

Stationary Equipment Refrigerant Management

Policy summary: This policy aims to minimize emissions of high Global Warming Potential (GWP) refrigerants used in stationary non-residential equipment through leak detection and monitoring, leak repair, system retrofit and retirement, and required service practices.

Recent developments on national and international efforts on reducing refrigerant leakage include:

- A U.S. EPA proposal published November 9, 2015 to more fully implement the prohibition under the federal Clean Air Act against knowingly venting, releasing, or disposing of ozone-depleting and substitute refrigerants. It would accomplish this by updating the existing requirements that currently apply to ozone-depleting refrigerants and then extending the requirements to non-ozone-depleting substitute refrigerants, such as hydrofluorocarbons (HFCs).⁶²
- The announcement that the international Montreal Protocol framework that successfully reduced emissions of ozone depleting substances would be extended to address refrigerants.⁶³

	Savings from full policy implementation	% of 1990 level
Economy-wide GHG emissions reduced 2020	0.1 MMTCO ₂ e	0.1%

Clean energy economy impacts: There could be additional jobs in companies that engage in refrigeration system leak detection and repair, and cost savings to affected facilities from lower use of chemicals to refill systems.

Rationale: Common refrigerants include several types of hydrofluorocarbons. Emissions of HFC have been growing steadily since their introduction in the 1990s as replacements for chlorofluorocarbons (CFC) that damage the ozone layer. Like CFC, HFC can have global warming potentials thousands of times more potent than CO₂.

Design issues: California Air Resources Board (CARB) finalized a regulation in 2010, phasing in requirements for a leak detection and repair program for refrigeration units containing a charge of 50 pounds of refrigerant or greater. As mentioned above, EPA proposed regulations in 2015 to reduce refrigerant leakage. Massachusetts is reviewing the proposed EPA regulations to see whether they adequately address this policy. If not, the Massachusetts

⁶² See <http://www2.epa.gov/snap/608-proposal>

⁶³ See <http://yosemite.epa.gov/opa/admpress.nsf/bd4379a92ceceac8525735900400c27/c489a7d31ef941ee85257ef50049921d!OpenDocument>

Department of Environmental Protection (MassDEP) will consider implementing a regulation modeled after California's.

GHG impact: This policy anticipates a reduction of 0.1 MMTCO₂e in 2020.

Implementation issues: A potential issue with the EPA regulations is that reporting requirements may not be adequate to allow emission reductions in Massachusetts to be documented. If Massachusetts relies on EPA's program instead of implementing its own regulation, data sharing with EPA will be critical to ensure reductions are realized.

Costs: Based on information published by EPA, the policy is not expected to be a financial burden on facilities, especially when savings resulting from the reduced need to purchase refrigerants are considered.

Legal authority: MassDEP has authority to promulgate a regulation under M.G.L. c. 111, sections 142A and 142B, and M.G.L. c. 21N to create an enforceable refrigerants control program to prevent air pollution.

Uncertainty: Technical risks associated with leak detection and repair are expected to be relatively small. The practices promoted by the policy are already established. Implementation risks relate to the number and diversity of facilities that may be affected by the policy, which could complicate compliance assistance, verification, and enforcement. The effectiveness of the policy depends on facility owners actually implementing the practices called for in the policy, which may in turn depend on ensuring that technicians are trained and aware of the requirement. Though coordinated national and international actions to address refrigerant emissions are desirable to achieve the greatest reductions, it is possible that the majority of such reductions will not take effect until after 2020.

Policy web page: <http://www.mass.gov/eea/agencies/massdep/climate-energy/climate/ghg/stationary-equipment-refrigerants.html>