



# Natural Gas STAR Program

## Producers Technology Transfer Workshop

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Sponsors – American Petroleum Institute and  
ExxonMobil Production Company

September 21, 2004

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



# The 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

# U.S. Industry Participation



## ★ 109 Program Partners:

★ 56% of transmission

★ 23 Partners

★ 44% of distribution

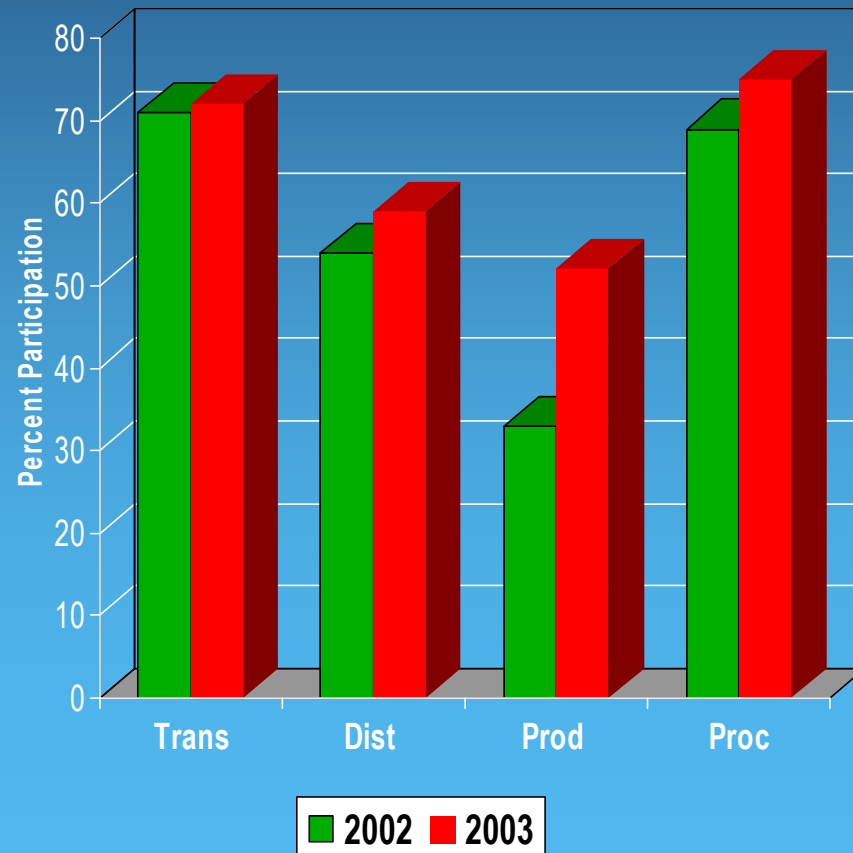
★ 45 Partners

★ 62% of production

★ 29 Partners

★ 62% of processing

★ 12 Partners



# 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)



1000 Louisiana Boulevard  
Washington, D.C. 20037-4241  
202-462-6000

January 10, 2003

The Honorable Spencer Abraham  
Secretary of Energy  
U.S. Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20545

Dear Mr. Secretary:

The Honorable Spencer Abraham  
January 10, 2003  
Page Two

Administrators aggressively work to eliminate any potential regulatory barriers to progress in these areas.

API's Climate Action Challenge program contains broad goals such as 100% of oil and gas 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 reduce methane emissions from our natural gas production - a critical low-GHG fuel necessary for the country's broader efforts to reduce its national GHG inventory.

Our Climate Smart Challenge seeks long-term possibilities, such as developing low GHG emissions energy technologies, CO2 capture and sequestration technologies, and advancing the DOE FreedomCar program, which promises to significantly increase the energy efficiency of new vehicles while reducing new vehicle GHG emissions.

Finally, our climate action plan underlying all this is the API Climate Development and Reporting Challenge. Estimating and reporting greenhouse gas emissions is extremely complex for most so that a generally robust, particularly for a highly integrated industry such as ours. Under our GHG Estimation and Reporting Challenge, we are aggressively developing a comprehensive GHG estimation protocol that can be used worldwide to produce standardized and comparable estimates of emissions from oil and gas industry operations - wherever they occur. This protocol is critical for us, since there is currently no reliable way to create our industry energy efficiency goal or other climate change actions to the President's 15 percent GHG intensity reduction goal. Over the next year, we will be developing the tools for measuring our progress toward our industry energy efficiency goal and how it relates to the President's GHG intensity goal. Additionally, as the protocol is adopted and as the data is carefully quality controlled to ensure accuracy and comparability, API will begin aggregating and reporting greenhouse gas emissions from our members' operations.

The attached document provides additional details about the API Climate Challenge Program. API and its members look forward to working with the Department of Energy and the rest of the administration on this complex and evolving issue of climate change and in addressing barriers that inhibit progress towards these goals.

Sincerely,

Eric Cavaney  
President and CEO



January 10, 2003

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

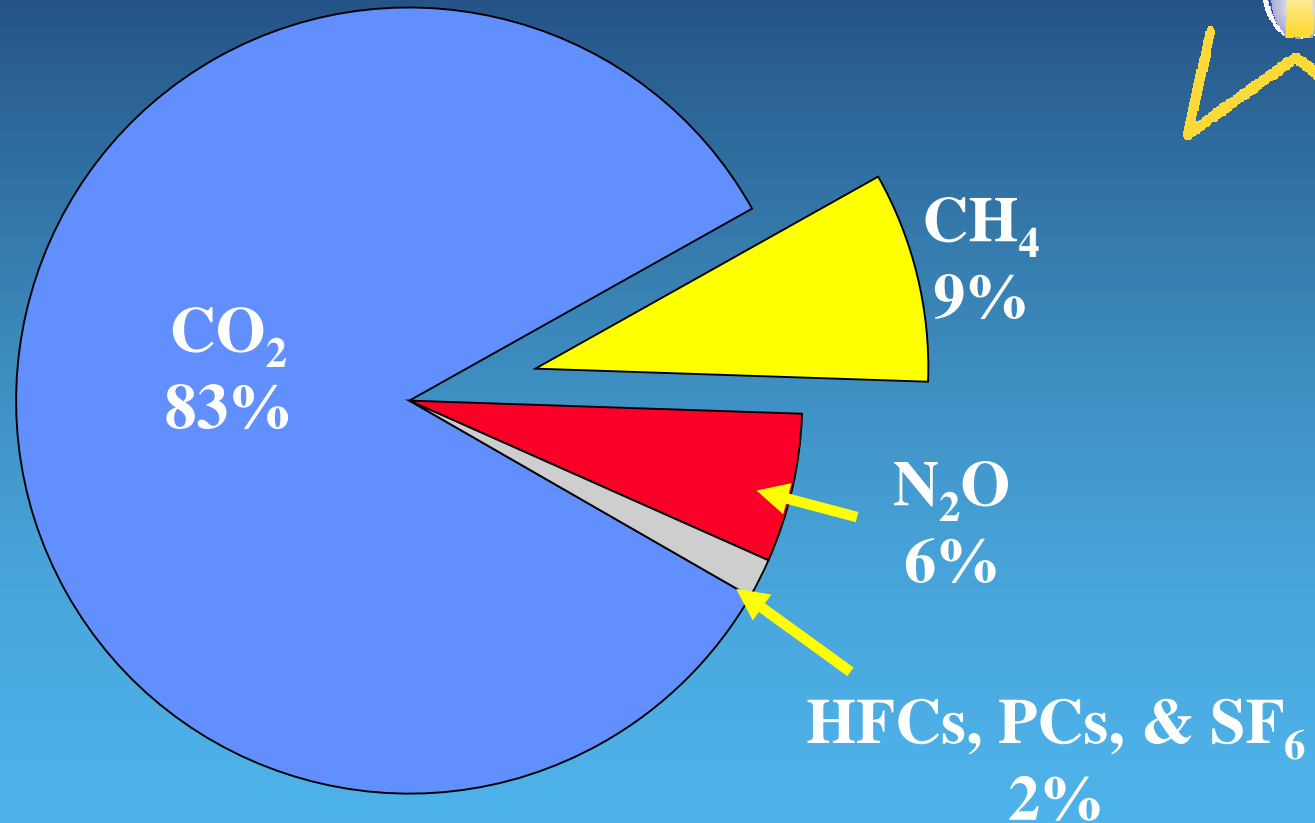
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**Methane  
Emissions in the  
Oil and Gas  
Industry**



# U.S. Greenhouse Gas Emissions

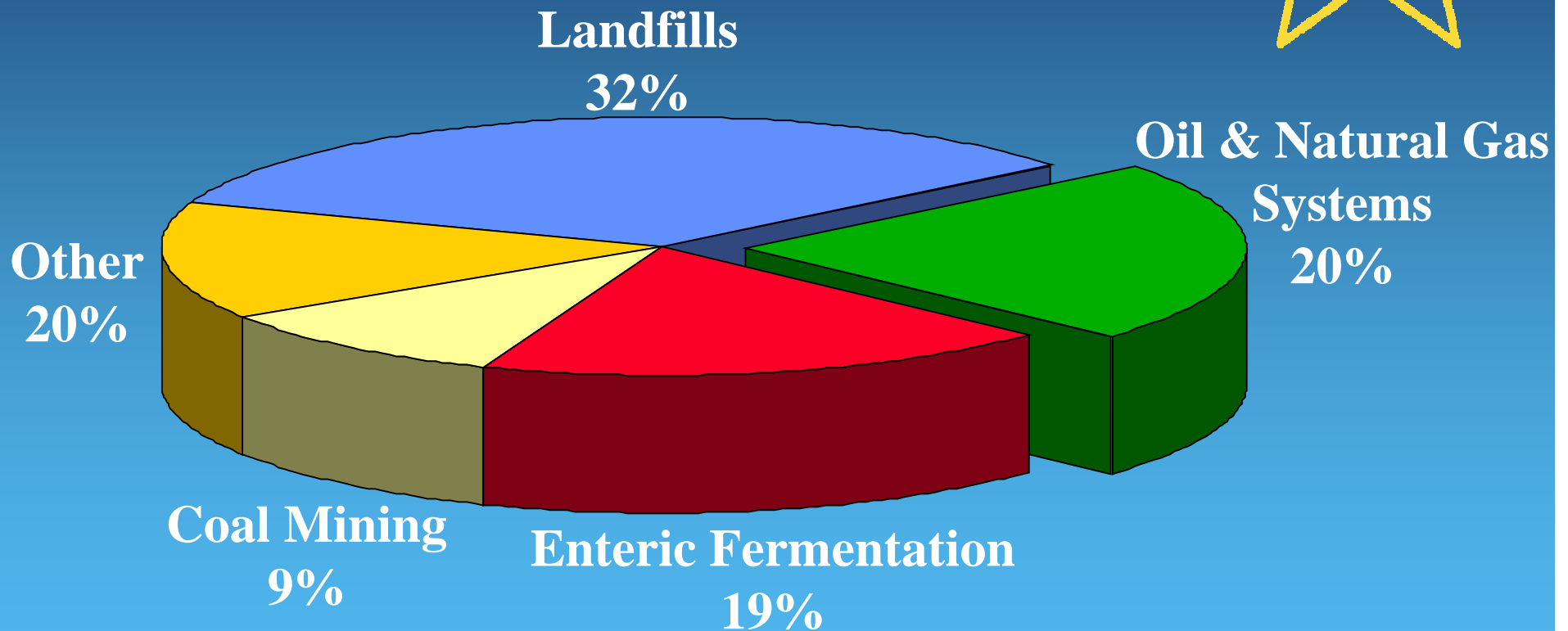
## All Sources



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



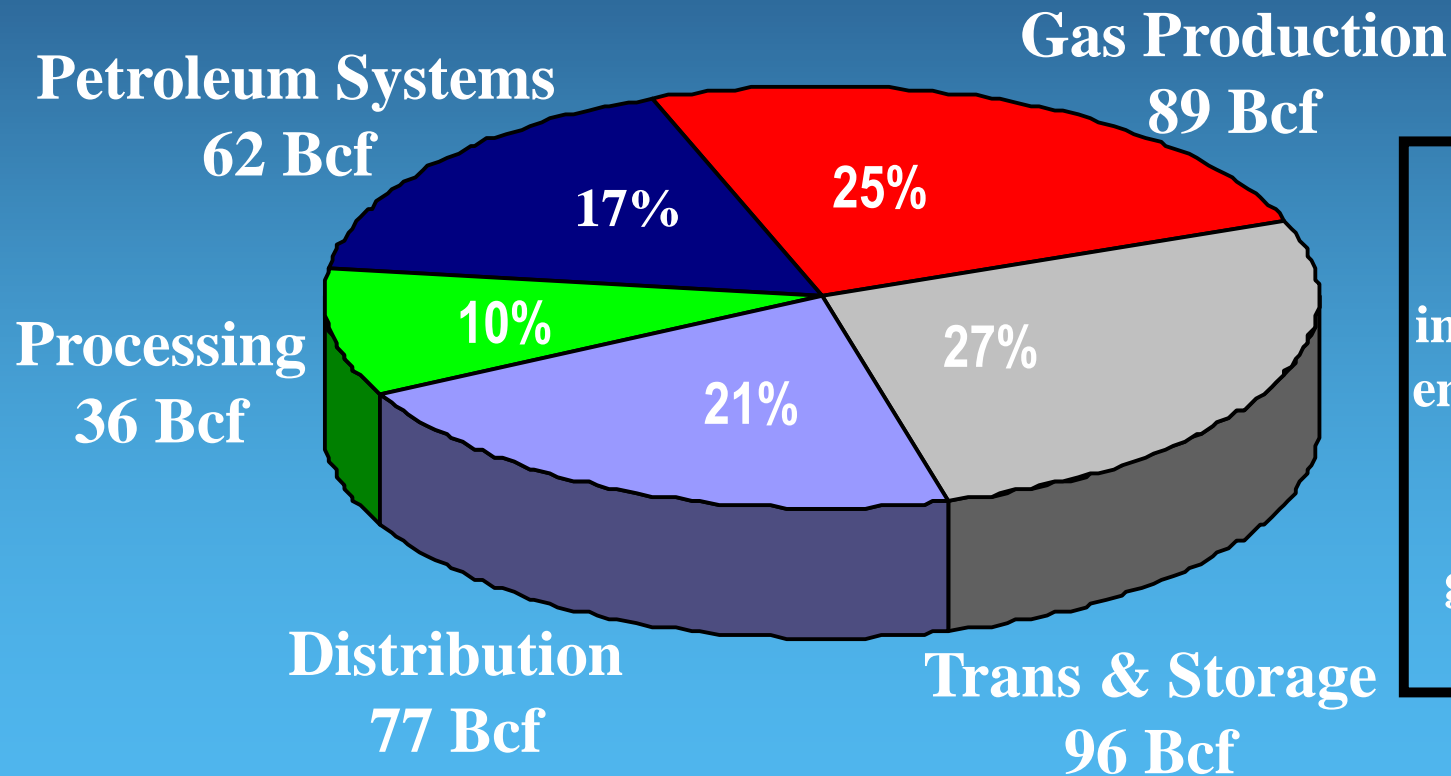
# U.S. Greenhouse Gas Emissions Methane



*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)



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

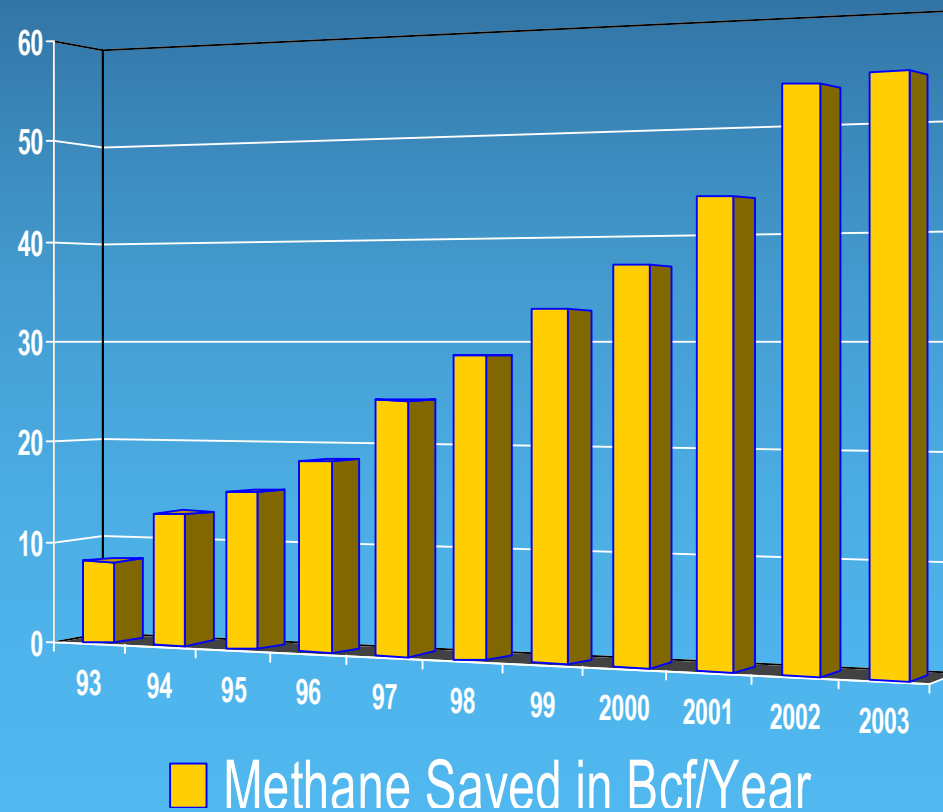
**Methane  
Emissions  
Reduction  
Successes**



# Natural Gas STAR Partner Accomplishments

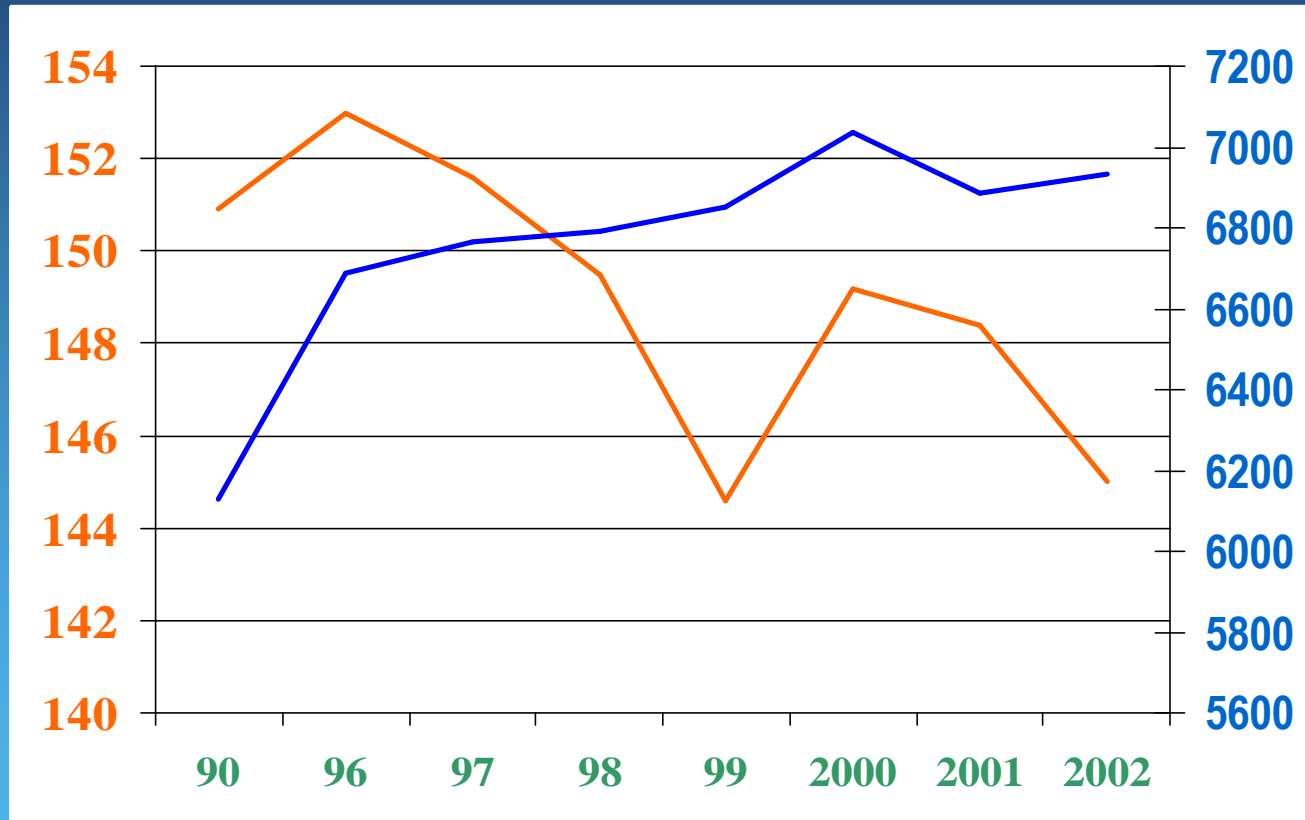


★ ~ 350 Bcf in methane emissions reductions since 1993!



# Natural Gas STAR Partner Accomplishments

Years 1990 - 2002



U.S oil & natural gas sector CH<sub>4</sub> emissions

Total U.S. greenhouse gas emissions

Units in Teragrams of CO<sub>2</sub> equivalent (TgCO<sub>2</sub>E)

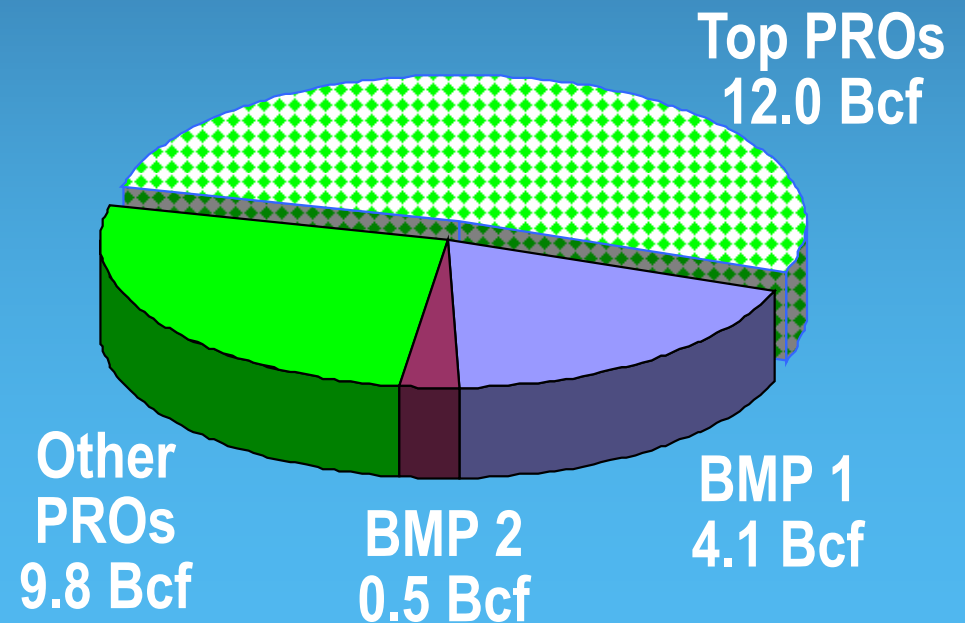
*Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 - 2002*

# 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)

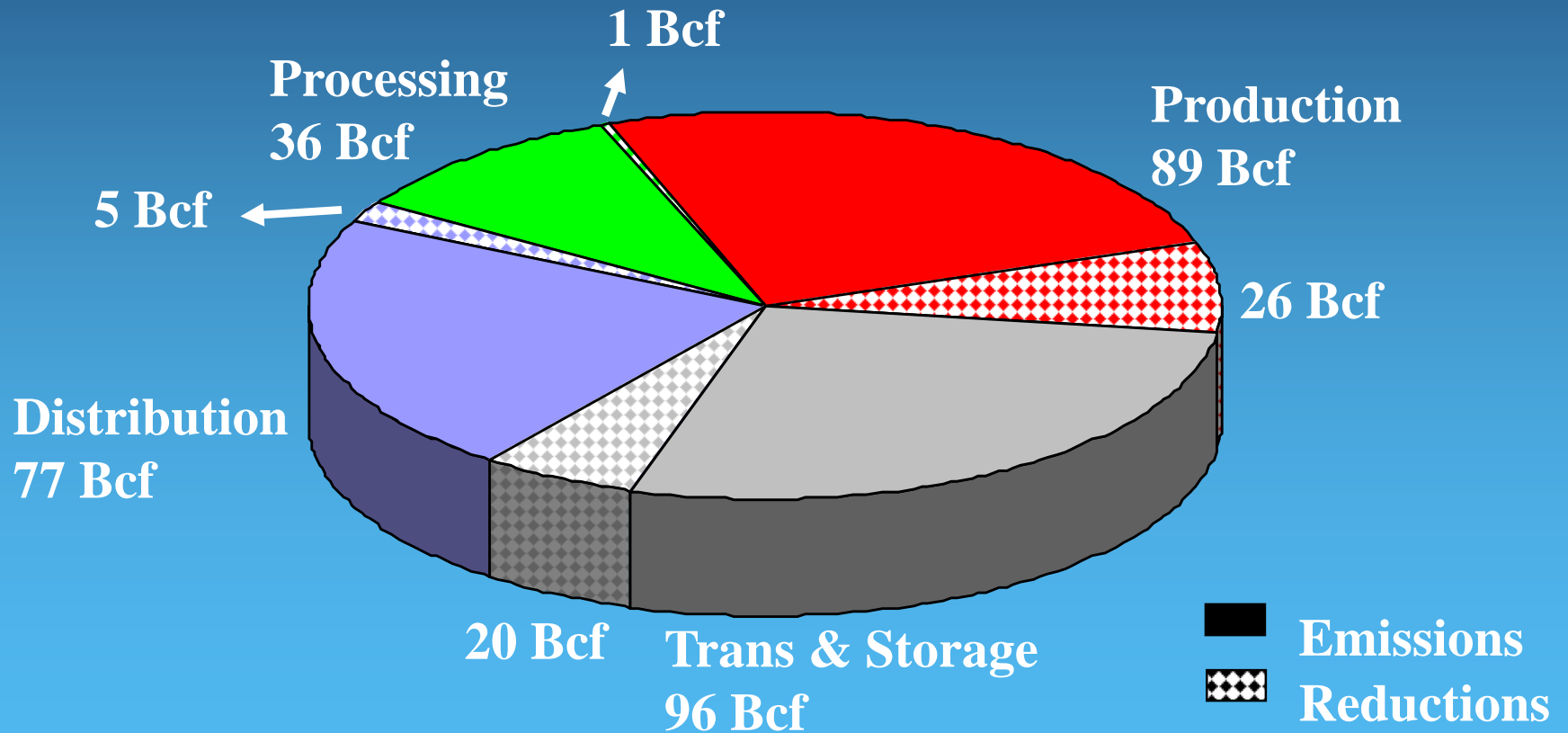
- 80% of production sector reductions came from PROs



# Natural Gas Industry Emissions



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



# 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

# Contact Information

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

