

State of California  
**Air Resources Board**

**BOARD ITEM SUMMARY**

**ITEM # 20-13-4:**      **Public Hearing to Consider Proposed Amendments to Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Chillers, Aerosols-Propellants, and Foam End-Uses Regulation**

**STAFF RECOMMENDATION:**

California Air Resources Board (CARB) staff recommends that the Board adopt the Proposed Amendments and direct the Executive Officer to determine if additional conforming modifications to the regulation are appropriate and if so, make them available for at least 15 days, consider written comments submitted during the public review period, and delegate to the Executive Officer the authority to take final action to adopt the regulation after addressing all appropriate conforming modifications.

**DISCUSSION:**

CARB staff is proposing amendments to the *“Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Chillers, Aerosols-Propellants, and Foam End-Uses Regulation”* (Title 17, California Code of Regulations, section 95371 et seq) (HFC Regulation). The Proposed Amendments are part of the effort by CARB to reduce emissions of hydrofluorocarbons (HFC), a class of highly potent greenhouse gases, as required by Senate Bill (SB) 1383. HFCs are short-lived climate pollutants (SLCP) that have an outsized impact on climate change in the near-term. While they remain in the atmosphere for a much shorter time than carbon dioxide, their global warming potentials (GWP) can be hundreds to thousands of times greater. Recognizing the importance of reducing HFCs, the Legislature enacted SB 1383 in 2016, which requires a 40 percent reduction in HFC emissions below 2013 levels by 2030.

HFCs are synthetic chemicals produced for use in air conditioning, refrigeration, foams, aerosols-propellants, fire suppressants and solvents. HFCs were developed to replace ozone-depleting substances that are being phased out under the Montreal Protocol. In 2018, CARB adopted the HFC Regulation to backstop key federal prohibitions from the federal Significant New Alternatives Policy (SNAP) Program that were partially vacated. The existing HFC Regulation is expected to achieve significant reductions in annual HFC emissions below business-as-usual (BAU) by 2030. However, CARB must achieve another ten million metric tons of carbon dioxide equivalent (MMTCO<sub>2e</sub>) in annual reductions to meet the SB 1383 target for 2030. The Proposed Amendments would achieve approximately 40 percent of the needed reductions remaining to meet the SB 1383 target.

The Proposed Amendments would place further restrictions on the use of HFCs in stationary refrigeration and air conditioning (AC) which are the largest emission sources of HFCs. Specifically, the Proposed Amendments establish a GWP limit of 150 on new stationary refrigeration systems containing more than 50 pounds of refrigerant in new facilities starting January 1, 2022, create a company-wide emissions reduction targets for existing retail food companies by 2030, and establish a GWP limit of 750 for new stationary air conditioning systems starting January 1, 2023. The Proposed Amendments also include a variance process and some administrative changes to enhance clarity of the existing regulation.

While some stakeholders still support the effective date for ACs, several stakeholders have requested that CARB delay the effective date from January 1, 2023, to January 1, 2025, for ACs due to the need to update codes and standards to allow for certain refrigerant types as well as the time needed to transition some refrigerant types. CARB is considering 15-Day changes extending the compliance deadline and incorporating a refrigerant recovery, recycle, and reuse (R4) program.

#### **SUMMARY AND IMPACTS:**

CARB staff analyzed both the cost and benefits of the Proposed Amendments to 2040, which reflects an average equipment lifetime of approximately 15 years. The Proposed Amendments are expected to reduce annual HFC emissions by 3.8 MMTCO<sub>2</sub>e in 2030, achieving approximately 40 percent of the additional reductions still needed under SB 1383. Cumulatively, the Proposed Amendments are expected to reduce HFC emissions by more than 72 MMTCO<sub>2</sub>e by 2040.

CARB staff used representative average costs for the low-GWP options to comply with the proposed GWP limits. CARB staff estimates an average annual direct net cost of \$227 million to comply with the Proposed Amendments and a cumulative cost of \$4.3 billion over the lifetime of the regulation. The cost is not expected to have a substantial adverse impact on California employment, businesses' status, or competitiveness.

The benefit of the HFC emissions reductions can be estimated using the Social Cost of Carbon, which provides a dollar valuation of the damages caused by one ton of carbon pollution and represents the monetary benefit today of reducing carbon emissions in the future. The total benefits in avoided harms range between \$1.7 billion to \$7.2 billion through 2040, depending on the discount rate.