

U.S. STATES TAKE THE LEAD IN HFC PHASEDOWN

U.S. states, with broad support from environmentalists and industry, are taking the lead in phasing down hydrofluorocarbons (HFCs) in the U.S. The **U.S. Climate Alliance, composed of 24 states representing 55% of the U.S. population and 60% of U.S. GDP**, has committed to reducing short-lived climate pollutants, including HFCs.¹ In the past year, **eight U.S. Climate Alliance states** have passed legislation or committed to issue new regulations to curb specific HFC uses – these states account for over **25% of U.S. HFC emissions** and host nearly **30% of HVAC jobs** in the nation.² Companies that manufacture and use HFCs are also implementing corporate plans to replace HFCs with lower global warming potential (GWP) alternatives. Stakeholder support for implementing the Kigali Amendment remains strong.

State leadership

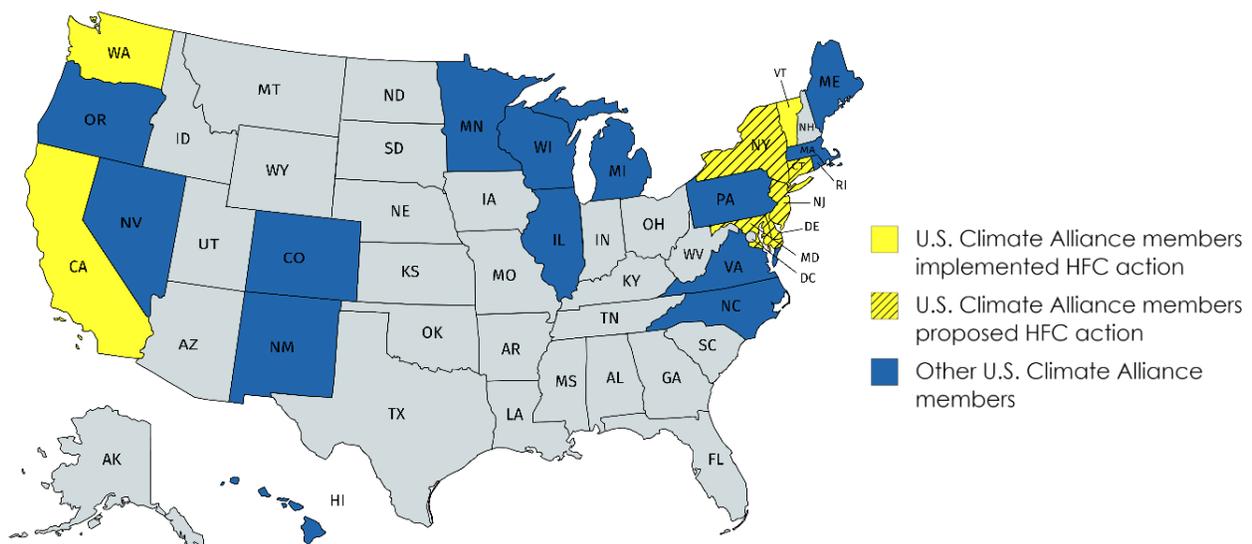
In the past year, **California**,³ **Vermont**,⁴ and **Washington**⁵ have passed legislation to adopt HFC use limits based on EPA’s SNAP rules, and **Connecticut**,⁶ **Delaware**,⁷ **Maryland**,⁸ and **New York**⁹ have committed to regulatory action to do the same. In June, legislation adopting EPA SNAP rules was introduced in **New Jersey**.¹⁰ Environmentalists and industry representatives have consistently supported these measures during public hearings. State SNAP programs resemble the federal program in their overall pace and coverage, while also including some adjustments agreed upon among stakeholders.

California and Vermont also have passed legislative mandates to **reduce overall HFC emissions by 40%** from 2013 levels by 2030. To meet its target, California is preparing additional HFC phase-down regulations (see box on following page).

Combined with future action within the U.S. Climate Alliance, these state efforts will help keep the U.S. on track to phase down HFCs in accordance with the Kigali Amendment schedule.

U.S. EPA SNAP Regulations

The U.S. Environmental Protection Agency (EPA) issued Significant New Alternatives Policy (SNAP) regulations in 2015 and 2016 to prohibit certain end uses of HFCs where safer alternatives are available (SNAP Rules 20 and 21). The rules set deadlines for adopting HFC alternatives in commercial refrigeration, vehicle air conditioning, building chillers, foam manufacture, aerosol products, and more. In 2017, a federal court decision limited EPA’s authority over HFCs under the “Safe Alternatives” provision of the Clean Air Act. The SNAP rules would have avoided about 68 million metric tons of CO₂-equivalent HFC emissions in 2025. States are now filling the gap left by the court decision.



Spotlight on: California

In 2018, the California Air Resources Board (CARB) became the first to adopt state HFC regulations based on EPA SNAP Rules 20 and 21. Later the same year, California incorporated additional aspects of the SNAP rules into state law by enacting the **California Cooling Act**, which took effect in January 2019. The California Cooling Act also created an incentive program to facilitate early adoption of HFC alternatives. The program received \$1 million in 2019 incentives funding through the state Greenhouse Gas Reduction Fund.

CARB has started **two rulemakings** to place broad limits on the use of HFCs in building air conditioning and to further limit HFC use in commercial refrigeration. The proposals include the following measures, which CARB aims to finalize in the first quarter of 2020:

- New residential and commercial air conditioners in buildings (excl. chillers) may use only refrigerants with GWP < 750 starting in 2023.
- New commercial refrigeration systems containing more than 50 pounds of refrigerant and installed and sold starting in 2022 may use only refrigerants with GWP < 150.
- Sales, distribution, or import for use in California of refrigerants with GWP > 1500 is prohibited starting in 2022.

These regulations will contribute to California reducing HFC emissions 40% from 2013 levels by 2030, a target adopted in 2016 through **SB 1383**. The two sectors covered by the ongoing CARB rulemakings account for more than two-thirds of California's HFC emissions.

Ten years ago, CARB adopted a **Refrigerant Management Program** to reduce greenhouse gas (GHG) emissions from stationary sources through refrigerant leak detection and monitoring, leak repair, system retirement and retrofitting, reporting and recordkeeping, and proper refrigerant cylinder use, sale, and disposal. It is the only program of its kind to this day.

California alone makes up one-eighth of U.S. HFC emissions.¹¹ Many of the states considering HFC legislation or regulation are looking to California as a model.

Industry support

U.S. industry has also expressed continued support for the Kigali Amendment and HFC phase-down. Last May, 32 top executives of HVAC and refrigeration companies sent a letter to President Trump urging him to ratify the Kigali Amendment.¹² 23 other companies that use HFCs in their production processes or supply chains sent a similar letter this February.¹³ **The Alliance for Responsible Atmospheric Policy**, an industry coalition representing over 95% of U.S. HFC production and a majority of HFC user industries, advocates for the ratification of Kigali. **The U.S. Chamber of Commerce, the National Association of Manufacturers, and Business Roundtable also support the Kigali amendment**, putting the weight of economic and political powerhouses behind the phase-down of HFCs.¹⁴

U.S. companies have begun taking action to facilitate the phase-down of HFCs. For example, in 2016, the Association of Home Appliance Manufacturers, a trade association representing 146 companies, announced a goal to phase out the use of HFCs in household refrigerators and freezers after 2024, later advanced informally to between 2021 and 2023 during state legislative processes.¹⁵ **In September 2018, nine chemical and equipment manufacturing companies, the Air-Conditioning, Heating, and Refrigeration Institute (AHRI), and the Natural Resources Defense Council (NRDC) sent a letter to the**

California Air Resources Board supporting a transition away from high-GWP HFCs in stationary air conditioning in 2023.

The auto industry has made substantial progress in replacing HFCs in motor vehicle air conditioning systems. Beginning in 2012, auto manufacturers began converting from HFC-134a (GWP of 1,430) to HFO-1234yf (GWP of 4). EPA reported in 2018 that **ten manufacturers making almost 40% of the U.S. auto fleet now use this low-GWP substitute**.¹⁶ In 2019, industry has reported that 60-75% of new vehicles use HFO-1234yf.

U.S. federal landscape

The Trump Administration has expressed support for the goals and approach of the Kigali Amendment and is considering advancing it to the U.S. Senate for advice and consent to treaty ratification.¹⁷ **Members of Congress from both parties have voiced their support for Kigali** – for example, last June, 13 Republican Senators sent a letter to President Trump urging him to advance ratification of the Kigali Amendment.¹⁸

Even if U.S. ratification is delayed, **new legislation could provide for a domestic phase-down on the same schedule**. A bipartisan bill to do so was introduced last year,¹⁹ and the co-sponsors have stated their intent to introduce a similar bill this year.²⁰

¹ www.usclimatealliance.org/about-initiatives

² Emissions figures calculated using the most recent year data for emissions of ODS substitutes from each state's greenhouse gas inventory and the U.S. greenhouse gas inventory. Employment figures calculated using figures from the Alliance for Responsible Atmospheric Policy, available at www.alliancepolicy.org/campaigns/kigali-resources

³ ww2.arb.ca.gov/our-work/programs/hfc-reduction-measures/california-significant-new-alternatives-policy-snap

⁴ www.r744.com/articles/9013/vermont_latest_state_to_regulate_hfcs

⁵ www.natlawreview.com/article/washington-state-passes-climate-bill-to-restrict-certain-uses-hfcs

⁶ www.ct.gov/deep/cwp/view.asp?Q=604906&A=4965

⁷ <https://news.delaware.gov/2019/06/30/delaware-to-eliminate-hfcs-to-confront-climate-change/>

⁸ news.maryland.gov/mde/2018/09/11/maryland-to-phase-out-hydrofluorocarbons/

⁹ <https://www.governor.ny.gov/news/governor-cuomo-directs-dec-phase-out-use-hydrofluorocarbons-new-york-state>

¹⁰ www.njleg.state.nj.us/2018/Bills/S4000/3919_I1.HTM

¹¹ Calculated using the most recent year data for emissions of ODS substitutes from California's greenhouse gas inventory and the U.S. greenhouse gas inventory.

¹² r744.com/articles/8324/hvacand_r_firms_urge_trump_to_refer_kigali_amendment_to_senate

¹³ www.ceres.org/sites/default/files/Letters/Company%26HigherEdStatementinSupportofRatificationoftheKigaliAmendment.pdf

¹⁴ www.alliancepolicy.org/campaigns/kigali

¹⁵ www.aham.org/AHAM/News/Latest_News/Home_Appliance_Industry_Sets_Goals_to_Eliminate_Use_of_HFC_Refrigerants.aspx

¹⁶ nepis.epa.gov/Exe/ZyPDF.cgi/P100W5C2.PDF?Dockey=P100W5C2.PDF

¹⁷ medium.com/naturalrefrigerants/u-s-to-consider-ratification-of-kigali-amendment-a26629889791

¹⁸ www.eenews.net/assets/2018/06/12/document_daily_01.pdf

¹⁹ www.kennedy.senate.gov/public/press-releases?ID=1C4A2AEF-FFCB-4A42-B4D1-0010329157FC

²⁰ www.nationaljournal.com/s/679309/trump-ally-pushes-climate-policy-opposed-by-white-house?