certainty?

The answer is no. As a general matter, for our industry, it is the presence of a schedule that provides certainty, not the specifics of that schedule. As previously mentioned, no company “follows” the phase down schedule in its use of HFCs. HFCs are products – and not by-product emissions from a smokestack. As by-product emissions, it might make sense for a company to gradually curb its emissions along the same downward curve as the phase down schedule. In such a scenario, changes to the schedule could be disruptive.

But the AIM Act does not regulate HFC *emissions*. It regulates the *production and import* of HFCs as *products*. And, as products, to avoid the significant cost burdens of carrying duplicate

HFC and non-HFC equipment lines, manufacturers will seek to make a complete transition into substitutes by a date certain, after which the specifics of the phase down schedule is of secondary importance. The focus of the manufacturers would be on substitute products that are not subject to regulatory restrictions.

Finally, it is important to note that a change in the phase down schedule does not prohibit the use of existing equipment, which consumers and business owners are free to use through the equipment's lifetime. Existing equipment is *not* subject to the AIM Act. And the AIM Act *does not* in any way mandate or otherwise require consumers to buy new equipment.

Nor does a change in the phase down schedule impact the availability of aftermarket supplies of HFCs, which are expected to be sustained for decades by the recovery, recycling, and reclaim of used HFCs. The phase down schedule applies only to *new* production and imports, not to recovery, recycling, and reclaim. Moreover, as discussed more fully below, applications for which no substitute is available are free to seek essential use exceptions, which shield such applications from any potential harm that might come from changes to the schedule.

8. SECTOR-BASED USE RESTRICTIONS

A. Section 10 Ensures a Level Playing Field for All Market Participants

Section 10 of the AIM Act provides for the establishment of sector-based restrictions on the use of particular HFCs. This section is fundamental to ensuring a level playing field for all market participants. The removal of this section unbalances the market.

Without this section, a lot of companies will be at risk of being caught "in the middle" of the transition, where they will have to maintain duplicate HFC and non-HFC product lines. This hollows out profitability and heaps costs on consumers.

As mentioned previously, many sectors will move significantly faster than the AIM Act's phase down schedule. Many companies will make a complete transition from HFCs in one fell swoop. Among the largest users, the HFC transition is likely to be completed by the end of the 2020s.

Section 10 gives those sectors able to move quickly from HFCs the chance to do so in a uniform and orderly manner. Absent this ability, sectors face significant uncertainty as to when to transition; a wrong choice could diminish competition and impact consumers.

Section 10 also helps those sectors that need more time to make a transition – *i.e.*, once the faster moving sectors are entirely out of HFCs, there is more room left under the phase down schedule for sectors for whom a transition would be more difficult. This flexibility is key to ensuring a fair and level-playing field for all market participants.

B. Why Section 10 Is Not SNAP

The Significant New Alternatives Policy (SNAP) program under Section 612 of the Clean Air Act was intended to ensure that new substitutes coming to market to replace older generations of ozone-depleting substances were safe for consumers and service technicians.

SNAP required the EPA to approve each substitute before it could be used. HFCs in use today were “approved” under SNAP. Section 10 does not in any way resemble SNAP. Its statutory language is wholly different, and it is entirely distinct in terms of purpose and operation.

Section 10 authorizes the EPA to restrict the use of an HFC in a sector or sub-sector either completely, partially, or on a schedule. These restrictions have nothing to do with substitutes. Moreover, Section 10 effectively requires the EPA to utilize the negotiated rulemaking procedure under the Negotiated Rulemaking Act in establishing any restrictions.

SNAP is a safety feature of Title VI. Section 10 is a valuable tool for industry to identify sensible transition pathways on a sector-by-sector basis.

9. ESSENTIAL USE EXCEPTIONS & OTHER SAFEGUARDS

A. Introduction

The AIM Act is based to a substantial degree on Title VI of the Clean Air Act, which successfully guided orderly transitions away from earlier generations of refrigerants. In particular, the AIM Act reflects the 30 years of industry experience under Title VI in providing maximum flexibility for HFC applications for which no substitute exists.

Some companies currently using HFCs have raised concerns over the scope, timing, and operation of the AIM Act’s (a) phase down of HFC production and consumption and (b) sector-based restrictions on HFC uses under Section 10.

To assuage these concerns, the AIM Act contains three “lines of defense” that will ensure the continued use of HFCs in applications where no substitutes exist or are commercially available.

B. The Three Lines of Defense

The three lines of defense are: (i) a phase *down* of HFC production and consumption, rather than a phase *out*; (ii) the ability to restrict uses either partially or on a graduated schedule; and (iii) the availability of essential use exceptions for renewable periods of up to five years.

i. Phasing Down HFC Production and Consumption

The legislation phases *down* the production and consumption of HFCs over a 15-year period, beginning in 2020 and ending in 2035. HFCs still will be produced and imported in amounts up to 15 percent of baseline levels from 2036 onward.

This 15 percent amounts to a total volume of approximately 50,000 tons – a significant quantity relative to some of the volumes cited by users expressing concern about the long-term availability of HFCs. Indeed, this is far less stringent than the phase *out* of the production and consumption of ozone-depleting substances under Title VI of the Clean Air Act.

ii. Flexibility in Restricting HFC Uses

The AIM Act allows the EPA to restrict the use of HFCs on a sector-by-sector basis. These restrictions can be implemented with flexibility – *i.e.*, they may be partial or on graduated schedules – and stakeholders have the opportunity to utilize negotiated rulemakings to ensure

that specific concerns in a sector over the existence and availability of HFC substitutes can be reflected in the final rule.

This is much more industry- and consumer-friendly than what transpired under Title VI, when SNAP was used to force transitions from certain HFCs in certain applications – with no flexibility in implementation and no opportunity for stakeholders to negotiate.

More importantly, the diversity of industries currently using HFCs mean that some sectors will seek to move quickly from HFCs and into substitutes, while other sectors will need more time and flexibility before making a transition.

Section 10 carefully takes this in account, allowing sectors able to move quickly into substitutes to do so. In turn, this frees up more “space” under the production and consumption phase down for use by those sectors that are more difficult to transition.

iii. Essential Use Exceptions

The legislation allows the EPA to authorize additional production or consumption of an HFC for an application for which no substitute exists. This “essential use” exception can be granted for up to five years and then renewed for additional periods of up to five years. Production and consumption of HFCs under these exceptions occurs outside of the phase down schedule and can continue for as long as needed.

The AIM Act makes essential use exceptions available beginning in 2034. Prior to that year, the gradual curve of the phase down schedule, the anticipated transitions in the 2020s of many high-volume sectors, and the increased levels of recovery, recycling, and reclaim of used HFCs is expected to allow for a sufficient supply of HFCs for remaining market participants. And even after 2034, these same factors may maintain supply such that essential use exceptions are not widely used, if at all.

Under Title VI, similar exceptions successfully protected the use of ozone-depleting substances in meter-dose inhalers until manufacturers were able to overcome technical challenges with substitutes. Fire suppression applications of ozone-depleting substances also were protected until high-performing substitutes became available. And military and aerospace applications were given additional time to ensure that new products had the necessary efficacy to meet the particularly exacting standards of these sectors.

Due to the presence of these exceptions, at no point did the phase out of ozone-depleting substances ever jeopardize the continued use of an ozone-depleting substance in an application for which no technical substitute was available. The EPA has three decades of experience in handling these kinds of exceptions and is generally considered to have worked well with industry in issuing exceptions for public health, military, aerospace, and fire suppression applications, among others.

The AIM Act is designed to carry forward this example and in no way force a transition for a sector or a specific application when no technical substitute is available or if such substitute would result in undue hardship to manufacturers, business owners, consumers, and the public.

C. Recovery, Reclaim, and Management

Beyond these three main lines of defense, the HFC legislation also seeks to encourage and increase the recovery and recycling of “used” HFCs for re-use – a process known as reclaim.

The reclaim industry developed in tandem with the transition out of ozone-depleting substances, such as CFCs and halons. A “reclaimed” substance is processed to ensure it meets the specifications of a newly produced “virgin” substance and can be used interchangeably with virgin material in virtually all applications.

To this day, reclaim has played a vital role in ensuring a robust supply of CFCs and halons for re-use in older equipment. For example, some buildings still use chillers that contain CFCs, despite the fact that no new CFC has been produced or imported in the United States for more than 20 years. Similarly, the aviation industry still uses halons in fire protection even though no new halons have been produced or imported in more than 20 years.

10. FEDERAL PREEMPTION OF STATE AUTHORITY

As previously discussed, unlike with point source emission requirements or equipment standards, the HFC phase down schedule in the AIM Act will not reflect what companies actually do. Many companies will transition completely away from HFCs by the mid-2020s. This is because it is costly for many businesses to make two types of the same equipment – one with HFCs and one without. It is cheaper, easier, and more profitable to transition in one fell swoop.

Once a company has transitioned from HFCs, states cannot impose a more stringent standard. There is nothing left for a state to regulate. The company has moved on to substitutes not subject to the AIM Act or other regulatory restrictions.

This is different from, for example, fuel economy standards. Automakers design entire fleets of vehicles to meet these standards and must redesign their fleets when these standards change. By contrast, the HFC phase down will lead most users of HFCs to stop using HFCs and switch to substitutes. Future changes in HFC regulations have no effect on a sector no longer using HFCs.

In other words: manufacturers will not follow the phase down schedule, but instead will time their transitions appropriately with the market. Given the speed of the market, this negates, to a substantial degree, the relevance and impact of state activity once they transition.

Thus, if the AIM Act is enacted in 2020, the opportunity to regulate HFCs in a material way will last about as long as the time it takes for EPA to complete its rulemaking obligations under the Act. States know this and would be extremely unlikely to expend limited time and resources trying to regulate something that offers no additional benefit.

Historically, states turned to other matters and no longer focused on refrigerant chemicals after a federal framework guiding an orderly transition out of ozone-depleting substances was enacted as part of the Clean Air Act Amendments of 1990. The presence of a federal framework for HFCs will have the same dampening effect on current and prospective state standards.

Moreover, federal preemption of state standards is not necessary for the economic benefits of an HFC phase down to flow to American manufacturers, workers, and consumers. Indeed, the single most glaring challenge facing the U.S. HVACR industry is the lack of a federal standard for HFCs – not the presence of state standards.

11. TECHNICAL CONSIDERATIONS

A. Safety of Next Generation Refrigerant Technologies

Current technologies have a broad range of safety characteristics, as do next generation technologies. HVACR equipment undergoes rigorous safety and energy efficiency testing (*e.g.*, through CSA, Intertek, and UL) before it can be sold in the United States.²⁷ In fact, the next generation technologies that have been added to EPA's SNAP program list of approved alternatives are specifically required to follow this process. This also is required in local and state building codes.

To date, the U.S. Department of Energy, the U.S. HVACR industry, and other stakeholders have conducted extensive research focused on risk reduction and upgraded safety standards in U.S. jurisdictions. This research was used in the development of U.S. safety standards that are far more conservative for the HVACR industry than those in foreign jurisdictions.

Additionally, there have not been any safety incidents in other countries, with less stringent safety standards, that have already begun using next generation refrigerant technologies, including new light-duty automobiles, and a variety of household products, including refrigerators and window air conditioning units.²⁸

B. Technician Training & Certification

Technician certification and licensing requirements are currently addressed in specific states, local jurisdictions, and in trade union requirements.

The AIM Act does not interfere with these processes.

12. OTHER COMMON QUESTIONS & ISSUES

A. Does the AIM Act Contain Duplicative Reporting Requirements?

There is no requirement for duplicative reporting in the AIM Act. And if enacted, EPA is highly unlikely to interpret the AIM Act's reporting provisions so as to require reporting of the same information year after year. The AIM Act's reporting requirements focus on collecting such information as may be necessary for efficient implementation of its regulatory programs.

B. Should the AIM Act Include Minimum Lead Times for Equipment Conversions?

The petition process in Section 10 puts industry stakeholders in the driver's seat when sector-by-sector use restrictions are contemplated. Adding a minimum lead time takes industry out of that driver's seat and instead could lead to a more restrictive date than desired by industry.

The petition process allows a sector to come together with a consensus transition date and propose it to the EPA, which then can initiate a negotiated rulemaking under Section 10. Starting with a blank slate, unhampered by prescribed minimum lead times, allows for the incorporation of requested lead times in the negotiating process.

Each sector is different, and, accordingly, this allows stakeholders in each sector to negotiate based on what is practical and achievable for that sector, as opposed to being hampered by a legislative prerogative that may not be relevant or appropriate to that sector's specific situation and posture. If a minimum lead time were required, it may induce other stakeholders, or even the EPA itself, to take a harder line against an industry sector's preferred transition timeline.

Finally, it is important to note that, across the entirety of industry, there are some sectors that are well prepared to move relatively quickly from HFCs. And, there are some sectors that will need flexibility to transition from HFCs over a longer period of time. As discussed more fully above, Section 10 is designed to accommodate both the first movers and the later movers. No further changes are necessary.

C. Should the AIM Act Require Coordination with the Department of Energy?

Rulemakings under other federal statutes by the U.S. Department of Energy (DOE) should not be brought into or otherwise be involved with the AIM Act.

First, EPA and DOE rulemakings are based on different underlying statutory requirements and subject to distinct agency and stakeholder dynamics. Coordination would mean delay, invite confusion, and almost certainly lead to a higher risk of legal challenges and more uncertainty for business planning purposes.

Second, there is no evidence to suggest that coordination would benefit EPA, DOE, industry, or the other stakeholders that routinely participate in rulemaking processes. Of course, no rulemaking process is ever perfect. But this would only swap one set of known and fairly addressable problems for a host of new problems, some of which might prove much more difficult to address.

Third, it is difficult to foresee a scenario where such a coordination provision would not significantly delay rulemakings at both agencies. This jeopardizes the economic benefits associated with the HFC phase down and otherwise seems likely to work counter to commercial interests by fueling greater regulatory uncertainty and instability.

Finally, there is nothing prohibiting EPA and DOE from coordinating if either or both agencies see fit to do so. It is not necessary or useful to include in the AIM Act something that turns this discretionary option into a required consideration or directive.

13. CONCLUSION

The historic nature of the coronavirus pandemic and the challenges it poses for the global economy weigh heavy on the American workers employed by the U.S. HVACR industry. Prior to the outbreak of COVID-19, the AIM Act was among the top priorities of virtually every company

in our industry. Today, the need for federal legislation to guide an orderly transition to next generation technologies has grown only greater and more urgent.

The enactment of the AIM Act would settle the regulatory landscape for HFCs and provide American manufacturers in our sector with greater confidence and greater clarity as they seek to navigate these difficult times and plan for a fast and aggressive rebound.

In every sense of the word, the AIM Act would serve as a potent form of economic stimulus for the U.S. HVACR industry – and it would do so without the need to appropriate any new federal funds. The benefits that would follow would be shared broadly by American manufacturers, workers, and consumers.

In closing, AHRI respectfully requests the Committee to work diligently and expeditiously in its consideration of the AIM Act and urges its passage and enactment on the fastest possible timeline.

Thank you for the opportunity to provide written testimony, and I welcome any questions you might have.

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