Natural Gas STAR Program

Overview and Accomplishments

Producers Technology Transfer Workshop
Oklahoma City, OK
May 14, 2009

Outline

- Background
- Natural Gas STAR Program Overview & Highlights
- Key Program Resources and Updates
Background

Current U.S. Greenhouse Gas Emissions Estimates

U.S. Greenhouse Gas Emissions All Sources

- CO₂ 85%
- N₂O 5%
- HFCs, PFCs & SF₆ 2%

U.S. Methane Emissions by Sector

- Oil & Gas Systems 23%
- Landfills 22%
- Other 21%
- Coal Mining 10%
- Enteric Fermentation 24%
- Other 1%

Methane emissions from Oil and natural gas systems make up about 2% of total U.S. greenhouse gas emissions.

Oil and natural gas systems are the second largest man-made source of methane emissions in the U.S. (23%)

Background: U.S. Oil and Gas Methane Emissions by Sector

- 2007 U.S. methane emissions from oil and natural gas industry: 331 Bcf (2% of total U.S. greenhouse gas emissions)

![Pie chart showing oil and gas emissions by sector]


Note: Natural Gas STAR reductions from gathering and boosting operations are reflected in the production sector.

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Oil and Gas Industry Methane Emissions: U.S. & International

- U.S. contributes 11% of worldwide methane emissions from oil and natural gas systems

![Bar chart showing methane emissions by country]


U.S. Oil & Natural Gas Opportunities: Why Gas STAR?

331 Bcf of methane emissions per year amounts to:
- $2.32B worth of gas lost (at $7/Mcf)
- CO₂ emissions from the electricity use of 17.7 million homes for one year
- Annual greenhouse gas emissions from 24.5 million passenger vehicles

U.S. oil and natural gas industry has an opportunity to cost-effectively reduce methane emissions resulting in:
- Increased operational efficiency
- Increased profits
- Increased domestic natural gas supply
- Improved safety
- Improved environmental performance
- Better public relations

Methane Emission Reductions: Important Short-term Climate Benefits

Impact of a 50% reduction from a business as usual scenario in 2050, maintained to 2100

Source: Pew Center on Global Climate Change, 2003
Overview & Program Highlights

The Natural Gas STAR Program is a flexible, voluntary partnership between EPA and the oil and natural gas industry designed to cost-effectively reduce methane emissions from natural gas operations.

- Over 130 Program Partners across four sectors
  - 10 International Partners
  - 20 Endorser Associations

For a complete listing of Natural Gas STAR partner companies and industry association endorsers, visit epa.gov/gasstar/partners/index.html
Accomplishments

Through participation in the Natural Gas STAR Program, partners reduced methane emissions by 92.5 Bcf in 2007
677 Bcf in cumulative reductions since 1993

Domestic Natural Gas STAR Methane Emission Reductions as of 2007

Natural Gas STAR International

Natural Gas STAR International launched September 26, 2006 now has 10 partners
Program Resources and Tools

Natural Gas STAR Key Components

- **Guidance on new technologies and practices**
  - Technical documents on more than 80 cost-effective technologies and practices
  - Free Technology Transfer workshops
  - One-on-one technical assistance to identify and prioritize cost-effective methane emission reduction opportunities

- **Annual record of partner voluntary actions and methane savings**

![Project Demonstrations](image1)

![Workshops](image2)

![Annual Reports](image3)

![Technical Information](image4)
Natural Gas STAR “Partner Challenge”

- EPA offers one-on-one technical assistance to partners in identifying and prioritizing cost-effective methane emission reduction opportunities
- Uses customized data
- Quantifies partners’ methane emissions and identifies corresponding emission reduction opportunities
- Details economic and operational benefits of reduction technologies & practices

Comparison of Estimated Methane Emissions Before and After Project Implementation

Methane Emissions Source

http://www.epa.gov/gasstar/tools/partner-challenge.html

2009 Technology Transfer Workshops

- Production and Processing
  - Billings, MT
  - Aug 31, 2009

- Production
  - Oklahoma City, OK
  - May 14, 2009

- Oil and Gas Subcommittee Meeting
  - Lake Louise, Alberta, Canada
  - Sept 14 to 17, 2009

- Annual Implementation Workshop
  - San Antonio, TX
  - Oct 19 to 21, 2009

For more information, visit www.epa.gov/gasstar/workshops
Recent Climate Change Activities

  - EPA’s preliminary economic analysis available at epa.gov/climatechange/economics/economicanalyses.html#wax

- Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Clean Air Act signed by the EPA Administrator on April 17, 2009.
  - Additional information available at epa.gov/climatechange/endangerment.html


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www.epa.gov/gasstar
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