

Evaluation of concerns raised to the Environment and Natural Resources (ENR) committee in the context of the Environmental Protection Agency (EPA) implementation of the American Innovation and Manufacturing (AIM) Act. The primary solution offered by Mr. LaBrecque to stop commercial refrigeration equipment from leaking in grocery stores is a fee to reduce purchases of refrigerant.

Leak Reduction/Reducing Refrigerant Supply

The AIM Act addresses this issue by reducing the available refrigerant allowed to be sold nationally. There is more detail below, but HFC availability will decrease by 10% next year compared to 2011 -13 and by 40% in 2024. Only 15% of that 2011-13 HFC baseline will be available in 2036.

Retailers will have to reduce the amount of refrigerant leaking because refrigerant simply will not be available to refill their equipment due to the AIM Act. The EPA is mandated to do so by the AIM Act nationally without a fee.

In Europe, under the same circumstances, leak rates for commercial refrigeration equipment were reduced by 67% in that 40% reduction. More leak reduction is anticipated as the phase-down continues and new stores are re-designed using more self-contained equipment such as the equipment designed and patented by Mr. LaBrecque.

Although federal ozone-depleting refrigerant regulations addressing chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) were implemented differently, there are no current concerns with leaking CFCs in the US and HCFCs are being phased out now. The EPA has a proven track record with this structure nationally, and the phase-down of HFCs starts next year.

The phase-down alone has been proven to address this important concern; however, the AIM Act also authorizes EPA to apply refrigerant management policies to HFCs. It may be worth noting that the EPA is starting to hold meetings on refrigerant management later this month. AHRI is also recommending to retailers that they reduce leaks and refrigerant usage as quickly as possible in a discussion on [Tuesday](#). The 2024 reduction is significant, and it is important to start preparing now for the change.

A separate fee is not necessary in Maine for refrigerants purchased to service leaking equipment. The leakiest equipment is, by far, commercial refrigeration equipment used in grocery stores. As businesses and individuals begin to recover from the economic hardship of the pandemic, it would not be timely to impose a fee on retailers that will be passed on to consumers creating another increase in food prices.

In addition, affected industries including technicians, contractors, distributors, and most importantly, retailers and consumers, have not been involved in a discussion around refrigerant management and fee legislation. Recall that blueberry growers were especially concerned with any costs that may impact them during discussions related to the original text of LD226. It is not timely to move forward without these important stakeholders especially since this issue will be addressed federally likely before Maine could implement such a fee.

Concerns were raised regarding energy efficiency and refrigerant selection related to LD226 legislation comparing the energy efficiency of R-407F and R-448A in Mr. LaBrecque's system. EPA approves refrigerants for use. If Mr. LaBrecque's equipment is considered by EPA to be "stand-alone equipment" R-448A is only approved for "Low temperature (i.e., temperatures at or below 32°F (0 °C)) stand-alone equipment only" where they have determined that lower global warming p alternatives are not available. R-448A is not a viable alternative for medium temperature use due to this limitation, and EPA will likely not allow its use long-term under the AIM Act for any temperature. Energy efficiency will indeed be an important feature of reduced greenhouse gas emissions but equipment manufacturers must be in compliance using federally approved refrigerants.

If Mr. LaBrecque's system is not considered "stand-alone equipment" LD226 does not impact refrigerants selection.

There was also mention of unknown refrigerants and consequences. However, many of the low global warming potential refrigerants are the historic chemicals used differently and in smaller quantities such as carbon dioxide, butane and propane which are sometimes referred to as "natural" refrigerants. The new chemicals have been in use for more than a decade in Europe and would be used in blends with currently use refrigerant components.

The document notes that LD226 will increase profitability for the chemical industry. For completeness, I would note that market-place competition is fierce during these transitions as companies work to develop new products. Some will benefit and others will not. We have seen in Europe a strong preference toward "natural" refrigerants away from fluorocarbons produced by chemical companies. In addition, the cost of the incumbent refrigerants will be reduced with the clarity of sector transitions from regulations such as LD226 during the phase-down of HFCs.

How the American Innovation and Manufacturing Act Addresses Leaking Equipment

The American Innovation and Manufacturing (AIM) Act, signed into law in 2020, requires the EPA to phase down the available supply of hydrofluorocarbons (HFCs) for sale in the U.S by 2036 compared to 2011-13. A similar regulatory structure is in place in Europe and in other countries that have ratified the Montreal Protocol Kigali Amendment which phases down HFCs on the same schedule. A similar, less aggressive structure was used with HCFC-22 years ago in the US.

Here is the phase-down schedule compared to 2011-13 baseline. There, of course, has been significant growth since 2013, so we are well above that baseline today.

- 2022: 10% reduction
- 2024: 40% reduction
- 2029: 70% reduction
- 2034: 80% reduction
- 2036: 85% reduction

Europe used the same step-down structure on an accelerated schedule. HFC sales were reduced by 37.5% in 2018. It was a shock to the market especially for retailers who quickly responded by managing refrigerants better especially reducing leaks by as much as two-thirds through a variety of methods very quickly. Retailers also reduced climate impact by using lower global warming potential (GWP) refrigerants.

- Better maintenance reducing leaks
- More self-contained equipment when equipment is replaced.
- Smaller refrigerant charges (quantities) when equipment is replaced.

The same results will be reached nationally through the AIM Act without adding fees. In fact, AHRI is holding a recorded [webinar](#) on Tuesday discussing strategies with retailers to reduce their demand for HFCs..