

January 30, 2023

via: <https://www.regulations.gov>

Docket No. EPA-HQ-OAR-2021-0643: Phasedown of Hydrofluorocarbons: Restrictions on the Use of Certain Hydrofluorocarbons Under Subsection (i) the American Innovation and Manufacturing Act of 2020: Proposed Rule
87 FR 76,738 (December 15, 2022)

Comments Submitted by Ben Lieberman, Senior Fellow, Competitive Enterprise Institute (CEI), on Behalf of CEI, Consumers' Research, Heritage Action for America, Caesar Rodney Institute, Science & Environmental Policy Project, Committee for a Constructive Tomorrow, Rio Grande Foundation, FreedomWorks Foundation, John Locke Foundation, Project 21, Cornwall Alliance for the Stewardship of Creation, 60 Plus Association, Institute for Energy Research, and Independent Women's Forum.

I. INTRODUCTION

The undersigned free-market organizations have a longstanding interest in bringing to light the deleterious consequences of federal regulations, which are often neglected by agencies in their attempts to adopt a regulatory agenda. For this reason, many of us submitted a joint comment to the Environmental Protection Agency in 2021 regarding the agency's Allocation Framework Rule implementing the American Innovation and Manufacturing (AIM) Act.¹ The Allocation Framework Rule set up the agency's quota system for hydrofluorocarbons (HFCs), a widely-used class of refrigerants that were being restricted under the AIM Act.² As we detailed in our comment, the rule and underlying agency analysis ignored the real costs to consumers of this new program.³

The agency's Proposed Rule at issue here, also pursuant to the AIM Act, would target newly manufactured air conditioning and refrigeration equipment in which HFCs are used. This includes residential air conditioning systems. Once again, despite the obvious costs of the

¹ H.R. 133, Consolidated Appropriations Act, Section 103, December 27, 2020, (AIM Act).

² Environmental Protection Agency, "Phasedown of Hydrofluorocarbons: Establishing the Allowance Allocation and Trading Program Under the American Innovation and Manufacturing Act: Final Rule," 86 FR 55116, October 5, 2021, (Allocation Framework Rule), <https://www.govinfo.gov/content/pkg/FR-2021-10-05/pdf/2021-21030.pdf>.

³ Docket No. EPA-HQ-OAR-2021-0044; Phasedown of Hydrofluorocarbons: Establishing the Allowance Allocation and Trading Program Under the American Innovation and Manufacturing Act; Proposed Rule 86 FR 27,150 (May 19, 2021), Comments Submitted by Ben Lieberman, Senior Fellow, Competitive Enterprise Institute (CEI), on Behalf of CEI, Consumers' Research, Caesar Rodney Institute, Committee for a Constructive Tomorrow, Center for the American Experiment, Rio Grande Foundation, Americans for Limited Government, Energy & Environment Legal Institute, 60 Plus Association, FreedomWorks Foundation, Buckeye Institute, John Locke Foundation, Project 21, Independent Women's Forum, Cornwall Alliance for the Stewardship of Creation, Roughrider Policy Center, and Texas Public Policy Foundation, at <https://cei.org/wp-content/uploads/2021/07/AIMAct-NOPR-Comments-6-2021.pdf>.

proposed constraints on market competition and consumer choice, the agency analysis asserts that there will be no net costs. This finding violates several provisions in the AIM Act and is arbitrary and capricious. For these reasons, we believe the Proposed Rule should not be finalized.

II. BACKGROUND

While the primary focus of the AIM Act and Allocation Framework Rule was to phase down the production of HFCs based on their claimed contribution to climate change, the statute also set out a process under which the agency may promulgate rules restricting air conditioning and refrigeration equipment that utilizes these refrigerants.⁴ These provisions include a process allowing anyone to petition the agency for such restrictions.⁵ EPA has received numerous such petitions, including many from representatives of the manufacturers of equipment that would be favored under the provisions advocated in their petitions.⁶

The agency has granted most of these petitions and with this Proposed Rule is now subjecting them to the required public process before they can become law.

Most of the petitions would require that all new equipment of a particular category use refrigerants with a global warming potential (GWP) at or below a certain threshold. While nearly every type of air conditioning and refrigeration equipment is covered under these petitions, this comment will focus on the provisions applicable to residential air conditioners. EPA is proposing to outlaw by January 1, 2025 the manufacture of residential (and light commercial) air conditioners using any HFC with a GWP higher than 700.⁷

The majority of such air conditioners currently being offered for sale use an HFC blend called HFC-410a. Air conditioners designed to operate with HFC-410a have dominated the residential market for a number of years, due to their combination of superior affordability and quality relative to other available refrigerants. However, HFC-410a has a GWP of 2,088 and thus the manufacture of any new equipment using it would be forbidden by 2025 under the Proposed Rule.⁸

Among the likely options to replace R-410a systems is R-32 with a GWP of 675, and R-454b with a GWP of 466.⁹ Note that these and other refrigerants had lost out to R-410a in the marketplace due to various shortcomings, including cost, performance, and safety. But now,

⁴ AIM Act, subsection (i), “Technology Transitions.”

⁵ Ibid. subsection (i)(3).

⁶ Environmental Protection Agency, “Technology Transition Petitions Under the AIM Act,” <https://www.epa.gov/climate-hfcs-reduction/technology-transition-petitions-under-aim-act#:~:text=A%20person%20may%20also%20petition,within%20180%20days%20of%20receipt>.

⁷ 87 FR 76773.

⁸ Environmental Protection Agency, “Transitioning To Low-GWP Alternatives in Residential and Commercial Air Conditioning and Chillers,” https://www.epa.gov/sites/default/files/2021-02/documents/transitioning_to_low-gwp_alternatives_in_res_and_com_ac_chillers.pdf.

⁹ California Air Resources Board, “High-GWP Refrigerants,” <https://ww2.arb.ca.gov/resources/documents/high-gwp-refrigerants>.

these refrigerants, and the manufacturers of air conditioning systems designed to use them, would be shielded from any further competition with R-410a systems if the Proposed Rule is finalized. It should be noted that, with limited exceptions, refrigerants are not interchangeable and that equipment is specifically designed around a particular refrigerant.

III. EPA’S REFUSAL TO ACKNOWLEDGE LIKELY REGULATORY COSTS VIOLATES THE AIM ACT AND IS ARBITRARY AND CAPRICIOUS

EPA’s economic assessment of the AIM Act is off to a very poor start. After enactment of the statute in December of 2020, market prices for the HFCs targeted under it soon increased substantially in anticipation of the restrictions to come.¹⁰ These sharp increases were well underway during the agency’s deliberations over the Allocation Framework Rule, yet its lengthy “Regulatory Impact Analysis for Phasing Down Production and Consumption of Hydrofluorocarbons (HFCs)” made absolutely no mention of them.¹¹ The agency finalized the rule on October 5, 2021 while completely ignoring actual market prices for HFCs that in many cases had increased several-fold by that point.¹² Instead, EPA relied on assumption-driven computer modeling to hypothesize that implementation of the AIM Act would produce net savings for consumers.

Much like its analysis of costs under the Allocation Framework Rule, the agency’s modeled assessment of costs under the Proposed Rule is completely untethered to reality. It falls well short of the AIM Act’s requirement that the agency shall rely on “the best available data,” and take into account “affordability for residential and small business consumers,”¹³ and is arbitrary and capricious.

A. The Proposed Rule Reduces Consumer Choice and Thus Raises Prices

It should be obvious that R-32 or R-454b or other new systems will be more expensive than they would otherwise be once they no longer face competition from R-410a systems. But nowhere is this market reality mentioned in the Proposed Rule and supporting analysis.

The agency assumes, without support, that the new systems “would typically not need extensive redesign and would be expected to have a similar cost....”¹⁴ It even suggests that there may be cost savings over time in the form of more energy efficient systems. The agency concludes that “overall, the proposed rule is expected to provide net savings to the economy, which may in turn be passed on to small businesses and residential consumers.”¹⁵

¹⁰ For example, refrigerant wholesaler [Refrigerant Depot](#) listed a 25-pound cylinder of R-410a at about \$100 to \$125 prior to the AIM Act, but as high as \$500 afterwards.

¹¹ Environmental Protection Agency, June 2022, <https://www.epa.gov/system/files/documents/2022-07/RIA%20for%20Phasing%20Down%20Production%20and%20Consumption%20of%20Hydrofluorocarbons%20%28HFCs%29.pdf>.

¹² Allocation Framework Rule, 86 FR 55116.

¹³ AIM Act, subsection (i)(4).

¹⁴ 87 FR 76765.

¹⁵ 87 FR 76764.

Assumptions that alternative systems are cost competitive are highly implausible given that manufacturers could have dropped R-410a and switched to them at any time, with or without the Proposed Rule. But in any event, the proper economic comparison is not between the cost of an R-32 or R-454b system and an R-410a system, but the cost of an R-32 or R-454b system with and without the restrictions under the Proposed Rule. The continued availability of R-410a systems would exert a measure of competition and price discipline on the new systems that will be absent if they are outlawed. For this reason, even consumers who ultimately choose R-32 and R-454b systems are better off without the Proposed Rule than with it. There can be no doubt that the Proposed Rule's constraints serve to raise prices, and the agency's analysis is deficient for failing to acknowledge this.

The agency concedes that it relies on information provided by the companies and trade associations that petitioned for the Proposed Rule, asserting that they are "well-positioned and incentivized to gather and have access to information regarding many of the factors in subsection (i)(4), including the best available data on many if not most of the subfactors in subsection (i)(4)(B)."¹⁶ In reality, these rent-seeking entities are incentivized to downplay any adverse consumer impacts attributable to the products for which they are seeking to secure a captive market via the Proposed Rule. Note also that these are some of same interested-party sources cited as support for the assertion that the Allocation Framework Rule would be cost-free, even as actual prices for HFCs were skyrocketing.¹⁷

Relying so heavily on such self-interested entities hardly qualifies as using the best available data, all the more so given their unimpressive track record in predicting the costs of the AIM Act thus far as well as the implausibility of their claims that the Proposed Rule's restraints on competition and product choice won't impose costs.

B. Mandating Uncompetitive Refrigerants in New Equipment Doesn't Benefit Consumers

It is important to emphasize that the Proposed Rule reduces rather than expands market choice. Any manufacturer that prefers to make systems designed to run with R-32, R-454b, or any other refrigerant compliant with the proposed 700 GWP cap has been free to do so at any time, with or without the AIM Act and with or without finalization of the Proposed Rule. The only thing the Proposed Rule does is hand those alternative systems the entirety of the new equipment market by outlawing competition with R-410a systems. In addition to higher prices, doing so also raises other issues associated with the use of problematic refrigerants.

Instead of acknowledging the reality that these alternative refrigerants have imperfections, EPA assumes that they are comparable to (or better than) R-410a.

Nowhere does the agency explain why these alternative refrigerants were nobody's first choice and why the Proposed Rule is needed in order for them to secure market share. Rather, it asserts without evidence that air conditioning systems "would be expected to have a similar cost

¹⁶ 87 FR 76771.

¹⁷ See, 87 FR 76770, footnote 72.

and similar performance with either the regulated substance or the substitute.”¹⁸ In reality, as noted in a study conducted for the Clean Energy Manufacturing Analysis Center, “[e]xisting ‘alternative’ refrigerants have limitations (e.g., toxicity, flammability, efficiency) that have restricted their use until now.”¹⁹

For example, both R-32 and R-454b have a flammability classification higher than that of R-410a.²⁰ Thus, flammability risks would likely increase for most new residential systems under the Proposed Rule. Legitimate questions whether these risks can be eliminated by the 2025 deadline may constitute a violation of the consumer protections in the AIM Act, including the requirement that safety be taken into account.²¹ At the very least, we urge caution regarding continued agency reliance on “information from petitions” regarding safety, as these petitions were submitted on behalf of the companies seeking to make and use the flammable refrigerants at issue.²²

C. The Proposed Rule Would Lead to Higher Repair Costs Not Accounted For in the Analysis

Beyond raising the purchase price of new air conditioning equipment, the Proposed Rule would also lead to higher repair costs over the life of these systems. The agency dismisses service costs by saying that they “comprise only a small fraction of income for residential consumers.”²³ This blanket assertion is not a valid reason to ignore these costs.

It is important to note that the flammability issues associated with several of the new refrigerants are not merely a safety concern, but also an economic one. The extra precautions service technicians must undertake when dealing with such refrigerants would add to the time and cost of repairs, and may also impact installation and disposal costs.

The Proposed Rule includes a section on “contractor training costs,” which concedes that the new refrigerants pose flammability and other challenges that service technicians must master, but it never takes the logical step of acknowledging that these challenges will very likely translate into higher repair bills.²⁴

Further, the Proposed Rule encourages a proliferation of refrigerants simultaneously in use, which adds complications and costs to the repair process. No single frontrunner has yet emerged as the best replacement for R-410a, and the Proposed Rule does not provide enough time for that process to play out. Further, the Proposed Rule is by nature an interim one – the

¹⁸ 87 FR 76765.

¹⁹ Chuck Booten et al., “Refrigerants: Market Trends and Supply Chain Assessment,” Clean Energy Manufacturing Analysis Center, February 2020, p. 41, <https://www.nrel.gov/docs/fy20osti/70207.pdf>.

²⁰ See, American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), “Designation and Safety Classification of Refrigerants,” 2019, https://www.ashrae.org/file%20library/technical%20resources/standards%20and%20guidelines/standards%20addenda/34_2019_f_20191213.pdf.

²¹ AIM Act, subsection (i)(4)(B).

²² 87 FR 76766.

²³ 87 FR 76764.

²⁴ 87 FR 76768-9.

GWP 700 threshold was arbitrarily chosen and very likely will be lowered in a future rulemaking, leading to yet more refrigerants forced into use. Undoubtedly, the companies developing and using GWP 400 or 200 or 100 refrigerants will petition the agency for future rounds of competition-limiting rules as is occurring with the Proposed Rule here.

As a result, service technicians will need to be trained and equipped to handle a large and growing number refrigerants in residential systems. Some of the equipment required to service residential systems is refrigerant-specific, leading to a costly redundancy of such equipment that will undoubtedly be passed on to consumers.

The proliferation of refrigerants under the Proposed Rule would also increase the risk of refrigerant cross-contamination and commingling. Adding the wrong refrigerant to a system (or even the correct refrigerant if contaminated with traces of another) can lead to serious and costly damage and also make reclamation much more difficult.

Note also that, unlike R-410a systems which have been refined and improved upon over the last twenty-plus years, the GWP 700-compliant systems are not similarly battle tested in the American market. The first generation of this equipment may or may not have the same reliability as the systems they are replacing, and repairs may be more common.

None of these equipment lifecycle costs are included in the agency's assessment.

D. The Proposed Rule Fails To Consider the Environmental Justice Impacts of Higher Air Conditioning Costs

As with the Allocation Framework Rule, the Proposed Rule's lengthy discussion of environmental justice does not consider the possibility that such regulations would raise air conditioning costs on those least able to afford them. Instead, it focuses primarily on hypothetical future releases from production facilities making replacement refrigerants and the impacts on surrounding communities.²⁵ Not only is this discussion irrelevant to the Proposed Rule—releases from such facilities are heavily regulated under separate authority in the Clean Air Act and other statutes—but it ignores the direct impacts on air conditioner affordability.

The health and welfare benefits of air conditioning are substantial. The most comprehensive study on the subject estimates that widespread market penetration of residential air conditioning in the U.S. has prevented up to 18,000 deaths annually.²⁶ Beyond mortality reductions, air conditioning also enhances the quality of life, including improved learning and labor productivity.²⁷ Such benefits receive scant attention in the Proposed Rule and supporting economic analysis.

²⁵ 87 FR 76746-49.

²⁶ Alan Barreca et al., "Adapting to Climate Change: The Remarkable Decline in the U.S. Temperature-Mortality Relationship over the 20th Century," *Journal of Political Economy*, January 2016, <https://epic.uchicago.edu/wpcontent/uploads/2019/08/684582.pdf>.

²⁷ Jose Guillermo-Cedeno-Laurent et al., "Extreme Heat Linked To Lower Cognitive Performance In Students In Non Air Conditioned Buildings," *Neuroscience News*, July 2018, <https://neurosciencenews.com/ac-heat-cognition9548/>.

Of course, these benefits accrue only to those who can afford air conditioning. Not surprisingly, data from the Energy Information Administration's Residential Energy Consumption Survey (RECS) finds that low-income households are less likely to have air conditioning.²⁸ Heat-related mortality and morbidity is higher among those with low incomes, especially seniors, and lack of access to air conditioning has been identified as a major contributor.²⁹

The Proposed Rule engages in speculation that climate change disproportionately burdens "the poor, the elderly, the very young, those already in poor health, the disabled, those living alone, and/or indigenous populations..."³⁰ But nowhere is there any consideration of the disproportionate impacts on those same groups of costlier air conditioning. Any assessment of potential disproportionate impacts of federal rulemakings should consider both costs as well as benefits.³¹

Granted, the agency has taken the position, however far-fetched, that the Proposed Rule is unlikely to impose costs. Even so, EPA should have at least considered the possibility that the agency's assessment may be optimistic (as we already know to be the case with the Allocation Framework Rule) and thus explored the environmental justice implications should the cost of purchasing and maintaining air conditioning increase.

IV. THE CLAIMED CLIMATE BENEFITS FROM THE PROPOSED RULE ARE OVERSTATED

It is difficult to see how the Proposed Rule could plausibly reduce the greenhouse gas contribution from HFCs beyond what is already mandated by the AIM Act and Allocation Framework Rule. The quantities of allowable HFCs are, on a GWP-weighted basis, already constrained by law. Indeed, the sharp jump in HFC prices in the very first year of the AIM Act (the quotas get considerably tighter in future years) is a real-world indication that every last ounce will be needed. The Proposed Rule would, at most, merely reallocate this limited amount towards a somewhat different mix of HFCs and end uses. Agency speculation that the Proposed Rule would somehow spark overcompliance with the existing quotas strains credibility and is not the best available data.

It should also be noted that approximately 74 percent of the greenhouse gas contribution attributable to air conditioning systems comes from the indirect carbon dioxide emissions associated with the electricity needed to run them, and not the small amount of refrigerant that

²⁸ U.S. Energy Information Administration, "Air Conditioning In Nearly 100 Million Homes," August 2011, <https://www.eia.gov/consumption/residential/reports/2009/air-conditioning.php>.

²⁹ See, Joyce Klein Rosenthal et al., "Intra-Urban Vulnerability To Heat-Related Mortality In New York City, 1997-2006," *Health & Place*, November 2014, <https://www.sciencedirect.com/science/article/pii/S1353829214001087>.

³⁰ 87 FR 76747.

³¹ See, Project 21 Black Leadership Network, "Blueprint For A Better Deal For Black America," April 2018, <https://nationalcenter.org/project-21-blueprint-for-a-better-deal-for-black-america/>.

leaks out.³² Thus, if the agency's optimistic assumptions of comparable or superior energy efficiency with the new refrigerants prove wrong, the Proposed Rule could lead to increased greenhouse gas emissions.

Nonetheless, the agency calculates substantial climate benefits through 2050. It estimates reduced greenhouse gas emissions ranging from 134 to 903 million metric tons carbon equivalent (MMTCO₂e) by 2050 and, based on its estimate of the social cost of HFCs (SC-HFCs), calculates present value of resulting benefits ranging between \$5 billion and \$51 billion in 2020 dollars.³³ Although the agency asserts that these calculations play no role in its deliberations over the Proposed Rule, they are nonetheless included in considerable detail and thus we believe it important to highlight several concerns with them.

The monetized benefits of reduced HFC emissions are based on the 2021 Interagency Working Group on the Social Cost of Greenhouse Gases (IWG 2021).³⁴ As several of us have detailed in other regulatory contexts, there are numerous flaws with IWG 2021, nearly all of which serve to exaggerate the climate benefits of avoided emissions.³⁵ Among them are the use of improperly-low discount rates, reliance on climate models that have consistently overstated actual warming, and downplaying the capacity for adaptation to mitigate climate impacts.³⁶

Overall, questions about whether the Proposed Rule would reduce greenhouse gas emissions as much as estimated (if at all), compounded by concerns whether the dollar value of reducing emissions has been exaggerated, renders the agency's calculations of climate benefits well short of best available data.

V. CONCLUSION

The Proposed Rule would serve to outlaw the types of residential air conditioning systems that currently predominate in the new equipment market and replace them with systems with a variety of shortcomings. Yet the agency's modeled analysis would have us believe that creating a captive market for these replacement systems would leave consumers better off. For the reasons we have described, the agency's analysis falls well short of the best available data standard required under the AIM Act and under the Information Quality Act, and is arbitrary and capricious because it bears little relation to economic reality.³⁷ We urge the agency to withdraw the Proposed Rule.

³² U.S. Department of Energy, "The Future of Air Conditioning for Buildings," July 2016, https://www.energy.gov/sites/prod/files/2016/07/f33/The%20Future%20of%20AC%20Report%20-%20Full%20Report_0.pdf.

³³ 87 FR 76804.

³⁴ 87 FR 76805.

³⁵ Coalition Comment to the Department Of Energy, Energy Conservation Standard for Consumer Furnaces, October, 5, 2022, <https://cei.org/wp-content/uploads/2022/10/FurnaceComment-10-5-2022-final.pdf>.

³⁶ *Ibid.* at 8-9.

³⁷ *Chem. Mfrs. Ass'n v. EPA* 28 F.3d 1259, 1264 (D.C. Cir. 1994); *Am. Iron & Steel Inst. v. EPA*, 115 F.3d 979, 1004 (D.C. Cir. 1997); *Columbia Falls Aluminum Co. v. EPA*, 139 F.3d 914, 923 (D.C. Cir. 1998); *Sierra Club v. EPA*, 356 F.3d 296, 307 (D.C. Cir. 2004).

Respectfully Submitted,

Ben Lieberman, Senior Fellow
Center for Energy and Environment
Competitive Enterprise Institute

Garrett Bess
Vice President
Heritage Action for America

Tom Pyle
President
Institute for Energy Research

Adam Houser
Director of Public Outreach
Committee For A Constructive Tomorrow

Donna Jackson
Director of Membership Development
Project 21

Mandy Gunasekara
Senior Policy Analyst
Independent Women's Forum

E. Calvin Beisner, Ph.D., President
Cornwall Alliance for the Stewardship
of Creation

William Hild
Executive Director
Consumers' Research

Beverly McKittrick
Director, Regulatory Action Center
FreedomWorks Foundation

Thomas Sheahan, Ph.D.
Chairman
Science & Environmental Policy Project

David Stevenson, Director
Center for Energy & Environmental Policy
Caesar Rodney Institute

Paul Gessing
President
Rio Grande Foundation

Brian Balfour
Senior Vice President of Research
John Locke Foundation

Saulius "Saul" Anuzis
President
60 Plus Association