

Mr. Lee Zeldin
Administrator, Environmental Protection Agency
12th Street and Pennsylvania Avenue, NW
Washington, D.C.

The American Consumer Institute (ACI) is a nonprofit 501(c)(3) education and research organization. Its mission is to identify, analyze, and protect the interests of consumers in legislative and rulemaking proceedings. ACI supports market-driven solutions that maximize economic growth, maintain affordability, and improve consumer welfare.

ACI is submitting these comments regarding the recent announcement from the Environmental Protection Agency (EPA) to reform the Biden-Harris 2023 Technology Transitions Rule which mandated switching refrigerants in air conditioning equipment.

ACI supports the reform. The Biden administration gave as little as 15 months' notice before finalizing its rule, forcing a rushed transition. As a result, the heating, ventilation, and air conditioning (HVAC) industry has experienced shortages and price increases. Consumers are spending substantially more to repair or replace their air conditioning units, and in some cases, going without.

The brief timeline given was unrealistic, and at minimum, should be extended. Efforts should additionally focus on reducing refrigerant leakage—which drives the environmental impact—during the manufacturing, installation, and repair processes of various air conditioning systems.

Background

The 2020 American Innovation and Manufacturing (AIM) Act authorizes the Environmental Protection Agency (EPA) to address hydrofluorocarbons (HFC) in three main areas: to phase down the production and consumption of listed HFCs, manage these HFCs and their substitutes, and facilitate the transition to next-generation technologies through sector-based restrictions. The goal of AIM was a gradual reduction in HFC production and consumption over time. It permitted the EPA to pass regulations that will reduce U.S. HFC production and use by approximately 85 percent over the next 15 years.¹

¹*American Innovation and Manufacturing Act of 2020*, Public Law 116-260 (2020).

In 2024, the EPA finalized a rule setting an aggressive phase down of HFCs.² Refrigerants with global warming potential (GWP) above 700 would need to be phased out starting January 1, 2025. Equipment made before that deadline could be sold and installed for up to one year. The rule is anything but gradual. It is implementing a timeframe much quicker than suggested and outlined in the original AIM Act.

The majority of residential air conditioners offered for sale at the time of the proposed rule used an HFC blend called R-410a. With a GWP of 2,088, R-410a is 2,088 times more potent than carbon dioxide (CO₂).

R-410a was developed in 1991, entered mass production by the mid-90s, and grew in popularity by the following decade.³ By 2013 it was the industry standard. While R-410a became the primary refrigerant over the course of these 20 years, compatible equipment developed simultaneously. Never mandated, R-410a dominated the competition due to its efficiency, effectiveness, and affordability. Independent forces drove its innovation and market penetration.

Under the new statute, all newly manufactured residential and light commercial HVAC systems would be required to use low-GWP refrigerants. With few options available, the recently developed R-454b has quickly become the new standard bearer. Its low toxicity level and GWP of 466 made it the obvious choice.

Consequences of a Quick Rollout

The fast-approaching deadline to switch refrigerants has left manufacturers, technicians, and contractors with little time to adequately prepare. Since refrigerants are not interchangeable and air conditioning units and refrigeration systems are specifically designed around particular products, new equipment compatible with R-454b would need to be manufactured. R-454b was only introduced in 2018; first-generation R-454b equipment rolled out early this year.

HVAC companies had to quickly decide whether to continue installing R-410a specific systems during their final year or begin the transition to the new ones compliant with the new standards.

Experts predicted a 30 percent price hike across the HVAC industry by the time the rule took effect in January of 2025.⁴ On top of supply chain issues, training technicians with the new equipment as well as additional time required for installation would increase service costs. R-454b's higher flammability classification adds another layer of training and extra precautions technicians must undertake when installing and/or repairing equipment, further adding costs.

² U.S. Environmental Protection Agency, "Biden-Harris Administration Advances Latest Actions to Address Climate-Damaging HFC Emissions and Boost American Leadership on Safer, More Efficient Technologies," News Release, October 6, 2023.

³ Colony Plumbing Heating Air Conditioning, "R-410a Phase out; New R-454b Mandate, January 21, 2021, <https://colonyheating.com/2025/01/21/r-410a-phase-out-new-r454b-mandate/>.

⁴ Hearth, "How the 2025 HVAC Price Increase Could Affect Your Business," December 23, 2024, <https://gethearth.com/how-the-2025-hvac-price-increase-could-affect-your-business/>.



Indeed, with the rush to phase out R-410a and implement R-454b, shortages of both the old and new systems caused price increases. Some areas across the country saw prices jump upwards of 30–40 percent this past summer.⁵ A system costing \$8,000 a year ago is \$11,000 today. An expert in the industry estimated that “Americans in 2025 will pay in excess of \$25 billion extra for air conditioning” on account of the new rule.⁶

R-454b is still relatively new, and only a handful of chemical plants globally are equipped to produce it at scale. As demand has surged, product availability is limited. To compound complications, the special cylinders required to store and ship R-454b are also in short supply. The price of R-454b jumped from approximately \$10 per pound to over \$70, largely due to cylinder scarcity.⁷ Some HVAC suppliers even placed strict limits on orders and tied refrigerant access to equipment purchases.

The quick timeline to transition produced some confusion and disarray, and those who work in the industry have witnessed some disconcerting issues.⁸ Contractors are doing what it takes to get by, including the following: Continuing to install R-410a compatible equipment even on the heels of its phase out, stockpiling R-454b which further compounds shortages, adding R-410a refrigerant to R-454b systems which could cause permanent damage, and attempting to chemically recreate R-454b refrigerant themselves.

An HVAC expert in the field stated, “At the end of the day, we phase down a refrigerant that we’ve worked with for the last two decades, that was working. We could have done a slower transition.... Instead, they flipped the switch on us. And customers are suffering because of it.”⁹

A more deliberate and moderate transition would have allowed hiccups to be ironed out, permitting manufacturers and contractors to adequately design and engineer appropriate solutions and efficiently correct potential missteps. Instead, an entire industry was left clambering for solutions.

Burdens on Households

Consumers are paying more for air conditioning. Significantly more.

An increasing number of households are already considered energy poor because they pay a disproportionately large portion of income on energy; those costs are rising in various regions of the country.¹⁰

⁵ Arshi Qureshi, “Price of AC Units Skyrocket Due to New Refrigerant Rule—and You Face Hefty Fee Even if You Already Own One,” *The Sun*, June 9, 2025, <https://www.the-sun.com/money/14434377/ac-unit-price-rise-refrigerant-rule-las-vegas/>.

⁶ Markie Martin, “HVAC Prices Rise Over Refrigerant Shortage,” *News Nation*, June 7, 2025, <https://www.newsnationnow.com/business/your-money/refrigerant-shortage-air-conditioning-costs/>.

⁷ Millian Aire, “The R-454b Refrigerant Shortage: What Florida Homeowners Need to Know,” Accessed October 27, 2025, <https://millionaire.com/news/r-454b-refrigerant-shortage-florida>

⁸ Joshua Griffen, “Latest on the 2025 Disaster in HVAC and 454b Problem!” HVAC Guide for Homeowners, May 29, 2025, YouTube, 16 min 2 sec.

⁹ Ibid.

¹⁰ Kristen Walker, “Increasing Number of Households are Considered Energy Poor,” *The Economic Standard*, October 9, 2024, <https://theeconomicstandard.com/increasing-number-of-households-are-considered-energy-poor/>.

Some of the nation's poorest are paying up to 36 percent of their income on electricity. Several states have and continue to see spikes in electricity rates on account of policy decisions affecting energy generation sources. Research indicates that roughly 48.5 million households could not pay an energy bill or pay it in full in 2024.¹¹

Adding additional costs to keep homes cool in the summer will further stretch budgets, forcing some to either go without, forego other necessities, or adjust thermostats to dangerous levels.

The health and welfare benefits of air conditioning cannot be overstated. Lack of proper air conditioning can lead to serious health issues and exacerbate others. The elderly, very young children, and people with chronic diseases are the most vulnerable populations for heat-related illnesses. Studies indicate that residential air conditioning in the U.S. has prevented up to 18,000 deaths annually.¹² Making such a basic necessity more expensive could put segments of the country at greater risk.

Families should not be forced to make choices between cooling their homes and other essential goods. When close to 20 percent of U.S. households below the poverty line still lack air conditioning, making this commodity more expensive puts it further out of reach.¹³

Environmental Implications

Research indicates that roughly 74 percent of emissions from air conditioning are due to fossil fuel combustion generating the electricity to operate the unit.¹⁴ The rest is the result of refrigerant escaping the system into the atmosphere during initial charging, servicing, end-of-life disposal, or other events. While certain refrigerants do have significant warming potential, they only contribute if leakage occurs.

Rather than focusing on banning products that will increase costs for the average American, policies that aim to improve the quality and care of air conditioning units to reduce or prevent potential leaks would better serve businesses and consumers.

Lawmakers can continue endeavors such as the 2024 finalized rule that addresses leaks across the lifespan of refrigerant-containing equipment and maximizing the reuse of existing HFCs. The rule came on the heels of a report indicating that curbing leaks and improving practices could prevent up to 90 billion metric tons by the end of the century.¹⁵

¹¹ Carina Rosenbach, Maria Castillo, David Valdez, "We Can End Energy Poverty in the Electric Sector: Here's How," Rocky Mountain Institute, May 28, 2025.

¹² Alan Barreca, et al, "Adapting to Climate Change: The Remarkable Decline in the US Temperature-Mortality Relationship Over the Twentieth Century," *Journal of Political Economy*, Vol 124 no. 1 (2016), <https://www.journals.uchicago.edu/doi/pdf/10.1086/684582>.

¹³ U.S. Energy Information Agency, "Air conditioning in nearly 100 million U.S. homes," August 19, 2011, <https://www.eia.gov/consumption/residential/reports/2009/air-conditioning.php>.

¹⁴ William Goetzler et al., "The Future of Air Conditioning for Buildings," U.S. Department of Energy, July 2016, https://www.energy.gov/sites/prod/files/2016/07/f33/The%20Future%20of%20AC%20Report%20-%20Full%20Report_0.pdf.

¹⁵ Christina Theodoridi et al., "The 90 Billion Ton Opportunity," Environmental Investigation Agency, October 20, 2022, <https://eia.org/wp-content/uploads/2022/10/Refrigerant-Lifecycle-FullReport-6Spreads-PRINT.pdf>.

According to the EPA, simply substituting refrigerants like R-454b for R-410a will only result in emission reductions of up to 876 million metric tons of equivalent through 2050.¹⁶ This approach is far less effective yet far more costly than improving the manufacturing, installation, repairs, and end-of-life treatment of equipment.

Since enhancing HVAC system maintenance is more productive and cost-effective, efforts should focus more on minimizing refrigerant leaks.

Conclusion

The EPA's proposed reform to the Biden-Harris Technology Transitions Rule is a necessary correction to a hastily implemented policy. While the goal of reducing climate-damaging HFC emissions is commendable, the accelerated timeline has imposed disproportionate costs on consumers and strained the HVAC industry. A more measured transition—aligned with the original intent of the AIM Act—would allow for technological readiness, supply chain stability, and proper workforce training, all while preserving affordability and safety for American households.

Policymakers should prioritize approaches that reduce refrigerant leakage, improve lifecycle management, and enhance system maintenance—strategies that deliver greater environmental benefits at lower economic cost. By recalibrating the pace of change and focusing on practical solutions, the EPA can uphold its environmental mandate without compromising consumer welfare or economic resilience.

A balance must be struck between environmental concerns and affordability. Consumers should not be forced to spend an inordinate amount of funds or put their health at risk for minimal global warming impact.

ACI supports the EPA proposal to reform the Biden Technology Transitions Rule.

Thank you for the opportunity to submit these comments.

Kristen Walker
Energy Policy Analyst
American Consumer Institute
4350 N. Fairfax Drive
Suite 725, Arlington, VA 22203

¹⁶ U.S. Environmental Protection Agency, "Fact Sheet: Final Rule - Phasedown of Hydrofluorocarbons: Restrictions on the Use of Certain Hydrofluorocarbons under Subsection (i) of the American Innovation and Manufacturing Act of 2020," October 2023.

