The American Innovation and Manufacturing (AIM) Act

Sector Workshops

MARCH 11-12, 2021
Agenda

- Welcome & Introductions
- The AIM Act and First Actions
- HFC Application
- Open Dialogue
- Closing
Hydrofluorocarbons (HFCs)

- HFCs are used as replacements for ozone-depleting substances (ODS) in sectors including refrigeration, air conditioning, foam blowing, and fire suppression.
- HFCs are potent greenhouse gases with global warming potentials (GWPs) hundreds to thousands of times higher than carbon dioxide (CO₂).
- HFC use is growing rapidly worldwide.
A global HFC phasedown is expected to avoid up to 0.5°C of global warming by 2100.
The AIM Act establishes three main types of regulatory programs:

- Phase down HFC production and consumption
- Facilitate transition to next-generation technologies
- Management of HFCs

Certain provisions are similar to provisions in CAA Title VI, but there are clear differences, including:

- Includes a limited state pre-emption clause
- Provides targeted small business technology grants
HFC Phasedown Schedule

- Important 2021 statutory deadlines:
  - 270 days after enactment, EPA to issue phasedown regulations = **September 23**
  - Less than **200** days to go
  - By **October 1st**, allocate allowances for 2022

<table>
<thead>
<tr>
<th>Date</th>
<th>Caps: Consumption &amp; Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>2022–2023</td>
<td>90 percent</td>
</tr>
<tr>
<td>2024–2028</td>
<td>60 percent</td>
</tr>
<tr>
<td>2029–2033</td>
<td>30 percent</td>
</tr>
<tr>
<td>2034–2035</td>
<td>20 percent</td>
</tr>
<tr>
<td>2036 &amp; after</td>
<td>15 percent</td>
</tr>
</tbody>
</table>
HFC Phasedown Allocation Rulemaking

- Rule will stand up allocation program
- Provide the methodology for distributing allowances
- Account for application-specific allowances listed in the Act:
  - metered dose inhalers
  - defense sprays
  - structural composite preformed polyurethane foam for marine & trailer use
  - etching of semiconductor material or wafers & cleaning of chemical vapor deposition chambers
  - mission-critical military needs
  - onboard aerospace fire suppression
Next Generation Technologies

- EPA authorized to restrict use of HFCs on a sector or subsector basis to support transition to next-generation technologies
- EPA must consider using negotiated rulemakings
  - If not using negotiated rulemaking, EPA must publish *explanation*
- Specified timelines:
  - grant or deny petitions within 180 days
  - promulgate final rules within 2 years from granting a petition
Management of HFCs

- EPA will establish a program for maximizing reclamation and minimizing releases of HFCs and their substitutes from equipment, and ensuring safety of technicians and consumers
  - Establish regulations to control, where appropriate, practices, processes, or activities regarding the servicing, repair, disposal, or installation of equipment
  - Consider using authority to increase opportunities for reclaiming HFC refrigerants
- EPA may coordinate with any other similar regulations (e.g., CAA 608 regulations)
- Subject to appropriations, EPA shall establish a grant program for small businesses for purchase of recycling, recovery, or reclamation equipment for HFC substitutes (e.g., HFO-1234yf), including for servicing motor vehicle air conditioners
First Actions: Notice of Data Availability (NODA)

- NODA published 2/11/21; comment period closed 2/25/21
- Provided information on HFC production and consumption between 2011 and 2013 as reported to the GHGRP
- Identified potential data gaps and requested comments on areas of additional information
- Provided preliminary information on HFCs for some of the specific applications allowed under the AIM Act for allocations
- Data will inform the establishment of U.S. HFC baselines for production and consumption
First Actions: HFC Phasedown Allocation Rulemaking

- NPRM allocation rule
- Fast-tracked, planned signature late April/early May
  - Planning for a 45-day comment period
- Rule will stand up allocation program, list entities receiving allowances, and set up methodology for distributing allowances
  - Amounts of application-specific allocations to be issued
- EPA will issue a benefits-costs analysis and other technical support documents
Semiconductors
Semiconductor manufacture uses three HFCs—HFC-23, HFC-32, and HFC-41—primarily in etching processes, but also minimally in CVD chamber cleaning processes.

In 2019, EPA estimates 43 metric tons (MT) were used in semiconductor fabrication facilities in the U.S.

In 2025, EPA estimates that, absent transition to alternatives, 68 MT of HFCs will be used in semiconductor manufacturing.

Reclaimed HFCs could offset need for newly produced/imported HFCs.

Source: GHGRP (2020), WFF (2020)
Reminders

- Unless called to speak, please keep your speaker on **MUTE**
  - If joining by phone, unmute by entering *6

- During Q&A session:
  - Raise your **HAND** to ask to speak
  - Open **CHAT** to submit questions or ask to speak
  - Please indicate your **NAME** and **AFFILIATION**
  - Please be mindful of time to allow others opportunity to ask questions or speak

- If your internet connection is unstable, turning off your **VIDEO** might help
Questions for Discussion

- Is the estimate of consumption of HFCs by semiconductor manufacturing reasonable? What has been the trend in the past (e.g., last five years)?
- What trends do you foresee in the future use of HFCs or alternatives for semiconductor manufacturing (e.g., next five years)?
  - What growth rate do you anticipate for semiconductor manufacturing generally? For use of HFCs in semiconductor manufacturing? Do you expect different growth rates for different HFCs?
- What alternatives and/or alternative technologies do you see in the future for semiconductor manufacturing? What challenges remain in finding and implementing alternatives to HFCs in this application?
- Have you investigated the possibility of using recovered/reclaimed HFCs?
- What relevant data is EPA seeking for this application?
- How can information be submitted to EPA?
Closing