The American Innovation and Manufacturing (AIM) Act

HFC Reclamation Workshop

APRIL 26, 2021

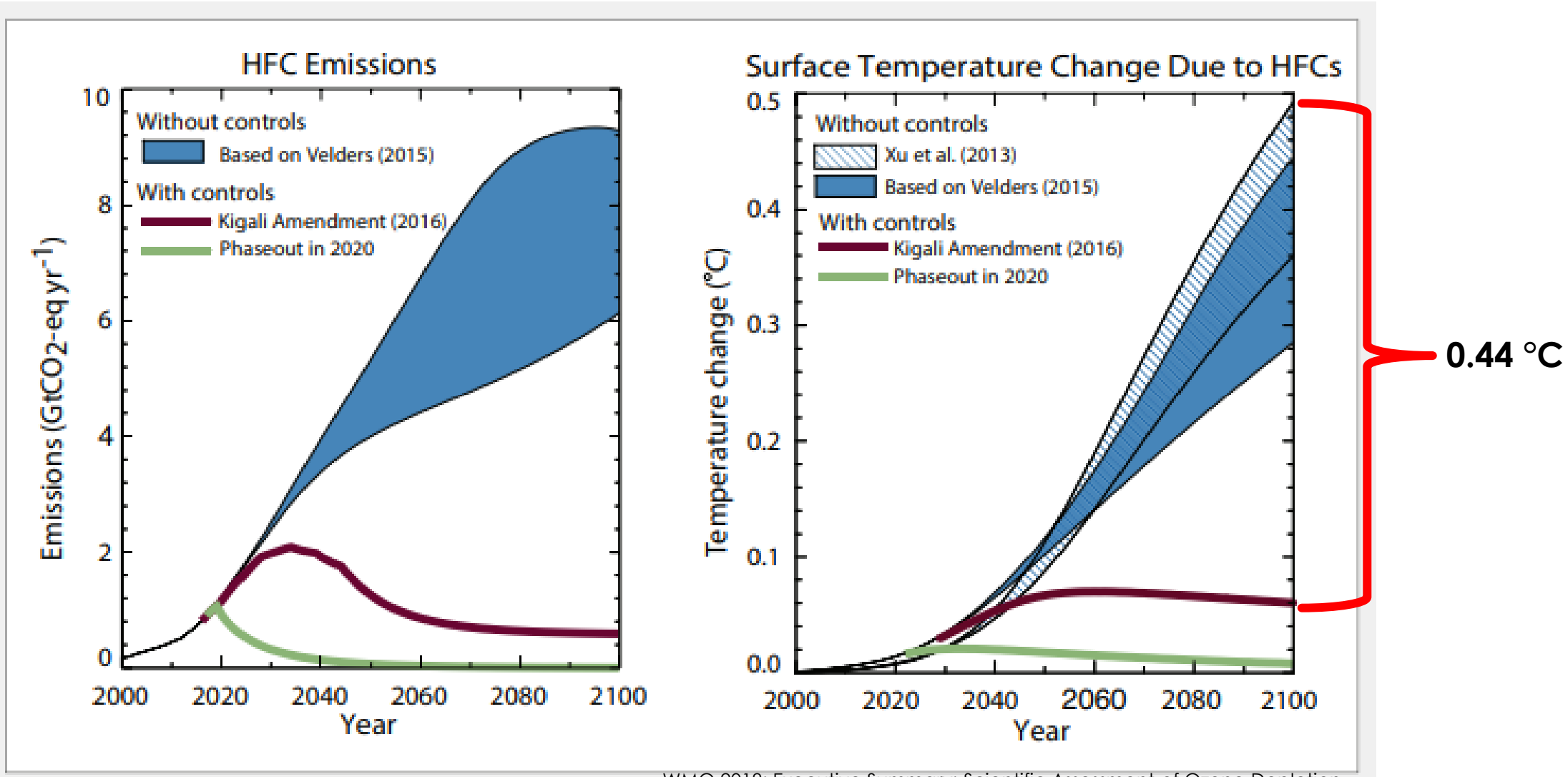
Agenda

- Welcome & Introductions
- The AIM Act and First Actions
- HFC Reclamation
- 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 (CO_2)
- HFC use is growing rapidly worldwide

A global HFC phasedown is expected to avoid up to 0.5°C of global warming by 2100



WMO 2018: Executive Summary: Scientific Assessment of Ozone Depletion

The American Innovation & Manufacturing (AIM) Act

- 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

18 Individual HFCs Listed in the AIM Act

Chemical Name	Common Name	Exchange Value
CHF_2CHF_2	HFC–134	1100
CH_2FCF_3	HFC–134a	1430
CH_2FCHF_2	HFC–143	353
$CHF_2CH_2CF_3$	HFC–245fa	1030
$CF_3CH_2CF_2CH_3$	HFC–365mfc	794
CF_3CHFCF_3	HFC–227ea	3220
$CH_2FCF_2CF_3$	HFC–236cb	1340
CHF_2CHFCF_3	HFC–236ea	1370
$CF_3CH_2CF_3$	HFC–236fa	9810
$CH_2FCF_2CHF_2$	HFC–245ca	693
$CF_3CHFCHFCF_2CF_3$	HFC–43–10mee	1640
CH_2F_2	HFC–32	675
CHF_2CF_3	HFC–125	3500
CH_3CF_3	HFC–143a	4470
CH_3F	HFC–41	92
CH_2FCH_2F	HFC–152	53
CH_3CHF_2	HFC–152a	124
CHF_3	HFC–23	14800

HFC Phasedown Schedule

- Important 2021 statutory deadlines:
  - 270 days after enactment EPA to issue phasedown regulations = **September 23**
    - Less than **150** days to go
  - **By October 1st** allocate allowances for 2022

Date	Caps: Consumption & Production
2022–2023	90 percent
2024–2028	60 percent
2029–2033	30 percent
2034–2035	20 percent
2036 & after	15 percent

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
- As of April 13, 2021, EPA has received 5 petitions: AHRI (2), NRDC, AHAM, EIA

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 published 2/11; provided information on:
  - HFC production and consumption reported to the GHGRP and identified potential data gaps
  - Provided preliminary information on specific applications allowed under the AIM Act for allocations
- Stakeholder engagement
  - Public meeting with over 200 participants held 2/25, sector workshops 3/11-12
  - Participating in industry forums and individual meetings with industry and ENGOs
  - Meeting with other federal agencies (e.g., SBA, Commerce, DoD, State, NASA, FDA) and States (e.g., CARB, Maryland, USCA)

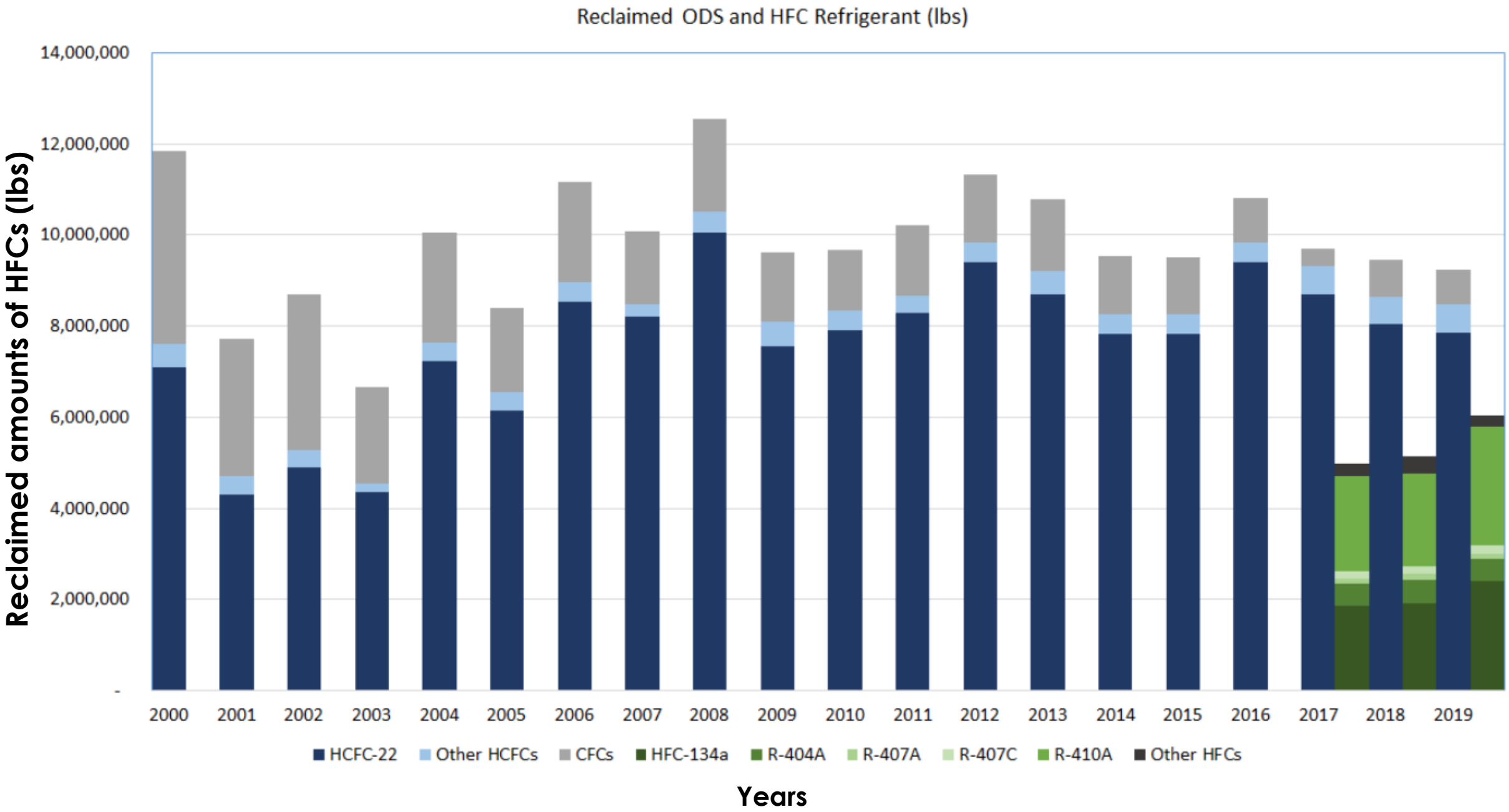
First Actions

- Notice of proposed rulemaking (NPRM) provided to OMB 3/26
- EPA requested expedited review
  - Planning for a 45-day comment period, including a public hearing
- Rule will stand up allocation program, provide criteria for which entities may receive allowances, and set up methodology for distributing allowances
- EPA will issue a regulatory impacts analysis that includes the benefits-costs and environmental justice and other technical support documents

HFC Reclamation

Reclaimer Background

- There are currently 57 reclaimers certified under CAA section 608
  - Reclaimers vary from those that reclaim small amounts of ODS and HFCs annually or are locally focused, to regional and national reclaimers
  - Over the past ten years there have been new entrants as well as some consolidation among existing reclaimers
- Since EPA started collecting data on reclaimed HFCs, HFC reclamation has grown by 20% (2017-2019)


Reclaimed ODS and HFC Refrigerant (lbs)
Reclaimed amounts of HFCs (lbs)
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
-
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
HCFC-22
Other HCFCs
CFCs
HFC-134a
R-404A
R-407A
R-407C
R-410A
Other HFCs
Years

Questions for Discussions

- What are the current practices for reclaiming HFCs? Are there any new technologies/practices under development or in use in the past few years?
- How is virgin material used by reclaimers?
  - Relative quantity needed to rebalance blends?
  - Relative quantity used for blending up to address impurities?
- How are patented refrigerants treated?
- Are there barriers to using reclaimed HFCs for first charging equipment? For aerosol filling? For foam blowing?
- To what extent are refillable cylinders used?
- What challenges and opportunities do reclaimers anticipate as HFCs are phased down?
- Are there additional data EPA should consider?

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

Closing