



Natural Gas STAR Program

Transmission Technology Transfer Workshop

Sponsors - Duke Energy Gas Transmission and
Interstate Natural Gas Association of
America (INGAA)

September 22, 2004

epa.gov/gasstar



The Natural Gas STAR Program



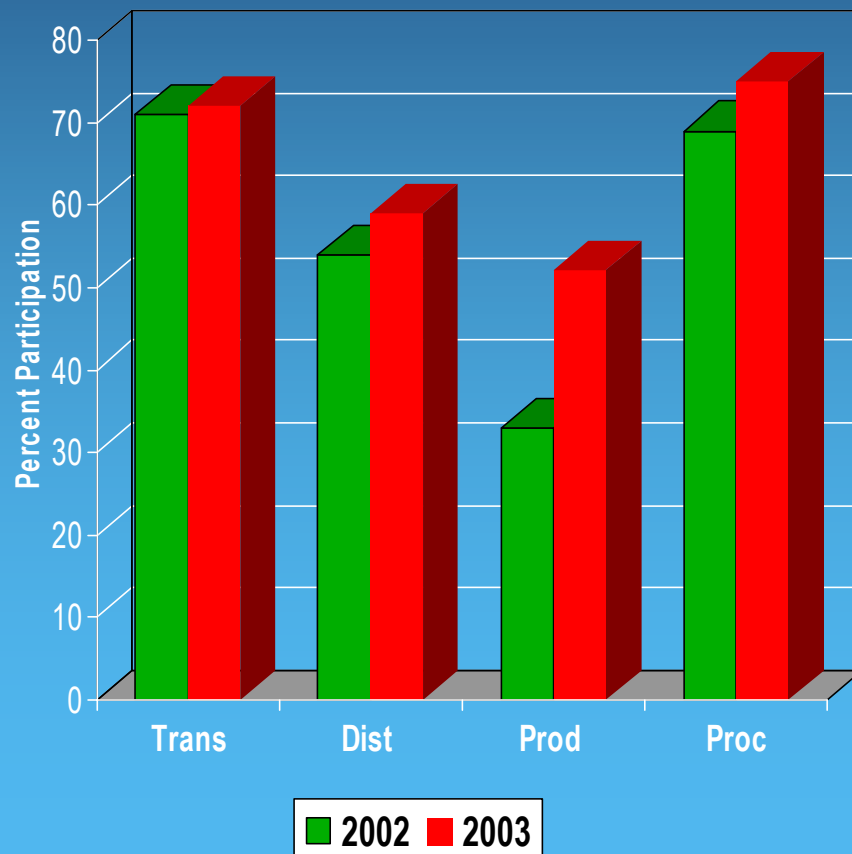
The Natural Gas STAR Program is a *flexible, voluntary partnership* between EPA and the oil and natural gas industry designed to *cost-effectively* reduce methane emissions from natural gas operations

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



Natural Gas STAR Program Endorsers



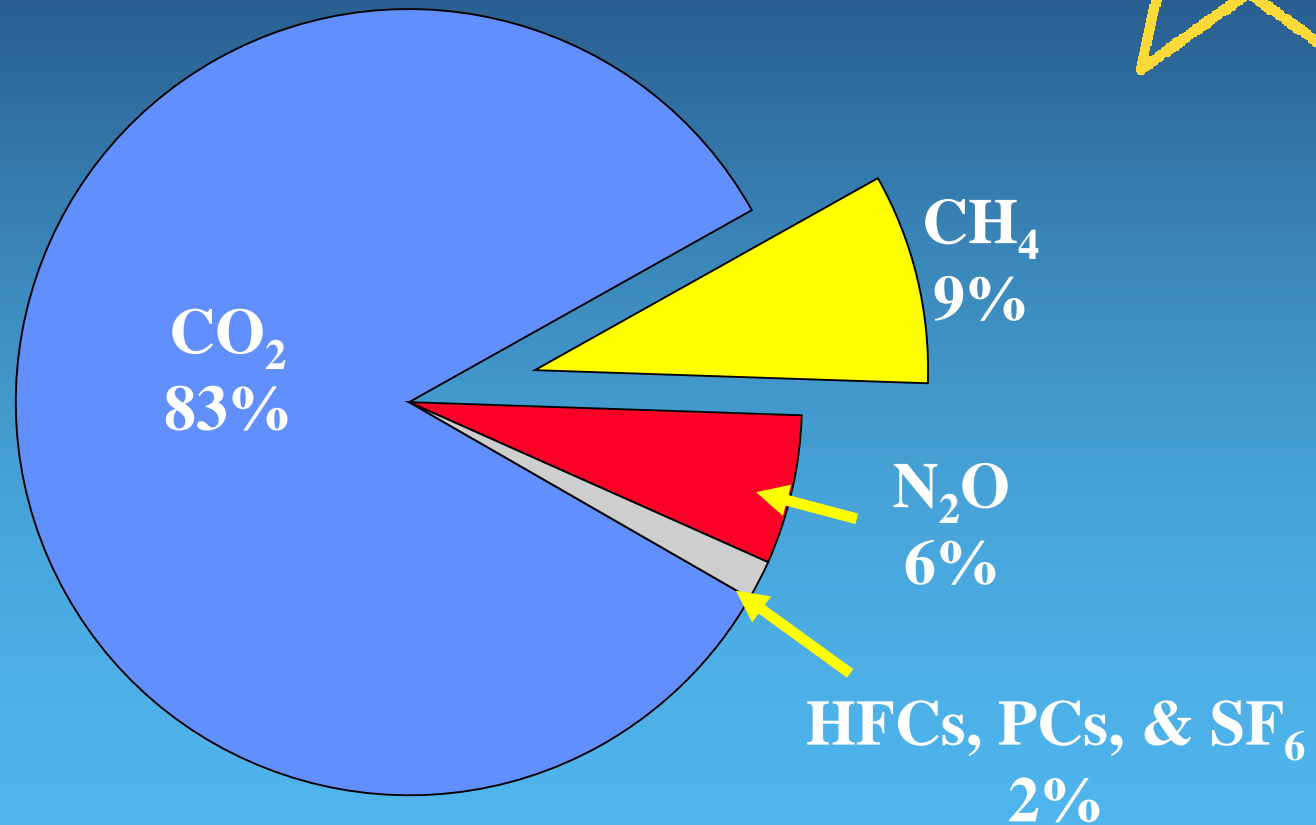
- ★ American Gas Association (AGA)
- ★ American Petroleum Institute (API)
- ★ Domestic Petroleum Council (DPC)
- ★ Gas Processors Association (GPA)
- ★ Gas Technology Institute (GTI)
- ★ Gulf Coast Environmental Affairs Group (GCEAG)
- ★ **Interstate Natural Gas Association of America (INGAA)**
- ★ Independent 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
Industry**

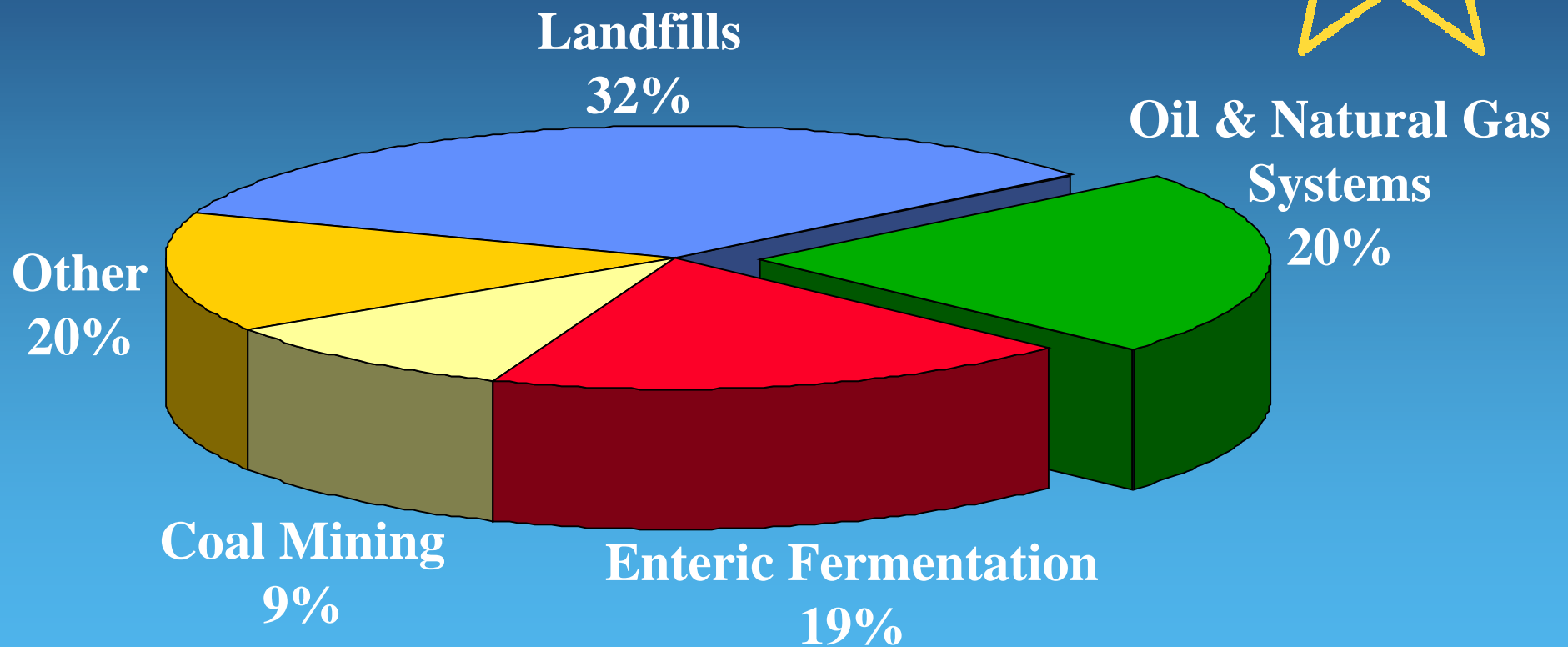


U.S. Greenhouse Gas Emissions

All Sources

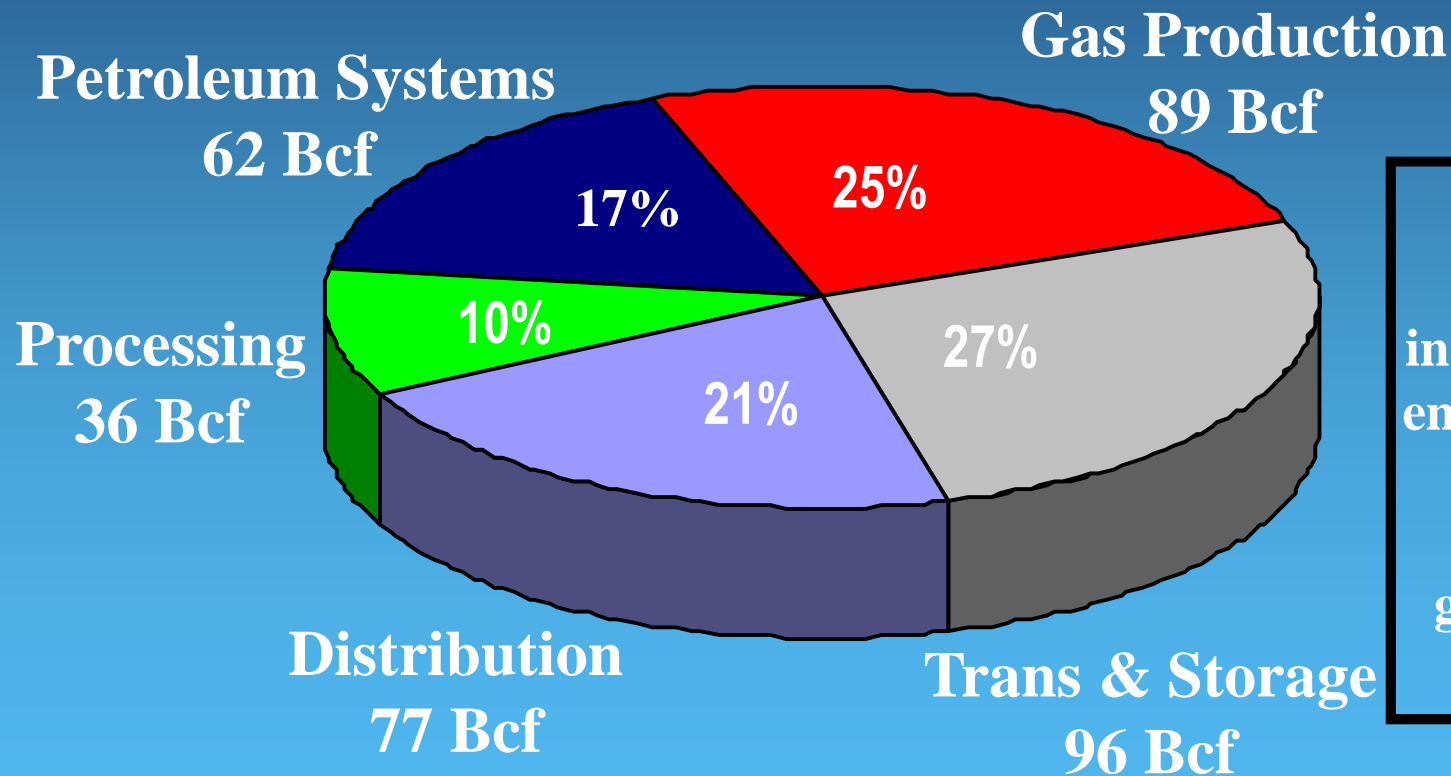


U.S. Greenhouse Gas Emissions Methane



U.S. Oil and Gas Industry Methane Emissions (Annual)

360 Bcf (billion cubic feet)



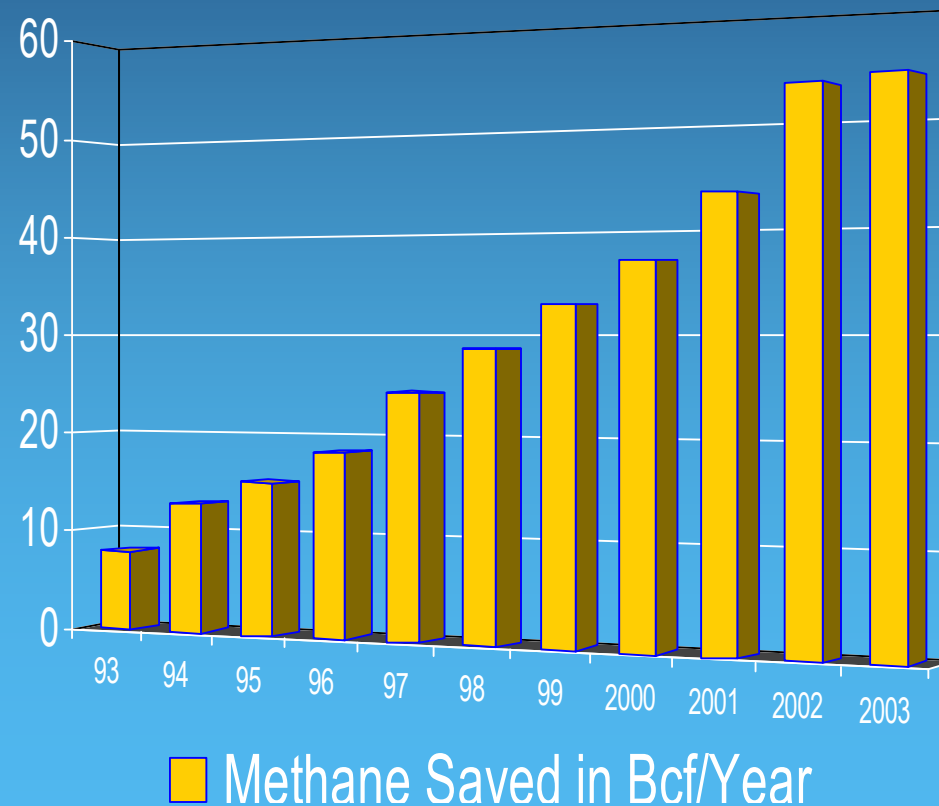
U.S. oil and natural gas industry methane emissions account for 2% of total U.S. greenhouse gas emissions

**Methane
Emissions
Reduction
Successes**



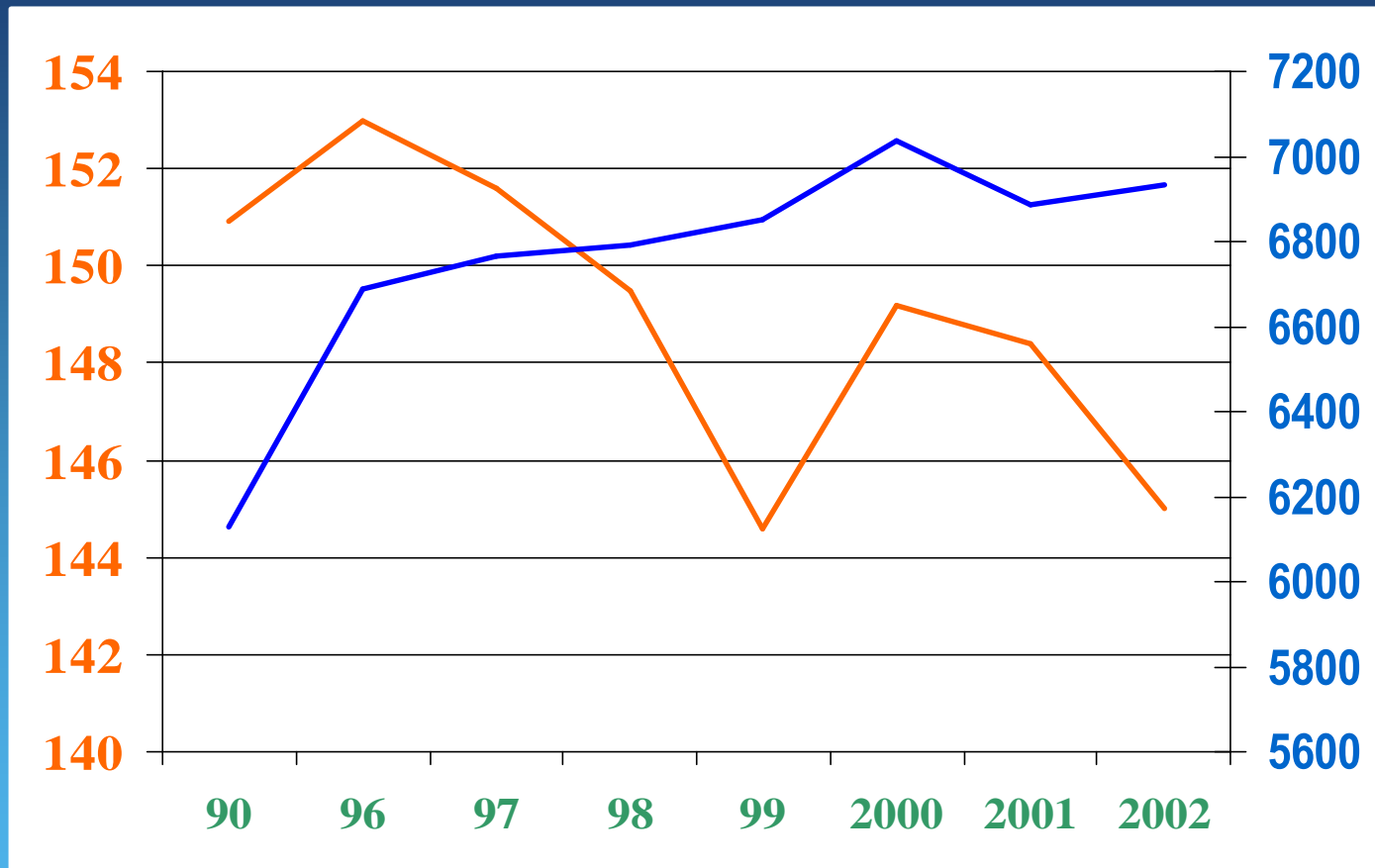
Natural Gas STAR Partner Accomplishments

★ ~ 350 Bcf in methane emissions reductions since 1993!



Natural Gas STAR Partner Accomplishments

Years 1990 - 2002



U.S oil & natural gas sector CH₄ emissions

Total U.S. greenhouse gas emissions

Units in Teragrams of CO₂ equivalent (TgCO₂E)

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

2003 Gas STAR Transmission Partner Reductions

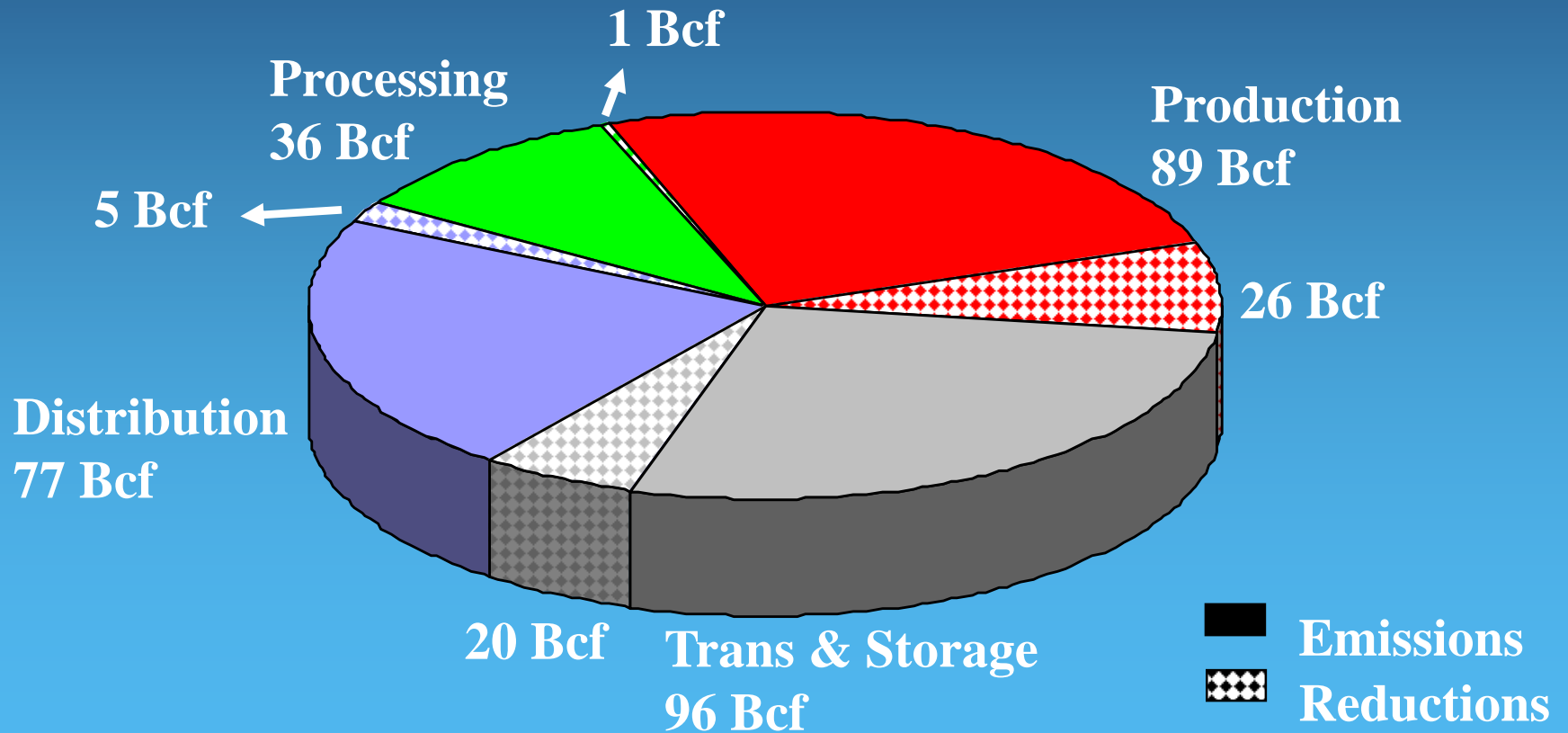


- ★ BMP 1 - DI&M at Gate Stations - 1,920 MMcf
- ★ BMP 2 - Identify and Replace Leaky Distribution Pipe - 44 MMcf
- ★ BMP 3 - DI&M at Compressor Stations - 2,619 MMcf
- ★ BMP 4 - Replace Reciprocating Engines with Turbines- 3,481 MMcf
- ★ BMP 5 - Replace High-bleed Pneumatics - 210 MMcf
- ★ BMP 6 - PROs - 11,565 MMcf

Natural Gas Industry Emissions



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



Top Transmission Sector PROs



- ★ Replace Wet Seals with Dry Seals
- ★ Use Compressors for Pipeline Pumpdown
- ★ Install Vapor Recovery Units
- ★ Use Composite Wrap
- ★ Monitor / Replace Compressor Rod Packing

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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