

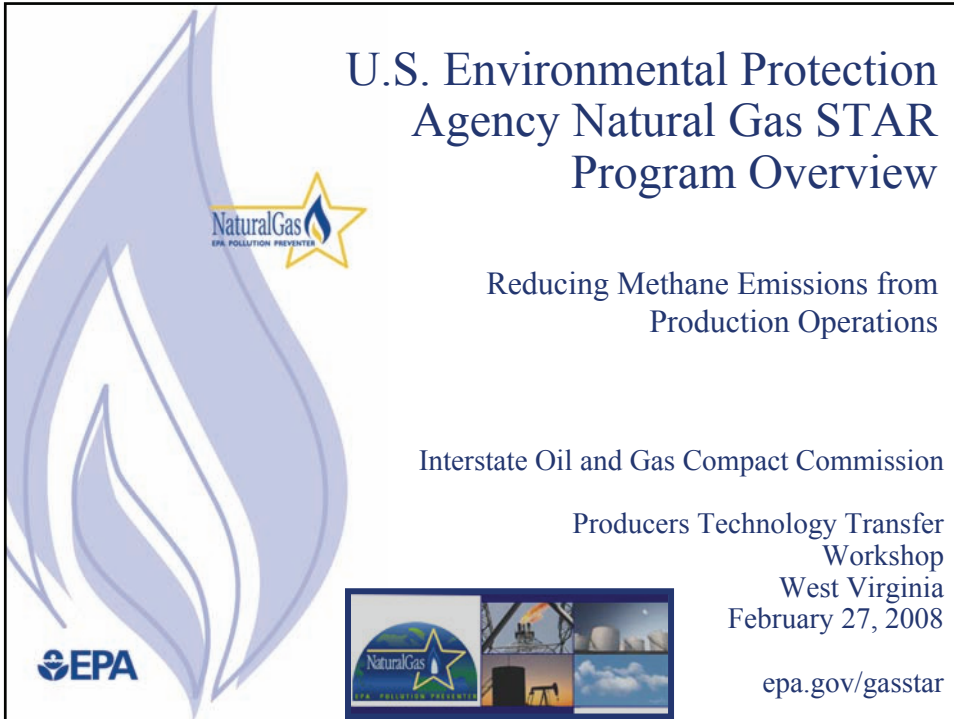
# U.S. Environmental Protection Agency Natural Gas STAR Program Overview

Reducing Methane Emissions from Production Operations

Interstate Oil and Gas Compact Commission

Producers Technology Transfer Workshop  
West Virginia  
February 27, 2008

[epa.gov/gasstar](http://epa.gov/gasstar)



## Contact Information

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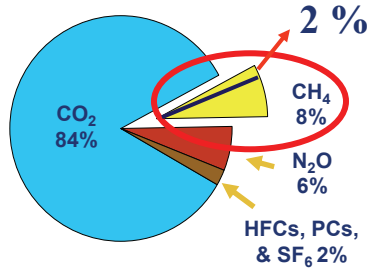
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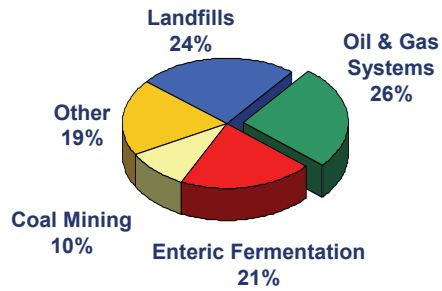
## Current U.S. Greenhouse Gas Emissions Estimates

U.S. Greenhouse Gas Emissions All Sources



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

U.S. Methane Emissions by Sector



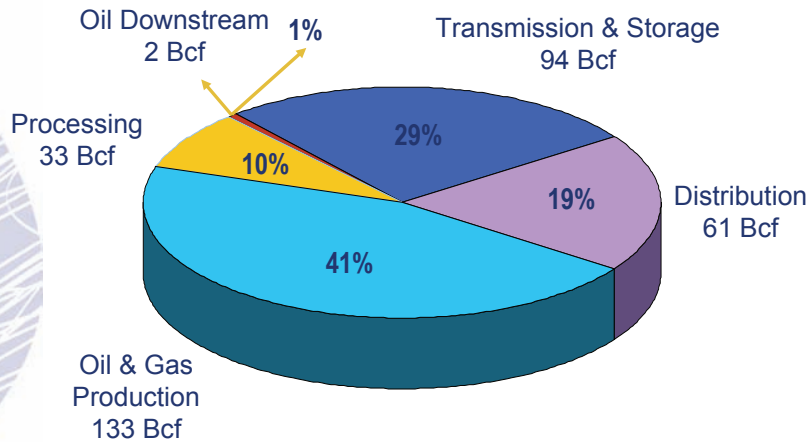
Oil and gas systems are the **largest** man-made source of methane emissions (**26%**)

Source: Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 – 2005, USEPA, April, 2007



## U.S. Oil and Gas Methane Emissions by Sector

2006 U.S. methane emissions from oil and natural gas industry: 323 Bcf (2% of total U.S. greenhouse gas emissions)

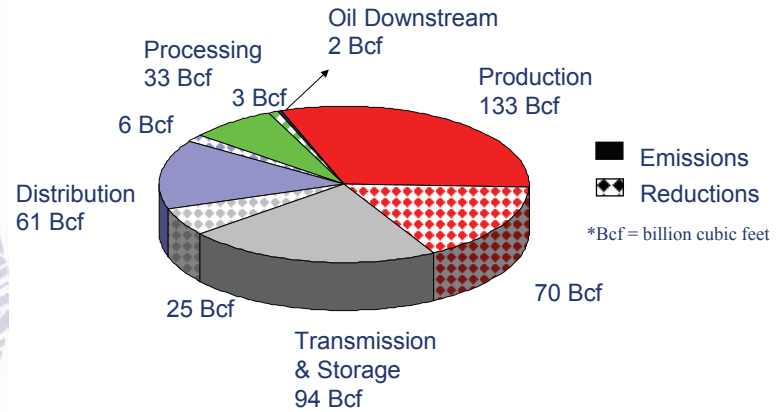


Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 – 2006, USEPA, April, 2008

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## 2006 Oil and Gas Industry Methane Emissions and Natural Gas STAR Reductions

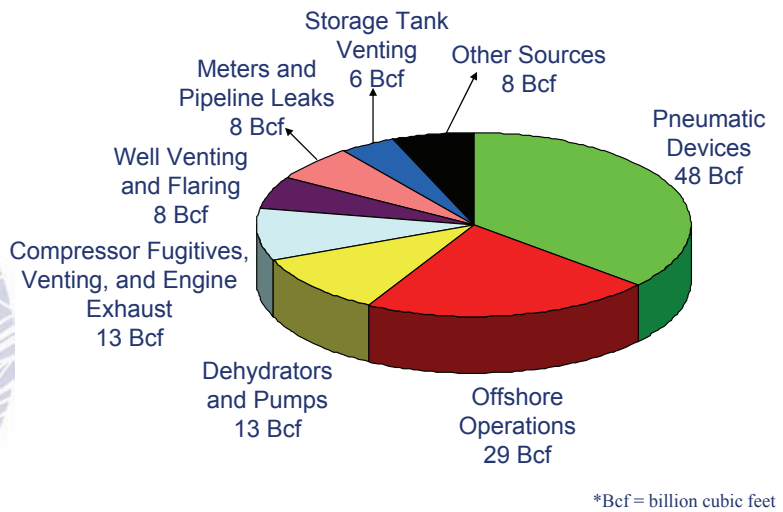


Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 – 2006, USEPA, April, 2008

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## 2006: Production Sector Methane Emissions



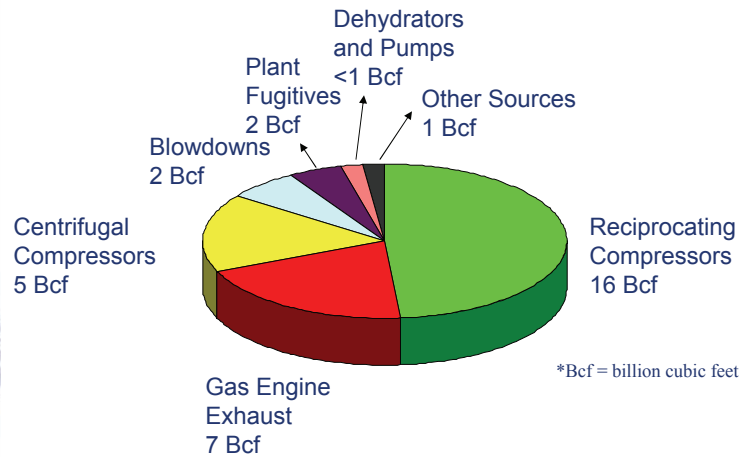
Source: Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 – 2006. April, 2008.

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

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## 2006: Processing Sector Methane Emissions



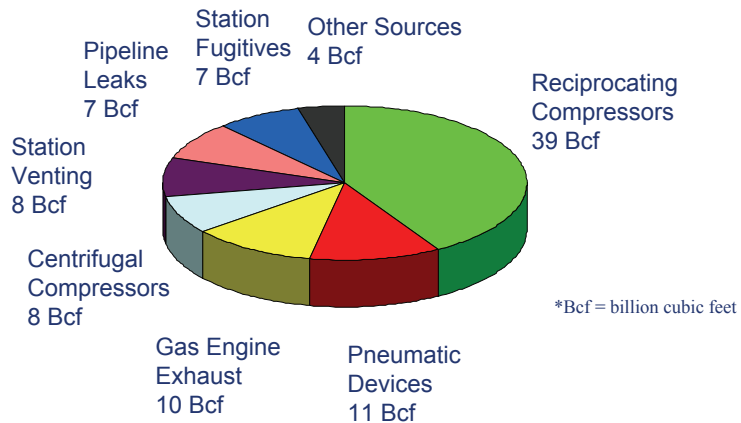
Source: Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 – 2006. April, 2008.

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

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## 2006: Transmission Sector Methane Emissions

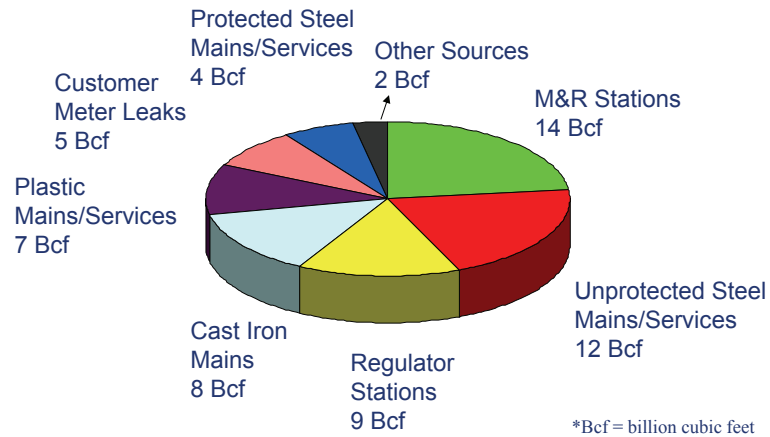


Source: Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 – 2006. April, 2008.

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## 2006: Distribution Sector Methane Emissions



Source: Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 – 2006. April, 2008.

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

### 4 323 Bcf of methane emissions per year amounts to:

- ◆ \$2.26B worth of gas lost (at \$7/Mcf)
- ◆ CO<sub>2</sub> emissions from the electricity use of 17.3 million homes for one year
- ◆ Annual greenhouse gas emissions from 23.9 million passenger vehicles

### 4 U.S. oil and gas industry has an opportunity to cost-effectively reduce methane emissions resulting in:

- ◆ Increased operational efficiency
- ◆ Increased profits
- ◆ Increased domestic gas supply
- ◆ Improved safety
- ◆ Improved environmental performance



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## Natural Gas STAR Program

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 120 Program Partners across four sectors

For a complete listing of Natural Gas STAR partner companies and industry association endorsers, visit [www.epa.gov/gasstar/partner.html](http://www.epa.gov/gasstar/partner.html)



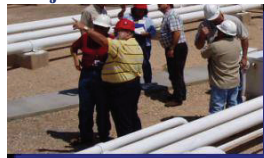
## Key Components

- Guidance on new technologies & practices
  - Technical documents on over 80 cost-effective technologies and practices
- Free Technology Transfer Workshops
  - Producers Technology Transfer Workshop  
Oklahoma City, OK  
May 14, 2009
  - Producers and Processors Technology Transfer Workshop  
Billings, MT  
August 31, 2009
- Annual Implementation Workshop  
Oct. 19 – 21, 2009  
San Antonio, TX

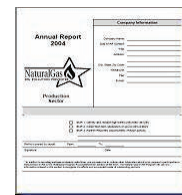


### Technical Information

### Project Demonstrations



### Workshops



### Annual Reports



## Benefits to Participation

- ♣ **Save time identifying the “right” technologies and practices to reduce methane emissions and increase revenue**
  - ♣ Technical information and economic analyses based on partner companies’ field experiences
  - ♣ One-on-one assistance to identify and prioritize cost-effective projects appropriate for a company’s operating environment
- ♣ **Build network with industry peers, draw upon their experience and success**
  - ♣ Sector specific Technology Transfer Workshops and Annual Implementation Workshops
- ♣ **Minimal resources required to administer the Program—these are provided:**
  - ♣ Standardized forms and default emission values
  - ♣ Data collection software and online reporting
  - ♣ Gas STAR technical support staff

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## Methane Reduction Opportunities for Smaller Producers

- ♣ **Compressors**
- ♣ **Vapor Recovery Units (VRUs)**
- ♣ **Natural Gas Dehydration**
- ♣ **Best Management Practices**

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# Resources and Contact Information

Learn more about Natural Gas STAR, visit:

[www.epa.gov/gasstar](http://www.epa.gov/gasstar)



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U.S. ENVIRONMENTAL PROTECTION AGENCY

**Natural Gas STAR Program**

Search:  All EPA  This Area

You are here: [EPA Home](#) > [Climate Change](#) > [Methane](#) > [Natural Gas STAR Program](#)

The Natural Gas STAR Program is a flexible, voluntary partnership that encourages oil and natural gas companies—both domestically and abroad—to adopt cost-effective technologies and practices that improve operational efficiency and reduce emissions of methane, a potent greenhouse gas and clean energy source.

**Basic Information**  
[Program Overview](#) | [Overview Oil and Natural Gas Industry](#) | [Methane Emission Sources and Opportunities](#) | [Industry Links](#)

**Accomplishments**  
[Emission Reduction Achievements](#) | [New Tools and Resources](#)

**Partners**  
[International Partners](#) | [Domestic Partners](#) | [Endorsees](#)

**Join the Program**  
[Program Form](#)

**Guidelines to Participation**  
[Key Components of Natural Gas STAR](#) | [Annual Reporting](#) | [Beyond the Basics](#)

**Highlights**

**FLARING AND VENTING REDUCTION**  
**NATURAL GAS UTILIZATION FORUM**  
 WASHINGTON, D.C. DECEMBER 2-3, 2008

- Nov 11-13 - 15th Annual Natural Gas STAR Implementation Workshop
- The Natural Gas STAR Partner Update - Fall 2008
- Other Current News

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Natural Gas STAR Home

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Documents, Tools & Resources

Newsroom

Workshops/Conferences

Natural Gas STAR International

Frequent Questions