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Via electronic submission

U.S. Environmental Protection Agency
EPA Docket Center
Air and Radiation Docket
Mail Code 28221T
1200 Pennsylvania Avenue NW
Washington, D.C. 20460

Re: Phasedown of Hydrofluorocarbons: Restrictions on the Use of Certain
Hydrofluorocarbons Under Subsection (i) of the American Innovation
and Manufacturing Act of 2020
EPA-HQ-OAR-2021-0643

Dear Administrator Regan:

In December 2022, the U.S. Environmental Protection Agency (EPA) published a proposed rule entitled “Phasedown of Hydrofluorocarbons: Restrictions on the Use of Certain Hydrofluorocarbons Under Subsection (i) of the American Innovation and Manufacturing Act of 2020.”¹ The States of California, Delaware, Hawaii, Illinois, Maine, Maryland, Minnesota, New Jersey, New York, North Carolina, Oregon, Vermont, Washington, and Wisconsin, the Commonwealth of Massachusetts, the District of Columbia, the California Air Resources Board (CARB), and the Maryland Department of the Environment (together, the States) welcome this opportunity to express their strong support for EPA’s proposal.

The proposed rule meaningfully addresses climate harms associated with hydrofluorocarbon (HFC) emissions by restricting the use of high-global warming potential (GWP) HFCs in the aerosols, foam blowing, and refrigeration, air conditioning, and heat pump sectors, and by subjecting manufacturers and importers to common-sense reporting and recordkeeping

¹ See 87 Fed. Reg. 76,738 (Dec. 15, 2022).

requirements. If finalized, the rule would avoid up to 35 million metric tons of carbon dioxide-equivalent emissions per year—the equivalent of removing over 7.5 million passenger cars from U.S. roadways—while saving industry and consumers up to 51 billion dollars cumulatively through 2050. The rule would set predictable nationwide standards for industry while complementing the States’ efforts to reduce greenhouse gas emissions in their separate jurisdictions.

Because the transition away from high-GWP HFCs is an important step in the fight to curb anthropogenic climate change, the States voice their support for the proposed rule and provide suggestions intended to further strengthen the regulations.

I. Background

Climate Change Impacts

As EPA notes in the preamble to the proposed rule, the buildup of greenhouse gases in the atmosphere is “changing the climate at a pace and in a way that threatens human health, society, and the natural environment.”² According to the National Aeronautics and Space Administration (NASA), the last nine years have been the warmest since the advent of modern recordkeeping.³

Climate change is harming the States in many ways. Wildfires, heat waves, increases in the frequency and severity of extreme weather events, sea-level rise, changes in agriculture and food production, droughts, floods, and other climate-related harms threaten our residents, economies, and natural resources.⁴ For example:

- California experienced eight of the ten warmest years on record between 2012 and 2022, with accompanying increases in heat-

² *Id.* at 76,745.

³ Press Release, Nat’l Aeronautics & Space Admin., NASA Says 2022 Fifth Warmest Year on Record, Warming Trend Continues (Jan. 12, 2023), <https://www.nasa.gov/press-release/nasa-says-2022-fifth-warmest-year-on-record-warming-trend-continues>.

⁴ *See, e.g.*, U.S. Glob. Change Rsch. Prog., Climate Science Special Report: Fourth National Climate Assessment, Volume I at 10 (D.J. Wuebbles et al. eds., 2017), <https://science2017.globalchange.gov/>.

related illnesses, drought, pest infestations, and wildfires.⁵ A September 2022 heat wave broke temperature records in Sacramento and other cities in northern California.⁶ Warmer temperatures are contributing to the severity of drought conditions in the State,⁷ which in turn degrades water security, increases ecological vulnerability, and increases the risk of wildfire. The 2018 Camp Fire, for example, was the deadliest and most destructive wildfire in California history—killing 85 people and destroying 18,804 structures.⁸ Extreme drought conditions also increase flood risk and the risk of dam failure during extreme rain events, as evidenced by California’s recent flooding events.⁹

- In the District of Columbia, warming temperatures have led to more intense rain events, more frequent flooding,¹⁰ and record-breaking heat waves.¹¹
- In 2022, Massachusetts experienced significant or critical drought conditions across the entire state,¹² leading to fires and water restrictions and harming private wells and water-dependent habitats state-wide.¹³

⁵ Cal. Env’t Prot. Agency, Off. of Env’t Health Hazard Assessment, Indicators of Climate Change in California at i-6 to i-7, i-14 to i-15 (C. Milanese et al., 4th ed. Nov. 2022), <http://bit.ly/3VusCBI>.

⁶ NASA Earth Observatory, A Long-lasting Western Heatwave (Sept. 9, 2022), <https://earthobservatory.nasa.gov/images/150318/a-long-lasting-western-heatwave>.

⁷ Gabriel Petek, California Legislative Analyst’s Office, What Can We Learn From How the State Responded to the Last Major Drought? at 2 (May 2021), <https://lao.ca.gov/reports/2021/4429/learn-from-last-drought-051321.pdf>.

⁸ Cal. Dep’t of Forestry & Fire Prot., Top 20 Most Destructive California Wildfires (Oct. 31, 2022), https://www.fire.ca.gov/media/t1rdhizr/top20_destruction.pdf.

⁹ See, e.g., Raymond Zhong, *How Climate Change is Shaping California’s Winter Storms*, N.Y. Times (Jan. 3, 2023), <https://www.nytimes.com/2023/01/03/climate/california-flood-atmospheric-river.html?smid=url-share>.

¹⁰ See World Health Org., Heath and Climate Change Urban Profile: Washington, District of Columbia (May 4, 2022), <http://bit.ly/3uf4ZBE>.

¹¹ See *id.*

¹² Massachusetts Drought Status (Sept. 8, 2022), <http://bit.ly/3hKCnwR>.

¹³ Press Release, Mass. Exec. Off. of Energy & Env’t Aff., Massachusetts Continues to Experience Drought Conditions (July 21, 2022), <http://bit.ly/3Vi0RfS>.

- New York has seen dramatic increases in the frequency and severity of extreme rain events.¹⁴ In 2021, barely a week after Tropical Storm Henri broke rainfall records,¹⁵ the remnants of Hurricane Ida dumped nearly a half-foot of rain in the New York City area in a few hours. The resulting flash flooding killed more than 40 people in the region.¹⁶
- The 2010s were the warmest decade on record for North Carolina, and 2019 was the single hottest year. North Carolina is still recovering from damage inflicted by Hurricanes Florence and Matthew—two 500-year storms that struck the state within a two-year period.
- As a result of wildfires in September 2020, Portland, Oregon experienced the worst air quality of all major cities in the world.¹⁷ In the summer of 2021, Oregon experienced an unprecedented heat wave that killed at least 116 people.¹⁸
- In 2021, the Pacific Northwest experienced a “once-in-a-millennium” heat wave that caused 100 heat-related deaths in Washington State

¹⁴ See N.Y. State Off. of the Att’y Gen., *Current & Future Trends in Extreme Rainfall Across New York State*, A Report from the Environmental Protection Bureau of New York State Attorney General Eric T. Schneiderman (Sept. 2014), <http://bit.ly/3EQUo4t> (based on data from the 2014 National Climate Assessment and the National Oceanographic and Atmospheric Administration’s Northeast Regional Climate Center).

¹⁵ See Andy Newman and Ellen Barry, *Tropical Storm Henri Brings Power Outages and Record Rain to Northeast*, N.Y. Times (Aug. 22, 2021), <https://www.nytimes.com/2021/08/22/nyregion/tropical-storm-henri.html?searchResultPosition=1>.

¹⁶ See Jesse McKinley et al., *Flooding from Ida Kills Dozens of People in Four States*, N.Y. Times (Sept. 2, 2021, updated Oct. 13, 2021), <http://bit.ly/3XKBK6Z>.

¹⁷ See Aimee Green, *Portland’s air quality was the worst of major cities in the world Friday*, The Oregonian (Sept. 11, 2020), <https://www.oregonlive.com/news/2020/09/portland-now-has-the-worst-air-quality-in-the-world-due-to-oregon-and-washington-wildfires.html>.

¹⁸ See Ardeshir Fabrizioan, *Heat Wave Death Toll Grows to 116*, The Oregonian (July 7, 2021), <https://www.oregonlive.com/data/2021/07/oregons-heat-wave-death-toll-grows-to-116.html>.

in a single week.¹⁹ The heat was so intense that hundreds of millions of shellfish baked to death in the Puget Sound.²⁰

As EPA recognizes, these and other climate change-related impacts will continue to disproportionately affect Black and Latino populations, communities of low wealth, Native American tribal communities, and other historically disadvantaged groups.²¹

The Role of HFCs

HFCs are used in a variety of applications, including as refrigerants in refrigeration, air conditioning, and heat pump systems; as foam blowing agents, solvents, and aerosols; and in fire suppression equipment. EPA has long recognized that HFC compounds are potent greenhouse gases that accelerate climate change and endanger public health and welfare.²² As EPA notes in the preamble to the proposed rule, some HFCs are *thousands of times* more climate-damaging than carbon dioxide.²³ In recent years, HFC use and emissions have grown due both to the global phaseout of ozone-depleting substances (for which HFCs are substitutes) and to the increased use of refrigeration and air conditioning globally.²⁴ Effectively non-existent in 1990, HFC emissions in New York for example now account for six percent of the state's total greenhouse gas emissions.²⁵ In California, statewide HFC

¹⁹ See Nicholas Turner, *Window shades, ventilation and other key lessons from the 2021 Pacific Northwest heat wave*, The Seattle Times (June 25, 2022), <https://www.seattletimes.com/seattle-news/environment/window-shades-ventilation-and-other-key-lessons-from-the-2021-pacific-northwest-heat-wave/>; Wash. State Dep't of Health, *Heat Wave 2021*, <https://doh.wa.gov/emergencies/be-prepared-be-safe/severe-weather-and-natural-disasters/hot-weather-safety/heat-wave-2021>.

²⁰ See John Ryan, *Extreme heat cooks shellfish alive on Puget Sound beaches*, KUOW Puget Sound Public Radio (June 23, 2022), <https://www.kuow.org/stories/extreme-heat-wave-cooked-many-shellfish-spared-others-study-finds>.

²¹ See EPA, *Climate Change and Social Vulnerability in the United States at 6–7* (Sept. 2021), https://www.epa.gov/system/files/documents/2021-09/climate-vulnerability-september-2021_508.pdf; Intergovernmental Panel on Climate Change (IPCC), *2022: Summary for Policymakers*, in *Climate Change 2022: Impacts, Adaptation and Vulnerability at 9, 12* (2022), <http://bit.ly/3EEzBCy>.

²² See 74 Fed. Reg. 66,496, 66,497 (Dec. 15, 2009).

²³ See 87 Fed. Reg. at 76,744.

²⁴ See *id.*

²⁵ See N.Y. Dep't of Env'tl. Conserv., *2022 Statewide GHG Emissions Report at v*, https://www.dec.ny.gov/docs/administration_pdf/ghgsumrpt22.pdf.

emissions have more than doubled since 2005 and continue to rise.²⁶ Because many commonly used HFCs have very high GWPs but are relatively short-lived in the atmosphere, near-term emissions reductions could have a significant impact on global warming. The States agree with EPA that we must reduce HFC and other fluorinated gas emissions if we wish to mitigate climate change-related harms.²⁷

State Efforts to Address HFCs and Combat Climate Change

The States have a substantial interest in protecting the health of our residents and our natural resources and infrastructure from the risks associated with HFC emissions and a warming climate.²⁸ We have been at the forefront of tackling the climate crisis, including through efforts to reduce HFC production and consumption. For example:

- California has committed to achieving carbon neutrality by 2045.²⁹ This includes a commitment to achieve 100-percent zero-emissions car and truck sales by 2035 and to obtain the state’s energy from 100-percent renewable sources by 2045.³⁰ Senate Bill 1383 mandates a 40-percent reduction in HFC emissions from 2013 levels by 2030.³¹ To meet that target and as part of California’s greenhouse gas emissions reduction plan,³² California adopted its Short-Lived

²⁶ See CARB, 2022 Scoping Plan for Achieving Carbon Neutrality at 224 (Nov. 16, 2022), <https://ww2.arb.ca.gov/sites/default/files/2022-11/2022-sp.pdf>.

²⁷ See IPCC, Global Warming of 1.5°C at 118, 157 (V. Masson-Delmotte et al. eds., 2019), <http://ipcc.ch/report/sr15/>.

²⁸ See *Nat. Res. Def. Council v. Wheeler*, 955 F.3d 68, 77 (D.C. Cir. 2020) (finding that “the release of HFCs contributes to climate change” that harms states in myriad ways).

²⁹ See Cal. Health & Safety Code § 38562.2; Cal. Exec. Order B-55-18. This commitment was adopted into law in 2022. See Assembly Bill 1279 (Muratsuchi, Stat. 2022, ch. 337) (the California Climate Crisis Act “declares the policy of the state both to achieve net zero greenhouse gas emissions as soon as possible but no later than 2045, and achieve and maintain net negative greenhouse gas emissions thereafter, and to ensure that by 2045, state anthropogenic greenhouse gas emissions are reduced to at least 85% below the 1990 levels”).

³⁰ See Senate Bill 100 (De Leon, Stat. 2018, ch. 312); Cal. Exec. Order N-79-20.

³¹ See Cal. Health & Safety Code § 39730.5.

³² California adopted Assembly Bill 32 (Nunez, Stat. 2006, ch. 488) in 2006 requiring reduction in greenhouse gas emissions to 1990 levels by 2020. See Cal.

Climate Pollutant Strategy³³ to combat HFC emissions. California also adopted the California Cooling Act³⁴ to counteract the partial vacatur of Significant New Alternatives Policy (SNAP) rules 20 and 21.³⁵ In 2020, CARB adopted its HFC Regulation, setting GWP limits for refrigeration and air conditioning equipment. As part of the same regulation, CARB required air conditioning manufacturers to use a percentage of reclaimed refrigerant in their new equipment.³⁶ In 2022, California adopted an HFC law (Senate Bill 1206) that, among other provisions, prohibits offering for sale or distribution, or otherwise entering into commerce in California, bulk HFCs or their blends that exceed certain GWPs beginning in January 2025.³⁷ Despite California's decarbonization efforts, high-GWP HFCs are expected to be among the last remaining persistent greenhouse gas emission sources in the state in 2045.³⁸

- Delaware has committed to reducing statewide greenhouse gas emissions by 26 to 28 percent from 2005 levels by 2025 and to obtaining 40 percent of its electricity from renewable sources by 2035.³⁹ Delaware has also prohibited certain HFCs in certain end uses through regulation.⁴⁰
- Maryland's Greenhouse Gas Reduction Act requires at least a 60-percent reduction in statewide greenhouse gas emissions by 2045.⁴¹

Health & Safety Code § 38500 *et seq.* In 2016, California adopted Senate Bill 32 (Pavely, Stat. 2016, ch. 249), requiring a 40-percent greenhouse gas emissions reduction below statewide emission limit by 2030. *See* Cal. Health & Safety Code § 38566.

³³ CARB, Short Lived Climate Pollutant Strategy (Mar. 2017), https://ww2.arb.ca.gov/sites/default/files/2020-07/final_SLCP_strategy.pdf.

³⁴ Senate Bill 1013 (Lara, Stat. 2018, ch. 375); Cal. Health & Safety Code § 39734.

³⁵ *See Mexichem Fluor, Inc. v. EPA*, 866 F.3d 451 (D.C. Cir. 2017).

³⁶ *See* Cal. Health & Safety Code § 39734; Cal. Code Regs., tit. 17, § 95371 *et seq.*

³⁷ *See* Cal. Health & Safety Code §§ 39735, 39736.

³⁸ Energy and Env'tl. Econs. Inc., Achieving Carbon Neutrality in California – Pathways Scenarios Developed for the California Air Resources Board (Oct. 2020), https://ww2.arb.ca.gov/sites/default/files/2020-10/e3_cn_final_report_oct2020_0.pdf.

³⁹ *See* 26 Del. C. §§ 351–364.

⁴⁰ *See* 7 Del. Admin. Code § 1151.

⁴¹ *See* Md. Code Ann., Env'r. §§ 2-1201 to 2-1211.

In addition, to help meet its aggressive climate goals and recognizing the availability of environmentally preferable alternatives, Maryland recently adopted regulations to phase out HFC use in foam products, refrigeration, commercial air-conditioning, and aerosol propellants.⁴²

- Massachusetts has committed to achieving net-zero economy-wide greenhouse gas emissions by 2050, with interim reductions of 50 percent from 1990 levels by 2030 and 70 percent by 2040 and a carbon-free power sector by 2035.⁴³ As part of its aggressive strategy to reduce greenhouse gas emissions, the Commonwealth also has prohibited HFCs in certain end uses.⁴⁴
- New Jersey has committed to reduce statewide greenhouse gas emissions by 80 percent from 2006 levels and transition to 100-percent clean energy sources by 2050.⁴⁵ New Jersey law prohibits HFC use in certain end uses.⁴⁶
- New York has committed to reducing statewide greenhouse gas emissions by 85 percent from 1990 levels by 2050 and to obtaining 100 percent of its electricity from zero-emissions sources by 2040.⁴⁷ To help achieve these goals, New York has prohibited certain HFCs in certain end uses.⁴⁸
- In 2018, North Carolina committed to reducing greenhouse gas emissions by 40 percent from 2005 levels by 2025.⁴⁹ Last year, North Carolina expanded on this commitment through Executive Order 246, which establishes goals of reducing greenhouse gas emissions by 50 percent by 2030 and reaching net-zero emissions by 2050.⁵⁰

⁴² See Md. Code Regs. § 26.11.33.01 to 26.11.33.06.

⁴³ See Mass. St. 2021, c. 8, §§ 8–10.

⁴⁴ See 310 Mass. Code Regs. § 7.76.

⁴⁵ See N.J. Stat. Ann. § 26:2C-40; N.J. Exec. Order 28.

⁴⁶ See *id.* § 26:2C-60 through 67.

⁴⁷ See N.Y. Env'tl. Conserv. Law § 75-0107(1); N.Y. Pub. Serv. Law § 66-p(2).

⁴⁸ See N.Y. Comp. Codes R. & Regs. tit. 6, pt. 494.

⁴⁹ See N.C. Exec. Order 80, 33 N.C. Reg. 1103 (Dec. 3, 2018).

⁵⁰ See N.C. Exec. Order 246, N.C., Reg. 1287 (Feb. 1, 2022).

- Oregon law requires its major electric utilities to reduce their greenhouse gas emissions by 100% by 2040.⁵¹ Oregon has also required statewide greenhouse gas emissions reductions in transportation, residential, commercial and industrial settings.⁵² Caps on covered fuel suppliers require emissions reductions of nearly 90% between 2022 and 2050.⁵³
- Vermont has committed to reducing statewide greenhouse gas emissions by 80 percent from 1990 levels and to achieving net-zero emissions across all sectors of its economy by 2050.⁵⁴ Vermont has also committed to interim statewide greenhouse gas emission reductions of 26 percent from 2005 levels by 2025 and 40 percent from 1990 levels by 2030.⁵⁵ As part of its strategy to reduce greenhouse gas emissions, Vermont has enacted a phase-out of certain HFCs in certain end uses.⁵⁶
- Washington State has committed to achieving net zero greenhouse gas emissions by 2050.⁵⁷ This commitment includes reducing statewide greenhouse gas emissions to 45 percent from 1990 levels by 2030; 70 percent from 1990 levels by 2040; and 95 percent from 1990 levels by 2050.⁵⁸ Washington recently enacted a number of new state laws to help achieve these emission reductions, including two designed to reduce HFC emissions.⁵⁹ In particular, Washington has phased out certain end uses of HFCs, banned the sale of certain products using high-GWP refrigerants, and is in the process of establishing a refrigerant management program.⁶⁰ In addition, the Climate Commitment Act of 2021 created an economy-wide cap-and-invest program that places a cap on emissions from regulated entities and provides for the investment of allowance auction revenues into climate mitigation and adaptation programs.⁶¹

⁵¹ See Or. Rev. Stat. § 469A.410(1)(c).

⁵² See *id.* ch. 340, div. 271.

⁵³ See Or. Admin. R. § 340-271-9000, table 2.

⁵⁴ See 10 Vt. Stat. Ann. §§ 578(a)(3), 592(b)(4).

⁵⁵ See *id.* § 578(a)(1)–(2).

⁵⁶ See *id.* § 586; V.A.C. 12 031 003, ch. 38.

⁵⁷ See Wash. Rev. Code § 70A.45.020(1)(c).

⁵⁸ See *id.* § 70A.45.020(1)(a).

⁵⁹ See Wash. Laws of 2019, ch. 284; Wash. Laws of 2021, ch. 315.

⁶⁰ See Wash. Rev. Code., ch. 70A.60; Wash. Admin. Code, ch. 173-443.

⁶¹ See Wash. Rev. Code., ch. 70A.65; Wash. Admin. Code, ch. 173-446.

The AIM Act

In December 2020, Congress passed the American Innovation and Manufacturing Act of 2020 (AIM Act or Act).⁶² The AIM Act addresses HFC pollution in three main ways: First, the Act requires EPA to phase down HFC production and consumption by 85 percent by 2036 through an allowance allocation and trading program.⁶³ Second, the Act directs EPA to maximize reclamation and minimize the release of HFCs by regulating “any practice, process, or activity regarding the servicing, repair, disposal, or installation” of equipment containing HFCs or their substitutes.⁶⁴ Third and of particular relevance here, the Act authorizes EPA to facilitate sector-based transitions to next-generation refrigerant technologies by “restrict[ing], fully, partially, or on a graduated schedule, the use of a regulated [HFC] in the sector or subsector in which [that chemical] is used.”⁶⁵

In carrying out a rulemaking to restrict HFC uses under subsection (i), EPA must, to the extent practicable, consider the best available data, the availability of substitutes for the HFCs that are the subject of the rulemaking (taking into account technological achievability, commercial demands, affordability, and other illustrative factors), overall costs and environmental impacts, and the remaining phase-down period under subsection (e).⁶⁶ “Except for a retrofit application,” rules promulgated under subsection (i) apply only to equipment “in existence in a sector or subsector” on or after the effective date of the Act.⁶⁷ Under section 7675(i)(3), any member of the public may petition EPA to promulgate a rule under section 7675(i)(1) restricting the use of a regulated HFC.

In October 2021, EPA finalized a rule establishing baselines for HFC production and consumption, codifying the AIM Act’s HFC phase-down schedule, and establishing methodologies for issuing and trading allowances.⁶⁸

⁶² See 42 U.S.C. § 7675.

⁶³ See *id.* § 7675(e)(2).

⁶⁴ *Id.* § 7675(h)(1).

⁶⁵ *Id.* § 7675(i)(1).

⁶⁶ See *id.* § 7675(i)(4).

⁶⁷ See *id.* § 7675(i)(7).

⁶⁸ See 86 Fed. Reg. 55,116 (Oct. 5, 2021) (Allocation Framework Rule).

CARB's Rulemaking Petition

In October 2021, EPA granted in whole or in part several rulemaking petitions submitted under 42 U.S.C. § 7576(i)(3), including a petition filed by CARB, a group of states and state agencies, the District of Columbia, and the City of New York.⁶⁹ Noting the “urgent need to reduce HFC production and consumption to address the climate crisis,” CARB’s petition requested that EPA use its AIM Act authority to (1) reinstate the HFC use restrictions promulgated in partially vacated SNAP rules 20 and 21; (2) impose additional HFC restrictions, including sector- or subsector-wide GWP limits, modeled on California’s then-proposed standards for reducing HFC emissions in various end uses; and (3) further curb HFC emissions by establishing a robust refrigerant management program.⁷⁰ CARB supported its petition with detailed HFC emissions and other data, including as presented in the 2020 standardized regulatory impact assessment that is now a part of the docket for this rulemaking.⁷¹ EPA granted the first and second requests in the petition; EPA’s response to the third request remains pending.⁷²

The Proposed Rule

The proposed rule responds to CARB’s and others’ granted or partially granted subsection (i) petitions by restricting the use of high-GWP HFCs in the aerosols, foam blowing, and refrigeration, air conditioning, and heat pumps sectors. The rule restricts HFC use in two ways: First and principally, the rule sets GWP limits on HFCs or HFC blends used in covered sectors or subsectors.⁷³ EPA believes this bright-line approach provides certainty to the regulated community and would therefore encourage innovation by freeing manufacturers to develop new HFC substitutes that are compliant with applicable GWP limits.⁷⁴ Second, the rule would restrict the use of specific HFCs or HFC blends in particular sectors or subsectors.⁷⁵ EPA notes that this “specific listing” approach may be advantageous where, for instance, only

⁶⁹ See 86 Fed. Reg. 57,141 (Oct. 14, 2021).

⁷⁰ See CARB Petition (July 15, 2021), available in the docket for this rulemaking (EPA–HQ–OAR–2021–0643–0012).

⁷¹ See CARB Standardized Regulatory Impact Assessment 2020 (Mar. 19, 2020), available in the docket for this rulemaking (EPA-HQ-OAR-2021-0643-0020).

⁷² See EPA’s Petition Response to CARB (Oct. 7, 2021), available in the docket for this rulemaking (EPA–HQ–OAR–2021–0643–0048).

⁷³ See 87 Fed. Reg. at 76,755.

⁷⁴ See *id.* at 76,755–56.

⁷⁵ See *id.* at 76,756.

one or a small number of regulated substances are used in a specific sector or subsector.⁷⁶

II. Comments in Support of the Proposed Rule

If finalized, EPA's proposed rule would strike a blow against climate change by delivering up to 35 million metric tons of carbon dioxide-equivalent emissions reductions annually through 2050.⁷⁷ The rule would also further the objectives of the AIM Act by procuring those emissions reductions more quickly than under the Allocation Framework Rule alone.⁷⁸

The States support EPA's approach. As the preamble makes clear, EPA has carefully considered the factors set forth in the AIM Act and has assembled a robust data set in support of the rule. The States agree with EPA that GWP limits applied to certain sectors or subsectors are likely to hasten the transition away from high-GWP HFCs by providing both certainty and flexibility, thus encouraging industry to innovate within the bounds established by the rule.

The States note that the proposed rule appropriately focuses on the aerosols, foam blowing, and refrigeration, air conditioning, and heat pump sectors (including motor vehicle air conditioning), which are responsible for the bulk of annual HFC emissions nationally.⁷⁹ The proposed rule maximizes potential emissions reductions by requiring the adoption of existing alternatives and by spurring technological innovation in these key sectors.⁸⁰

⁷⁶ *See id.*

⁷⁷ *See id.* at 76,803.

⁷⁸ *See id.* at 76,806.

⁷⁹ *See* U.S. EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2020 at 4-138, <https://www.epa.gov/system/files/documents/2022-04/us-ghg-inventory-2022-main-text.pdf>.

⁸⁰ For instance, many industries that manufacture foam and aerosols products began transitioning away from HFCs with greater GWP after the passage of SNAP program rules 20 and 21 in 2015 and 2016. *See* 80 Fed. Reg. 42,870 (July 20, 2015); 81 Fed. Reg. 86,778 (Dec. 1, 2016). Moreover, certain refrigeration end uses, like retail food refrigeration, have similarly transitioned to using low and ultra-low GWP alternatives. *See* CARB, Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Chillers, Aerosols-Propellants, and Foam End-Uses Regulation, Initial Statement of Reasons: Staff Report (ISOR HFC) (Dec. 10, 2020) at 36–37, https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2020/hfc2020/isor.pdf?_ga=2.9219824.434157033.1674166415-1528944598.1638383145.

The States applaud the timeliness of EPA’s proposed restrictions on the use of high-GWP HFCs in the residential and light commercial air conditioning and heat pump systems subsector. As noted above, many States have passed laws, promulgated rules, or adopted policies designed to lessen the threat of climate change by drastically reducing greenhouse gas emissions, including HFCs.⁸¹ To meet its statutory emissions-reduction requirements, New York for example anticipates that it will need to encourage the swift and widespread adoption of climate-friendly heating and cooling technologies, including ground- and air-source heat pumps.⁸² Because high-GWP HFCs are widely used as refrigerants in heat pump systems,⁸³ the States are acutely aware of the need to transition this subsector to lower-GWP alternative refrigerants as expeditiously as possible. The proposed rule takes many of the steps required to spur this transition. And because EPA’s compliance cost analysis shows that the proposed rule will not significantly increase equipment prices, the States are persuaded that the rule will not be a barrier to the proliferation of heat pump technology.⁸⁴

The States also support the following provisions in the proposed rule, each of which is critical to reducing harmful HFC emissions:

- The proposed labeling, reporting and recordkeeping requirements for manufacturers and importers: These requirements are sensibly designed to collect necessary data and verify compliance in a non-burdensome manner and will ensure the proposed rule’s restrictions are readily enforceable.⁸⁵

⁸¹ See, e.g., N.Y. Env’tl. Conserv. Law § 75-0107 (requiring 40-percent reduction in greenhouse gas emissions below 1990 levels by 2030 and 85-percent reduction by 2050).

⁸² New York’s Climate Action Council estimates New Yorkers will need to install heat pumps in up to two million homes by 2030. See N.Y. Climate Action Council, Scoping Plan Final Report at 123 (Dec. 2022), <https://climate.ny.gov/-/media/project/climate/files/NYS-Climate-Action-Council-Final-Scoping-Plan-2022.pdf>. Governor Hochul recently proposed to prohibit the sale of any new fossil fuel-fired heating systems in new small buildings by 2030 and in new large buildings by 2035. See 2023 State of the State Book at 134–135, <https://www.governor.ny.gov/sites/default/files/2023-01/2023SOTSBook.pdf>. This would result in a significant increase in the use of heat pumps to provide space heating and hot water in New Yorkers’ homes and businesses.

⁸³ See 87 Fed. Reg. at 76,788.

⁸⁴ See *id.* at 76,764–66.

⁸⁵ See *id.* at 76,800–02.

- The proposed GWP limits of less than 700 for chillers (both industrial process refrigeration and comfort cooling), residential and light commercial air conditioning (including heat pump systems and variable refrigerant flow systems), and residential dehumidifiers: If EPA intends to meaningfully address leakage from these systems in this or a future rulemaking, these limitations—which account for existing, lower-GWP technology—could be particularly beneficial.⁸⁶
- The proposed GWP restrictions on motor vehicle air conditioning for light- and medium-duty passenger vehicles, heavy-duty pick-up trucks, complete heavy-duty vans, and certain non-road vehicles (150), transport refrigeration (intermodal containers) (700), and automatic commercial ice machines (150): These GWP thresholds are critically important to continue the transition to low-GWP refrigerants in these subsectors.⁸⁷
- The proposed timelines to implement restrictions on the manufacture and import of products using HFCs (January 1, 2025) and on the sale and distribution of those products (January 1, 2026): These timelines will ensure a timely transition away from high-GWP HFCs, which in turn will minimize the amount of potent greenhouse gases released.⁸⁸ Because some of the equipment types being regulated have lengthy service lives, any delay in these compliance timelines would effectively lock in unnecessary levels of high-GWP HFC emissions for many years. Nor would delay be justified: as California’s implementation of similar HFC regulations shows, EPA’s proposed timelines are achievable.⁸⁹

The States urge EPA to maintain each of the above-listed requirements and timelines.

⁸⁶ See *id.* at 76,773.

⁸⁷ See *id.* at 76,773–74. According to the 2022 EPA Automotive Trends Report, approximately 95% of model year 2021 light-duty vehicles were manufactured to use a low-GWP alternative to the HFCs used in prior model years. These alternatives could be employed for medium-duty passenger vehicles, heavy-duty pickup trucks, and complete heavy-duty vans due to similarities in air conditioning systems, vehicle designs, and the potential for occupational and consumer exposure to health and safety risks. Other low-GWP alternatives, including R-744 and HFC-152a, exist for these vehicle categories as well. See 77 Fed. Reg. 33,315 (June 6, 2012); 73 Fed. Reg. 33,304 (June 12, 2008).

⁸⁸ See 87 Fed. Reg. at 76,759, 76,773–74.

⁸⁹ See Cal. Code Regs. tit. 17, § 95374.

III. Reasonable and Achievable Changes that Will Strengthen the Proposed Rule

The foregoing notwithstanding, the States discuss below several ways EPA could make the proposed rule even stronger and more effective without undermining industry's ability to comply.

A. EPA Should Revise Portions of the Proposed Rule to Ensure Maximum HFC Reductions

Although the States support the proposed rule, we suggest several modifications which, if implemented, would further the purposes of the AIM Act by minimizing harmful HFC emissions. These suggestions include tightening certain already-established GWP limits, broadening the rule to include additional subsectors and equipment, and advancing certain compliance deadlines.

First, we recommend that EPA tighten the GWP limits for the following four subsectors within the refrigeration, air conditioning, and heat pumps sector: (1) industrial process refrigeration, (2) retail food refrigeration – supermarket systems, (3) retail food refrigeration – remote condensing units, and (4) cold storage warehouse systems. For these subsectors, the proposed rule sets forth two separate GWP limits based on refrigerant charge capacities.⁹⁰ Specifically, the rule sets a GWP limit of 150 for systems with charge capacities of 200 pounds or greater and a GWP limit of 300 for systems with charge capacities of less than 200 pounds.⁹¹ The States urge EPA to modify the proposed rule to set a GWP limit of 150 for systems with charge capacities of greater than 50 pounds and a GWP limit of 300 or less where feasible for systems with charge capacities of 50 pounds or less. These stricter GWP limitations are feasible: California has established similar thresholds based, in part, on the availability of refrigerant technologies that can meet these stricter GWP requirements.⁹² The stricter GWP limits are also important for maximizing HFC emission reductions, encouraging further development of low-GWP alternatives, and ensuring that large facilities cannot evade the GWP limits simply by installing refrigeration systems that

⁹⁰ See 87 Fed. Reg. at 76,773–81.

⁹¹ See *id.*

⁹² See Cal. Code Regs., tit. 17, § 95371 *et seq.* The use of a 50-pound threshold is not new. The regulated industry is already subject to other HFC regulations that use a similar threshold. See 40 C.F.R. part 82, subpart F; Cal. Code Regs., tit. 17, § 95380 *et seq.*

consist of multiple, smaller pieces of equipment with refrigerant charges less than 200 pounds.⁹³

Second, the States urge EPA to remove the separate GWP limit of 300 for the high-temperature side of cascade systems within the following subsectors: (1) industrial process refrigeration; (2) retail food refrigeration – supermarket systems; (3) retail food refrigeration – remote condensing units; and (4) cold storage warehouse systems.⁹⁴ Instead of creating separate subsectors for the high-temperature side of these systems, EPA should include the high-temperature side within the systems’ general subsector. Regulating these systems under the general subsector will hasten the transition to lower-GWP alternatives and is achievable: in its HFC regulation covering these subsectors, California set a GWP limit of 150 for all types of new refrigeration systems used in these subsectors and did not provide a separate category or GWP limit for cascade systems. EPA should set a GWP limit of 150 for all types of refrigeration systems, cascade or otherwise.⁹⁵

Third, the States urge EPA to advance the compliance date for variable refrigerant flow (VRF) systems within the “residential and light commercial air conditioning – variable” subsector by one year, from January 1, 2026 to

⁹³ The States’ proposed GWP limit of 150 for 50- to 200-pound systems allows for A1, A2L and A3 technological solutions in small- and large-format stores in multiple system configurations, allowing for flexibility. CO₂ and propane (limited to 150g/unit), both of which have GWPs of less than five, are already permitted in most state building codes and are widely used. Anticipated building code updates prior to 2025 will further expand technological options for A2Ls and A3s (increased to 300 or 500g/unit) for small- and large-format stores. Existing and future refrigerant technologies below 150 GWP include solutions that address temperature glide, efficiency, capacity, and other performance factors. Based on California’s regulatory experience, facilities with 50- to 200-pound systems are not necessarily neighborhood convenience stores, but instead are commonly mid-sized grocery stores and even large supermarkets, which may have multiple systems each with 50 to 200 pounds of refrigerant.

⁹⁴ See 87 Fed. Reg. at 76,773–76, 76,781.

⁹⁵ For instance, with respect to cascade systems in industrial process refrigeration and cold storage, EPA has acknowledged that “it is technologically achievable and has become more common to use R-717 [a low-GWP alternative] in the high temperature side.” *Id.* at 76,775. If there are concerns about obtaining approval from local authorities for the use of R-717 in densely populated areas due to potential safety issues, EPA should create a limited exemption clause in the regulation for those instances.

January 1, 2025.⁹⁶ VRFs are an important clean heating solution, particularly for large commercial applications. Accordingly, the rule should require VRFs to use lower-GWP refrigerants as soon as building codes allow them. Building code updates allowing for lower-GWP alternatives such as A2Ls will be in effect by January 1, 2025 and many states, including California,⁹⁷ have already passed legislation or revised their building codes⁹⁸ to adopt these latest standards.⁹⁹ Accordingly, a compliance date of January 1, 2025 is feasible and EPA should adopt it.

Fourth, the States recommend that EPA regulate refrigerants used in existing equipment that has been retrofitted. Currently, the proposed rule focuses on new equipment manufactured or imported into the United States and excludes existing equipment and retrofits. Existing equipment accounts for a large portion of the market and releases large amounts of high-GWP HFCs; addressing emissions from this category of equipment is critical for reducing overall HFC emissions.¹⁰⁰ The States suggest separate GWP limits for retrofits as in SNAP rules 20 and 21.¹⁰¹ The States further recommend that EPA require the use of reclaimed refrigerant for servicing and maintenance, akin to the 2022 California statute that prohibits the use of newly produced bulk refrigerant with a GWP greater than 2,200 in 2025; a GWP of 1,500 in 2030; and a GWP of 750 in 2033.¹⁰²

Fifth, EPA should further reduce HFC emissions by regulating additional subsectors for which low GWP alternatives exist. Specifically, the States urge EPA to include the following additional subsectors: (1) other

⁹⁶ See *id.* at 76,773.

⁹⁷ See Cal. Health & Safety Code § 18944.21.

⁹⁸ See Air-Conditioning, Heating, and Refrigeration Institute, Safe Refrigerant Transition News—Regulatory Update: SRTTF Notes Legislation Supporting Low-GWP Refrigerants (Nov. 30, 2022), <http://newsmanager.commpartners.com/ahrisrtn/issues/2022-11-30-email.html>.

⁹⁹ See Jim Cika and Tara Lukasik, Code changes on A2L refrigerants, *Building Safety Journal* (Jan. 26, 2022), <https://www.iccsafe.org/building-safety-journal/bsj-technical/code-changes-on-a2l-refrigerants/>.

¹⁰⁰ See CARB, 2022 Scoping Plan for Achieving Carbon Neutrality at 238–39 (Nov. 16, 2022) (noting that spontaneous release of refrigerants currently in existing equipment would result in greenhouse gas emissions equivalent to 60 percent of California’s annual statewide greenhouse gas emissions from all sources), <https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf>.

¹⁰¹ See 42 U.S.C. § 7675(i)(7)(A).

¹⁰² See Cal. Code Regs., tit. 17, § 95376.

refrigeration – to include refrigeration applications not captured in other subsectors, for example: animal exhibits, zoos, and aquariums; and (2) other chillers – to include applications not covered in other subsectors, for example: water coolers, non-industrial process refrigeration, AC, or supermarket chillers. We further request that residential ice makers be included within the existing residential refrigeration systems subsector, and that the following equipment be included within the existing residential and light commercial air conditioning and heat pump systems subsector: (1) vertical packaged terminal air conditioners and (2) emergency restoration dehumidifiers. The proposed rule should set GWP limits for each of these new subsectors and equipment types consistent with thresholds provided for existing subsectors in the proposed rule.¹⁰³

Sixth, the States request that the proposed rule include other types of heat pump subsectors such as water heater heat pumps, clothes dryer heat pumps and heat pumps used in pools and spas. EPA should set GWP thresholds for these categories consistent with the latest developments in refrigerant technologies.

Seventh, the States request that the proposed rule include a catchall provision under every subsector description to avoid the accidental exemption of equipment or products that could and should be regulated to reduce emissions of high-GWP HFCs.

Eighth and finally, EPA should ensure that substitutes for high-GWP HFCs do not themselves pose undue health or environmental risks.

B. EPA Should Clarify Several Provisions of the Proposed Rule to Avoid Confusion upon Implementation

In addition to the proposed changes discussed above, the States urge EPA to clarify or revise four provisions of the proposed rule to prevent confusion upon implementation.

First, if EPA decides to keep a separate GWP for the high-temperature side of cascade systems, it should clarify the GWP limit for the low-temperature side of such systems. As noted above, the proposed rule sets forth separate GWP limits for the high-temperature side of cascade systems

¹⁰³ See 87 Fed. Reg. at 76,785–89.

but not for the low-temperature side.¹⁰⁴ The States presume that, under the proposed rule, the GWP limit that applies to the low-temperature side of a cascade system depends on the refrigeration charge capacity of that system. If EPA decides to keep a separate GWP for the high-temperature side of cascade systems, it should clarify this aspect of the rule.

Second, in certain instances, the proposed rule indicates that it is proposing to establish GWP limits greater than specific thresholds.¹⁰⁵ For consistency, EPA should clarify whether the GWP limits set forth in table 4 are less than or greater than the established GWP limit.¹⁰⁶

Third, EPA should clarify whether the proposed rule regulates (1) refrigerated laboratory equipment that operates at -62°C (-80°F) or lower temperatures and (2) industrial process refrigeration chillers that operate at less than -50°C (-58°F). The proposed rule implies these systems are exempt; however, they are not listed as exemptions.

Fourth, the proposed rule's prohibitions affect "products" that are "manufactured." The EPA definition of "product" includes "components and subcomponents."¹⁰⁷ Under this definition, it is unclear whether the prohibition would apply to existing equipment that is modified with new components or subcomponents. EPA should consider revising the definition of "product" and/or "manufacture" to address this ambiguity.

C. EPA Should Maximize Benefits and Fully Assess and Minimize Any Potential Harms to Communities with Environmental Justice Concerns and Native American Tribal Communities

The States support EPA's commitment to addressing environmental justice concerns in this rulemaking.¹⁰⁸ Human health and our surrounding environments are in a moment of crisis as societies try to navigate the devastating impacts of climate change—impacts that are disproportionately

¹⁰⁴ *See id.* at 76,773, 76,775.

¹⁰⁵ *See, e.g., id.* at 76,776, 76,780.

¹⁰⁶ *See id.* at 76,773–74.

¹⁰⁷ *See id.* at 76,753.

¹⁰⁸ EPA defines environmental justice as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws and policies. *See id.* at 76,746.

borne by underserved communities.¹⁰⁹ It is thus critical that EPA use all available tools in this rulemaking to comprehensively assess and mitigate cumulative impacts to underserved communities.

The States recognize and appreciate the environmental justice benefits the proposed rule would yield through reducing climate change harms, which disproportionately impact underserved communities.¹¹⁰ Additionally, the States commend EPA for its preliminary analysis to understand the impacts of the proposed rule on underserved communities.¹¹¹ The States nonetheless urge EPA to go further to understand and mitigate these impacts, including by requiring monitoring and reporting to assess the rule's impacts on communities neighboring HFC substitute manufacturing facilities, evaluating and monitoring indirect pollution impacts on communities neighboring HFC and HFC substitute manufacturing facilities, and analyzing the rule's impacts on businesses in underserved and tribal communities.

EPA is required to comprehensively assess and redress cumulative impacts to underserved communities.

Numerous executive orders direct EPA to proactively promote and work toward achieving environmental justice. First, Executive Order 13,985 commits to advancing equity, civil rights, racial justice, and equal opportunity throughout the federal government.¹¹² It explains that an affirmative approach to “recogniz[ing] and redress[ing] inequities in . . . policies and programs that serve as barriers to equal opportunity” is

¹⁰⁹ “Underserved communities” refers to populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life, such as Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality. *See* Exec. Order 13,985, Advancing Racial Equity and Support for Underserved Communities Through the Federal Government, 86 Fed. Reg. 7009 (Jan. 25, 2021).

¹¹⁰ *See* 87 Fed. Reg. at 76,747.

¹¹¹ *See id.*

¹¹² *See* Exec. Order 13,985, Advancing Racial Equity and Support for Underserved Communities Through the Federal Government, 86 Fed. Reg. 7009 (Jan. 20, 2021).

necessary “because advancing equity requires a systematic approach to embedding fairness in decision-making processes.”¹¹³

Second, Executive Order 13,990 directs federal agencies to review existing regulations and to take action to, among other things, prioritize environmental justice.¹¹⁴

Third, Executive Order 14,008 requires federal agencies acting to mitigate climate change to secure environmental justice and spur economic opportunity for underserved communities that have been historically marginalized and overburdened by pollution and underinvestment in housing, transportation, health care, and water and wastewater infrastructure.¹¹⁵ To that end, federal agencies must develop programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related, and other cumulative impacts on underserved communities. Under these and other executive orders, EPA must affirmatively assess and redress barriers to environmental justice in the HFC phase-down regulations to embed fairness into its approach.¹¹⁶

¹¹³ *Id.*

¹¹⁴ See Exec. Order 13,990, Protecting Public Health and the Environmental and Restoring Science to Tackle the Climate Crisis, 86 Fed. Reg. 7037 (Jan. 20, 2021).

¹¹⁵ See Exec. Order 14,008, Tackling the Climate Crisis at Home and Abroad, 86 Fed. Reg. 7619 (Jan. 27, 2021).

¹¹⁶ In addition to the 2021 Executive Orders directing EPA to address environmental justice, EPA also has authority from Executive Order 13,563, 76 Fed. Reg. 3821 (Jan. 21, 2011) (directing agencies to select regulatory approaches that maximize net benefits including “distributive impacts[] and equity”); Executive Order 12,898, 59 Fed. Reg. 7629 (Feb. 16, 1994) (directing each federal agency to “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations”); and Executive Order 12,866, 51 Fed. Reg. 51,735 (Oct. 4, 1993) (ordering agencies to consider “distributive impacts[] and equity” in designing regulations).

Most recently, EPA has recognized its obligation to assess cumulative impacts and has published updated guidance providing “analysis on the Agency’s legal authority to address cumulative impacts affecting communities with environmental justice concerns”; EPA should ensure that it complies with this guidance when assessing the cumulative impacts of the proposed rule. See Office of General Counsel, EPA Legal Tools to Advance Environmental Justice: Cumulative

EPA should take the following steps to comprehensively assess and redress cumulative impacts to underserved communities

The States applaud EPA for conducting a rigorous analysis to understand the characteristics of the communities surrounding facilities where EPA expects HFC substitute production to increase as a result of the proposed rule.¹¹⁷ We further commend EPA for utilizing current analytical tools and available data to enhance the granularity with which it identifies some of the baseline risks from some facilities releasing toxic chemicals—an essential part of any cumulative impacts analysis.¹¹⁸

As EPA recognizes, however, these analyses show that the proposed rule may exacerbate existing harms to underserved communities in the vicinity of substitute production facilities.¹¹⁹ In particular, EPA acknowledges that the chemicals used as feedstock for the production of certain HFC substitutes are toxic¹²⁰ and that production of HFC substitutes is likely to increase in response to the proposed rule.¹²¹ EPA therefore undertook an analysis of the communities neighboring the 14 major facilities that produce HFC substitutes.¹²² This analysis showed, among other things, that the majority of the communities neighboring these facilities have populations with higher proportions of people of color (Black and Hispanic) than the national and state averages.¹²³ In addition, “[t]here is a higher percentage of households with low and very low incomes at all analyzed distances [1, 3, 5,

Impacts Addendum at 1 (Jan. 2023), <https://www.epa.gov/system/files/documents/2022-12/bh508-Cumulative%20Impacts%20Addendum%20Final%202022-11-28.pdf>.

¹¹⁷ See 87 Fed. Reg. at 76,746–49.

¹¹⁸ See EPA, Draft Regulatory Impact Analysis Addendum: Impact of the Technology Transitions Proposed Rule, Doc. ID No. EPA-HQ-OAR-2021-0643 at 84–85 (2022) (Draft RIA Addendum).

¹¹⁹ See *id.* at 83 (“Many of the communities near the facilities expected to be affected by the Allocation Framework Rule and this proposed rule are also near other sources of toxic emissions which contribute to environmental justice concerns”).

¹²⁰ See EPA, Draft Regulatory Impact Analysis for Phasing Down Production and Consumption of Hydrofluorocarbons (HFCs), Doc. ID No. EPA-HQ-OAR-2021-0044-0046, 37 (2021).

¹²¹ See 87 Fed. Reg. at 76,748.

¹²² See *id.* at 76,748.

¹²³ See Draft RIA Addendum at 88–97.

and 10 miles] from these facilities.”¹²⁴ Critically, the baseline cancer and respiratory risk in the majority of the communities within a 1-mile radius of these facilities is already higher than the national average and the rural national average.¹²⁵

The States recognize that, as EPA notes, it is challenging to estimate impacts given uncertainty about how different facilities will change their operations and emissions as a result of the proposed rule. This is not, however, a problem without a solution. Indeed, in order to evaluate the impacts of the Allocation Framework Rule, EPA proposed to require annual reporting for emissions from each facility’s HFC production lines in order to “establish a baseline for each facility and monitor and track trends.” Draft RIA Addendum at 81. The States commend EPA for taking this approach to evaluate the community-based impacts of the allocation framework. The States urge EPA to require similar annual reporting for emissions from facilities that produce HFC substitutes to similarly inform the Agency’s understanding of the proposed rule’s impacts and to be able to appropriately respond to and mitigate them. The States believe this authority is both authorized under the Clean Air Act¹²⁶ and required effectuate EPA’s obligation to consider cumulative impacts.

In addition, as some of the States urged in comments on the proposed Allocation Framework Rule, the States urge EPA to monitor and account for additional *indirect* pollution effects of the proposed rule. For example, increased production of HFC substitutes or market consolidation could result in changes in truck traffic to and from certain facilities.¹²⁷ Truck traffic can

¹²⁴ *Id.* at 87.

¹²⁵ *See id.* at 88–97.

¹²⁶ Section 114 of the Clean Air Act gives EPA authority to require emissions monitoring and public reporting from emissions sources, 42 U.S.C. § 7414(a), (c), and that provision (among others) applies to “any rule, rulemaking, or regulation promulgated by the Administrator pursuant to” AIM Act, *id.* § 7675(k)(1)(C). *See also* Legal Tools to Advance Environmental Justice: Cumulative Impacts Addendum at 12-13.

¹²⁷ *See* CARB, Overview: Diesel Exhaust & Health, <https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health>; Maya Angelique G. Demetillo et al., Space-Based Observational Constraints on NO₂ Air Pollution Inequality from Diesel Traffic in Major Cities, *Geophysical Research Letters* (2021), <https://agupubs.online.library.wiley.com/doi/10.1029/2021GL094333>; Inkyu Han, Effects of train and truck traffic on noise levels in urban communities, 141 *J. Acoustical Soc’y of America* 3882 (2017), <https://doi.org/10.1121/1.4988694>.

be a major source of air and noise pollution in communities located near industrial facilities, and increased truck traffic may significantly contribute to the existing pollution burdens these communities bear.¹²⁸ Additionally, underserved and tribal communities could be impacted by losing access to nutritious food as the cost of refrigeration in business increases. Finally, EPA should assess whether the cost of cooling homes, schools, and workplaces will increase in underserved communities, which are already experiencing worse health outcomes and increased mortality from climate-change induced extreme heat events.¹²⁹ EPA should fully evaluate these indirect effects in promulgating a final rule.

The States also encourage EPA to consider the impacts of the proposed rule on businesses in underserved and tribal communities. Underserved and tribal communities may lack adequate access to cold chain services, which are essential for providing nutritious food. EPA should carefully review the potential financial costs of the rulemaking on small or locally owned businesses, such as convenience stores, markets, other small local businesses, and the communities they serve. For example, EPA found that approximately 162 of the potentially affected small businesses could incur costs above one percent of annual sales and approximately 110 small businesses could incur

¹²⁸ Diesel truck engines contribute to emissions of ozone, which causes lung inflammation and increased asthma-related emergency room visits; particulate matter 2.5, fine particles that cause heart and lung diseases; and diesel particulate matter, a toxic air contaminant causing increased cancer risk. *See* Cal. Off. of Env'tl. Health Hazard Assessment, Air Quality: Ozone, <https://oehha.ca.gov/calenviroscreen/indicator/air-quality-ozone>; Cal. Off. of Env'tl. Health Hazard Assessment, Air Quality: PM2.5, <https://oehha.ca.gov/calenviroscreen/indicator/air-quality-pm25>; Cal. Off. of Env'tl. Health Hazard Assessment, Diesel Particulate Matter, <https://oehha.ca.gov/calenviroscreen/indicator/diesel-particulate-matter>.

¹²⁹ *See* IPCC, Climate Change 2014: Synthesis Report at 7–8 (2014), https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf; U.S. Global Change Research Program, The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment, ch. 2: Temperature-Related Death and Illness (Crimmins, A. et al., eds., 2016), <https://health2016.globalchange.gov/>; EPA, Climate Change Indicators: Heat-Related Deaths (Apr. 2021), <https://www.epa.gov/climate-indicators/climate-change-indicators-heat-related-deaths>; *see also* Northeast Climate Adaptation Science Ctr., Massachusetts Climate Change Projections-Statewide and for Major Drainage Basins at 4–5, 7 (Mar. 2018), <https://resilientma.org/resources/resource::2152> (projecting that Massachusetts will continue to experience an increasing number of days of extreme heat in urban areas with low tree cover).

costs above three percent of annual sales in complying with this rule.¹³⁰ EPA should disclose whether these businesses are located in underserved communities and consider financial assistance options for compliance with the rule. After finalization of the rule, the States also encourage EPA to provide effective technical assistance and promote compliance in an equitable manner by holding informational workshops and providing translation services to members of the regulated community, including small businesses in underserved and tribal communities.

Finally, in response to EPA's question about how to share information on cumulative impacts with the public,¹³¹ the States encourage EPA to directly engage with the communities surrounding facilities that produce HFC substitutes. As many of the States recommended in their comments on the Allocation Framework Rule, EPA should hold in-person informational workshops in potentially affected communities, provide for relevant translation services to disseminate information about potential impacts, and ensure that community feedback is representative.¹³²

IV. Comments on the Proposed Rule's Request for Further Information

EPA "seek[s] advance information on certain topics that may be helpful for developing a future proposed rule."¹³³ The States provide the following comments:

A. Expansion of Restrictions For Certain Mobile End Uses

Motor vehicle air conditioning and transport refrigeration systems are a significant source of HFC emissions.¹³⁴ Consequently, a transition toward A2L refrigerants and other lower-GWP alternatives in these end uses is

¹³⁰ See 87 Fed. Reg. at 76,766.

¹³¹ See *id.* at 76,749

¹³² See Comments submitted by the Massachusetts Office of the Attorney General et. al on the Phasedown of Hydrofluorocarbons: Establishing the Allowance Allocation and Trading Program under the AIM Act, EPA-HQ-OAR-2021-0044-0097 (July 1, 2021).

¹³³ 87 Fed. Reg. at 76,740.

¹³⁴ See EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2020 at 4-138, <https://www.epa.gov/system/files/documents/2022-04/us-ghg-inventory-2022-main-text.pdf>; ISOR HFC at 2.

underway in various states and in other countries.¹³⁵ The proposed rule continues this progress by imposing GWP limitations or specific HFC bans with respect to: (1) transport refrigeration used in road systems and marine systems and (2) motor vehicle air conditioning units associated with light- and medium-duty passenger vehicles, heavy-duty pick-up trucks, complete heavy-duty vans, and certain nonroad vehicles.¹³⁶

With respect to transport refrigeration used in road systems and marine systems, the proposed rule prohibits the use of specific HFCs by 2025.¹³⁷ The States encourage EPA to do more. Specifically, EPA should develop future technological transitions rulemakings that set GWP limits—significantly lower than 2,200—for these transport-refrigeration end uses as soon as EPA determines that lower-GWP alternatives meeting the criteria set forth in subsection (i)(4) of the AIM Act have become available.¹³⁸

With regard to certain motor vehicle air conditioning units, EPA seeks comment on “whether the Agency should propose restrictions for [medium-duty passenger vehicles], [heavy-duty] trucks, complete [heavy-duty] vans, and certain nonroad vehicles with a calendar year compliance date . . . rather than a model year.”¹³⁹ However, EPA does not address or seek comment on the use of refrigerants in other heavy-duty vehicles not included in the proposed rule, such as buses, line-haul trucks, vocational trucks, or drayage trucks, among others. The States therefore encourage EPA to develop future technological transitions rulemakings that set GWP limits for those heavy-duty vehicle categories not covered in this rulemaking as soon as lower-GWP alternatives that satisfy the criteria in subsection (i)(4) become available.¹⁴⁰

B. Promulgation of a Comprehensive Refrigerant Management Program

Given that large commercial refrigeration systems are responsible for extensive aggregate emissions, and given that up to 90 percent of heat pump-

¹³⁵ See ISOR HFC at 23.

¹³⁶ See 87 Fed. Reg. at 76,773–74.

¹³⁷ See *id.* at 76,773.

¹³⁸ See 42 U.S.C. § 7675(i)(4).

¹³⁹ 87 Fed. Reg. at 76,792.

¹⁴⁰ See 42 U.S.C. § 7675(i)(4).

related HFC emissions occur at the end of an appliance's service life,¹⁴¹ EPA should promulgate a comprehensive refrigerant management program for HFCs under AIM Act subsection (h) as expeditiously as possible. As noted in CARB's subsection (i) petition, refrigeration and air conditioning systems are the largest sources of HFC emissions nationally. In California alone, there are approximately 6,800 facilities with systems containing more than 50 pounds of high-GWP HFC refrigerants; these systems often contain hundreds or thousands of pounds of refrigerant and can leak an average of 10 to 20 percent of their refrigerant charge on an annual basis.¹⁴² Studies show some 80 percent of refrigerant leaks can be eliminated through proper refrigerant management and end-of-life destruction and reclamation practices.¹⁴³ Refrigerant recycling could avoid nearly 58 gigatons of carbon dioxide-equivalent emissions by 2050.¹⁴⁴ The costs of implementing these refrigerant management solutions can be offset through revenue gained from the sale of recycled refrigerants, resulting potentially in over 600 billion dollars in saved lifetime net operational costs.¹⁴⁵

The States appreciate the opportunity to comment on these important issues.

Respectfully submitted,

¹⁴¹ See N.Y. Climate Action Council, Scoping Plan Final Report at 331 (Dec. 2022), <https://climate.ny.gov/-/media/project/climate/files/NYS-Climate-Action-Council-Final-Scoping-Plan-2022.pdf>.

¹⁴² Based on data reported to CARB via the Refrigerant Registration and Reporting System (R3), 2012–2018.

¹⁴³ See Env'tl. And Energy Study Inst., EPA's HFC Phasedown: How Regulatory Heat is Advancing the Coolant Industry (June 22, 2021), <https://www.eesi.org/articles/view/epas-hfc-phasedown-how-regulatory-heat-is-advancing-the-coolant-industry>.

¹⁴⁴ See P. Purohit and L. Höglund-Isaksson, Global Emissions of Fluorinated Greenhouse Gases 2005–2050 with Abatement Potentials and Costs, Atmospheric Chemistry and Physics (2017), <https://www.drawdown.org/solutions/refrigerant-management>.

¹⁴⁵ See *id.*

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