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.
U.S. Industry Participation

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

- BP p.l.c.
- ChevronTexaco Corporation
- ConocoPhillips Company
- Duke Energy Field Services
- Dynegy Midstream Services, L.P.
- El Paso Field Services
- Enbridge Energy Partners, L.P.
- Enogex
- ExxonMobil
- ONEOK Field Services Company
- **Pioneer Natural Resources, Gas Processing**
- Western Gas Resources, 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)
Methane Emissions in the Oil and Gas Industries
U.S. Greenhouse Gas Emissions
All Sources

CO₂ 83%

CH₄ 9%

N₂O 6%

HFCs, PCs, & SF₆ 2%

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)

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

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
Methane Emissions Reduction Successes
★★~ 350 Bcf in methane emissions reductions since 1993!

Natural Gas STAR Partner Accomplishments
Natural Gas STAR Partner Accomplishments
Years 1990 - 2002

Units in Teragrams of CO$_2$ equivalent (TgCO$_2$E)
Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 - 2002

- U.S. oil & natural gas sector CH$_4$ emissions
- Total U.S. greenhouse gas emissions
Natural Gas Industry Emissions

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

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

*Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 - 2002*
2003 Processing Sector Emissions Reductions

★ BMP 1: Replace pneumatic devices with instrument air - 87 MMcf
★ BMP 2: Install flash tank separators on glycol dehydrators - 0 MMcf
★ BMP 3: Implement DI&M programs - 0 MMcf
★ BMP 4: Partner Reported Opportunities (PROs) - 1,000 MMcf
Top Processing Sector PROs

★ Eliminate Unnecessary Equipment
★ Use Hot Taps
★ Reroute Glycol Skimmer Gas
★ Install VRUs
★ Replace Gas Pumps with Electric Pumps
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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