Reliable Public Power Provider

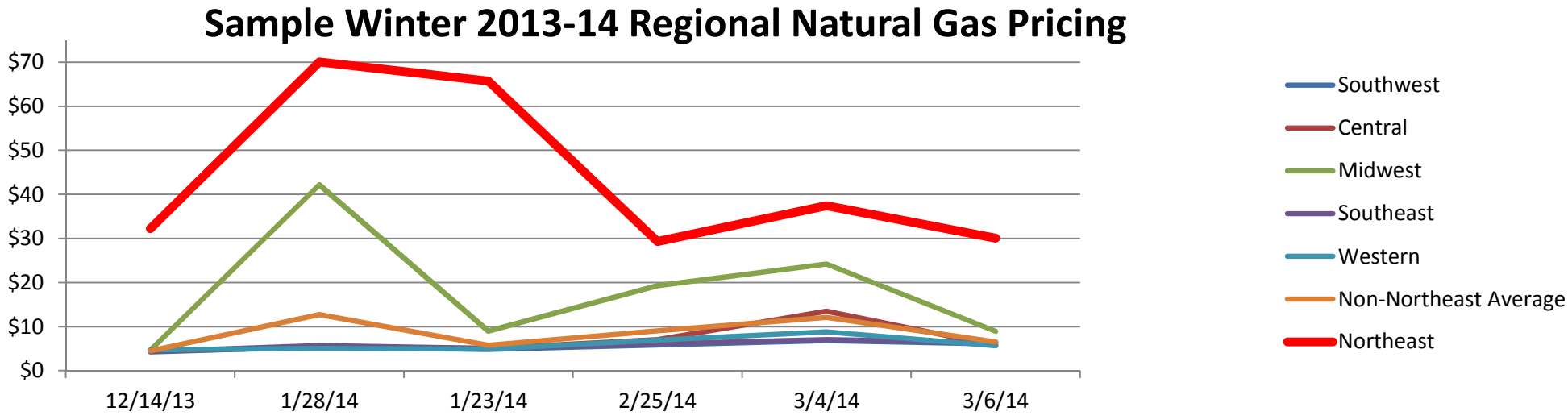
AMONG THE NATION'S FINEST

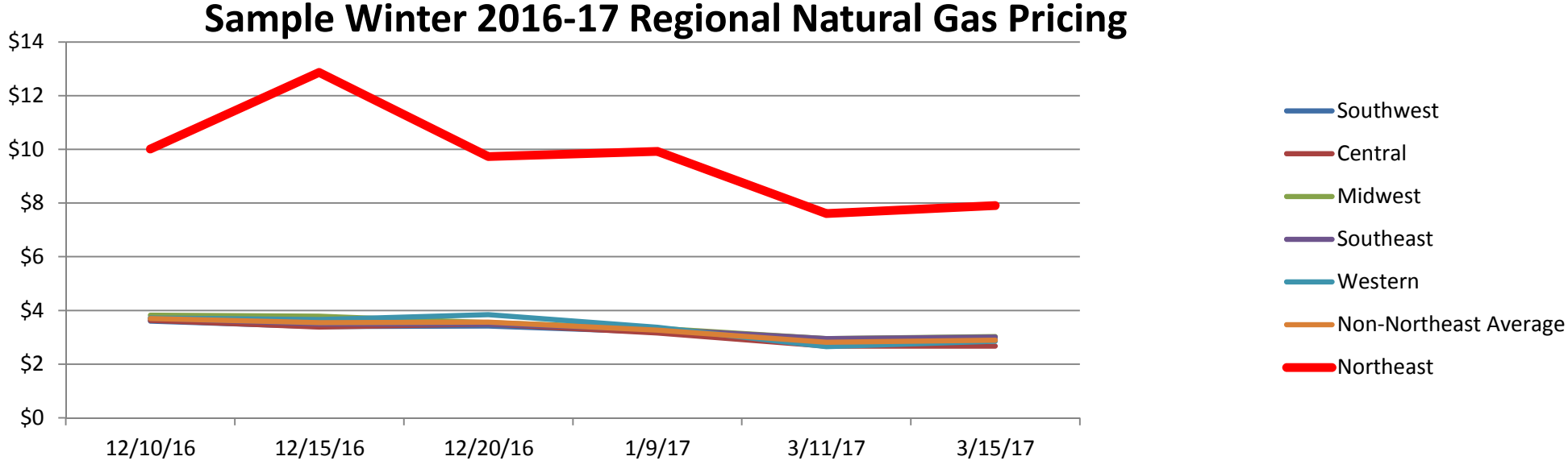
Westfield Gas & Electric
2017/2018 Energy Outlook
October 4, 2017

Connection of Natural Gas & Electric Power

- While natural gas supplies are plentiful… the delivery infrastructure in the Northeast remains inadequate.
- Many of the transmission pipelines were built decades ago when natural gas was first introduced into the region (1950's).
- The demand for natural gas, particularly in the electric generation business, had been relatively flat since the pipelines were built (about 10% of generation in New England was from natural gas).
- This began changing about a decade ago. In 2016, roughly half of electric generation was fueled by natural gas.

Limited Transport Translates to Higher Costs
Sample Spot Pricing – 2 Recent Winters





Limited Transport Translates to Higher Costs
Sample Winter 2016-17 Pricing

Region	12/10/16	12/15/16	12/20/16	1/9/17	3/11/17	3/15/17
Southwest	3.60	3.41	3.43	3.20	2.84	2.91
Central	3.63	3.39	3.50	3.16	2.68	2.68
Midwest	3.83	3.79	3.55	3.33	2.95	3.03
Southeast	3.71	3.50	3.50	3.30	2.95	3.01
Western	3.72	3.67	3.85	3.37	2.66	2.85
Non-Northeast Average	$ 3.70	$ 3.55	$ 3.56	$ 3.27	$ 2.81	$ 2.89
Northeast	$ 10.01	$ 12.87	$ 9.73	$ 9.93	$ 7.61	$ 7.91
Northeast Premium	**271%**	**363%**	**273%**	**303%**	**270%**	**273%**

Winter in Review

- Although New England delivered gas costs experienced last winter during peak demand periods were higher than the rest of the nation, costs were less onerous than some previous winters.

- Several factors worked in unison to cap New England delivered gas costs including:

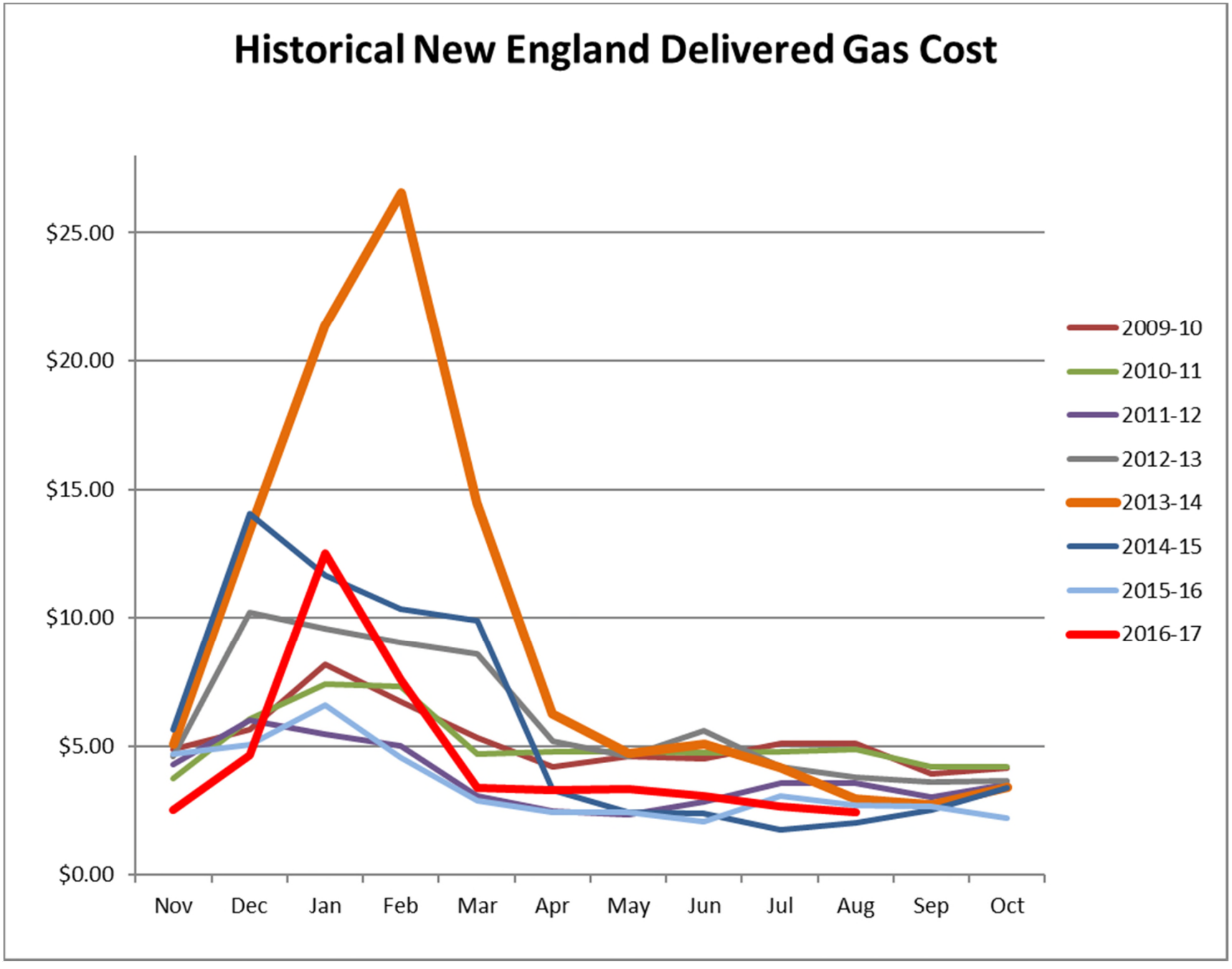
  Lack of sustained frigid weather – although heating degree days for the entire winter period were near normal, the lack of extreme cold kept heating demand in check.

  Continued low crude oil prices – robust supplies of crude has put downward pressure on its price.

  Availability of LNG in New England – Foreign LNG contracts tied to the cost of oil allowed LNG deliveries to flow to the New England market, unlike some previous winters.

  ISO New England's Winter Reliability Program – Provided financial incentives to oil, gas and dual fuel generators to secure supply in advance of the onset of winter, creating greater supply availability.

Natural Gas Demand & Limited Infrastructure



Pipeline Investment

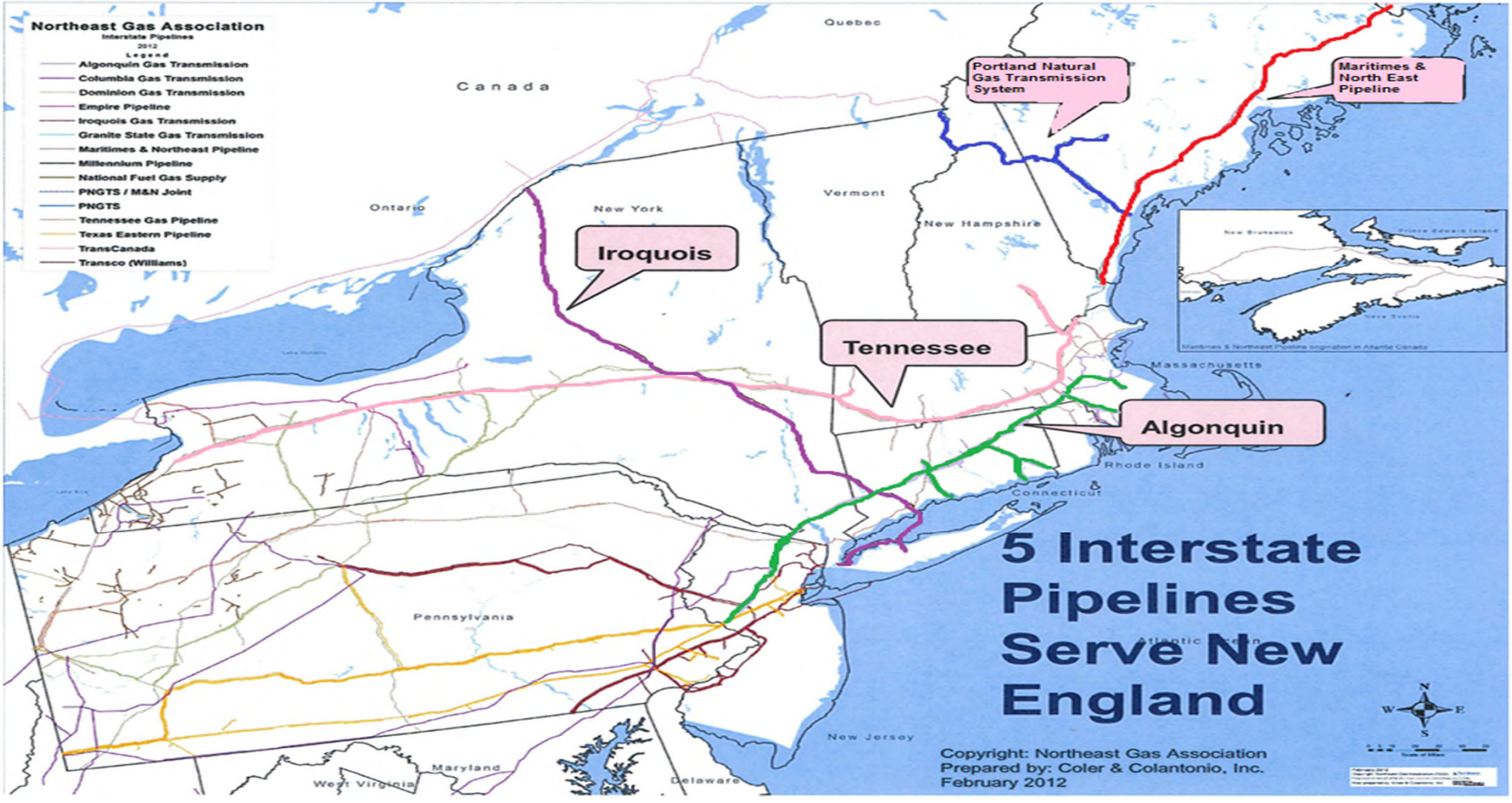
- The natural gas interstate pipeline system is **designed solely to fulfill its contractual arrangements.**

- **Pipeline capacity is added only** to meet the needs of gas customers requesting primary firm service and who are willing t**o execute long term firm transportation contracts** that pay for the required capital investment and operating costs. Because of exorbitant costs of pipeline expansion **there is no "If we build it they will come" mindset.**

- Instead, without long term firm commitments and arrangements, projects do not proceed and if they do, **local opposition and state permitting can derail the project - as has recently occurred to the Constitution Pipeline project in New York.**

Natural Gas Demand & Limited Infrastructure

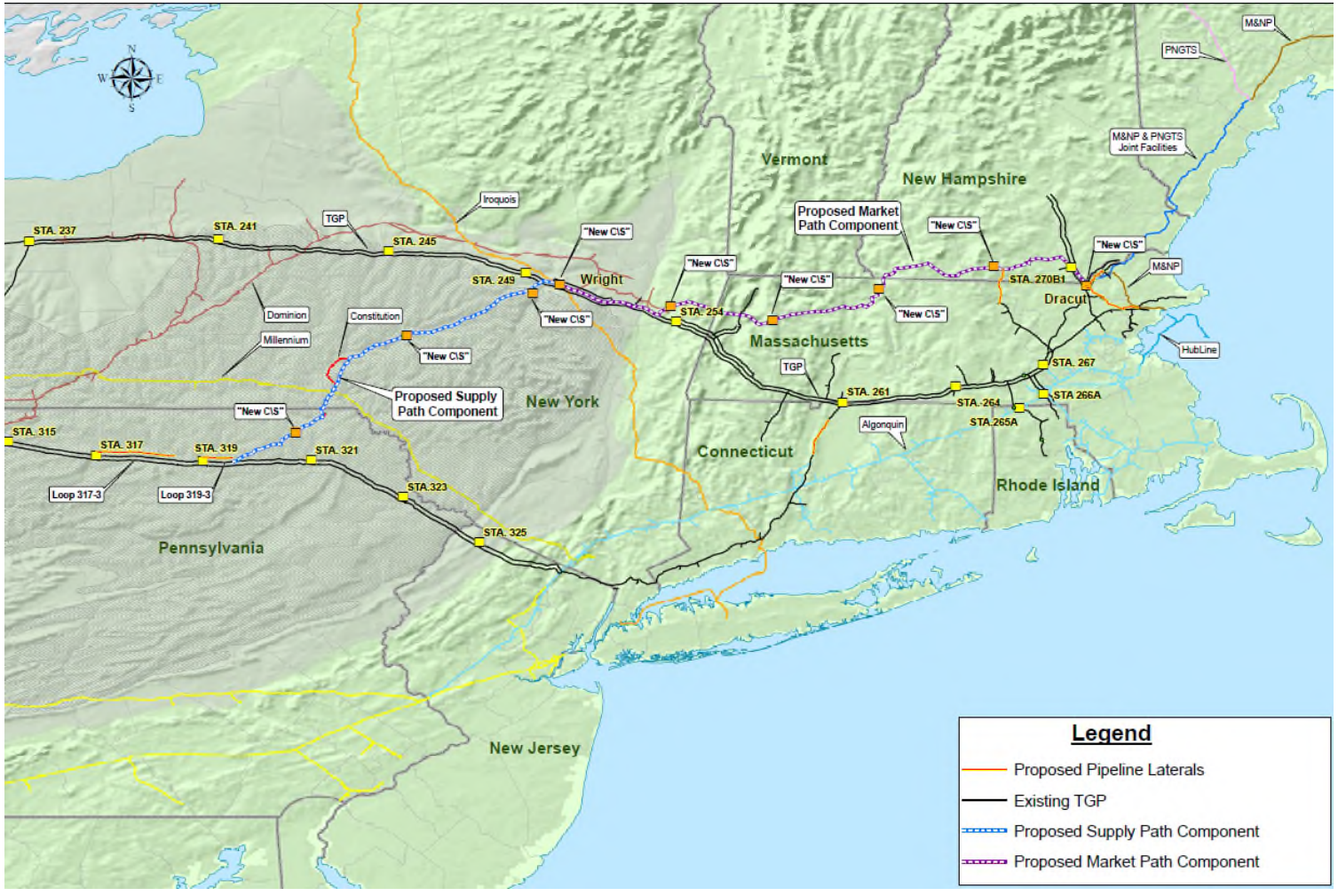
Although shale supplies are plentiful, limited transport exists from the shale regions into New England



Natural Gas Demand & Limited Infrastructure

~~Northeast Expansion Project (Tennessee Gas Pipeline)~~ (CANCELLED)

- Would have provided 361 miles of pipeline looping and new build out stretching **from TGP's 300 line in Northeast Pennsylvania to Dracut, MA** plus backhaul to existing markets
- 560,000 Dth/day scalable to 1.2 Bcf/d to access prolific and low cost Marcellus Shale region gas supplies for delivery into New England markets
- The lack of such a project will continue to leave New England exposed to price volatility and leave shippers searching for other viable alternatives



Natural Gas Pipeline Infrastructure & Management

- The Federal Energy Regulatory Commission (**FERC**) determines
  - **the rate-setting methods for interstate pipeline companies,**
  - **sets rules for business practices, and**
  - **has the sole responsibility for authorizing the siting, construction, and operations of interstate pipelines, natural gas storage fields, and liquefied natural gas (LNG) facilities.**

- The FERC **does not manage the overall pipeline system the way a regional electric ISO or RTO does**.

- **Pipeline Owners will only expand their service when a guaranteed rate of return is met**.

What Does It All Mean

- **Prices in both gas and electric utilities will be subject to significant fluctuations for the foreseeable future**
  - Natural gas drives the electric industry
  - During periods of high demand, transportation costs will drive the New England markets
  - With increased capacities at least five years away, these fluctuations will continue
- This effect is **negative for the consumer and business** alike
  - On the **commercial** side, investment by business in the region will be adversely affected. This hurts **job growth, economic stability, and investment in infrastructure and the community**
  - On the **residential** side, people's **disposable income contracts** for many reasons and **detracts from any meaningful recovery**

What Can We Expect This Winter?

- **Although one can never tell where prices will end up, several factors are lining up which may once again keep New England delivered gas costs between the high levels experienced during the Winter '13-'14 and the lower levels seen during the Winter '15-'16**

  Crude oil prices remain low – continued excess supply of crude oil has caused its forward price (as of today) to remain at or near $50/bbl well into 2022.

  Lower LNG demand in Japan – nuclear power plants shut down by the 2011 tsunami are back on line. Nuclear power reduces Japan's dependence on more costly gas fired generation and LNG.

  Global gas liquefaction capacity increases – new liquefaction plants continue to come on line in Australia boosting global supply.

  Availability of LNG in New England – Such global LNG supply/demand forces are likely to contain global LNG costs, making the New England market attractive.

  ISO New England's Winter Reliability Program – is expected to continue this winter.

What is WG+E Doing

- Westfield continues to diligently
  - Utilize a **risk management portfolio** for both gas and electric purchases through an Enterprise Risk Management Program
  - **Control distribution expenses**
  - **Invest** in programs and technological advances to deliver energy the most cost effective way
  - Utilize a **rate stabilization program**
  - **Utilize hedge programs** to optimize supply purchases
  - **Educate** its customers, utilizing various methods, regarding the impacts of this dilemma