

Technical Support Document  
for  
Rules regarding the phase-down of the use of hydrofluorocarbons  
Proposed Rule Filing

**Introduction**

In 2019, the Governor signed into law Act 65 – An act related to the regulation of hydrofluorocarbons (HFCs). The Act directs the Agency of Natural Resources to adopt rules to establish a schedule of phase-down of the use of HFCs, and allows the Agency to modify deadlines for the phase-down established in Act 65 if the modification will:

- (1) reduce the overall risk to human health or the environment; and
- (2) reflect the earliest date that a substitute is currently or potentially available.

Act 65 directs the Agency to implement rules that achieve a forty percent reduction in use of HFCs by 2030 from 2013 levels. This Technical Support Document (TSD) is meant to supplement the draft text of the proposed rule filing and the Administrative Procedure Act rulemaking forms to provide detail and analysis of the above rulemaking requirements.

**Modified Phase-down deadlines**

This rule is extending the phase-down deadline for HFCs in the New Vending Machine, Polystyrene Extruded Boardstock and Billet (XPS), Rigid polyurethane (PU) high-pressure two-component spray foam, and Rigid PU low-pressure two-component spray foam end use categories, from January 1, 2021 to January 1, 2022.

For the New Vending Machine category the substitute chosen by the manufacturers (R290), which has been selected to also meet Energy Star requirements, would currently prohibited vending machines from being placed in areas of ingress or egress of a building. Vending machine manufacturers are working with regulating bodies to figure out a solution to this issue. Other alternatives are potentially available but were not chosen due to energy efficiency reasons. If the phase-down deadline for this end use is not extended vending machines sold in Vermont would be old models which have already been manufactured and so would not be subject to this rule. Those older models of vending machine are much less energy efficient than the current models being produced and so would have a larger environmental impact than the models being produced now, and would likely be in service for a significant period of time, depending upon the lifetime of the machine.

There are concerns that the three foam insulation categories (Polystyrene Extruded Boardstock and Billet (XPS), Rigid polyurethane (PU) high-pressure two-component spray foam, and Rigid PU low-pressure two-component spray foam) will not have viable alternatives available to meet the January 1, 2021 prohibition deadline. Industry groups have stated that issues with formulation adjustments, lab/code accreditation testing facilities, and the supply chains have all been exacerbated by the ongoing COVID-19 pandemic. If an extension is not granted for these three foam products the number of construction foam products available in Vermont will apparently be greatly reduced. This lack of supply will lead to higher prices for building insulation materials, which will act as a disincentive for building

weatherization efforts. Weatherization projects increase the thermal efficiency of a building and so enable the building to be heated using less energy. In Vermont, this energy for heating is generally from the combustion of fossil fuels or biomass, both of which produce carbon dioxide and other co-pollutants which have negative impacts on the climate as well as on human health. By increasing the cost of weatherization materials and disincentivizing these weatherization projects, reductions in heating demand for these buildings will not occur to the same degree and the potential emissions reductions associated with these non-completed projects will not be realized.

#### **Forty percent reduction goal**

Based on an HFC emissions modeling tool developed by California, implementation of a rule adopting SNAP regulations in Vermont will not achieve a 40% reduction in HFC use levels from 2013 by 2030. This is in part due to the fact that emissions of HFCs are growing rapidly and without this rule emissions in 2030 are projected to be approximately 35% above 2013 emissions levels. In order for Vermont to achieve further reductions in the use of HFCs, additional analysis and measures would be required that are not currently within the scope of the authority granted to ANR under Act 65. It is also important to maintain consistency and compatibility with other states implementing similar rules or laws for the phase out of HFCs. This consistency will provide certainty and sends a market signal to manufacturers that will likely lead to emissions reductions outside of the states with HFC reduction programs in place.