

*Princeton E-Affiliates Partnership
Fourth Annual Meeting
November 20, 2015*

*Panel Discussion: The Energy Economics of
Falling Oil Prices, Fracking and Renewables*

Ismael Arciniegas Rueda
Director Structuring and Product Management
PSEG Energy Resources and Trade

Falling Gas Prices Impact on Wholesale/Retail Power Markets

- ✓ Merchant Power prices are driven by the interaction of supply and demand in a real time setting
 - Supply is dispatched in merit order to meet demand based on cost (low costs producers are dispatched first) such as the price is set up by the most expensive unit dispatched to match demand
 - Until relatively recently price was usually set up by gas units as their were relatively more expensive than other fuels such as coal and nuclear
- ✓ Fracking based gas supply has pushed gas prices down and therefore it has move generation based gas lower on the supply curve with significant consequences across the wholesale generation industry.
 - Merchant generators with Coal based portfolios suddenly realized their units do not get dispatched (selling energy) and only revenues they can get is for reliability purposes (capacity)
 - Price volatility seems lower and it has shifted form summer to winter (when gas disruptions maybe more likely)
 - Low wholesale energy prices have not been followed up by a similar increase in demand
 - Merchant generation has difficult adapting to new world as changing portfolio mix takes time

Falling Gas Prices Impact on Wholesale/Retail Power Markets

✓ What about Retailers?

- As it turns out, low wholesale power prices have been reflecting into retail customers but at lower speed as retail power price “elasticity” to gas prices is somewhat lower than wholesale power prices so retailer margins have a bit more time to adjust.
- Low gas prices have also make easier for retailers to compete non-only on commodity but buy adding products that allows for differentiation (e.g., Green)

✓ What about Financials?

- Banks, hedge funds and others provide financial products that generators/retailers can use to hedge their risks exposures and allow financials to take positons (trading)
- Low gas prices and low volatility (in addition to increasing regulation) have reduced the attractiveness of energy markets to some financial players and therefore liquidity has dried up making risk management for generators/retailers harder to implement.

✓ Winners/Losers?

- This new market dynamic favors companies that can quickly adapt and make changes to their portfolio of assets (e.g., by increasing proportion of efficient gas units in portfolio)
- Losers are those that are stuck in old technologies (e.g., expensive coal)

Falling Gas Prices Impact on Wholesale/Retail Power Markets

✓ What is Next?

- In the long run, low prices would promote new uses of electricity which would increase demand (e.g., electric cars) and therefore market forces would gradually push prices up
- Also, projects are on the way to send of the gas supply to market overseas (e.g, Mexico)
- However it is not clear how long it would take for those forces to play out so that power prices go back to old normal