

Subcommittee on Environment and Climate Change
Hearing on
“Promoting American Innovation and Jobs:
Legislation to Phase Down the Use of Hydrofluorocarbons”
January 14, 2020

Mr. Gary Bedard
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The Honorable Frank Pallone, Jr. (D-NJ)

1. How do the prices of replacements for HFCs compare to the prices of HFCs? How will any price differences affect consumers?

RESPONSE:

- *Today our business uses several different HFC refrigerants for use in the air conditioning and commercial refrigeration equipment we manufacture.*
- *Some replacements are currently less expensive, while some replacements are more expensive.*
- *There are numerous replacement refrigerant options currently being evaluated by Lennox for the various types of equipment we manufacture.*
- *In our evaluation of suitable refrigerants, we consider the safety, cost, environmental impact, reliability, availability, compatibility and efficiency of each replacement refrigerant option.*
- *Some of the replacement refrigerants are currently more expensive than the incumbent refrigerants (R410A and R404A) and some of the replacement refrigerants are currently **LESS** expensive than the incumbent refrigerant (R410A and R404A).*
- *In addition to being less expensive, some refrigerants improve the efficiency of the system and require a smaller charge size (less refrigerant per unit).*
- *We expect the price of replacement refrigerants to decrease when they are broadly commercialized due to the economies of scale when these chemicals are produced in much larger quantities and we expect competitive pressures to significantly reduce the cost of alternate refrigerants as we have seen in previous refrigerant transitions (CFCs to HCFCs and HCFCs to HFCs).*
- *Further, it is our understanding the preliminary EPA estimates projected billions of dollars of compliance and consumer cost savings over the fifteen-year implementation period.”*

2. What are the effects on consumers of a national HFC phasedown on HFC-using equipment?

RESPONSE:

- *Consumers will benefit from a national HFC phasedown. As stated above, some of the new replacement refrigerants require a smaller charge (less refrigerant), is more efficient (reducing the cost to the consumer) and more environmentally friendly.*
 - *A national phasedown of HFC refrigerants ensures a safe, rational, efficient and cost-effective transition to alternate refrigerants.*
 - *Consumers with a system that uses HFC refrigerants may continue to own and operate their equipment well into the future. There is no need to install a new system if the system needs a “recharge” of HFC refrigerant.*
 - *Once a current system has run its useful life, the consumer will purchase a new system containing the new refrigerant. If a consumer has a leak in their existing system, there will be a plentiful supply of 410A to service equipment.*
 - *HFC refrigerants are being phased-down, not phased-out, meaning there will be a plentiful supply of replacement HFC refrigerants for decades. In fact, CFC-11 is still readily available to service equipment produced in the 1980s.*
 - *The INFORUM analysis found that in both residential and commercial air conditioning, the refrigerant cost is less than 1% of the overall ownership cost of owning and operating the equipment. Further, history has shown that given the stable long-term lead times of the phasedown schedules, industry has successfully been able to design and commercialize products that cost less, are more efficient, and have lower leak rates. In most instances, government studies found previous transitions generated significant consumer cost savings. Similar results are expected from the phasedown approach provided in H.R. 5544.*
 - *Consumer cost will decrease slightly as a result of a rational federal transition. The biggest cost impact to consumers is a slower state-by-state “patchwork” transition from HFC refrigerants to alternate refrigerants. In a state-by-state transition, manufacturers lose the economies of scale required to conduct a transition in rational, efficient and cost-effective manner. The real issue is not the cost of an efficient federal transition, but rather the high cost of a state-by-state “patchwork” transition, which will ultimately be borne by the end-consumer.*
 - *Additionally, a rational federal transition ensures much greater environmental benefits to the nation, than the current (most likely scenario) where some states transition to new refrigerants, while other states do not.*
3. The United States Chamber of Commerce, in a report entitled: “Made in China 2025,” stated that China is calling “for [its] brands to control over 80 percent of [China’s] market for several consumer goods, including air conditioners.” How does this claim square with the claims being made by the supporters of the bill that U.S. Heating and Air Conditioning manufacturers will be robustly exporting under this bill?

RESPONSE:

- *Lennox International Inc. (LII) is American based (Richardson, TX) and manufactures predominantly in the United States and currently exports almost 15% of the products we manufacture in the United States to global markets. Lennox envisions growing that share only if the United States continues to innovate and lead the development of products for the global market. This leadership will be critical to reduce the cooling technology trade deficit.*
- *If the AIM Act is not passed into legislation, the lack of federal program will ensure the Chinese market (and the EU, Canada and Japan) transitions to new refrigerants and new equipment technology before the United States. Additionally, every other developed country around the globe is either already transitioning to new refrigerants or has a plan to transition in the near future. The lack of a domestic federal transition will ensure the United States continues to manufacture old HFC technology and becomes a laggard in the global HVACR market. Regardless of the “Made in China 2025 initiative,” American HVACR manufacturing will lag the global market and lose share if the United States does not transition in an efficient and cost-effective manner.*

4. How many alternatives are available as replacements for HFCs? Please include information about available fluorinated alternatives. Are fluorinated and other alternatives manufactured by a broad range of companies?

RESPONSE:

- *Replacement Alternatives:*
 - *Different HVACR applications require different refrigerant properties and therefore, no single refrigerant addresses all applications. For example, the refrigerants used in refrigerators, commercial freezers, automobile air conditioners, and home air conditioners are likely different.*
 - *The same is true within the product portfolio of Lennox products. Different refrigerants are used in our residential products, commercial HVAC products and our commercial refrigeration products. Within a supermarket or a foodservice restaurant, one is likely to find various types of equipment that use various types of refrigerants depending on the type of application. One size does not fit all.*
 - *There are more than a dozen potential replacements for air conditioning alone, both fluorinated and non-fluorinated, which could be manufactured by a variety of companies. The assertion that one company has a “monopoly” on alternate refrigerants is uninformed, unfounded and patently false. The challenge the industry faces is selecting the best replacement from the myriad of choices.*
 - *Historically, downstream partners in the supply chain narrow the choices over time, because a best-fit alternative is identified. As choices narrow, several major suppliers have introduced product to supply market demand and competitive prices.*
 - *To further make the point, manufacturers of residential HVAC systems have multiple refrigerant choices. These refrigerant choices are produced by many different*

chemical companies and in many instances, some of the same refrigerants are manufactured by more than one supplier.

- *Consumer Choice*
 - *Refrigerant selection is not a “consumer feature”. The assertion that consumers will “no longer have a choice of refrigerant” lacks a basic understanding of the HVACR market.*
 - *Today, when purchasing an air conditioning system, consumers have the choice of efficiency levels, communicating controls, air filtration selections, smartphone controls, variable speed operation, tonnage and zoning systems amongst other options, which determine the comfort, cost and efficiency of a system.*
 - *Consumers are not offered a choice of refrigerant, because the type of refrigerant is not a product feature. Consumers don’t ask for a choice of refrigerant in their automobile AC, nor do they ask for a choice of refrigerant in their home refrigerator, wine cooler or freezer, nor do they ask for a choice of refrigerant in their home air conditioner.*
 - *The claim that a consumer is somehow losing choice is akin to the argument that a consumer should have the choice between aluminum, copper or steel when selecting a tailpipe when purchasing an automobile. Consumers don’t choose the brand or type of car battery, air filter, engine oil or type of rubber hoses when purchasing an automobile. Likewise, the refrigerant is a component of an HVAC system and is not a product feature of an air conditioning system. Consumers care about comfort, efficiency and cost. Consumers simply don’t care about refrigerant choice as long as the product provides comfort, is easy to operate, is reliable and safe.*

5. Is there reason to be concerned about the possibility of the phasedown schedule accelerating past the establishment of sufficient codes and standards, and if that were to happen despite the prohibition in on the bill on accelerating the schedule prior to 2024, how would this affect liability concerns for manufacturers and contractors?

RESPONSE:

- *The AIM Act provides the needed market signal to focus the industry on the continued development of safety codes and standards.*
- *Approval of codes and standards are an important part of the transition process. The standards process typically runs on a three-year cycle, which is one reason why the limitation is contained in the bill to not adjust the phasedown schedule prior to 2024. That said, the transition schedule for equipment will primarily take place between 2024 and 2029.*
- *Industry looks forward to having that clear signal and has found that it is necessary to incentivize localities to adopt the most relevant safety standards as needed to meet the schedule.*

6. Chemical recyclers have in the past paid a premium to recycle the chemicals that preceded HFCs, but some argue that process has become cost inefficient. Can you explain why this could be important for the environmental effect of this bill if a similar situation were to occur with HFCs?

RESPONSE:

- *Lennox is not a chemical recycler and has limited experience in this area.*
- *However, in examining the market history, there is a small cost to the recovery and purification of used refrigerant, and there has been no incentive for refrigerant – users to purchase reclaimed refrigerant at the additional cost.*
- *Compliance with refrigerant management programs improves when there is a financial incentive to collect the used refrigerant for re-use.*
- *“The domestic industry has significant under-utilized reclaim capacity. A properly administered refrigerant management program would provide additional supply for after-market service, thereby reducing the environmental impacts of additional virgin material. After-market service, loss and disposal are still the single largest source of HFC emissions.”*