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Environmental Investigation Agency Comments on Proposed Amendments Title 6 of the New York Codes, Rules and Regulations, Part 494 "Hydrofluorocarbon Standards and Reporting"
submitted via email

The Environmental Investigation Agency (EIA) appreciates the opportunity to submit comments on proposed amendments to Title 6 NYCRR Part 494, Hydrofluorocarbon Standards and Reporting. EIA is an independent non-profit campaigning organization dedicated to identifying, investigating, and implementing solutions to the world's most pressing environmental problems. Our climate campaign focuses on reducing the climate impact of the cooling sector, by eliminating reliance on polluting gases and exposing related illicit trade. We strongly support New York State's efforts to reduce the harmful impacts of hydrofluorocarbons (HFCs) on our climate.

As noted in the Regulatory Impact Statement (RIS) for Part 494, these amendments will reduce HFC emissions and support requirements of New York's Climate Leadership and Community Protection Act, Chapter 106 of the Laws of 2019 (Climate Act) to reduce statewide greenhouse (GHG) emissions. Currently, HFCs comprise 5.6% of the state's emissions. The state GHG emissions limits are based on a 1990 baseline; however, HFCs were not widely used at that time, and their use and associated emissions have risen significantly in subsequent years. The Department asserts that the State must reduce other gases more than the prescribed limits to make up for the rapid growth of HFC emissions since the baseline year. Without these proposed actions, HFCs could represent 41.9% of the 2050 Climate Act emissions limits.[1]

The proposed rule will greatly support the state's transition away from HFCs to alternative refrigerants that protect the climate, ozone, and offer enhanced energy efficiency. As Part 494 RIS states, "reducing HFC emissions and eliminating HFC sources is imperative to meeting the statewide GHG emission limits required by the Climate Act."

There has been significant action at the federal level to reduce HFC emissions, and the proposed amendments serve as a backstop to the EPA's Technology Transitions rule under the AIM Act , as the current Part 494 regulation did for the EPA's SNAP program that was rolled back in 2017 and 2019.[2]

Most importantly, this proposal embodies NY leading the way toward a transition to ultra-low GWP refrigerant alternatives in the refrigeration and air conditioning sectors. This leadership is vital to set the stage for more ambitious nationwide restrictions on HFCs at the federal level. We urge NY DEC to pursue stakeholder dialogue toward finalizing ambitious but feasible days for these sectors to transition to GWP <10 alternatives.

[1] Regulatory Impact Statement, 6 NYCRR Part 494, Hydrofluorocarbon Standards and Reporting, https://dec.ny.gov/sites/default/files/2023-12/part494ris2023.pdf
[2] Regulatory Impact Statement, 6 NYCRR Part 494

EIA supports and recommends the NY DEC focus on advancing the following aspects of the proposed rule:

- Backstop GWP limits for end-uses covered by the EPA's Technology Transitions rulemaking;
- Establish future dates for new equipment to transition to ultra-low GWP (<10) alternatives, particularly refrigerant end uses;
- Establish GWP limit prohibitions on the sale of bulk refrigerants with an exemption for reclaimed substances;
- Allow flexibility for new equipment to be retrofitted from high GWP to lower-GWP refrigerant;
- Align leak rate threshold under the food chain refrigerant replacement program with best practices of the EPA's GreenChill Partnership.

Prohibitions and Global Warming Potential (GWP) Limits

EIA strongly supports the GWP limits in the proposal, which send the long-term signal needed to transition from HFCs to alternatives with ultra-low GWPs of less than 10 and also allow time for industry to make that transition. The European Union (EU) has already finalized similar regulations with even earlier effective dates than those in this proposal, underscoring the feasibility of these amendments.

EIA notes, as stated in the RIS, that the 10 GWP limit in 2030 or 2034 is the primary addition to the EPA's Technology Transition regulation and is a necessary action to achieve the mandated emission limits for New York. Only using the Technology Transitions regulation, the proportion of HFCs in the state will increase from 5.6% of all emissions to 15.8% in 2050. The proposed amendments will reduce annual HFC emissions by an additional 8 $MMTCO_2e$, ensuring HFCs will be less than 3% of the 2050 emission budget.[3]

EIA also supports the Department's use of GWP20 to set the proposed limits for each sector, as HFCs are shorter-lived and powerful greenhouse gases, it's reasonable to measure their impact based on their actual atmospheric lifespan. In order to ease compliance for end users, EIA recommends including the GWP100 measurement next to GWP20 limits. This allows producers, manufactures, and end users to plan for upcoming state and federal regulations with varying metrics.

Additionally, we agree with the decision to set restrictions on systems with a refrigerant charge capacity of 50 pounds or greater, which is consistent with California regulations, as well as the size threshold for EPA's Section 608 program.

We support backstopping GWP limits for end-uses covered by the EPA's Technology Transitions rulemaking, and the action to set limits for uses not covered by the federal regulation. This allows adequate time for end users to plan the transition to ultra-low GWP systems as current systems age and are replaced if they cannot be repaired. As the HFC phasedown moves forward, including a 30% reduction in consumption levels this year, costs of HFCs are expected to increase. To seize greater emissions reductions and avoid higher refrigerant costs for systems at a time of decreasing HFC supply, it is beneficial for the climate and end users to transition as soon as possible, and sending a clear signal for the final GWP target will incentivize system operators to transition equipment to the ultra-low GWP goal rather than an interim GWP target.

[3] Regulatory Impact Statement, 6 NYCRR Part 494

Following the 2017 enactment of HFC phasedown regulations in the EU, HFC prices reached up to 13 times the pre-regulation prices and have sustained well above five times.[4] For example, transitioning a single supermarket to natural refrigerants can save $2,800 annually per store based on current prices.[5] With similar expected price increases to the EU, this could grow quickly to $14,000 annually, or $280,000 over a system's 20-year lifetime. This more than offsets the higher upfront capital costs of the ultra-low GWP refrigeration system.

There are already successful uses of ultra-low GWP, natural refrigerants across the country, including in New York. For example, NY-based grocer DeCicco & Sons has implemented transcritical CO_2 systems across several stores. In its first CO_2 store, the business saved $74,000 in energy consumption over a 12 month period as a result of the transition.[6] As DeCicco & Sons stated in public testimony for this proposed rule, 70% of their store locations in New York now use natural refrigerants.

Additionally, natural refrigerants such as ammonia have been successfully used in rinks across North America for years. CO_2 refrigerants (1 GWP) are currently used in 80 rinks across the country, and provide energy savings over HFCs and other alternative hydrofluoroolefins (HFOs). Natural refrigerants are also used in the majority of NHL rinks and consistently rated as the best quality ice by the players.[7]

As cited in our *On Thin Ice* investigation on NHL ice rinks, ammonia is the dominant refrigerant used in ice rinks and various industrial refrigeration systems.[8] Unlike many other cooling sectors, ice rinks have not widely adopted HFCs, although a significant portion still use their predecessors, hydrochlorofluorocarbons (HCFCs). In the state of California, at least 80% of ice rinks use ammonia.[9] This widespread use of ammonia contributed to the state banning refrigerants with a GWP greater than 150, including Opteon R-513A and R-449A, from being used in new ice rinks.[10]

In addition to ammonia, CO_2 is currently utilized by 80+ rinks across the country, including the NHL's Columbus Blue Jackets.[11] CO_2 systems also include energy savings over HFCs/HFOs, as the heat reclaim from Nationwide Arena is used to preheat hot water, support snowmelt, and provide underfloor heating. This technology is widely available and can be used to transition existing facilities, as in Columbus. With thousands of rinks currently operating natural refrigerants across North America, there is no need for fluorinated gases to meet the technological or market demands in ice rink refrigeration. EIA strongly encourages all new ice rinks and replacements to require ultra-low GWP refrigerants.

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[4] Oko-Recherche, Briefing paper: HFC availability on the EU market, (2020), https://www.oekorecherche.de/sites/default/files/publikationen/briefing_paper_hfc_availability_en.pdf

[5] California Air Resources Board, Standardized Regulatory Impact Statement, (2020), p 50, https://ww2.arb.ca.gov/rulemaking/2020/hfc2020

[6] Zondits, Efficient Transcritical CO2 Refrigeration During Warm Months, 2017, https://www.zondits.com/transcritical-co2-refrigeration-adiabatic/

[7] ATMOsphere. North American Guide to Natural Refrigerants in Ice Arenas. (2022) https://atmosphere.cool/ice-arenas-report-2022/

[8] EIA, On Thin Ice, https://www.exposingclimatepollution.org/on-thin-ice

[9] California Air Resources Board, Proposed HFC Regulation, Initial Statement of Reasons, (2020), https://ww2.arb.ca.gov/rulemaking/2020/hfc2020

[10] Ibid, see also Resolution 20-37 https://ww2.arb.ca.gov/rulemaking/2020/hfc2020

[11] Atmosphere, North American Guide to Natural Refrigerants in Ice Arenas, (2022), p. 46

Concerns have been raised regarding the cost burden associated with the prohibitions in §494-1.4, particularly around the timeline and the interpretation of this proposal that all systems above 50 lbs will need to install equipment without HFCs starting in 2025. EIA emphasizes that the proposal does not require equipment obtained prior to the compliance dates in §494-1.4 containing a prohibited substance to cease use of that equipment starting next year.

Restrictions on Bulk Substances

We support restrictions on new bulk regulated substances but encourage the Department to clarify if there will be an exemption for reclaimed bulk regulated substances under §494-1.4(f). The RIS refers to California's GWP limits on bulk substances, which does allow for the sale of reclaimed HFCs, as long as they are from an EPA certified reclaimer.[12] EIA requests the Department clarify if Part 494 will align with CA by providing an exemption for reclaimed bulk regulated substances. We support this exemption, as the use of reclaimed refrigerants benefits the climate by preventing the use of virgin refrigerant sold onto the market in New York, and will help bolster the reclaim infrastructure. As detailed in our joint report with NRDC and IGSD, *Lifecycle Refrigerant Management: The 90 Billion Ton Opportunity*, in the coming years of the HFC phasedown, leak mitigation and a growing supply of reclaimed HFCs will ease demand for virgin HFCs and moderate the impact of the phasedown on prices for system operators.[13]

Labeling and Disclosure

We support the requirement for systems 50 lbs and greater to have a label affixed with details on the regulated substances contained in the equipment. Consumers have a right to know if products contain HFCs, and so EIA highlights the need to include the GWP of that HFC or blend containing an HFC. With the range of HFC and HFO blends on the market, providing the GWP limit on the label will strengthen enforcement and compliance as the GWP limit is more straightforward to enforce than a blend list.

Leak Monitoring and Automatic Leak Detection System (ALDS)

We agree with the monthly leak inspection, to be replaced with automatic leak detection systems for systems with a refrigerant charge of 1,500 lbs or greater. However, we note that annual inspections, as proposed in Part 494, are not sufficient for systems between 50-199 lbs. Even a small leak over the course of the year could result in a total loss of charge. With estimated leak rates for AC equipment up to 10% and up to 20% for refrigeration, a leaking system not inspected every quarter could lose significant refrigerant, increasing costs for the environment and the end user.

Requirements on prevention and repair of refrigerant leaks by commercial users such as supermarkets are a vital aspect of the proposal. A refrigerant management program can help save businesses money on purchasing new refrigerants to replace those leaked, while also making a big impact on reducing emissions. The average supermarket system leaks 25% of its refrigerant annually, equivalent to 875 pounds of 336 car emissions each year.[14] Similar programs in other states, including California and Washington, have

[12] California Air and Resources Board, About SB 1206, https://ww2.arb.ca.gov/our-work/programs/sb-1206/about

[13] EIA, IGSD, NRDC, The 90 Billion Ton Opportunity: Lifecycle Refrigerant Management, (2022): https://us.eia.org/report/20221020-the-90-billion-ton-opportunity/

[14] EIA, Climate-Friendly Supermarkets, https://www.climatefriendlysupermarkets.org/get-the-facts

demonstrated saving businesses money through common sense refrigerant management. In its proposed Management of Certain Hydrofluorocarbons and Substitutes Under Subsection (h) rule, the EPA estimated that proposed leak repair and ALDS provisions would lead to savings of $13 million in 2025 and prevent 3.8 MMTCO$_2$e of HFC emissions in 2030.[15]

EIA supports setting leak rates for refrigerant-containing appliances. Setting low leak rates is an extremely high priority for lifecycle refrigerant management because they can lead to large climate benefits at low cost. For many equipment types, more than half of all refrigerant used in the equipment throughout its life is lost to leaks and thus not available for recovery and reclamation, underscoring the importance of timely repair.[16] However, it's unclear if the proposed rule has set leak thresholds for the repair requirements by sector. We recommend providing more detail on this aspect and explore specific leak rate thresholds to help enforce the proposed repair requirements.

We strongly support the proposed requirement for ALDS to accurately detect the ambient concentration of regulated substances at a minimum of 10 parts per million (ppm). However, we also recommend using 10 ppm for the alarm threshold to alert the operator instead of the proposed 100 ppm threshold.

EIA's *Leaking Havoc* investigation into the refrigerant leaks of major supermarket stores demonstrates that many commercial refrigeration leaks are even under 10 ppm. Concentrations detected above 2 ppm were considered an indicator of a potential significant leak in a given store, as per guidance provided by the manufacturer of the Bacharach leak detection equipment.[17] Of all the leaks we detected across dozens of stores, less than 5% were at a concentration greater than 100 ppm, however, 29% ranged from 10-100 ppm on the sales floor – one of which was visibly streaming onto the contents of a case. The vast majority were detected at lower concentrations, with 67% of the leaks we found having concentrations less than 10 ppm on the sales floor.[18] Even smaller concentration leaks can lead to a major source of emissions and a higher cost burden over time.

Additionally, EIA's 2022 investigation focused on Gristedes, a supermarket chain in New York City. All of the Gristedes stores investigated were found to be leaking, most of which had refrigeration labeled with HFCs, and in two stores EIA found what appeared to be leaks of chlorofluorocarbon (CFC) or HCFC refrigerants, potent climate warming and ozone depleting substances that have been phased out through regulations.[19] It's important to note that EIA's investigators only detect refrigerant leaks from store equipment accessible to customers. This excluded large storage cold rooms, machine rooms, rooftop cooling units, and other equipment where the EPA estimates 79% of supermarket leaks occur.[20] This underscores the importance of consistent, storewide leak monitoring to address the full scale of this issue, as required in the proposed Part 494.

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[15] EPA, Regulatory Impact Assessment of Phasedown of Hydrofluorocarbons: Management of Certain Regulated Substances under Subsection (h) of the American Innovation and Manufacturing Act of 2020, https://www.regulations.gov/docket/EPA-HQ-OAR-2022-0606/document

[16] Ibid, EIA, IGSD, NRDC

[17] EIA, Leaking Havoc report, 2021: https://www.climatefriendlysupermarkets.org/leaking-havoc#IV

[18] EIA, Leaking Havoc, 2021, https://www.climatefriendlysupermarkets.org/leaking-havoc

[19] EIA, Leaking Havoc in New York City, 2022 https://www.climatefriendlysupermarkets.org/leaking-havoc-nyc

[20] EPA, *Commercial Refrigeration Leak Prevention & Repairs*, https://www.epa.gov/sites/default/files/documents/leakpreventionrepairguidelines.pdf

Retrofit and Replacement

EIA supports the requirement for a retrofit or retirement plan if air conditioning or refrigeration equipment with a refrigerant leak has not been successfully repaired within the specified time allotted for each equipment type, and that equipment must be retrofitted or retired only when repair attempts have failed to fix the leak(s). We offer additional recommendations on this below for proposed requirements in the food chain refrigerant replacement program.

EIA investigations into equipment with the highest leak rates, in the supermarket sector, have revealed widespread leaks that often are not repaired promptly. Specifically, EIA visited one-third of all Gristedes locations in NYC and found 100% to have a detectable leak.[21] Additionally, EIA found R-12 and R-22 labels on Gristedes' equipment indicating the use of older equipment that is more prone to leak at high rates.

EIA supports the proposed definitions for retire and retrofit, with one addition. 'Retrofit' should be updated to read: "to convert equipment from one refrigerant to another lower-GWP refrigerant including the conversion of the equipment to achieve system compatibility with the new refrigerant and may include, but is not limited to, changes in lubricants, gaskets, filters, driers, valves, o-rings, or components." This ensures a retrofit plan cannot include backsliding to higher-GWP refrigerants and encourages the transition to ultra-low, natural or hydrocarbon-based systems already widely in use.

Regarding the proposed definition of "new" for products or equipment, we recommend allowing for more flexibility for new equipment to be retrofitted from high GWP to lower-GWP refrigerant, in the criteria under the definition. This will align the definition with other state programs like California and Washington, which will help prevent confusion and accidental non-compliance among system operators.

If the intent is to avoid retrofitting of equipment as a means to extend the lifetime of older equipment using HFCs, NY DEC may want to consider amending the definition of "Retrofit" to require systems beyond their useful life (>15 years since first installed) to be replaced with ultra-low GWP alternatives.

EIA notes that the proposed rule gives generous opportunities for end users to avoid retrofitting or retiring equipment through the leak repair time windows, starting at 14 days and increasing up to 120 days, depending on the availability of parts, labor, and if the equipment is used in industrial process refrigeration. As the proposed rule also mandates the switch to ALDS for large refrigeration systems and encourages the switch for large AC and medium-sized systems, this should allow service technicians to spend less time conducting monthly inspections and reduce wait times for repairs and installations.

Additionally, the 10-year timeframe for using ultra-low GWP systems allows businesses to plan their transition smoothly. The predictability of a long-term market signal allows New York businesses to get ahead of the federal phasedown which may accelerate in the future.

It is also important to note that the ultra-low GWP equipment is already more energy-efficient than HFC-based refrigeration systems. The RIS used EPA calculations predicting that the full HFC phasedown will have a net benefit of up to $269.9 billion. If the costs are allocated to New York State based on population

[21] EIA, Leaking Havoc in New York City, (2022); https://www.climatefriendlysupermarkets.org/leaking-havoc-nyc

size, this would result in $288-540 million in savings. The RIS also states the majority of potential cost savings are incurred from the adoption of low GWP options in commercial and industrial sectors that also provide substantial energy cost reductions, particularly in cooler climates like that in New York State.[22]

Variances

EIA supports the proposed flexibility for compliance timelines to small businesses in disadvantaged communities that are experiencing economic hardship. The proposed rule allows for companies to apply for variances that allow exceptions to the time requirements for prohibitions, leak repair, retrofit and replacement plans, and food chain replacement. The rule reasonably allows for exceptions in the case of impossibility, force majeure event, or economic hardship. In particular, EIA notes the importance of supporting those businesses in a "disadvantaged community and is either a retail food facility or meets the definition of small business as defined in section 131 of the Economic Development Law." Given the timelines to repair equipment before a retrofit or replacement is mandated and the ability of businesses to request a variance the proposed replacement mandates are reasonable while allowing for flexibility to suit the necessities of individual businesses.

Reporting

We support the proposed annual reporting requirements, particularly for large and medium equipment above 200 lbs. However, we caution against making this report dependent that equipment exceeds the compliance thresholds, ranging from 3,000 - 23,000 lbs of CO_2e annually. It is important that all medium and large equipment report annually, in addition to ensuring compliance this allows the Department to compare the effectiveness of systems with and without ALDS. A robust lifecycle refrigerant management program requires an accurate, regularly updated inventory to ensure refrigerants are properly recovered and faulty equipment is repaired or replaced. This data will also provide essential information to ensure New York State is on track to meet emissions reduction targets, as well as support the growing reclamation market by maintaining an up-to-date inventory of refrigerant types and the systems they're deployed in across the state.

Food Chain Refrigerant Replacement Program

The food chain refrigerant replacement program is a key component to address the single largest source of HFC emissions in the state: field-installed equipment used in commercial food retail. We fully support efforts to curb emissions from these systems. However, EIA recommends adjusting the refrigerant loss condition under the requirements under section (c) of §494-2.8. The proposed 1% or less annual refrigerant loss from refrigeration equipment containing 200 or more pounds could be THE reason for lack of industry support and may not be feasible for small businesses to achieve.

The EPA's voluntary GreenChill program for food retailers requires 5% for the platinum standard, which the program reports over half of the certified stores have achieved. GreenChill Partners on average have

[22] Regulatory Impact Statement, 6 NYCRR Part 494, Hydrofluorocarbon Standards and Reporting, 2024, https://dec.ny.gov/sites/default/files/2023-12/part494ris2023.pdf

achieved corporate average leak rates of around 12% (half the industry average).[23] Additionally, Washington state has set a 16% leak rate for retail food refrigeration systems, which is the most ambitious state threshold at present.[24] We recommend the refrigerant loss condition be adjusted to best-in-class leak rates under the GreenChill Partnership, with the opportunity for the Department to reduce it in the future.

Thank you for considering our comments on the proposed amendments to Part 494. We are available for further discussion and to answer any questions on the above recommendations.

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[23] EPA Press Release, https://www.epa.gov/newsreleases/epas-greenchill-program-celebrates-achievements-environmentally-friendly-refrigerant

[24] Washington State, Department of Ecology, Chapter 173-443 WAC: Hydrofluorocarbons (HFCs) And Other Fluorinated Greenhouse Gases, (2020): https://ecology.wa.gov/getattachment/eb351094-2b5e-49ce-b626-c90092542a75/OTS-4615-6-For-Filing.pdf?utm_medium=email&utm_source=govdelivery