

FERC Implementation of Market Based Wholesale Electricity Rates

A Story Of Unfulfilled Promises
For Consumers

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Liberty Energy Group, Inc

Restructuring - Goals & Expectations

- In Order 888, FERC made clear that the success of electric supply industry restructuring is to be measured in consumer prices
- FERC's original goals included
 - more efficient use of existing resources through more efficient economic dispatch of generation resources over broad geographic regions
 - better unit availability factors
 - better maintenance practices
 - improved fuel diversity through broad regional economic dispatch

Restructuring - Goals & Expectations

“Today the Commission issues three final, interrelated rules designed to remove impediments to competition in the wholesale bulk power marketplace and to bring more efficient, lower cost power to the Nation's electricity consumers. “(75 FERC ¶ 61,080, Docket Nos. RM95-8-000 and RM94-7-001, issued April 24, 1996, p.1)

Restructuring - Goals & Expectations

- Later, in Order 2000, FERC noted:

... that traditional management of the transmission grid by vertically integrated electric utilities was inadequate to support the efficient and reliable operation that is needed for the continued development of competitive electricity markets, and that continued discrimination in the provision of transmission services by vertically integrated utilities may also be impeding fully competitive electricity markets. These problems may be depriving the Nation of the benefits of lower prices and enhanced reliability.... **Competition in wholesale electricity markets is the best way to protect the public interest and ensure that electricity consumers pay the lowest price possible for reliable service.** (89 FERC ¶ 61,285, Docket 99-2-000 Final Order, pp. 2-3)

Restructuring - Unfulfilled Promises

- Market structures with good theoretical underpinnings face challenges when applied to real world markets because of market power, inelastic demand, transmission constraints or other issues
- Misaligned Incentives Reward Anti-Competitive Behaviors:

“All of the characteristics of wholesale electricity markets described above tend to make the elasticity of the residual demand curves faced by large suppliers extremely small in absolute value, which implies extremely large inverse elasticities and very large market clearing price increases from that supplier’s withholding a small percentage of its output. Typically, the greater the share of the total generation capacity owned by a supplier, the smaller is the absolute value of the elasticity of the residual demand curve it faces and the greater is its incentive to raise prices through unilateral actions.”

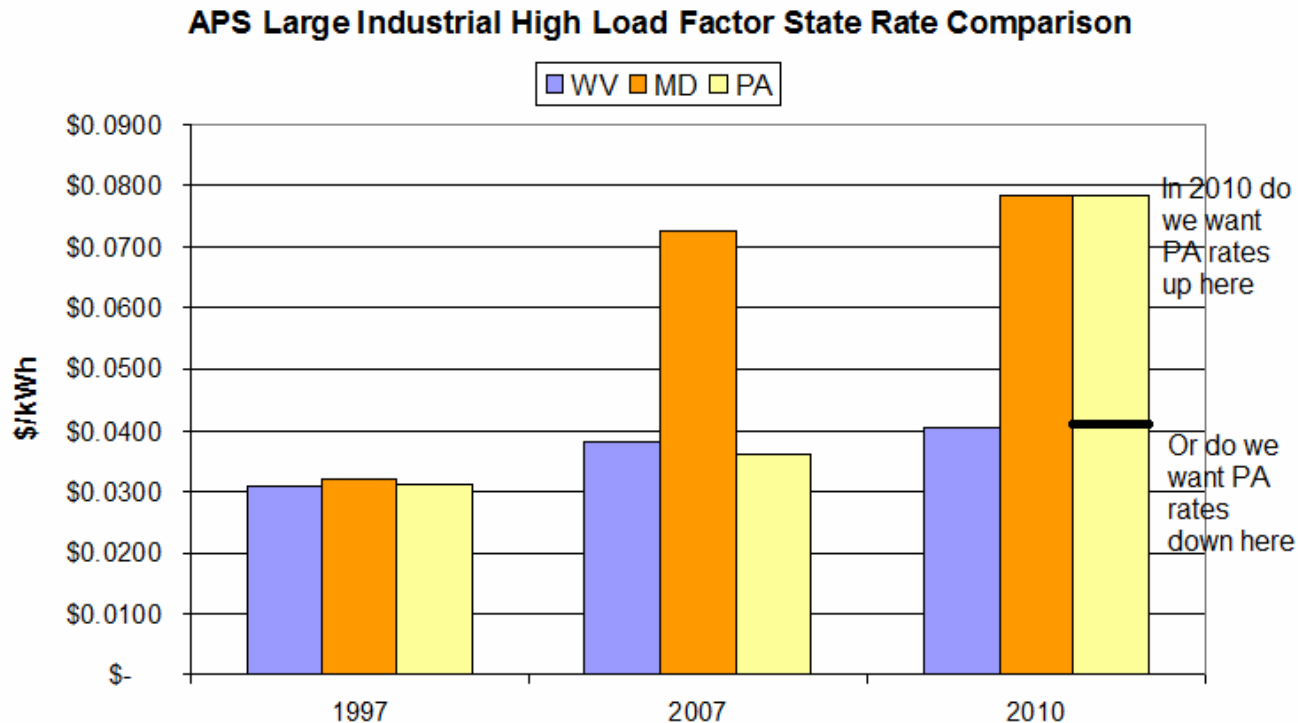
Merger Analysis in Restructured Electricity Supply Industries: The Proposed PSEG and Exelon Merger (2006) by Frank Wolak, PhD and Shaun McRae, ftp://zia.stanford.edu/pub/papers/pseg_exelon_merger.pdf

Restructuring - Unfulfilled Promises

- Market design does not promote competition by providing the opportunity for reasonable returns to both new and existing assets.
 - Marginal generation unit owners struggle to survive which inhibits new investment
 - Simultaneously, owners of depreciated existing assets reap windfalls that would be reduced by investing in new capacity
- Compare actual total charges to retail consumers to what those costs would have been under traditional cost of service regulation.
 - Consumer experiences in every market indicate that the sum of the newly restructured parts is greater than the old bundled whole would have been absent restructuring of the electricity supply industry.
 - Misplaced fixation on “price signals” while ignoring the total dollar recovery from consumers distorts the reality that wholesale electric rates are significantly over recovering the wholesale revenue requirement by tens of billions of dollars annually
- Consumers are already being harmed as evidenced by comparing retail prices to industrial consumers served by Allegheny Power in the restructured market area of MD and the adjacent traditional cost of service area in WV: (next slide)

What Happened To Just and Reasonable?

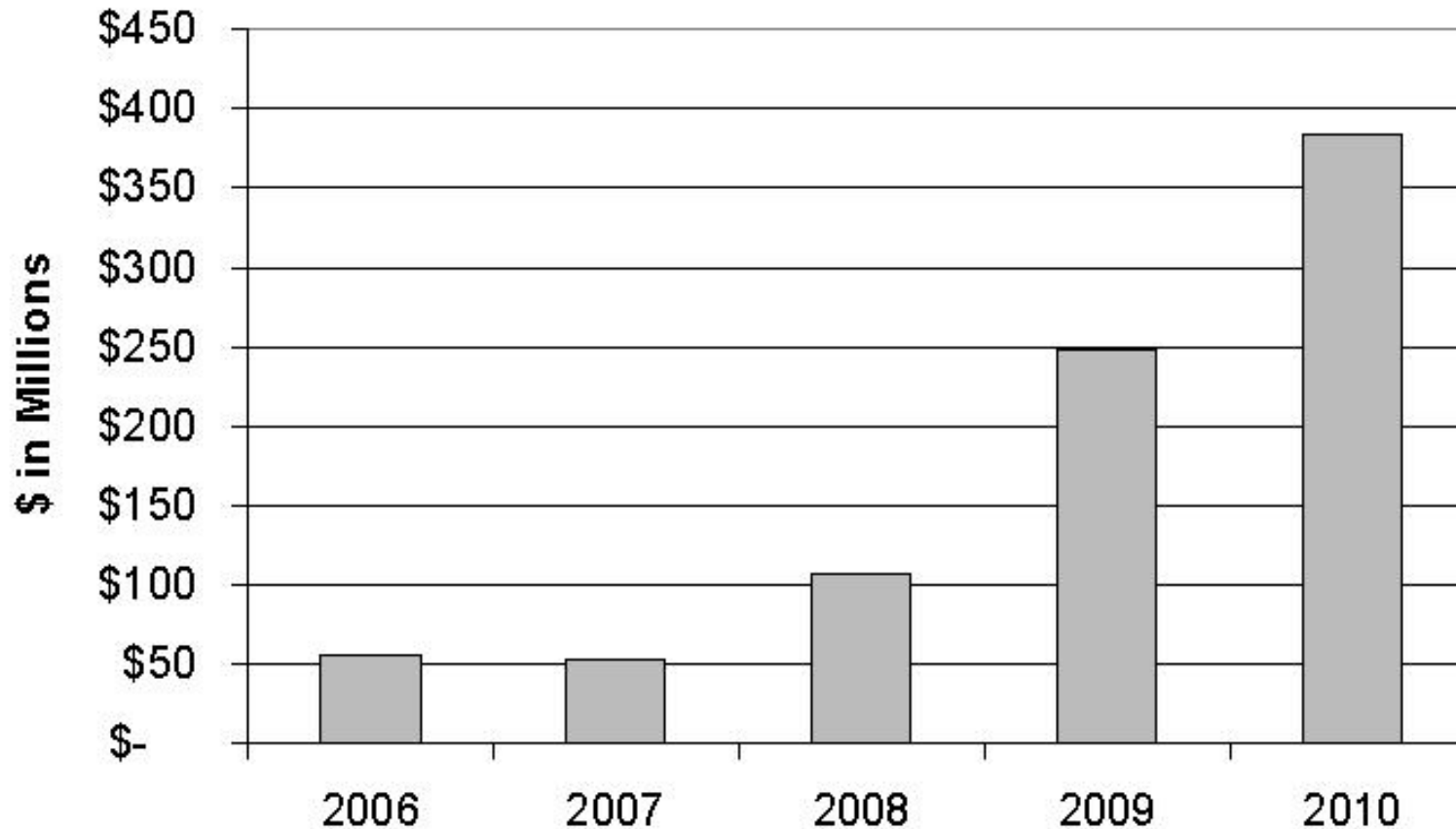
Comparing APS Rate PP in MD vs WV, the only reason for the difference is that the current dysfunctional PJM wholesale market design sets the price in MD while the WV rate reflects fully bundled cost of service as of June 2007. Effectively MD consumers pay a FERC imposed “electricity market design tax” to generation owners vs. what WV customers pay. So which price should PA custom



Where Is All The Money From The Excessive Customer Payments Going?

APS Pre-Tax Income from APS presentation at EEI Conference for Wall Street Investors fall 2007

APS Pre-Tax Income



Where Is All The Money From The Excessive Customer Payments Going?

- Allegheny Power
 - Projects pre-tax income to grow 7 fold between 2007 and 2010 due to elimination of PA and MD rate caps
 - Shareholders have seen a 623% increase in value between July 2003 and late 2007
- PP&L Inc.
 - 37% increase in earnings between 2006 and 2007 due to wholesale electricity prices and projecting another 35% increase by 2010 when wholesale prices set retail rates in PA
 - Shareholders have seen more than a 250% increase in value from 2003 through 2007
- Exelon
 - Shareholders have seen more than a 250% increase in value from 2003 through 2007
- Constellation
 - 52% total shareholder return in 2007
 - Shareholders have seen a 320% increase in value from 2002 through 2007

What Do Customers Want?

- Reliable electricity supplies at “Just and Reasonable” prices
- Real competition between resources and between providers of resources in the procurement process
- Economic dispatch of a broad regional resource pool on a least cost to consumer basis
- “Finance able” long term obligations via FERC approved Tariff based recovery for new and necessary existing generation resources that assure returns to investors, provide price stability for consumers and eliminate the incentives for withholding
- Integrated **regional** generation, transmission and demand side forecasting, coordination and **competitive** procurement by an **independent** entity with the objective of providing consumers with electricity on a least cost basis consistent with reliability objectives

Alternative Market Design Proposal

The American Public Power Association ("APPA"), at page vii of its recent document "Consumers in Peril: Why RTO-Run Electricity Markets Fail to Produce Just and Reasonable Electric Rates," captures these essential functions as follows:

- Ensure non-discriminatory access to the grid through independent administration of a regional OATT and provision of transmission service, including needed ancillary services.
- Develop and administer a regional transmission rate design that eliminates rate pancaking and assures the recovery of the cost of transmission facilities for all transmission facility owners that wish to participate in the RTO, regardless of their form of ownership.
- Operate a single regional open access same-time information system (OASIS) and independently calculate available transmission capacity (ATC).
- Conduct independent and collaborative regional transmission and generation interconnection facilities planning, with the full inclusion of affected stakeholders.
- Carry out wide-area system security and reliability-related activities, ensuring that transmission facilities are operated in compliance with relevant North American Electric Reliability Corp. and regional reliability entity criteria.
- Operate an energy imbalance market to enable transmission customers to manage their imbalances and to allow generators (including intermittent renewable generators) to sell excess generation not committed under bilateral contract arrangements.
- Ensure adequate generation reserves through implementation of appropriate regional resource adequacy requirements.

The organized RTOs perform the first 5 of these essential functions well today. It is the last 2 functions that we propose must be re-designed.

Alternative Market Design Proposal

Load Forecasting and System Modeling

- RTOs/ISOs, in coordination and cooperation with state planning and state siting authorities pursuant to a transparent process, shall have primary responsibility for developing integrated transmission and generation modeling/planning.
 - Modeling/planning results should be released annually
 - States, wholesale customers, and industrial customers should have the ability to demonstrate to RTOs/ISOs that they have adequately self-supplied resources to satisfy resource adequacy requirements.
- Load forecast procedures for future Regional Transmission Planning Processes (RTEPP) and for the Competitive Procurement Process discussed below should:
 - Account for changes in peak load, energy volumes, load duration, and others factors critical to long-term planning
 - Use the same set of assumptions for an integrated approach to generation, transmission, and demand resource planning
 - Consider state commission and other stakeholder input regarding planning parameters
 - Determine local deliverability requirements based on transmission transfer limits and generation characteristics under peak system load conditions.
 - Utilize existing RTO/ISO Security Constrained Unit Commitment (SCUC) dispatch models.
- Through this open, coordinated regional planning process, the RTO/ISO will identify the region's needs for generation capacity and long-term demand response resources, and any reliability-based operating or locational characteristics that are necessary for these resources

Alternative Market Design Proposal

Competitive Procurement Process

- The Competitive Procurement Process will apply to all load for which LSEs have not demonstrated, to the RTO/ISO, long-term arrangements for delivering energy to meet load levels during the peak period.
- The first Competitive Procurement Process would be held soon after implementation of the new market design, and Competitive Procurement Processes would be held every 2 years thereafter, unless the RTO determines that a Process must occur more frequently.
- Selected units receive revenue recovery assurances over the long-term (10-20 years) via a FERC tariff, consistent with their remaining useful lives, as reflected in their capacity offers.
 - Long-term, unit-specific approach to procurement and pricing reduces the need for mitigation due to a more level playing field for new entry, but some areas with concentrated generation ownership and limited ability for new entry will require that capacity offers reflect the appropriate amortization of actual fixed costs if, and for as long as, those units are needed for system reliability, as determined by a properly structured Market Monitor.
 - Long-term obligations eliminate incentives for withholding from energy imbalance market.

Alternative Market Design Proposal

Competitive Procurement Process (cont)

- The number of years before obligations are imposed on units procured through the Competitive Procurement Process shall be determined by the RTO based on actual performance in the industry, based on, among other things, the type of generation that is procured (i.e., baseload, intermediate, and peaking). For example:
 - Obligations on peaking units incurred through Competitive Procurement Process take effect no earlier than 3 years after the Competitive Procurement Process is conducted.
 - Obligations on intermediate units incurred through Competitive Procurement Process take effect no earlier than 5 years after the Competitive Procurement Process is conducted.
 - Obligations on baseload units incurred through Competitive Procurement Process take effect no earlier than 7 years after the Competitive Procurement Process is conducted.
- Generation that is not receiving compensation for prior long-term capacity obligations would be subject to a must-offer requirement into the Competitive Procurement Process, in the form of market-based capacity bids with cost-based energy bids (i.e., \$/MW-day with a cost-based strike price of \$/MWh); market-based capacity bids should reflect a commitment length consistent with the remaining useful life of the unit; cost-based energy bids must show unit heat rate and unit operational characteristics.

Alternative Market Design Proposal

Competitive Procurement Process (cont)

- The Competitive Procurement Process for each forward year would procure the needs identified by the planning process discussed above, but would procure less than the full reserve requirement, due to the inherent uncertainty of load forecasts and the pricing implications of procuring more than is needed; the difference between the initial procurement of generation and demand response resources for a given delivery year and the full reserve requirement for that delivery year would be procured over time by “Incremental Residual Auctions” (IRAs) closer in proximity to the delivery year.
- The objective function of both the Competitive Procurement Process and IRAs is to procure supply at the lowest cost to consumers for the planning period.

Alternative Market Design Proposal

Clearing Process and Payments to Suppliers

- Consistent with the objective function above the Competitive Procurement Process, the IRAs, and unit dispatch would produce the overall lowest cost supply to customers.
 - The unit selection process/algorithm will consider and select units based on the combination of capacity and energy prices that will result in the overall lowest cost to customers over the relevant planning horizon.
 - Optimization and unit selection in the procurement process must be synergized with transmission planning objectives.
- Units selected in the Competitive Procurement Process receive unit-specific capacity payments and unit-specific "cost plus" energy payments with indexing to account for changes in fuel and variable O&M costs.
- Units receiving capacity payments would be subject to liquidated damages (LDs) for non-performance of energy delivery when dispatched (e.g., LDs equal to LMP replacement cost).
- Equal access to transmission system for new and existing units; deliverability determined by offers and transfer limits

Alternative Market Design Proposal

Clearing Process and Payments to Suppliers (cont)

- Balancing markets (Day-Ahead and Real-Time) would continue for residual energy, and would be dispatched at LMP; however
 - Only those units not receiving a capacity payment would actually collect LMP on a clearing price basis.
 - Any unit receiving capacity payments would be paid based on its actual fuel and variable O&M costs associated with their obligated capacity.
 - Any energy production beyond the contracted capacity of a unit would also receive LMP on a clearing price basis.

Load Costs

- Customers would pay MW-weighted zonal prices for capacity and MWh-weighted zonal prices for energy because energy and capacity would mostly be paid “call option strike price”.
- Customers would not pay the LMPs produced in the Day-Ahead and Real-Time energy markets for **all** energy consumed from those markets because the LMPs would be paid only to units that are not receiving option premiums in the form of capacity payments.