



# **NATURAL GAS OUTLOOK TO 2020**

## **The U.S. Natural Gas Market -- Outlook and Options for the Future**

February 2005

# American Gas Foundation

**Independent source of information,  
research and programs on energy and  
environmental issues that affect  
public policy**



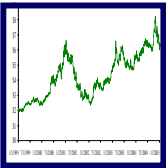
# Past Studies



**Fueling the Future (2001)**



**Meeting the Gas Supply Challenge (2002)**



**Natural Gas and  
Energy Price Volatility (2003)**

# Current Studies



## **Safety Performance & Integrity of the Natural Gas Distribution Infrastructure**



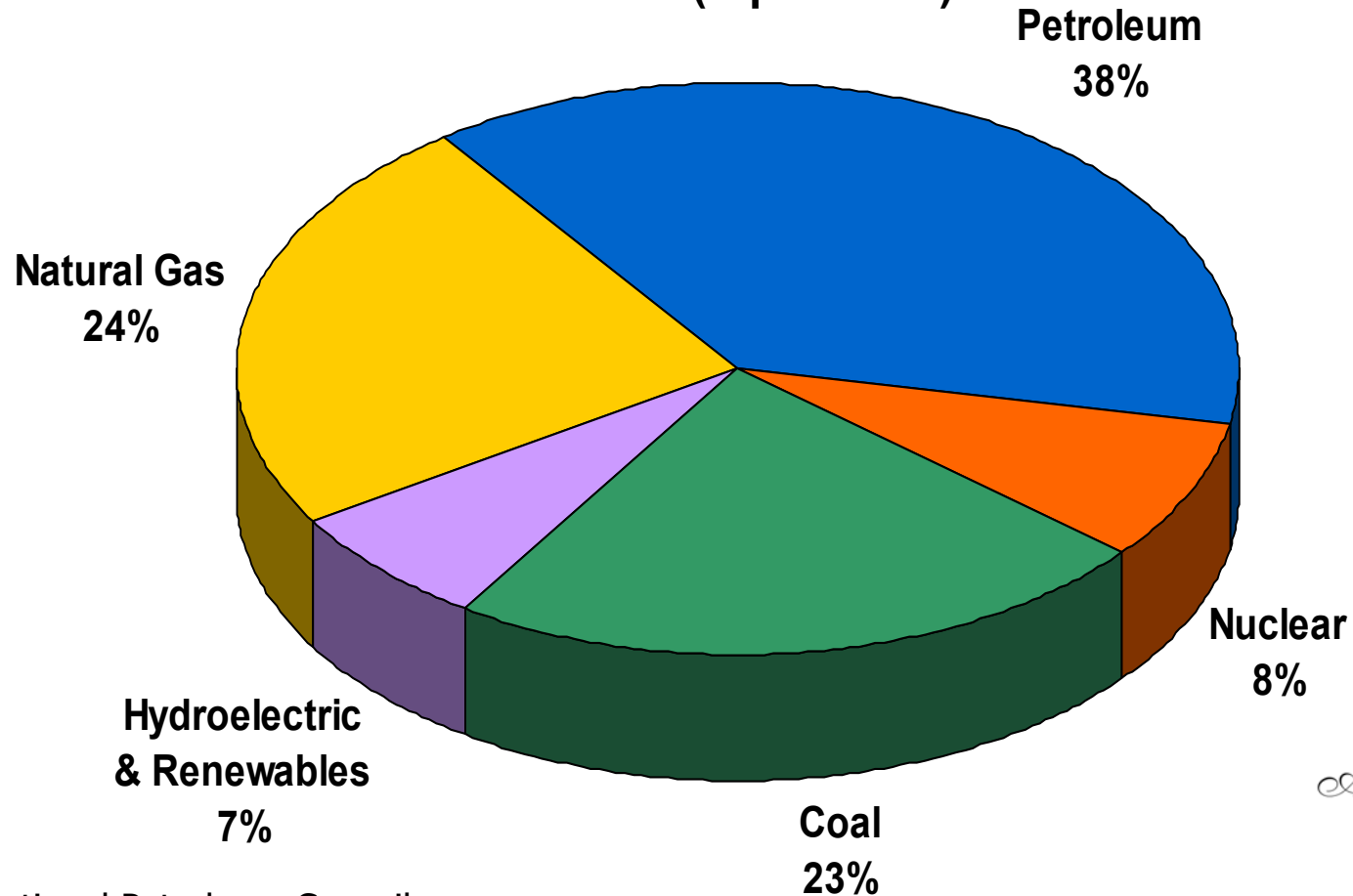
## **Public Policy and Real Energy Efficiency**

# Natural Gas Situation

- **Ample natural gas resources exist**
- **Demand is growing**
- **Supply access and infrastructure are being constrained**
- **Prices are rising and volatile**
- **High prices are detrimental**

# Important to Our Economy

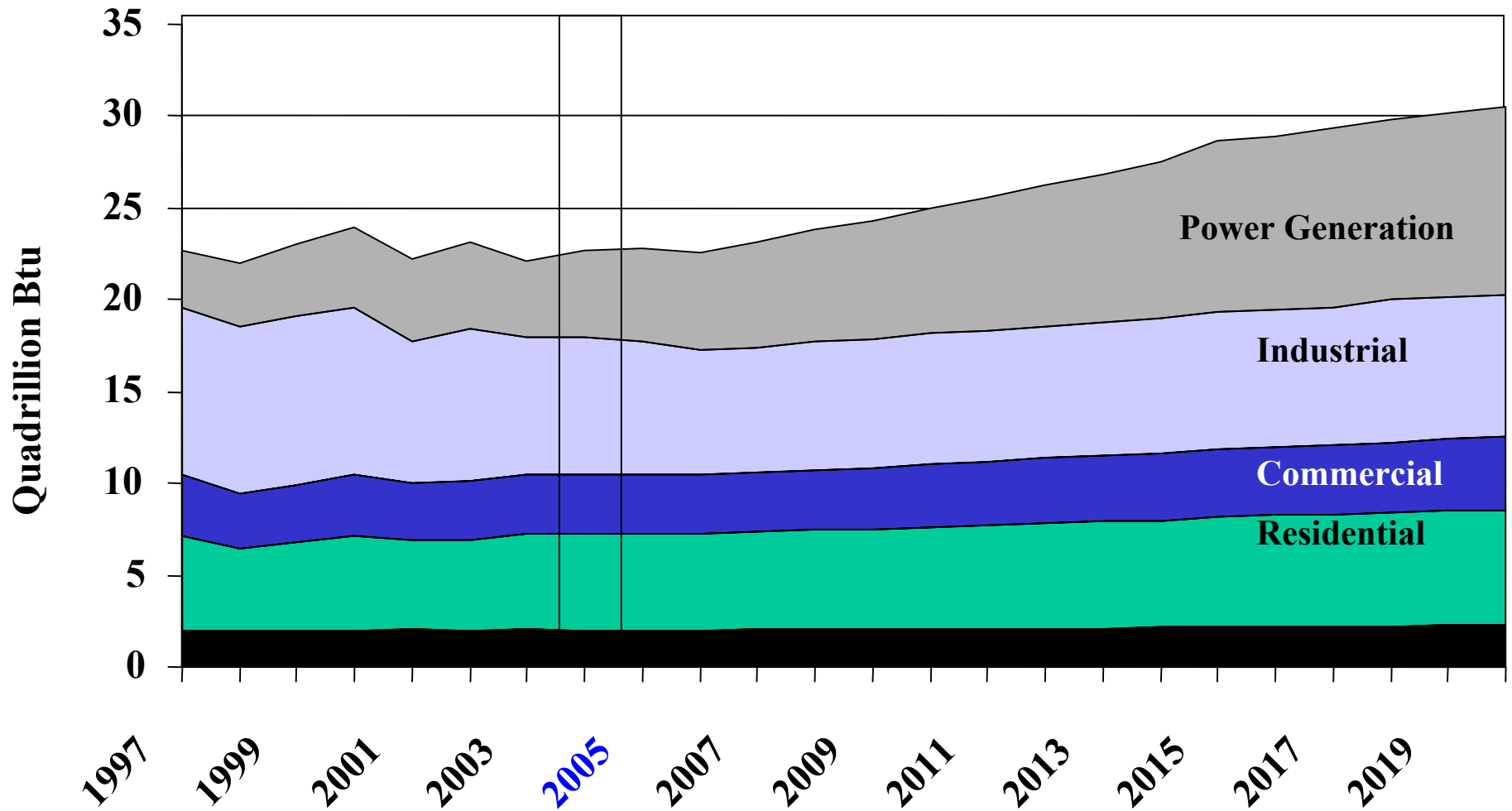
Average Annual U.S. Energy Use  
97 TCF (equivalent)



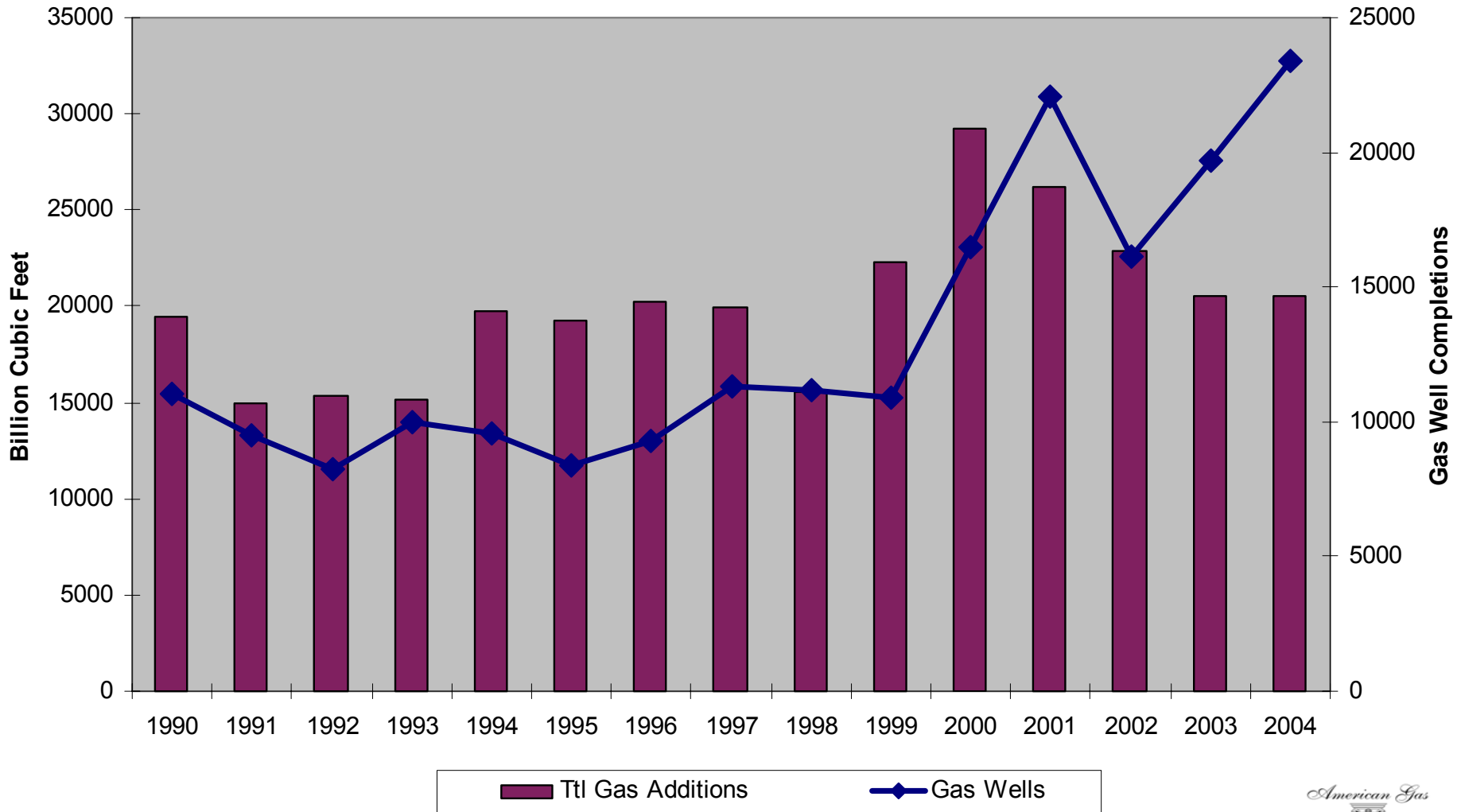
Source: National Petroleum Council



# Actual and Projected Natural Gas Consumption

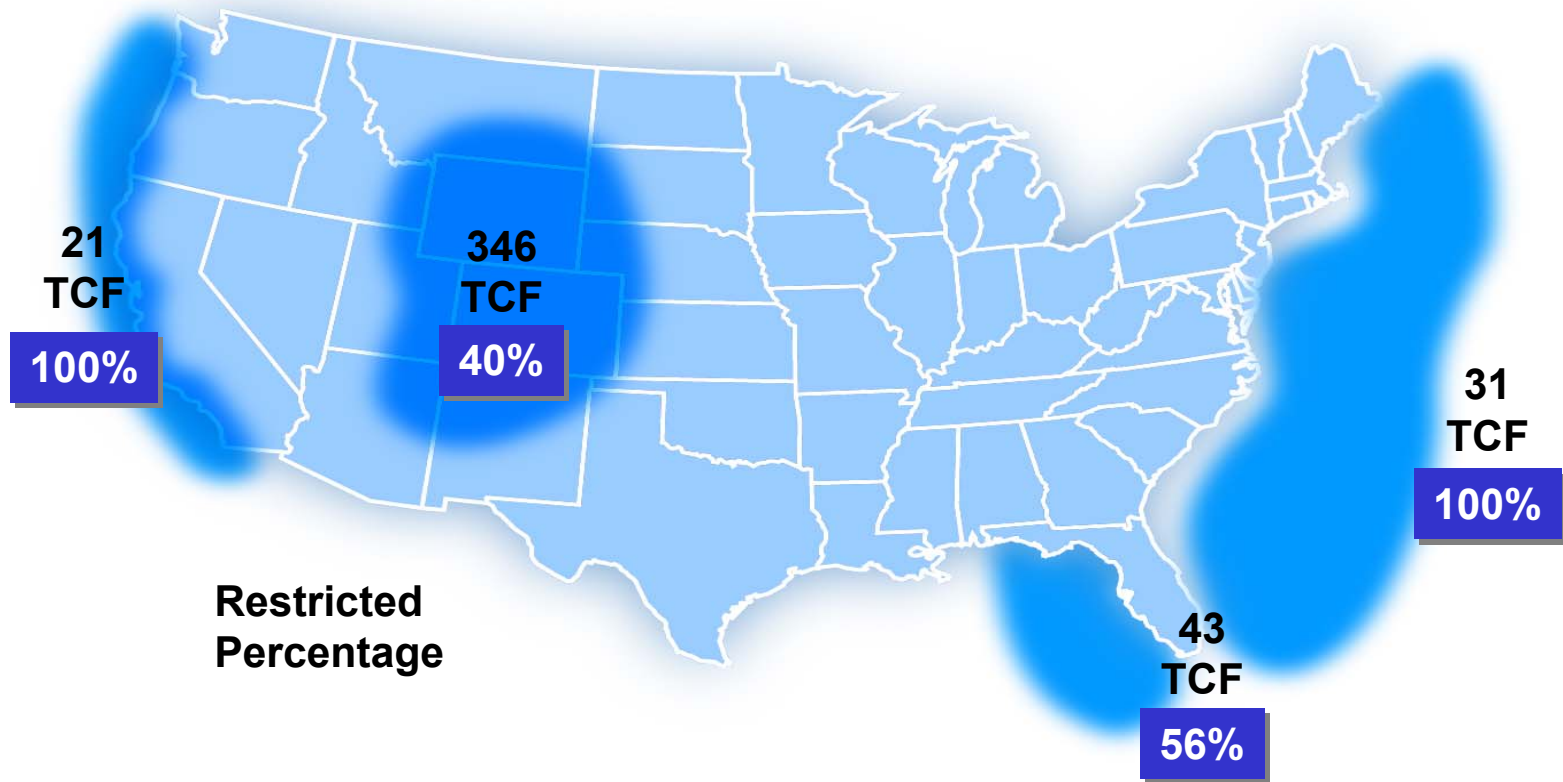


# Maturing Resource Base





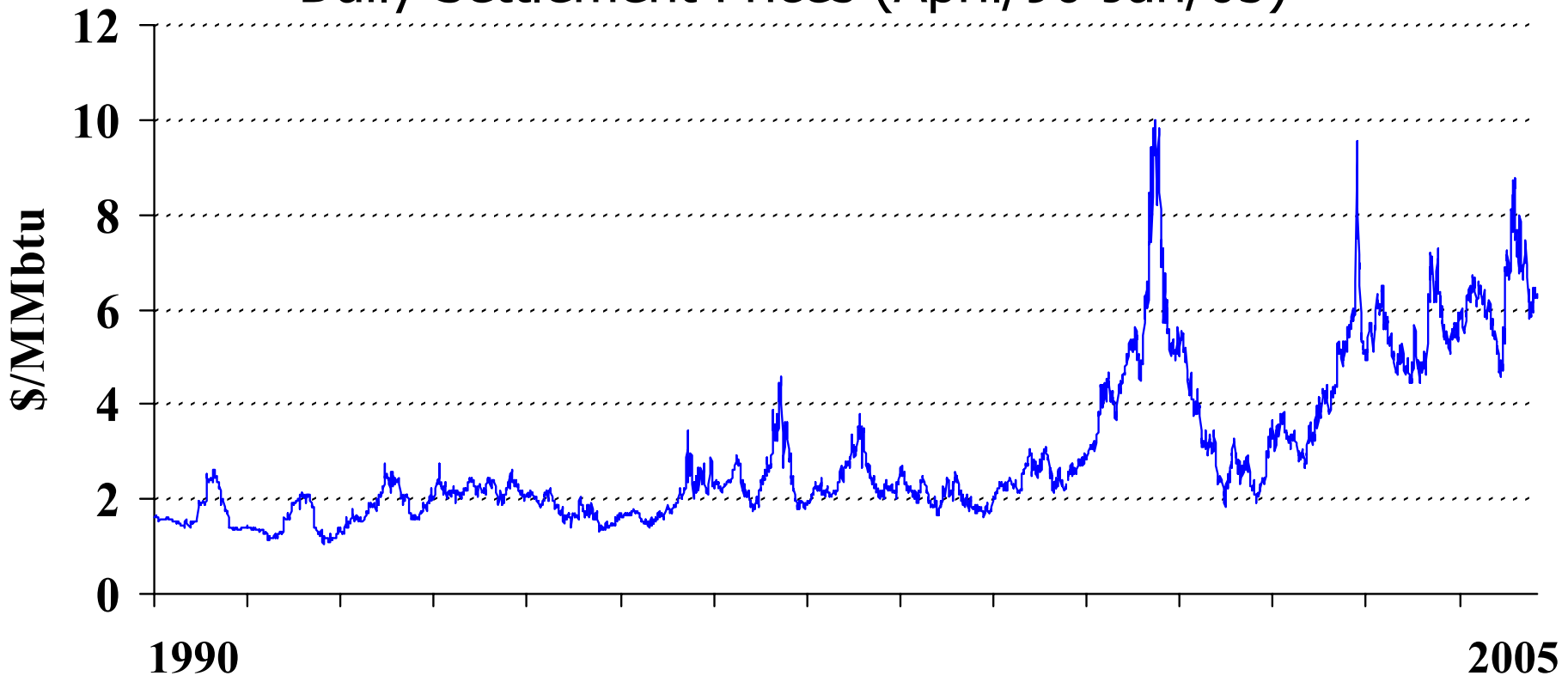
# Major Portions of the Gas Resource Base Are Not Accessible



**Approximately 29 trillion cubic feet (TCF) of the Rockies gas resources are closed to development and 108 TCF are available but severely restricted**

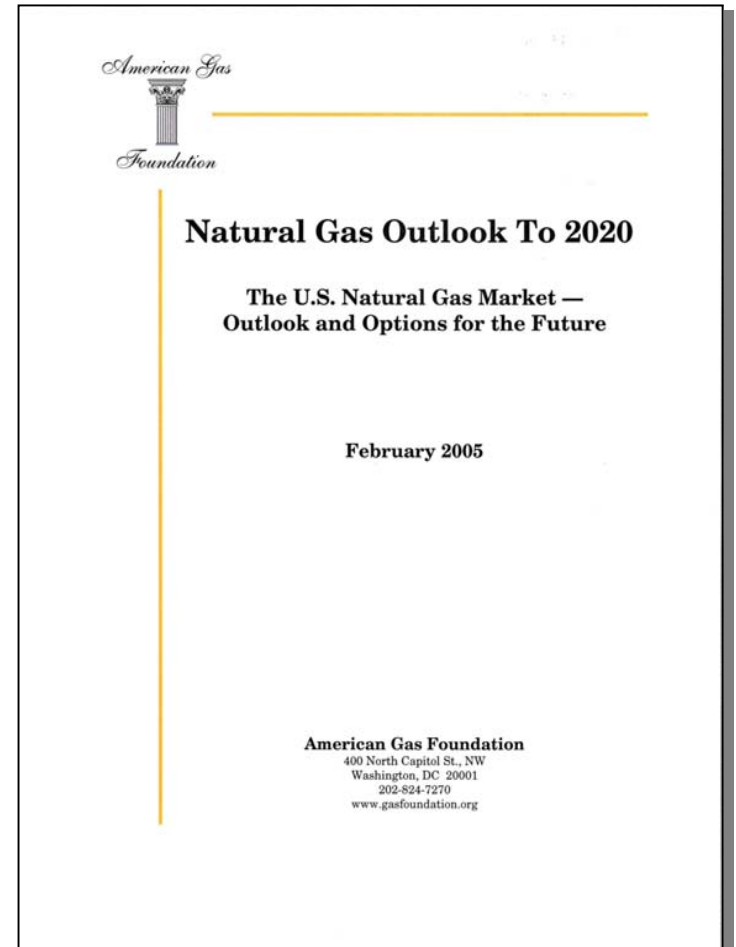
# Rising and Volatile Prices

NYMEX Henry Hub Futures  
Daily Settlement Prices (April/90-Jan/05)



# Natural Gas Outlook to 2020

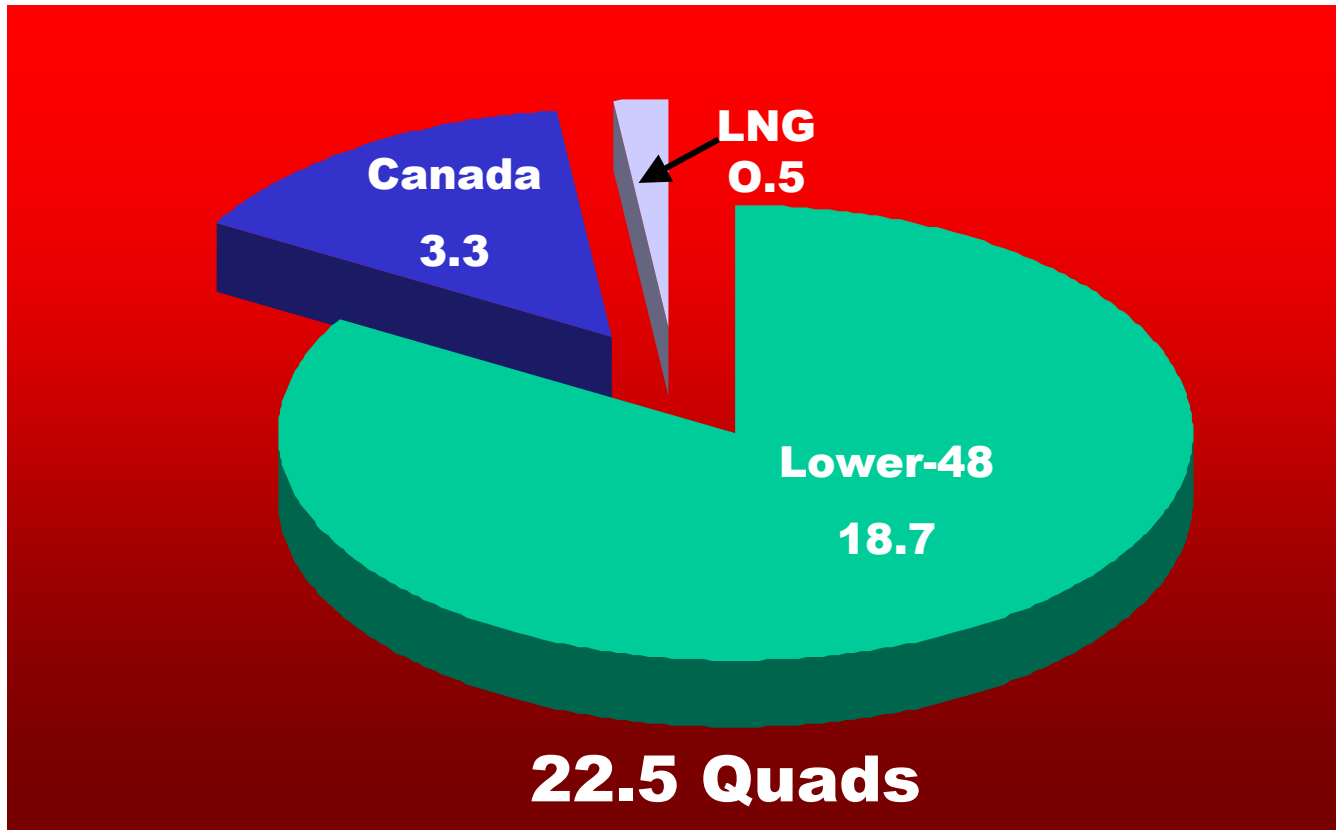
- **Analyzes the effects of key policy variables**
- **Analyzes effects on supply availability**
- **Outlines supply impact on natural gas markets**



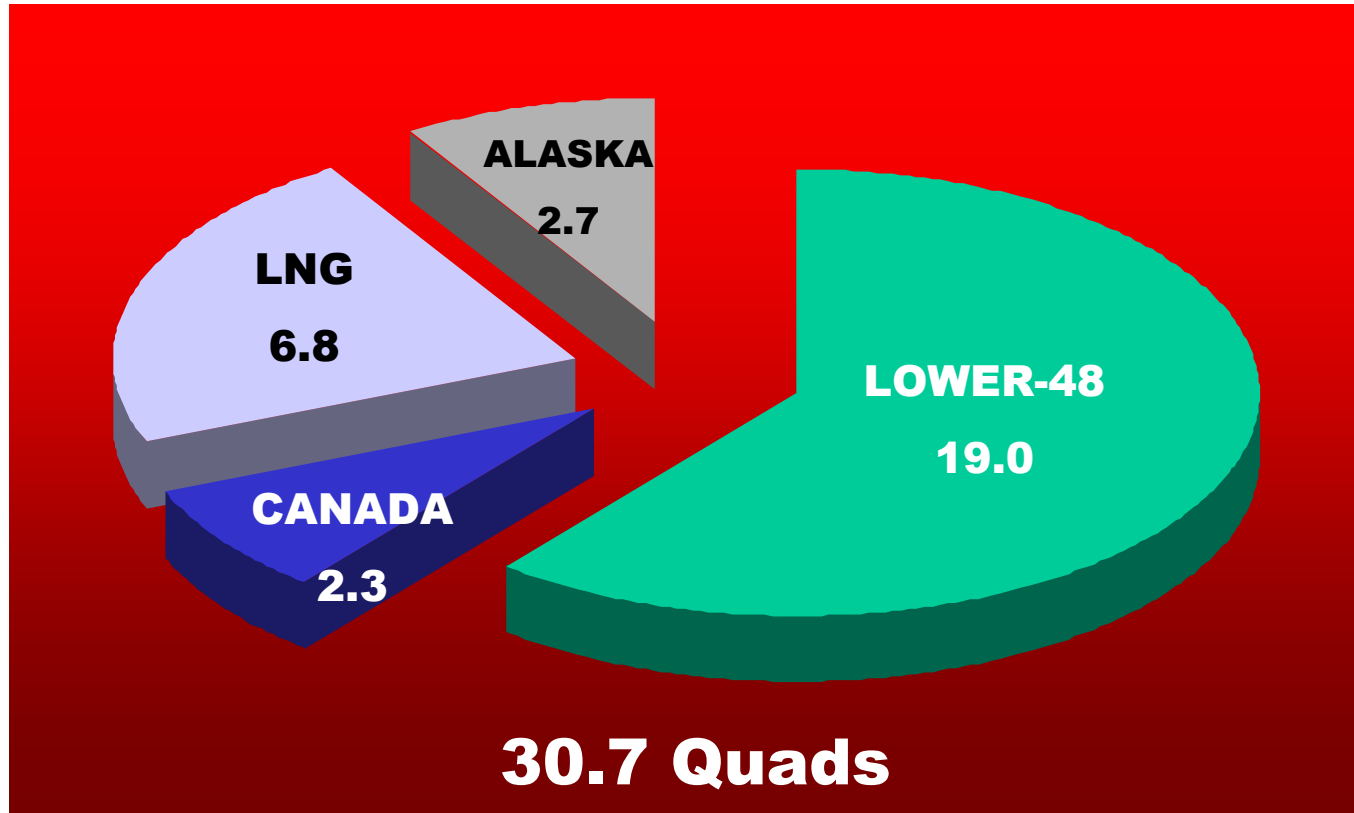
# Scenario Assumptions

	<b><u>Expected Policies</u></b>	<b><u>Expanded Policies</u></b>	<b><u>Existing Policies</u></b>
Drilling Moratoria	Unchanged	Relaxed	Unchanged
Intermountain West Access	Unchanged	Increased	Unchanged
Alaskan Pipeline	2014	2014	Not Built
LNG in 2020	18 Bcfd	23 Bcfd	5.3 Bcfd
New Gas-Fired Generation	60 GW	30 GW	60 GW

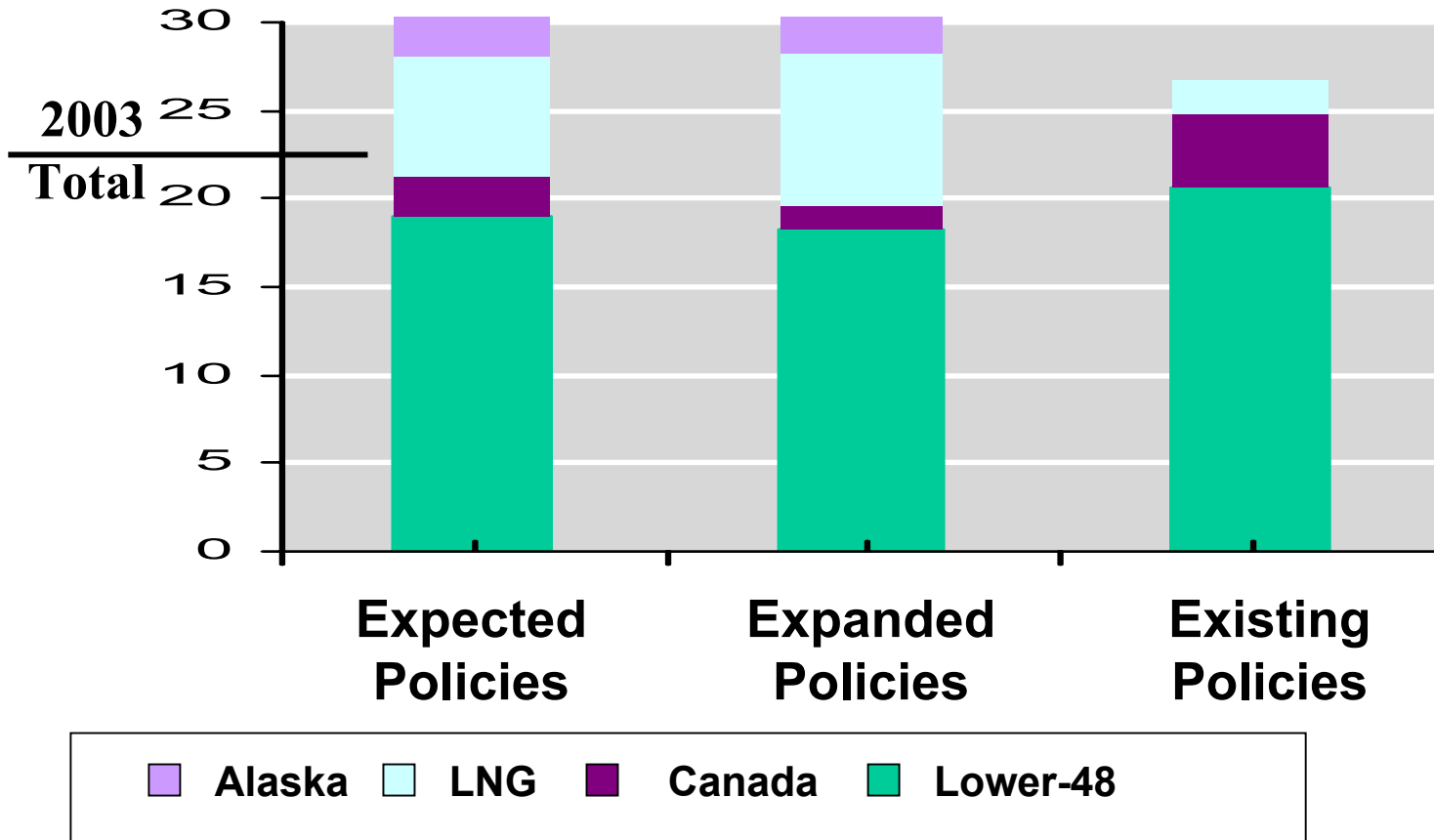
# Sources of U.S. Natural Gas Supply 2003



# Expected Sources of U.S. Natural Gas Supply 2020



# Projected Natural Gas Supply (Quads) 2020



# Alaska

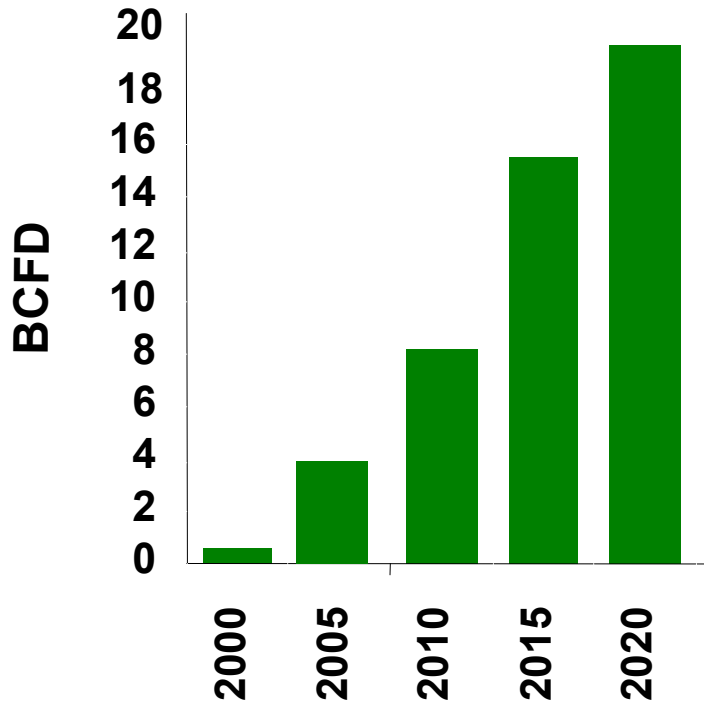
- Potential supply from existing reserves
- Congress recently passed legislation that includes tax credits, depreciation provisions, loan guarantees and expedited approval process to construct a pipeline from Alaska to the Lower-48



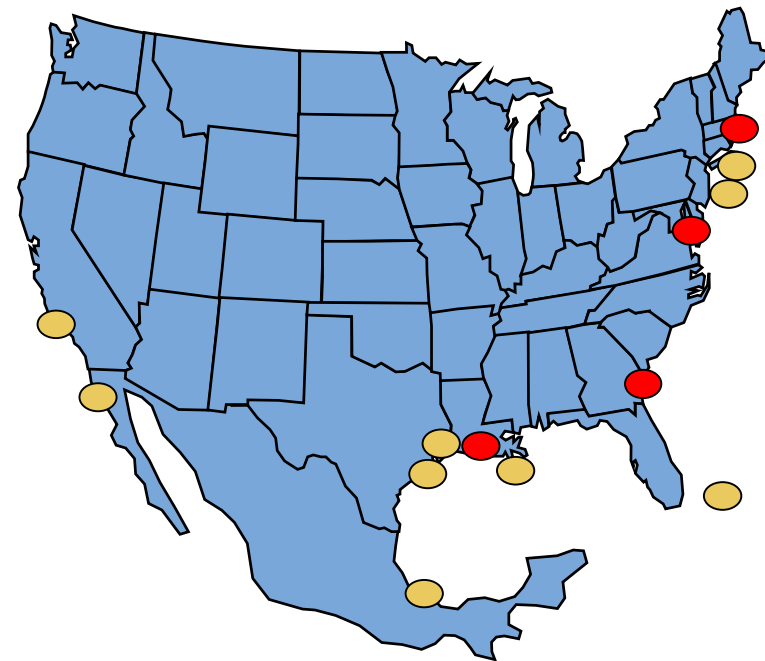


# LNG Imports Face Challenges

Expected Policies  
LNG Imports



Import Terminals

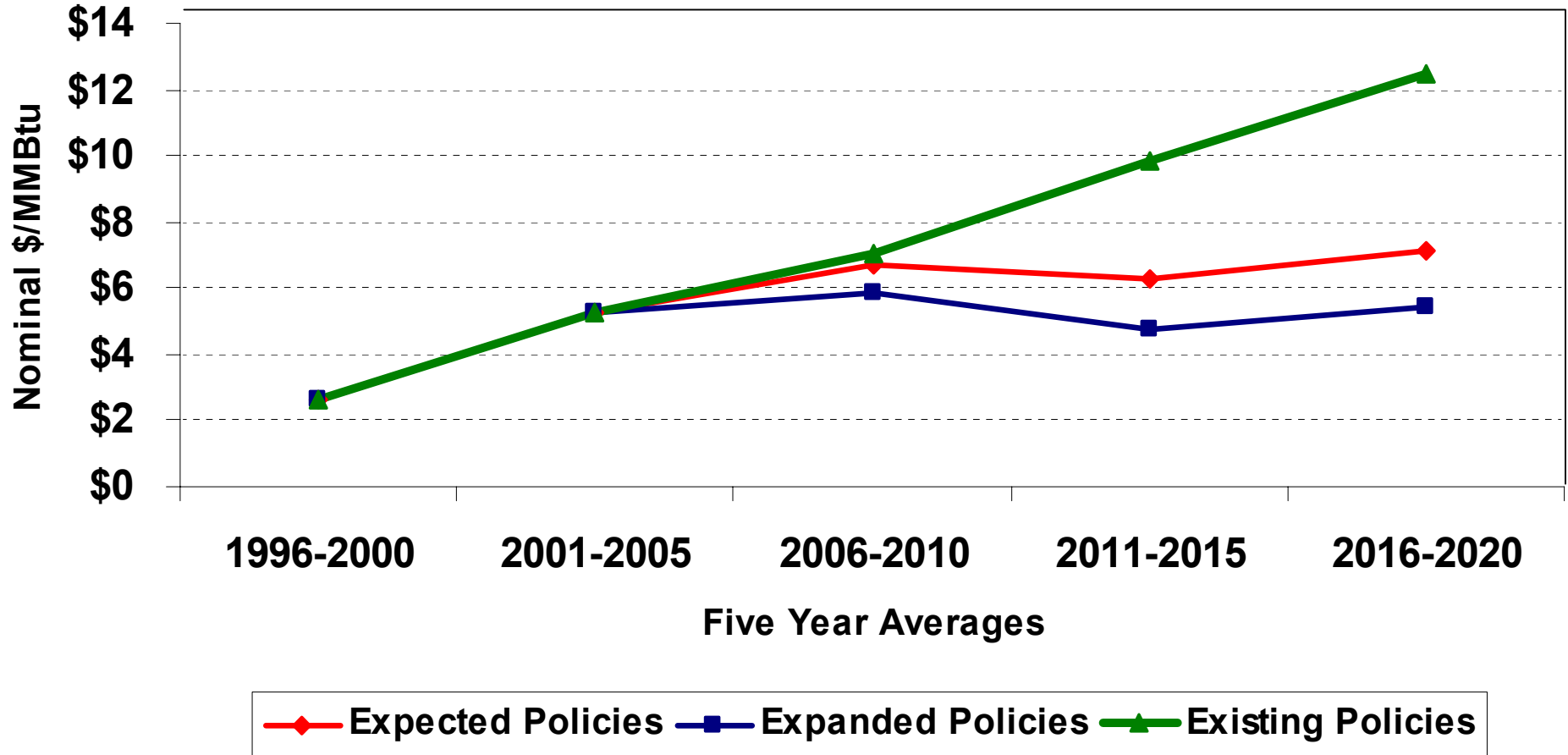


- Existing
- Potential

# Study Implications

- Under no scenario will natural gas markets return to the 80's-90's era of supply surplus and low, stable prices
- Policy makers and industry decision makers need to act immediately
- Failure to take action will lead to more instability and cost U.S. consumers billions of dollars in additional energy costs

# Actual and Projected Natural Gas Prices (Henry Hub)



# Scenario Projections

	<b><u>Expected Policies</u></b>	<b><u>Expanded Policies</u></b>	<b><u>Existing Policies</u></b>
<b>Supply</b>	Greater diversity	Diversity with more LNG	Reliance on Conventional; Strain on Lower-48
<b>Demand</b>	30.6 quads	30.6 quads More Industrial; Less Electric Gen	26.7 quads

<b>2020 Prices*</b>	<b>\$8.15</b>	<b>\$5.47</b>	<b>\$13.76</b>
<b>Average* (2004-2020)</b>	<b>\$6.72</b>	<b>\$5.50</b>	<b>\$9.43</b>

\* Nominal

# Impact to Consumers

	<u>Expected Policies</u>	<u>Expanded Policies</u>	<u>Existing Policies</u>
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**Over \$120 Billion in additional cost in 2020**

# Impact to Consumers

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**\$1 Trillion in additional cost over 15 years**

# Impact to Consumers

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<b>2020 Prices</b>	\$8.15	→ \$5.47	

**Approximate savings of \$80 Billion in 2020**

# Impact to Consumers

	<u>Expected Policies</u>	<u>Expanded Policies</u>	<u>Existing Policies</u>
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**\$575 Billion in savings over the 15 years**



# Conclusions

- Today's decisions about supply, infrastructure, and efficiency will govern future gas prices
- Existing Policies "status-quo" scenario must be avoided
- Work hard to make the Expanded Policies scenario a reality

# Needed Policy Actions

- Pursue new natural gas supply strategies
- Pursue energy diversity
- Ensure the Alaskan Pipeline and adequate LNG terminals are built
- Promote real conservation and efficiency

# Needed Policy Actions

- Promote additional drilling with advanced technology
- Remove policy and regulatory constraints for drilling and infrastructure  
(Dec 2004 DOE/Argonne Nat'l Lab Study "Environmental Policy and Regulatory Constraints To Natural Gas Production")
- Align energy strategies with environmental and national economic interests

*American Gas*



*Foundation*

*[www.gasfoundation.org](http://www.gasfoundation.org)*