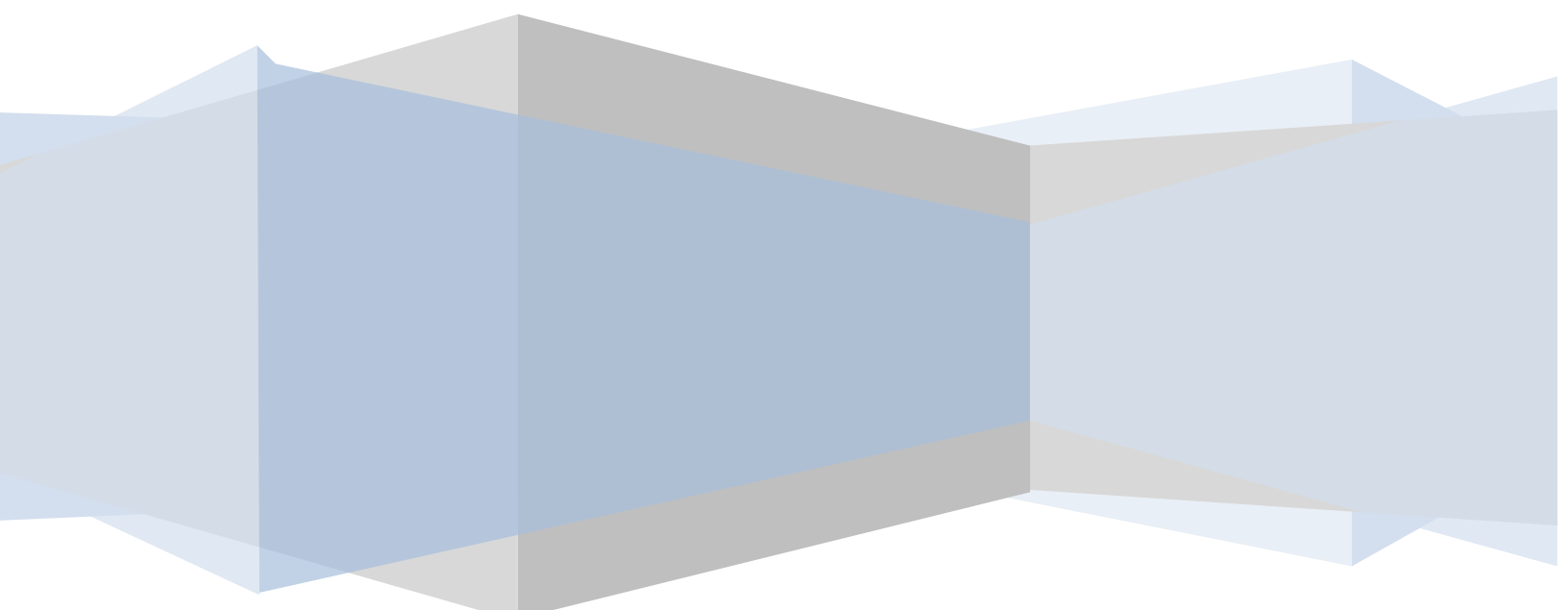


McCullough Research

The New York Independent System Operator's Market-Clearing Price Auction Is Too Expensive for New York

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Background

For generations, New Yorkers paid their electric bills based on a system whereby state government reviewed and approved the capital investments, fuel purchases, operating costs, and profits of each electric utility company in the state. New Yorkers had reliable and relatively cheap electricity, and a system of regulation that, whatever its defects, was relatively transparent and that the public understood.¹

Over the past decades, however, some states, including New York, abandoned this system in favor of deregulation – called “electricity restructuring”. It was widely argued that a competitive marketplace could provide cheaper, more reliable electricity, and could exploit the changes in technology that the old system could not or would not embrace. In 1996, the state’s Public Service Commission decided to deregulate. The utilities were encouraged to divest their generation facilities.² While their distribution systems remained regulated, with operating costs and bills still subject to state approval the utilities were now responsible for the acquisition of enough electricity to meet the needs of their customers. Today, to some degree, private parties in the wholesale marketplace set the price of electricity, and New Yorkers pay that price to their utilities in their monthly electric bills.³

¹ Under “cost-of-service” or “cost-based” regulation, state regulators grant utilities the ability to set the rates they charge their customers based upon the cost of providing the service, and the right to earn reasonable profits.

² The utilities were not forced by the state to divest but did so to reap financial benefits from the sale of generating facilities. Electric bills were lowered for a couple years after divestiture from the one-time infusion of cash.

³ The actual relationship between bids and prices in New York is not public, so while the relationship between bids and prices is positive, the actual prices paid by consumers are difficult, if not impossible, to verify.

The "Market-Clearing Price" Auction

The new marketplace for buying and selling electricity was created in 1999 to replace the former New York Power Pool with an organization called the New York Independent System Operator, or NYISO for short. NYISO is a not-for-profit corporation established by the businesses that participate in the market. No state law created or regulates NYISO, and the self-perpetuating organization writes its own rules as a utility subject to FERC jurisdiction over its tariffs. Every day, customers that need to buy electricity and the generators that make and own electricity engage in auctions run by the NYISO that set the price paid by customers. Unlike the types of auctions familiar to most New Yorkers, in NYISO's "market-clearing price" auction the buyer must pay to all sellers the *highest* price calculated by a complex computer program at the NYISO.

Let's say a utility, the "buyer", needs to purchase 30 megawatts of electricity. In a normal auction, a seller is identified that is willing to sell 10 megawatts to the buyer for \$100.00. Next, a second seller is identified that is willing to sell 10 megawatts for \$200.00. Then a third seller is identified that is willing to sell the remaining 10 megawatts for \$300.00. The result is that the buyer pays \$100.00 to the first seller, \$200.00 to the second, and \$300.00 to the third for a total cost that day of \$600.00. But in the NYISO "market-clearing price" auction, the *buyer pays each seller \$300.00 for a total cost that day of \$900.00*. The buyer then passes the full \$900.00, including the entire 50% increase over the price of a normal auction, to all of its customers, without review or approval by the PSC or any other state agency. Economists call the surplus that has been transferred from customers to generators "Producers' Surplus." It is NYISO's "market-clearing price" auction that causes the inflated price for electricity and the

transfer of billions of dollars from ratepayers to the generators. No free-market principles or state laws justify the huge price inflation that New Yorkers pay every month because of what the utilities pay to generators. These very high electric bills harm the state's economy and cost the state thousands, if not millions of jobs, since businesses and industry tend to relocate to states or other countries where utility costs are cheaper.

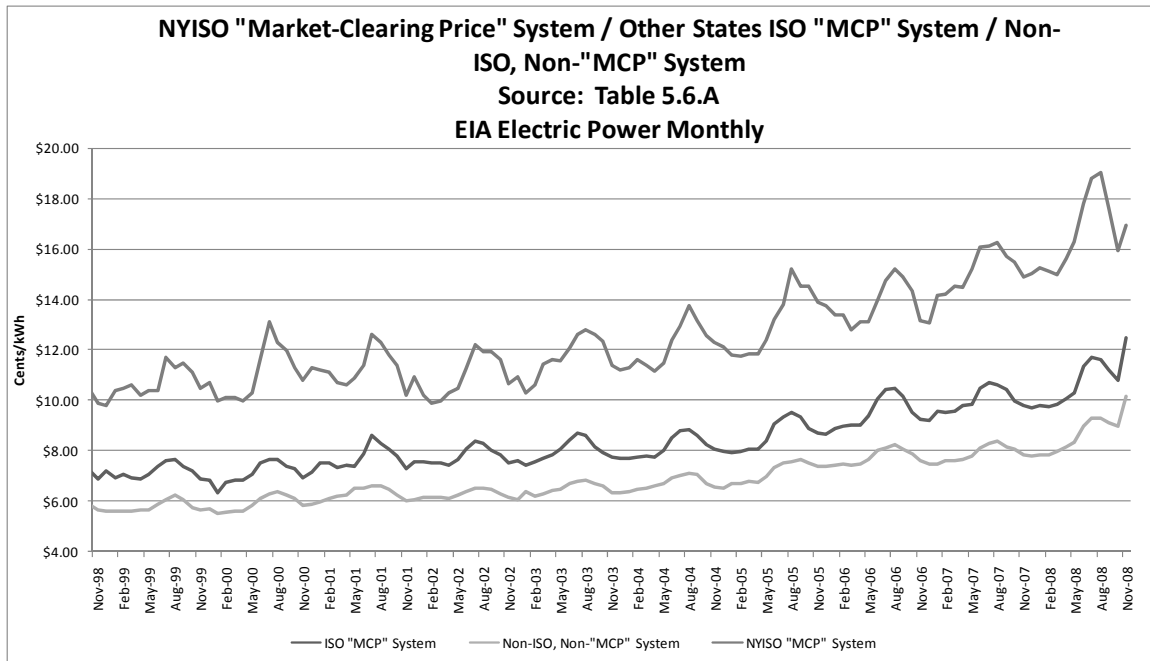
The problem of excessive electricity prices is composed of two parts:

1. Customers pay the highest price in the market (Producers' Surplus)
2. The price calculated by the computer program at the New York ISO is high relative to supply and demand (Market Inefficiency)

New York Pays the 4th Highest Electric Prices in the Continental U.S.

Data from the U.S. Energy Information Administration makes very clear that New York electricity customers pay very high rates, some of the highest in the continental United States. The chart below illustrates the prices that New York pays (medium-gray line) in comparison to states without "market-clearing price" auctions administered by ISOs.⁴ We observe that the prices in New York are much higher than elsewhere in the U.S., and they are even higher than in the states that have adopted the ISO-administered "market-clearing price" auctions.

⁴ Independent System Operators, or ISOs, also known as Regional Transmission Organizations, or RTOs, are responsible for administering markets and transmission system operations in a given geographic area. A useful map is at <http://www.ferc.gov/industries/electric/indus-act/rto.asp#skipnavsub>.



Six Reasons Why New York Pays More for Electricity

First, the New York Independent System Operator uses a "market-clearing price" auction. Every day, utilities, the buyers of electricity, enter the amounts of electricity they need to serve their customers, and the producers of the electricity, the generators, enter bids to sell their electricity. This type of auction requires the buyer to pay to all of the sellers the highest price asked by any individual seller. As explained in more detail above, the use of the "market-clearing price" requires utilities to pay excessive amounts of money to generators, which yields excessive electric bills for ratepayers.

Second, the prices calculated at the New York Independent System Operator are not competitive. Every day, at least one market participant in the state submits bids far higher than any credible estimate of cost – \$1,000/MWh. By comparison, the cost to produce elec-

tricity is significantly less than \$100/MWh, even using relatively expensive fuels like natural gas. This high bidding illustrates that sellers do not bid at or slightly above their marginal operating costs, and that they are gaming the market or intentionally withholding power to create a price spike, or artificial scarcity.

Third, the auction process is secretive. This problem is accentuated by a severe lack of transparency in the NYISO's market. Today, the bidders' identities are secret, the bids are secret for six months, and the actual computations that translate the bids to prices are secret. Thus, the public cannot know, on a day when prices spike, whether sellers bid so as to create artificial scarcity.⁵

Fourth, the premise that the highest bid will reflect marginal cost requires perfect competition, which does not exist in practice. When the PSC appointed by Governor Pataki ordered New York's electricity industry to deregulate, it was anticipated that "competition" (many buyers and sellers of electricity) would develop over time, and with more "players" the price of electricity would drop. Unfortunately, this scenario never occurred. Instead there are a handful of buyers and sellers and the price of electricity has done nothing but increase. As is true of any other commodity, the lack of sufficient buyers and sellers leads to artificially high prices.

⁵ To varying degrees, characteristics of transparency are largely missing from the nation's electricity markets. For example, in Texas rules for the ERCOT spot market require public disclosure of the identity of bidders that ask for prices above a certain level. Under the traditional regulatory system, all rates and charges for wholesale electricity are publicly filed in advance. And if the major bidders have substantially more information at hand than many of their competitors, true of nearly all U.S. restructured electric power environments, then the large bidders can use the information to their advantage. This advantage is further strengthened by the ability of the bidders to manipulate the demand curve for balancing energy in many cases. See Analysis of the Balancing Energy Market, McCullough Research, February 20, 2009, <http://www.mresearch.com/pdfs/372.pdf>.

Fifth, natural gas prices in the U.S since deregulation was first proposed have been extremely volatile. This has increased prices for all electricity sold in the wholesale spot markets in many hours of the year when natural gas is the most expensive of the fuels used to produce electricity. In recent years, natural gas plants set the clearing price in New York in most hours, and more natural gas plants have been built, because they cost less than plants run with other fuels, and plant owners and investors can more rapidly recover their return on investment. This leads to a vicious circle where natural gas use increases, and that increased use helps bring higher prices and greater volatility.

Sixth, capital costs (the money needed to buy land, and to finance, build, and operate a generating plant) are often considerably less than the cost of the fuel (natural gas, coal, etc.) needed to run the plant that makes the electricity. This means that the single-price auction represents considerably higher revenues for generators than they would have received under any cost-based regulation.

New York Customers Pay \$2.2 Billion a Year in Artificial and Unnecessary Electricity Rates on their Electric Bills

It is possible to quantify the excessive and unnecessary cost to the ratepayers of New York of the “market-clearing price” mechanism. Publicly available data enables us to find the fuel, operating, and capital costs and the historical profits of New York’s fifteen-largest electric generating plants. We can then measure these objective costs against the prices that are being paid every day in NYISO’s “market-clearing price” auction.

The U.S. federal government makes the energy information it collects available to the public.⁶ We use data for New York from the state energy profile compiled and updated by the Energy Information Administration (EIA), an arm of the U.S. Department of Energy.⁷

Power plants in New York are varied, and it can be somewhat difficult to compare the fuel, operating, and capital costs, interest payments, return on equity, depreciation and the historical profits for every plant in the entire state. Therefore, we use the EIA-923 database to find fuel use and generation for the fifteen-largest plants in the state.⁸ We examine media coverage of power plant sales and acquisitions to find data about capital values. We also make two assumptions: 1. Depreciation is on a straight line basis over twenty years. 2. The melded cost of capital is 12%.

Our data about the NYISO's market-clearing price auctions comes from the Locational Marginal Pricing (LMP) and Installed Capacity (ICAP) data posted on its Market Data Exchange.⁹ Locational Marginal Pricing is the price in the market that generators are paid for each megawatt-hour. ICAP represents the payments for plant capacity.

We want to find specific information about the fifteen-largest electric generating plants in New York,¹⁰ because they represent approximately 50% of New York state

⁶ Data is available from the U.S. Environmental Protection Agency, the Federal Energy Regulatory Commission, etc.

⁷ The Energy Information Administration provides "Official Energy Statistics from the U.S. Government". Data for New York is at http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=NY

⁸ http://www.eia.doe.gov/cneaf/electricity/2008forms/consolidate_923.html

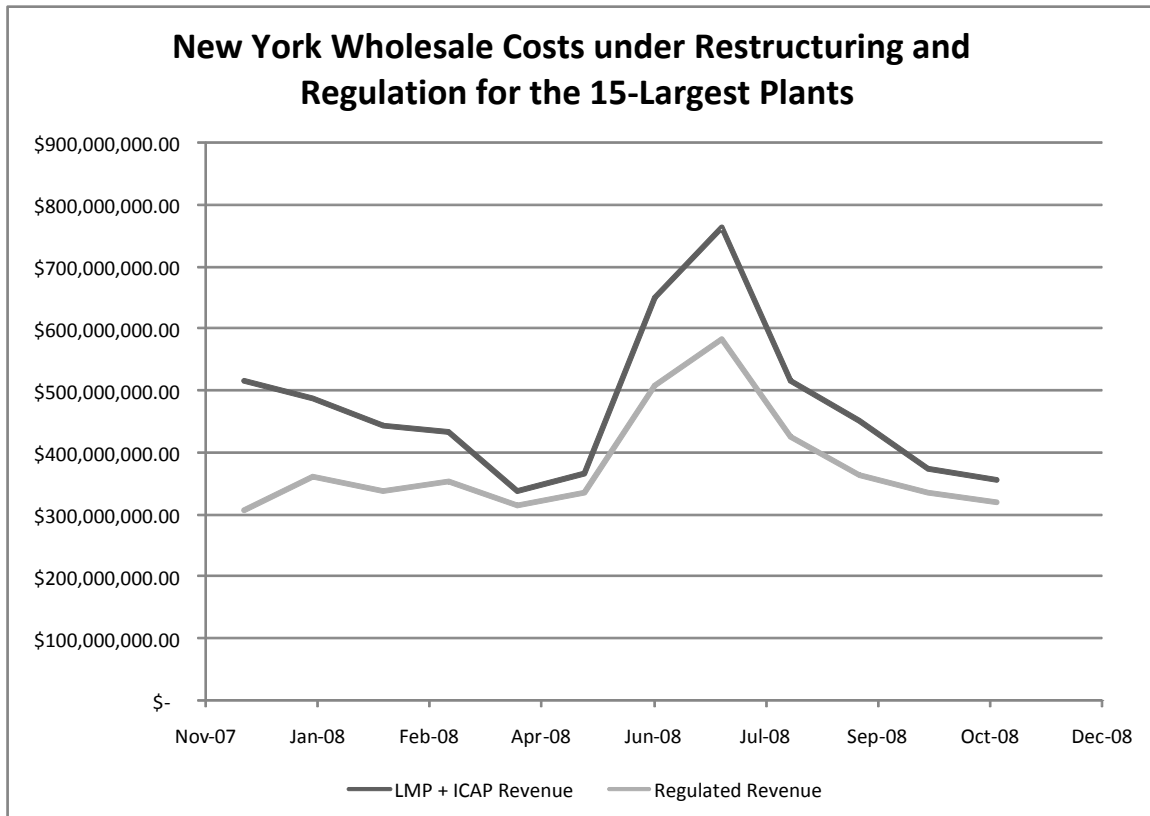
⁹ http://www.nyiso.com/public/market_data/pricing_data/dam_lbmp_zonal.jsp

¹⁰ The fifteen-largest plants in order of 2008 YTD net generation are: Nine Mile Point Nuclear Station, Indian Point 3, Indian Point 2, Athens Generating Plant, AES Somerset, R. E. Ginna Nuclear Power Plant, North-

generation. We exclude a number of plants owned by the New York Power Authority from this analysis, even though they would have increased the calculated savings, because they are sold under long-term, cost-based contracts.

Now we “crunch the numbers”.

The darker line in the following chart shows that from October 2007 through September 2008 revenues from the sales of the fifteen-largest plants excluding those owned by NYPA have been 20% greater than they would have been under traditional cost-based regulation. The differential represents \$1.159 billion in increased wholesale costs for the fifteen plants over this twelve-month period. Since this calculation is only for 51% of the electricity generated, our calculations assume that this additional cost would be true of the other 49%, which would yield excess charges of roughly double the estimated \$1.159 billion: a total of \$2.273 billion.



Data compiled by McCullough Research

Recommendations

Three alternative auction rules would reduce the price of electricity across New York.

1. Require the NYISO to make the identities of bidders, bids, and the calculations needed to calculate prices immediately available to the public, decision-makers, elected officials, scholars and the media.
2. Adopt the American Public Power Association's recommendation limiting bids for short-term power sales to true marginal costs.

3. Move consumer supplies back again to fully allocated, cost-of-service electric generating plants. This would produce savings of \$2.273 billion or a nearly 10% reduction in the electric bill for each New York residential household.