

U.S. Climate Change Policy and the SF₆ Voluntary Agreement: Looking Forward

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SF₆ Emissions Reduction Partnership for Electric Power Systems
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Overview



- Many Players on Climate Change
- Snapshot of Government Activity
- Current Policy Developments Impacting the Future
 - GHG Mandatory Reporting Rule
 - Endangerment Findings
 - Congressional Activity - Waxman/Markey
- SF₆ and the Electric Power Industry
- Conclusions

Many Federal Agencies Involved



- Much broader and more complex institutionally than any other environmental issue
- Diverse interests and perspectives, e.g.:
 - Energy use, security, and markets: DOE, FERC, DOD
 - Sectoral agencies: USDA, DOT, DOI
 - Revenue use: Treasury
 - Research agencies: DOE, NASA, NOAA, USGS
 - Impacts: DOI, NOAA
 - International activities: DOS, USAID, DOC, USTR
 - Interagency coordination: CEQ, OMB, OSTP, NSC, NEC, CEA

Increasing State and Local Activity



- **States and regions filling near-term vacuum**
 - Trading programs (RGGI, WCI, Midwest)
 - Reporting programs (TCR, CCAR, WCI, etc.)
 - California waiver
 - International linkages (ICAP)
- **Additional long-term interest in other aspects**
 - Land-use and transportation
 - Impacts and adaptation
 - Energy efficiency
 - Linkages to air quality, water quality and supply

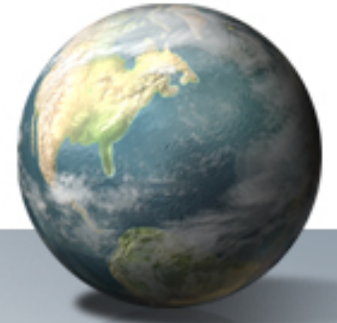
Administration's Vision



President Obama has a comprehensive plan to invest in alternative and renewable energy, address the global climate crisis and create millions of new jobs

- Ensure 10 percent of our electricity comes from renewable sources by 2012, and 25 percent by 2025.
- Implement an economy-wide cap-and-trade program to reduce greenhouse gas emissions 80 percent by 2050

Strong Engagement in EPA



- Priority for Administrator Lisa Jackson
 - Confirmation of Gina McCarthy
- Many EPA offices, programs, and regions focusing on climate
 - Mitigation
 - Impacts (water, air quality)
 - Linkages to other environmental goals (air quality, waste management, etc.)
 - Land use
 - Research and development
 - Data management
 - Regulatory review

Mandatory Reporting Rule: Status



- Required by FY08 Appropriations Act – Dec. 26, 2007
 - Proposal due Sept. 26, 2008
 - Final due June 26, 2009
- Preamble and rule draft submitted to OMB Oct. 24, 2008
- Package withdrawn Jan. 26, 2009 per regulatory review memos and re-submitted Feb. 11, 2009
- Proposal signed March 10, 2009; published in Federal Register April 10, 2009

MRR Requirements



- Rule applies to:
 - Direct emitters of greenhouse gases with emissions generally equal or greater to 25,000 metric tons/year (equivalent to 131 rail cars' worth of coal, or average annual energy use of 2,200 homes)
 - Suppliers of fossil fuels & industrial chemicals
 - Manufacturers of motor vehicles and engines
- Covers 85%-90% of total U.S. GHG emissions
- Reporting generally at the facility level
- Excludes most small businesses and governments
- Buildings: majority of commercial and residential building owners do not report
- MRR complements state programs; it is not intended to replace or preclude them

MRR: Next Steps



- 60-day public comment period (closes June 9, 2009)
 - Held 2 public hearings: Alexandria, VA & Sacramento, CA
 - General & source-specific information available on MRR website:
<http://epa.gov/climatechange/emissions/ghgrulemaking.html>
- Working toward issuing final rule in late 2009, so 2010 data can be reported in 2011

Endangerment: Background



- April 2, 2007– In *Massachusetts v. EPA*, the Supreme Court found that greenhouse gases are air pollutants covered by the Clean Air Act
- EPA was required determine whether:
 - GHG emissions from new motor vehicles cause or contribute to air pollution;
 - This air pollution may reasonably be anticipated to endanger public health or welfare; or
 - The science is too uncertain to make a reasoned decision

Endangerment Findings



- April 17, 2009 – Administrator signed a proposal with two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act
 - **Proposed Endangerment Finding:** Current and projected concentrations of the mix of six key greenhouse in the atmosphere threaten the public health and welfare
 - **Cause or Contribute Finding:** Combined emissions of CO₂, CH₄, N₂O, and HFCs from new motor vehicles and motor vehicle engines contribute to the atmospheric concentrations of these key greenhouse gases and hence to the threat of climate change

Endangerment *(cont.)*



- This action, if finalized, does not impose any requirements on industry or other entities
 - Not accompanied by a proposed standard
 - Does not impose any timetable for issuing regulations
 - Does not indicate that EPA has made any final decisions about regulating GHGs under the Clean Air Act

Endangerment: Next Steps



- Two public hearings completed
 - May 18, 2009—Arlington, VA
 - May 21—Seattle, WA
 - Nearly 300 people testified; most in favor
- 60 day public comment period from date of publication in FR (April 24-June 23)
 - Over 400 pre-publication comments received
- General Information and FAQs available on website at:
<http://epa.gov/climatechange/endangerment.html>

Congressional Activity



- Bills from both House and Senate
- Multiple committees involved
- Focus on cap and trade, but also other policy tools, like:
 - Energy efficiency
 - Renewable Energy
- Waxman-Markey currently on the table

EPA Analysis of Waxman-Markey Discussion Draft



- Discussion draft introduced March 31, 2009
- If enacted, the bill would:
 - Advance energy efficiency and reduce reliance on oil
 - Create an economy-wide cap and trade program
 - Stimulate innovation in clean coal technology
 - Accelerate use of renewable energy sources
 - Create strong demand for clean energy technologies and assist economic recovery and job growth
- At request of bill sponsors, EPA's economic analysis Waxman-Markey Discussion Draft of the bill was issued April 20st
 - Analysis focused on cap and trade provisions due to time limitations
 - Projections of emissions and energy demand based on AEO 2009 (December 2008) and do not include the stimulus law

EPA Analysis & Major Findings



- The Waxman-Markey Discussion Draft transforms the structure of energy production and consumption, moving the U.S. to a clean energy economy.
- Allowance prices are less than previous EPA analyses of Senate cap and trade bills, ranging from \$13 to \$17 per metric ton CO₂ equivalents (tCO₂e) in 2015 and from \$17 to \$22/tCO₂e in 2020 in the core scenario.
- Offsets have a strong impact on cost containment.
 - The capped sector uses all of international offsets allowed in all years of the policy (1.25 billion tCO₂e offsetting 1 billion tCO₂e of capped sector emissions annually).
 - The 1 billion tCO₂e annual limit on domestic offsets is never reached due to limited mitigation potential.

Carbon price of SF₆ relative to CO₂ – the basic math



\$/metric ton of CO ₂	\$5	\$10	\$20
CO ₂ (1 metric ton) 1 X \$	\$5	\$10	\$20
SF ₆ (one lb) 10.8 CO ₂ eq* x \$	\$54	\$108	\$216
SF ₆ cylinder = 115 lbs.	\$6,210	\$12,420	\$24,840

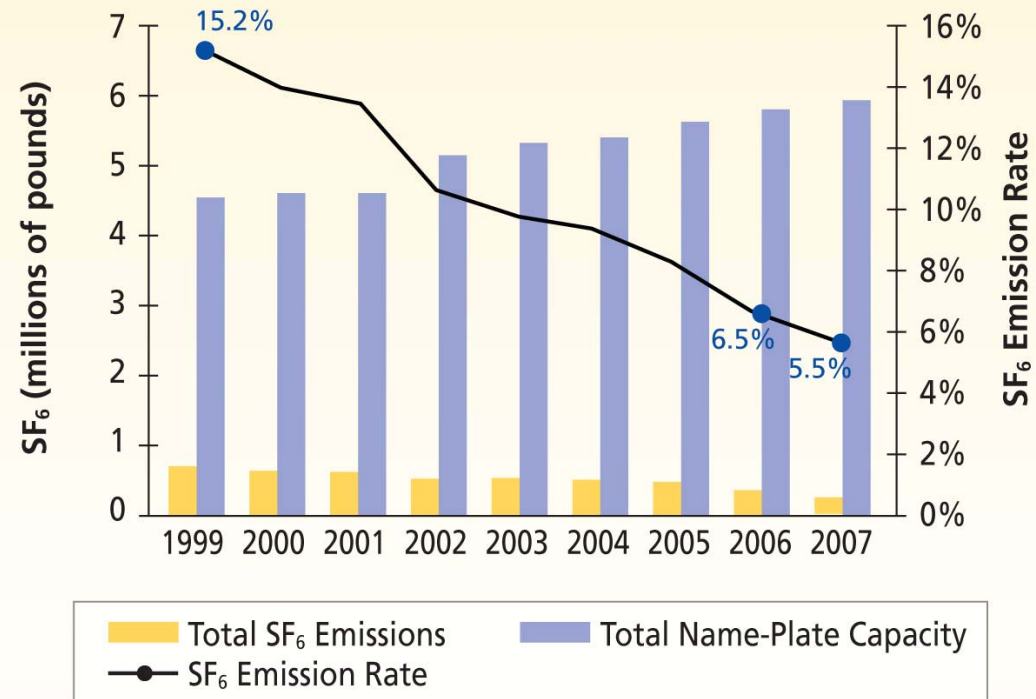
*Assuming SF6 GWP-100 of 23,900

*EPA Analysis of W-M discussion draft \$13 to \$17 per metric ton CO₂ equivalents (tCO₂e) in 2015 and from \$17 to \$22/tCO₂e in 2020



Program Accomplishments

- Partnership's annual average SF₆ emission rate:
 - In 1999: **15.2%**
 - In 2007: **5.5%**
- Total cumulative SF₆ emission reductions relative to the 1999 baseline:
1,554,279 pounds



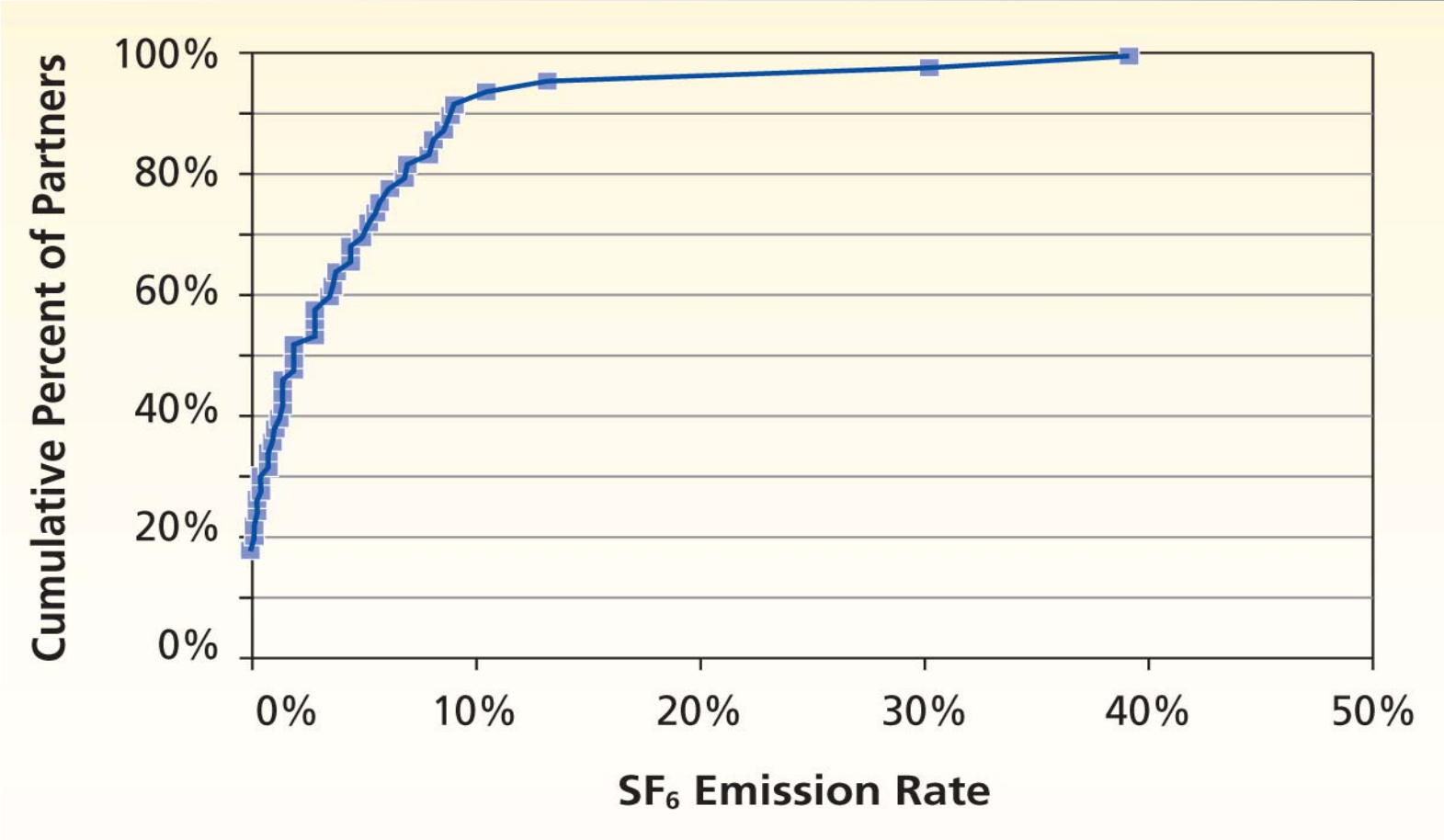


Program Accomplishments (cont.)

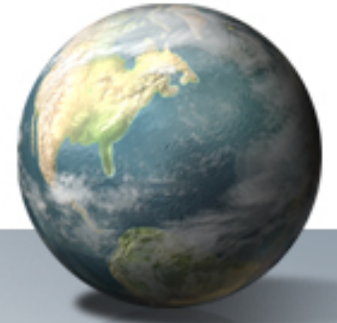
- Reductions of **1,554,278 pounds** equate to the CO₂ equivalent emission reductions from:
 - **3.1 million cars** not driven for one year
 - **39.1 million barrels of oil** not used
 - **4.4 million households** reducing electricity use by 50 percent for one year
 - Each year for 3,200 years

Source: <http://www.epa.gov/cleanenergy/energy-resources/calculator.html>

Spectrum of Partner Company Emission Rates (2007)



Opportunities for 2009 and Beyond



- **Improve inventory tracking and reporting**
 - High quality data
 - Consistent and comparable
- **Continue to explore and expand emission mitigation options**
 - Build consensus on best practices
 - Identify new options, reduce costs
 - Avoid accumulation of extremely long-lived chemicals
- **Encourage sector-wide strategies and information sharing**
 - Domestic and International (such as being done in semiconductor and aluminum sectors)
 - Raise awareness on SF₆ reduction potential

Conclusions – Moving Forward



- **Change is underway**
 - A lot of policy uncertainty, but strong focus on tackling climate change
- **SF₆ reductions are an important part of the climate protection**
 - Most potent greenhouse gas
 - Avoid irreversible impacts on climate
- **Opportunity to act now**
 - Technically feasible, cost-effective reductions available now
 - Minimize impact of any future regulatory regime
- **Full spectrum of policies and measures being considered for EPS**
 - Use Partnership to prepare for the future

Contacts and Resources



Thank you!

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www.epa.gov/climatechange