



Comments of the Natural Resources Defense Council on
EPA Proposed Rule, Phasedown of Hydrofluorocarbons:
Allowance Allocation Methodology for 2024 and Later Years

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The Natural Resources Defense Council (NRDC) appreciates the opportunity to comment on the U.S. Environmental Protection Agency (EPA)'s proposed rule *Phasedown of Hydrofluorocarbons: Allowance Allocation Methodology for 2024 and Later Years* ("the proposal"). NRDC is a leading proponent of the effort to move the United States and the world away from hydrofluorocarbons (HFCs) to protect our climate from the damage they cause.

The American Innovation and Manufacturing (AIM) Act of 2020 has provided EPA with ample authority to implement an ambitious, fast-paced phasedown of HFCs nationwide, and in this proposal EPA has largely upheld the core mandate that the AIM Act provides. However, there are distinct aspects of the proposal that should be strengthened, and we provide comments on those points here.

We look forward to working with EPA as it moves toward finalization of these important regulations and more under the AIM Act.

Imported Products Containing HFCs

NRDC continues to believe, as raised in our July 2021 comments to the original framework rule, that importing finished products containing HFCs should require expending consumption allowances for the quantity of HFCs contained. In other words, HFCs contained within imported products should be covered by the U.S. HFC allocation and phasedown program. In our prior comments we note that some 10 percent of total U.S. HFC consumption comes as HFC imports within products, materially adding to the climate harm from U.S. HFCs. As explained in the prior comments, the HFCs imported in these products are covered by the term "consumption" as defined in the AIM Act, which does not distinguish between HFCs imported in "bulk" and in products. In addition to harming the climate, the failure to require consumption allowances for HFCs in imported products competitively disadvantages domestic manufacturers of HFC-containing products in comparison to companies building their products overseas in places without, or with less strict, caps on HFCs. HFCs in imported products will remain a problem since imported products such as air conditioners and heat pumps are expected to contain HFCs: next-generation, climate-friendlier refrigerants for the air conditioning and heat pump sectors – by far the biggest product type in question – continue to be largely or entirely comprised of an HFC, HFC-32, with an exchange value (GWP) of 675.

EPA has stated that it plans to address imported products in its forthcoming Technology Transitions proposal. We will evaluate whether that approach suitably addresses the downsides of omitting HFCs in imported products from the phasedown. However, we are concerned that if the Technology Transitions rule bars the use of the highest GWP HFCs in both domestic and imported products, importers of foreign-made products will still not need to expend U.S. HFC consumption allowances, while domestic producers will remain competitively disadvantaged by the need to do so.

As a result, even with future Technology Transitions rules in place, equipment containing refrigerants with significant GWPs will likely continue to be imported and installed in the U.S. market outside of the allowance allocation framework.

This disparity should add impetus for EPA to also establish measures on refrigerant management to prevent the additional HFCs from imported products, as well as existing banks, from reaching the atmosphere. In October 2022, EPA released a Notice of Data Availability (NODA) on HFC reclamation. We welcome this action and encourage EPA to follow it with a comprehensive refrigerant management rule to address not only refrigerant reclamation but also proper installation and leak reduction practices for residential and commercial cooling equipment. NRDC, EIA, and IGSD released a report earlier this year outlining several measures toward lifecycle refrigerant management.¹

Allowance allocation methodology

EPA requests comment on whether to expand the range of years used to develop each allowance holder's high three-year average to include 2020 and 2021. While NRDC is generally open to a variety of allowance allocation approaches, we agree with EPA's concerns that it would be challenging to account for market disturbances and supply chain issues that have likely occurred because of the covid-19 pandemic and, importantly, production and stockpiling decisions will have likely been influenced by the knowledge that the production and import restrictions were drawing closer as the AIM Act was being written and ultimately enacted. NRDC encourages EPA to continue using historic production and consumption data to determine allowance allocations for calendar years 2024-2028.

NRDC continues to support modernizing EPA's methodology for allocating allowances, including employing novel approaches EPA first laid out and took advanced comment on in the 2022-2023 framework rule but which it has not proposed to implement in this proposal. NRDC submits that in the ideal case EPA should begin auctioning off HFC production and consumption allowances rather than continue distributing them free of charge and use the funds raised to speed the transition away from HFCs to climate-friendlier alternatives. The AIM Act affords EPA wide latitude to distribute allowances in the most beneficial manner, and it is ultimately the public – the proper owner of the atmosphere's limited ability to safely carry the burden of HFCs – who should benefit from the value created by introducing a scarcity in supply of HFCs. As it stands, companies receiving allowances reap the windfall profit of the scarcity value inherent in HFC allowances.

¹The 90 Billion Ton Opportunity: Lifecycle Refrigerant Management at: https://www.nrdc.org/resources/90-billion-ton-opportunity-lifecycle-refrigerant-management?nrdcpreviewlink=SKyL3_U-PRKCIvPZd32s1vqWM47JBmQVeDS93-dKdE

Application-specific allowances

In the original framework rule EPA allocated production or consumption allowances for use in six specific applications under subsection (e)(4)(B)(iv) of the AIM Act. Those six applications were defined by Congress to include propellants in metered-dose inhalers; defense sprays; structural composite preformed polyurethane foam for marine use and trailer use; etching of semiconductor material or wafers and the cleaning of chemical vapor deposition chambers within the semiconductor manufacturing sector; mission-critical military end uses; and onboard aerospace fire suppression.

The AIM Act specifies that “for the 5-year period beginning on the date of enactment of this Act, the Administrator shall allocate the full quantity of allowances necessary, based on projected, current, and historical trends, for the production or consumption of a regulated substance”.² The AIM Act was enacted in 2020 and EPA disseminated the first allowances in October 2021 to be expended in 2022. As a result, the application specific allowances will be available for the years 2022-2025. EPA states in this proposed allocation rule that it is not proposing any changes to the methodology for issuing application-specific allowances through this rulemaking. According to the AIM Act, starting January 1, 2026 (5 years from enactment of the AIM Act), EPA is authorized to revisit whether the six end-uses require application-specific allowances. EPA does not offer any additional information in this proposed allocation rule on how it plans to evaluate and review application-specific allowances post-2025, despite the proposal otherwise covering the allocation process during this timeframe.

Under the AIM Act, renewal of application-specific allowances post-2025 is not automatic. In order to grant an up to five-year extension, EPA would be required to make findings that there are not adequate alternatives for specific uses. In our July 2021 comments, we encouraged EPA to take into account the availability of reclaimed HFCs, inventory of previously produced and imported HFCs, and availability of alternatives when revisiting the need for and volume of application-specific allowances. All of these factors can reduce the need for virgin substances in most of these applications, in which case allowances should be limited to an amount commensurate with the need for virgin HFCs. We continue to maintain that EPA should carefully review and account for the availability of substitutes, as well as the amount of HFCs available through reclamation or stockpiling and we ask that EPA clarify the process and criteria it plans to pursue in reviewing and evaluating the need for additional application-specific allowances beyond the original period.

Emissions reporting

NRDC appreciates the progress EPA has proposed to make in monitoring HFC production facilities for local pollution impacts but submits that further action needs to be taken to protect communities’ health and environment from the production of HFCs and their alternatives. Monitoring HFC production lines for pollutant emissions is a good start but does not address a key issue we raised in our comments on the original framework rule: the apparent increase – and the possibility of further increases – in pollution from production of alternatives to HFCs, such as hydrofluoroolefin HFO-1234yf, induced by the phasedown of HFCs.

² Section (e)(4)(B)(iv)(I) of the AIM Act

In brief:

- NRDC supports EPA’s proposal to require annual reporting of emissions of hazardous air pollutants (HAP), ozone depleting substances (ODS), and HFCs from each facility’s HFC production line emissions units. Many of these substances are also identified as high priority for risk evaluation under TSCA, underlining the concerns that are associated with their emission into the environment and surrounding communities.
- In response to EPA’s request for comment, NRDC also supports extending the same requirement to emissions of each criteria air pollutant and its precursors.
- Further, we request that EPA extend these unit-specific emissions reporting requirements to facilities that produce HFOs and other HFC alternatives.

We agree with EPA that more granular emissions reporting data are needed in order to determine with greater certainty where dangerous emissions are coming from within each plant, how those emissions (separately and cumulatively) increase health risk in neighboring communities, and what measures can be taken to reduce or eliminate such emissions.

Data included in the 2021 rulemaking for the initial HFC allocation rule demonstrated that substantial emissions of hazardous air pollutants occur at production facilities for both HFCs and HFOs. The Regulatory Impact Analysis (RIA) for that proposed rule identified eight U.S. facilities producing HFCs. Most of them are located along major waterways and six are located in rural areas (the Chemours Louisville and Daikin America facilities are classified as urban).³ The RIA listed 17 toxic chemicals used as a feedstock or created as byproducts of HFC production.⁴ The RIA showed the eight facilities’ toxic air and water releases of the 17 chemicals as reported to the Toxic Releases Inventory for 2019; taken together, nearly two million pounds of toxic substances potentially associated with HFC production were released in that year.⁵ Some 72 percent of the reported amounts are air releases (27.6 percent of releases are transferred offsite, and only 0.4 percent are water releases). There were also more than 10,000 pounds of non-production releases.⁶

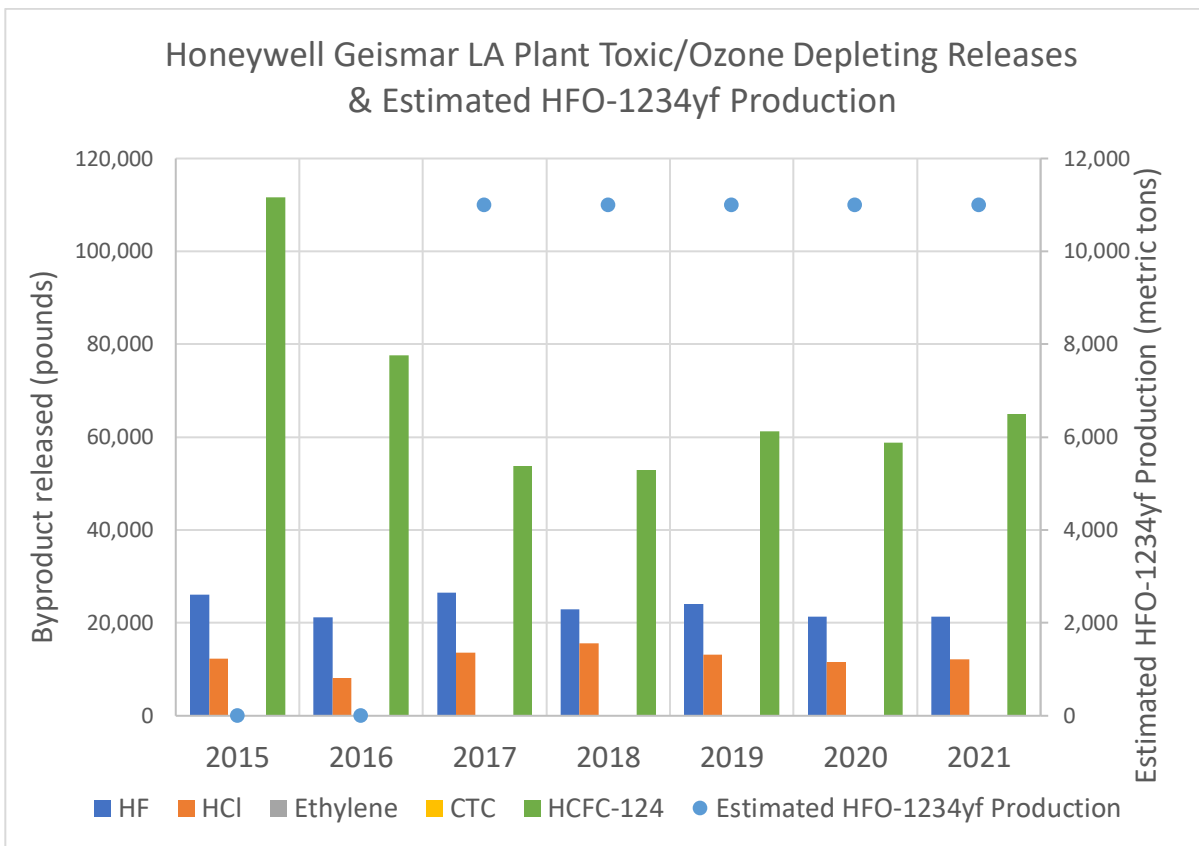
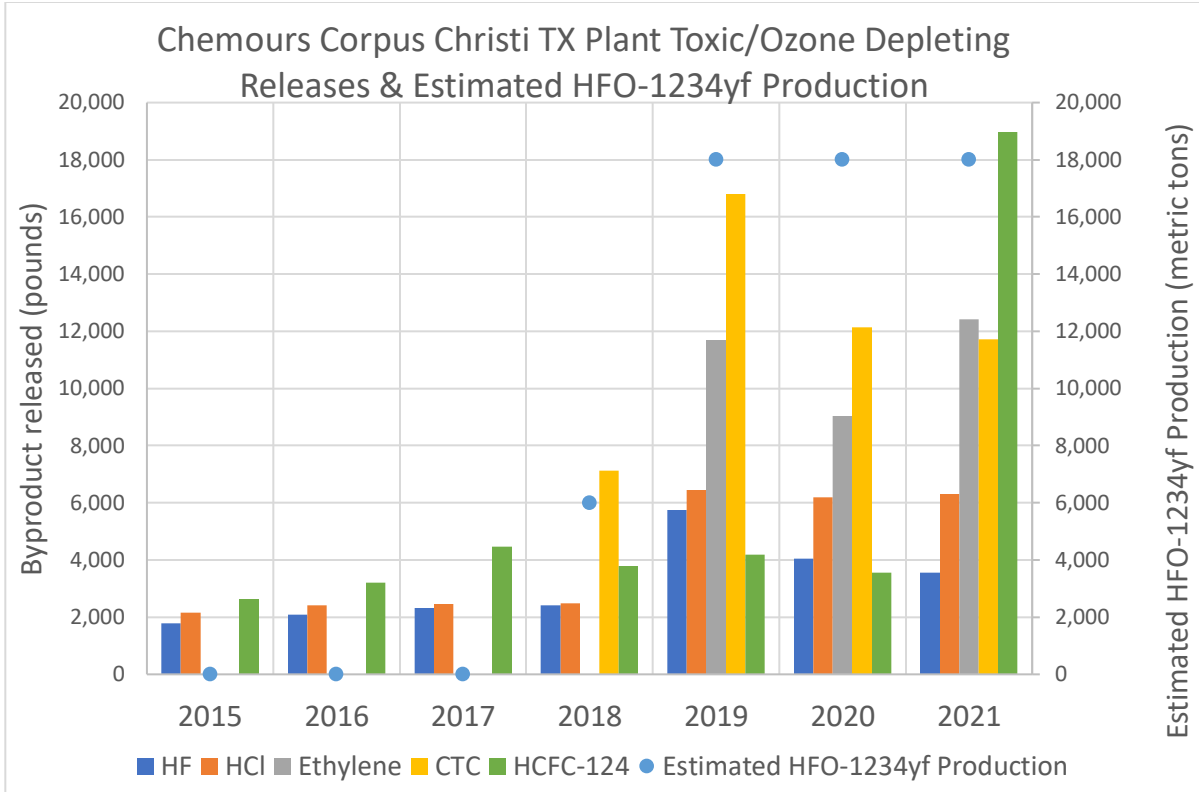
The same pattern exists for facilities producing HFOs. Here we reproduce charts from NRDC’s July 6, 2021, comments on the original proposed framework rule, showing emissions of several HAPs and ozone precursors at plants producing, among other things, HFO-1234yf – specifically, plants operated by Chemours in Corpus Christi, Texas, and Honeywell in Geismar, Louisiana. These charts have been updated to include new data from the Toxic Releases Inventory and have added an additional substance, HCFC-124, for which there are elevated emissions.

³ Draft Regulatory Impact Analysis for Phasing Down Production and Consumption of Hydrofluorocarbons (HFCs), p. 103-104.

⁴ *Ibid*, p. 108

⁵ *Ibid*, p. 110

⁶ *Ibid*, p. 113





These data show substantial releases of dangerous chemicals from plants where HFCs and HFOs are produced. As we noted then, and as EPA notes in the current proposal, neither the one-time plant-level reporting currently required nor other plant-wide emissions reporting provides the granular data needed to determine how much of these dangerous emissions emanated from facilities related to HFC and HFO production versus other operations at those plants. NRDC agrees that it is critical to have unit-specific data in order to meaningfully assess the origin of emissions within each plant, the community and broader health and environmental risks, and control measures available to reduce or eliminate such emissions. Non-confidential reporting of HFO production volumes – which is only estimated in these graphs, as the true values are claimed as confidential business information (CBI) in EPA’s Chemical Reporting Registry – should also be mandatory as part of this HFO monitoring program.

These requirements should apply to emissions units producing HFOs and other HFC alternatives as well as to units producing HFCs. First, HFCs, HFOs, and other alternatives are commonly produced within the same plants. Collecting emission data across all the operations at such plants is essential to have a comprehensive assessment of overall emissions and community risks. Consider carbon tetrachloride (CTC) – a carcinogen as well as an ozone-depleting substance – as an example. It would make no sense to collect unit-specific data only on CTC emissions from facilities related to HFC production and to ignore the same data on emissions from facilities related to HFO production at the same site. Indeed, CTC may be produced or stored at *additional* units within the same plant, and similar unit-specific emissions data should be collected from those units in order to have a comprehensive assessment of CTC emissions site-wide.

Second, the production of HFOs or other alternatives may already occur at sites where there is no HFC production, or where HFC production will terminate in the coming years. The same concern for community risk exists if HAPs or criteria pollutants/precursors are emitted from HFO production plants even if HFCs are not produced there.

NRDC believes the current proposal is broad enough for EPA to issue final regulations extending the coverage of the emissions reporting requirements as we are requesting here. To the extent any further notice and opportunity to comment is necessary, we request that EPA raise the issue in communications with stakeholders and/or issue a supplemental notice. This can be done quickly, in time to finalize these requirements without delay.

While these requirements for emissions reporting should apply to all HAPs and criteria pollutants/precursors, they have special relevance to ozone-depleting and climate-warming substances whose production is banned under the Montreal Protocol, the Kigali Amendment, and domestic law unless entirely consumed (except for trace quantities) in the production of other compounds. CTC is one such chemical. We reiterate, as we said in our July 2021 comments, that CTC emissions on the scale reported at the Chemours site are not consistent with the total ban on CTC production except where entirely consumed (but for trace quantities) in production of other chemicals. So too for HCFC-124 emissions from both the Honeywell and Chemours sites. As shown in the graph in this section, Chemours’ Corpus Christi plant has begun releasing significant quantities of HCFC-124, the quantity of which increased in 2021 by 5-fold over the prior year to constitute nearly a quarter of total TRI-reported releases from the plant. Honeywell’s plant has consistently emitted a significant amount of HCFC-124 as well. EPA should be taking enforcement action based on the current data, and in this rulemaking EPA



should require annual reporting of CTC and HCFC-124 production, storage, and handling at all specific units within these plants as an aid to enforcing the current CTC and HCFC-124 production bans.

The same unit-specific emissions reporting requirements should apply to other substances, including but not limited to HCFC-22, whose production is also banned under the Protocol and domestic law except where entirely consumed making other chemicals.

NRDC supports requiring the use of continuous emission monitoring systems. Stack testing, materials balance accounting, the use of EPA emission factors, and permit-related monitoring are likely to be less accurate, either because of the inaccuracy of those methods or the infrequency of application, or both. Firms proposing to use methods other than continuous emissions monitoring systems should bear the burden of demonstrating that the alternatives are of at least equal accuracy.

NRDC agrees with EPA that Section 114(a) of the Clean Air Act provides ample authority for the proposed unit-specific emissions reporting requirements, as well as for expanding those requirements as advocated above. The AIM Act incorporates Section 114 of the Clean Air Act. That provision grants EPA authority to require the collection and submission of data for the purposes of developing new rules as well as enforcing existing ones. Section 114 provides that “emission data” shall be publicly available and cannot be withheld from the public as confidential information. EPA’s long-standing regulations define “emission data” expansively to include “a description of the device, installation, or operation constituting the source” of those emissions.⁷

Thank you for the opportunity to comment on this proposed rule and we look forward to working with EPA and all relevant stakeholders.

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⁷ 40 C.F.R. §2.301