The Role of Energy Efficiency in Solving the Natural Gas Problem

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EESI Briefing
July 14, 2003

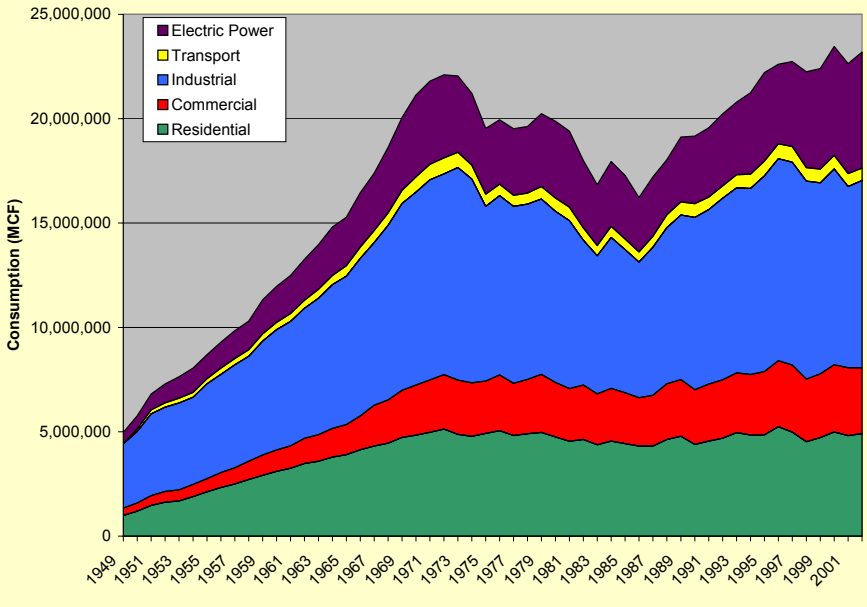
Overview

- Natural Gas Demand Drivers
- Electricity's Role in Gas Demand
- Natural Gas Price and Supply Issues
- Natural Gas Efficiency Potential
- Policy Responses: Near Term
- Policy Responses: Longer Term
- Conclusions

Natural Gas Demand Drivers

- Demand for Natural Gas has been growing since the late 1980s.
- Growth resulted from:
  - low price
  - expanding supply and availability
  - environmental performance
- Growth led by industry and electricity generation
- Industrial use has been declining recently
- Electricity generation key growth sector in recent years

Natural Gas Demand

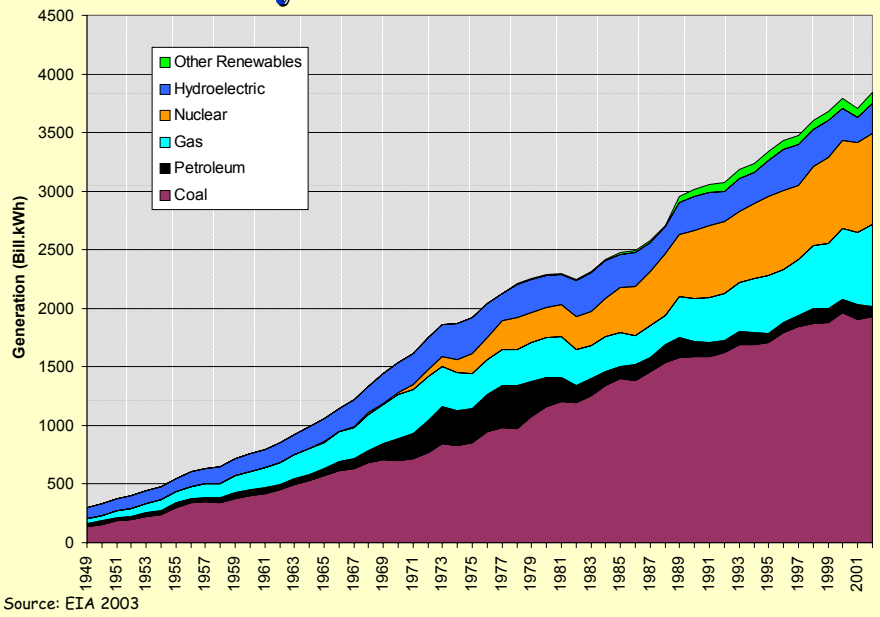


Source: EIA 2003

Electricity Drives Gas Demand

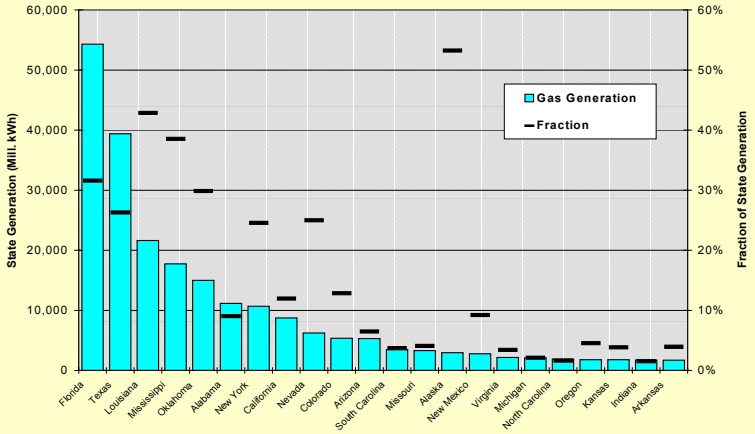
- Gas fuels almost 20% of electricity generation nationwide--40% or more in some states
- Fastest growing source of generation
- Gas generation heaviest during peak hours
- Peak efficiency between 12 and 20%, compared to
  - CCGT over 46% efficient
  - Gas combined heat and power (CHP) systems 75% efficient or better
- Bottom line: saving peak electricity saves a lot of gas

Electricity Generation Fuel Sources



Source: EIA 2003

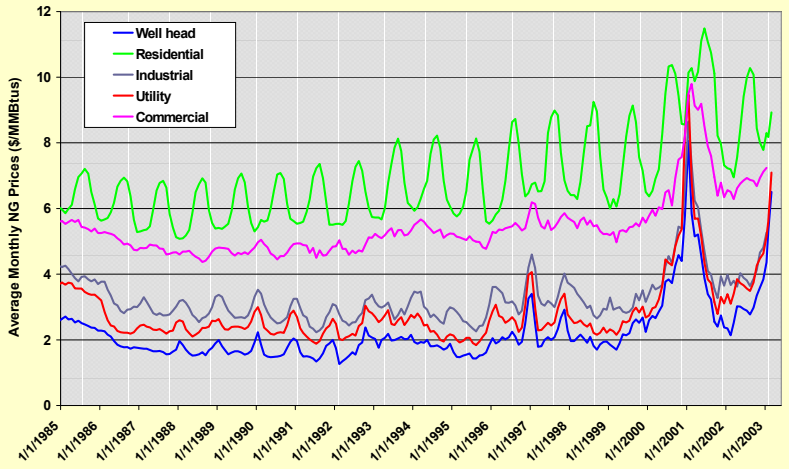
State Use of Gas for Generation



Gas Price Trends

- Gas commodity prices historically fluctuate seasonally
- Recent trends driven by
  - Demand growth
  - Supply and pipeline constraints
  - Competition between generation and storage
  - Limited exploration due to low prices
- Collapse of trading/hedging markets has reduced "liquidity" in gas markets
  - Increases price volatility and overall price
  - Reduces investor confidence

National Average Natural Gas Prices

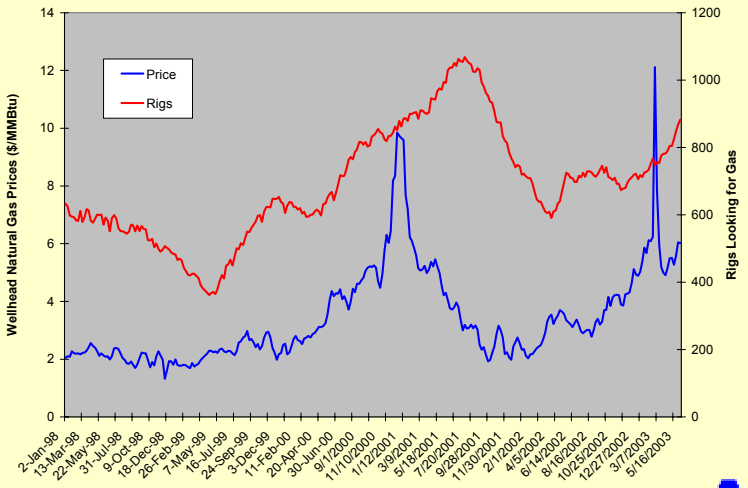


Source: EIA 2003

Gas Price and Supply Trends

- Exploration low during 1990's with low commodity prices
- Up since 2001 due to commodity price increases
- Exploration now at historically high levels
- Yet exploration activity, and new field production, must continually expand to offset declines in existing field
- Prospects for significant increases in U.S. production, at acceptable cost, are dim

Drilling Rigs and Price Trends



Source: Baker Hughes 2003

Efficiency and Conservation: The Only Near-Term Options

- Efficiency is a resource: now saving 25% of U.S. energy use and over $400 billion
- California solved its 2001 energy crisis using efficiency and conservation
- Small demand reductions in tight markets have large leverage on prices
- Substantial potential remains for short term conservation and longer term efficiency

Natural Gas Efficiency Potential: Residential

Measure	Savings (Bcf)	$/Therm
Duct/Air Sealing	310	0.450
Windows	233	0.154
New Homes	178	0.401
Furnaces/boilers	162	0.479
Combo heat/WH	85	0.543
Appliances	53	-0.859
Water Heaters	52	0.370
TOTAL	1072	.321

Natural Gas Efficiency Potential: Commercial

Measure	Savings(Bcf)	$/Therm
Re-commissioning	362	0.229
Furnaces/boilers	181	0.082
Retrofits (e.g. HVAC)	162	0.361
Glazing	145	0.301
New Construction	140	0.322
Cooking/ventilation	76	0.300
Operator training	51	0.063
TOTAL	1116	0.242

Natural Gas Efficiency Policy Options

Near-term:

- Nationwide voluntary conservation and efficiency campaign--with administration leadership
- Supplemental or reallocated FY 2003 funding for deployment programs, including Energy Star and state grants
- Amend energy tax credits to increase gas savings--CHP, residential equipment, commercial buildings, new homes
- Increase FY 2004 funding for deployment programs

Natural Gas Efficiency Policy Options

Longer-Term:

- Accelerate DOE Standards: residential heating, commercial cooling
- Accelerate CHP by reducing utility barriers
- Upgrade building codes and voluntary standards
- Increase gas and electric utility efficiency programs via public benefits, performance standards, regulatory reform
- Expand energy efficiency R&D for gas and electricity saving technologies

Conclusions

- Energy Efficiency and Conservation are the only near-term options for addressing the natural gas problem
- Efficiency and Conservation are also key to long-term solutions
- Administration, Congress and the efficiency community need to act now

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