



Natural Gas Supply Association

2018-2019 Winter Outlook

Markets Matter

www.ngsa.org

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



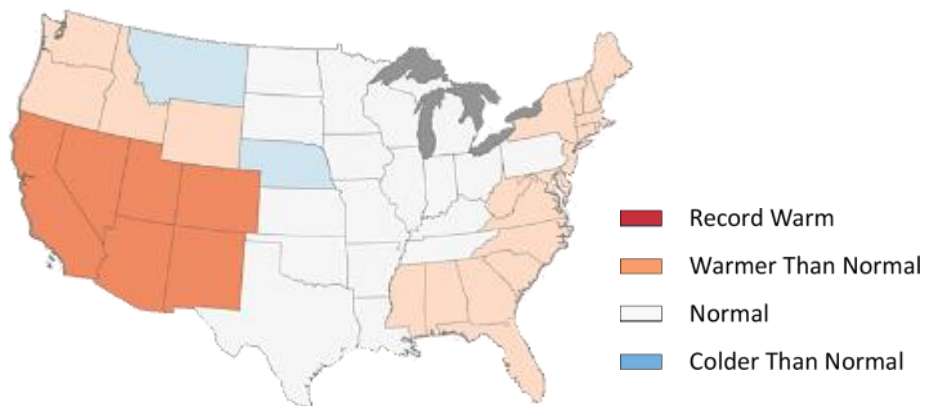
Demand: Winter Weather

Last Winter (Nov. – March)

2017-2018 ACTUAL

Actual winter heating season:

14% *colder* than previous winter but
1% warmer than 30-year average



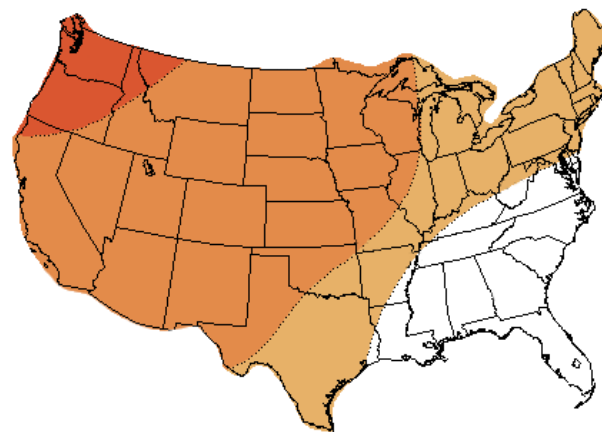
3,497 Heating degree days (NOAA)

This Winter

2018-2019 FORECAST

Forecast:

1% *warmer* than last year
2% warmer than 30-year average



3,455 Heating degree days

Winter-to-winter pressure on natural gas prices



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**



Demand: Customer Demand

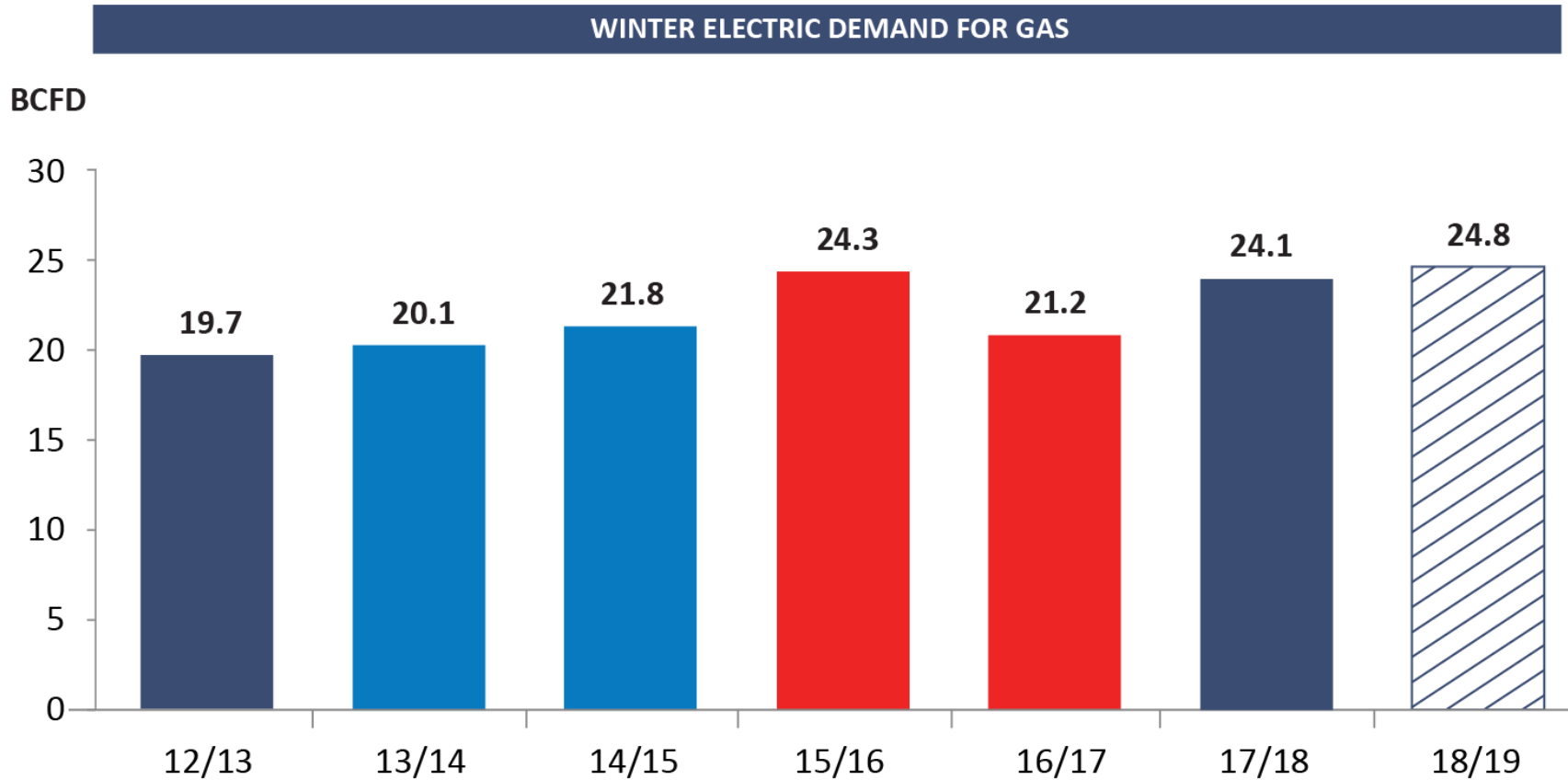
Winter Season Period-to-period change	Last Winter 2017-2018 ACTUAL	This Winter 2018-2019 FORECAST
Customer Gas Demand*	99.3 Bcf/d	102.7 Bcf/d
■ Residential/Commercial	37.8 Bcf/d	36.9 Bcf/d
■ Electric	24.1 Bcf/d	24.8 Bcf/d
■ Industrial	24.1 Bcf/d	24.5 Bcf/d
■ Pipeline exports- Mexico	4.4 Bcf/d	5.2 Bcf/d
■ 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"



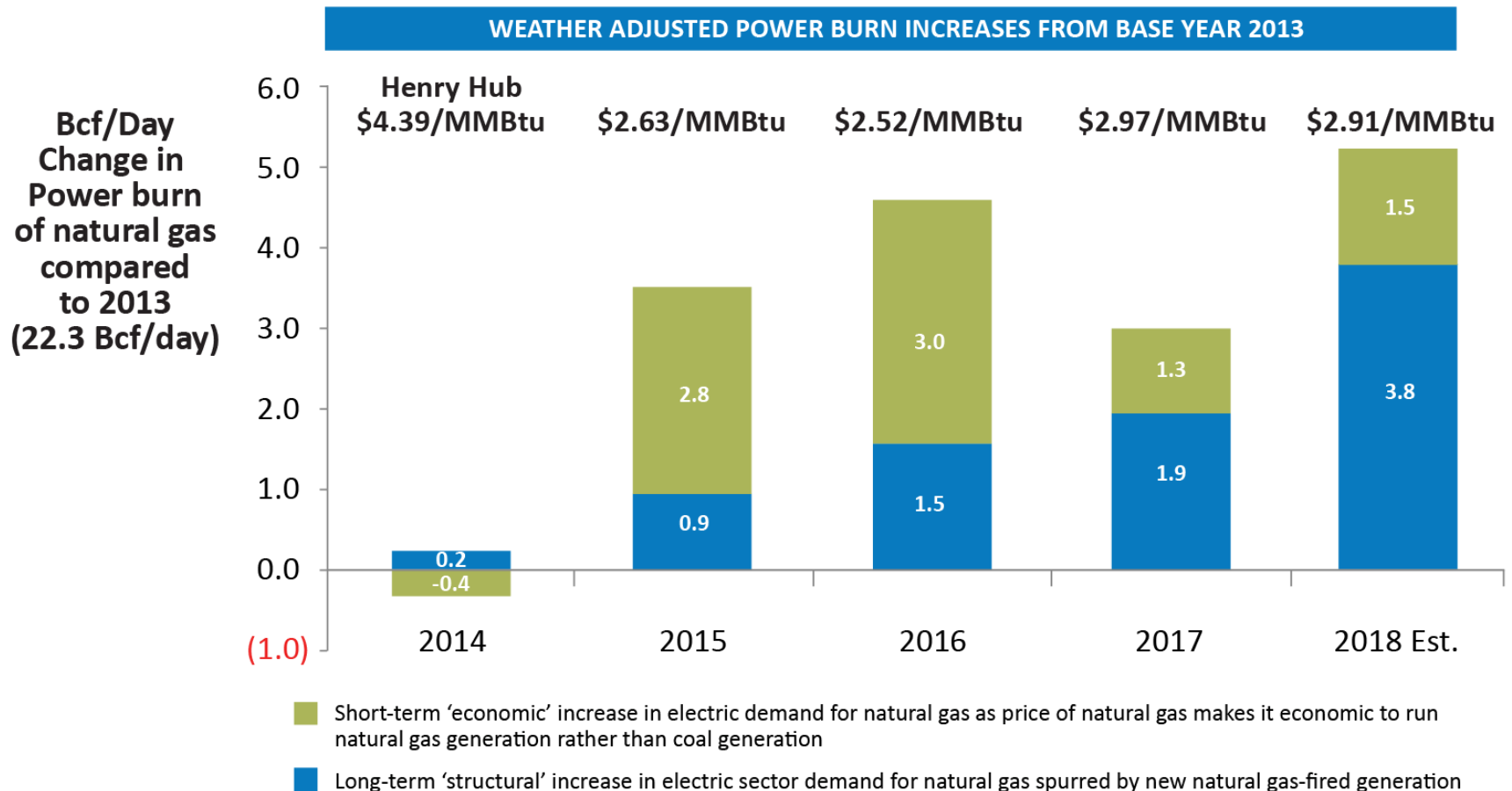
FOCUS: Record-Setting Winter Electric Sector Demand



Note: light blue=cold winter, red=warm winter, dark blue=normal winter. Source: EVA



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



Note: Values are adjusted for weather. Source: Energy Ventures Analysis



Focus: Industrial Demand Peak Growth Phase

Natural Gas Spurring 46 Major Industrial Projects 2018–2023

\$79 Billion
Investment to Build

Increase of 2.1
Bcf/d by 2023

32 New Projects

29 Petrochemical
2 Fertilizer
1 Steel

7 Expansions

7 Petrochemical

7 Re-starts

4 Steel
2 Aluminum
1 Petrochemical

In addition to

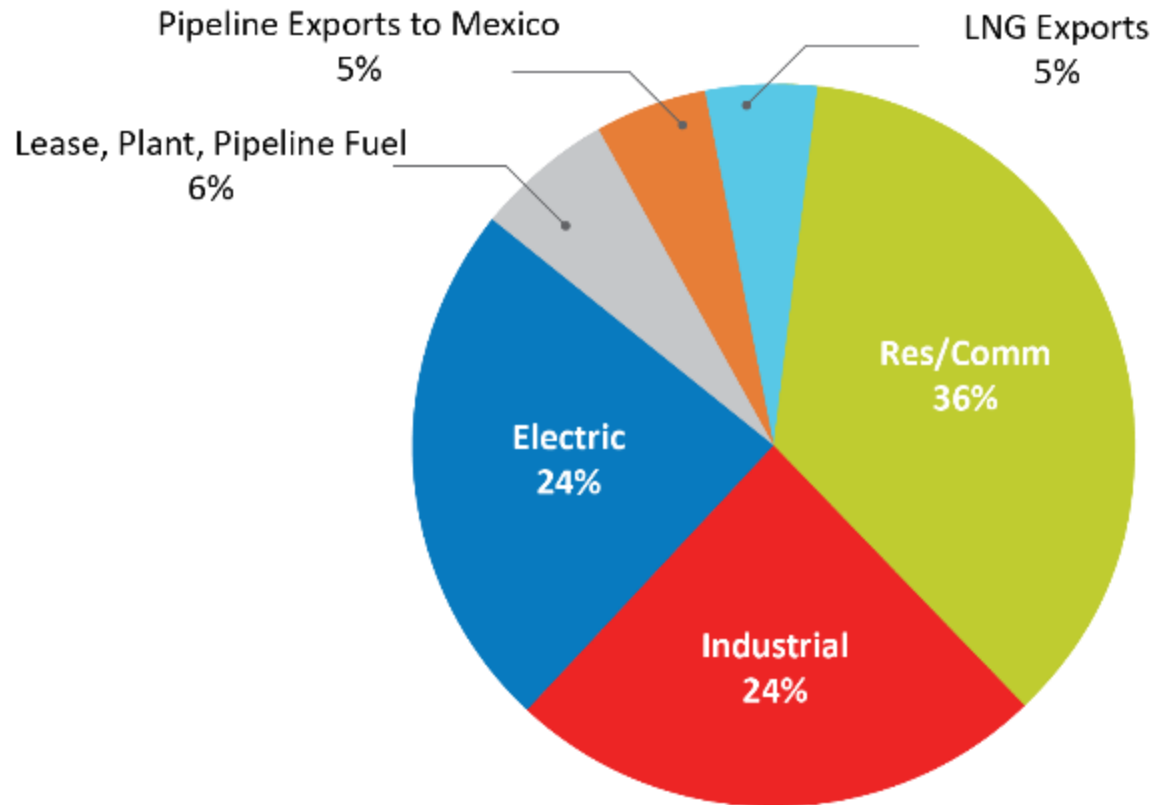
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COMPLETED
Projects for
additional \$53 Billion
and 1.5 Bcf/d from
2015-2017



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**



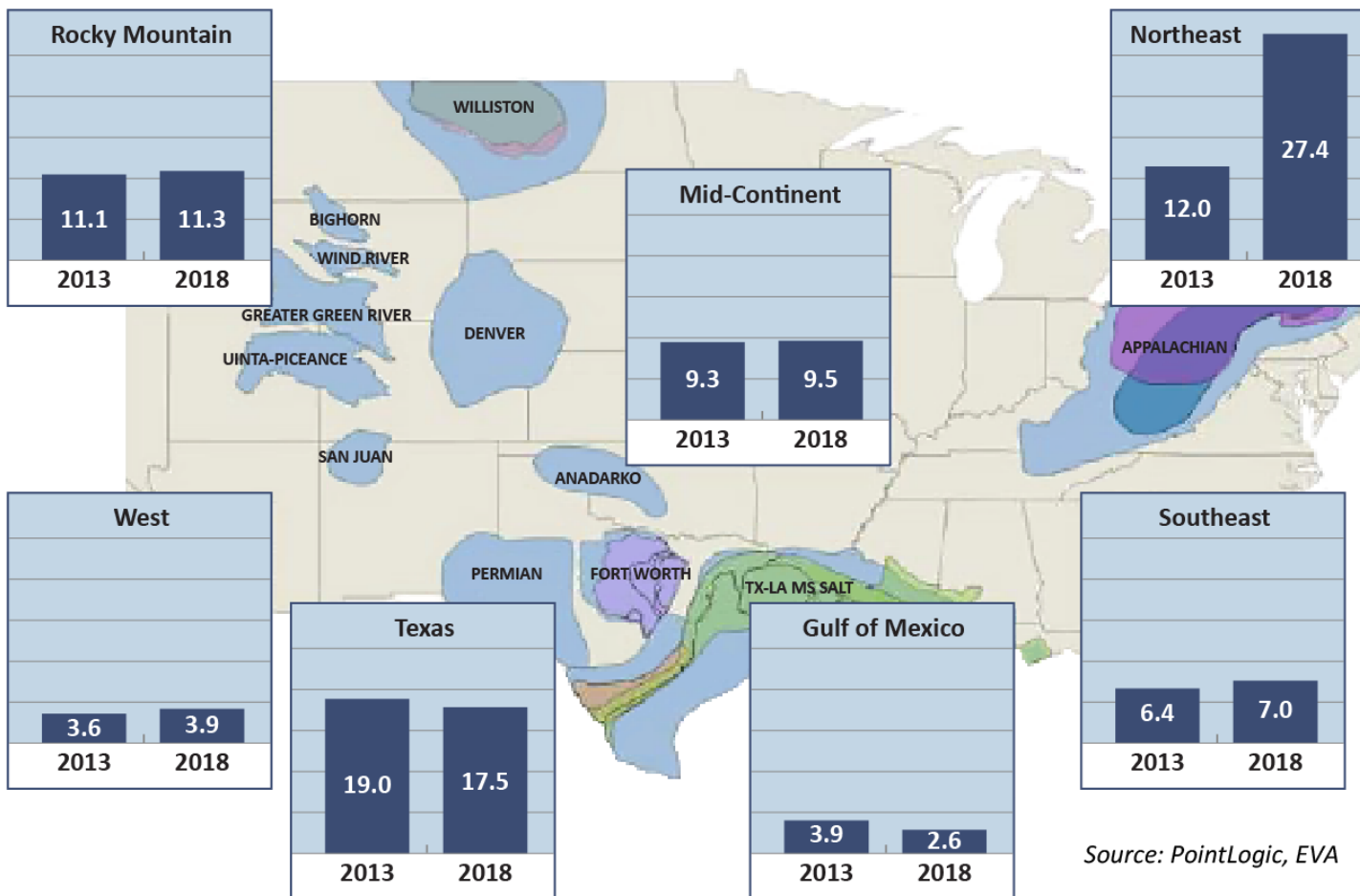
Supply: Winter Production and Imports

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

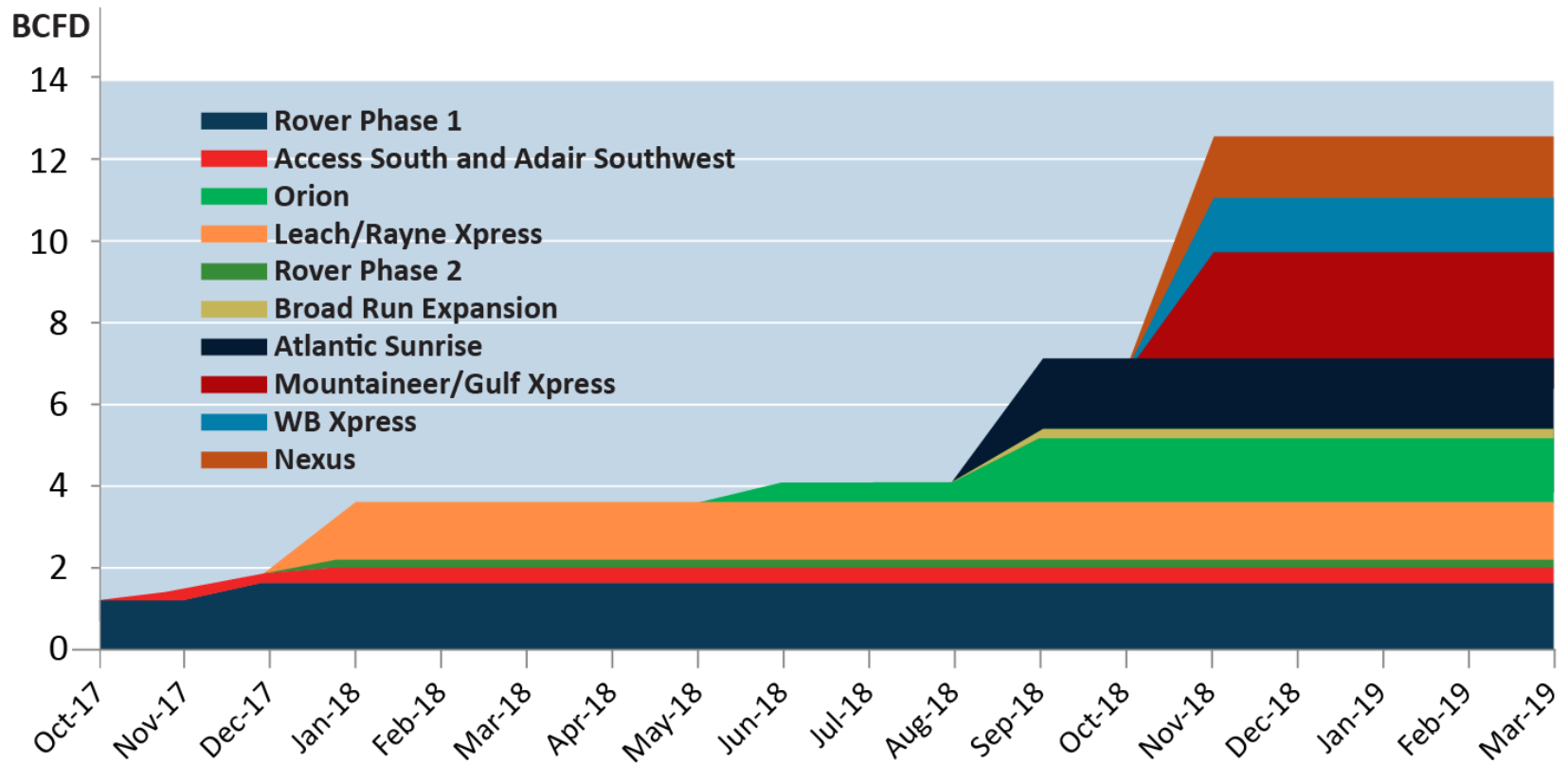
14 BCFD GROWTH IN U.S. GAS PRODUCTION FROM 2013 TO 2018 YTD, OR 21%



Source: PointLogic, EVA



Supply: Northeast Takeaway Capacity Increases 2017-2019

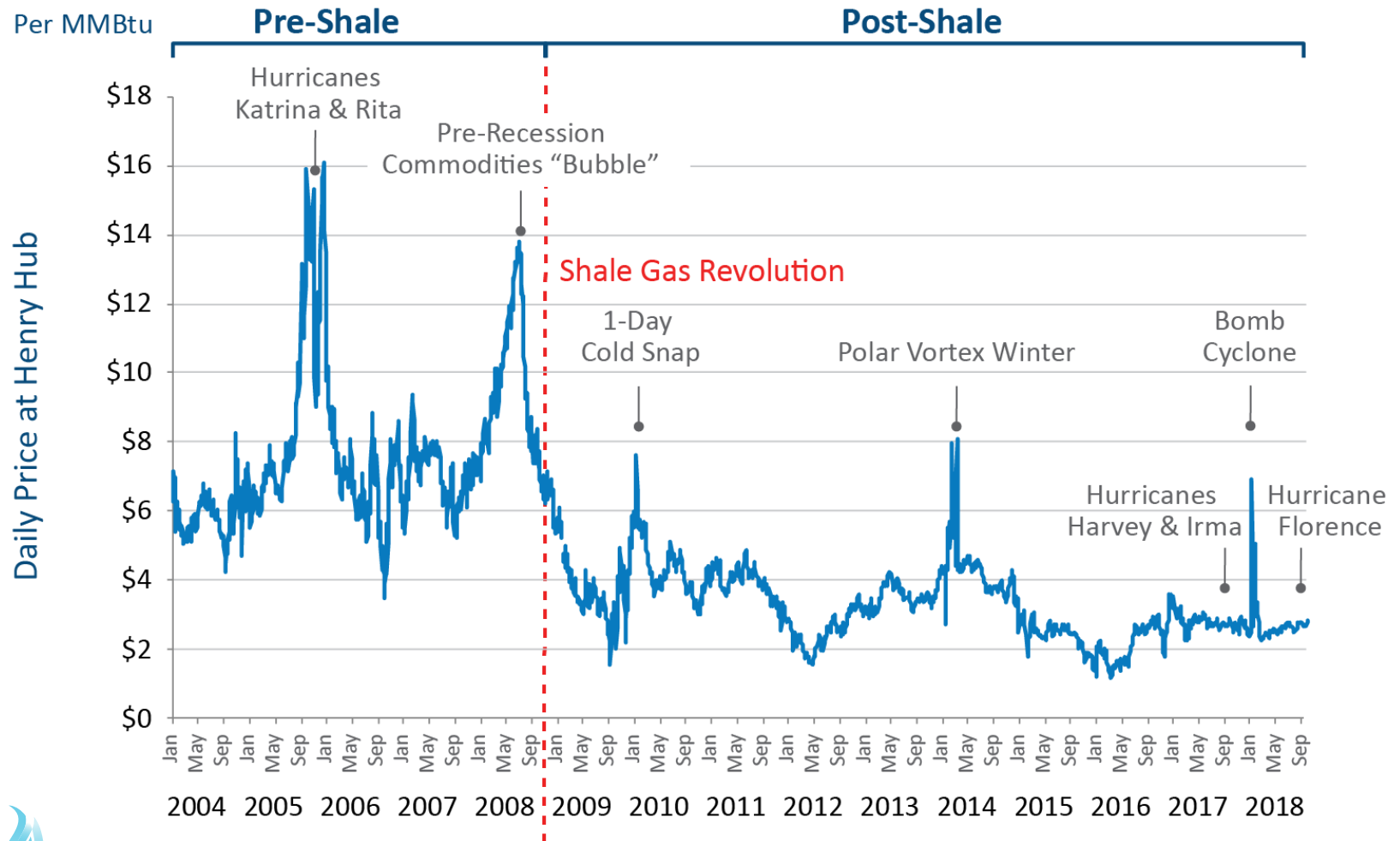


Source: EVA



Comparison of Impact of Severe Weather on Daily Prices

What a Difference a Decade Makes



Winter Outlook: **Wild Cards**

Weather?



This Season's Winter Outlook

Winter Season Period-to-period change	This Winter 2018-2019 FORECAST
Weather	—
Economy	—
Overall demand	—
Storage	⤴
Winter supply	⤵
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





Contact:

Daphne Magnuson
dmagnuson@ngsa.org
[@natgas_ngsa](https://twitter.com/natgas_ngsa)
www.ngsa.org

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