Regulatory Framework for the U.S. Energy Market

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SUMMARY

- The U.S. has a fragmented and balkanized electricity market as a result of duel regulatory jurisdiction – our central government regulates the wholesale market for electricity, while each state regulates its own retail market.
- The central government started in 1978 to cultivate a competitive wholesale market, with wide latitude for each region to monitor its own development.
- States have only recently embarked on retail competition policies, and –with a few exceptions – have generally failed to create competition, particularly amongst residential customers.
- While large commercial and industrial competition is robust in New Jersey, it nevertheless uses an innovative auction process to compensate for a lack of residential and small business retail competition.

A. Regulated by the Central Government

The Federal government has jurisdiction over the wholesale electricity markets.

1. Federal Energy Regulatory Agency (FERC)

- FERC, is an independent Federal agency that regulates the interstate transmission of electricity, natural gas, and oil.
- FERC also reviews proposals to build liquefied natural gas (LNG) terminals and interstate natural gas pipelines as well as licensing hydropower projects.
- The Energy Policy Act of 2005 gave FERC additional responsibilities, including backstop citing authority for transmission projects and LNG terminals, mandatory reliability standards, and wholesale market monitoring and enforcement powers.

2. PJM Interconnection

 Under FERC's guidance, PJM runs the wholesale physical power market in 13 states, including New Jersey, that clears dayahead and real-time power transactions between generation companies and load-serving entities.

- PJM has the most robust forward wholesale market in the United States with transactions primarily executed in a bilateral over-the-counter (OTC) basis.
- PJM manages a sophisticated regional planning process for generation and transmission expansion to ensure future electric reliability.
- New Jersey, therefore, has little ability to affect the price of wholesale electricity, although our BGS auction, to be discussed later, attempts to squeeze out more inefficiencies in the wholesale market.

B. Problems with the Wholesale Market

Although the wholesale electricity market in PJM is generally competitive, problems do remain.

Supply/Demand Pressures

 NJ is one of the most expensive states for wholesale electricity because it is congested and prices are based on local factors.

 Demand is rising and growing while supply is decreasing due to retirements.

 The Northeast region has a number of load pockets caused by insufficient transmission between individual market areas with the most notable being New York City, Long Island, southwest Connecticut, PJM East and the Delmarva Peninsula. These load pockets, in part, have occurred because of changing demographics and difficulty in siting transmission.

Supply/Demand Pressures Cont.

- Transmission constraints limit additional imports of hydroelectric power from Canada, resulting in a greater reliance on gas-fired capacity closer to native loads.
- NY is short on supply building infrastructure to take more electricity from NJ (Neptune Line to Long Island).
- New Jersey is attempting to reduce demand by using energy efficiency, developing renewable generation (20% by 2020), and importing cheaper electricity from other states

2. Balkanized Markets

- Our central government has taken a laissez-fair approach to regulating wholesale markets, refusing to standardize the markets (i.e., Standard Market Design)
 - There are four active independent system operators (ISO's) in the Northeast, but the rules of each are inconsistent, thus not allowing for an integrated wholesale market.
 - None of the ISOs have the ability to force transmission owners to build additional lines or order local and state authorities to grant permits.

Balkanized Markets cont.

- The PJM, NYISO and ISO-NE were each organized by a number of local utilities that were willing to hand over control of their transmission lines to a common operator in order to enhance reliability and economic dispatch, as well as offer scheduling and settlement services.
- However, the three ISOs have evolved differently. The timing and process through which the three system operators dispatch and variations in standards and market rules have resulted in the inability of one standardized market to develop in the Northeast.

3. Wholesale Pricing

- Within the wholesale power market, transmission constraints have enormous effects on the price in the constituent zones and sub-zones.
 - An efficient electricity system, with no transmission constraints, dispatches generators in order of their operating cost: the cheapest ones, generally baseline hydroelectric and nuclear generators, are generally dispatched first, followed by increasingly costly forms of generation, such as natural-gas-fired and oil-fired units.
 - The high cost of idle capacity discourages deregulated electricity suppliers from acquiring surplus capacity that would rarely operate. When demand in an area exceeds the capacity of its low-cost suppliers, it is often difficult to import cheap power from other areas because of limited transmission capability. Demand then must be met by running cheaper generators to their limits and by dispatching more expensive generators. This gives rise to extreme price volatility.

Wholesale Pricing cont.

Price volatility is exacerbated by the unresponsiveness (inelasticity) of consumer demand for electricity to high prices. Most consumers pay electricity prices that are still regulated. Because they are based on average generating costs, regulated prices do not vary significantly even when the real-time (marginal) cost of supplying electricity changes. As a result, there are few incentives in the U.S. electricity market to reduce demand.