

# Have Restructured Wholesale Electricity Markets Benefitted Consumers?

*The evidence is clear that generators are profiting excessively from RTO power markets, and that sellers' rates are not 'just and reasonable' as the law requires. Consumers are paying the price, to their detriment and that of the overall economy.*

by Elise Caplan and Stephen Brobeck

**Elise Caplan** is Manager of the Electric Market Reform Initiative for the American Public Power Association. Before joining APPA, Ms. Caplan was an economic and legislative consultant for the Connecticut Municipal Electric Energy Cooperative. Ms. Caplan has a Masters in Public Policy from the University of Michigan.

**Stephen Brobeck** has served as executive director of the Consumer Federation of America since 1980. He has served as a visiting professor at Cornell University and at the University of Utah and as an adjunct professor at the University of Maryland. He earned a Ph.D. in American Studies from the University of Pennsylvania. From 1990 to 1996, he served as a director of the Federal Reserve Bank of Richmond

## I. Introduction

Over the past fifteen years many wholesale and retail electricity markets in the United States have undergone a series of fundamental changes. At the wholesale level, the Federal Energy Regulatory Commission shifted its traditional policy of regulating all wholesale power rates based on seller costs and a reasonable rate of return to, in certain cases, allowing wholesale sellers to sell at market-based rates. Under the latter policy, FERC has chosen to rely on supposed market “competition” to ensure that prices are “just and reasonable,” as required under the Federal Power Act.

**A**long with the move to market-based rates, FERC encouraged the creation of regional transmission organizations (RTOs) and independent system operators (ISOs), both hereinafter referred to as RTOs. RTO formation has been concentrated in the Northeast, mid-Atlantic, and Midwest states, as well as California and Texas, covering about two-thirds of the nation's electricity customers. RTOs perform a number of beneficial functions, including independent and non-discriminatory

transmission service, regional non-pancaked transmission rates, and collaborative transmission planning and

construction processes. But these beneficial functions have been somewhat offset by the highly problematic markets operated by some RTOs and the absence of adequate oversight of these markets, as discussed in greater detail below.

Concurrent with these changes in wholesale markets was a restructuring of certain retail electricity markets regulated by state public utility commissions. Some 20 states have implemented varying degrees of retail restructuring, in which consumers were given the right to purchase power from non-utility providers. The incumbent once-vertically-integrated utility may continue to serve

customers who elect to continue to buy from that utility, but for customers who choose an alternative power supplier the incumbent acts solely as a wires and service provider, not as a seller of electricity. In an attempt to prevent incumbent utilities from having a competitive advantage over alternative suppliers, the incumbent was generally required to divest its generating plants, usually to an unregulated affiliate.

Customers in restructured states who do not purchase from an alternative supplier continue to receive power from the

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*The beneficial functions of RTOs have been offset by markets RTOs operate and the absence of adequate oversight of these markets.*

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incumbent utility under what is known as “standard offer” or “default” service. While the costs of distribution and transmission remain regulated by state regulators on a cost-of-service basis, the cost of electricity generation, whether provided by the incumbent utility or an alternative non-utility supplier, reflects the cost of their purchasing wholesale power on the wholesale market or through bilateral contracts. As a result, a much larger pool of customers in these states is now exposed to wholesale power rates established by these RTO markets than would have been the case absent restructuring and retail customer access.

Public power utilities and rural electric cooperatives generally did not participate in state retail access programs, but because they

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— Government Accountability Office

purchase a significant portion of their power from RTO markets, customers of these entities pay electric rates that are highly affected by RTO market policies. Indeed, customers of *all* load-serving entities in these market areas are affected by the RTO markets. To the extent these markets do not appear to be “workably competitive,”<sup>1</sup> *all* customers in the RTO footprint – not just those of public power and rural electric utilities – are ill-served.

This restructuring of wholesale and retail electricity markets was predicated on the expectation that these changes would promote supplier competition that would in turn spur innovation and greater efficiencies, producing lower rates and meaningful choices for consumers. There is no evidence yet, however, that changes to these markets have achieved those

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1. The concept of workable competition was introduced by the economist John Maurice Clark in 1940 as recognition that markets cannot achieve perfect competition. Clark developed a set of criteria to measure where workable competition exists such that consumers benefit from rivalry between sellers to reduce prices. J.M. Clark, *Toward a Concept of Workable Competition*, AM. ECON. REV., Vol. 30, No. 2, Part 1, 241-256 (Jun., 1940).

economic benefits for consumers. Instead, evidence is mounting that customers have been harmed by the markets, as discussed later in this article. The

absence of a conclusive finding of benefits was confirmed by the Government Accountability Office in a September 2008 report on the functioning of RTO markets:

It has been over 10 years since major federal electricity restructuring was introduced and some of the first RTOs were developed to facilitate it, yet there is little agreement about whether restructuring and RTOs have been good for consumers, how they have affected electricity prices, and whether they have produced the benefits FERC envisioned.<sup>2</sup>

**F**our years after the GAO released this report, FERC has still not undertaken such an analysis. But there is a wealth of data available to support the conclusion that consumers actually have been harmed by the restructuring of wholesale electricity markets and that access to alternative

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2. *Electricity Restructuring: FERC Could Take Additional Steps to Analyze Regional Transmission Organizations' Benefits and Performance* (GAO-08-987, Sept. 2008), at 58. <http://www.gao.gov/new.items/d08987.pdf>.

retail suppliers does not solve the fundamental problems of the wholesale market from which those suppliers must purchase power.

**B**elow we will provide a more detailed description of the RTO-operated markets; then examine the relevant data; and finally, we discuss specific RTO rules and structure that have provided opportunities for excess generator earnings at the expense of consumers. The final section challenges the proposition that RTO-operated restructured markets have produced competition and provided benefits to consumers.

## II. Overview of RTO Markets

There are six RTOs currently operating under FERC jurisdiction. These are ISO New England (ISO-NE); the New York ISO (NYISO); the PJM Interconnection (PJM); the Midwest Independent Transmission System Operator (MISO); the California ISO (CAISO); and the Southwest Power Pool (SPP). The Electric Reliability Council of Texas (ERCOT) ISO in Texas operates solely within the state as an intrastate transmission grid and is therefore subject only to state regulation.

The primary wholesale markets operated by RTOs are for energy, ancillary services and capacity, with the energy market accounting for the majority of dollars transacted. For example, in PJM, the largest RTO, energy accounted for 73 percent of the average wholesale price in

2011.<sup>3</sup> In this market, electricity is purchased and sold in day-ahead and real-time spot markets. (SPP currently only has a real-time market, but has filed a proposal with FERC to implement a two-day market and received conditional approval of the new market from FERC on October 18.) These spot markets operate as “single clearing price” markets with the RTO taking all offers in ascending order, and stopping with the last incremental offer needed to supply power to buyers. This final bid establishes the price paid to all sellers in that time frame.

**O**ffers into the energy market need not reflect the sellers’ actual costs of generation, as FERC would have required under a traditional cost-of-service ratemaking regime. Rather, the sellers set their own price offers, regardless of their actual costs, subject only to review and possible adjustment by the RTOs’ market monitors. In PJM, the market monitor typically mitigates less than one percent of the energy offers in both the real-time and day-ahead markets.<sup>4</sup>

RTO energy markets also employ a methodology known as locational marginal pricing (LMP) under which prices vary by geographic area, depending upon the presence or absence of transmission congestion. When

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<sup>3</sup>. *State of the Market Report for PJM*, 2011, Table 1-7, at 17,

[http://www.monitoringanalytics.com/reports/PJM\\_State\\_of\\_the\\_Market/2011/2011-som-pjm-volume2-sec1.pdf](http://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2011/2011-som-pjm-volume2-sec1.pdf)

<sup>4</sup>. *Ibid*, Table 2-7 at 27.

congestion prevents lower cost generation from being delivered to customers in a constrained zone, more expensive generation located within the zone must be used to meet that demand. The price customers in such a zone pay reflects the offer submitted by this higher cost generator, even if there are generators offering lower prices in other areas of the RTO region, because customers cannot access this lower cost energy outside of the constrained zone. The difference between the lower energy price in the RTO generally and that charged in the constrained zone is referred to as the “congestion charge.”

**T**he conceptual basis for LMP is that these differential prices will send “price signals” to indicate where there is a need for new generation or additional transmission capacity, or to reduce load through conservation or shifting the times when energy is consumed. As discussed below, this theory has not borne fruit in practice.

Transmission customers of an RTO have some ability to hedge their congestion costs through a form of Financial Transmission Rights (FTRs) or Congestion Revenue Rights (CRRs).<sup>5</sup> These FTRs and CRRs can produce revenues to offset the congestion fees the RTO charges a customer, however the

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<sup>5</sup>. A holder of an FTR along a specific transmission path is entitled to the difference in the congestion costs between the two points on that path. The value of an FTR can be positive or negative depending upon the direction of the energy flow and the differential between the congestion costs.

revenues they produce vary and are often limited to terms of a year or less. Moreover, they are not necessarily a complete hedge against high congestion costs.

RTOs also operate markets for ancillary services – additional services needed to support the delivery of energy and ensure reliable operation of the system. There are two general categories of ancillary services provided by RTOs: regulation service, which provides short-term adjustments in generation to maintain system frequency and meet load on a continuous basis; and operating reserves, which provides backup power available to meet shortfalls in capacity during emergencies or unexpected variations in load. Ancillary services revenues comprised about two percent of the total wholesale price in PJM in 2011.<sup>6</sup>

Several RTOs also operate what are known as “capacity markets.” The intent of these markets is to provide revenue to recover the capital cost of constructing generation and to ensure that there is sufficient generation capacity standing by to provide power, or sufficient end-users willing to curtail power use when needed (also known as demand response). In PJM, the capacity market – also known as the Reliability Pricing Model (RPM) – accounted for 16 percent of the wholesale price in 2011.<sup>7</sup> These capacity markets also operate on a single-clearing-price basis, and two of them (PJM and NY

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<sup>6</sup>. *State of the Market Report for PJM*, 2011, Table 1-7, at 17.

<sup>7</sup>. *Id.*

ISO) have different locational capacity prices according to region, based on the same theory that's behind LMP in the energy market – that higher prices in more constrained regions will incent the development of new capacity resources or of needed transmission.

PJM and ISO NE operate centralized mandatory capacity markets that procure capacity three years in advance of when it is needed. MISO, CA ISO and NY ISO<sup>8</sup> have voluntary capacity markets intended to supplement capacity procured through contracts. MISO filed a proposal to FERC for a mandatory centralized capacity market in July 2011, and FERC issued an order in June 2012 accepting a centralized two-month forward capacity market auction with locational pricing, but ruled that the market would not be mandatory.<sup>9</sup> A rehearing of that order was granted in August.

**F**ERC allows generators in the RTO markets to charge “market-based rates,” relying on a supposedly competitive market to discipline prices to the “just and reasonable” levels required by the Federal Power Act. FERC relies solely on market monitors for each RTO to determine whether the wholesale electricity markets are competitive. These market monitor analyses are based on a limited frame of analysis that ignores

evidence, such as the profitability data presented later in the report, which raises questions about the competitive nature of these markets. Moreover, the reports issued by the market monitors do not always support a definitive finding of competition. For example, in the most recent State of the Market Report for PJM, the market monitor found that the local market structure in the energy market and both the local and aggregate market structure in the capacity market were not competitive, as was the structure and the performance in the regulation market.<sup>10</sup>

### III. RTO Market Structures and Rules Contribute to Higher Prices

Prior to examining the empirical evidence of the effects of RTO markets on electricity prices paid by utility customers, this section describes the structural flaws in RTO markets – conceptual problems that have led to higher prices than would have occurred absent such markets. These fundamental features of RTO markets, discussed below, provide both incentives and opportunities for merchant generators to earn excess revenues at the expense of consumers.

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<sup>8</sup>. With the exception that all capacity within New York City must be offered into the auctions for the New York City zone.

<sup>9</sup>. Fed. Energy Reg. Comm., *Order on Resource Adequacy Proposal*, Docket ER11-4081-000, 139 FERC ¶ 61,199 (June 11, 2012)

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<sup>10</sup>. 2012 *Quarterly State of the Market Report for PJM*, Monitoring Analytics at 4-5.

**Absence of Cost-Based Offers in the Energy Market:**

Generators can submit offers to sell energy at any level they

choose, subject only to very high price caps and limited mitigation. (In capacity markets, offers are generally capped at the “avoidable costs” or the costs avoided were the unit to be shut down for the year, net of energy and ancillary service revenues.)

**Single-Clearing Price:** Use of the single-clearing price in both the energy and capacity markets provides a uniform price to all generation and demand response within each zone, regardless of the offeror’s bid price and costs, or to all capacity bidding into the annual market auction regardless of its offer or costs. The combination of this feature with the absence of a cost-based offer requirement means that consumers do not see lower prices from lower cost plants that clear the energy market or from largely- or fully-depreciated plants that clear the capacity market.

Some economists who are supportive of RTO markets argue that in the alternative to a single clearing-price market structure, known as a “pay-as-bid” market, sellers would simply sell at the highest offer price they expect to be bid into the market, resulting in the same high price being paid to all sellers as would occur under the single-

*The financial benefits of constrained supplies can be seen in the candid presentations by merchant generation owners to the financial community.*

clearing price model.<sup>11</sup> The reason a similar outcome is likely under both a single clearing-price and pay-as-bid model is that the simultaneous absence of both price regulation and

sufficient competition to discipline prices allows for strategic bidding to occur. The rationale for allowing offers in the market to deviate from actual costs is that the wholesale market was naively expected to be reasonably competitive enough to discipline prices – an outcome that has not occurred.

**Reliance on Locational Price Signals:** The theory behind locational pricing is to provide price signals indicating where new transmission and generation is most needed. But in reality, new resources have not developed to respond to higher prices in these markets. Instead of inducing new resource development, the higher prices provide a financial incentive for incumbent generation owners to keep supplies constrained, or at least to ensure that prices bid by new market entrants remain high.

The financial benefits of constrained supplies can be seen in the candid presentations by merchant generation owners to the financial community wherein the potential closure of coal

<sup>11</sup>. See J. Chandley and W. Hogan, *Electricity Market Reform: APPA’s Journey Down The Wrong Path*, April 16, 2009, at 29, <http://www.competecoalition.com/files/LECG%20study.pdf>

plants is touted as a benefit to their earnings.<sup>12</sup> Studies have found that the closure of coal plants is in fact beneficial for those generators who continue operating because the constrained supply drives up prices in the wholesale market.<sup>13</sup>

**B**arriers to Entry: As a result of the merchant generators' strong interest in minimizing new market entry and the decline in prices that accompanies such new entry, the effort to

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<sup>12</sup>. In a presentation to financial analysts, Exelon identified several factors likely to raise future RPM prices, primarily coal retirements and higher costs and price offers for the coal plants continuing to operate. Bank of America Merrill Lynch Megawatt Roundup Conference, Houston, Texas, March 28, 2012, Slide 9, <http://phx.corporate-ir.net/External.File?i=1&item=VHlwZT0yffBhcmVudEIEPTQ3NDUwOTd8Q2hpbGRjRD00NjAxMDA>

<sup>13</sup>. Credit Suisse notes that “the retrofit / closure decision will not occur in a vacuum such that plants ‘on the bubble’ for investment could be attractively economic as other plants are pulled from the market.” *Growth From Subtraction: Impact of EPA Rules on Power Markets*, Credit Suisse Equity Research, Sept. 23, 2010, [http://op.bna.com/env.nsf/id/jstn-8actja/\\$File/suisse.pdf](http://op.bna.com/env.nsf/id/jstn-8actja/$File/suisse.pdf), at 36. Similarly, Fitch Ratings concluded that: “Merchant generation that does not rely on coal (or coal-fired generation that is already highly controlled) could increase its profitability if a significant portion of coal-fired generation in the same region is retired and heat rates rise in the region due to stringent enforcement of new EPA rules.” *Time to Retire? US Coal Plants in Environmental Crosshairs*, FitchRatings, Feb. 2011, at 2, [http://op.bna.com/env.nsf/id/jstn-8actja/\\$File/suisse.pdf](http://op.bna.com/env.nsf/id/jstn-8actja/$File/suisse.pdf)

procure new generation in persistent high-cost areas of ISO NE, including Connecticut, and PJM, including New Jersey and Maryland, was fought within PJM by incumbent generators. When New Jersey and Maryland stepped up to remedy the situation by facilitating development of new generation in their service areas it was bitterly resisted by the generators, who have now challenged the arrangement with a suit in US District Court. In PJM, NY ISO, and ISO NE, merchant generators have won rule changes that impose minimum price offers on new generation to prevent needed new supply from lowering market prices.

In what is likely the most egregious example of this practice, following the New York Power Authority's (NYPA) signing of a long-term contract with Astoria Energy II, a new, more efficient power plant in New York City and an ensuing complaint from existing generation owners, on September 20 FERC ordered the New York ISO to substitute a higher cost of capital for the plant's actual cost of capital when determining whether the plant will be required to submit a higher price offer. The order, if left to stand, will dramatically raise power prices and deter new generation entry in a result that is clearly anti-consumer. NYPA and its public agency customers in the constrained New York City market have asked FERC to reconsider its September decision, noting that it also contravenes FERC precedent.

### **Complexity and Lack of Data**

**Transparency:** The history of many

RTO markets has also been characterized by a seemingly never-ending layering of new markets and pricing policies. When a given market

*If restructuring of electric markets is amended, restricted, or delayed, our business prospects and financial results could be negatively impacted.*

—Constellation Energy

There are several ways to examine data on electricity prices to assess the impact of RTO markets on price. The first and least sophisticated is a direct comparison of prices between

structure does not achieve its goal of providing satisfactory revenue to RTO generators, the response – prompted by generators, many of them the spun-off affiliates of formerly vertically-integrated utilities – has been to induce the RTO to add a new, more complex market or a rule to prop up prices, such as a tightening of the minimum offer price rule in PJM, or the price-raising provision underpinning FERC’s ruling on NYPA’s power purchase agreement with Astoria Energy II. Complexity has been further complicated by the many financial entities participating in the markets that do not buy or sell power, but trade only in virtual products; this clouds transparency and makes the task of market monitoring more difficult.

Next, we build on this fabric of conceptual flaws theoretical basis by summarizing the primary evidence from the observed relationship between RTO markets and prices.

#### **IV. Impact of RTO Markets on Prices**

The extent to which RTO markets have promoted competition and lowered prices for consumers has been hotly debated.

RTO and non-RTO regions. Second is a rigorous analysis of these respective prices using econometric tools to remove the impacts of region-specific factors that may influence prices aside from the effect of the RTO. Third is to measure the differential between prices paid in the RTO markets and the cost of producing electricity sold in those markets. All three avenues lead to a conclusion that the restructured RTO-operated markets have increased prices above what would be seen in the absence of restructuring.

In the first test, an admittedly crude one – a direct comparison of prices in RTO and non-RTO regions – indicates that consumers are not benefitting from RTO markets. For example, a recent analysis of the weighted average residential electricity price gap between retail access states in RTO regions and regulated states shows that this gap grew significantly between 2002 and 2008. The gap between these two state groups persisted through 2011 despite recent drops in electricity prices.<sup>14</sup>

<sup>14</sup>. See, e.g., K. Rose, *State Retail Electricity Markets: How Are They Performing So Far?*, ElectricityPolicy.com, June 2012, available at

Another study, conducted prior to the recession-induced price declines, found a persistent gap in retail prices within RTO and non-RTO regions from 1999 through 2008 – a gap that widened when fuel prices were removed.<sup>15</sup> The American Public Power Association (APPA) conducts an annual analysis of retail electric rates in regulated and restructured states, which reveals a significant disparity in rates between these two categories.<sup>16</sup> For this comparison, the restructured category includes states that implemented retail restructuring and are located within FERC-regulated RTO markets, but no longer have rate caps – i.e., states whose customers are fully exposed to RTO-market prices. Restructured states are California, Connecticut, the District of Columbia, Delaware, Illinois, Massachusetts, Maryland, Maine, Michigan, Montana<sup>17</sup>, New Hampshire, New Jersey, New York, Pennsylvania, and Rhode Island. The regulated category includes those states with traditional rate

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<http://www.electricitypolicy.com/archives/4455-stateretailelectricitymarkets>.

<sup>15</sup> McCullough Research, *Why Are Electricity Prices in RTOs Increasingly Expensive?*, March 3, 2009, <http://www.mresearch.com/pdfs/376.pdf>

<sup>16</sup> American Public Power Association, *Retail Electric Rates in Deregulated and Regulated States: 2011 Update*, April 2012, <http://publicpower.org/files/PDFs/RKW%5FFinal%5F%2D%5F2011%5Fupdate.pdf>

<sup>17</sup> Although retail access in Montana was ended for most customers in 2007, it is still allowed for large customers. Moreover, the utilities sold off their generation, meaning that they buy power on the wholesale market, including from RTOs such as MISO.

regulation of vertically-integrated utilities, plus Ohio, a restructuring state where transitional rate regulation continued in 2011.

States that implemented retail choice were generally high cost states at the time of restructuring. The intent behind restructuring was that competition by electric suppliers would result in lower rates. In 1997, the states in the deregulated category had average rates that were 3.1 cents per kWh above rates in the regulated states (9.0 vs. 5.9). But the combined effect of divestiture of utility generating assets and exposure of retail consumers to wholesale rates set in RTO markets resulted in an even larger gap in 2011, with deregulated states paying, on average, rates that are 3.7 cents per kWh above rates in regulated states (12.6 vs. 8.9).

One common explanation for the rate differential, frequently cited by supporters of RTO markets, is that differences in rates are simply a reflection of the variation in fuels used for generation and their costs.<sup>18</sup> But when restructured states within RTOs are compared to regulated states with similar fuel-use profiles, the differential persists. For example, coal and nuclear generation

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<sup>18</sup> For example, in the *Myths & Realities of Competitive Electricity Markets*, the Electric Power Supply Association (EPSA) asserts that “[e]lectricity rates have been rising throughout the country, not only in restructured states. These increases are largely a result of rising costs for the fuel used by generators to produce electricity.” <http://www.epsa.org/industry/index.cfm?fa=mythsRealities>

accounted for 86 percent of the electricity generation in the state of Maryland in 2010, and rates in the state increased by 6.23 cents per kilowatt-hour, nearly doubling, between 2003 and 2010. This is in sharp contrast to rates in vertically-integrated utility states having similar amounts of generation from coal and nuclear resources. For example, Iowa and Missouri, respectively, had 80 and 90 percent of their generation from coal or nuclear, but saw rate increases of less than two cents per kWh in this same time period.<sup>19</sup>

To fully assess the role RTO markets play in exacerbating this price differential, we might consider the counterfactual question of what prices would be in the absence of an RTO. A number of studies in the earlier years of restructuring, between about 2003 and 2007, attempted to use econometric or other methods to isolate the impacts of electric market restructuring from other variables on prices. Many of these studies reached different conclusions about the price effects. A detailed review in 2006 by [John Kwoka](#), of Northeastern University, of the most-cited of these studies, found numerous methodological problems, leading Dr. Kwoka to conclude that there is no reliable and convincing evidence that consumers are better off as a result of the restructuring of the U.S. electric power

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<sup>19</sup>. American Public Power Association, *Fuel Cost, Market Structure and Electricity Prices in Maryland*, Nov. 2011, <http://www.publicpower.org/files/PDFs/MarylandFuelandElectricityCostFactSheetNov2011.pdf>

industry.<sup>20</sup> Critiques of later studies, especially those finding benefits from market restructuring, confirmed this initial finding.<sup>21</sup>

**F**ERC has not stepped into the research vacuum to determine if wholesale power rates in the restructured RTO-run markets meet the “just and reasonable” standard of the Federal Power Act. As a result, in December 2007, 41 national and regional industrial and consumer representatives made a joint filing at FERC, requesting that the Commission comprehensively investigate the justness and reasonableness of wholesale power supply prices in the markets administered by RTOs.<sup>22</sup> This filing was rejected by FERC on the basis

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<sup>20</sup>. John Kwoka, *Restructuring the U.S. Power Sector: Review of Recent Studies*, Northeastern University, Nov. 2006, <http://appanet.cms-plus.com/files/PDFs/ExecutiveSummaryRestructuringStudyKwoka.pdf>

<sup>21</sup>. See, for example, J. Kwoka, *A Review of the LECG Study*, Northeastern University, April 2007, <http://appanet.cms-plus.com/files/PDFs/KwokaLECGReview.pdf>; and *The Compete Coalition Oversells Independent Study Findings*, by Laurence D. Kirsch and Mathew J. Morey, Christensen Associates Energy Consulting, <http://appanet.cms-plus.com/files/PDFs/CompeteCritiqueChristensen12-3-07.pdf>

<sup>22</sup>. Request to Expand Scope of Section 206 Proceeding, Federal Energy Regulatory Commission, Wholesale Competition in Regions with Organized Electricity Markets, Dockets RM07-19-000 and AD07-7-000, Dec. 17, 2007, <http://www.publicpower.org/files/PDFs/41PartiesRequestAD077RM0719121707asfiled.pdf>

that the parties to the filing failed to “offer any specific solutions” or “appreciate the differences in market designs that exist in each region.”<sup>23</sup>

Regarding FERC’s reluctance to address this issue, so vitally important to electricity consumers served in these regions, the Government Accountability Office’s 2008 study concluded that:

FERC has not conducted an empirical analysis to measure whether RTOs have achieved these expected benefits or how RTOs or restructuring efforts more generally have affected consumer electricity prices, costs of production, or infrastructure investment.”<sup>24</sup>

Responding to one of GAO’s recommendations, FERC issued a set of proposed RTO performance metrics in February 2010. These were not developed independently or with input from all the interested stakeholders, but largely in conjunction with the RTOs — the very entities whose performance was being measured. It was no surprise therefore that the final measures FERC approved were similar to those recommended by the RTOs and did not include a crucial metric requested by consumer representatives — namely, a comprehensive accounting of all

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<sup>23</sup>. *Notice of Proposed Rulemaking (NOPR) on Wholesale Competition in Regions with Organized Electric Markets*, Docket Nos. RM07-19-000 and AD07-7-000, 122 FERC ¶ 61,167, (Feb. 22, 2008), at 17-18, <http://www.ferc.gov/whats-new/comm-meet/2008/022108/E-1.pdf>

<sup>24</sup>. US GAO, September 2008 at 55.

revenue streams from wholesale markets, generator costs and resulting profits.<sup>25</sup>

A comprehensive measure of generator revenues, costs and profits is essential to answering the question of *whether consumers have benefitted* from the restructuring of electricity markets as that restructuring has been practiced. We join with FERC and others in recognizing the important work the RTOs have done in their coordinated planning and operations, as we acknowledged above. But that cannot allow us to turn a blind eye to the question of whether some RTO markets reduce these benefits under the rules by which they operate. Analysis of the degree to which there is a divergence between market sellers’ actual costs and their revenues is necessary to determine the benefits of moving from cost-of-service regulation (in which utilities are allowed to recover prudently incurred costs, including a reasonable rate of return on equity through rates) to market-based rates. If utilities earn revenues from wholesale markets that greatly exceed their costs, this imposes a higher cost burden on electricity consumers, whose purchases are the very source of those revenues.

Measuring the differential between revenues and costs also provides a method of accounting for other factors that

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<sup>25</sup>. See, e.g., *Initial Comments of the American Public Power Association and the Electricity Consumers Resource Council*, Docket AD10-5-000, Federal Energy Regulatory Commission, March 5, 2010, [http://www.publicpower.org/files/PDFs/APPA\\_ELCONInitialcommentsAD105352010asfiled.pdf](http://www.publicpower.org/files/PDFs/APPA_ELCONInitialcommentsAD105352010asfiled.pdf)

influence prices outside of the market structure. If, for example, fuel costs or state renewable energy standards were influencing prices, the generators' costs might be different, but not their net revenue or profit levels. A gap between revenues and costs should not persist in a truly competitive market – a market in which new sellers can readily enter the market, lower prices through competition, and reduce the cost-price gap.

Analyses conducted by APPA of the financial performance of the largest generation owners within PJM demonstrate higher earnings than one would see under regulation or what would be expected under workable competition. In fact, in a telling admission, RTO generation owners' 10-K reports to the Securities and Exchange Commission list restrictions on competition as a potential risk to their earnings.<sup>26</sup> For example, Constellation Energy (now merged with Exelon) stated in its 2011 10-K filing: "If competitive restructuring of the electric and natural gas markets is amended, reversed, discontinued, restricted, or delayed ... our business prospects and financial results could be negatively impacted."<sup>27</sup>

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<sup>26</sup>. *Financial Performance of Owners of Unregulated Generation in PJM: 2011 Update*, American Public Power Association, June 2012, [https://www.publicpower.org/files/PDFs/Financial Performance 2011 update 7 12 12.pdf](https://www.publicpower.org/files/PDFs/Financial%20Performance%202011%20update%207%2012%20.pdf)

<sup>27</sup>. Form 10-K, Constellation Energy Group, Inc, at 21, <http://www.sec.gov/Archives/edgar/data/9466/000104746912001863/a2207433z10-k.htm>

For sellers to view competition as needing to be protective of their profits demonstrates all too clearly the inappropriateness of applying the term "competitive" to these markets.

A primary metric reported in APPA's financial analyses is the return on equity earned by RTO sellers. The return on equity is the ratio of a company's net income (or profits) to their common equity owned by shareholders, and is a frequently used measure of profitability. A regulated utility charging cost-based rates typically has an approved return on equity intended to ensure a reasonable return to shareholders. In regulated utility rate cases, the presence of unusually high returns is one form of evidence that the utility is recovering substantially more than its cost of service (including return on investment) and hence is charging unjust and unreasonable rates.<sup>28</sup>

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<sup>28</sup>. A source frequently cited to support this concept is the Supreme Court decision in *Bluefield Waterworks v. PSC of WV*, 262 U.S. 679 (1923) where the Court found that a "public utility is entitled to such rates as will permit it to earn a return on the value of the property it employs for the convenience of the public equal to that generally being made at the same time and in the same region of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties, but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures..." Cited in J. A. Beecher, *Core Case Law in U.S. Public Utility Regulation*, INST. PUB. UTIL., July 2012). <http://ipu.msu.edu/research/pdfs/IPU%20Core%20Case%20Law%20in%20Regulation%20Beecher%20%282012%29.pdf>

FERC's own understanding of the importance of returns on equity as a factor in determining whether rates are just and reasonable has been demonstrated in its issuance, in 2009 and again in November 2012, of orders initiating investigations into the rates for interstate transmission of natural gas. These investigations were all initiated following

preliminary analyses that led the Commission to find that each of these pipelines might be substantially over-recovering its cost of service causing existing rates to be unjust and unreasonable. In the most recently announced investigation, the estimated returns on equity, net of income taxes, ranged from 18.5 to 21.75 percent for 2010 and 2011.<sup>29</sup> In that same year,

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<sup>29</sup> Fed. Energy Reg. Comm., News Release: November 15, 2012 Docket Nos. RP13-184-000, RP13-185-000 Item No. G-1 & G-2, FERC Opens

#### ESTIMATION OF EXCESS COST TO CONSUMERS IN RESTRUCTURED ELECTRICITY MARKETS\*

##### Calculation of Excess Profits Earned by a Sample of Merchant Generators (Exelon, PSEG, PPL and First Energy)

1. Subtract the 2011 return on equity for the regulated segment of each of the four companies from the return on equity for the merchant segment. (For these entities, the difference in ROE ranged from 4 to 15 percent.)
2. Multiply the return on equity differential obtained in step 1 by the common equity of the generating segment of each company to obtain its post-tax excess profit.
3. To account for the additional revenue needed to cover taxes, convert the post-tax excess profit obtained in step 2 to the pre-tax profits based on the percentage of income paid in taxes in 2011. (This calculation is made by dividing the post-tax amount by 1 minus the percentage tax rate.)

**The outcome of the above three steps produces total excess earnings of approximately \$3.2 billion for the four companies in 2011. The following steps can be taken to extrapolate these excess earnings to all consumers in restructured states within RTO markets.**

4. Divide the total earnings for the four companies by the total generation from their merchant segments to obtain a dollars-per-megawatt-hour cost of excess profits charged to consumers. In this case, it is equal to about \$8 per megawatt-hour.
5. To calculate the hypothetical excess profits paid by residential, commercial and industrial customers in restructured states within RTOs in 2011, multiply the per-megawatt-hour cost of excess profit to these consumers by the total electricity they used. Assuming similar profit margins are realized by generating companies in all restructured markets results in a total hypothetical cost to consumers of \$12.6 billion in 2011 alone.

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\* These steps were not applied to an RTO market such as MISO in which the principal generators are part of vertically-integrated utilities.

however, the return on equity earned by the merchant electricity generation subsidiary of Exelon Corp. was 23 percent.<sup>30</sup> Similarly, in 2010, the merchant

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Investigations into Rates on Two Interstate Gas Pipelines, November 15, 2012 <http://www.ferc.gov/media/news-releases/2012/2012-4/11-15-12-G-1.asp>.

<sup>30</sup> These returns were calculated by APPA using non-GAAP net income data reported in presentations to financial analysts the companies and common equity for the merchant generation segment contained in their 10-K filings with the SEC. American Public Power Association, *Financial Performance*

segments of PPL Corp. and Public Service Enterprise Group (PSEG) had returns of 22 percent.<sup>31</sup> There is no obvious reason why returns considered excessive for gas utilities should not also be seen as excessive in the electricity sector.

**D**eclines in energy prices that have continued since 2009 have muddied the debate as supporters of RTO markets have pointed to these decreases as evidence of the “competitiveness” of the markets.<sup>32</sup> But the greatest factors contributing to these price drops were the economic downturn and sharp declines in the price of natural gas, both of which are external to RTO operations. These declines neither affirm nor negate the success of the markets in providing benefits for consumers. In fact, despite the declines in prices, significant gaps persist between revenue to generators

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*of Owners of Unregulated Generation in PJM: 2011 Update.* June 2012.

<sup>31</sup> American Public Power Association, *Financial Performance of Owners of Unregulated Generation in PJM: 2010 Update.* May 2011, <http://www.publicpower.org/files/PDFs/FinancialPerformance2010UpdateMay2011.pdf>

<sup>32</sup> For example, in 2009 Joel Malina, Executive Director of COMPETE, stated that: “In competitive electricity markets all over the country electricity prices are on the downturn. This evidence should put to rest the superficial arguments suggesting that competitive markets aren’t working.” *Rates Continue to Decrease in Competitive Markets, Including Ohio, Massachusetts, Pennsylvania, New York, Illinois and Maryland*, Compete Coalition, June 10, 2009, <http://www.competecoalition.com/newsroom/rates-continue-decrease-competitive-markets-including-ohio-massachusetts-pennsylvania-new-y>

from electricity sales and the costs of producing that energy, and between earnings for merchant and regulated generation owners. In 2011, returns on equity for a sample of the largest merchant generators in PJM, including Exelon Corp., PPL Corp., PSEG and FirstEnergy, ranged from 15 to 23 percent – levels that far exceed regulated utility returns and even returns to many businesses in far more competitive markets. Gross margins, defined as the revenue from the sale of electricity less the cost of fuel and purchased power, remained strong and increased in some cases, indicating the continuance of significant market power, reflected in the difference between fuel costs and electricity prices in 2011.<sup>33</sup>

These profitability data also can be used to obtain a rough measure of the negative impact on consumers of wholesale electricity restructuring.<sup>34</sup> While it is very difficult to calculate precisely the effects of restructuring itself on electricity prices, this exercise provides some idea of the scope of the negative impact on consumers, businesses, and the overall economy.

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<sup>33</sup> *Financial Performance of Owners of Unregulated Generation in PJM: 2011 Update*, American Public Power Association, June 2012.

<sup>34</sup> This concept was first developed by the financial analyst Edward Bodmer in *The Deregulation Penalty: Losses for Consumers and Gains for Sellers*, A Report to the American Public Power Association by Edward Bodmer, August 2009, <http://edbodmer.wikispaces.com/file/view/Electricity+Company+Profits+2.pdf>

To estimate the excessive costs to consumers from restructuring, one approach would be to measure the excess profits earned by merchant generators. Under this method, the costs to consumers from paying for these excess profits was calculated first for a sample set of four of the largest sellers of unregulated generation in PJM; Exelon, PSEG, PPL and

First Energy.

The total excess cost to consumers purchasing electricity from these four companies is

estimated to be about \$3.2 billion in 2011. Were all merchant generators in all RTO markets to realize the same level of profits as these four companies, the cost to all consumers would be \$12.6 billion. (See the prior inset box on page 14 for a more detailed explanation.)

**A**lthough this is a rough estimate, and there are many factors entering into the determination of electricity prices than restructuring, the calculation described in the inset box – revealing a possible \$12 billion excess payment from consumers to generating companies that do not face genuine market competition – demonstrates the scope of restructuring’s negative impact.

These data show that the economy has been significantly and adversely impacted by electricity industry restructuring, as it has been practiced. The greatest

beneficiaries of restructuring have been not consumers, as was promised, or innovative companies that were expected to emerge, but the “usual suspects” – owners of previously regulated, largely depreciated generating units.

Unfortunately, a healthy discussion about how to best regulate the wholesale electricity markets to both protect

consumers, encourage innovation and entry of new participants has been clouded by a debate over rhetoric.

Despite the evidence to the contrary, supporters of these

RTO-operated markets continue to assert that the markets are “competitive,” without presenting any evidence that they deserve this definition. It is difficult to imagine moving beyond this debate, however, when the financial stakes are so high for the large merchant generation owners and when the regulators of the wholesale market appear inclined to defer to their interests.

It is crucial that FERC, as the regulator responsible for ensuring under law that wholesale prices are just and reasonable, determine whether RTO markets are achieving their cost-reducing potential, and, if not, to implement needed reforms. The Government Accountability Office and 41 consumer groups have suggested it must do no less. ■

*FERC should determine whether RTO markets are achieving their cost-reducing potential, and, if not, implement needed reforms.*