



# Summary of North American Gas Markets

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# ICF: Fast-Growing Diverse Consultancy with Domain Expertise in Energy Markets



# Summary of North American Gas Markets

- **Gas Supply Outlook**
- **Gas Demand Outlook**
- **Gas Prices and Market Uncertainties**

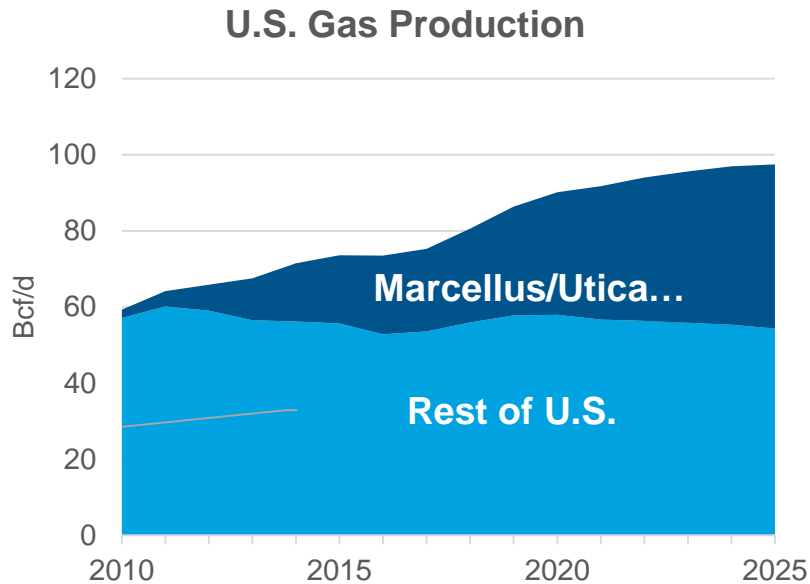
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# Common Themes in ICF's Gas Market Outlook

- Gas prices are projected to rise above recent levels
- Market growth in LNG and Mexican exports and gas-fired power generation will lead to upward price pressure
- Gas price volatility will increase
- But, gas supply is still robust and likely to keep prices in check – return to price levels observed ten years ago is not likely
- Midstream infrastructure development could be a limiting factor on gas market development
- A few different supply areas, for example, the Marcellus/Utica production area are most important to watch

# U.S. Natural Gas Production will Continue to Grow, Driven by Production from the Marcellus and Utica

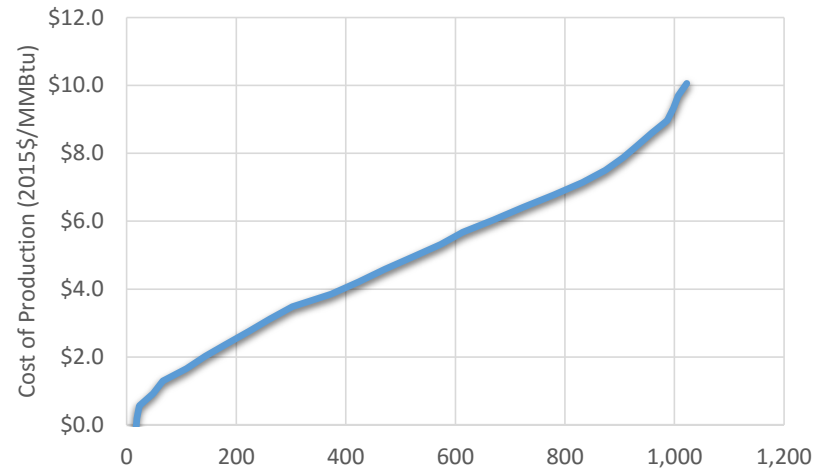


**Marcellus & Utica Shale Activity**

Year	Well Completions	Production (Bcf/d)
2013	2,131	11
2014	2,572	15
2015	2,243	18
2016	1,450	21
2020	3,084	32
2025	3,068	43

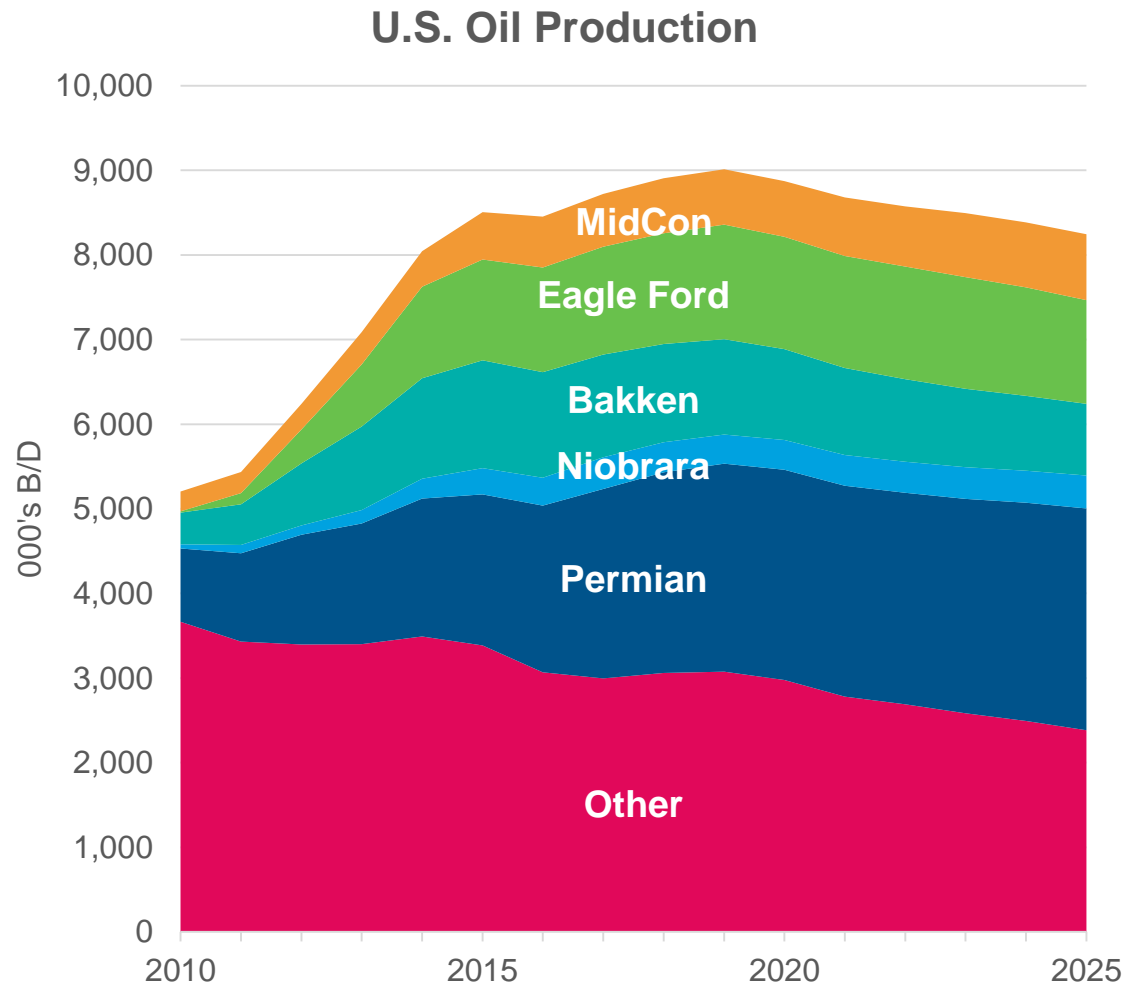
Marcellus and Utica's prolific gas resource will continue to drive robust production growth.

**Current Recoverable Shale Gas - Marcellus/Utica (Tcf)**



# Some Oil-Prone Areas May Contribute to the Growth of Natural Gas Production

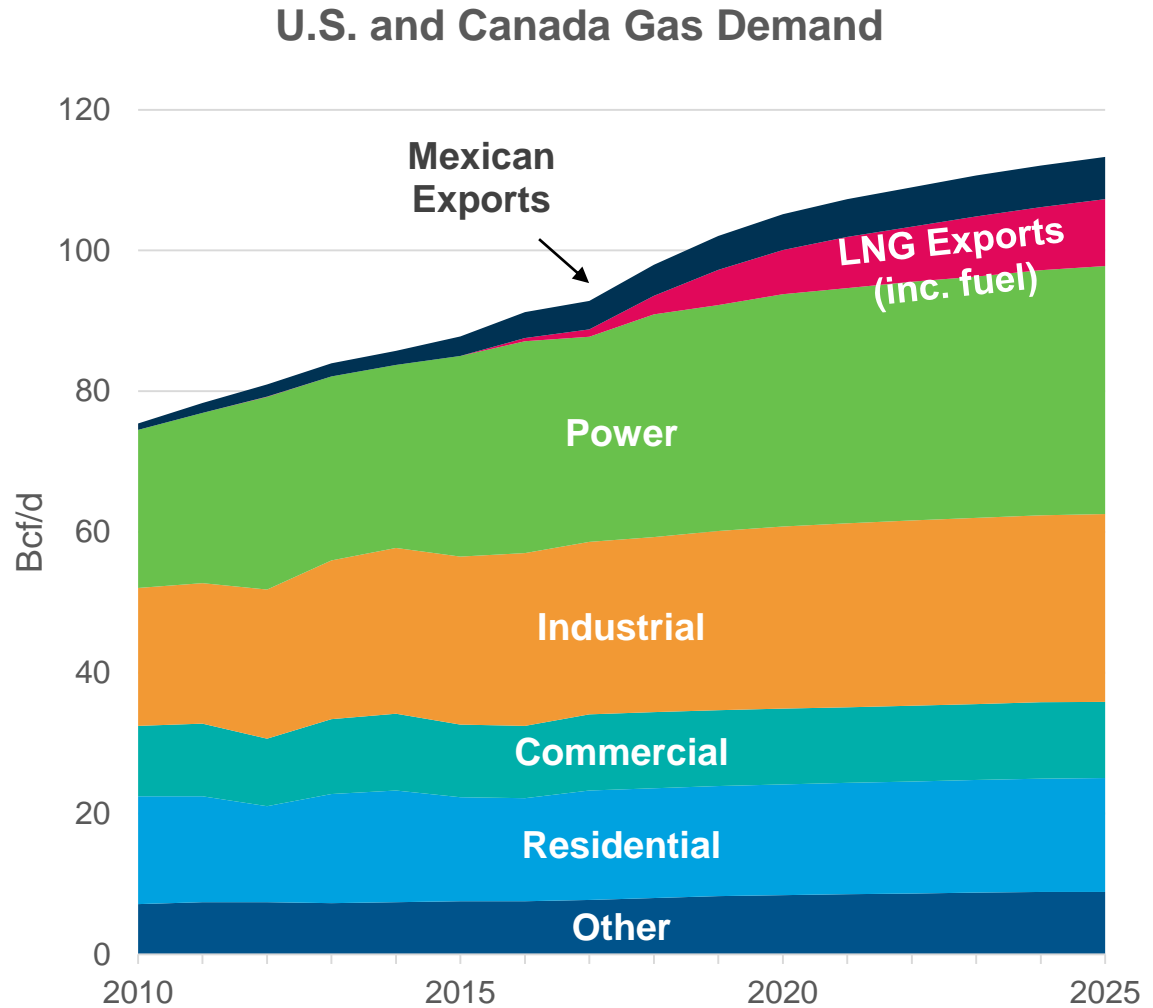
- Some oil-prone areas will still experience growth despite relatively low oil prices
- The Permian Basin has become a leading global low-cost oil resource



Source: ICF DPR

# Gas Demand Growth will be Concentrated in “New” Markets

- North American gas use will rise to over 110 Bcf/d by 2025, on heels of recent increases in gas generation
- Expect an annual average of 2 to 3 Bcf/d of market growth during the next decade
- Growth concentrated along the U.S. Gulf Coast and in Southern States

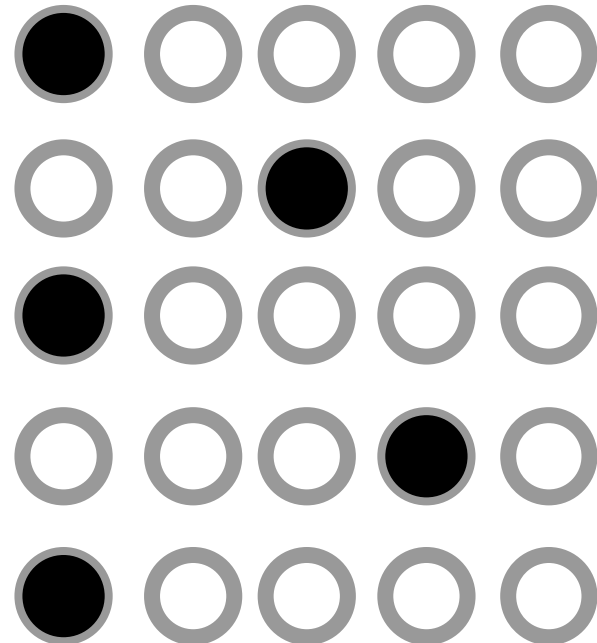


Source: ICF Strategic Gas Outlook

# A Number of Factors are Pointing Toward Higher Natural Gas Prices

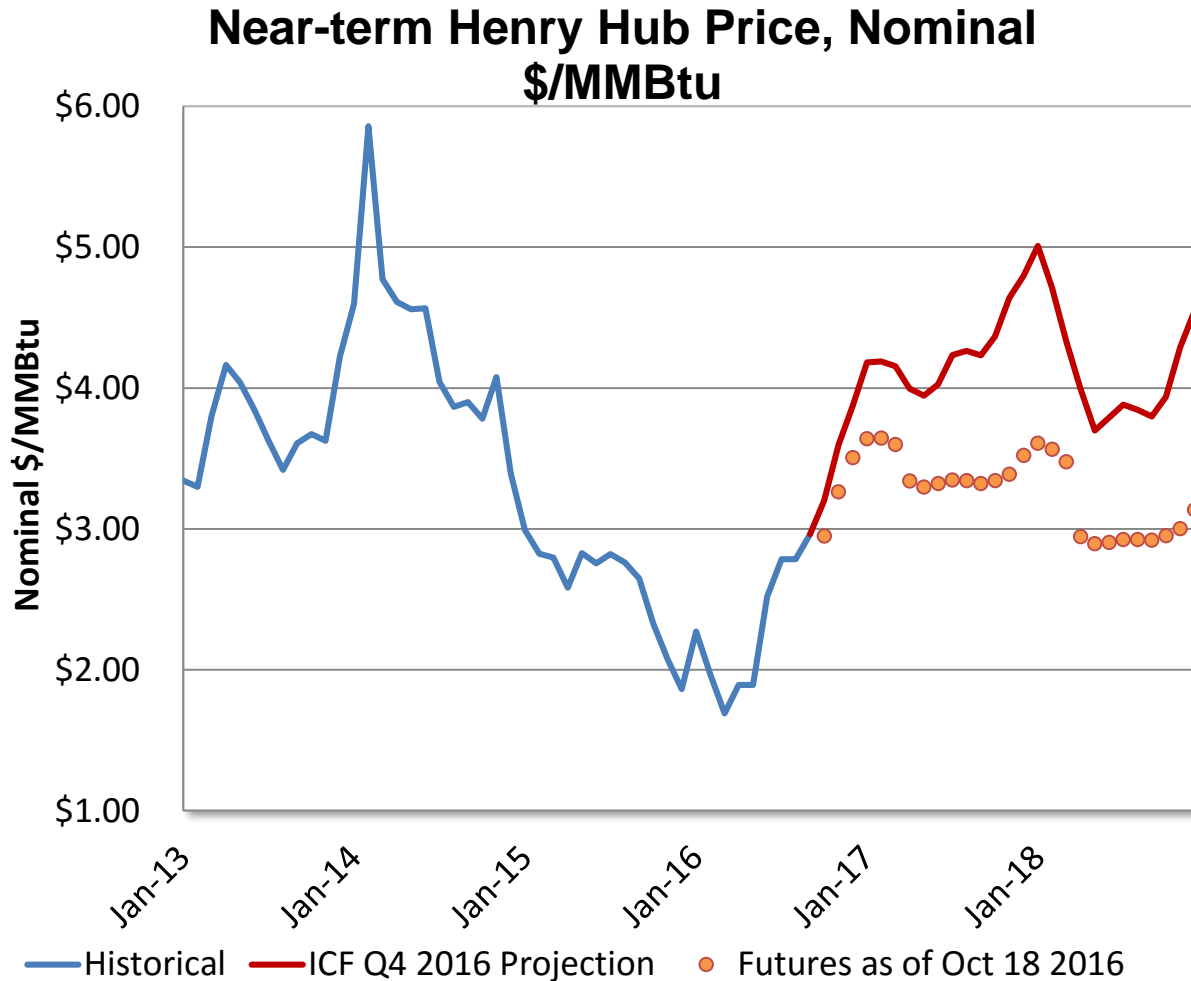


- LNG and Mexican Exports
- Storage Activity
- Relatively Low Drilling Activity
- Marcellus/Utica Production
- Power Sector Load Growth





# Expect Higher Gas Prices and Increased Price Volatility



- Henry Hub averages over \$4 per MMBtu during next 12 months
- Modest price relief in 2018 as drilling activity rebounds; but \$2 per MMBtu price environment is gone, barring a warm winter
- ***ICF's projected prices in the longer term (i.e., the next ten years) average about \$4 per MMBtu***

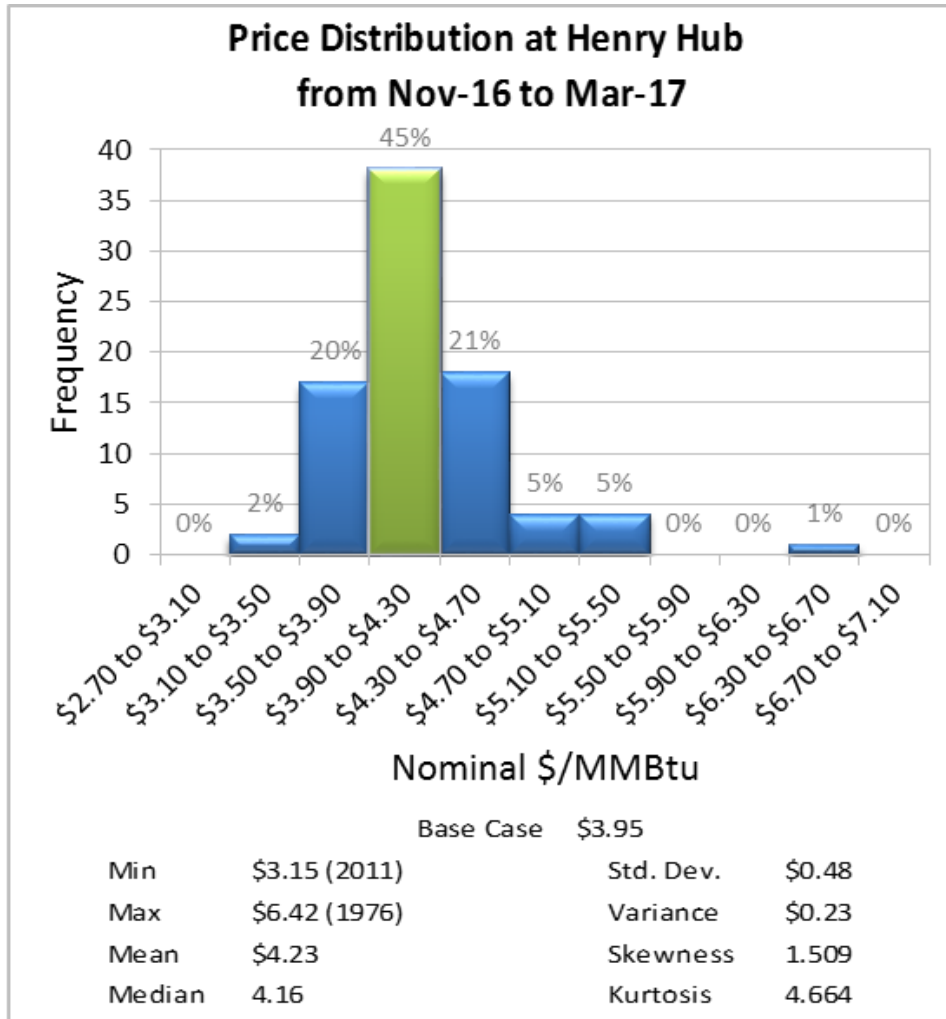
Source for Historical Price Information: SNL

# Gas Prices will Continue to be very Different Across Markets

Average Price Difference (i.e., Basis) Versus Henry Hub (Nominal \$/MMBtu)	Past 24 Months	Next 12 Months	Following 48 Months
Marcellus and Utica Supply	(\$1.03)	(\$0.98)	(\$0.80)
Algonquin Citygates (New England)	\$1.54	\$2.18	\$2.64
Chicago Citygates	\$0.08	(\$0.07)	(\$0.12)
West Texas (Waha)	(\$0.15)	(\$0.27)	(\$0.28)
Opal (Rocky Mountains)	(\$0.15)	(\$0.35)	(\$0.37)
AECO (Western Canada)	(\$0.67)	(\$0.88)	(\$1.01)
SoCal Border	\$0.13	\$0.03	\$0.18

Source for Historical Price Information: SNL

# Weather Will Significantly Impact the Direction of Markets During the Upcoming Winter and Next 24 Months



- Average winter price levels at Henry Hub will range from \$3.00 to almost \$6.50 per MMBtu, depending on weather.



# And, there are Other Major Uncertainties that will Impact Prices in the Longer Term

- Economic Activity
- Rebound of E&P Activity
- Midstream (Pipeline) Infrastructure Development
- Regulatory Changes

# Final Thoughts on the State of the Gas Market

- The gas market is shifting to a tighter supply & demand balance
- Future market development will be driven more equally by changes in natural gas demand and supply
- Market growth will still be met primarily by growth in Marcellus/Utica production
- There are select areas outside of the Marcellus/Utica that are still experiencing growth and present opportunities
- ICF expects gas markets to experience increased prices and volatility, but price levels observed ten years ago are not likely

# Questions & Contact Information

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