

Exploring the Future for Natural Gas Supply and Demand

Based on ICF's March 2010 Energy Outlook

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Kevin R. Petak

Vice President, Gas Market Modeling
ICF International
703-218-2753
kpetak@icfi.com

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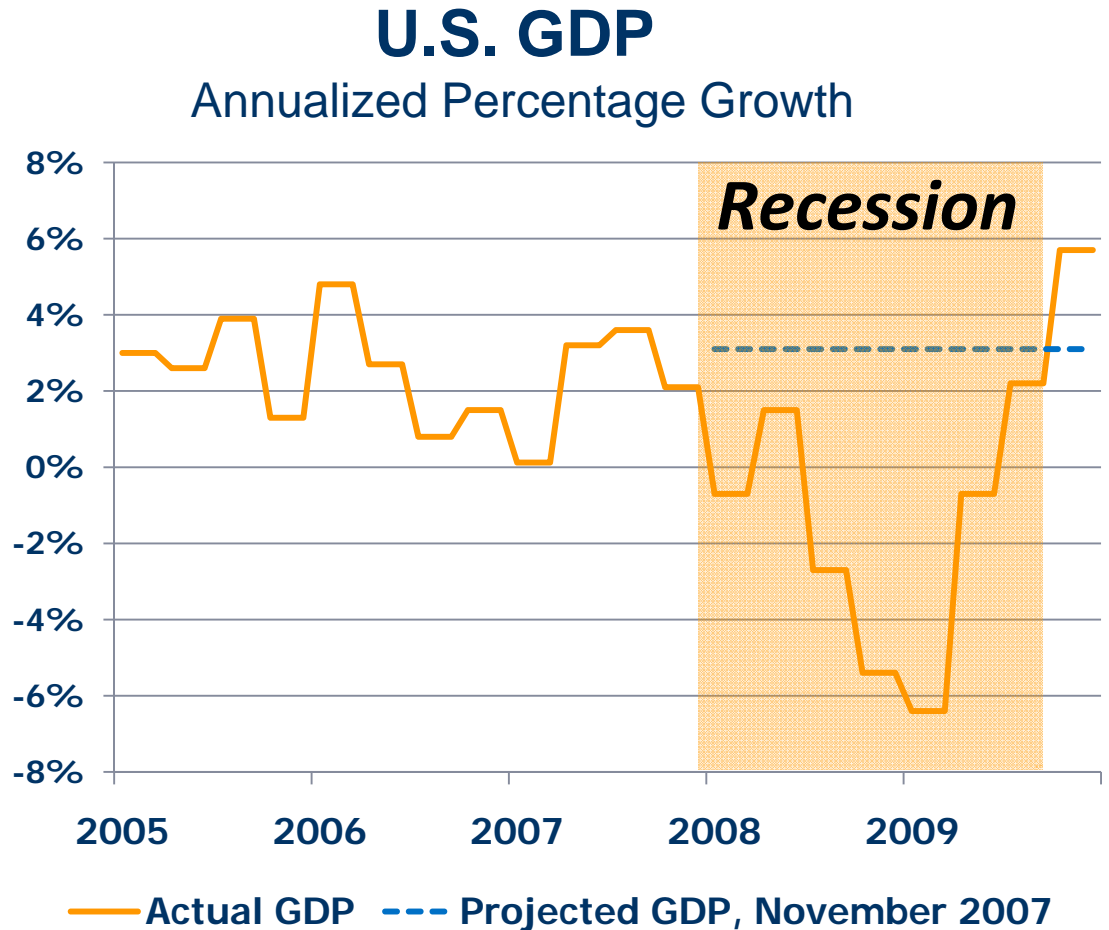
Contents

- Setting the Stage with a Brief Review of Recent Historical Trends
- ICF's Near-term Market Projections
- ICF's Long-term Market Projections
- In Summary

Setting the Stage with a Brief Review of Recent Historical Trends

The Great Recession Had Significant Impacts on the Economy

- The most significant event during the past few years was the recession.
 - The most significant recession during the past 50 years.
 - The economy shrunk by about 4%.
 - Contrasts with 2.8% per year growth – that is, the assumed growth rate for GDP in our projection.

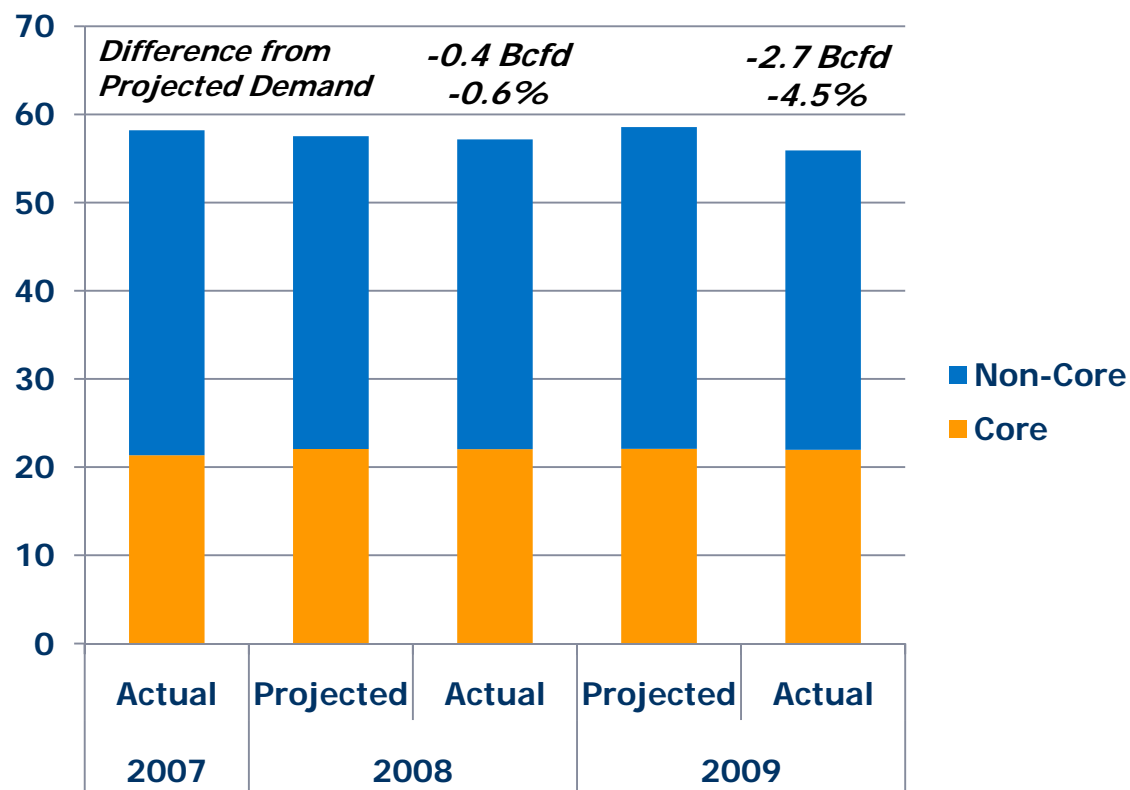


Source: U.S. Bureau of Economic Analysis

A Shrinking Economy Reduced Gas Use

- Instead of growing modestly from the 2007 level, gas use has declined by about 5%, consistent with the decline in economic activity.

U.S. Natural Gas Consumption Annual Average Billion Cubic Feet per Day

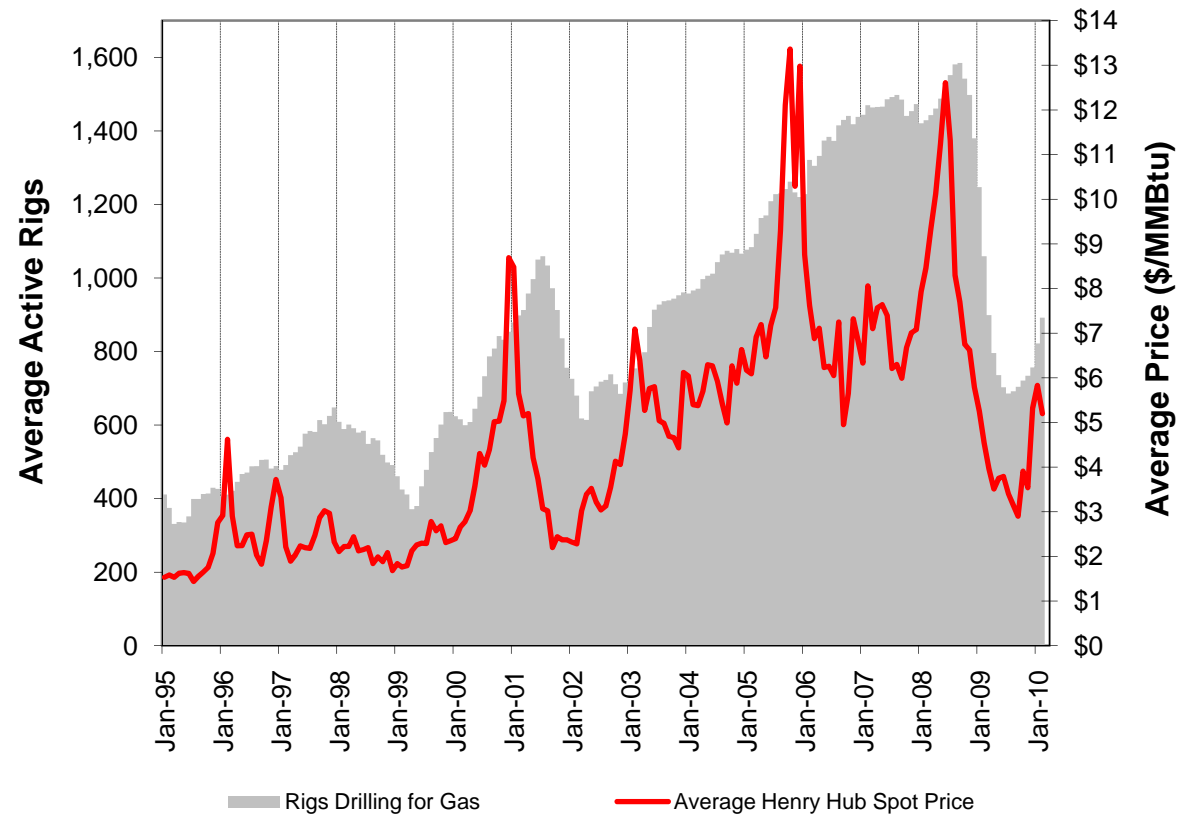


Core demand includes the residential and commercial sectors.
 Non-core demand includes the industrial and power generation sectors.
 Projected values are from ICF's November 2007 gas market projection.

Drilling Activity Tends to Follow Natural Gas Prices

- But, drilling activity continued to rise until late 2008 in response to relatively high gas prices.
- A significant decline in activity occurred in late 2008 and early 2009 in response to the collapse in prices.
- More recently, activity has modestly increased, but the focus is on horizontal wells.

U.S. Gas-Directed Drilling Activity and Gas Prices

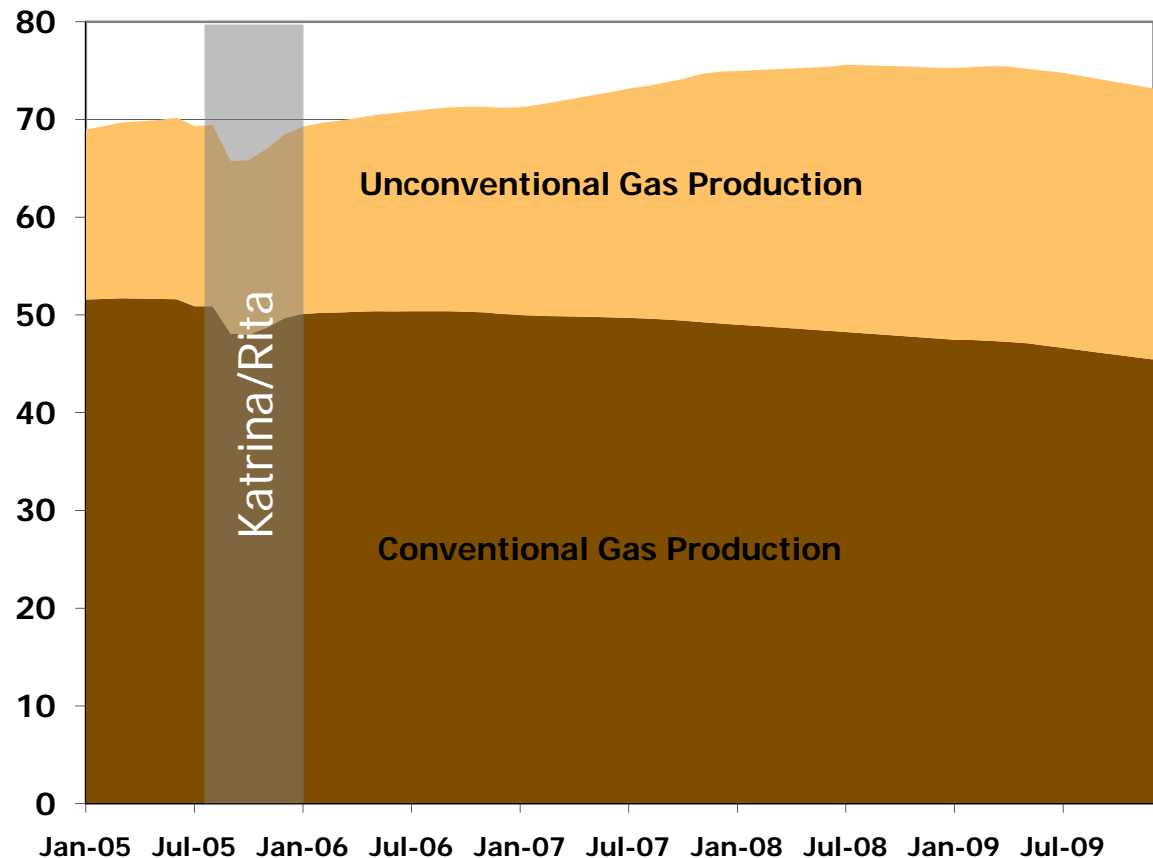


Sources: Rigs from Baker-Hughes, and gas prices from Platts

And the Growth in Gas Production Has Been from Unconventional Sources

- Increase in natural gas production has been associated with robust levels of unconventional gas development.
 - Total gas production up by about 5 billion cubic feet per day, or by about 7 percent from 2005 through 2009.
- Conventional gas production has continued to decline.
- Recent stabilization and slight decline in production is a result of declines in drilling activity.

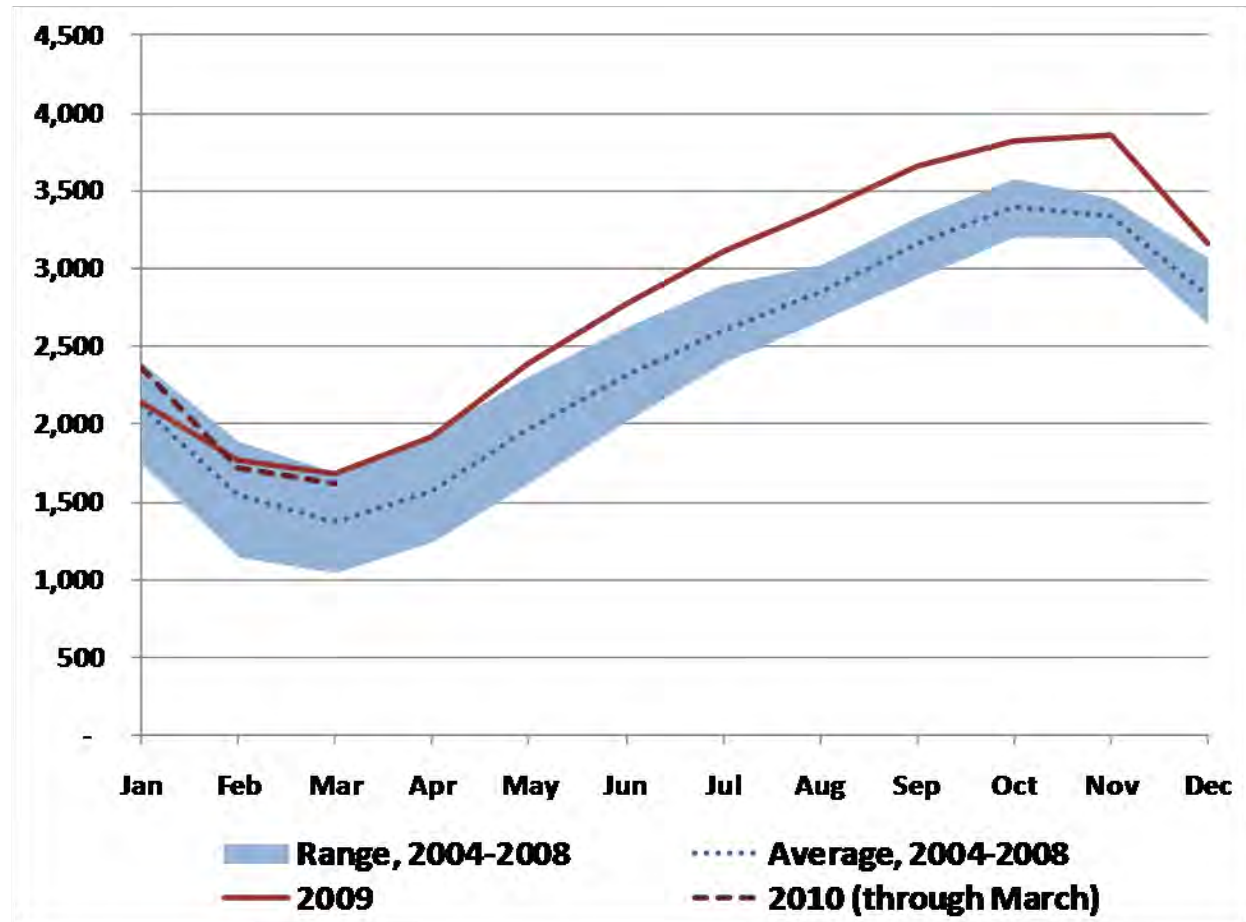
U.S. & Canada Natural Gas Production
Billion Cubic Feet per Day



Robust Storage Levels are a Result of the Divergent Trends in Supply and Demand

- Storage during the past year has been at the top end or above the range for the prior 5 years, and has been 200 to 500 Bcf above average levels during that 5-year period.

U.S. Working Gas Levels Billion Cubic Feet

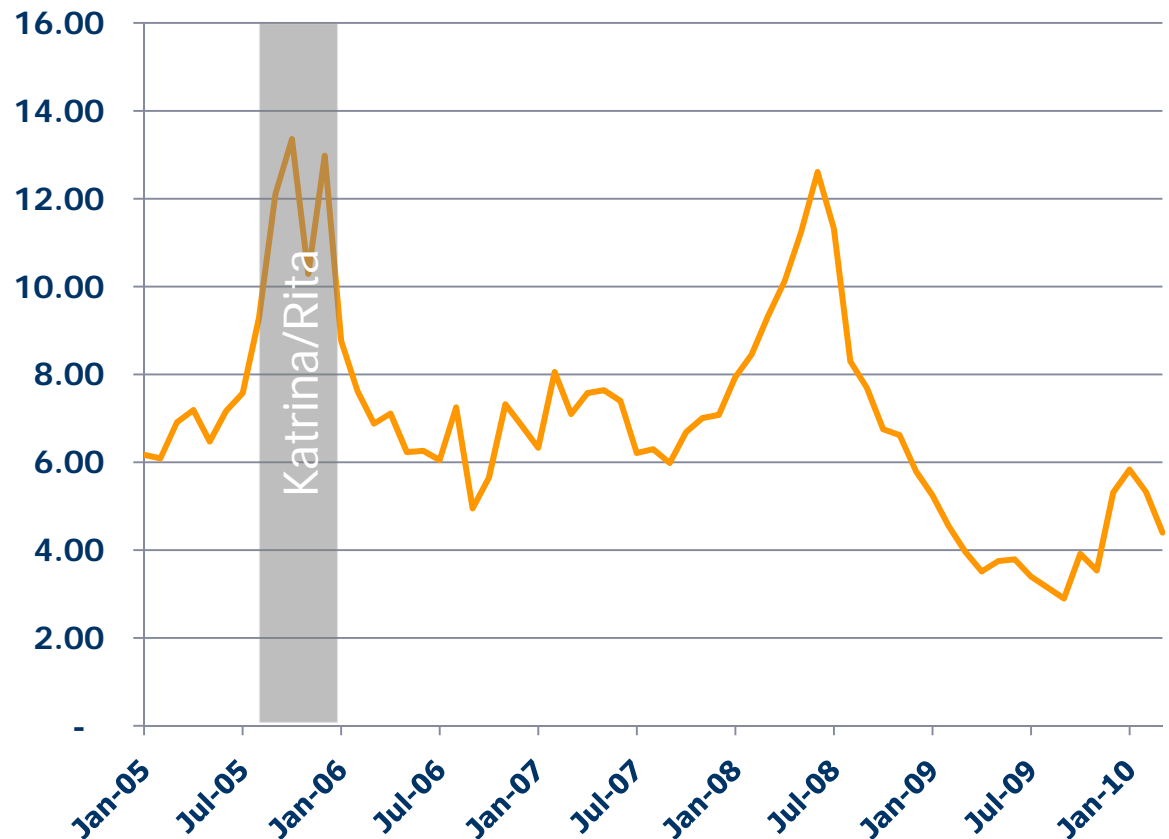


Source: U.S. Energy Information Administration

... and, Natural Gas Prices Have Been Much Lower as a Result

- Prices during the past year have averaged just over \$4 per MMBtu, about 50% below the average of about \$8 per MMBtu during the prior 5 years.

Natural Gas Prices at Henry Hub
Nominal Dollars per Million British Thermal Units (MMBtu)



Source: Platts

ICF's Near-Term Market Projections

The Gas Balance is Likened to Tighten as the Economy Continues to Rebound

U.S. Natural Gas Supply/Demand Balance Average Billion Cubic Feet per Day

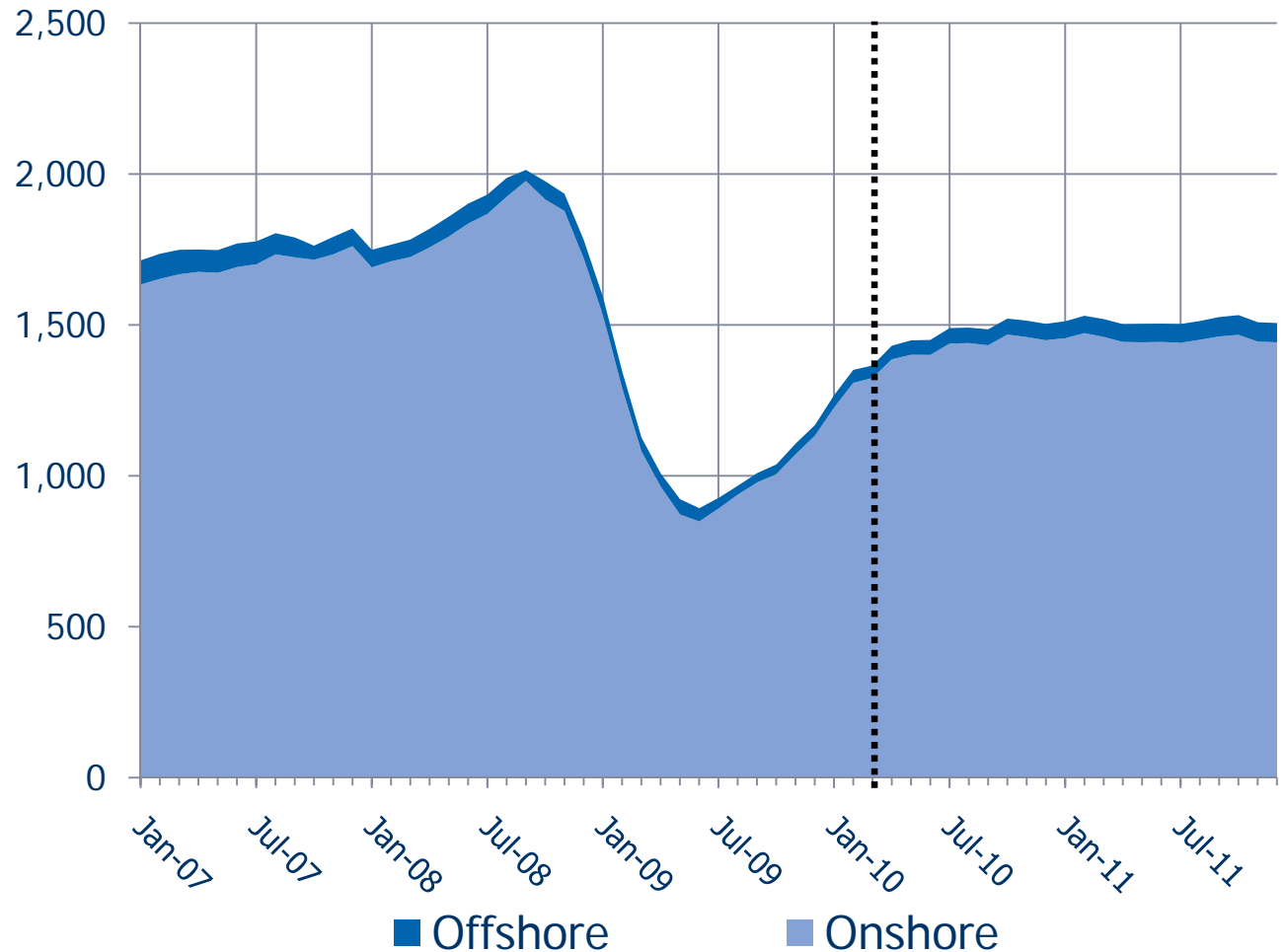
- Gas demand is likely to turn around and grow, albeit at a relatively modest rate.
 - Most of the rebound in the near-term will occur in the industrial sector, but there are still signs of weakness and much uncertainty.
- Production is likely to continue to shrink this year, but will turn around as gas prices firm.

	Injection Season			Withdrawal Season		
	2009	2010	2011	2009/10	2010/11	2011/12
Gas Demand						
R/C/I Gas Use	29.6	30.1	30.8	58.8	56.1	56.5
Power Gas Use	17.5	17.1	17.0	15.0	14.4	15.6
Other Gas Use	5.7	5.6	5.6	6.1	5.9	6.1
Net Injections	10.2	9.7	10.6	0.0	0.0	0.0
<i>Demand Total</i>	<i>63.0</i>	<i>62.5</i>	<i>64.0</i>	<i>79.9</i>	<i>76.5</i>	<i>78.2</i>
Gas Supply						
US Production	56.5	55.1	56.2	56.2	55.4	57.9
Net Imports	6.9	8.0	8.3	7.3	6.6	6.6
Net Withdrawals	0.0	0.0	0.0	17.6	15.3	14.9
<i>Supply Total</i>	<i>63.4</i>	<i>63.1</i>	<i>64.6</i>	<i>81.0</i>	<i>77.3</i>	<i>79.4</i>
Balancing Item (S-D)	0.4	0.6	0.6	1.1	0.9	1.2

Projected Rig Activity Will Stabilize After a Modest Increase

U.S. Rotary Rigs Actively Drilling for Oil and Gas

- Projected activity for the total number of rotary rigs operating in the U.S. is likely to stabilize near 1,500 rigs, well below the peak in 2008.
- Focus will be on unconventional gas development, and the majority of the rigs will be drilling deviated holes or horizontal wells.

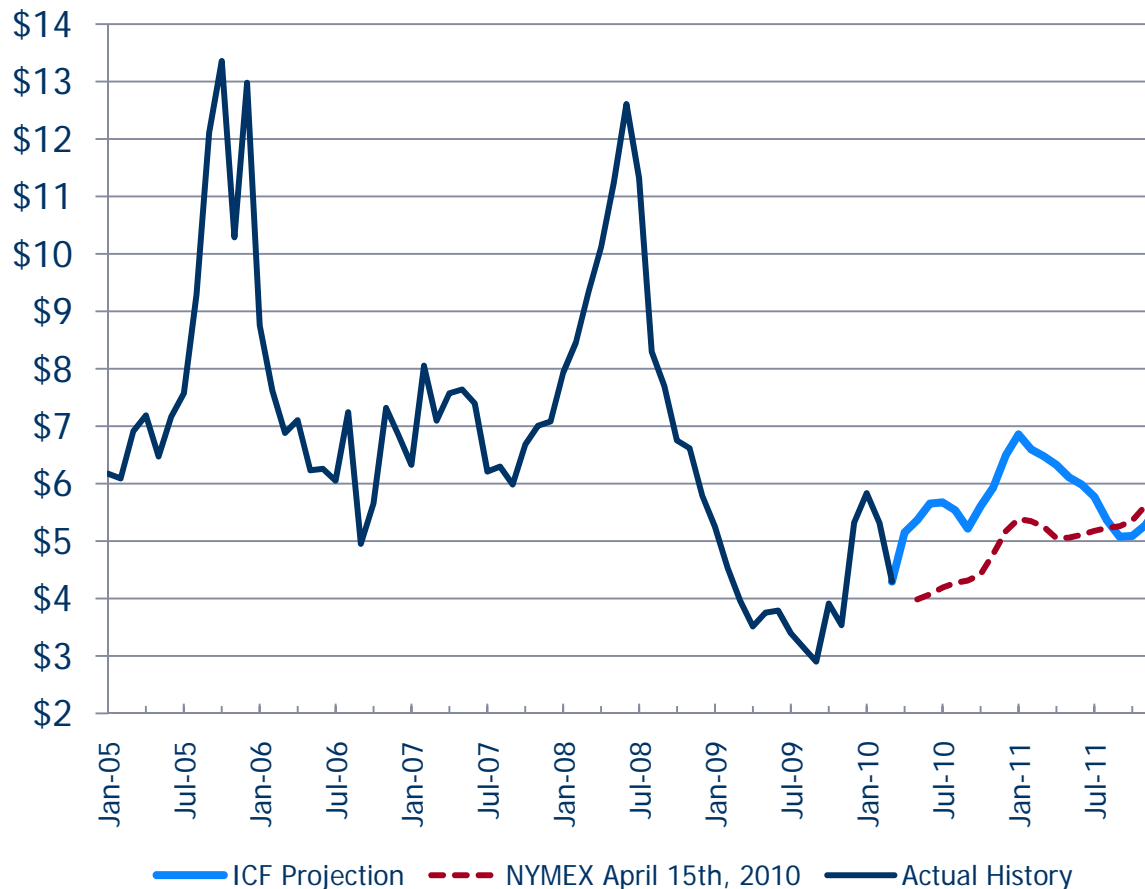


Source: Baker-Hughes

Gas Prices are likely to Rebound Along with the Rebound in Gas Demand

- Gas prices are likely to strengthen as the economy continues to rebound, but the strength of the rebound in prices will be directly linked to growth in gas use.
- Average level of gas price over the next year projected to be about \$5.30 per MMBtu.
- Our projection is currently about \$1 or 20% above the futures market.
 - Projection and futures in strong contango – most analysts and market observers expect future prices to be above current levels.

Projected Natural Gas Prices Versus NYMEX Nominal Dollars per MMBtu



Source: Historical prices from Platts

But, There are Many Near-term Uncertainties

- Weather
 - Both temperatures and potential hurricane activity
- Pace of Economic Recovery
 - Will industrial gas demand recover?
 - How will electricity load grow?
- Gas versus Coal in the Power Sector
 - With low gas and coal prices, which fuel will win the dispatch war?
 - And, in the longer term, environmental issues (including carbon regulation) loom.

ICF's Long-Term Market Projections

Important Demand Assumptions Drive Our Long-term Projections

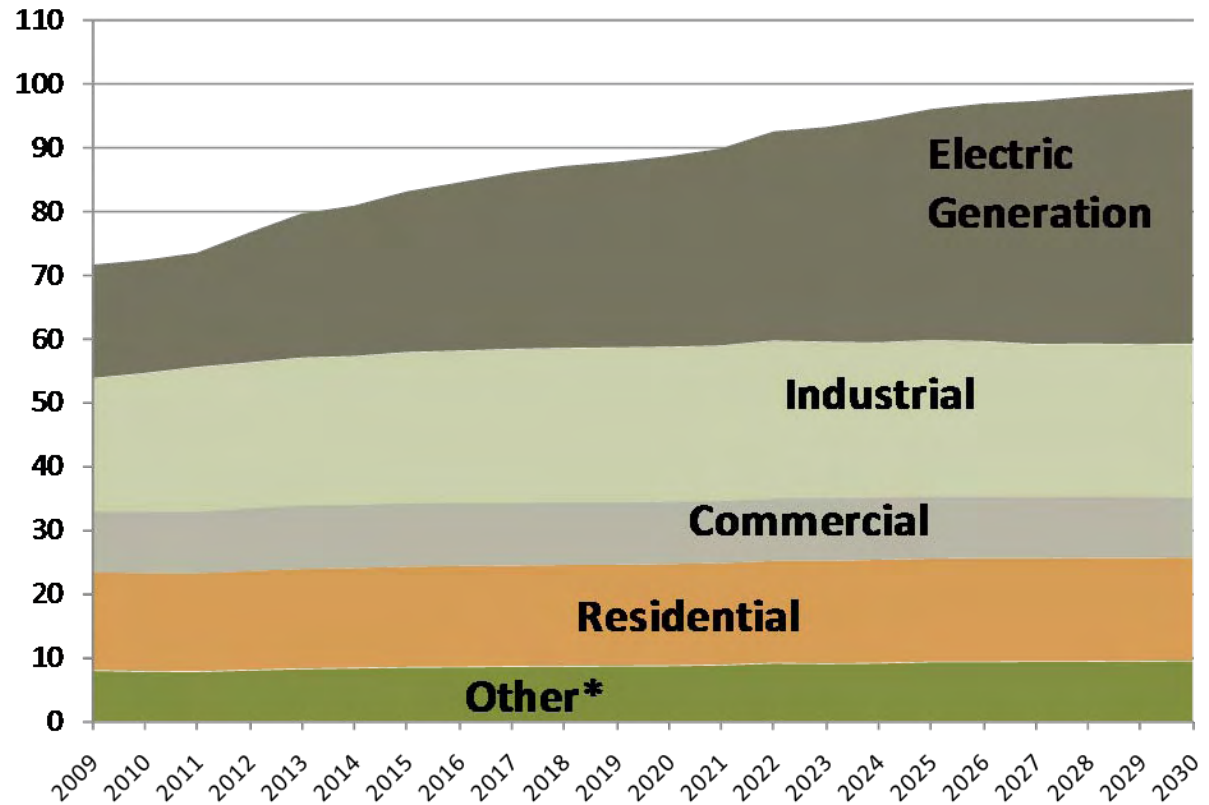
- In the long-run, U.S. and Canada economic activity continues at levels consistent with levels observed during the past 20 years.
 - Actual reported GDP values are applied through Q4 2009*. GDP growth averaged +0.2% for the full year 2009.
 - U.S. GDP is assumed to grow by 3% in 2010, and at a rate of 2.8% per year after 2010.
- A Federal cap and trade system that reduces CO₂ emissions is in effect by 2015.
- Adoption of DSM programs and conservation and efficiency trends continue, consistent with recent history.
 - No assumed policies that create additional DSM, conservation, and efficiency beyond those currently in place.

*Includes an advance estimate of Q4 2009 GDP growth released by the U.S. Bureau of Economic Analysis on Jan 29, 2010.

Gas Demand Grows Mostly as a Result of Growth in the Power Sector

- The hangover from the recession leads to relatively flat natural gas use from 2009 into 2011.
- After 2011, demand growth resumes, led by growing gas use for electric generation.
 - Power generation gas use more than doubles by 2030.
- Very little demand growth occurs in the other sectors.

U.S. and Canadian Gas Demand
Annual Average Billion Cubic Feet per Day



* Other includes Pipeline Fuel and Lease and Plant gas use

Exploring the Drivers of the Growth of Gas Use in the Power Sector

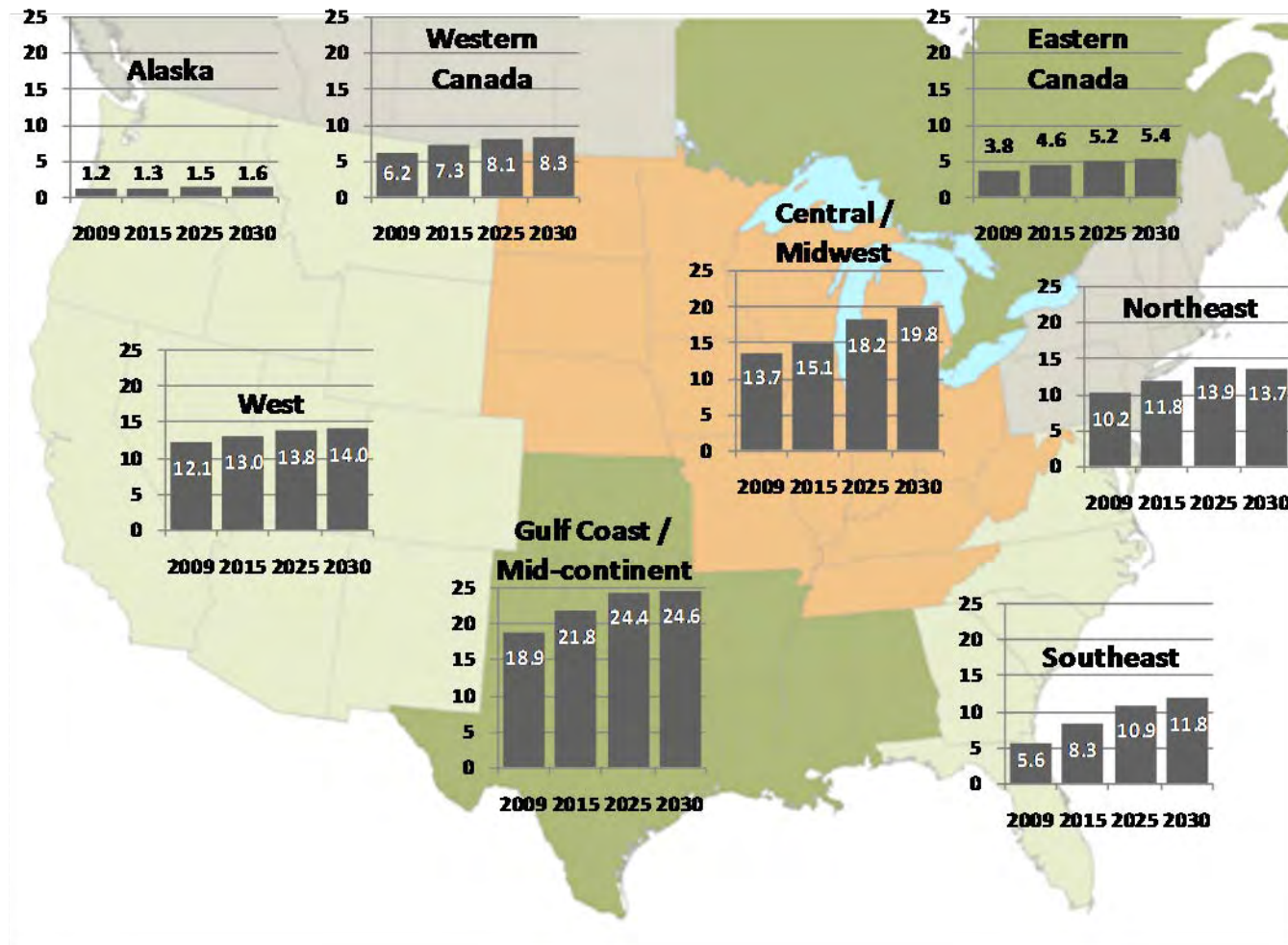
- Since 1997, over 200 Gigawatts of new gas-based capacity has been constructed.
 - Gas-fired plants have continued to be favored due to relatively low capital costs and pollutant emissions.
- Gas is an important fuel for carbon policy.
 - Generation from existing coal plants is likely to decline.
 - Carbon policy limits the growth in coal capacity during the forecast period.
 - Coal with carbon sequestration is too costly to be considered a viable option until after 2020.
- Generation from renewables grows at a rapid pace, but from a relatively small base.
 - This is mostly driven by state RPS specifications. The development is further enhanced by carbon policy.
- Significant growth in nuclear generation not expected until after 2020, and even uncertain then.
- No significant changes in hydroelectric capacity or generation.

A large portion of the incremental growth in electricity demand during the next 15 years will likely be satisfied by gas-fired generation.

Demand for Natural Gas Will Grow Across the U.S. and Canada

- Most of the regional growth in gas demand is due to increased gas use for electric generation.
- The largest increases occur in the southern parts of the U.S.
- Demand growth in Western Canada is primarily driven by increased gas use for oil sands development.

Regional Gas Demand Annual Average Billion Cubic Feet per Day



The North American Natural Gas Resource Base Could Support Current Levels of Gas Use for Up to 100 Years



Technically Recoverable Resource Assuming Current E&P Technologies, in Tcf

	Proven Reserves	Unproved Plus Discovered Undeveloped	Total Remaining Resources	Shale Assessment*
Alaska	8.2	294.4	302.6	0.0
West Coast Onshore	3.1	26.5	29.6	0.3
Great Basin	1.0	3.7	4.7	0.0
Rockies	59.5	235.0	294.5	15.7
West Texas	21.4	133.3	154.7	92.2
Gulf Coast Onshore	44.6	280.1	324.6	113.0
Mid-continent	28.3	234.2	262.5	168.2
Eastern Interior	19.7	331.6	351.2	262.4 **
Gulf of Mexico	17.7	299.7	317.4	0.0
U.S. Atlantic Offshore	0.0	32.8	32.8	0.0
U.S. Pacific Offshore	0.9	21.7	22.6	0.0
WCSB	56.9	316.0	372.9	166.2
Arctic Canada	0.0	71.0	71.0	0.0
Eastern Canada Onshore	0.5	12.8	13.3	7.0
Eastern Canada Offshore	0.5	83.0	83.5	0.0
Western British Columbia	0.0	10.9	10.9	0.0
US	204.4	1,892.9	2,097.3	651.8
Canada	57.9	493.6	551.5	173.2
North America	262.3	2,386.5	2,648.8	825.0

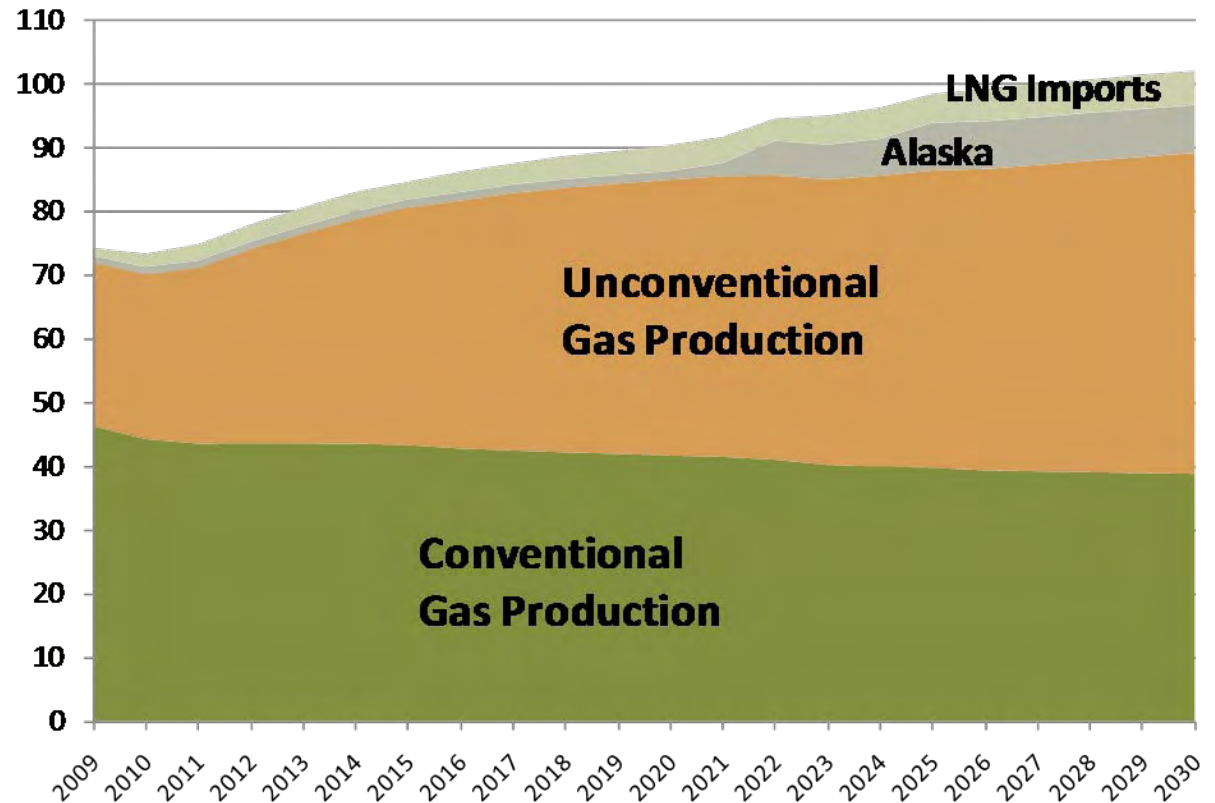
*Portion of total resource

**Not all resource is currently recoverable due to restrictions

Gas Supply Will Continue to Grow as Robust Development of Shale Gas is Likely to Continue

- Conventional gas production continues to decline, while unconventional production grows robustly.
- Unconventional gas production grows from one-third to over one-half of total gas supply by 2030.

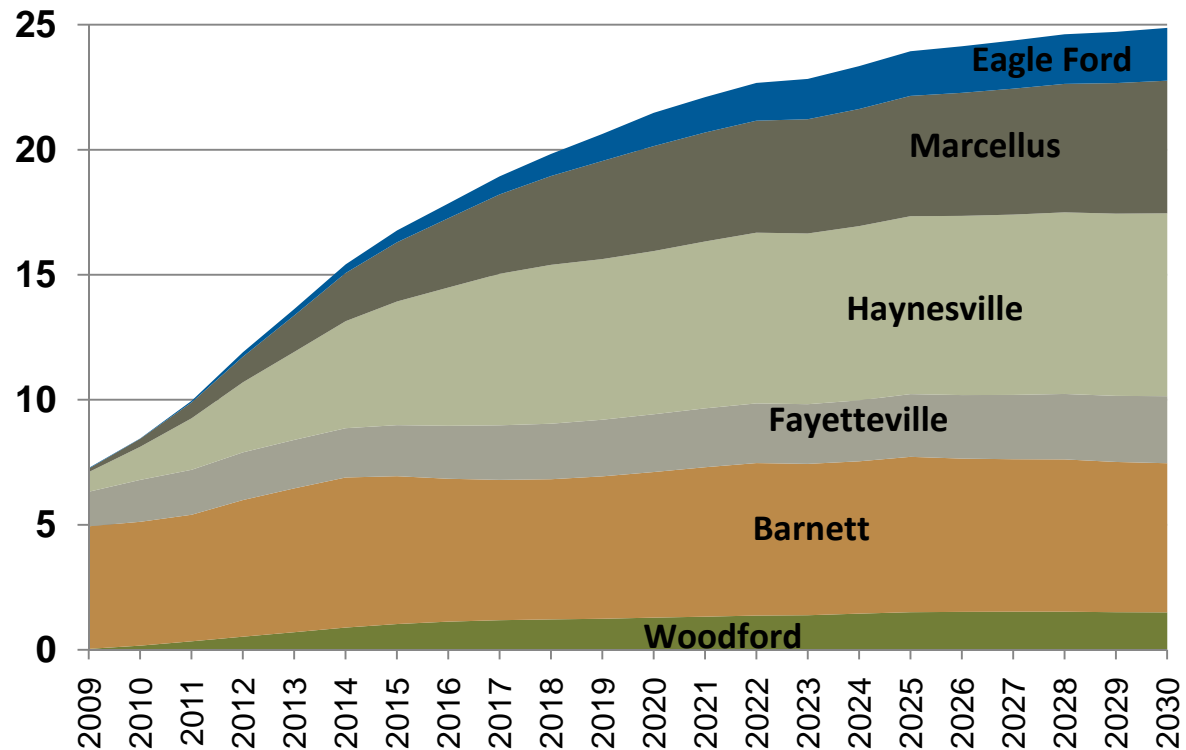
U.S. and Canadian Gas Supply Average Billion Cubic Feet per Day



Shale Gas Production Is a Game Changer

- The Lower-48 shale plays are among the fastest growing production areas in North America.
 - Barnett has been under development for over 8 years.
 - Other areas, such as Woodford, Fayetteville, and Haynesville, have emerged in the past few years.
 - Marcellus and Eagleford are still in the early stages of development.
 - The Granite Wash, though not included in this chart, is also an emerging play.
- The strength of the shale plays was evident during the recession, when development continued despite low gas prices.
 - But concerns over water use and fracturing fluid disposal could limit the pace of future development.
- Combined production from these areas is projected to increase by a factor of four from about 6 Bcfd in 2008 to nearly 25 Bcfd by 2030.

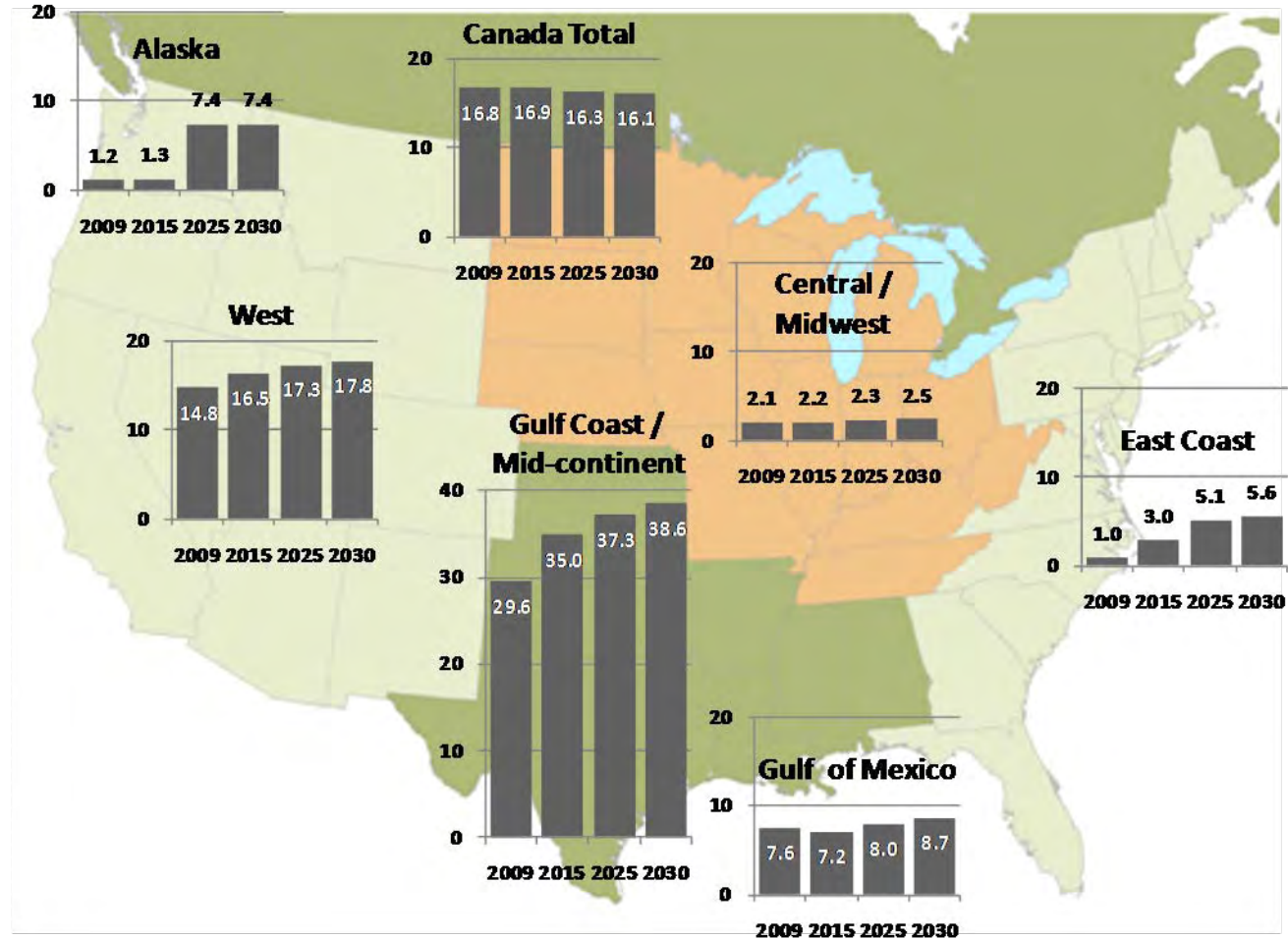
Shale Gas Production Annual Average Billion Cubic Feet per Day



Supply Growth is Mostly Concentrated in Areas with Growing Shale Production

- Production grows most along the Gulf Coast, in the Mid-continent, and along the East Coast (the Marcellus Shale).
 - These areas have high concentrations of shale gas resource.
- Canadian production is projected to decline, but shale gas development in British Columbia bears close watch.
- Alaska gas production increases to fill the Alaska Gas Pipeline that is assumed to come on-line in 2021.
 - But, Alaska natural gas development is very uncertain.
- Gulf of Mexico production rises only modestly, as increases in Deep Water plays offset declines in Shallow Water production.

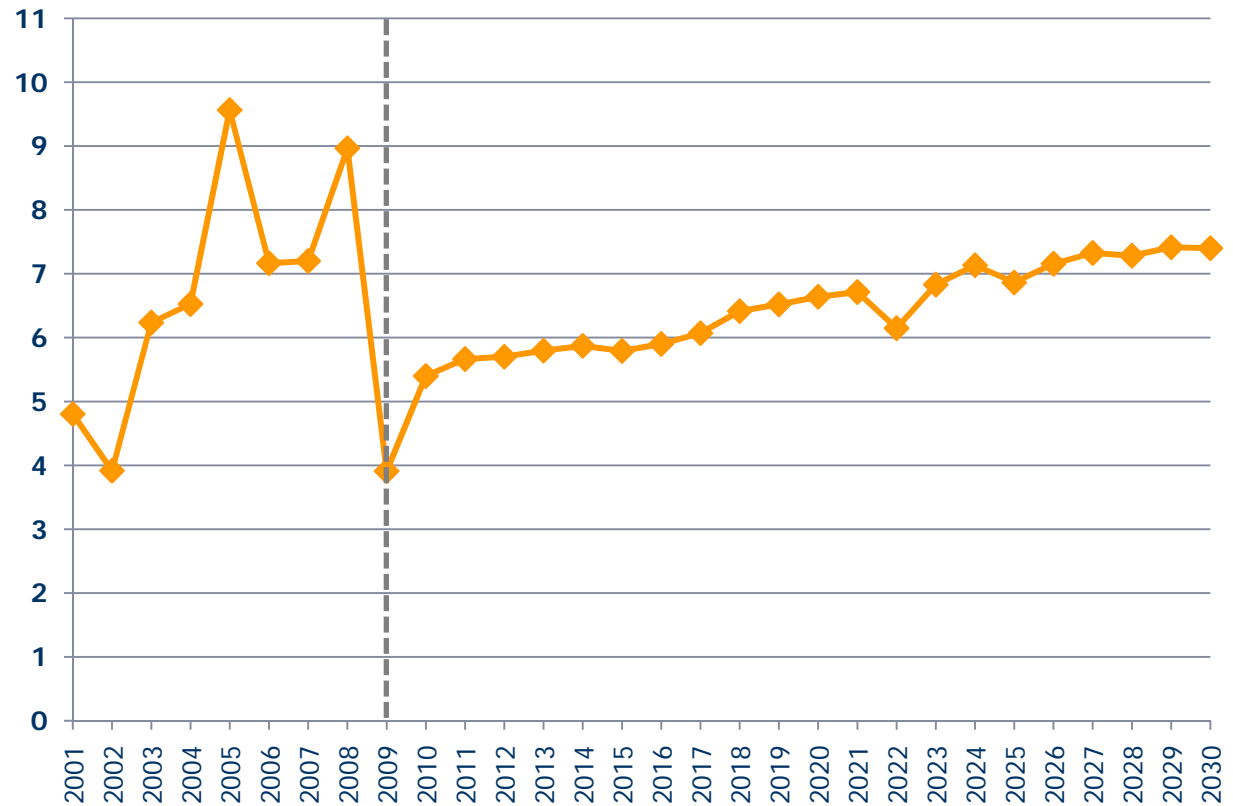
Regional Gas Supply Average Billion Cubic Feet per Day



Long-term Henry Hub Gas Prices Average Between \$5.50 and \$7.50 per MMBtu

- Henry Hub natural gas prices are projected to average between \$5.50 and \$7.50 per MMBtu in real terms.
- Robust growth in gas demand applies upward pressure on gas prices over time.
- \$5.50 to \$7.50 per MMBtu gas prices are sufficient to support the levels of supply growth in our projection.

Average Annual Gas Price at Henry Hub 2008 Dollars per MMBtu



Sources: Platts Gas Daily (historical), ICF International (projection)

In Summary

- Gas prices will rebound as the economy rebounds. Henry Hub gas prices likely to average \$5.50 to \$7.50 per MMBtu in real terms going forward.
- Gas consumption likely to grow, with significant growth in gas-fired power generation.
- Shale gas development is a game changer.
- Significant uncertainties in both directions.

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