



## **CIBO Annual Meeting:**

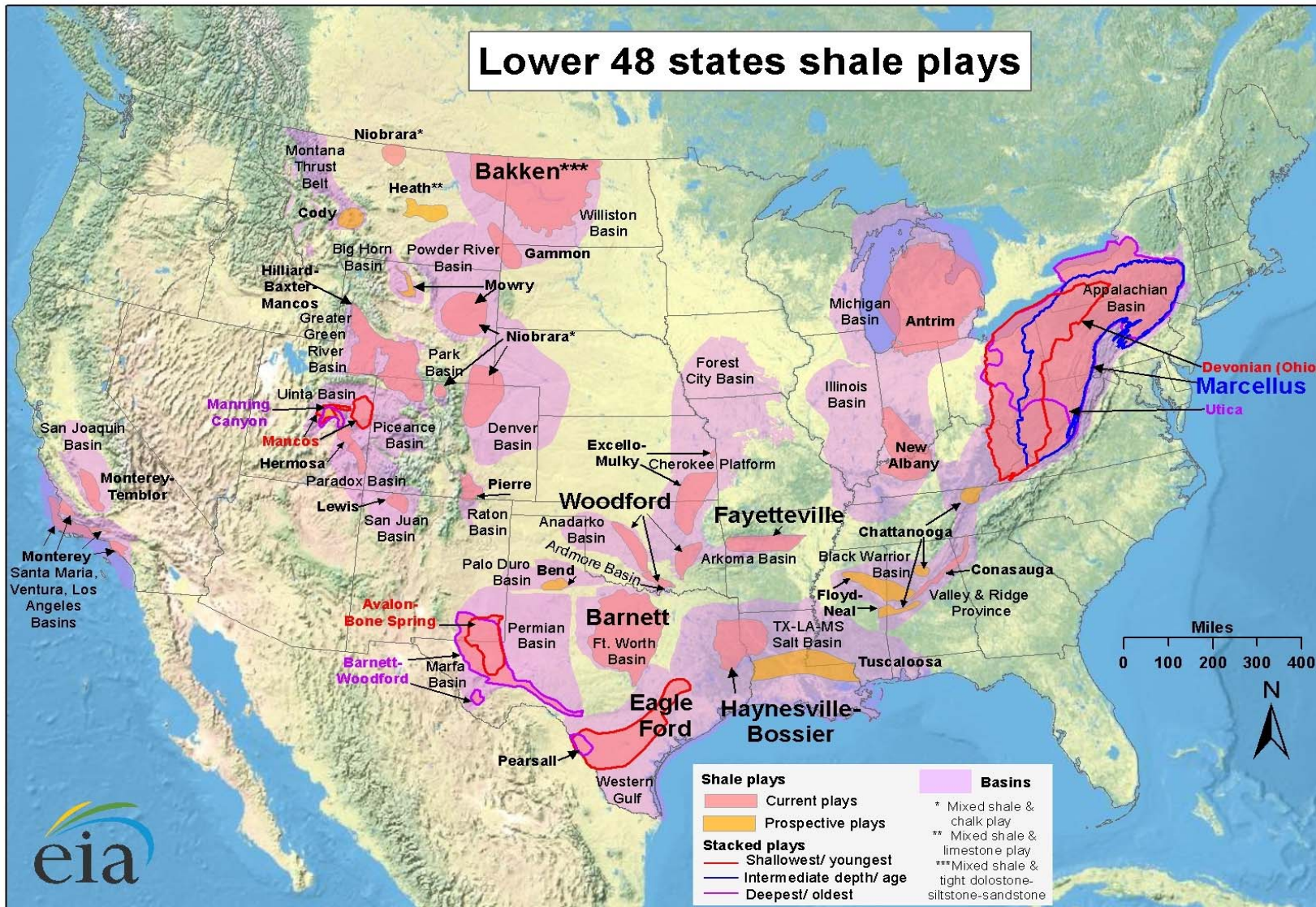
# **Is Natural Gas the Answer?**

Dena E. Wiggins  
President and CEO  
Natural Gas Supply Association

[www.ngsa.org](http://www.ngsa.org)

October 16, 2014

# Abundant Shale Gas Widespread Across U.S.

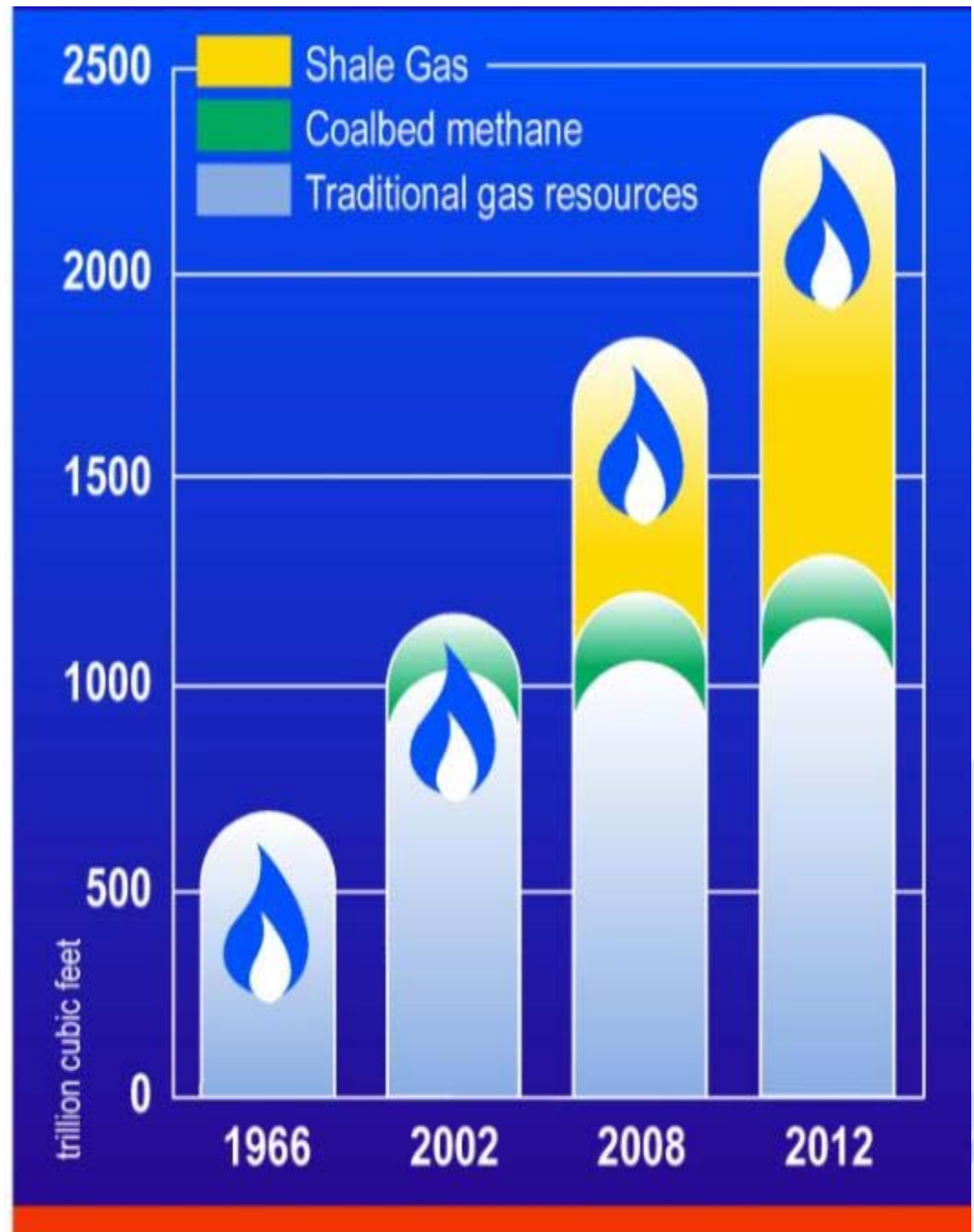


Source: Energy Information Administration based on data from various published studies.  
 Updated: May 9, 2011



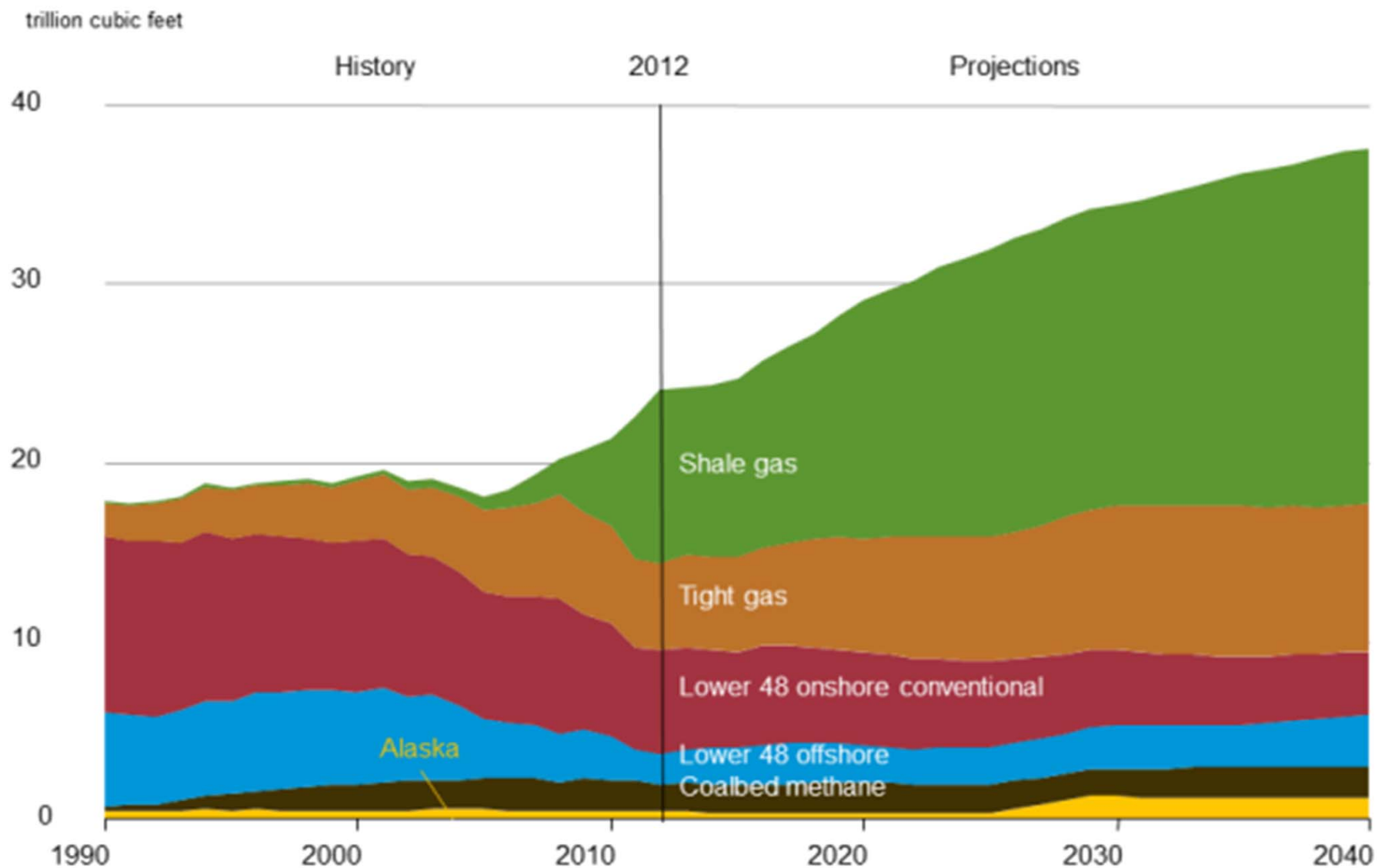
# Resource Estimates More Than Doubled Since 2002

- Growing with improvements in technology
- Fall on the conservative side: history tells us there is more to be discovered
- If the 1966 estimate of 600 trillion cubic feet (Tcf) had remained static, the U.S. would have run out of natural gas 8 years ago.



Source: Potential Supply of Natural Gas in the U.S. 2012, Potential Gas Committee, 2013.

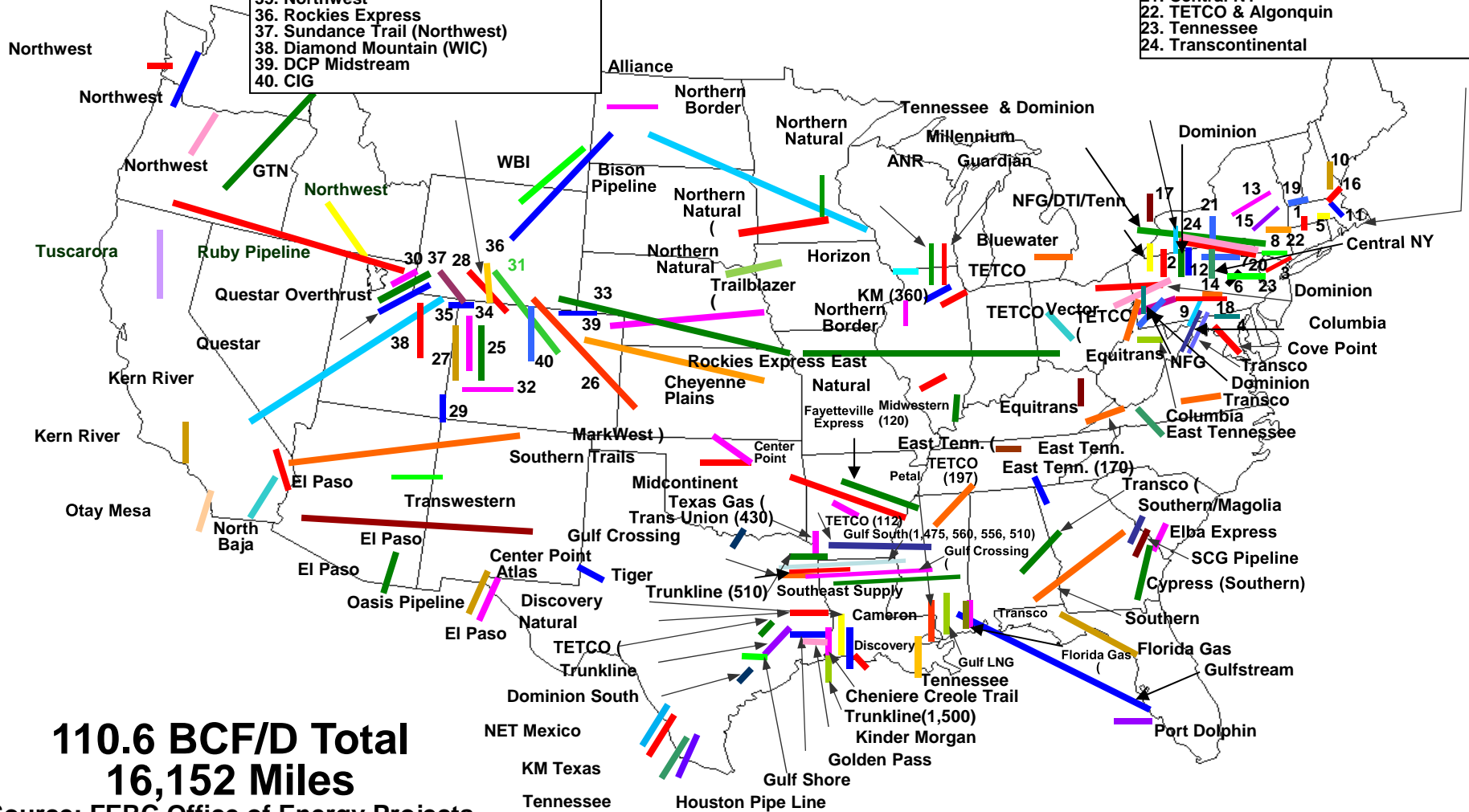
Figure MT-44. U.S. natural gas production by source in the Reference case, 1990-2040



# Market Responsive Infrastructure Additions Major Pipeline Projects Certificated (MMcf/d) January 2000 to May 2014

1. Algonquin
2. Dominion
3. Iroquois
4. Columbia
5. Algonquin
6. Transcontinental
7. Transcontinental
8. Transcontinental
9. Columbia
10. Maritimes
11. Algonquin
12. Tennessee
13. Tennessee
14. Transco
15. Algonquin
16. Algonquin
17. Empire
18. Texas Eastern
19. Algonquin
20. Tennessee
21. Central NY
22. TETCO & Algonquin
23. Tennessee
24. Transcontinental

25. CIG
26. CIG
27. TransColorado
28. WIC
29. El Paso
30. Rendezvous
31. Entrega
32. Northwest
33. Rockies Express West
34. White River Hub
35. Northwest
36. Rockies Express
37. Sundance Trail (Northwest)
38. Diamond Mountain (WIC)
39. DCP Midstream
40. CIG



**110.6 BCF/D Total**  
**16,152 Miles**  
Source: FERC Office of Energy Projects

# Producer-Backed Pipeline Projects (2012)

<b>Company</b>	<b>Project</b>	<b>Capacity (MMcf/d)</b>	<b>Subscribed to Marketer/ Producer</b>
Tennessee Gas Pipeline	MMP Project	240	100%
Millennium Pipeline Company	Minisink Compressor Project	225	100%
Tennessee Gas Pipeline	Northeast Upgrade Project	636	100%
Texas Eastern/ Algonquin	NJ-NY Expansion Project	800	79%
Transco	NE Supply Link	250	100%

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

**63**

## NEW PROJECTS

29 Petrochemical  
13 Fertilizer  
12 Steel  
7 Gas-to-liquids  
2 Paper and pulp

**28**

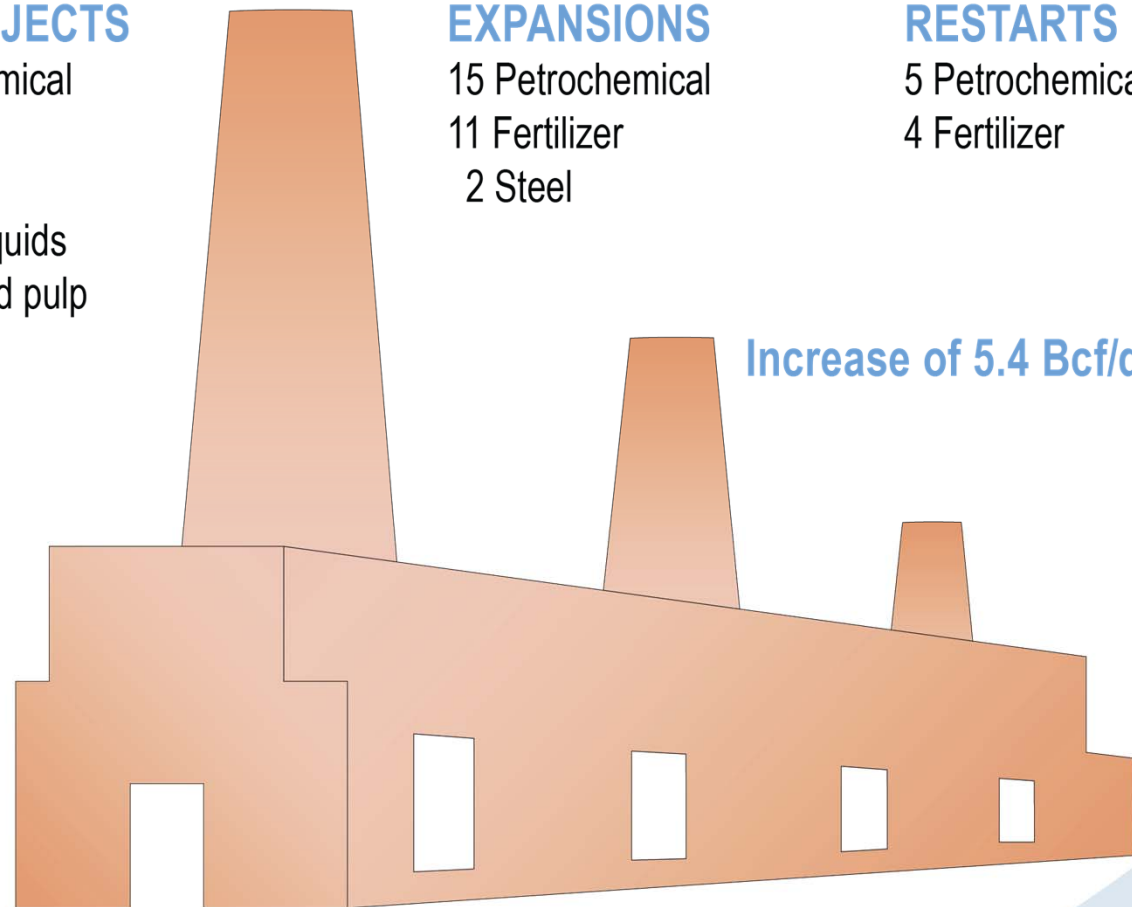
## EXPANSIONS

15 Petrochemical  
11 Fertilizer  
2 Steel

**9**

## RESTARTS

5 Petrochemical  
4 Fertilizer

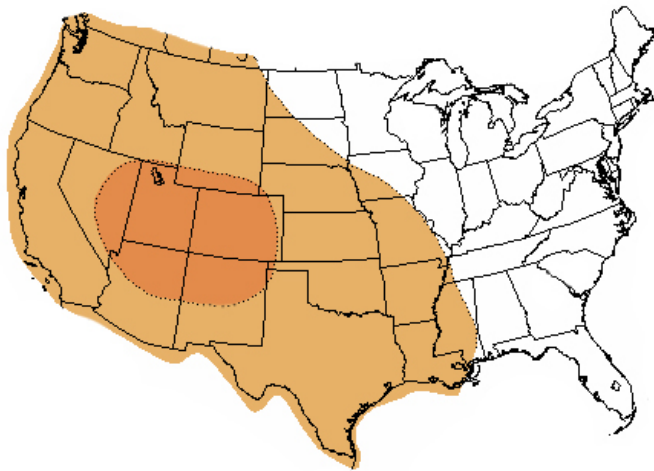


Data source: Energy Ventures Analysis, September 2014

# What Happened Last Winter?

## Expectation

Winter 2013-2014

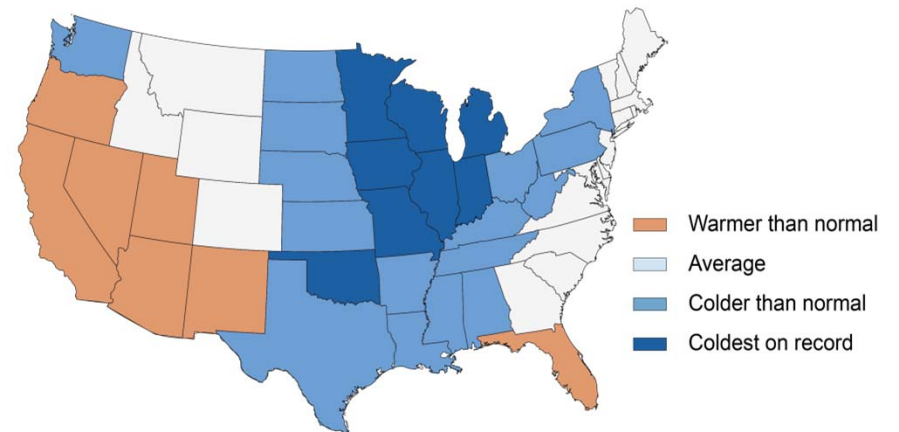


3,418 Heating degree days

## Reality

Winter 2013-2014

11% colder than previous winter  
9% colder than 30-year average

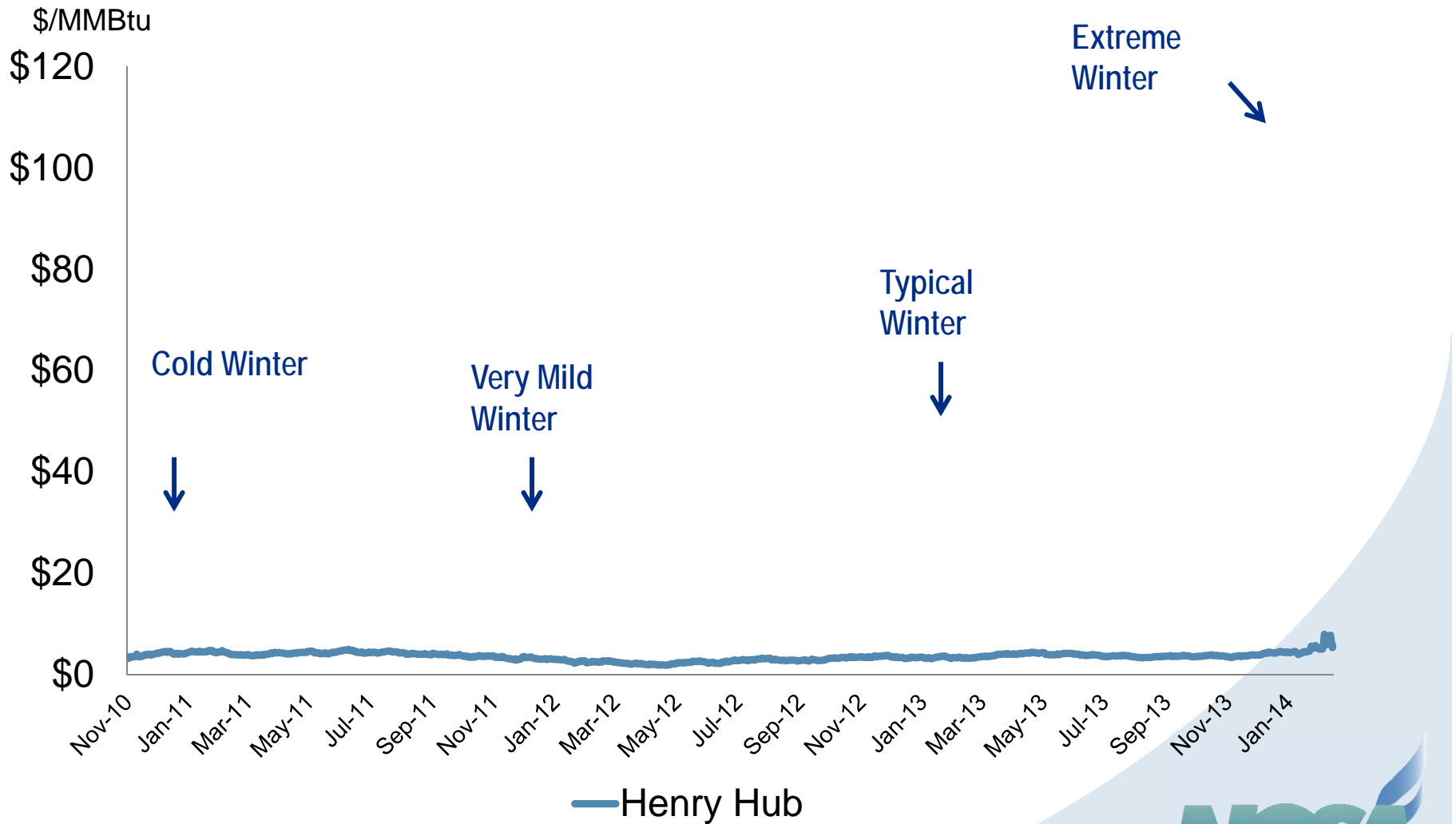


3,865 Heating degree days

Source: National Oceanic and Atmospheric Administration (NOAA)



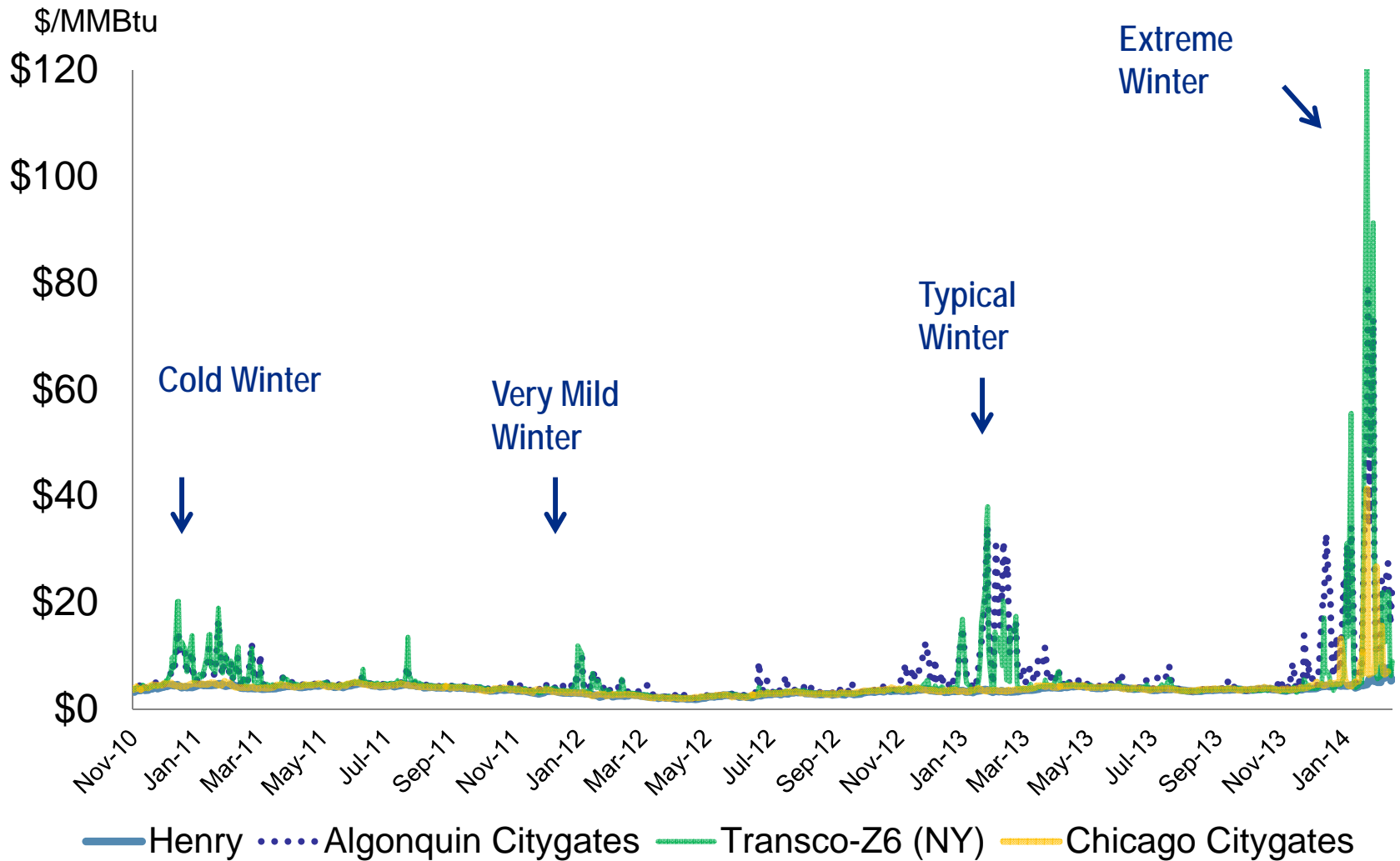
# Weather Impact Seen in Daily Natural Gas Market



Source: Intercontinental Exchange



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Source: Intercontinental Exchange

# 2014 - 2015 Winter Outlook

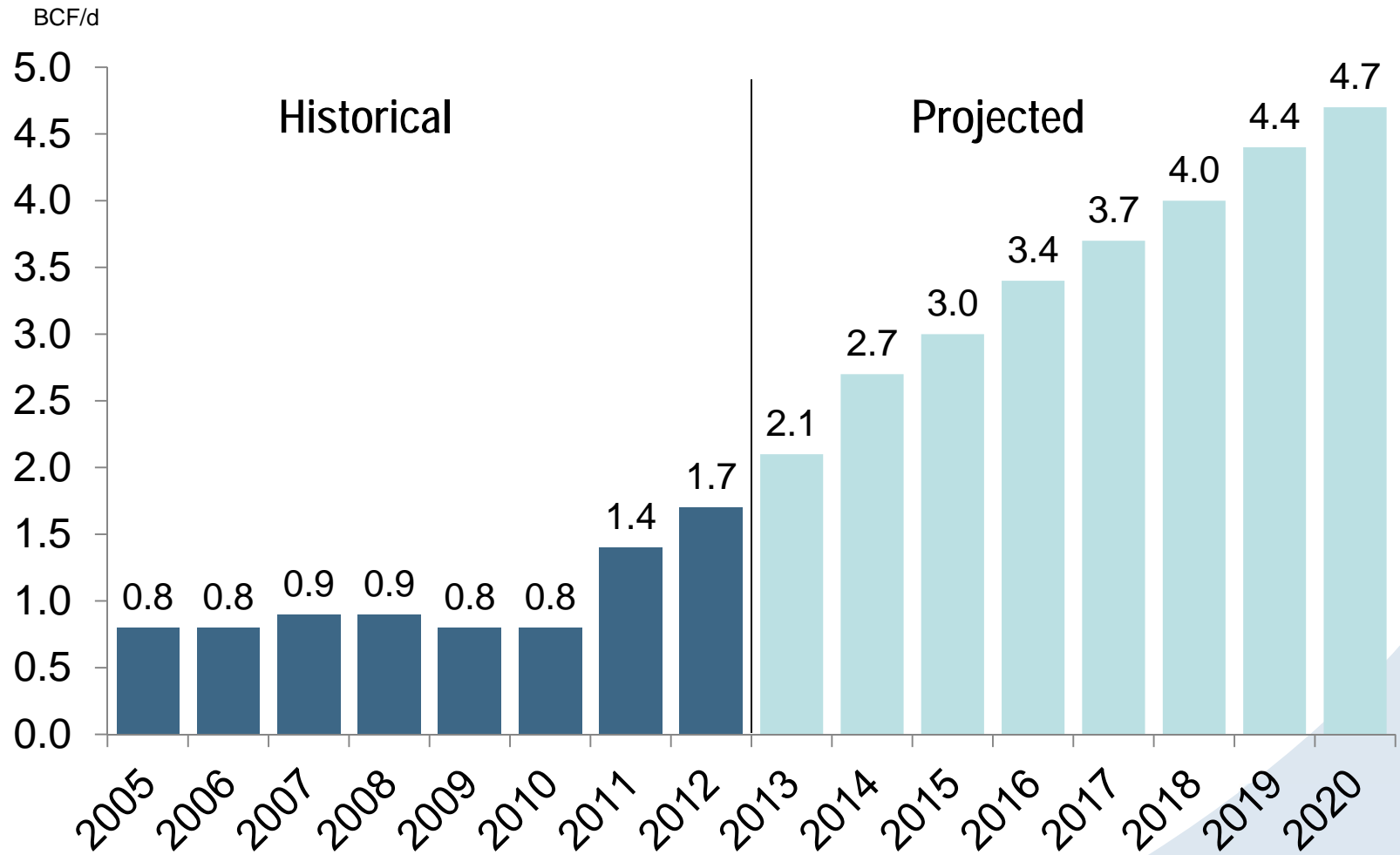
	FORECAST
Weather	↓
Economy	—
Overall demand	↓
Storage	↑
Winter production	↓
Winter-to-winter pressure on natural gas prices	↓

# LNG Exports:

Bring dollars to U.S. and reduce trade deficit by selling LNG to overseas trading partners.

- Reduces U.S. trade deficit by billions of dollars
- Each \$1 billion LNG sold = 6,000 new jobs
- Generates over \$10 million/ year in new tax revenue for federal, state, and local governments

# Natural gas exports to Mexico are expected to nearly double by 2020



Source: Energy Ventures Analysis, 2013 Long-Term Outlook

# Gas/Electric Coordination

- Environmental regulations and moderate gas prices promote increased use of gas fired generation
- Power Sector Issues:
  - Timely nomination deadline occurs before electric dispatch – more acute in capacity-constrained markets
  - Limited scheduling opportunities to manage intraday changes in electric load
  - Too many hours between the last opportunity to schedule and the end of the gas day

# Increasing Gas Demand Creates Transitional Phase for Power Sector

- Well-functioning natural gas market with competitive prices
- Advantages of natural gas leading to significant demand growth
  - For many years, generators capable of securing affordable gas without firm contractual commitments
  - Now, regional pipeline capacity constraints limiting previous system flexibility

# Organized Market Rules Can Help Support Increased Fuel Reliability

- RTO should ensure rules and pricing structures
  - Create stronger link between performance and capacity market obligations
  - Provide incentives for generators to contract for reliable gas services
  - Permit generators to recover costs of reliable fuel commitments
- Investment in fuel security through pipeline contracting, in turn, supports new gas infrastructure
- PJM recognizes issue
  - Considering solutions in capacity market for generators to recoup costs associated with firm fuel investment



# Other “Solutions”: Trading Platform aka “Craigslist” for Gas?

- Conceptual idea for a gas trading platform
- If developed, should be driven by the market, not mandated by regulators
- Do pipelines have capability to rapidly redirect flowing gas from multiple deliver points
- Trading requires credit protection

## Final Thoughts

- Abundant supply of clean-burning natural gas
  - Market forces expected to exert downward pressure on prices for this winter
- Infrastructure being built to bring gas to market
- Northeast area in transition -- growing pains until:
  - Adequate gas infrastructure in place
  - Generators can better align pipeline capacity contracts with expected generation commitments

For further information:

[dena.wiggins@ngsa.org](mailto:dena.wiggins@ngsa.org)

202.326.9310