The National Regulatory Research Institute's 2008 Activities on Natural Gas

Ken Costello
Director, Natural Gas Research and Policy
The National Regulatory Research Institute

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NRRI Natural Gas Activities in 2008

- Natural gas in a carbon-constrained world (NRRI briefing paper 08-CO)
- Outsourcing of gas procurement and asset management (paper for Colorado PUC)
- Regulatory oversight of gas supply planning and procurement (NRRI report 08-07) and teleseminar
- NARUC natural gas information toolkit (document on NARUC website, www.naruc.org)
- Financial speculation in energy markets (upcoming NRRI paper)
- Ratemaking issues (ongoing work; NRRI report 07-10)
- Reporting of short-term and long-term projections for the natural gas sector (presentations)
- Development of NRRI's website section on natural gas (www.nrri.org)

Natural Gas in a Carbon-Constrained World

Description of the Issue

- Federal greenhouse gas (GHG) legislation will have varying effects on the demand for different sources of energy
- Many analysts view natural gas as a “bridge fuel”
- One concern is the effect of an increase in the demand for natural gas by power generators on other consumers
- Recent events have tightened the GHG-natural gas nexus, particularly for the next several years

GHG Legislation and New Gas-Fired Electric Generation

- Projections call for increased reliance on natural gas in the short term
- Increased demand could have a significant price effect on a tight natural gas market
- Effect could be longer-term to the extent the market penetration of low-carbon generation technologies is delayed
- Overall, GHG legislation would aggravate the existing supply-demand situation for the natural gas sector

Policy Implications

- The importance of accelerated R&D for new generation technologies
- The need for a diversified portfolio in a carbon-constrained world (see EPRI studies)
- Some industry leaders arguing for a delay in new GHG legislation until new generation technologies become commercial
- Natural gas industry supporting consideration of fuel switching from electricity-to natural gas for direct use applications (e.g., space heating, water heating)

Outsourcing of Gas Procurement and Asset Management

Background on Outsourcing as a Business Strategy

- Definition of outsourcing
- Examples of outsourced activities
- Rationale for outsourcing
- Salient features of outsourcing

Outsourcing of Gas Procurement and Asset Management

- Overview of non-distribution gas utility activities
- Potential benefits to the utility and its customers from outsourcing those activities
- Examples of outsourced activities
  - Basic features
  - Common and special characteristics

Big Issues Before State Regulators

- Affiliate relations
- Sharing of profits and efficiency gains
- Selection of an outsourcing firm
- Regulator's role in reviewing and evaluating, approving, and overseeing outsourcing proposals

Questions on the Desirability of Outsourcing

- What should be the objectives of outsourcing?
- How should a utility and the regulator evaluate the merits of outsourcing?
- How could outsourcing benefit customers? How could it harm customers?
- What efficiencies are gained from outsourcing that the utility cannot achieve on its own? Even if the utility could achieve the efficiencies on its own, could outsourcing still produce benefits?
- Would stronger regulatory incentives for more efficient utility gas procurement and asset management achieve most of the potential benefits from outsourcing?

Questions on the Regulator's Role

- What role should the regulator play in overseeing an outsourcing arrangement, once in place?
- How should the regulator distribute the economic benefits of an outsourcing arrangement between the utility and its customers? What are the important factors for determining this allocation?
- Are there circumstances under which the regulator should mandate outsourcing, for example, where evidence of mismanagement exists? Does the regulator have the legal authority to order outsourcing?

Comprehensive Regulatory Oversight (CRO) of Gas Supply Planning and Procurement

Different Elements of a Gas Supply Plan

- Objectives
- Projected prices
- Available gas supplies and delivery capacity
- Demand projections
- Kinds of commercial transactions (spot market purchases, contracting)
- Hedging strategy
- Portfolio policy for price and supply diversity
- Reliability criteria
- Affiliate and outsourcing transactions
- Treatment of uncertainty

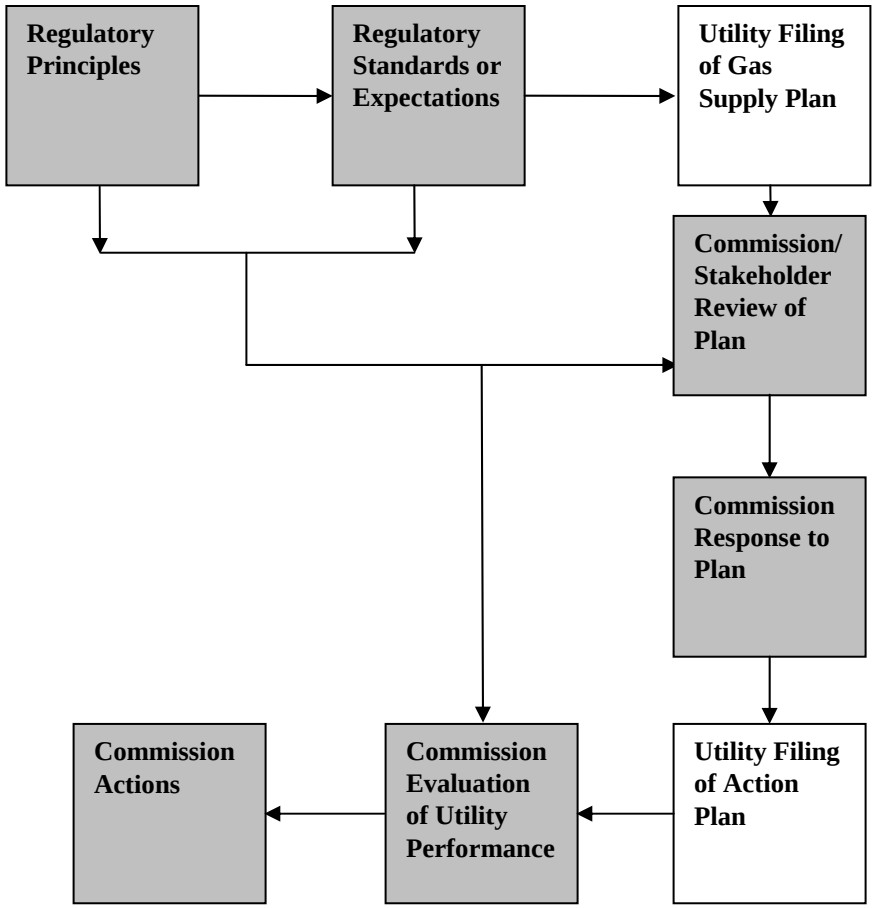
Challenges in Oversight of Gas Supply Planning

- One management expert perceptibly views planning as: A *simplified road map of complex terrain based on provisional knowledge that is subject to revision in light of new information*
- From a narrow technical perspective, gas supply planning is an optimization problem where the utility
  - Attempts to maximize an "aggregate objective function" composed of different sub-objectives and their relative importance (The analogy of buying a car)
  - Operates in an environment of uncertainty over future demand, prices for gas supplies, transportation-capacity availability, and so forth
  - Faces operational, contractual and market constraints

Challenges in Oversight of Gas Supply Planning -- *continued*

- Regulatory review requires an assessment of the inputs and assumptions placed into models and other analytical tools, and their effects on a utility and its customers
- This assessment requires
  - Knowledgeable, experienced and skilled commission staff
  - Tools and methods that extend beyond optimization modeling; for example, outside-of-modeling analyses and judgment

A Six-Step CRO



A Six-Step CRO -- *continued*

- ***Step 1 establishes principles for gas supply planning and gas procurement*** (statement of broad policy and first principles)
- ***Step 2 establishes planning and performance standards*** (specification of expected utility actions consistent with the principles)
- ***Step 3 is the commission's review and evaluation of a filed gas supply plan*** (basis for commission input into the planning process)
- ***Step 4 is the commission's decision on a filed gas supply plan*** (determination of how commission will respond to later decisions on cost recovery and other matters)
- ***Step 5 is the commission's evaluation of actual performance by a utility*** (comparison of actual performance with expected performance, detection of subpar performance, focus on plan execution)
- ***Step 6 is commission actions following performance evaluation*** (commission review of its own policies/practices, enforcement function)

Major Issues and Areas of Contention

- Need for commission principles/standards
- Required commission staff expertise
- Commission commitment to a utility's plan or strategy
- Execution of a plan in light of new information
- Commission evaluation of actual utility performance
- Scope and nature of commission retrospective reviews
- Commission evaluation of its own policies/practices that affect utility behavior in planning and execution
- Legal constraints to implementing CRO
- Net benefit of CRO relative to present approaches used by commissions

Negative Reactions to CRO

- "Pie in the sky" – not feasible, especially for small commissions
  - Too demanding and difficult for commissions
  - Too costly for parties and the commission
- Too intrusive on utility decision-making
- May go beyond a commission's legal authority
- Not needed – present approaches work well

NARUC Natural Gas Information Toolkit

Introduction to the Information Toolkit

- Purpose of the Toolkit
  - Assist state commissions in dealing with the problem of high and volatile natural gas prices
- Joint effort of different NARUC Committees and Subcommittees, NRRI and DOE
- Focus was on residential natural-gas consumers
- Modeled after the 2003 Information Toolkit, but more expansive and detailed

Introduction to the Information Toolkit -- *continued*

- Identified actions that state commissions can take in response to high and volatile natural gas prices
- Identified options only for consideration -- definite answers and detailed analyses not provided
- Conventional and innovative options discussed

Questions Addressed

- Where are wholesale gas prices expected to head over the next year or so? What explanations have industry experts given for the high prices through mid-2008? What is the likelihood of prices returning to their mid-2008 levels?
- What can be done to lighten the burden of high gas prices on residential consumers?
- How can a state commission respond to a public and legislative outcry over high gas bills?
- What ratemaking methods and rate designs may be most compatible with an environment of high and volatile natural gas prices?
- What can gas utilities do to deal with high gas prices?
- What can consumers themselves do?
- What role can energy efficiency play in reducing the burden of high gas prices? What can a utility and state commission do to promote energy efficiency?
- What can a utility and state commission do to help low-income households in paying high gas bills and receiving energy assistance from non-utility sources?
- What near-term actions (i.e., actions that would have an effect this upcoming winter heating season) can a state commission, a gas utility and consumers take? What longer-term actions can they consider?
- What actions have state commissions already taken to address the high and volatile natural gas prices consumers will face during the upcoming winter and beyond?

Financial Speculation in Energy Markets

Purpose of Upcoming NRRI Paper: Help State Commissions to

- Understand the basic function of speculation in commodity markets
- Understand the difference between good and bad speculation
- Evaluate if speculation is contributing to gas price increases paid by retail consumers that is avoidable under effective federal regulation
- Identify different actions that they can take in response to existing speculative activity

Current Issues and Concerns

- Movement and volatility of natural gas prices caused by several factors, some reflecting physical supply and demand factors and others reflecting financial speculation

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Question: To what extent has speculation relative to market fundamentals, i.e., physical supply and demand conditions, caused fluctuations in natural gas prices?

Current Issues and Concerns -- *continued*

- Investors have significantly moved their assets to commodity markets including natural gas

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Question: What effect has this shifting of assets had on commodity markets?

Current Issues and Concerns -- *continued*

- Efficacy of federal regulation in detecting and discouraging manipulation in financial derivative markets

Ratemaking Issues

Basic Arguments by Gas Utilities for New Ratemaking Mechanisms

- Prevailing conditions make it difficult to measure with adequate precision certain costs and sales in a test year
- Asymmetrical distribution of certain costs and sales around some baseline or normalized level (e.g., the likelihood of gas sales per customer falling below the test year level is much greater than the likelihood of sales exceeding the test year level)
- The challenge for state commissions: each mechanism has varying effect on advancing and hindering the core principles and policy objectives underlying ratemaking

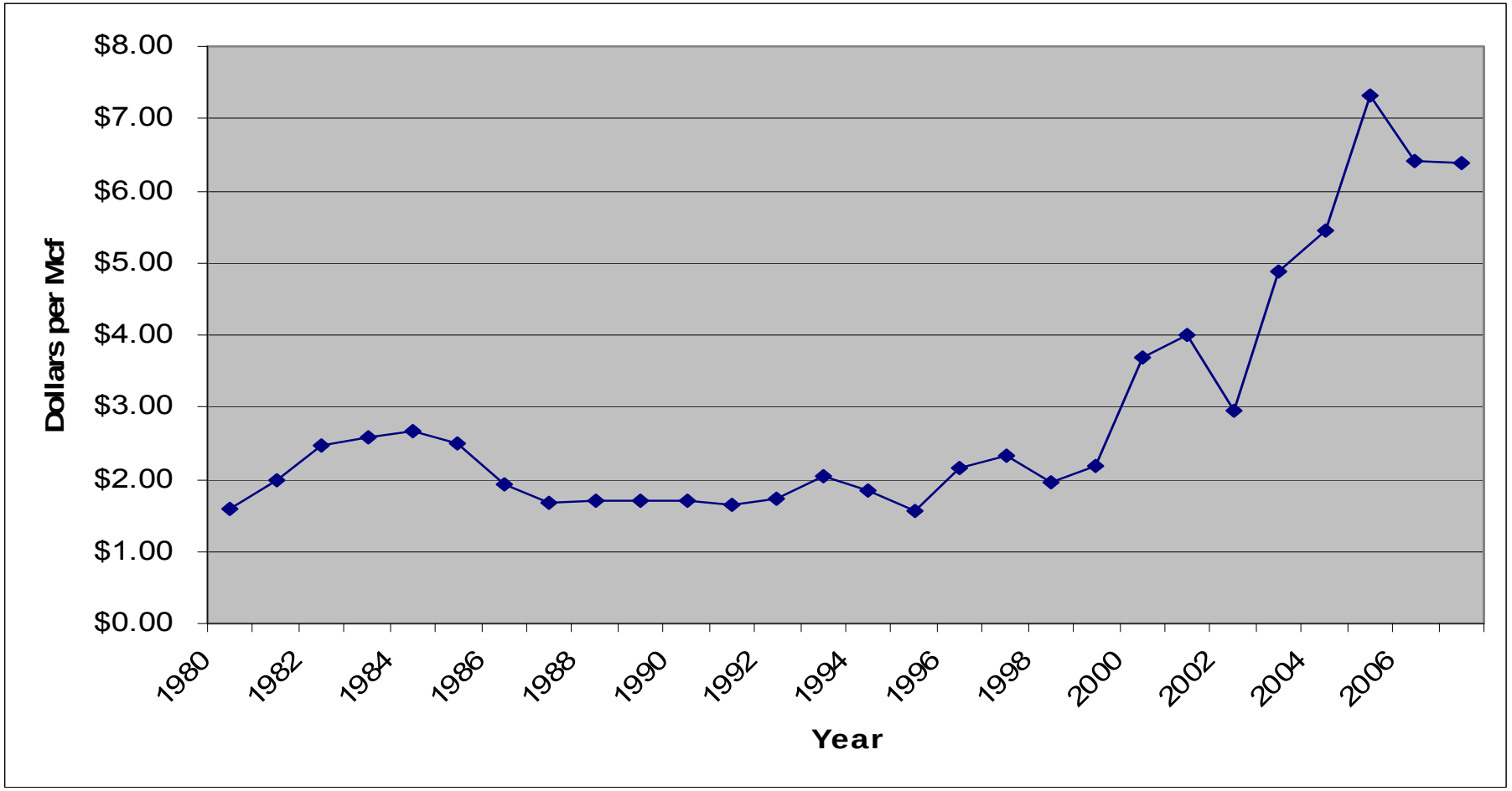
Examples of New Ratemaking Methods

- Revenue decoupling (RD) rider
- Straight-fixed variable (SFV) rate design
- Earnings sharing mechanism
- Tracker for bad-debt costs
- Tracker for pipeline-integrity-management costs
- Tracker for pipeline-replacement costs
- Tracker for utility energy-efficiency costs

Cost Trackers (or Riders)

- A utility adjusts its rates to recover certain costs without a formal rate review
- These costs can include those that deviate from some baseline (e.g., bad-debt costs that exceed the level implicit in current rates determined by a commission in the last rate case)
- These costs can also include zero-based expenses; a commission might allow a utility, for example, to recover all of its costs in promoting energy efficiency outside of a rate case review
- One justification for a cost tracker is the inadequacy of using historical cost to predict future costs
- A tracker has the intent of stabilizing a utility's earnings and reducing the likelihood of future rate cases
- On the downside, a tracker could cause a utility to have less incentive to control its cost with the diminution of regulatory lag; another concern is that a tracker would shift risks to consumers, since supposedly the utility could more easily pass through excessive costs, or any cost increase, to consumers

Wellhead Natural Gas Prices, 1980-2007



Consequences of High and Volatile Wholesale Natural Gas Prices

- More customers find natural gas unaffordable, especially low-income households
- Energy conservation, whether customer-induced or utility initiated, becomes more beneficial
- Fuel-switching becomes more likely (e.g., residential customers switching to electric heat pumps)
- Price-elasticity effect becomes more pronounced (i.e., higher consumer response to prices)
- Utility bad-debt expenses increase
- Both the utility and its customers generally face more risk
- Hedging becomes more important for both the utility and its customers (e.g., increased price predictability and stability offers value to consumers)
- Utility customers become less satisfied with their utility service and regulatory oversight
- Overall, the gas industry becomes less stable with usage levels, gas bills and utility earnings more volatile and uncertain

The Impact of Rising Gas Costs and Energy-Efficiency on LDCs' Gas Revenues

- Between 1980-2005, 15 million new residential gas customers (35% increase)
- Over the same period, total residential gas consumption increased by only 0.1 Tcf (2.1% increase)
- Usage per household (normalized for weather) has continuously declined over this time for various reasons
- Most gas utilities filing rate cases in recent years have experienced a decline in usage per customer over the past two decades
- Although parties to these proceedings generally have not disputed this happening, some have questioned whether this decline will continue in the future

Recent Econometric Study*

- Factors like new building codes and appliance efficiency standards, in addition to rising gas prices, have contributed to the downward trend of gas usage per customer over the past 20+ years
- *Δ Consumption per Household (%) = -0.18·Real Price Change (%) + Annual Trend (-1%) ·Number of Years* (example for 2000-2006: with a 44% price increase, consumption per household estimated to fall by 13.9%, or 2.2% per year)

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* Frederick Joutz and Robert P. Trost, *An Economic Analysis of Consumer Response to Natural Gas Prices*, prepared for the American Gas Association, March 2007

Illustration of Effect of Declining Sales on Earnings

– Accounting relationships:

$$E^* = R^* - FC$$
$$\Delta Q \times P = \Delta R = \Delta E$$
$$\Delta R/E = \Delta E/E = \Delta ROE/ROE^*$$

where * indicates targeted or baseline, Δ = change, E = earnings to equity shareholders, R = revenues, FC = fixed costs (including the interest on debt), Q = sales level, P = base rate, and ROE = rate of return on equity

– *Example*: R* = $400 million; FC (all costs except the return on equity) = $360 million; ROE = 12% (or authorized earnings to common equity holders = $40 million

Illustration of Effect of Declining Sales on Earnings -- *continued*

- Assume that all distribution (non-gas) costs are fixed
- Assume that revenues fall 1% (or $4 million) short of the targeted revenue (R*) because of an unexpected price-elasticity effect
- The decrease in earnings to common equity holders would equal $4 million, which is a decline of 10%; this translates into a decrease of ROE of also 10% (or 120 basis points) or from 12% to 10.8%
- **In sum, the decrease in revenues of 1% translates into lower earnings to equity holders of 10%**

Setting the Base Rate: Test Year Parameters for the Residential Class

Revenue requirements (after cost allocation)	$97.5 million
Number of customers (latest historical count)	500,000
Average usage per customer (latest historical count, assuming normal weather)	90 Mcf
Total gas usage	45 million Mcf
Customer charge	$5 per month
Customer charge revenues	$30 million
Volumetric charge	$1.50 per Mcf
Volumetric revenues	$67.5 million
Volumetric revenue per customer	$135
Authorized earnings to common equity shareholders (@ pre-tax ROE of 10%)	$10 million
Total revenues from distribution service	$97.5 million

The Standard Two-Part Tariff: Applying the Previous Numerical Example

- The following arithmetical expression shows the standard two-part tariff for base rates set by gas utilities

$$B_i = C + p \cdot q_i$$

where the non-gas component of the total bill for customer i (B_i) equals the sum of the customer charge (C) and the volumetric distribution charge (p) times the amount of gas consumed (q_i)

- The two-part tariff from our previous numerical example

$$B_i = \$5 \text{ per mo.} + \$1.50 \cdot q_i$$

Assume that a customer uses 20 Mcf of gas in a particular month. The total non-gas portion of her bill would be $35.

Ratemaking Proposals Addressing the Problems of the Standard Two-Part Tariff

- Revenue-decoupling (RD) tracker
- Straight-fixed variable (SFV) rate design
- Earnings sharing mechanism
- Shifting of more fixed costs to the customer charge
- Declining-block rate

The Rationale for Revenue Decoupling

- Eliminates the disincentive for utilities to promote energy efficiency
- Standard rate design places the utility at risk for recovering its fixed costs previously deemed to be prudent, with the risk increasing in recent years
- RD superior to alternative rate designs in achieving revenue stability and promoting energy efficiency
- Represents an incremental change in ratemaking practices that would significantly advance some regulatory objectives while having little effect on other objectives

Straight-Fixed Variable (SFV) Rate Design

- Let us assume in the previous numerical example that fixed costs make up 90% of the non-gas costs and that a utility recovers all of the fixed costs in the customer charge, with the remaining 10% recovered in the volumetric charge
- The fixed monthly charge would then equal $14.60 and the volumetric charge would equal $0.217 per Mcf (Recall that under standard rate design, as presented earlier, the monthly customer charge was $5 and the volumetric charge was $1.50 per Mcf)
- One outcome would be that low-usage customers would face higher gas bills and high-usage customers would face lower gas bills, compared to the standard rate design; for example, a customer consuming 30 Mcf per year would see the annual non-gas portion of her bill increase from $105 to $182; for a customer consuming 120 Mcf, his bill would drop from $240 to $202

Earnings Sharing Mechanism

- The utility adjusts its rates periodically (e.g., annually) when its actual return on equity falls outside some specified band
- If the band encompasses a 10-14 percent rate of return on equity, when the actual return is 9 percent the utility could adjust its rates upward to increase its return closer to 10 percent
- This mechanism helps to stabilize a utility's rate of return without a formal rate case review
- This mechanism should reduce the frequency of future rate cases and allow adjusted rates to coincide closer to recent market developments, including those affecting a utility's costs

Earnings Sharing -- *continued*

(1) $ROE_{retained} = ROE_{earned}$

(when ROE_{earned} lies within the specified "dead band" region)

otherwise

(2) $ROE_{retained} = ROE_{end} + g(ROE_{earned} – ROE_{end})$

(where ROE_{end} is an end point of the "dead band" region and "g" equals the sharing ratio)

Earnings Sharing -- *continued*

- Numerical example
  - Assume that the "dead band" region is 10-14% rate of return on equity (with 12% estimated as the utility's cost of equity)
  - Assume also that the sharing ratio ("g") is 0.5
  - During the year, assume that the utility earned a 16% rate of return on equity
  - Under the mechanism, the utility would rebate to customers an amount equivalent to 1 percentage point of its ROE out of the 2 percentage points it earned beyond the upper end of the "dead band" region (14%)
  - Thus, the utility's adjusted ROE would be 15% (14% + 0.5[16% - 14%])

Earnings Sharing -- *continued*

- Questions and Issues
  - What benefits does an earning's sharing mechanism have over traditional ratemaking?
  - What incentives does a utility have under the earnings-sharing mechanism to control costs?
  - Should the sharing component be constant? Would other than a 50/50 sharing ratio be preferable?
  - Is a "dead band" needed? If so, how large should it be?
  - How does the mechanism help (1) protect the utility from declining consumption per customer and (2) achieve revenue stabilization?

Cost-Based Customer Charge

- Customer costs include those costs associated with serving customers, irrespective of the amount or rate of gas usage; these costs include operating and capital costs that vary directly with the number of customers
- One issue in recent rate cases is whether a utility should raise the customer charge in line with customer costs; according to cost-of-service studies, most gas utilities have customer charges set below marginal customer costs
- Increasing the customer charge would improve economic efficiency, since the volumetric or usage charge would better reflect a utility's variable or marginal cost
- A higher customer charge would tend to increase summer gas bills and reduce winter bills, as well as mitigate the effect of weather on customer bills
- On the downside, a higher customer charge could harm low-usage customers and meet with public disapproval (which it has), especially for increasing minimum summer gas bills

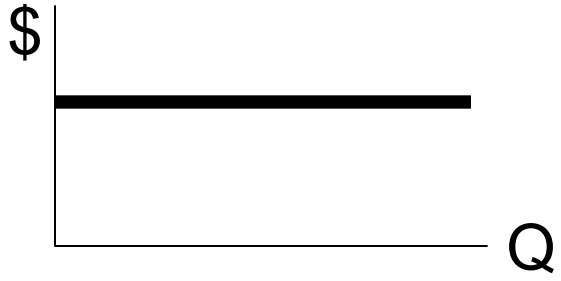
Declining-Block Rate

- The customer pays a lower rate for gas consumed at successively higher blocks
- As an illustration, the customer would pay $5.50 per Mcf for the first 100 Mcf, and $4.50 for all consumption over 100 Mcf
- This rate structure promotes the sale of gas by lowering the marginal price to high-usage customers from additional consumption
- A utility's earnings become more stable when the recovery of fixed costs occurs in the low-usage blocks, where customers will inevitably consume at the minimum
- This rate structure promotes economic efficiency when the price at higher usage blocks, within which customers use gas, corresponds to variable or marginal cost; when marginal cost does not decline with higher levels of consumption, this rate structure is discriminatory in favoring larger users
- By encouraging sales, this rate structure would tend to improve system utilization (i.e., the ratio of average demand to system capacity, defined over a specific time)

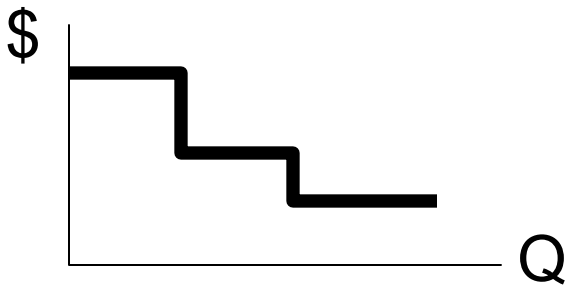
Examples of Rate Designs: Conflicts in Achieving Different Regulatory Objectives

Flat Bill per period, no usage charge

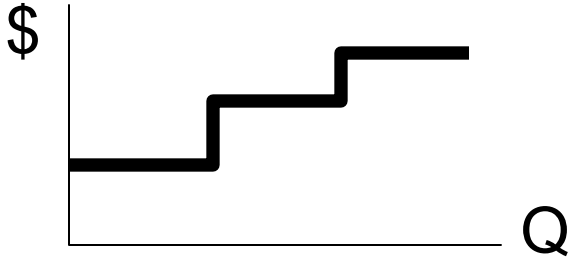
Uniform: Flat Rate per unit



Declining Block



Inverted Block

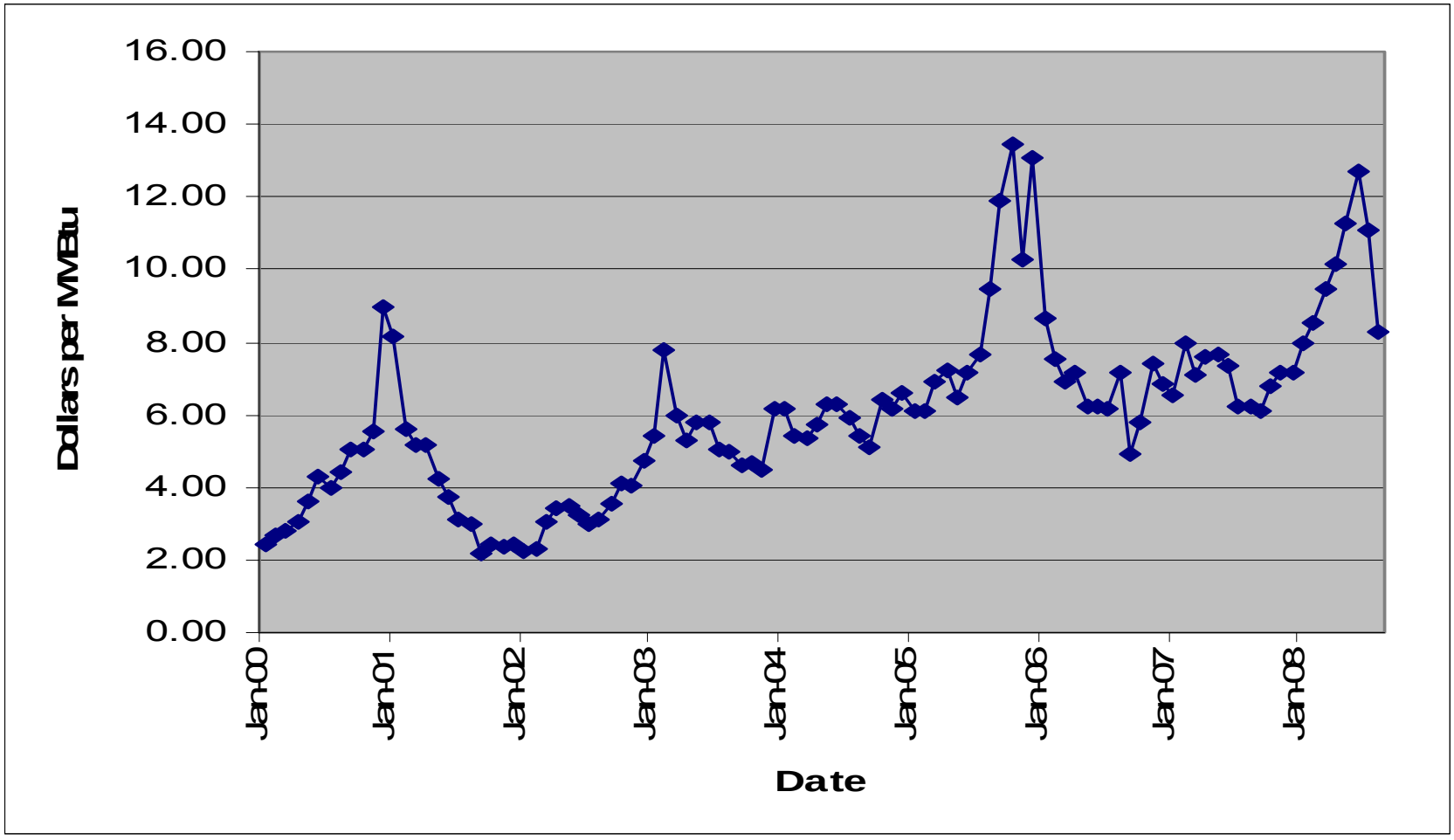


Bonbright's Eight Criteria for Ratemaking: The Guide for PUCs

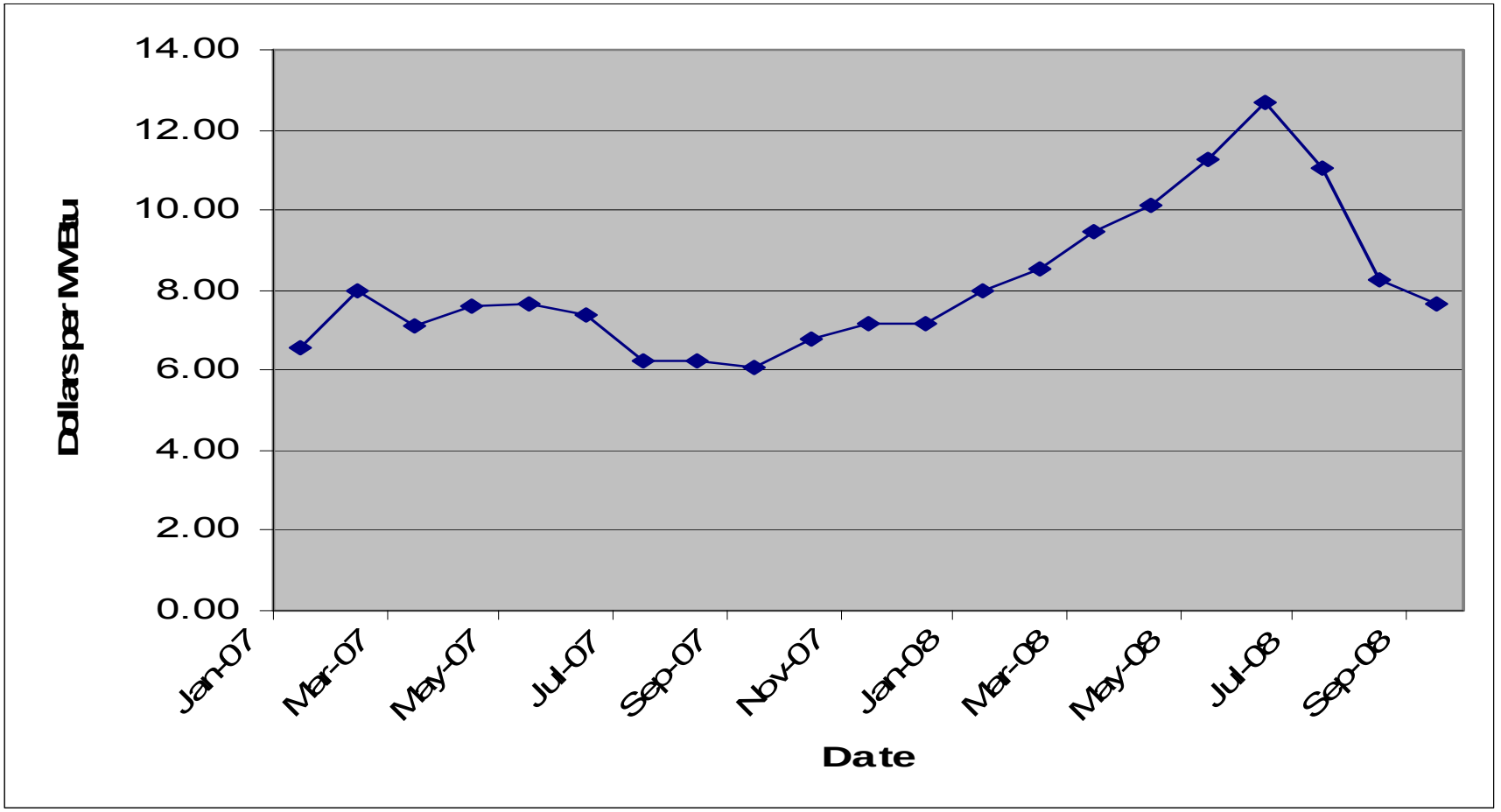
- Simplicity, understandability, public acceptability and feasibility of implementation
- Uncontroversial as to proper interpretation
- Effectiveness in providing the utility with adequate revenues to recover costs
- Year-to-year revenue stability
- Rate stability
- Fairness among customer classes
- Avoidance of undue price discrimination
- Economically efficient in giving customers proper price signals, for example, in not over-consuming utility service

Projections of the U.S. Natural Gas Market

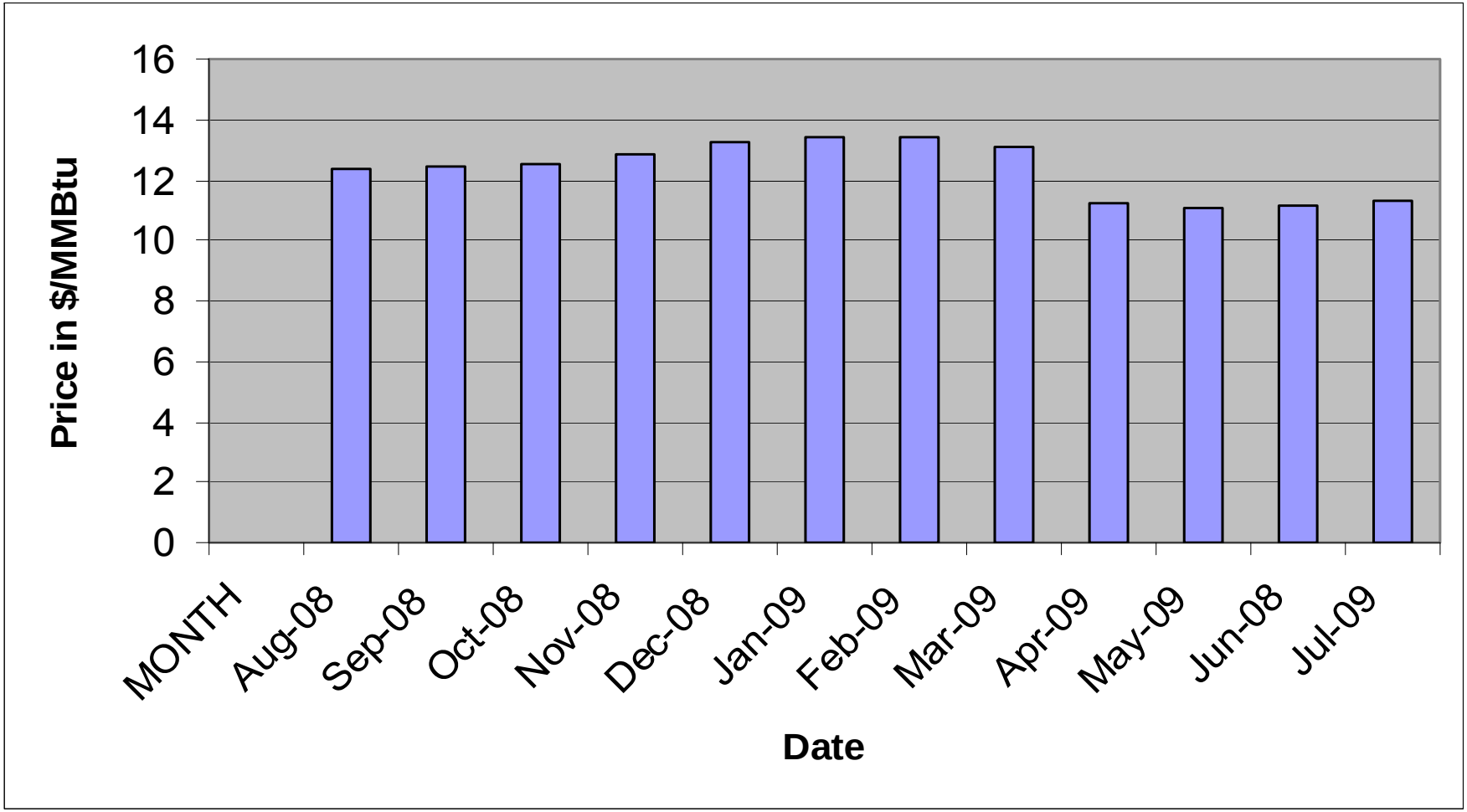
Henry Hub Prices, January 2000-September 2008



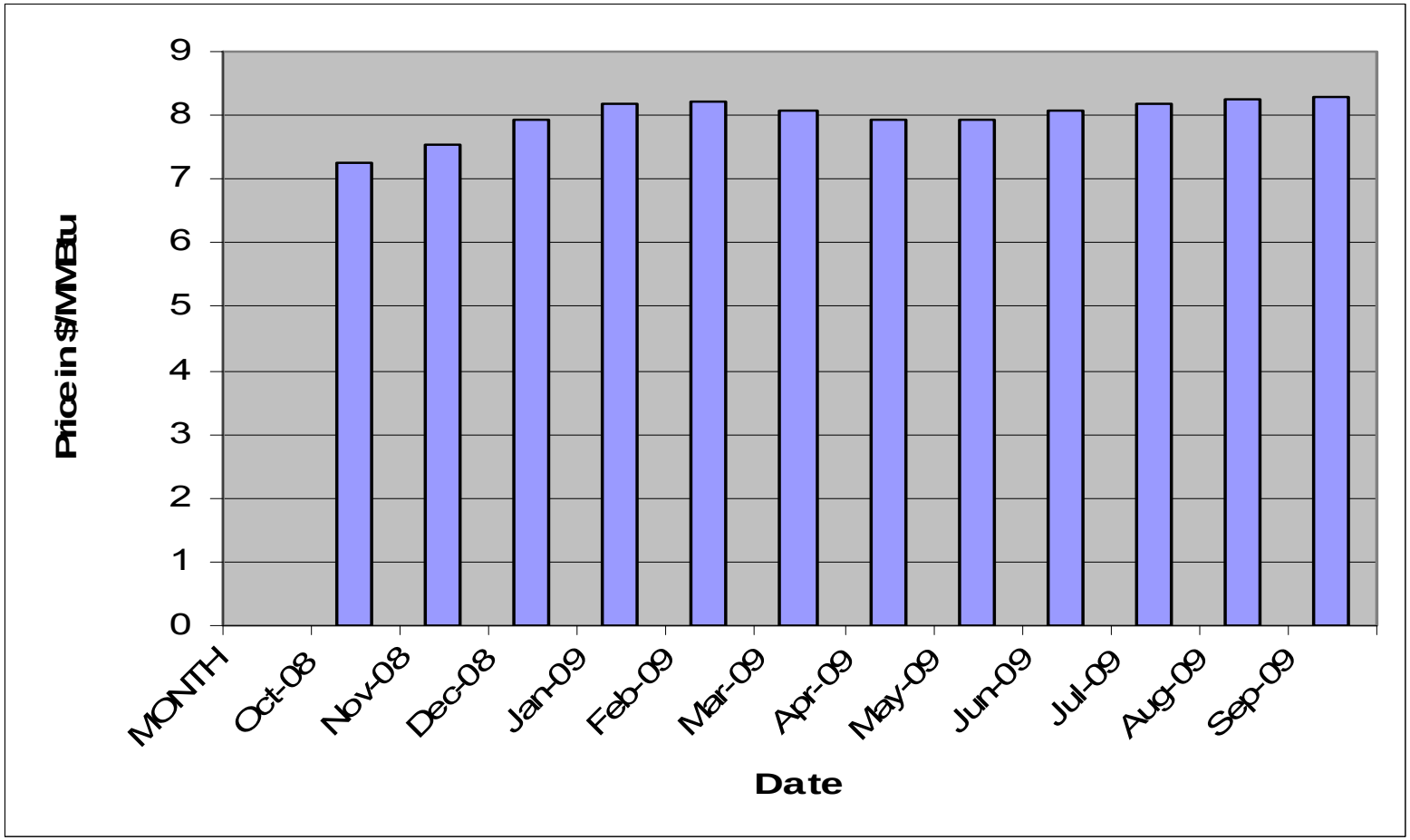
Henry Hub Prices, January 2007-September 2008



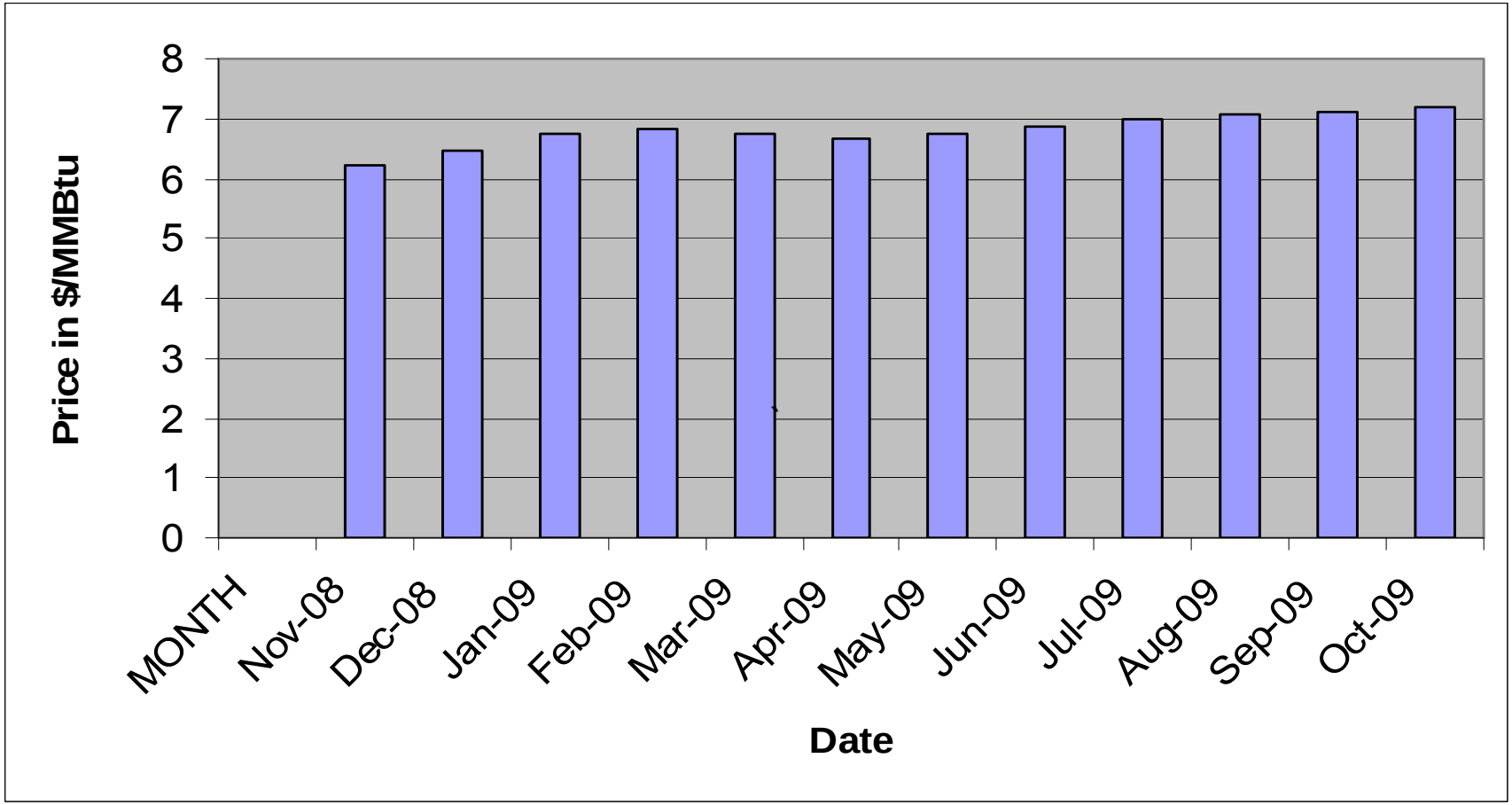
NYMEX Futures Prices, as of July 8, 2008



NYMEX Futures Prices, as of September 11, 2008



NYMEX Futures Prices, as of October 24, 2008



EIA's Short-Term Projections, as of October 2008

- **Average wellhead price:** $8.51 per Mcf in 2008, and $7.46 in 2009 (the 2007 price was $6.39)
- **Consumer prices:** residential prices projected to be 9.5% higher in 2008 than in 2007
- **Winter prices and expenditures:** 16.5% increase in price over last winter and 18.1% increase in expenditures
- **Consumption:** demand projected to increase by 2.4% in 2008 and 1.9% in 2009
- **Supply:** moderate growth in 2008
  - As of October 17, working gas in storage 2.2% below the level at the same time last year, and 2.9% above the 5-year average
  - Domestic production projected to increase by over 6.7% in 2008 and by 4.2% in 2009
  - LNG imports projected to decrease by over 54% in 2008 and then increase by almost 30% in 2009

EIA's 2008 and 2009 Projections: Changes over April-October

	2007	2008	2009
LNG Imports (Bcf)	770	680 (A) 390 (AU) 582 (M) 350 (S) 530 (JN) 350 (O) 480 (JL)	949 (A) 480 (AU) 894 (M) 450 (S) 850 (JN) 453 (O) 790 (JL)
Average Wellhead Price ($/Mcf)	$6.39	$7.56 $8.88 $8.64 $8.65 $9.82 $8.51 $10.20	$7.42 $8.03 $8.52 $7.80 $9.96 $7.46 $10.47
Average Henry Hub Price ($/Mcf)	$7.17	$8.59 $10.04 $9.69 $ 9.71 $11.05 $ 9.67 $11.86	$8.32 $9.01 $9.41 $8.55 $10.99 $8.17 $11.62
Residential Gas Price ($/Mcf)	$13.00	$13.83 $14.36 $14.40 $14.22 $14.84 $14.23 $15.11	$14.15 $15.04 $15.35 $14.49 $16.92 $14.22 $17.46

Long-Term Gas Outlook: Comparison with 2007 Projections (source: EIA, *AEO 2008*)

- Higher natural gas price projections (higher oil prices and increase in production costs associated with recent trends)
- Slower projected growth in natural gas consumption because of lower economic growth, higher prices, slower growth in electricity demand, greater use of more efficient appliances and slower growth in energy-intensive industries
- Less optimistic on LNG imports
- Higher delivered price because of increased margins from declining use per customer

Highlights of *AEO 2008*

- Starting around 2016, total gas consumption will begin to fall, particularly in the electricity and industrial sectors (total gas consumption increasing from 21.7 Tcf in 2006 to 23.8 Tcf in 2016, then declining to 22.7 Tcf by 2030)
- Slow increase in domestic gas production
- Future direction of global LNG market is a key uncertainty (price and availability of LNG in the U.S. market uncertain because of many new international players entering LNG markets and strong competition for available supply) (U.S. LNG regasification capacity will nearly quadruple by 2009, but considerably less LNG supply is expected to be available)

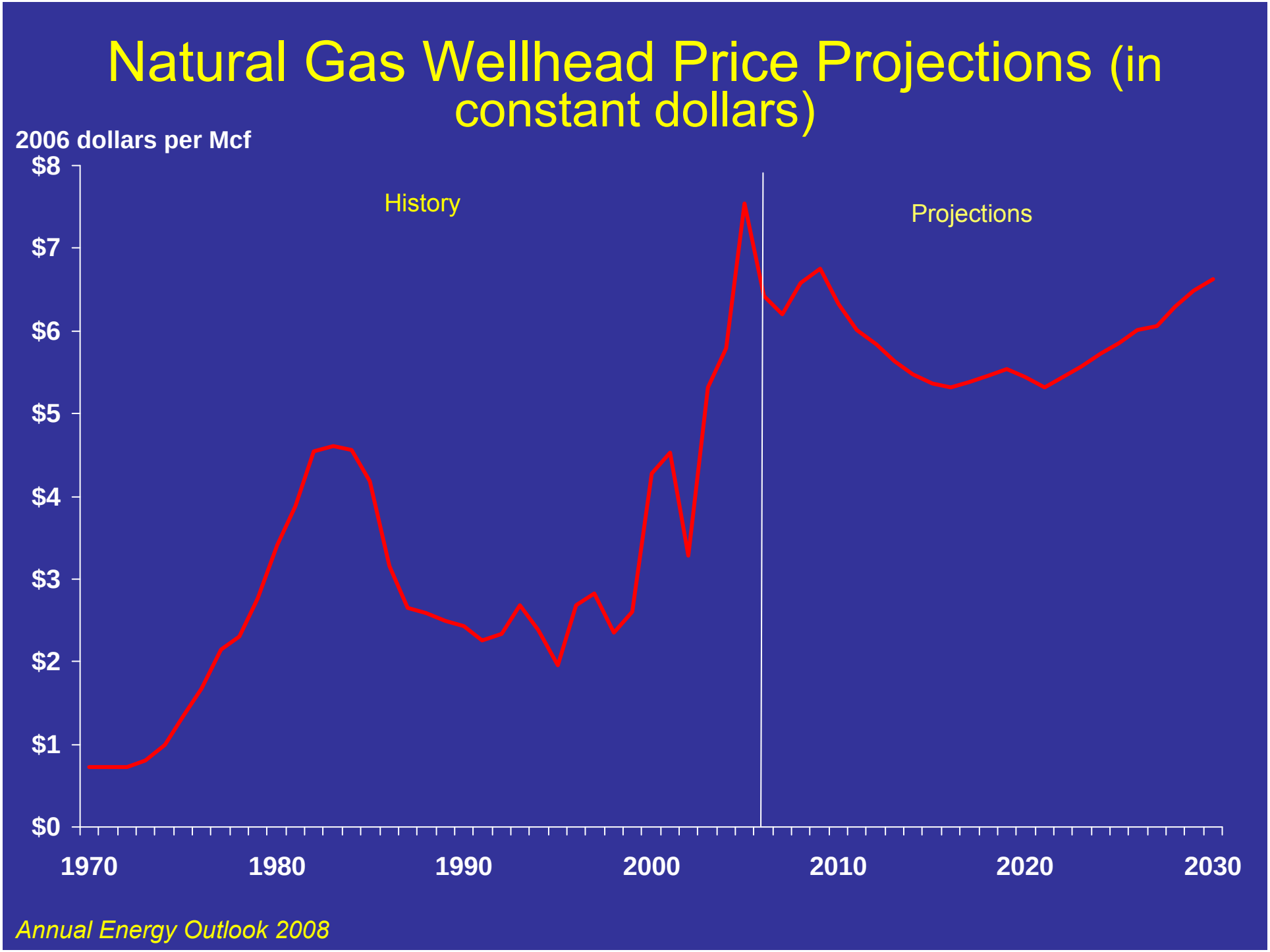
Highlights of *AEO 2008* -- *continued*

- Prices will dampen as new supplies enter the market (prices are projected to decline, in real dollars, until around 2016 as new gas supplies enter the U.S. market)
- Alaskan gas pipeline expected to be completed in 2020
- Sharp drop in conventional onshore gas production, with offshore production peaking in 2017 as new resources come online in the Gulf of Mexico

Highlights of *AEO 2008* -- *continued*

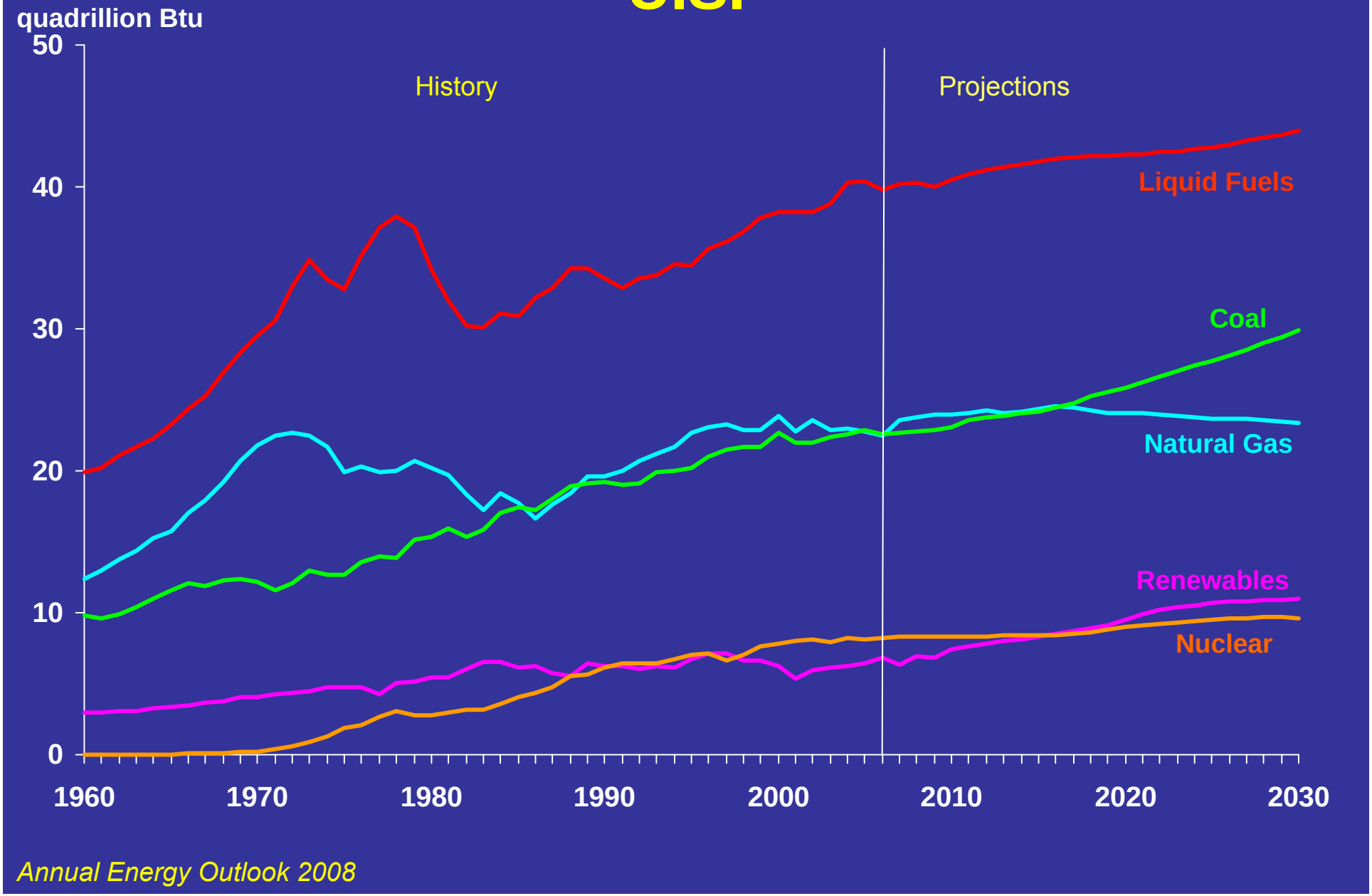
- Production of unconventional gas, particularly gas from shale, is expected to be a key contributor to growth in U.S. gas supplies
- Net pipeline imports of gas into the U.S. expected to fall from 2.9 Tcf in 2006 to 0.3 Tcf in 2030, because of both resource depletion in Alberta and Canada's growing domestic demand

Natural Gas Wellhead Price Projections (in constant dollars)



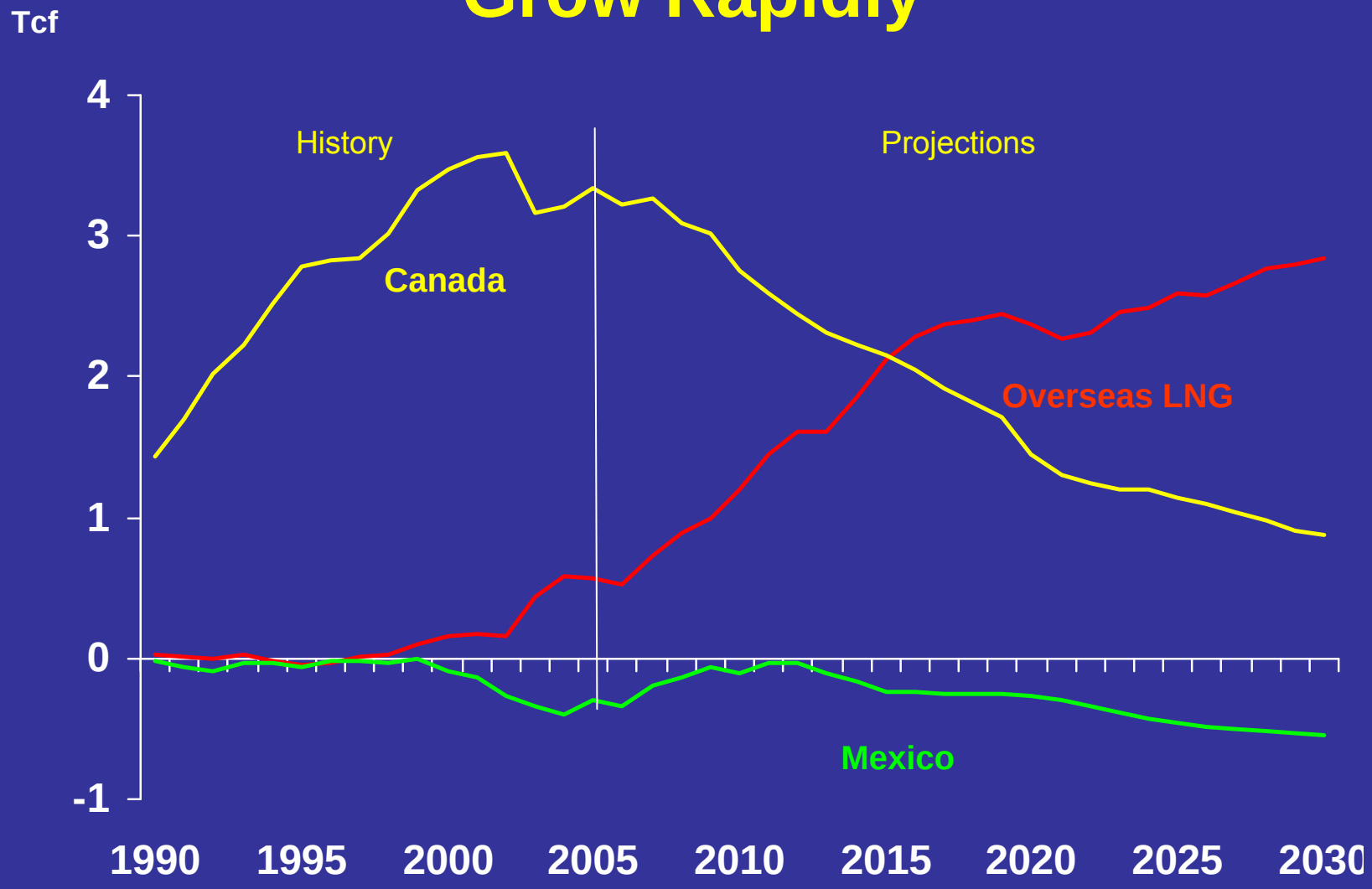
Annual Energy Outlook 2008

Consumption of Different Fuel Sources in the U.S.



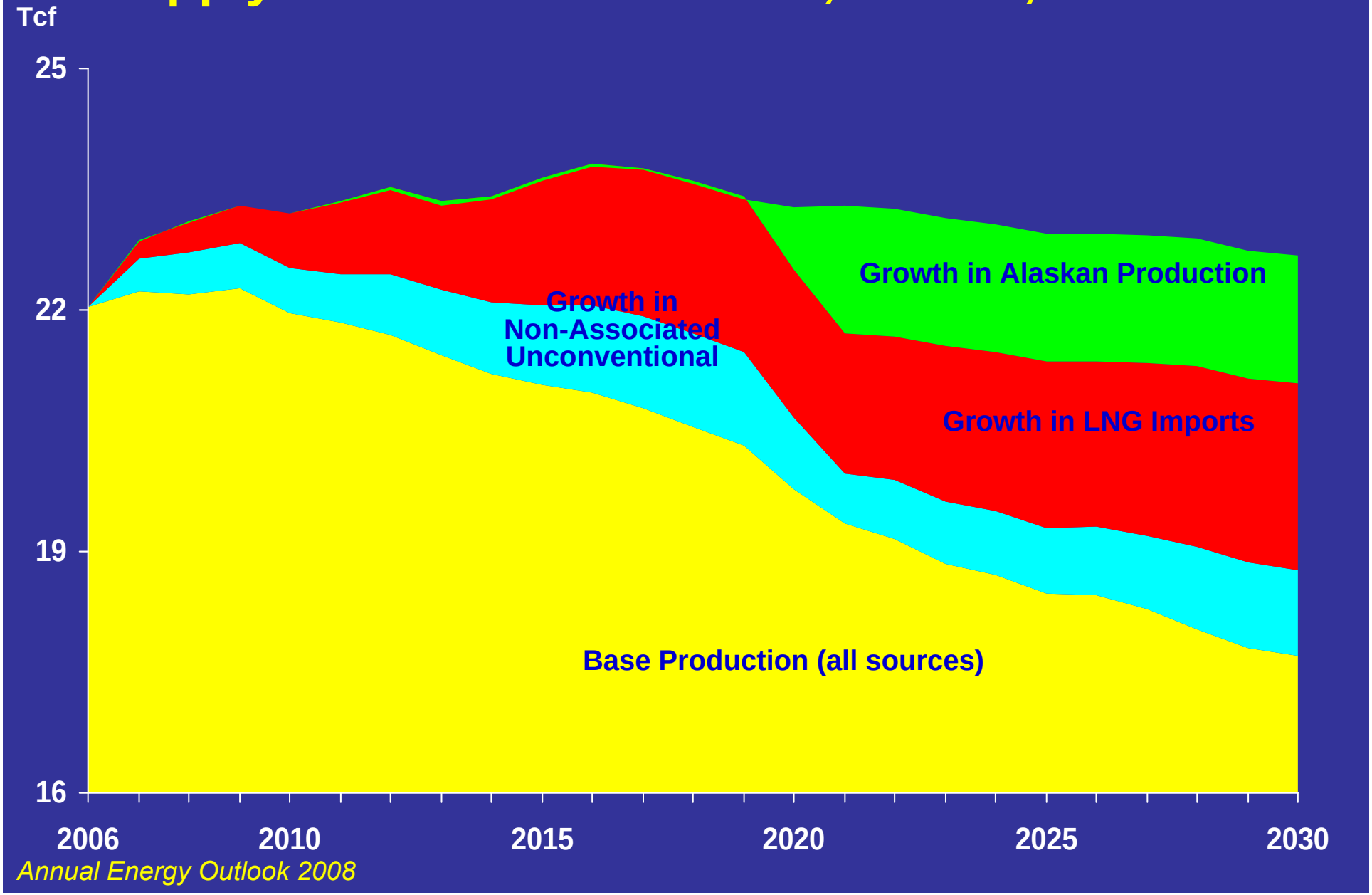
Annual Energy Outlook 2008

Canadian Imports Decline and LNG Imports Grow Rapidly



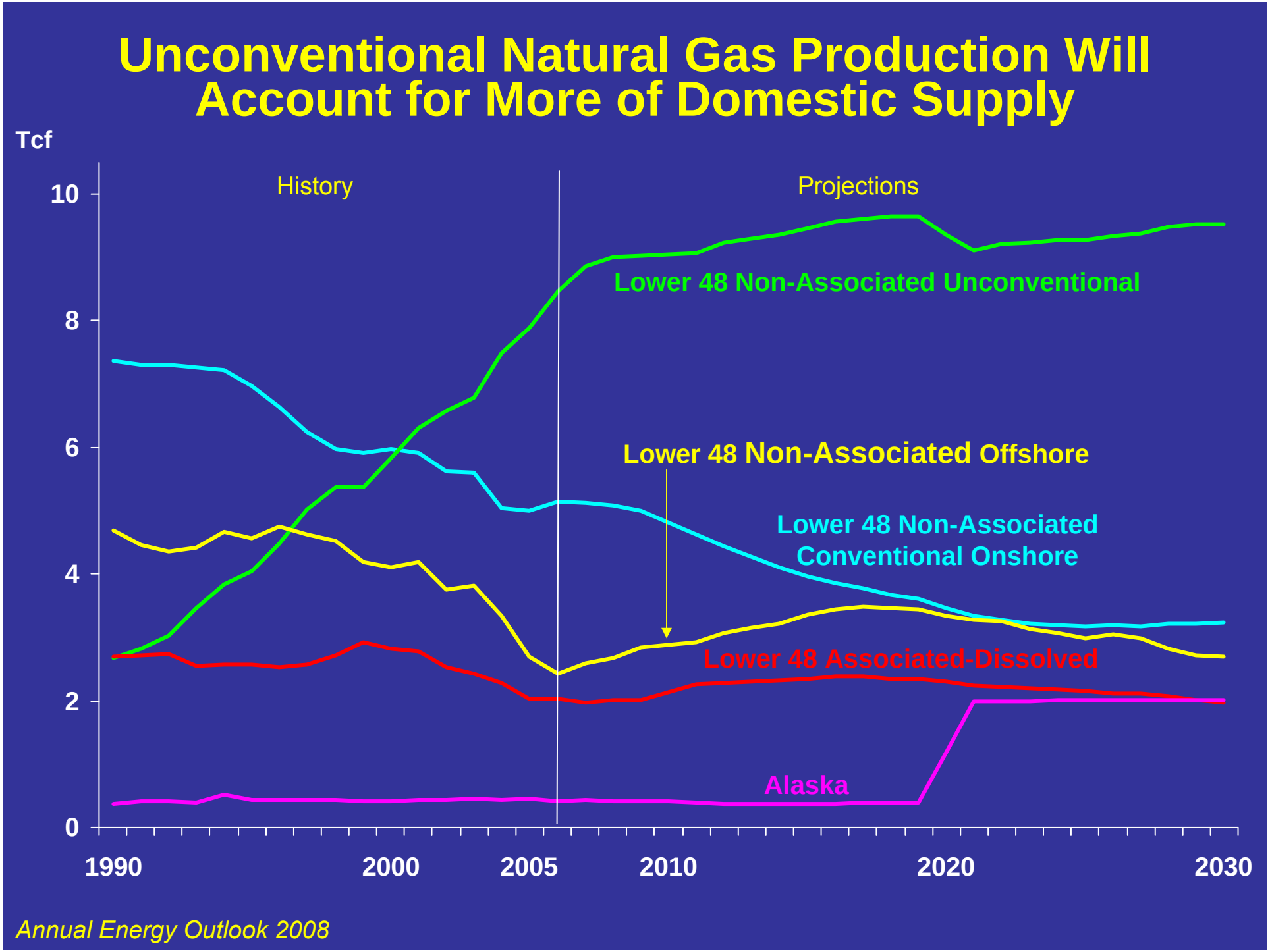
Annual Energy Outlook 2008

The Major Sources of Incremental U.S. Natural Gas Supply: Unconventional Gas, Alaska, and LNG



Annual Energy Outlook 2008

Unconventional Natural Gas Production Will Account for More of Domestic Supply



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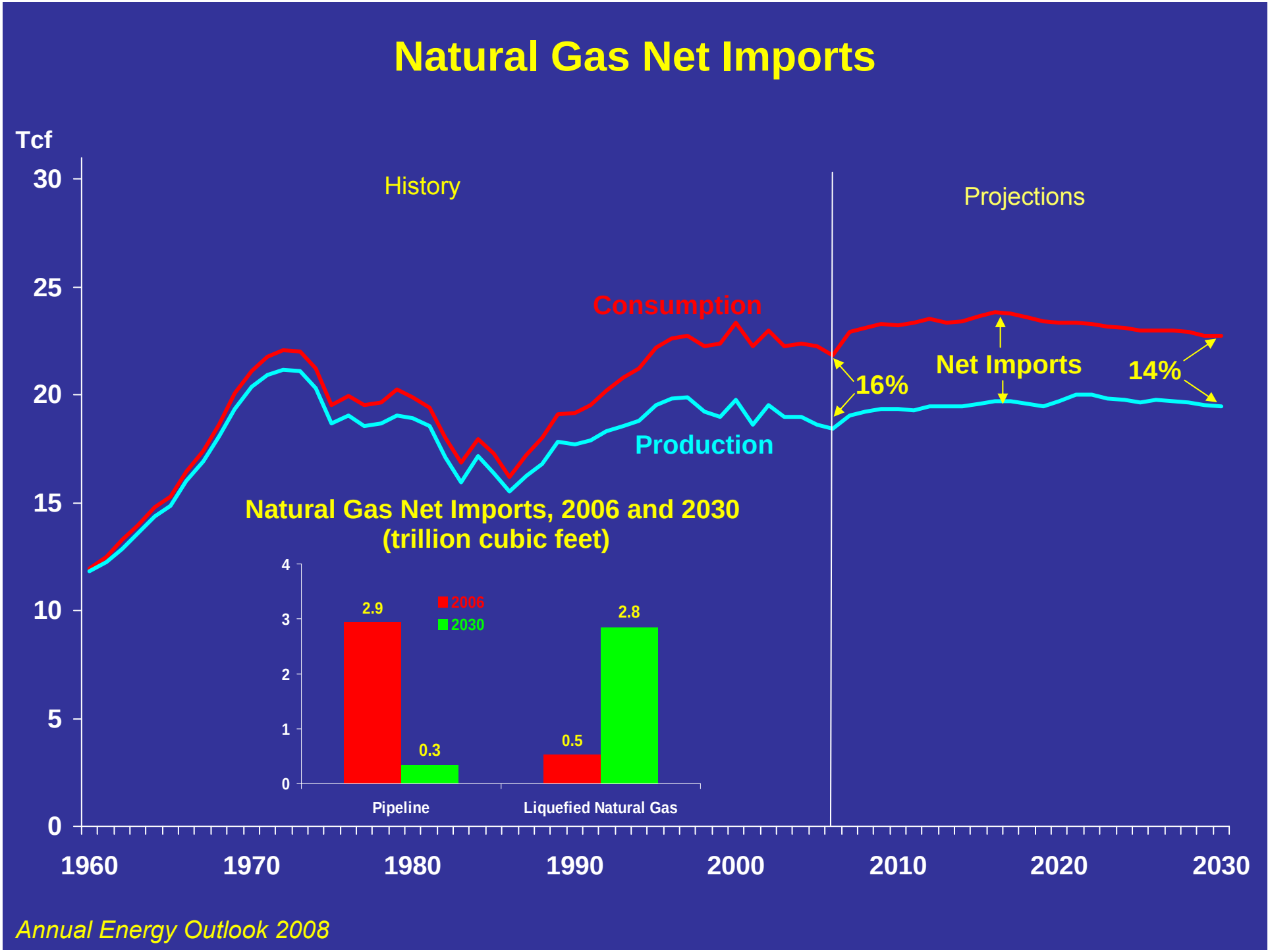
Natural Gas Net Imports



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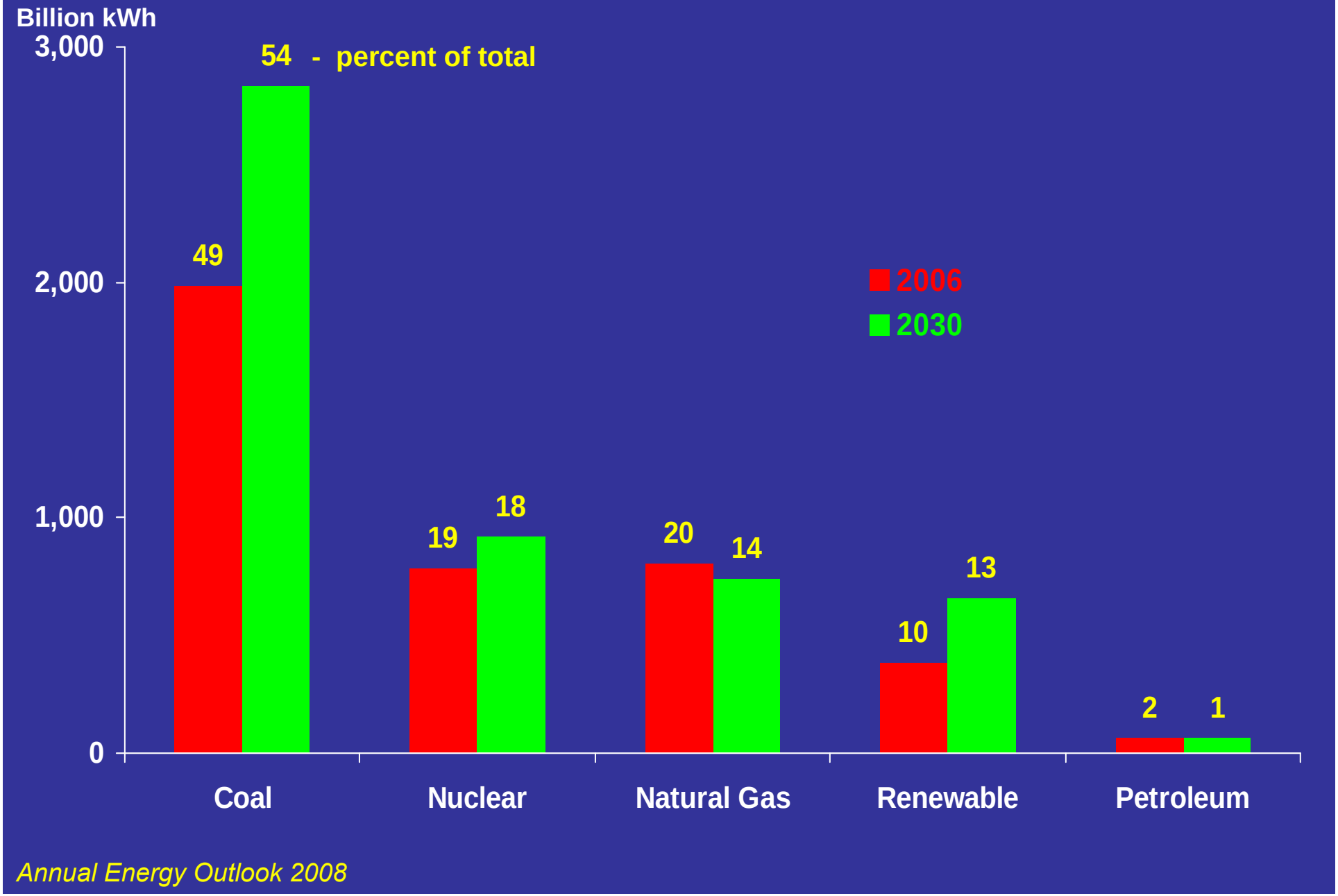
Fuel Sources for Electricity Generation



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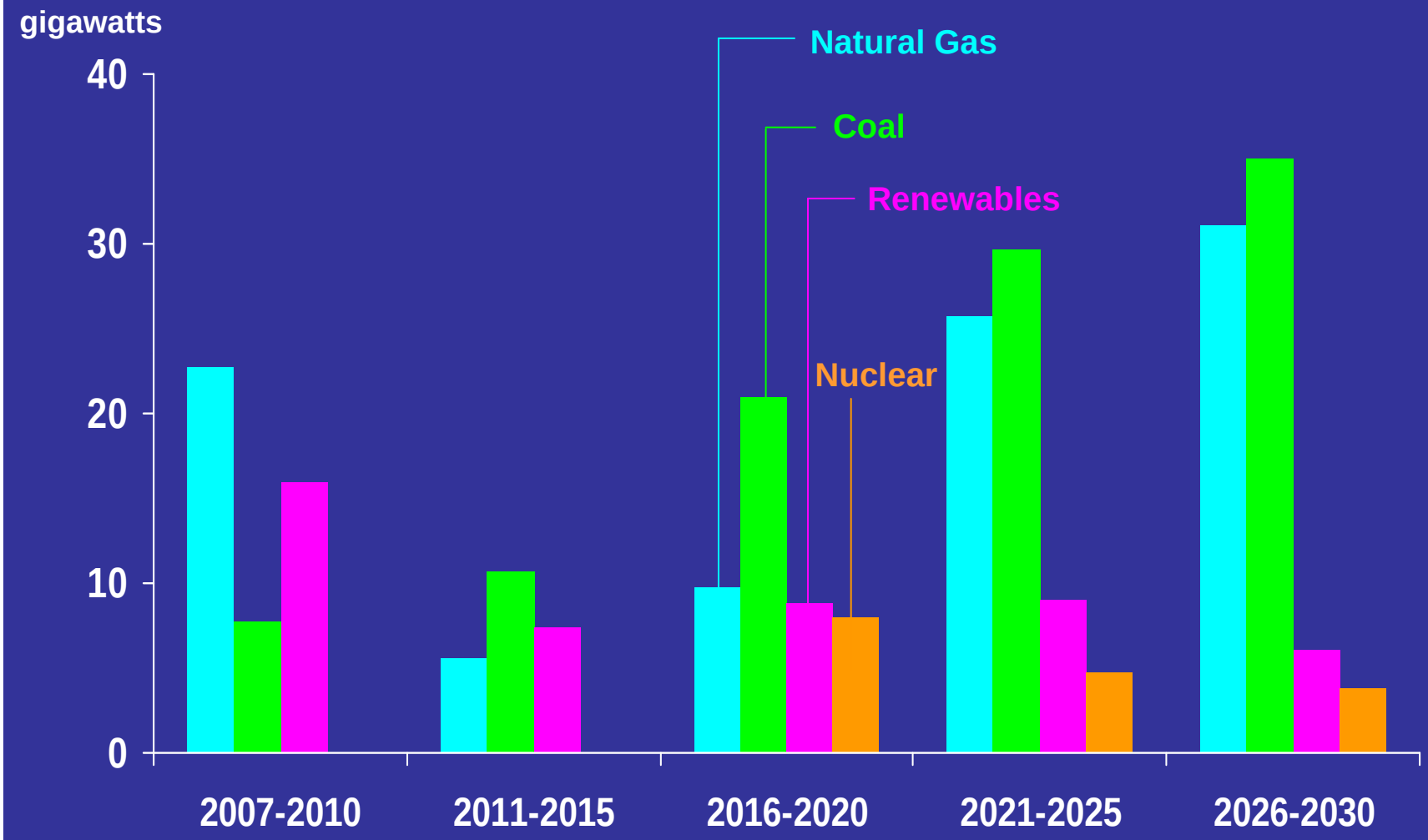
Additional Generation Capacity thru 2030



Annual Energy Outlook 2008

NRRI's Website: The Section on Natural Gas

Components

- Paper on “The Natural Gas Industry at a Glance”
- Research in Progress
- Research Projects in Search of Researchers
- Hot Topics – and How to Prepare for Them
- Library of NRRI Publications
- Suggested Readings
- Recent NRRI Presentations
- Ask an Expert
- Glossary and Acronyms
- Research Tools
- Discussion Threads

Contact

Ken Costello, Director,
Natural Gas Research and Policy, *National Regulatory Research Institute*

mailto:kcostello@nrri.org

NRRI Website: http://www.nrri.org