



Voluntary SF₆ Emission Reduction Partnership: Program Update

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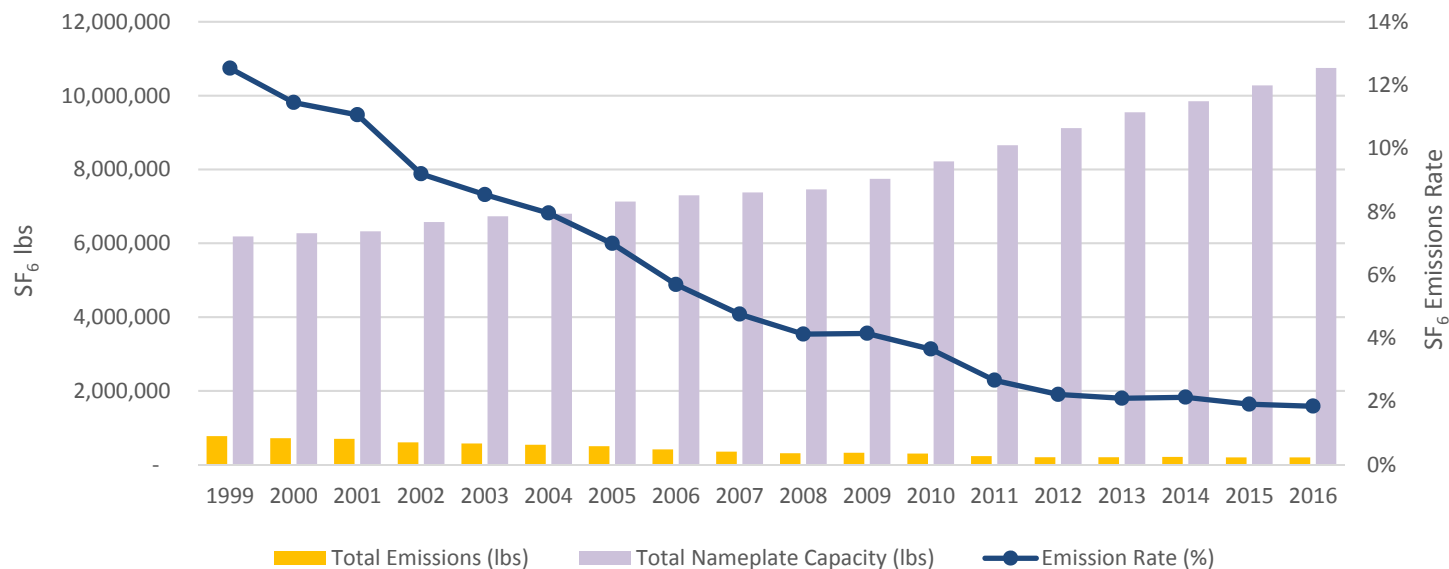
About the Partnership

- ▶ Formed in 1999 between EPA and 48 Charter Partners
- ▶ Designed to cost-effectively reduce SF₆ emissions from electrical transmission operations
- ▶ Currently **90** Partner utilities representing approximately **49%** of total U.S. grid transmission miles
- ▶ Total 2016 nameplate capacity = **10,747,355 lbs** of SF₆



Partnership Accomplishments

- ▶ Between 1999 and 2016:
 - ▶ 74% decrease in SF₆ emissions of Partners
 - ▶ 85% decrease in emissions rate (emissions/nameplate capacity)
- ▶ Cumulative reductions of 6.6M lbs. of SF₆ (holding 1999 levels constant)
 - ▶ Have saved partners \$33M to \$105M in SF₆ purchases to replace such losses (based on an SF₆ gas cost range of \$5 to \$16/lbs.)
 - ▶ Additional costs savings from reduced labor and maintenance



2017 Workshop on SF₆ Emission Reduction Strategies

- ▶ 123 attendees
- ▶ 15 presentations
- ▶ Topics covered:
 - ▶ Case studies and shared best management practices
 - ▶ Recent developments on SF₆ alternatives
 - ▶ Federal GHG reporting program (GHGRP)
 - ▶ State and international climate regulation update
- ▶ Site tour: Pacific Gas and Electric led workshop attendees through a tour of the San Mateo Substation providing a history of the substation's Gas Insulated Switchgear (GIS). The tour covered safety considerations, federal and state SF₆ compliance requirements for the substation, and close-up views of the GIS.

U.S. EPA's 2017 Workshop on SF₆ Emission Reduction Strategies

January 24–25, 2017

Embassy Suites by Hilton San Francisco Airport Waterfront
San Francisco, CA

150 Anza Boulevard, Burlingame, California, 94010

U.S. EPA's SF₆ Emission Reduction Partnership for Electric Power Systems is hosting a special technical workshop on SF₆ emission reduction strategies for electric utilities.

Proposed Activities and Partner Engagement

- ▶ Focus for 2018: Update technical information on SF₆ emission reduction options
- ▶ Formats:
 - ▶ Webinars
 - ▶ Case studies
 - ▶ Company policy documents and materials
 - ▶ Summary reports
 - ▶ Presentations
- ▶ *We welcome company engagement!*

Key Technical Areas

1. Options for reducing losses of SF₆ and emission sources
2. Overview of SF₆ accounting: approaches and tools
3. Leak detection for SF₆: equipment and company programs
4. Leak measurement
5. Handling of SF₆
6. Recycling of SF₆
7. Leak repair and equipment refurbishment
8. SF₆ reporting through GHGRP (nameplate capacity)
9. Employee education/training programs
10. Options for small companies/users of SF₆

► *Are any of these topics of particular interest to you?*

THANK YOU!

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<https://www.epa.gov/f-gas-partnership-programs/electric-power-systems-partnership>