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California Air Resources Board
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NRDC & IGSD Comments on ARB's Rulemaking Proposal Workshop on High Global Warming Potential Refrigerant Emissions Reductions

The Natural Resources Defense Council (NRDC) and the Institute for Governance and Sustainable Development (IGSD) appreciate the opportunity to comment on the California Air Resources Board (ARB)'s Rulemaking Proposal on High Global Warming Potential (GWP) Refrigerant Emissions Reductions.

ARB has proposed to:

1. Begin a rulemaking process to adopt into state regulations, with any appropriate modifications, the United States Environmental Protection Agency's (US EPA) Significant New Alternatives Policy Program (SNAP) Rule provisions as they relate to prohibitions on certain hydrofluorocarbons (HFCs) in stationary refrigeration and air conditioning end uses; and

2. Further evaluate the proposed HFC mitigation strategies identified in ARB's adopted Short Lived Climate Pollutant (SLCP) Strategy for potential future rulemakings.

NRDC and IGSD applaud ARB for its work to mitigate the growing climate threat posed by HFCs. We strongly urge ARB to adopt into California state regulations both EPA SNAP prohibition rules in their entirety, rather than in part.

HFCs are the world's fastest-growing climate pollutants and, left unchecked, will be responsible for significant climate change by 2050. While HFCs have been the subject of much federal and international attention over the past two years, California will need to act on its own in order to meet its 2030 emissions reduction goals. California's leadership will also encourage a smooth start to the global phasedown of HFCs under the Kigali Amendment to the Montreal Protocol and will support technical innovation already underway by companies in California.

The newly proposed HFC regulations will offer significant co-benefits prioritized in California Senate Bill 605.[1] Low-GWP technologies tend to be more energy efficient than the HFCs they replace, reducing other air pollutants associated with power plant air emissions that impact public health and disadvantaged communities.

California's rules will also help reduce investment uncertainty for companies that have invested heavily in alternatives to HFCs, will reward innovation, and will avoid obsolete technologies being sold into the state. Regulations in a major market like California's will help lower the cost of next-generation low-GWP technologies by allowing them to achieve economies of scale and shared infrastructure in the commercialization of alternative technologies. California companies will have an advantage in commercializing new technologies that can be marketed in other states.

Background

HFCs – used as refrigerants, foam blowing agents, aerosol propellants, and some minor uses – are man-made chemicals that have, on average, global warming potentials (GWPs) thousands of times that of carbon dioxide.[2] As a result, even small total emissions of HFCs harm the climate significantly. US EPA estimates that HFCs accounted for 3% of total US greenhouse gas emissions in 2014,[3] a figure that could rise to 69% globally in 2050 under aggressive carbon dioxide reductions scenarios.[4]

In May 2015, California began work on a Short-Lived Climate Pollutants Strategy (SLCP Strategy). In keeping with SB 1383, ARB set a target of reducing HFC emissions by 40% below 2013 levels by 2030. Over the course of that rulemaking, HFCs were the subject of several significant national and international actions. First, EPA issued two regulations under the Significant New Alternatives Policy (SNAP) Program, in 2015 ("SNAP Rule 20") and again in 2016 ("SNAP Rule 21"), prohibiting previously-approved HFCs with high GWPs in specific end uses. Also in 2016, EPA issued a rule extending its Refrigerant Management Regulations from ozone-depleting substances (ODSs) to their HFC replacements.

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[1] Senate Bill 605 directs the California Air Resources Board to "prioritize the development of new measures for short-lived climate pollutants that offer co-benefits," such as "reducing other air pollutants that impact community health and benefit disadvantaged communities". California Health and Safety Code Section 39730 (a) (4). Accessed 20 October 2017. http://leginfo.ca.gov/pub/13-14/bill/sen/sb_0601-0650/sb_605_bill_20140921_chaptered.htm.

[2] Durwood Zaelke, Nathan Borgford-Parnell, and Stephen O. Andersen. 2017. Primer on HFCs: Fast action under the Montreal Protocol can limit growth of hydrofluorocarbons (HFCs), prevent 100 to 200 billion tonnes of CO2-eq by 2050, and avoid up to 0.5°C of warming by 2100. IGSD: http://www.igsd.org/wp-content/uploads/2017/05/HFC-Primer-19May2017.pdf

[3] EPA, U.S. Greenhouse Gas Inventory Report: 1990-2014, https://www.epa.gov/ghgemissions/us-greenhouse-gas-inventory-report-1990-2014.

[4] 80 Fed. Reg. 42,870, 42,879 (July 20, 2015).

In October 2016, Parties to the Montreal Protocol signed the Kigali Amendment – a global phasedown of HFCs ending in 2047. This historic agreement includes a commitment by developed countries to cut consumption and production of HFCs gradually starting in 2019, culminating in approximately an 85% reduction from 2011-2013 levels in 2036.[5]

As California's final SLCP Strategy notes, the Kigali Amendment will not be sufficient for California to meet its HFC reduction goal in 2030. The amendment will, however, change the regulatory landscape for HFCs, so ARB decided to forgo specific HFC measures in favor of further consideration. To that end, ARB commissioned a study of California's HFC emissions under the Kigali Amendment. Based on the results of that report, which are forthcoming, ARB has stated its intent to consider further actions on HFCs as needed to meet California's 2030 goal.

In August 2017, the D.C. Circuit Court of Appeals issued a decision vacating EPA SNAP Rule 20 to the extent that it requires manufacturers using HFCs to convert to other substances. NRDC and others have petitioned the court to rehear the case and reverse the decision, and are currently awaiting a response from the court. A similar court case against SNAP Rule 21 has been held in abeyance pending resolution of the SNAP Rule 20 legal case. While NRDC will continue to defend the legality of SNAP Rules 20 and 21, it is clear that California cannot rely on federal action to reduce HFC emissions.

Recommendations

NRDC and IGSD urge ARB to adopt state regulations that replicate EPA's two HFC prohibition regulations – SNAP Rules 20 and 21 – in their entirety. ARB had planned to rely on these rules to meet California's SLCP reduction target in 2030 and thus should take steps to ensure the rules carry force despite an uncertain federal regulatory landscape.

California should ban the in-state manufacture and sale of all products using aerosol propellants, foams, and refrigerants that are inconsistent with EPA's change of listing status decisions in SNAP Rules 20 and 21.[6] NRDC and IGSD recommend that ARB not adopt "only certain provision of the federal program," as proposed in the notice for the October 24th 2017 workshop, and instead completely replicate the program.

All HFC end-uses addressed in the two SNAP Rules contribute significantly to California's HFC emissions. Aerosols and foams, for example, are typically considered smaller contributors, but

[5] For developed countries (non-Article 5 parties), the baseline from which HFC reductions are measures is equal to their average HFC consumption and production, separately, between 2011 and 2013 plus 15% of their 2007 HCFC baseline allocation expressed in GWP tons.

[6] Note: EPA SNAP regulations continue to allow medical aerosol propellant applications of HFCs.

together account for 17% of California's 2013 HFC emissions.[7] Cosmetic, convenience, and technical aerosols products and foams are low hanging fruit: many technologies are available to replace high GWP HFCs in these end-uses and have been emerging nationwide as SNAP Rule 20 and 21 have taken effect.

NRDC and IGSD strongly urge ARB to adopt EPA's prohibition on HFC-134a and other high-GWP refrigerants in light duty motor vehicles starting in model year 2021. HFC emissions from motor vehicles contributed 13% of California's HFC emissions in 2013.[8] In this case, California should consider banning the sale or the in-state registration of new vehicles using HFC-134a. Such regulations may prove crucial to continuing the market transition away from HFC-134a should federal fuel economy incentives for low-GWP refrigerants be diminished.

Residential refrigerators and freezers should also be included in ARB's current rulemaking. Refrigerators and freezers are subject to numerous regulations and tend to be manufactured for national markets. California's adoption of SNAP Rule 21's 2021 prohibition on HFC-134a and other high GWP refrigerants will help maintain industry movement towards climate friendly alternatives. Moreover, the 2021 prohibition aligns with the next expected revision to the US Department of Energy's minimum energy efficiency standards for refrigerators and freezers. This sensible coordination reduces the need for multiple product redesigns to comply with both regulations.

ARB adoption of EPA's prohibitions in these three sectors, as well as the rest of the SNAP rules as proposed, will cut California's short-lived climate pollutant emissions appreciably in 2030, while also reducing air emissions through increased energy efficiency that can be achieved with low-GWP technology alternatives. California's leadership will also maintain an incentive for national manufacturers of these products to continue their transition to lower-GWP alternatives absent federal regulation. As other states and cities adopt their own HFC regulations, California's adoption of the full federal program will net even greater climate benefits.

In a future rulemaking, ARB should consider expanding its existing Refrigerant Management Program[9] by adopting EPA's updated Refrigerant Management Regulations, which aim to reduce the emissions both of ODSs and HFCs through a simplified framework for refrigerant handling and documentation. Like the SNAP rules, EPA's update to the Refrigerant Management Regulations has been challenged in court. By updating California's Refrigerant Management

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[7] California Air Resources Board, Short Lived Climate Pollutant HFC Emissions Inventory, https://www.arb.ca.gov/cc/inventory/slcp/data/slcp_fgas_100yr1.pdf; California Air Resources Board, California's High Global Warming Potential Gases Emission Inventory: Emission Inventory Methodology and Technical Support Document. April 2016. https://www.arb.ca.gov/cc/inventory/slcp/doc/hfc_inventory_tsd_20160411.pdf

[8] Id.

[9] California Air Resources Board, Refrigerant Management Program. October 2017. https://www.arb.ca.gov/cc/rmp/rmp.htm

Program to effect restrictions on the handling and use of HFCs equivalent to EPA's recent actions, ARB would further solidify progress in reducing HFCs.

To discourage dumping of obsolete high GWP stationary refrigeration technology, ARB may also wish to consider adopting additional rules requiring that sellers disclose the environmental impacts of the system's refrigerant and explain the additional inspection and reporting burdens that buyers of high GWP technology must take on pursuant to California's Refrigerant Management Program.

Conclusions

NRDC and IGSD commend ARB's continued leadership on HFCs, both in this rulemaking and beyond. California's rules will help reduce investment uncertainty for companies that have invested heavily in alternatives to HFCs, will reward innovation, and will avoid obsolete technologies being sold into the state.

Alternatives to HFCs are falling quickly in price and are often more energy efficient than the HFCs they replace, saving customers money and reducing power plant emissions associated with large air conditioning and refrigeration loads. In California especially, the use of alternative refrigerants will help solve grid issues and will facilitate the incorporation of distributed energy resources.

In the proposed rulemaking, ARB should adopt as state-level regulation the prohibitions in EPA's SNAP Rules 20 and 21. ARB should follow this rulemaking by adopting EPA's updated Refrigerant Management Regulations. In addition, ARB should adopt further HFC cuts as needed to achieve California's 2030 HFC emissions reduction target. Doing so will help California reach its total greenhouse gas reduction goals and lend its leadership to the US and the rest of the world as the phasedown of HFCs begins.

We appreciate the opportunity to comment on this important proceeding.

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