

Natural Gas Winter Outlook 2014–2015

Executive Summary

The Natural Gas Supply Association's (NGSA) 14th 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 dynamics, which ultimately impact all consumers of natural gas.

NGSA forecasts whether wholesale natural gas prices will be subject to upward, downward or level pressure for the upcoming winter, but the association does not forecast actual prices.

Based on an analysis of the economy, weather, demand, production and storage, NGSA expects downward price pressure on the natural gas market compared to last winter. Our expectation for downward price pressure is based on projections for robust production combined with winter weather that is forecasted to be considerably milder than last winter's bitter cold.

A high-level overview of the natural gas market's major pressure points for winter 2014-2015 reveals:

- » **WEATHER:** The National Oceanic and Atmospheric Administration (NOAA) predicts that the continental United States will on average experience winter weather temperatures that will be 11 percent warmer than last winter, placing **downward pressure** on demand and prices.
- » **ECONOMY:** Public data anticipates the economy will experience strong growth this winter, however the increase in the GDP isn't quite large enough winter-over-winter to impact pressure on prices. Therefore, the expanding economy will place **level pressure** on natural gas prices because it is fairly similar to last winter's economic growth.
- » **DEMAND:** Winter weather is the single greatest influence on the residential and commercial sectors, which together account for about 40-45 percent of winter demand for natural gas. Warmer weather is projected to decrease residential and commercial demand. Although demand from the industrial sector is projected to increase significantly, industrial growth will only offset *some* of the residential/commercial decrease. Overall customer demand is projected to decrease and to place **downward pressure** on prices.
- » **STORAGE:** The natural gas industry is expected to enter the winter heating season with storage inventories that are adequate, but at a lower level than last winter. Storage will put **upward pressure** on prices.
- » **PRODUCTION:** Production is projected to exceed last winter's robust levels, reaching a new record. High winter production levels are likely to result in **downward pressure** on natural gas prices.

All of these projected pressure points are interrelated and a deviation in one affects the other assumptions in this equation. *The milder winter weather combined with record production are the most significant factors impacting this winter's forecast.*

Sources: NGSA used analyses and data from Energy Ventures Analysis, IHS Economics and Country Risk, the Energy Information Administration and the National Oceanic and Atmospheric Administration.



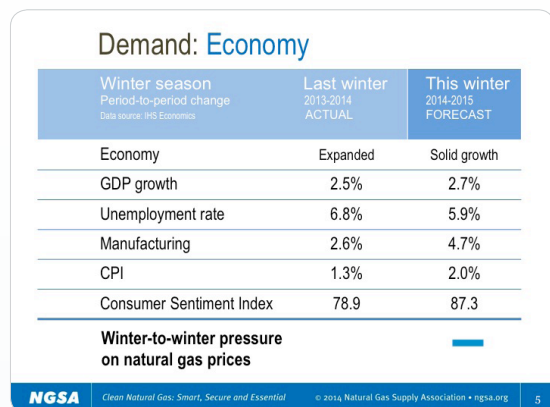
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The following pages will provide more detailed information about NGSA's Winter Outlook.

Economy/Demand

Public forecasts anticipate that last winter's strong economic showing will continue this winter. According to IHS Economics and Country Risk (formerly IHS Global Insight), the economy will continue expanding this winter with improvement expected in nearly every economic category.



The economic factor that provides the most insight into this winter's economy is the Gross Domestic Product (GDP). IHS expects the GDP to grow at a rate of 2.7 percent this winter, modestly exceeding last winter's growth of 2.5 percent.

Unemployment continues to slowly improve, and is predicted to drop to its lowest rate in six years. In other welcome news, manufacturing is projected to outpace the general economy, improving by a healthy 5 percent over last winter. Finally, IHS predicts that the Consumer Price Index (CPI), which measures inflation, will be 2 percent. Altogether, these economic indicators are encouraging, as reflected by the Consumer Sentiment Index that tracks consumer attitudes at 87 percent.

Although the economy is expanding, it is forecasted to place neutral pressure on natural gas prices because its level of growth remains fairly similar to last winter's.

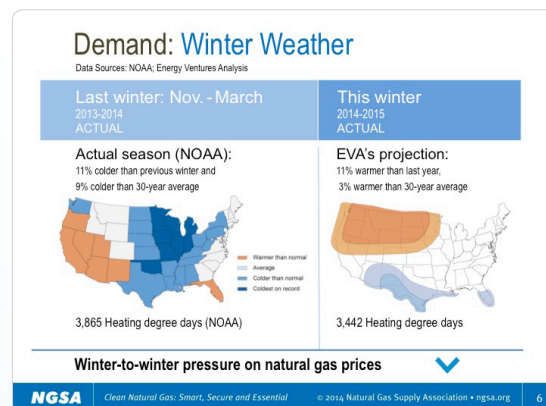
Weather/Demand

The previous three winters have occupied three extremes. Three years ago we experienced the warmest November through March on record in 2011-2012. Two years ago, the winter of 2012-2013 followed traditional winter weather patterns. And the winter of 2013-2014 was a remarkable 9 percent colder than normal, setting all-time records for household natural gas demand again and again in January and February. What can we expect for the winter of 2014-2015? Based on NOAA's data, Energy Ventures Analysis predicts weather that will be 11 percent warmer than last winter on a national average.

On a regional basis, NOAA's forecast divides the country into thirds: with warmer weather sweeping across the northern

United States; typical winter weather in the central and eastern United States; and colder-than-average temperatures in Texas and sections of two other southern states.

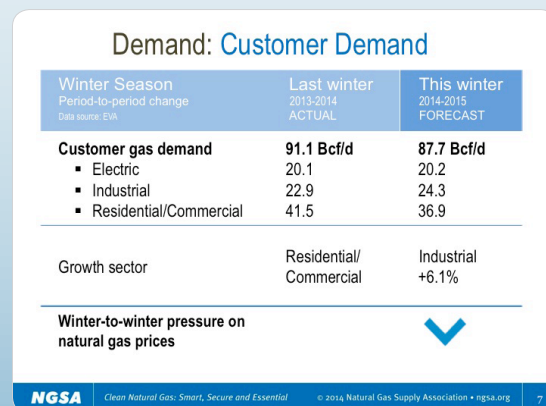
As a nation, over the full five-month winter heating season (November 2014-March 2015), EVA is forecasting 400 fewer heating degree days (HDD) than last winter. Heating degree days are defined as the difference between 65 degrees Fahrenheit and the average outside temperature for that day. Based on significantly fewer winter-over-winter heating degrees, the outlook calls for weather to put downward pressure on natural gas prices.



As always, a significantly colder than expected weather pattern could lead to upward price pressure, especially if the very cold temperatures are concentrated in those regions that rely heavily on natural gas for space heating: the East and Midwest. The opposite would be true if the weather turns out to be much warmer than normal.

Overall Natural Gas Demand

The demand analysis prepared by EVA projects that winter-to-winter natural gas demand will decline compared to last winter. EVA expects overall demand of 87.7 billion cubic feet per day (Bcf/d) compared to 91.1 Bcf/d last winter.

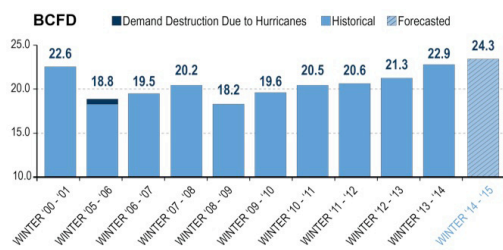


Total demand is anticipated to be lower because of a return to more typical winter weather than last year. With that said, there are some customer sectors that are less weather-sensitive and these are expected to increase their demand. For example, EVA

predicts that milder weather will reduce **residential and commercial demand** by 11 percent this winter. Winter weather is the single greatest influence on the residential and commercial sectors, which together account for about 40-45 percent of winter demand for natural gas.

This decline will be somewhat offset by a strong showing from the **industrial sector**, which is forecasted to increase its winter demand by 6 percent compared to last winter. In fact, EVA anticipates that industrial demand for natural gas will return to the highest levels since the 1990s.

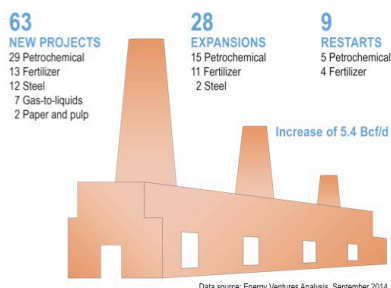
Focus on Industrial Demand: Return to Highest Levels Since 1990s



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In line with the growth projected for this winter, EVA points out that an extended forward view shows that scores of new, expanded and re-started major natural gas-intensive industrial projects loom on the 2012-2019 horizon.

Natural Gas Spurring 100 Major Industrial Projects 2012-2019; \$90-\$100 Billion Investment to Build

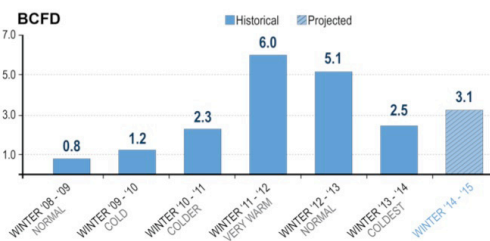


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The industrial growth projected over the next five years is primarily due to the petro-chemical, fertilizer, steel and gas-to-liquids industries expanding to take advantage of affordable, abundant natural gas in the U.S. Most of these major projects are slated for southern states, and over 60 percent are brand new projects.

When analyzing the **electric sector's** projected demand for natural gas this winter, EVA predicts a relatively small increase of 100 million cubic feet per day (MMcf/day) over last winter, bringing total projected electric demand to 20.2 Bcf/day. Much of this winter-over-winter increase is due to the expectation that there will be more coal-to-gas "switching" than occurred in the winter of 2013-2014.

Electric Demand: Monthly Coal-to-Gas Switching Sustained Since 2008



Source: Energy Ventures Analysis, 2014

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Coal-to-gas "switching" occurs when electric utilities choose to run natural gas-fired power plants rather than coal plants to generate electricity. Switching is purely an economic decision based on the current price of the competing fuels. Fuel switching is a temporary response and it should not be confused with the more durable and long-lasting growth in gas demand occurring in the electric sector due to the construction of new gas-fired power plants.

Combining the significant decrease in residential and commercial demand with the healthy increase in industrial demand and an expected modest uptick in electric demand, overall winter demand is projected to decrease by 4 percent compared to last winter and to place **downward pressure** on prices.

Storage/Supply

Traditionally, underground natural gas storage has allowed 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.

During the winter of 2013-2014, a record amount of natural gas was withdrawn from storage in response to cold weather and demand for gas. At the end of the storage withdrawal season, storage was below 900 Bcf. Weekly storage injections rose to the challenge during the "re-fill" season, consistently exceeding the five-year average and attesting to the resilience of storage.

Supply: Winter Storage

Winter Season	Last winter	This winter
Period-to-period change	2013-2014	2014-2015
Data source: EIA, Energy Information Administration	ACTUAL	FORECAST
End of injection season	3,816 Bcf	3,440 Bcf
Percent of average fill (Five-year average)	95%	85%
New storage capacity	68 Bcf	Est. 5 Bcf

Winter-to-winter pressure on natural gas prices



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Going into the winter heating season, it is projected that more than 3,400 Bcf of natural gas will be in storage, compared to the 3,816 Bcf in storage at the same time last year. The difference is expected to place **upward pressure** on natural gas prices this winter.

Production/Supply

Turning to natural gas production, EVA expects domestic production to surpass last winter's record-breaking production figures. Domestic natural gas production this winter is forecasted to be 70.8 Bcf/day, significantly exceeding last winter's 67.2 Bcf/day by 5 percent and setting a new record.

Among the reasons that winter production is expected to increase are: continued strong production from shale wells; new pipelines and takeaway capacity in areas such as the Marcellus; and continued gains in drilling technologies and efficiencies.

High natural gas production despite fewer gas well completions can also be attributed to the significant amount of natural gas being produced from oil wells. Natural gas produced during the oil extraction process is known as "associated gas." EVA projects that associated gas will account for 7 percent of U.S. supply this winter.

There are some other interesting developments in supply. For example, EVA projects that Mexican exports will grow to a record of 2.2 Bcf/day due to Mexico's robust economy.

Supply: Winter Production		
Winter season Period-to-period change Data source: Energy Ventures Analysis	Last winter 2013-2014 ACTUAL	This winter 2014-2015 FORECAST
Annual natural gas well completions (Lower 48)	7,971	7,397
Winter average production (Lower 48)	67.2 Bcf/d	70.8 Bcf/d
Canadian imports (net)	5.7	5.3
LNG imports	0.1	0.1
Mexican exports (net)	1.7	2.2
Winter-to-winter pressure on natural gas prices		✓

In summary, strong supply this winter is forecasted to place **downward pressure** on natural gas prices compared to last winter. However regions with infrastructure constraints are vulnerable to short periods of upward pressure on prices, as we witnessed in the Northeast during last winter's Polar Vortex.

"Wild Card" Market Factors

There are always a few "wild card" factors that can influence the market. This winter's wild cards include:

- » Unexpected cold – or **warm** – snaps
- » Higher than expected consumption by power sector

Forecast

NGSA analysis of varying data indicates downward pressure on natural gas prices this winter compared with last winter, primarily due to the following:

- » Warmer winter weather than winter of 2013-2014 – DOWNWARD PRESSURE
- » Improvement in economy similar to last winter's improvement – FLAT PRESSURE
- » Overall demand less than last winter – less overall demand because of warmer weather, masking significant winter-over-winter growth from the industrial sector – DOWNWARD PRESSURE
- » Less working gas in storage – UPWARD PRESSURE
- » Production at record winter levels, fueled by shale gas and associated gas – DOWNWARD PRESSURE

This Season's Winter Outlook	
Winter season Period-to-period change	This winter 2014-2015 FORECAST
Weather	✓
Economy	—
Overall demand	✓
Storage	✓
Winter production	✓
Winter-to-winter pressure on natural gas prices	✓

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Conclusion: Era of Growth

- » Strong production continues
- » Industrial market entering era of growth
- » Stable natural gas outlook for consumers

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

