



Maryland
Department of
the Environment

Prohibition of Hydrofluorocarbons in Certain End-Uses



Megan Ulrich, Joshua Shodeinde and Tad Aburn, MDE
AQCAC Meeting, September 16, 2019



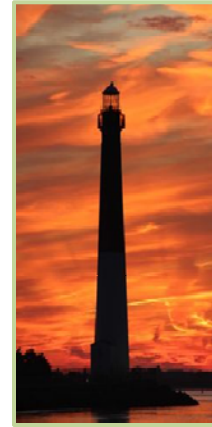
Today's Briefing

- One of two major climate change regulations we will be taking to AQCAC on December 16, 2020 for approval
- Today - Just a short preview
- Stakeholder Meeting on September 23rd. AQCAC members are invited
- This is supposed to be a fifteen minute preview ... the topic is interesting and important so MDE will work with AQCAC Chair to manage discussion



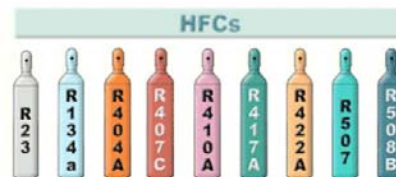
Overview

- Background
 - Why regulate hydrofluorocarbons (HFCs)?
 - Greenhouse Gas Reduction Act
 - United States Climate Alliance (USCA)
 - Federal Program
 - Legal Challenges
- Proposed Regulation
- Next Steps
- Questions



Why Regulate HFCs?

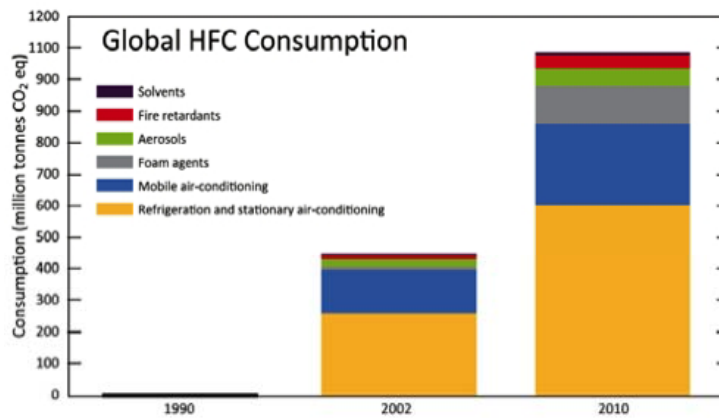
- HFCs are a part of a group of potent greenhouse gases (GHGs) known as short-lived climate pollutants (SLCP)
- High Global Warming Potential (GWP)
- Clear need to minimize HFC emissions now ... to meet goals of leadership states and the international community to limit global warming
- HFCs emissions could offset many of the benefits of large-scale CO₂ reduction programs





Why Regulate HFCs (continued)

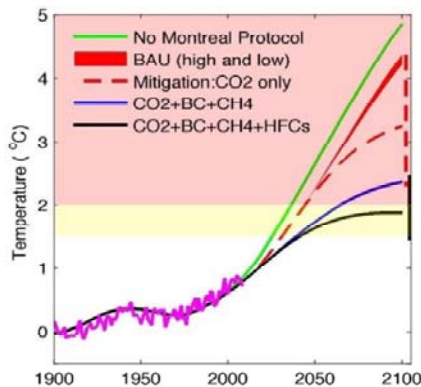
- HFCs are the fastest growing source of GHGs



Source: <https://eia-global.org/campaigns/Climate/what-are-hydrofluorocarbons>



Why Regulate HFCs (continued)



- The adjacent figure shows temperature change under various GHG mitigation scenarios analyzed by researchers
- Mitigating CO₂ alone won't prevent the worst climate impacts
- HFC mitigation is required to get closer to the goals of leadership states and the international community

<https://www.atmos-chem-phys.net/13/6083/2013/acp-13-6083-2013.pdf>



Co-Benefits of HFCs Mitigation

- Low GWP HFC replacements will generate significant co-benefits
 - Energy efficiency benefits
 - Improved energy efficiency drives additional CO₂ reductions
 - Benefits to electricity supply especially during peak demand periods
 - Benefits to Maryland's efforts to continue to make progress on air pollution ... ground-level ozone, sulfur dioxide and fine particulate



The Greenhouse Gas Emission Reduction Acts (GGRA) of 2009 and 2016

- Originated in 2007 by Executive Order which resulted in a 2008 "Climate Action Plan"
- This led to the "Greenhouse Gas Emission Reduction Act" of 2009
 - 25 % Greenhouse Gas (GHG) Emission reduction by 2020
- 2009 law reauthorized in 2016 ... new goals added
 - 40 % GHG reduction by 2030
- The acts also require that the State's GHG reduction plans support a healthy economy and create new jobs





US Climate Alliance

- Maryland joined the U.S. Climate Alliance (USCA) on January 10, 2018
 - Originally, an alliance of 12 states ... now 25 states
- Basic mission: to meet the goals of the Paris Climate Agreement, aiming to reduce GHG emissions by at least 26-28 percent below 2005 levels by 2025
- Maryland is working with other states on short-lived climate pollutant reductions, such as HFCs and methane



www.usclimatealliance.org/



**DELAYS WITH THE
FEDERAL PROGRAM**



Federal Program: EPA SNAP

- EPA established the Significant New Alternative Policy (SNAP) to identify and evaluate substitutes for ozone-depleting substances
- EPA's 2015 SNAP Rule 20 & 2016 SNAP Rule 21 prohibited high-GWP HFCs by end-use
- The EPA rules were challenged



Mexichem Fluor vs. EPA

- In August 2017, the DC Circuit Court of Appeals vacated parts of the 2015 SNAP Rule (SNAP Rule 20) "to the extent it requires manufacturers to replace HFCs with a substitute substance"
 - DC Court of Appeals also vacated parts of the 2016 Rule (SNAP Rule 21)
- Rule remanded to EPA- a new EPA rulemaking has not yet occurred
- In 2018, EPA issued guidance stating that it will not be enforcing SNAP Rule 20 or 21 until it adopts new rules reflecting the Court's decision. This has led to uncertainty of compliance of both the 2015 and 2016 SNAP rules on the federal level.





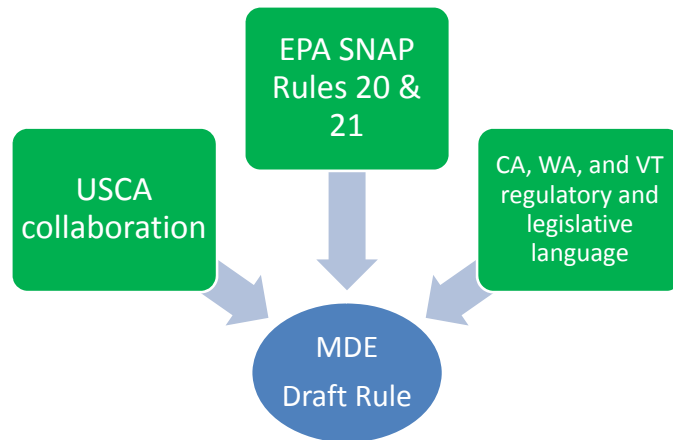
States Initiate Action

- In the face of stalled federal regulations and to provide regulatory certainty, Maryland and other USCA states are working to move forward with state programs to prohibit the use of certain HFCs
- State programs will require affected sources to transition to widely available alternatives that are less harmful to the environment
- USCA and state efforts are strongly supported by much of the private sector involved in this issue and the environmental community
- Three states already have legislation or regulation adopting the HFC prohibitions in SNAP rules 20 & 21: CA, WA, and VT.
 - Other states moving forward include: DE, CT, and NY





How Did MDE Build the Regulation



The Draft Regulation Basic Requirement

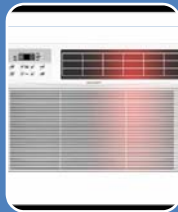
- Rule will prohibit the use of certain HFCs for certain end uses
- Includes many definitions
 - Lists prohibited HFCs
 - Defines end uses
- The rule lists which HFCs are prohibited in specific end-uses ... and the effective date of prohibition
- Copy of draft regulation to be used at the September 23rd stakeholder meeting included in your package
 - Regulation for 12/16 AQCAC meeting likely to be updated



Draft Regulations *End Use Categories*



Aerosol Propellants



Air Conditioner

- Centrifugal Chillers (new)
- Positive Displacement Chillers (new)

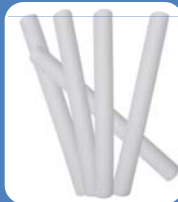


Draft Regulations *End Use Categories - Continued*



Refrigeration

- Cold storage warehouses
- Household refrigerators and freezers
- Supermarket systems (retrofitted and new)
- Remote condensing units
- Refrigerated food processing and dispensing equipment
- Vending Machines



Foams

- Rigid Polyurethane and Polyisocyanurate Laminated Boardstock
- Flexible Polyurethane
- Integral Skin Polyurethane
- Polystyrene Extruded Sheet
- Polyolefin
- Phenolic Insulation Board and Bunstock
- Polystyrene Extruded Boardstock and Billet (XPS)



Timeline

- Stakeholder Meeting:
September 23, 2019
- Presented to AQCAC for
Approval: December 16,
2019
- Public hearing:
June 2020
- Rule Adoption and Effective:
Fall 2020

