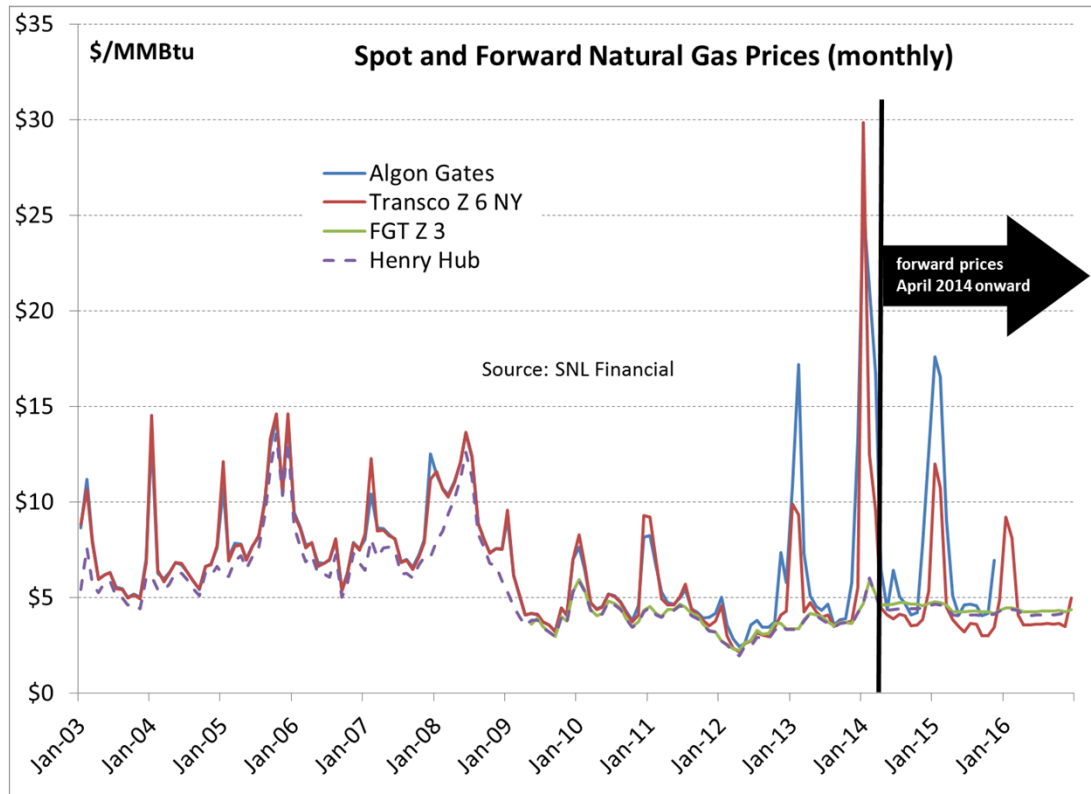


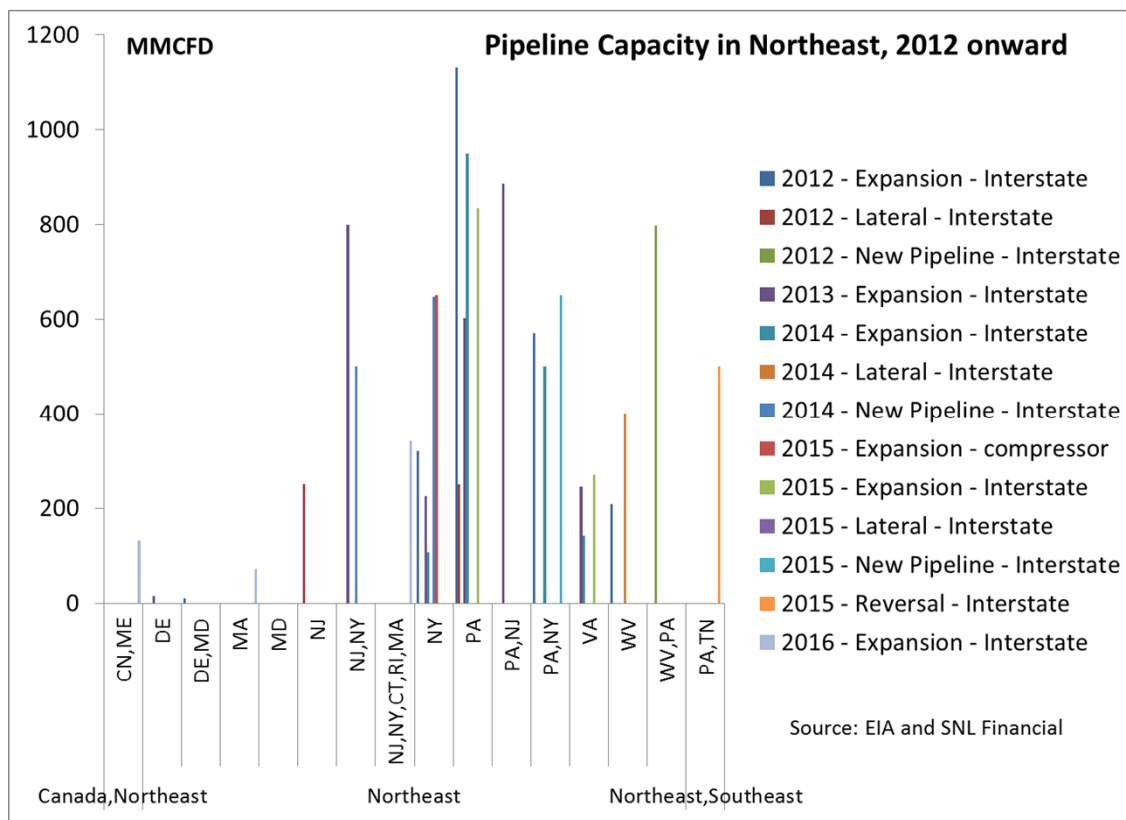
The Midstream and the Winter of our Discontent: What do Price Spikes Mean for the Long-Term?

The severe winter of 2013/14 led to strong natural gas price spikes in the Northeast (NE) averaging \$25-30/MMBtu in January (see chart). Henry Hub (HH) averaged \$4.7, significantly above \$3.7 in 2013 and \$2.8 in 2012, much lower than NE prices. Such winter basis differentials are the norm due to bottlenecks in pipeline and storage capacity. ***Is this time different? Will increased Marcellus production lead to new capacity build? Or, will we see permanent demand destruction?***



Short Term Observations

- Congestion in the NE will take time to resolve
- Pipeline expansion is falling short of expected peak demand
 - No projects are currently planned beyond 2016 (see chart next page):
 - Roughly 13 BCFD of new interstate pipeline capacity 2012-2016, almost all in PA, WV, NY and NJ; very little to New England states
 - 70% from expansion projects
 - 500 MMCFD from PA to TN
 - 50% completed, 25% announced, others in various stages of development
- Forward curves reflect market expectations of demand-supply imbalance to last: \$18 at Algon Gates and \$12 at Transco Zone 6 (NY) in January 2015 (see chart at left).
- Rate increases are possible as a method of financing new capacity
 - Several ISOs including PJM and NYISO have proposed, ISO-New England is considering, to fund pipeline capacity into the region by 2017/2018
- Storage levels below 5-year average raise questions about winter 2014-5 (watch for upcoming CEE analysis on storage refill)



Longer Term Effects?

- Natural gas prices could remain elevated: HH averaged \$3.7 in 2013; could average above \$4 in 2014
- Some industrial load interrupted due to high energy prices: temporary or permanent demand loss?
- Coal-fired generation increased in response to high natural gas prices, defying the long-term trend of switching from coal to gas.
 - Is this only short-term market response or a signal of fundamental change?
 - Given seasonal demand, can more gas-fired generation be built, especially in New England, without new pipeline and/or storage capacity?
 - What is the alternative to gas if coal plants close due to EPA regulations and nuclear plants close due to age and cost?
- Will the push for energy exports (especially LNG) and to reverse gas flows from Marcellus to the Gulf Coast be impacted as a result of winter shortages?

- Price spikes and basis blow outs are not uncommon but are usually short unless they are signaling structural problems.
- Ongoing and expected coal-fired plant retirements will reduce NE utilities' ability to switch to coal from gas.
- Plans by pipeline operators to reverse gas flows to the Gulf Coast to serve new industrial demand and LNG exports reflects desires for more consistent monetization of the resource base in locations where projects can be built.
- Regulators do not provide a cost recovery mechanism (such as long-term contracts) that facilitate new infrastructure. Governors in New England are trying to address this challenge via a regional solution.
- Overall, great difficulty exists in siting pipelines: obtaining permits in the face of local/environmental opposition, managing costs for new infrastructure. Until these challenges are overcome, regional imbalances will continue to pull supply to higher priced end use locations, creating volatility.