

Natural Gas Winter Outlook 2010–2011

Executive Summary

The Natural Gas Supply Association's (NGSA) tenth annual Winter Outlook summarizes the association's view of existing natural gas market conditions and fundamentals. The analysis covers the key points that can affect supply and demand, which ultimately impact industrial, electric, commercial and residential consumers.

NGSA does not forecast natural gas prices, but for the 2010-2011 heating season the association expects flat price pressure on the natural gas market relative to last winter. Our expectation is based on a strained economic recovery, warmer winter weather than last year, and more demand for natural gas from the manufacturing and electric sectors, offset by supply factors such as high natural gas storage levels and increased natural gas production. The major pressure points include:

- » **ECONOMY:** As evidenced for the last two winters, economic conditions may play a greater role in natural gas market conditions than the weather this winter. NGSA anticipates the economy will continue its gradual but strained recovery. Public data indicate modest overall economic growth will place level winter-over-winter pressure on natural gas prices this heating season, when compared to last winter.
- » **WEATHER:** The National Oceanic and Atmospheric Administration (NOAA) predicts that most of the continental United States will experience winter weather temperatures that will be very slightly warmer than last winter's heating season. Only the Northwest and some bordering states are predicted to experience colder than normal temperatures, while a broad swath of the South is expected to be warmer than normal. Overall, weather is projected to place flat pressure on demand and prices compared to last winter.
- » **DEMAND:** Natural gas demand is expected to rise this winter. Industrial demand is expected to increase appreciably, nearing pre-recession levels. Electric demand also is projected to increase, with a significant amount of fuel-switching to natural gas expected to occur. Residential and commercial demand are projected to decrease slightly. Taken together, indicators point to upward pressure from increased demand.
- » **STORAGE:** The natural gas industry is expected to enter the winter heating season with storage inventories at a high level, but not as high as last year's all-time record levels. Storage will put even pressure on prices.
- » **PRODUCTION:** The number of rigs and well completions this winter is higher than last winter, led by horizontal and directional drilling. Production is projected to be greater than last year, exerting downward pressure on natural gas prices.

All of these projected pressure points are interrelated. Any deviation from this forecast is likely to affect the other assumptions in this equation. *The pace of the economic recovery and its impact on demand will be the most significant factors impacting the market.*



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Economy/Demand

This heating season, NGSAs expects the economy to persist at a strained recovery.

Economy/Demand		
Winter season Period-to-period change <small>Data source: Global Insight</small>	Last winter 2009-2010 ACTUAL	This winter 2010-2011 FORECAST
Economy	Fragile recovery	Strained recovery
GDP growth	1.3%	1.9%
Unemployment rate	9.9%	9.8%
Manufacturing	-0.5%	5.0%
CPI	1.9%	1.1%
Winter-to-winter pressure on natural gas prices		—

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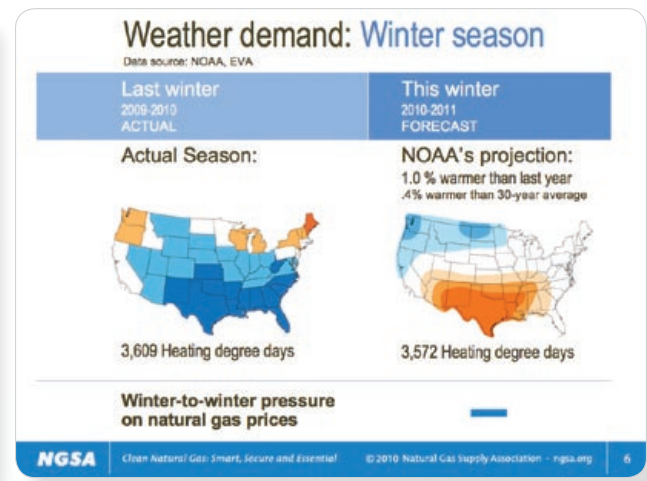
The Gross Domestic Product (GDP) is expected to show moderate growth compared to last winter. According to Global Insight, a nationally recognized economic forecasting firm, the GDP is expected to increase 1.9 percent compared to last winter's 1.3 percent.

Manufacturing, another important component of natural gas demand, is projected to improve by a robust 5 percent this winter, a welcome improvement from last winter's decline of 0.5 percent. The unemployment rate is predicted to hover at an uncomfortable 9.8 percent and inflation is forecast to increase 1.1 percent. Although most of the economic indicators are encouraging, the persistent high rate of joblessness is predicted to place a dampening effect on an otherwise positive story. As a result, NGSAs anticipates winter-to-winter pressure on the natural gas market will be flat based on the economy.

Weather/Demand

For December 2010 through February 2011, NOAA is forecasting that this winter will be slightly warmer than last winter on a national average, with colder-than-normal weather in the Northwest, warmer-than-normal weather in the South and normal winter temperatures in most of the remaining United States. Looking at the full five-month winter heating season (November 2010–March 2011), the firm Energy Ventures Analysis, Inc. (EVA) is forecasting 3,572 heating degree days (HDD) this winter, compared to 3,609 HDD last winter. The number of heating degree days is defined as the difference between 65 degrees Fahrenheit

and the average outside temperature for that day. Based on very similar winter-over-winter heating degree days, the forecast is for weather to put level pressure on natural gas prices.



As always, a significantly colder than expected weather pattern could lead to upward price pressure, especially if the coldest temperatures are concentrated in those regions that mainly use natural gas for heating: the West, Midwest and mid-Atlantic states. The opposite would be true if the weather turns out to be much warmer than normal.

Overall Natural Gas Demand

An independent demand analysis performed by EVA notes that winter-to-winter natural gas demand will be greater than last winter with 79.8 billion cubic feet per day (Bcf/day) compared to 77.9 Bcf/day last year, an increase of 2.4 percent.

Overall gas demand		
Winter season Period-to-period change <small>Data source: EVA</small>	Last winter 2009-2010 ACTUAL	This winter 2010-2011 FORECAST
Demand	77.9 Bcf/d	79.8 Bcf/d
• Industrial demand	19.3 Bcf/d	20.3 Bcf/d
• Electric demand	16.2 Bcf/d	17.3 Bcf/d
Overall demand change	3.0%	2.4%
Growth sector	Industrial	Electric and industrial
Winter-to-winter pressure on natural gas prices		▲

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Winter-over-winter, demand from the industrial sector is expected to grow 5 percent and electric demand for

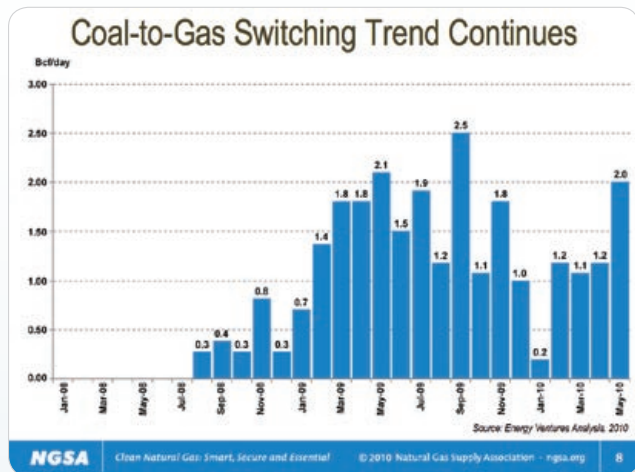
natural gas is expected to grow 7 percent according to Energy Ventures Analysis. However EVA forecasts some decline in demand from the residential and commercial sectors due to continued conservation in these sectors and slightly warmer weather. Taken together, overall demand is expected to increase 2.4 percent.

In the electric sector, natural gas prices have remained competitive with coal since the summer of 2008. As a result, natural gas-fired electricity generation is projected to continue to displace some coal-fired generation in the dispatch order this winter. EVA predicts that the coal-to-gas switching that began in August of 2008 and has since continued at levels as high as 2.5 Bcf/day will persist into the upcoming winter.

New natural gas generating capacity this year is expected to be 8.6 gigawatts (GW) greater than last year, a growth pattern that approaches that of new wind generation capacity (9 GW) and significantly outpaces new coal-fired generation (2.4 GW).

Storage/Supply

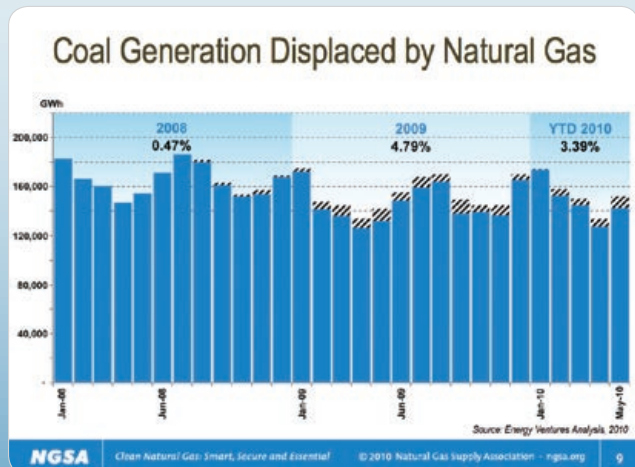
Underground natural gas storage allows companies to purchase and physically stockpile natural gas supplies in the spring and summer for use during the winter when demand for natural gas space heating is at its peak. Storage capacity has steadily increased in recent years and an estimated 48 Bcf of new capacity is expected to be in place this year compared to last season's capacity.



Winter season Period-to-period change <small>(Data source: ICF)</small>	Last winter 2009-2010 ACTUAL	This winter 2010-2011 FORECAST
End of injection season	3,807 Bcf	3,700 Bcf
Percent of average fill (Five-year average)	105%	101%
New storage capacity	134 Bcf	Est. 48 Bcf
Winter-to-winter pressure on natural gas prices		—

When comparing the forthcoming winter outlook with that of two years ago in 2008-2009, when much lower levels of fuel switching occurred, the net increase is 1.6 Bcf/day, or 10 percent. Putting this figure in perspective relative to its impact on coal demand: from January to May 2010, only 3.4 percent of coal generation has been displaced.

Going into the winter heating season, it is projected that 3,700 Bcf of natural gas will be in storage, compared to the all-time record of 3,800 Bcf set last year. Although less natural gas is expected to be in storage than last year, the difference is not great and storage is still at a very robust level. Storage levels should result in level year-over-year pressure on natural gas prices.



Production/Supply

Overall Lower-48 natural gas production is projected to be greater than last winter owing to a strong increase in drilling activity. Two-thirds of rig activity is now directional or horizontal drilling. Domestic natural gas production this winter is forecast to be approximately 57.5 Bcf/day compared to 55.2 Bcf/day last winter, an increase of approximately 4 percent over last winter. Growth in production from shale formations continues to be very strong.

An estimated 20,000 well completions will take place this year compared to 16,969 last year, a 15 percent increase.

Production/Supply		
Winter season Period-to-period change <small>Data source: ICF</small>	Last winter 2009-2010 ACTUAL	This winter 2010-2011 FORECAST
Annual well completions	16,969	20,000
Annual average rig count	811	948
Winter average production	55.2 Bcf/d	57.5 Bcf/d
Canadian imports	6.8 Bcf/d	6.2 Bcf/d
LNG imports	1.4 Bcf/d	1.9 Bcf/d
Winter-to-winter pressure on natural gas prices	▼	

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This winter, ICF International forecasts that imports from Canada will average 6.2 Bcf/day, a decline of 0.6 Bcf or 9 percent relative to last winter due to decreasing production in western Canada. However imports of liquefied natural gas (LNG) are expected to increase by 0.5 Bcf, making up for Canada's reduced contribution.

Overall, very strong production should result in lower winter-to-winter price pressure on the natural gas market.

“Wild Card” Market Factors

If the industrial sector grows at a greater extent than forecasted here, it will demand more natural gas, which would put upward pressure on prices.

And if prices were pressured upward by industrial demand, some of the predicted coal-to-gas switching could fall off.

If there is a warmer-than-normal winter in Europe, LNG imports could be greater than expected. LNG has truly become a global market.

Conclusions

NGSA analysis of varying data indicates flat overall pressure on natural gas prices this winter compared with last winter, primarily due to the following estimates affecting market pressure points:

- » Strong supply fundamentals
 - » Production among highest level in decades.
 - » Rig count holding its own.
 - » Recent weather extremes met with steady prices.
- » Higher use of existing natural gas-fired generation.
- » Industrial demand rising in step with economic recovery.

This season's winter outlook	
Winter season Period-to-period change	This winter 2010-2011 FORECAST
Economy	—
Weather	—
Overall demand	▲
Storage	—
Overall supply	▼
Winter-to-winter pressure on natural gas prices	—

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Our outlook reveals a robust, resilient and well-functioning market that is working well for natural gas consumers.

For more information, please visit our Web sites or contact us directly.