

Senate Committee on Environment and Public Works
Information-Gathering Process entitled, “S. 2754, American Innovation and Manufacturing
Act of 2019: Written Testimony and Questions for the Record”

March 25, 2020

Questions for the Record for Air-Conditioning, Heating and Refrigeration Institute

Chairman Barrasso:

1. **A number of industry associations and companies raised serious concerns with the bill in testimony, including the potential economic impacts of the bill on their operations and manufacturing. These groups include, for example, the Alliance for Automotive Innovation, Industrial Energy Consumers of America, National Automatic Merchandising Association, National Automobile Dealers Association, Society of Chemical Manufacturers and Affiliates (SOCMA), and Truck and Engine Manufacturers Association. The full list of those who submitted testimony is available at this [link](#).**
 - a. **You provide an “industry view” on pages 6-7 of your testimony but do not note any of these concerns. Does that mean you think all of the issues presented in those testimonies are not valid views? If so, why? If not, should the AIM Act be amended to address the issues identified by these testimonies?**

Answer:

Thank you for your question, Mr. Chairman.

My testimony was intended to reflect the views of the heating, ventilation, air conditioning, and refrigeration (HVACR) industry, which, as noted in my testimony, represents an estimated 70 percent of hydrofluorocarbon (HFC) use in the United States by volume and annually contributes 2.3 million jobs and \$158 billion in goods and services to the U.S. economy.

AHRI would not seek to speak for other industries or groups, but would note that technical challenges any sector might face in making a transition are accounted for in the flexibility inherent in the AIM Act’s design and structure. The sectors referred to in your question would not face jeopardy by the mere enactment of the AIM Act, as the AIM Act does not mandate transitions for any specific sector, but instead takes a gradual, market-driven, technology-sensitive approach over a 15-year period that allows those sectors able to transition quickly to do so while providing additional time and flexibility for those sectors facing challenges in identifying, testing, and marketing appropriate substitutes.

I also would emphasize that 15 percent of the HFC baseline is preserved for the continued use of HFCs in the U.S. economy, which AHRI estimates to be approximately 60,000 tons – a significant quantity, particularly for niche and specialty applications.

More broadly, my testimony sought to make clear that, if enacted, the AIM Act would guide a transition to next-generation technologies in a manner similar to the highly successful transition from ozone-depleting substances under Title VI of the Clean Air Act, as experienced by our sector and the sectors referred to in your question.

In that transition, concerns expressed at the time of enactment of Title VI about the cost and availability of substitutes, among other issues, proved entirely unfounded. The past 30 years have shown that costs declined over the course of the transition and temporary exceptions were granted for niche applications that lacked substitutes until appropriate substitutes that were safe, reliable, and affordable could be developed. No one suffered undue hardship as a result of Title VI. At no point was existing equipment affected, and no one was forced to transition from ozone-depleting substances before they were ready.

Indeed, the ozone-depleting substance transition is broadly considered a success in both commercial and environmental terms and represents a flexible, industry-friendly, common sense approach to technology choice and market-driven innovation embodied by the Ronald Reagan and George H.W. Bush Administrations principally responsible, in partnership with Congress, for devising the policies embodied by the Montreal Protocol and Title VI.

In expressing an “industry view” of the AIM Act, my testimony sought to highlight the similarities between both (i) Title VI and the AIM Act and (ii) the transition from ozone-depleting substances and the transition from HFCs. That is, we all are dealing with generally the same sectors, products, and equipment.

Experience has shown that the concerns of the industries referenced in your question can be adequately addressed by orderly transition following the enactment of the AIM Act. However, absent such enactment, and without the benefit of an orderly transition and a competent standard for HFCs at the federal level, our industry would share in those concerns and be almost certain to suffer far greater impacts, given the far greater share of HFC use we represent.

- b. On page 7 of your testimony, you present potential economic impacts of the AIM Act to the heating, ventilation, air-conditioning, and refrigeration industry. To clarify, your study did not evaluate the impacts on other industries, correct? If it did, please explain how and whether your study addressed all of the concerns identified in the testimonies available at the website above.**

Answer:

My testimony refers to the economic benefits associated with an orderly transition from HFCs and into next-generation technologies used by the U.S. HVACR industry. As noted in my answer to part (a) of your question, as well as in my testimony, the U.S. HVACR industry comprises a substantial majority of HFC use. AHRI thus believes the focus of the economic study on our industry was appropriate in light of this fact and remains highly relevant in the Committee’s consideration of the AIM Act.

Additional information regarding the cost of transition for other market sectors can be found, according to Senator John Kennedy, in the EPA cost analysis of the transition, which has been reviewed by the Senator.

Senator Capito:

- 2. Mr. Yurek, I appreciate your in-depth testimony. You state that sufficient legacy HFCs will be available for legacy equipment. Can you elaborate on that? What assumptions do you make about the amount of legacy equipment in operation, that fleet's remaining useful life, and the amount of HFCs available to serve that need over time? Does the legislation guarantee that states could not reduce the availability of HFCs through their own, stricter HFO transitions?**

Answer:

Thank you for your questions, Senator Capito.

The 30-year history of the transition from ozone-depleting substitutes under Title VI of the Clean Air Act, on which the AIM Act is based to a substantial degree, unequivocally shows that existing equipment and aftermarket supplies of ozone-depleting substances were not adversely affected. Supplies of CFCs, HCFCs, halons, and other ozone-depleting substances remain available to this day for older equipment.

About a decade ago, our industry and independent parties started examining what an HFC transition might entail. And in the years since then, HFC use has been subjected to rigorous research, modeling, and scenario planning to ensure that a transition from HFCs, if guided by a federal regulatory scheme, would go as smoothly and as successfully as the federally regulated transition from ozone-depleting substances. These models have researched HFC usage, market sizes, likely growth rates, lifetime of equipment, leak rates, and other features needed to forecast the reasonableness of this regulatory structure and how it might be best implemented.

Equipment lifetime is specific to equipment type and can range from less than ten years for some small equipment types to greater than 30 to 40 years (*e.g.*, industrial process refrigeration equipment, commercial refrigeration equipment, and large chillers in commercial buildings). As noted in my testimony, CFC-based chillers in commercial buildings were still operating and able to access supplies of reclaimed CFCs for servicing more than 20 years after CFCs were last produced or imported into the United States. Recovery, recycling, and reclamation of refrigerants has been key to this continued availability of these substances and will be important in the HFC transition as well.

To the final part of your question, the AIM Act, as you know, does not bear on state authority. I noted in my testimony that federal preemption of state authority was not necessary in the transition from ozone-depleting substances. The enactment of Title VI in 1990 filled the void, and states shifted their attention elsewhere. Section 614(a) of Title VI imposed a two-year “pause” in the enforcement of state standards, and following that pause, no state sought to

regulate ozone-depleting substances in a manner that was more stringent than Title VI. Preemption simply was not an issue in the transition from ozone depleting substances.

As noted above and as discussed at great length in my testimony, the AIM Act is intended to reproduce for the HFC transition the experience of our industry with the transition from ozone-depleting substances under Title VI. This extends to the question of preemption. Our priority is to secure a federal standard for HFCs, not to address state standards.

It is tempting to conjecture that the political landscape in the states is somehow different today than it was in 1990 – that back then states were more willing to go along with what Congress did. I do not believe that to be true. If anything, the risk was greater in 1990 that states would continue to seek to regulate ozone-depleting substances no matter what Congress did.

By the late 1980s, public concern over the hole in the ozone layer and excessive exposure to ultraviolet radiation was intense and widely shared. Indeed, some states had been seeking to develop and deploy regulatory restrictions on ozone-depleting substances since the 1970s. These states were heavily vested in efforts to reduce, if not eliminate, ozone-depleting substances. By no means was it a foregone conclusion that federal legislation, championed and signed by a Republican president, would persuade states to set aside regulatory programs that, in some cases, had been in effect for more than a decade.

Today is markedly different. The relatively small degree of state activity on HFCs has emerged only in the past two years and only because of the absence of any competent federal means to regulate HFCs. Unlike with ozone-depleting substances, which were exclusively responsible for the depletion of the stratospheric ozone layer, HFCs are one of many drivers of climate change. States focused on climate change have many other areas on which to focus their attention once HFCs are subject to a federal standard.

Our industry is complicated. No state can seek to regulate HFCs without substantial technical input from AHRI and other organizations representing our industry; our expertise is just not found anywhere else. Given the limited time and resources at the state level, we think it extremely unlikely a state would continue to pursue HFCs once the main reason for their involvement in the first place – the lack of a federal standard for HFCs – has been addressed.

Finally, and also as discussed in significant detail in my testimony, HFCs are products and not by-product emissions.

No company will curb its HFC use gradually, in line with the phase down schedule in the AIM Act (unless, of course, some other regulatory regime might apply that might induce a company to undertake a gradual transition, such as the granting of “credits” for transitions to HFC substitutes contained in the tailpipe emission and fuel economy standards). Rather, companies will seek to transition to HFC substitutes by a date certain, because it is too costly for most manufacturers to maintain two lines of identical equipment – one that uses HFCs and one that uses substitutes.

Many companies will seek to transition from HFCs relatively early in the phase down schedule – likely around the mid-2020s. This is because the lion’s share of the economic benefits reside in the market for next generation refrigerant technologies, and not in using HFCs for as long as

possible. This is inherent in the distinction between HFCs as “products” and other focuses of regulatory programs, such as emissions and equipment standards, *e.g.*, for fuel economy.

This distinction is highly relevant to preemption because, once a company makes a transition from HFCs, there is nothing further a state can do. Or, put another way: if a state were to impose a more stringent HFC standard, it would not matter to the many companies already working to transition from HFCs. Most important, states know this and would not expend limited time and resources on additional regulation that confers virtually no benefit, environmental or otherwise.

- 3. You suggest that the market will ultimately drive this transition and that states “cannot one up” the federal government, but that without federal legislation a “disorderly” transition is likely. I am struggling to square those two concepts with the legislation that is currently before us for consideration. On the one hand, if market innovations and energy efficiency savings will drive this transition via the “invisible hand,” why is a regulatory mandate even necessary? On the other, the AIM Act does not prevent states establishing their own regulatory frameworks, so how can you guarantee no state will “one up” the federal government and contribute to a “disorderly” transition through a patchwork of state-by-state regulatory frameworks given the lack of federal preemption in the bill?**

Answer:

These are important issues, and I believe the entirety of my testimony speaks directly to these issues. To answer, I would emphasize the following points:

- The absence of a federal HFC standard puts American manufacturers and American workers and consumers at a significant competitive disadvantage in the global HVACR market. This is based on 30 years of industry experience with the transition from ozone-depleting substances under Title VI of the Clean Air Act. Transitioning without a federal framework jeopardizes the significant investments in innovation made to date and exposes U.S. manufacturers to predatory, anti-competitive practices by foreign-based manufacturers, as discussed on page 9 of my testimony.
- If enacted, the AIM Act would provide certainty, stability, and predictability – giving confidence and direction to American manufacturers to plan, invest, hire, and build.
- If not enacted, American manufacturers would lack this certainty, stability, and predictability. This would complicate decisions to invest, hire, and build, and the significant economic benefits associated with leading the transition to next-generation refrigerant technologies would be enjoyed by foreign competitors rather than American manufacturers and American workers.
- If not enacted, many manufacturers may find themselves forced to maintain two duplicate product lines, one with the current HFC technology and one with substitutes.
- As discussed in my testimony and in my answer to Question 2, above, the overriding priority for our industry is enacting a competent federal HFC standard.

- Also as discussed previously, the speed with which many companies will seek to transition from HFCs means states seeking to impose more stringent standards will not have an appreciable effect beyond the AIM Act; a state HFC standard has no impact on a company that has already fully transitioned from HFCs and into substitutes.
 - In our view, states know this and would not expend their limited time and resources on something which confers no meaningful benefit.
4. **Your testimony included repeated references to Clean Air Act Title VI precedents. Why not just amend that section as necessary instead of, as the AIM Act proposes, standing up a separate regulatory program to affect an HFO transition? Given the federal judicial history of this issue, should not amending the Clean Air Act be the preferred vehicle for effecting changes to implementation of the Montreal Protocol provisions of the Clean Air Act to prevent duplication of regulatory authority and potential legal challenges?**

Answer:

AHRI does not have a formal position as to where the provisions of the AIM Act may be codified in the U.S. Code, if the AIM Act were to be enacted. We believe the AIM Act can accomplish its stated objectives as written and does not need to be folded into Title VI. We do not believe there is any risk of duplicative authority, given the distinct nature of the AIM Act's provisions and discrete focus solely and exclusively on HFCs. We believe the AIM Act's authority is clearly expressed and sufficiently limited so as to avoid undue litigation risk in its implementation.

5. **With that in mind, would ratification of the Kigali Amendment be a better vehicle for this regulatory change and also help ensure the equity of international competition in your industry?**

Answer:

The Kigali Amendment is an important addition to a multilateral environmental agreement and, as such, would not be an adequate or appropriate substitute for the federal standards contained in the AIM Act. Nor would ratification alone necessarily result in an orderly transition.

AHRI supports ratification of the Kigali Amendment, as a significant portion of the economic benefits associated with the transition to next-generation refrigerant technologies reside in expanding U.S. exports of American-made products and equipment. However, our immediate priority is the enactment of the AIM Act.

All prior amendments to the Montreal Protocol were ratified with unanimous bipartisan support in the United States Senate, although the lag between their adoption internationally and eventual U.S. ratification meant that implementation under domestic law always preceded ratification. This is expedient from a policy standpoint, but also essential from a commercial standpoint, given the globalized nature of the economy in which American HVACR manufacturers and workers seek to compete.

6. How does the cost of reclaimed HFCs compare with that of virgin HFC feedstocks?

Answer:

Reclaim costs are specific to the volumes recovered and evolve in step with the transition and the extent of demand. In particular, the costs of reclaim have been shown to decline significantly as economies of scale set in over the course of a refrigerant transition. Policies promoting reclaim also can significantly reduce cost; Section 9 of the AIM Act specifically encourages and promotes reclamation largely for this purpose.

The critical point with reclamation is that technologies exist to ensure the continued availability of refrigerants long after virgin production and the import of virgin product has ceased. As noted in my testimony, CFC-based chillers in commercial buildings were still operating and able to access supplies of reclaimed CFCs for servicing more than 20 years after CFCs were last produced or imported into the United States. If these supplies were not relatively economical, it is unlikely these old chillers would have been retired from service.

7. How do the costs of reclaimed HFCs compare to recycled HFCs? Is there a strong policy justification for favoring one over the other legislatively or regulatorily?

Answer:

Neither recycling nor reclaimed refrigerants should be favored from a policy perspective. They serve two different purposes.

As a general matter, recycling refers to the recovery and reuse of a refrigerant by a single business, such as the owner of a grocery store that might recycle the refrigerant from one piece of equipment in the store for use in another piece of equipment. Reclaim, by contrast, refers to the recovery and purification of a refrigerant such that it can be sold as effectively identical to virgin refrigerant.

For example, retailers might recover refrigerants from certain pieces of equipment and recycle them for use in their supermarket chains, while reclaimed refrigerant is not merely moved from one piece of equipment to another, but is purified to standard AHRI 700 to ensure the purchaser of that refrigerant is receiving top quality (like new) refrigerant.

8. **You praise the AIM Act for “dampening” states implementing their own standards, now and in the future. Your colleague recently noted that the AIM Act provides no guarantee of stopping state action. Francis Dietz, Vice President of AHRI, recently said: “In the past when we’ve done different transitions, states have fallen in line with the federal government. . . But I’m not certain that would be the case this time. I wouldn’t tell people to bet on that.” If you identify stopping separate state regulatory activity as a benefit and Mr. Dietz has observed states are not guaranteed to fall in line, why not include federal preemption language to ensure there will not be a state-by-state regulatory patchwork?**

Answer:

I would refer to my answer to Question 2 from Senator Capito and Question 13 from Senator Whitehouse regarding the issue of federal preemption of state authority. I also would note that AHRI’s official position on HFCs and the AIM Act is contained in my testimony and in the answers to these questions.

9. **Can you please identify which, if any, members of AHRI oppose preemption and for what reasons?**

Answer:

Over the past three years, the federal void with respect to HFCs has driven some states to develop their own regulatory standards for HFCs. As mentioned previously, our industry is complicated and virtually impossible to regulate without substantial technical input and data from industry experts. Given the uncertainty at the federal level, it would have been irresponsible for our industry not to participate actively in state legislative and regulatory proceedings. In some cases, as a result of that participation, some companies have made substantial, multi-year investments to meet these state standards.

As discussed more fully above, our priority as an industry is not to do away with state standards – it is to fill the federal void with a competent, common sense federal standard, which we believe the AIM Act represents. Once that void is filled, also as discussed more fully above, we do not believe state standards will pose a problem, particularly given that once a company has transitioned from HFCs, there is nothing further for a state to regulate.

Senator Cardin:

10. In the Air-Conditioning, Heating, & Refrigeration Institute (AHRI) written testimony, AHRI refers to large-volume sectors likely to transition to substitutes in the 2020s.

- a. What would be a rough estimate of the total volume of HFCs used today that would be likely to transition to substitutes by 2025 and 2028?**

Answer:

Thank you for your questions, Senator Cardin.

This is best understood as a percentage of the phase down, as AHRI is not in a position to speak specifically to the plans and possible decisions of any one sector. But, as a percentage, AHRI expects approximately 40 percent of HFC uses to have transitioned to substitutes by 2024 and 70 percent by 2029. The dates used in AHRI's models are 2024 and 2029, hence the percentages for those years provided here.

- b. How much would this leave under the phasedown for other users going forward?**

Answer:

Based on these estimates, by 2036, the 15 percent "tail" of HFCs remaining for continued use is approximately 60,000 tons.

Senator Whitehouse:

11. You state that roughly 230,000 tons of HFCs are produced or imported in the U.S. each year and that 70 percent is used for refrigeration or air conditioning. What percentage of total HFCs used in the U.S. are used by the aerospace, semiconductor, composites, foam, and defense sprays industries? Has this percentage of niche uses grown over the last five years, and if so, by how much?

Answer:

Thank you for your questions, Senator Whitehouse.

It would not be appropriate for AHRI to speak specifically about another sector's use data.

But as a general matter, according to AHRI's knowledge and understanding of the EPA Vintaging Model of HFCs, the sectors referred to in your question use well less than ten percent of the HFC baseline each year.

The one exception to that is foams, which represent a larger portion of HFC use by volume, including a portion of the estimated 70 percent used by the HVACR industry. AHRI would respectfully defer on the specifics of this question to the foam sector industry groups, such as the Center for Polyurethanes Institute (CPI) and the Extruded Polystyrene Foam Association (XPSA).

I also would note that the AIM Act is designed to accommodate niche applications for which no substitute is currently available. The gradual phase down of production and consumption ensures a significant supply of HFCs for continued use for the next several decades. By 2036, when the phase down plateaus at 15 percent of the baseline, AHRI estimates approximately 60,000 tons of HFCs will be available. This is more than enough to satisfy the needs of the sectors referenced in your question.

Moreover, the AIM Act authorizes the provision of temporary exceptions for applications in need of additional time to identify, develop, and test substitutes to ensure they are safe, reliable, and affordable. Title VI of the Clean Air Act, on which the AIM Act is based to a substantial degree, shepherded transitions in these same sectors from ozone-depleting substances without imposing hardship or otherwise forcing any of these applications into substitutes before such substitutes were available. AHRI would anticipate the same experience under the AIM Act and with HFCs.

- 12. Numerous industries have provided written testimony stating that there are no acceptable substitutes for HFCs they use. Please comment on these claims with respect to the aerospace, semiconductor, composites, foam, and defense sprays industries. Please list all HFCs for which such claims have been made and state whether or not you agree with the claim that no acceptable substitute exists. If you do not agree, please provide the name of the substitute and why you believe it to be acceptable.**

Answer:

As discussed in significant detail in my testimony, the AIM Act is designed to accommodate applications for which no substitute is available, providing temporary exceptions until such substitutes can be identified, thoroughly tested for safety and reliability, and made available and affordable. These provisions of the AIM Act are modeled on similar provisions contained in Title VI, which confronted and successfully dealt with many of these same sectors and applications.

The point, therefore, is not whether a substitute exists now, but the extent to which current uses can be accommodated until such substitutes become available. The AIM Act effectively balances the fundamental fairness of subjecting every actor to the same general standard while providing a means for every actor that needs more time and flexibility under the standard to be granted such in accordance with demonstrated need.

13. Please describe the transition from CFCs to HFCs, catalyzed by the Montreal Protocol and Title VI of the Clean Air Act. Did Title VI preempt or in any other way limit state regulatory action with respect to CFCs? After the implementation of Title VI and the accompanying two year pause in state enforcement of CFC regulations, did states adopt or resume enforcing CFC regulations? If so, how many and in what manner?

Answer:

As discussed more fully in my testimony, the orderly transition from ozone-depleting substances, as facilitated by the enactment of Title VI of the Clean Air Act in 1990, is broadly considered a commercial and environmental success.

As discussed in my answer to Question 2, and partially reproduced here for reference, federal preemption of state authority was not necessary in the transition from ozone-depleting substances. The enactment of Title VI in 1990 filled the federal void, and states shifted their focus elsewhere. Section 614(a) of Title VI imposed a two-year “pause” in the enforcement of state standards, and following that pause, no state sought to regulate ozone-depleting substances in a manner that was more stringent than Title VI. Preemption simply was not an issue in 1990.

As noted above and as discussed at great length in my testimony, the AIM Act is intended to reproduce for HFCs the orderly transition from ozone-depleting substances experienced under Title VI. This extends to the question of preemption. The overwhelming priority for our industry is to fill the federal void with a competent HFC standard, not to address state standards.

It is tempting to conjecture that the political landscape in the states is somehow different today than in 1990 – that states were more willing to go along with what Congress did. I do not believe that to be true. If anything, the risk was greater in 1990 that states would continue to seek to regulate ozone-depleting substances no matter what Congress did.

By the late 1980s, public concern over the hole in the ozone layer and excessive exposure to ultraviolet radiation was intense and widely shared. Indeed, some states had been seeking to develop and deploy regulatory restrictions on ozone-depleting substances since the 1970s. These states were heavily vested in efforts to reduce, if not eliminate, ozone-depleting substances. By no means was it a foregone conclusion that federal legislation, championed and signed by a Republican president, would persuade states to set aside regulatory programs that, in some cases, had been in effect for more than a decade.

Today is markedly different. The relatively small degree of state activity on HFCs has emerged only in the past two years and only because of the absence of any competent federal means to regulate HFCs. Unlike with ozone-depleting substances, which were exclusively responsible for the depletion of the stratospheric ozone layer, HFCs are one of many drivers of climate change. States focused on climate change have many other avenues and areas on which to focus their attention once HFCs are subject to a federal standard.

Our industry is complicated. No state can seek to regulate HFCs without substantial technical input from AHRI and other organizations representing our industry; our expertise is just not found anywhere else. Given its limited time and resources, we think it extremely unlikely a state would continue to pursue its own HFC regulations once the main reason for their involvement in the first place – the lack of a federal standard for HFCs – had been addressed.

Finally, and also as discussed in significant detail in my testimony, HFCs are products and not by-product emissions.

No company will gradually curb its HFC use in line with the phase down schedule in the AIM Act. Rather, companies will seek to transition to HFC substitutes in one fell swoop, because it is too costly to maintain two lines of identical equipment – one that uses HFCs and one that uses HFC substitutes.

Many companies will seek to transition from HFCs relatively early in the phase down schedule – likely around the mid-2020s. This is because the lion’s share of the economic benefits reside in the market for next generation refrigerant technologies, and not in staying in HFCs for as long as possible. This is inherent in the distinction between HFCs as “products” and other focuses of regulatory programs, such as emissions and equipment standards, *e.g.*, for fuel economy.

This distinction is highly relevant to preemption because, once a company makes a transition from HFCs, there is nothing further a state can do. Or, put another way: if a state were to impose a more stringent HFC standard, it would not matter to the many companies already working to transition from HFCs. Most important, states know this and would not expend limited time and resources on additional regulation that confers virtually no benefit, environmental or otherwise.

14. For HFCs where users claim that the current substitute is too expensive, based on your prior experience transitioning from CFCs to HFCs, what do you believe will occur with respect to the price of HFC substitutes? Please comment on old claims by the Heritage Foundation, the Competitive Enterprise Institute, and others the HFCs would be too expensive and compare them to these groups’ current claims that HFOs will be too expensive. Do you find these groups’ claims to be credible?

Answer:

I would refer to pages 7-8 of my testimony, which discusses cost issues in detail. I also would refer to the EPA cost study of the AIM Act, which we understand Senator John Kennedy to have received and reviewed, which shows the HFC phase down will save American consumers and businesses \$3.7 billion over 15 years.

As to the credibility of the claims made by various think tanks, I would consider these to be in the nature of reviews and commentary rather than empirical research or data-driven modeling.

Indeed, the Competitive Enterprise Institute published a paper in 1994, cited in my testimony, warning of cost increases and other hardships as a result of the transition from CFCs. Industry

experience has shown that the concerns expressed in that paper, and other similar concerns expressed elsewhere in the late 1980s and early 1990s, were entirely unfounded. Costs declined and niche applications in need of more time to develop a safe, affordable, and reliable substitute were granted temporary exceptions for as long as needed.

The resurfacing of these same claims, some more than 30 years old and entirely controverted by industry and practical experience, merely repeats past mistakes and directly contradicts the lessons our industry has learned over the past three decades in competently managing refrigerant transitions.

15. If the AIM Act were to be passed in its current form, based on your experience with Title VI, how do you believe that states would respond with respect to adopting and/or enforcing their own HFC laws and regulations?

Answer:

As per my testimony and my answer to Question 2 from Senator Capito and Question 13 from Senator Whitehouse. Federal preemption of state authority was not necessary in the transition from ozone-depleting substances. The enactment of Title VI in 1990 filled the federal void, and states shifted their focus elsewhere. Section 614(a) of Title VI imposed a two-year “pause” in the enforcement of state standards, and following that pause, no state sought to regulate ozone-depleting substances in a manner that was more stringent than Title VI. Unlike with ozone-depleting substances, which were exclusively responsible for the depletion of the stratospheric ozone layer, HFCs are one of many drivers of climate change. States focused on climate change have many other avenues and areas on which to focus their attention once HFCs are subject to a federal standard. Given the limited time and resources at the state level, we think it extremely unlikely a state would continue to pursue its own HFC regulations once the main reason for their involvement in the first place – the lack of a federal standard for HFCs – had been addressed.

16. Do you believe that passing the AIM Act in its current form will lead to more or less regulatory harmonization and certainty than would continued congressional inactivity in this space?

Answer:

As discussed more fully in my testimony, the highest priority of our industry with respect to HFCs is filling the federal void with a competent regulatory regime, such as the AIM Act. We believe this will settle the regulatory landscape and provide certainty and predictability for companies to plan, invest, hire, and build. We believe the enactment of the AIM Act would, for

reasons explained in significant detail in my testimony, discourage states from seeking to further regulate HFCs, as no meaningful benefit, for the environment or otherwise, would result.