



Understanding the Symbols



Upward market pressure




Flat market pressure



Downward market pressure

Last Year's Projection: **How Did We Score?**

Predicted Pressure on Prices	Actual Pressure on Prices	Score
—	—	

Correctly predicted:

We projected winter-over-winter demand increase due to colder winter and exports, but production would reach record—resulting in flat pressure on prices

- Last winter 2017-2018 average Henry Hub price = \$2.99 MMBtu
- Previous winter 2016-2017 average Henry Hub price = \$3.01 MMBtu



2018-2019 Winter Outlook: **Outline**

■ Looking ahead to Winter 2018-2019

- Market pressure points:
 - Weather
 - Economy
 - Demand
 - Storage
 - Production
- Wild card factors
- Winter expectations

■ Summary



Demand: **Economy**

Winter Season Period-to-period change	Last Winter 2017-2018 ACTUAL	This Winter 2018-2019 FORECAST
Economy	Strengthening	Robust
GDP growth	2.5%	3.2%
Unemployment rate	4.1%	3.5%
Manufacturing	1.9%	2.5%
CPI	2.2%	2.5%
World GDP Growth	3.2%	3.3%
Consumer Sentiment Index	98.6	98.2

**Winter-to-winter pressure
on natural gas prices**



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Data Source: IHS Markit

Demand: **Customer Demand**

Winter Season Period-to-period change	Last Winter 2017-2018 ACTUAL	This Winter 2018-2019 FORECAST
Customer Gas Demand*	99.3 Bcf/d	102.7 Bcf/d
▪ Residential/Commercial	37.8 Bcf/d	36.9 Bcf/d
▪ Electric	24.1 Bcf/d	24.8 Bcf/d
▪ Industrial	24.1 Bcf/d	24.5 Bcf/d
▪ Pipeline exports- Mexico	4.4 Bcf/d	5.2 Bcf/d
▪ LNG exports (net)	3.0 Bcf/d	4.7 Bcf/d
Growth sector	Res/Comm+12% Electric + 13%	LNG Exports +57%

**Winter-to-winter pressure
on natural gas prices**

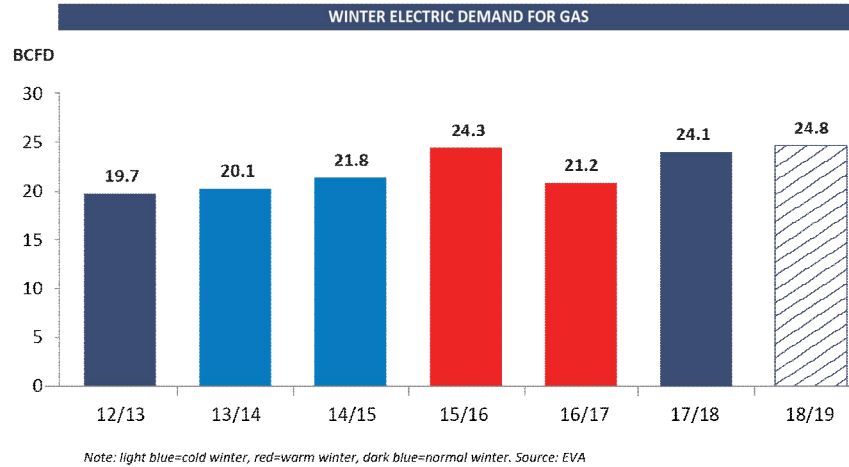
*Includes "Lease, Plant and Pipeline Fuel"



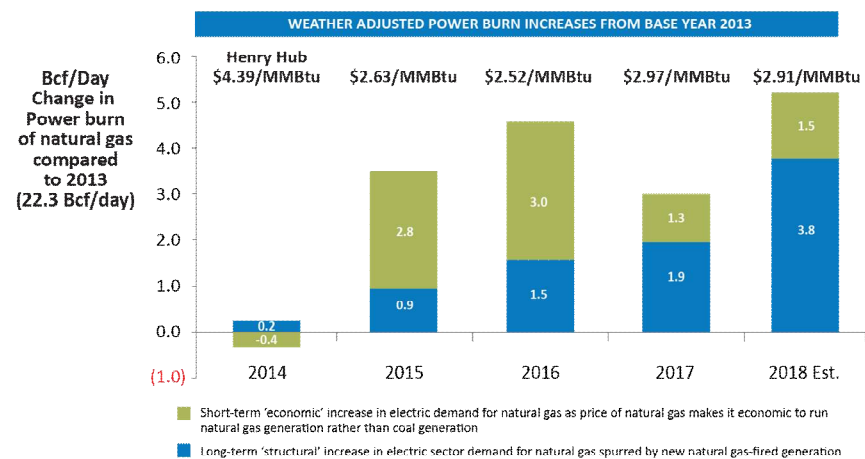
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Data Source: Energy Ventures Analysis

FOCUS: Record-Setting Winter Electric Sector Demand



FOCUS ON ELECTRICAL SECTOR DEMAND: Increase in demand for natural gas now driven mostly by new natural gas-fired generation



Focus: Industrial Demand Peak Growth Phase

Natural Gas Spurring 46 Major Industrial Projects 2018–2023

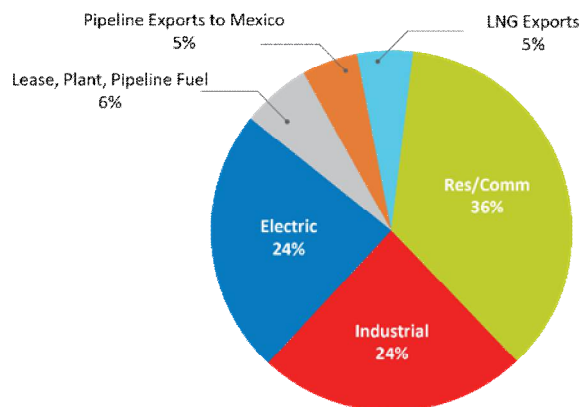


Photo courtesy: Chevron U.S.A. Inc., 2017 (Pascagoula)

Data Source: Energy Ventures Analysis, Sept. 2018

FOCUS: Big Increase in Exports, But Remain Small Share of All Natural Gas Demand

Natural Gas Demand Sectors Winter 2018-2019



Total demand 102.7 Bcf/d



Supply: Winter Storage

Winter Season Period-to-period change	Last Winter 2017-2018 ACTUAL	This Winter 2018-2019 FORECAST
Start-of-winter inventory	3,790 Bcf	3,302 Bcf
Compared to 5-year average (Percent of total storage inventory)	1% lower	14% lower
New storage capacity	0 Bcf	Est. 3 Bcf

Winter-to-winter pressure
on natural gas prices

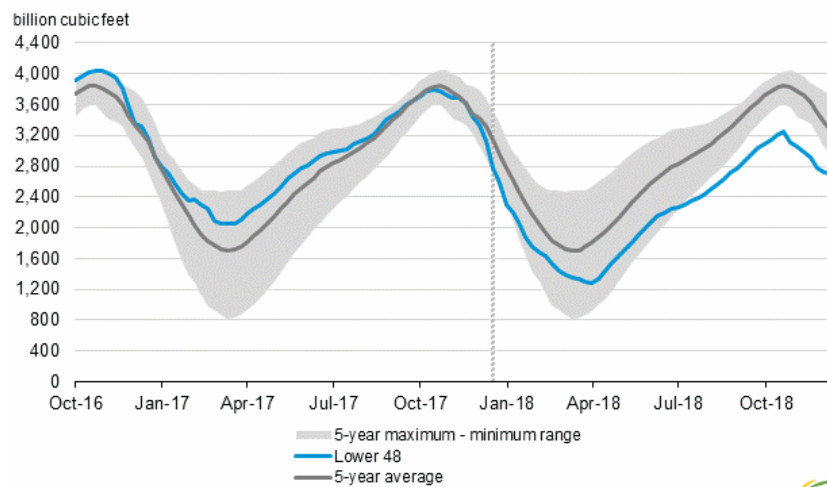


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Data Sources: Energy Information Administration and Energy Ventures Analysis

Current Natural Gas Storage Inventory Levels

Working gas in underground storage compared with the 5-year maximum and minimum



Source: U.S. Energy Information Administration



Supply: Winter Production and Imports

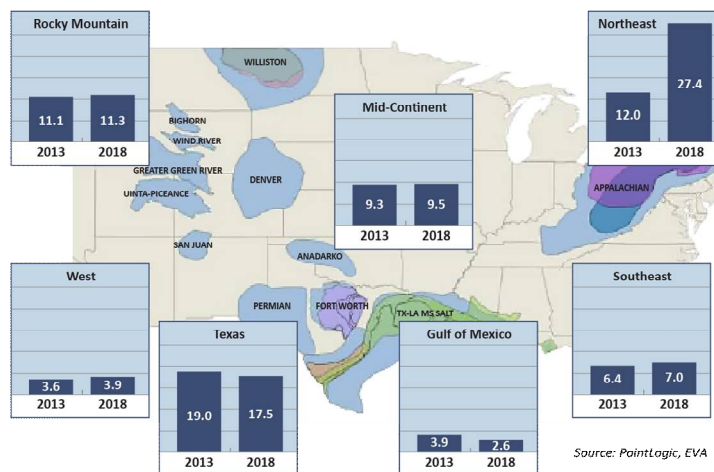
Winter Season Period-to-period change	Last Winter 2017-2018 ACTUAL	This Winter 2018-2019 FORECAST
Winter average production (Lower 48)	77.4 Bcf/d	84.9 Bcf/d
Canadian imports (net)	5.4 Bcf/d	5.2 Bcf/d

Winter-to-Winter pressure
on natural gas prices

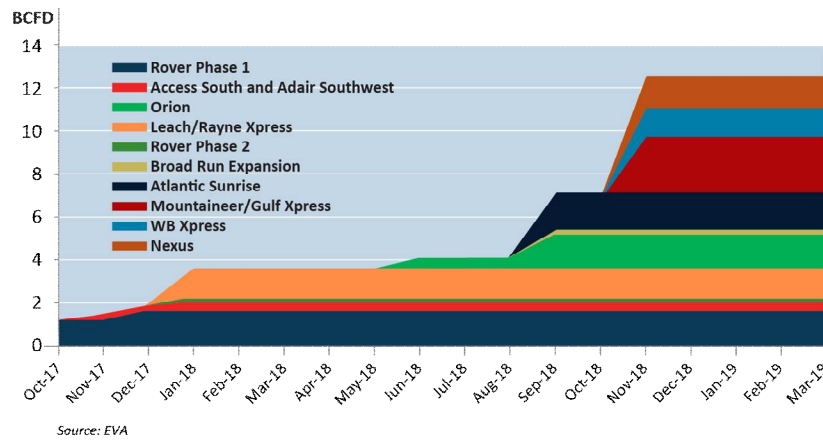


Supply: Record Growth in Production Continues

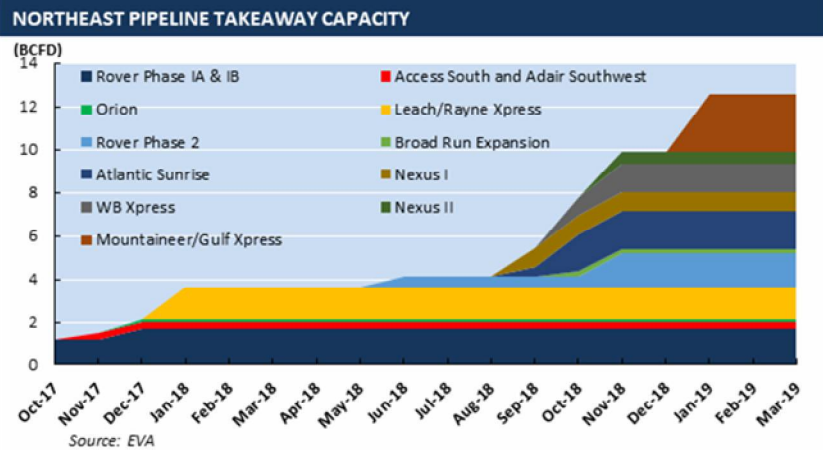
14 BCFD GROWTH IN U.S. GAS PRODUCTION FROM 2013 TO 2018 YTD, OR 21%



Supply: Northeast Takeaway Capacity Increases 2017-2019



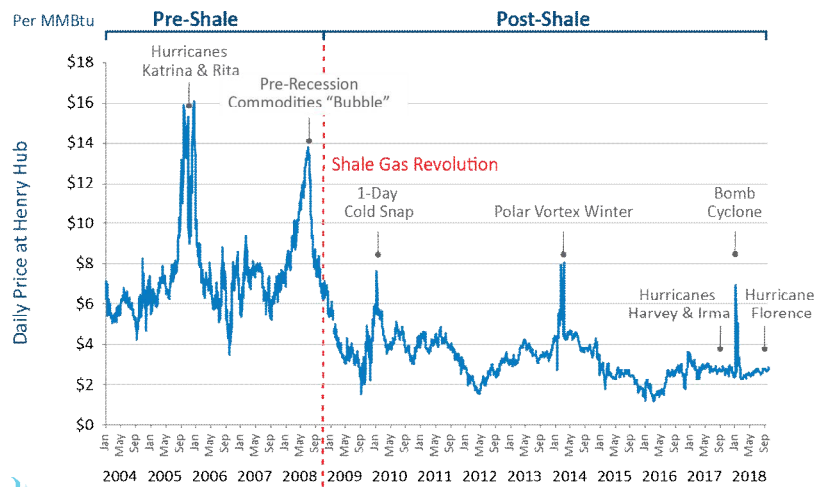
Supply: Northeast Takeaway Capacity Increases 2017-2019



Updated – January 2019



Comparison of Impact of Severe Weather on Daily Prices What a Difference a Decade Makes



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Data Source: Gas Daily

Winter Outlook: Wild Cards



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This Season's Winter Outlook

Winter Season Period-to-period change	This Winter 2018-2019 FORECAST
Weather	—
Economy	—
Overall demand	—
Storage	^
Winter supply	v
Winter-to-winter pressure on natural gas prices	—



Natural Gas Outlook: Flexible, Stable Gas Market

- Record customer demand to surpass even Polar Vortex winter 2013-2014
 - Exports – LNG and pipeline – increase but remain small slice of overall demand, provide stability in ebbs and flows of market
 - New gas-fired generation could push electric demand to new winter record despite warmer winter
 - Slight growth in industrial demand due to manufacturing running at greater capacity
- Storage at lowest level of shale era, but production takes pressure off
 - Efficiencies in drilling and production continue to make wells productive at lower cost
 - Diverse supply sources contribute to greater flexibility and resilience evidenced by limited supply impact of deep freeze, hurricanes



About NGSA

- Represents major producers and suppliers of domestic natural gas
 - Integrated and independent companies: 14 members
 - Founded in 1965
- Only national natural gas association representing producers and suppliers with a dedicated focus on downstream issues
- Promotes benefits of competitive natural gas markets, resulting in reliable and efficient transportation and delivery, increased supply and demand
- Combined with the Center for LNG



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2018-2019 Winter Outlook

Markets Matter

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