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.
109 Program Partners:
- 56% of transmission
  - 23 Partners
- 44% of distribution
  - 45 Partners
- 62% of production
  - 29 Partners
- 62% of processing
  - 12 Partners
Production Sector Gas STAR Partners

- Anadarko Petroleum Corp.
- Amerada Hess Corp.
- Apache Corp.
- BP p.l.c.
- Burlington Resources, Inc.
- ChevronTexaco Corp.
- ConocoPhillips Company
- Devon Energy Corp.
- Dominion E&P, Inc.
- El Paso Production Company
- Energen Resources Corp.
- Evergreen Resources, Inc.
- ExxonMobil Production Company

- The Houston Exploration Company
- Hunt Oil Company
- Kerr-McGee Corp.
- Marathon Oil Company
- Murphy Oil Corp.
- Newfield Exploration Company
- Occidental Oil & Gas Corp.
- Pioneer Natural Resources Company
- Pogo Producing Company
- Quicksilver Resources, Inc.
- Shell E&P Company
- Torch Energy Services
- TotalFinaElf
- Unocal Corporation
- Williams Production RMT Company
- XTO Energy, Inc.
Natural Gas STAR Program

Endorsers

- American Gas Association (AGA)
- **American Petroleum Institute (API)**
- Domestic Petroleum Council (DPC)
- Gas Processors Association (GPA)
- Gas Technology Institute (GTI)
- Gulf Coast Environmental Affairs Group (GCEAG)
- Interstate Natural Gas Association of America (INGAA)
- Independent Producers Association of Mountain States (IPAMS)
- National Association of Regulatory Utility Commissioners (NARUC)
- Natural Gas Supply Association (NGSA)
- New York State Energy Research and Development Authority (NYSERDA)
- Southern Gas Association (SGA)
January 10, 2003

From: Mr. Red Cavaney
To: Hon. Spencer Abraham

sector membership developing GHG management plans. It also contains more targeted goals for those key cost-effective government programs, such as 100% participation in Natural Gas Star and CHP Challenge. Expanding participation in the Natural Gas Star program would further
Methane Emissions in the Oil and Gas Industry
U.S. Greenhouse Gas Emissions
All Sources

Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 - 2002
U.S. Greenhouse Gas Emissions
Methane

- Landfills: 32%
- Oil & Natural Gas Systems: 20%
- Enteric Fermentation: 19%
- Coal Mining: 9%
- Other: 20%

Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 - 2002
U.S. Oil and Gas Industry Methane Emissions (Annual)

360 Bcf (billion cubic feet)

Petroleum Systems 62 Bcf (17%)
Processing 36 Bcf (10%)
Distribution 77 Bcf (21%)
Gas Production 89 Bcf (25%)
Trans & Storage 96 Bcf (27%)

U.S. oil and natural gas industry methane emissions account for 2% of total U.S. greenhouse gas emissions.

Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 - 2002
Natural Gas STAR Partner Accomplishments

★ ~ 350 Bcf in methane emissions reductions since 1993!
Natural Gas STAR Partner Accomplishments
Years 1990 - 2002

Units in Teragrams of CO₂ equivalent (TgCO₂E)
Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 - 2002

U.S. oil & natural gas sector CH₄ emissions
Total U.S. greenhouse gas emissions
2003 Production Sector Emissions Reductions

- BMP 1: Replace high bleed pneumatic devices
- BMP 2: Install flash tank separators on glycol dehydrators
- BMP 3: Partner Reported Opportunities (PROs)
  - 80% of production sector reductions came from PROs

- Top PROs 12.0 Bcf
- Other PROs 9.8 Bcf
- BMP 1 4.1 Bcf
- BMP 2 0.5 Bcf
Natural Gas Industry Emissions

Methane emissions (solid) and reductions (italics) in each sector of the U.S. natural gas industry

Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 - 2002

<table>
<thead>
<tr>
<th>Sector</th>
<th>Emissions</th>
<th>Reductions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>89 Bcf</td>
<td>26 Bcf</td>
</tr>
<tr>
<td>Trans &amp; Storage</td>
<td>96 Bcf</td>
<td>5 Bcf</td>
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<tr>
<td>Distribution</td>
<td>77 Bcf</td>
<td>20 Bcf</td>
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<tr>
<td>Processing</td>
<td>36 Bcf</td>
<td>1 Bcf</td>
</tr>
</tbody>
</table>
Top Production Sector PROs

- Install Instrument Air System
- Install Plunger Lift in Gas Wells
- Pipe Glycol Dehydrator Emissions to VRU
- Convert Gas-driven Chemical Pumps to Instrument Air
- Eliminate Unnecessary Equipment
- Install Vapor Recovery Units on Storage Tanks
Workshops

Annual Conference
October 26 - 27, 2004 - Houston, TX
White House “Methane to Markets” Initiative

★ Five year activity to develop verifiable methane emissions reduction projects at landfills, coal mines and natural gas systems

★ Goal is to build long-term capacity within developing countries and economies in transition

★ Countries include:
  Australia, China, India, Italy, Japan, Mexico, Ukraine and UK

★ Gas STAR will lead natural gas system-related activities. The Program **welcomes** Gas STAR Partner participation
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