

**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 Industrial Energy Consumers of America (IECA)**

**Chairman Barrasso:**

1. The Air-Conditioning, Heating, and Refrigeration Institute (AHRI) submitted [testimony](#) claiming:

*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.*

Your testimony highlights your concern that industrial chillers could be forced to be replaced before their useful life. Do you agree with AHRI’s claim above?

**IECA REPLY:**

AIM is a production phase-out program. It does not mandate the phase-out of existing HFCs using equipment. However, AIM does not guarantee that producers of HFCs will maintain sufficient supplies of existing HFC products to allow existing equipment to operate throughout its lifetime and without increased costs. Because of the mandated phase-out program, HFC producers may decide not to continue production of HFC products. Without sufficient supply of HFC products at reasonable costs, IECA companies would have no choice but to shutdown existing equipment prematurely.

2. AHRI submitted testimony claiming:

*Under Title VI [of the Clean Air Act], 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.*

IECA requests a level playing field where the U.S. is not placed on an accelerated schedule that is quicker than other countries like China. Do you agree with AHRI that the acceleration provision in the AIM Act, which allows the AIM Act’s schedule to be ramped up, is good for U.S. manufacturers?

**IECA REPLY:**

The AHRI reference to U.S. manufacturers is not manufacturers who are users of HFCs and HFC equipment. AHRI references to manufacturers are most likely companies who are in the business of producing HFCs and HFC consuming equipment.

For HFC users that do not compete with foreign competitors, competitiveness is not an issue. Those HFC users include homeowners, commercial real estate, and utilities.

Ramping up phase-out for manufacturers like chemicals, plastics, steel, iron ore, aluminum, paper, food processing, fertilizer, insulation, glass, industrial gases, pharmaceutical, building products, automotive, independent oil refining, and cement is definitely not good for manufacturing competitiveness. China has more manufacturing than the U.S. and they do not have an accelerated phase-out.

The AHRI assessment may be correct for U.S. manufacturers of refrigeration equipment, which is a small segment of the U.S. manufacturing sector. We disagree with that assessment for the industries in other segments of the U.S. manufacturing sector especially those industries that compete in global markets.

3. Your testimony highlights an issue with the report entitled “Consumer Cost Impacts of U.S. Ratification of the Kigali Amendment Report Prepared for the Air-Conditioning, Heating, & Refrigeration Institute and the Alliance for Responsible Atmospheric Policy,” where new heat transfer fluids do not perform as well as the chemicals they are replacing. Do you know why that is the case? Does it have to do with the chemical structure of HFC replacements?

**IECA REPLY:**

The chemistry of the HFC replacements have less heat transfer capacity.

Do you have concerns that the AIM Act, including the technology transitions provision, do not adequately figure in cost considerations?

**IECA REPLY:**

That is correct. The studies that we referenced to support AIM economics do not include all costs. They only consider front-end economics and not total system costs. Using a less efficient heat transfer fluid often requires increased capital expense to upgrade back-end equipment, such as requiring more compressor capacity, which in turns increases electricity costs. Other capital equipment cost examples include additional storage for refrigerants, raw materials and products, replacement of other secondary material handling equipment such as other pumps, and replacement of other condensing equipment such as distillation column overhead condensers.

**Ranking Member Carper:**

Please provide a response to each question, *including each sub-part*.

4. The AIM Act would affect a phase down of the production and consumption of HFCs over a 15-year period, with 15 percent of the baseline period allowed to be produced and imported from 2036 onward. The AIM Act also contains provisions intended to increase to a significant degree the recovery and reclaim of HFCs. The purpose of these provisions, and other provisions in the Act, is to ensure the continued use of HFCs for decades to come,

particularly in small or niche applications for which no substitute is available. In light of this, why do you believe the AIM Act represents a phase out on HFCs?

**IECA REPLY:**

AIM is an HFC production and consumption phase-down bill that includes a defined phase-out time table, which means less and less will be available. The legislation also gives the EPA the option to phase down more quickly or change the reduction volumes. The bill does not prevent recovery and reclaim. However, S.2754 does not require that HFC supplies will be available for existing HFC using equipment and at reasonable prices.

If EPA acts to accelerate phase down or if HFC manufacturers choose NOT to produce HFCs, supply becomes in jeopardy for existing equipment and the cost of replacement HFC refrigerant can escalate.

5. Of the HFC compounds that are being used by your member companies today, on average how much does the industry use on an annual basis (in tons and GWP-weighted tons) now?

**IECA REPLY:**

Our members have over 4,000 very large manufacturing complexes and each complex has several chillers. We have not surveyed the member companies. We do not intend to survey them because they have a COVID-19 and economic crisis to manage. The HFC industry knows how much is used by the U.S. manufacturing industry.

6. Assuming an annual total of 230,000 tons of HFCs produced and imported into the United States each year, what percentage of this figure is used by your member companies on an annual basis?

**IECA REPLY:**

We have not surveyed the member companies to know the answer to this question. We do not intend to survey them because they have a COVID-19 and economic crisis to manage. The HFC and refrigeration industry knows how much is used by the U.S. manufacturing industry.

7. Do you project HFC usage will grow or shrink over the next 15 years?

**IECA REPLY:**

We have not surveyed the member companies to know the answer to this question. However, IECA companies assume that as new HFC replacements will be available, and when existing industrial chillers need to be replaced, they will use the HFC replacement products. Therefore, we would anticipate that HFC imports would decrease.

8. If the AIM Act were implemented as introduced, do you believe the HFCs used by your company will be eligible for essential use exceptions? If not, why not?

**IECA REPLY:**

First, the Essential Uses provision does not specify what type of HFC users qualify for “essential use” exceptions. So, we do not know whether we qualify. Second, the bill says that the Administrator “may” authorize production of regulated HFCs. It does not say that EPA “shall” authorize production. Therefore, there is no certainty that needed supplies would become available. Third, the EPA only would consider continued HFC production if no substitute will be available during the applicable period. Our existing equipment will not work properly without existing HFCs.

9. Are you aware that the Kigali Amendment to the Montreal Protocol has different phasedown timelines for different countries? The phasedown timeline you mention in your testimony is incorrect for the United States.

**IECA REPLY:**

Yes, we are aware that the Kigali Amendment has different phase down timelines for different countries. That is exactly why our comments address the need for Congress to always act to ensure a level playing field with countries with which U.S. manufacturers compete globally. The Kigali Amendment gives countries that have manufacturing capabilities equal or greater than ourselves a free-pass for several years. We are not asking for an advantage, but to not be disadvantaged.

**Senator Capito:**

10. Mr. Cicio, you state the need for the regulatory exemption of HFCs usages throughout the useful lives of certain industrial equipment, which in some cases can be measured not only in years but decades. You also call for the need for any phaseout schedule to be equivalent to that of China – as well as India, Mexico, Malaysia, Thailand, and Brazil – to prevent disadvantaging US manufacturers and to prevent dumping into the US market. Would your preferred approach, to ensure international consistency, be ratification of the Kigali Amendment to the Montreal Protocol rather than a standalone regulatory program? Would that help some of the international trade concerns you raise?

**IECA REPLY:**

The most logical fix is simple. Because the bill mandates the reduction of HFCs, the bill should also mandate that there will be sufficient inventories of existing HFCs available at reasonable costs to allow existing industrial chillers to operate until replacement is needed. New industrial chillers would use the new HFC replacements.

11. You note that the supporters of the AIM Act are suppliers of HFOs and associated products, while your members are the consumers, which affects different parties’ assessments of the costs and benefits of this legislation. Do you feel that the suppliers, for whom the economic benefits are better defined and concentrated, have been more vocal than the consumers, for whom the costs are nebulous and diffuse? In the near-term, do you think the costs to the consumers are likely to outweigh the benefits to suppliers, economy-wide?

**IECA REPLY:**

IECA supports the transition to less GHG intensive refrigerants. As industrial chillers can no longer operate efficiently, we support using the non-HFC refrigerants and new equipment.

It appears that the companies who produce refrigerants and associated equipment are almost exclusively the entities who have promoted the HFC accelerated production phase-out. They are the companies who would potentially financially benefit from the promoted changes. What makes this bill unbusinesslike is that it mandates the elimination of products that we use. Therefore, if companies want to mandate HFC reductions, then there should also be a mandate to assure sufficient supply at a reasonable cost to operate existing equipment for their useful life.

We believe the costs outweigh the benefits of switching. That said, it is appropriate to start the transition so long as existing industrial chillers will have sufficient inventory of current HFCs at a reasonable cost.

12. You note that HFOs do not work as well at removing heat, especially at industrial scales. With HFOs, some cooling equipment used in your members' manufacturing processes will be required to cycle more frequently, increasing electricity consumption, wear and tear on equipment, and its operation in its least efficient mode – namely getting up to operating speed. Do you have any sense that those effects were considered in economic analyses presented by supporters of the AIM Act? Do you think these effects will reduce the energy efficiency benefits propounded in those studies?

**IECA REPLY:**

Based upon the studies highlighted in our comments, they did not account for all costs to industrial chiller consumers. Failure to account for all costs do reduce the claimed benefits.

13. What would the costs be both to your members and to their downstream consumers of replacing industrial equipment with decades of remaining useful life due to a regulatory mandate or the lack of a sufficient supply of HFCs? Would there be a significant environmental cost for that premature replacement?

**IECA REPLY:**

We have not surveyed our companies to determine what the exact costs would be for several reasons. If we did, we are confident there would be a wide range of cost impacts from company to company. The number and size of chillers per company vary greatly. We do not intend to survey them because they have a COVID-19 and economic crisis to manage.

It would be very costly and disruptive to prematurely replace existing industrial chillers due to potential insufficient supply of HFCs. New industrial chillers cost millions or upward to tens of millions of dollars depending on the size.

However, today's economic crisis makes it easier to illustrate our point. When U.S. manufacturers are having a hard time keeping the doors open and keeping employees on the

payroll, the U.S. manufacturer should not have to worry about being mandated to spend capital on switching to HFOs. China's manufacturing companies, as an example, do not have to worry.

14. Would you support a grandfathering provision for HFC use in existing equipment? What might that look like?

**IECA REPLY:**

IECA requests that a provision be added that guarantees sufficient supplies of phased-out HFCs will be available at reasonable costs, so that existing industrial chillers will not be forced to be replaced before their useful life. This is important for several reasons but also because the bill gives the EPA the ability to accelerate the production phase-out. Any refrigerant phase-out should be set at the federal level and not a patchwork of state requirements. Congress should ensure that U.S. manufacturers are not placed on an accelerated phase-out trajectory over other manufacturers in other countries. We request a level playing field. U.S. manufacturers that compete in global markets will be at a disadvantage and higher costs will reduce competitiveness. China, as an example, should have the same phase-out schedule as the U.S. They do not.

In addition, there is a lot of uncertainty on what will be considered a next-gen refrigerant. Manufacturers are making decisions today to replace aging chillers and are relying on information from the vendors on what is next gen, suitable for their application and more environmentally friendly with no assurance that the replacement refrigerant will be considered next-gen under future legislation, international agreements, etc. A grandfather provision should also be included to protect companies who are making replacement choices today. It is important to not create stranded assets under new legislation by forcing units to be prematurely replaced before the end of their useful life. This can occur due to "new" next-gen determinations obsoleting the refrigerant and/or the refrigerant being "phased out" under a new mandate. Protections are needed to ensure there are sufficient supplies of these current next-gen refrigerants and they will be available at reasonable cost for the useful life of the equipment.

**Senator Cramer:**

15. On April 13, 2020, I received a letter about the AIM Act from a constituent, the Basin Electric Power Cooperative, whose headquarters are in Bismarck, North Dakota. That letter is attached. In its letter, the Basin Electric Power Cooperative highlights a number of concerns with the AIM Act, including potential cost impacts as well as fire safety impacts. Basin identifies a number of problematic provisions in the bill. Do you support the types of legislative changes to address cost and availability issues that Basin proposes in its letter?

**IECA REPLY:**

The Basin Electric Power Cooperative (BEPC) has the same challenges as IECA companies. They have large existing systems using HFCs. And, prematurely switching to non-HFCs is very costly. However, our solution to the problem presented by S.2754 differ from BEPC.

IECA requests that a provision be added that guarantee sufficient supplies of phased-out HFCs will be available at reasonable costs, so that existing industrial chillers will not be forced to be replaced before their useful life. If Congress is going to mandate a phase out of existing HFCs, then it should mandate that sufficient supplies will be available for the life of the equipment at reasonable costs.

The BEPC solution of relying upon the 'essential uses' exemption is not a solution in our opinion. The EPA could decide that our applications do not qualify for exemption. S.2754 also gives the EPA the ability to accelerate the production phase out. If they do, and the bill requires HFC manufacturers to maintain inventory, then companies like IECA companies and BEPC will not have to convert equipment prematurely.

Sincerely submitted

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