Shale Shock: The Revolution in Shale Gas Recovery, Electricity Markets & the Green Agenda

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Marcellus Shale Play

- Marcellus Shale formation estimated to contain between 168 trillion to 516 trillion cubic feet (TCF) of natural gas.

- Experts believe 10% of gas in formation is currently economically recoverable, or up to 50 TCF
What are long-term consequences of shale gas availability on future electricity capacity needs, resource mix & profits?

- NYISO: No need to invoke regulatory backstop solutions to meet reliability needs in NY from 2009 through 2018.


- Electricity prices in NY are highly correlated to natural gas prices.

- Generating resources, such as coal and nuclear that are not normally on the margin, would see lower profits during times of low gas prices.
What are long-term consequences of shale gas availability on future electricity capacity needs, resource mix & profits? – cont.

1997 from EIA, 2009 data from 2009 NYISO Load & Capacity Report, and 2018 data from NYISO 2009 RNA. The 2009 RNA base case only included about 30% of the EEPS target, therefore the load forecast may be high, and doesn’t not including some expected generation.
Will gas be the “fuel of choice” for new generation?

- Natural gas already is the fossil fuel of choice for new generation in New York State.

- Since 2000, 5,976 MW (or about 80% of total additions) of natural gas-fired generation has been added in the state.

- Since 2000, 1,227 MW (or about 16% of total additions) of wind turbines have been added in the state.
Will gas generation be a substitute or a complement to renewable energy?

- In 2003, NY PSC instituted its renewable portfolio standard (RPS) calling for an increase in renewable energy used in the State from 19% to about 25% by 2013.

- The goal of the RPS program is under consideration to be increased to 30%, along with implementation of an Energy Efficiency Portfolio Standard calling for a 15% reduction in energy use by 2015.

- A key component of RPS is the Renewable Energy Credit (REC), which was designed to provide an incentive (through a bid process) to renewable resources as their costs typically are higher than revenues achievable in the market.

- Due to the intermittent nature of renewable energy resources, specifically wind and solar, they require either energy storage or additional generation to meet load when the renewable sources are unavailable.
Critics of shale gas extraction methods exist. Are regulations likely? How will regulations affect the long-term viability of shale gas supply?
Where should the natural gas be directed? Renewable resources? Natural gas powered cars?

- Natural gas, being a commodity, will go where the market takes it, unless a change in federal policy directs it elsewhere.

- Initially, gas produced from Marcellus will simply displace gas that was previously procured from other locations.

- As time goes on, the new Marcellus supply source may lead to greater use of natural gas in the form of residential space heating, industrial processes, and as a transportation fuel, but a large investment in pipeline infrastructure will be required to make this possible.
How will shale fit into NY's energy resource strategy?

[Image of a map showing Northeast Natural Gas Pipeline Systems]
Is the extraction of gas from shale sustainable?

An active natural gas well in Chemung County after the drilling and completion work is done and the site has been reclaimed.
Conclusions

• Marcellus gas should be beneficial for NY and the Northeastern US, as long as it is produced with the least adverse environmental impacts possible.

• Natural gas extraction will create jobs, create wealth for upstate landowners, and increase State revenue from taxes and land-owner leases and royalties.

• Resource presents an opportunity for the State to unlock substantial economic value while helping to achieve a key energy policy objective of importance to the State’s energy security.

• Increased supplies of natural gas in combination with natural gas efficiency programs will place downward pressure on natural gas prices, thereby potentially lowering the cost of energy for New Yorkers.