

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

New York Independent System Operator, Inc.     )

Docket No. ER10-2220-000

**Affidavit of David B. Patton, Ph.D.**

**I.     Qualifications and Purpose**

1.     My name is David B. Patton. I am an economist and President of Potomac Economics. Our offices are located at 9990 Fairfax Boulevard, Fairfax, Virginia 22030. Potomac Economics is a firm specializing in expert economic analysis and monitoring of wholesale electricity markets. Potomac Economics currently serves as the Market Monitoring Unit (“MMU”) for the New York Independent System Operator, Inc. (“NYISO”), as the External Market Monitor for the ISO New England Inc (“ISO-NE” or the “ISO”), and the Independent Market Monitoring Unit for the Midwest ISO (“MISO”). I am responsible for assessing the competitive performance of the markets administered by the ISOs, including assisting in the implementation of monitoring plans to identify and remedy market design flaws and abuses of market power. I also provide recommendations regarding market mitigation measures and other market rules.
  
2.     I have worked as an energy economist for nineteen years, focusing primarily on the electric utility and natural gas industries. I have provided strategic advice, analysis, and expert testimony in the areas of electric power industry restructuring, pricing, mergers, and market power. I have also advised other existing and prospective RTOs on

transmission pricing, market design, and congestion management issues. With regard to competitive analysis, I have provided expert testimony and analysis regarding market power issues in a number of mergers and market-based pricing cases before the Federal Energy Regulatory Commission (“FERC”), state regulatory commissions, and the U.S. Department of Justice.

3. Prior to my experience as a consultant, I served as a Senior Economist in the Office of Economic Policy at the Federal Energy Regulatory Commission, advising the Commission on a variety of policy issues including transmission pricing, open-access and electric utility mergers.
4. Before joining the Commission, I worked as an economist for the U.S. Department of Energy. During this time, I helped develop and analyze policies related to investment in oil and gas exploration, electric utility demand side management, residential and commercial energy efficiency, and the deployment of new energy technologies. I hold a Ph.D. and M.A. in Economics from George Mason University and a B.A. in Economics with a minor in Mathematics from New Mexico State University.
5. The NYISO filed with the Commission a proposed market power mitigation measure to apply to generators outside of New York City that are committed or dispatched for local reliability on August 13, 2010. The proposed measure is substantially similar to a measure approved by the Commission in Docket No. ER09-1682-000 for three specific generators. As the MMU for the NYISO, we support this measure. The purpose of this affidavit is to answer protests that have been filed in response to the NYISO’s filing.

## II. Cost Recovery for Generators Needed for Reliability

6. Once of the key arguments against the proposed mitigation measures is that generators needed for reliability should be able to exercise market power in order to recover their going forward fixed costs.<sup>1</sup>
7. While I do *not* disagree with arguments by suppliers that resources needed for reliability should have an opportunity to recover their going-forward fixed costs, I strongly disagree that recovering such costs by exercising a prescribed amount of market power is a reasonable approach for the following reasons.
8. First, there is no one set of thresholds that would be appropriate for all suppliers. Any single threshold would cause some generators to under-recover their fixed costs and other suppliers to substantially over-recover.
9. Second, designing thresholds that require suppliers to raise their offer prices in order to recover fixed costs makes market power extremely difficult to distinguish from legitimate conduct. It necessarily requires subjective judgments to be made by the MMU or by the FERC regarding when an offer price increase by a supplier is acceptable and when it is an abuse of market power. In addition to the difficulty this would present to the MMU and the Commission, it would create uncertainty for suppliers regarding when their conduct may be deemed to be an exercise of market power.

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<sup>1</sup> This is essentially proposed by Dr. Shanker. See the First Tier of Dr. Shanker's proposal (paragraph 37).

10. Third, relying on suppliers to raise prices to recover fixed costs would create considerable risk for suppliers. Because of uncertainty regarding market conditions, suppliers may raise their offer prices and, in doing so, not be dispatched and forego opportunities to produce. In addition, when a supplier committed out-of-market for reliability does successfully raise prices and associated Bid Production Cost guarantee (“BPCG”) payments, it may face unwarranted scrutiny after the fact when its offers are made public.
11. Hence, relying on market power rents that result from economic withholding to appropriately recover fixed costs is highly undesirable from a policy perspective. In cases where a supplier is providing necessary reliability services to the system and is not recovering its fixed costs, the Commission has generally relied on contractual solutions that are customized and appropriate for the specific resource in question. This is a reasonable approach, particularly in cases where the reliability need is local and cannot be satisfied through a competitive market process. NYISO pointed to the Attachment Y process as a means to ensure the recovery of going-forward fixed costs for resources that are determined to be needed for reliability. In their protests, IPPNY and Dr. Shanker argue that the Attachment Y process is inadequate for this purpose.
12. I recognize the importance of ensuring that generators that are determined to be needed for reliability and kept in service as a "gap" or as a more permanent solution to a reliability need have the opportunity to recover their going-forward fixed costs.<sup>2</sup> In cases where a

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<sup>2</sup> Going-forward costs include costs that could be avoided by taking a generator out-of-service for an extended period or by retiring a generator permanently. Going-forward costs may include maintenance costs incurred to keep the generator in service, labor costs necessary to keep the plant available, and/or expected profits from converting the facility to an alternative purpose that would be foregone by keeping the generator in service.

supplier is providing necessary reliability services to the system and is not recovering its going-forward fixed costs, the Commission has generally relied on contractual solutions that are customized and appropriate for the specific resource in question. I believe that a generator-specific contractual solution is clearly superior to allowing the supplier in question to exercise market power to recover its going-forward fixed costs. If the Attachment Y process is inadequate, which I do not address in this affidavit, then Attachment Y should be modified, supplemented, or replaced.

### **III. Delaying Imposition of the Proposed Mitigation Measures**

13. IPPNY and Dr. Shanker argue that the proposed ROS mitigation measures should not be approved until provisions are added to the Tariff that clarify or enhance the opportunity for generators that are kept in service for reliability to recover their going-forward fixed costs.
14. It would be unreasonable to delay the implementation of the NYISO's proposed ROS mitigation measures. These measures will likely have an immediate effect on market outcomes. Currently, some generators are committed by an SRE or DARU instruction when they are pivotal. Some suppliers exceed the proposed conduct thresholds, but do not satisfy the impact criteria set forth in Section 23.3.2.3 of the NYISO's Market Power Mitigation Measures ("Mitigation Measures"). In these cases, the proposed mitigation measures will result in more reasonable energy prices and uplift costs. Hence, the

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Going-forward costs do not include sunk costs such as past expenditures or investments, and/or financing costs that could not be avoided by taking the generator out of service.

proposed mitigation measure fill a gap in the Mitigation Measures that will ultimately ensure that the market outcomes are competitive.

15. In my opinion, it is extremely unlikely that a Generator that does not exceed the thresholds proposed in the NYISO's filing would appropriately be the subject of a filing pursuant to Section 23.3.2.3 of the Mitigation Measures to apply additional or different mitigation. However, I would not categorically rule out such a filing. Rather, the facts and circumstances presented in each instance should be considered in reaching a decision.
16. Additionally, there is no indication in the record that the proposed reliability-must-run contract process will actually be needed by any generator if the NYISO's proposed mitigation measures are implemented. Given prevailing capacity prices and net revenues available from the energy and ancillary services markets, it would not be surprising if all of the generators that are needed periodically for reliability are more than covering their going-forward fixed costs.
17. Many of these fixed cost arguments were raised when comparable mitigation measures were implemented for three specific generating units in up-state New York.<sup>3</sup> Nonetheless, it has been one year since the mitigation measures were applied to these generators, and none of the three generators have filed a notice of its intention to retire.
18. For these reasons, it would be unreasonable to delay the implementation of the proposed mitigation measures until the proposed revisions to Attachment Y can be fully considered.

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<sup>3</sup> *New York Independent System Operator, Inc.*, 131 FERC ¶ 61169 (2010).

#### **IV. Rents Earned towards Fixed Costs of Generators Committed for Reliability**

19. IPPNY and Dr. Shanker assert that generators that are frequently committed by a Supplemental Resource Evaluation (“SRE”) or Day-Ahead Reliability Units (“DARU”) instruction do not have an opportunity to earn infra-marginal revenues, implying that they cannot recoup their going-forward fixed costs. This assertion is generally not correct for generators in New York because such generators are able to earn significant revenues in excess of their marginal costs (*i.e.*, “net revenues”) in several ways. First, the NYISO capacity market provides sufficient revenue to keep many units in service that run very infrequently. Indeed, some units outside New York City that are never committed for reliability and only rarely operate remain in service, relying almost exclusively on capacity revenues to cover going-forward costs
20. Second, when a generator is committed by an SRE instruction, it has the opportunity to earn real-time energy and ancillary services revenues. In this regard, even high-cost generators can receive substantial revenues above their marginal costs in peak periods when transitory shortages occur, resulting in prices that are much higher than the generators’ marginal costs. In fact, high-cost generators that are committed for reliability are more likely than other high-cost generators to be online in real-time and earn revenue during such periods.
21. Third, when a generator is committed by a DARU instruction, it receives a BPCG payment for any costs required to operate to its day-ahead schedule. Such generators routinely earn profits in the real-time market for increasing or decreasing output relative to their day-ahead schedules for energy and ancillary services. Because these generators are

already on-line and available (no additional start-up cost), they have an enhanced opportunity to be scheduled to provide incremental Energy and earn inframarginal revenues than they would absent the DARU instruction.

22. Dr. Shanker's characterization of constraints that result in DARU and SRE commitments as "invisible" constraints that do not allow for infra-marginal rents creates an impression that they are different from other constraints in a manner that causes the NYISO's normal settlements to be inadequate. Although generators that are committed for reliability do not earn infra-marginal rents in some cases, they are not unique in this regard from other locational pricing markets that are all uniform price auctions. An important feature of the uniform price auction market design is that suppliers have an incentive to offer at marginal cost. This allows the market to commit and dispatch resources efficiently. One implication of this design is that the marginal generator usually receives little or no infra-marginal rents to contribute toward the recovery of its fixed costs. When constraints involve small areas where there are relatively few generators, each generator is more likely to be marginal, but such units are not prevented from earning additional energy and ancillary services revenues when prices rise above the marginal costs of the generator, particularly during shortage pricing events.
23. Therefore, whether a reliability constraint is "invisible" and not reflected in prices, or modeled and included in prices does not materially change the market power the supplier possesses or the appropriateness of the proposed mitigation.

## V. Problems with the First Tier of Dr. Shanker's Proposal

24. IPPNY and Dr. Shanker argue that the mitigation measures should be revised to allow higher thresholds for generators based on “the frequency of out of merit calls” (i.e., like the PJM measures which allow thresholds of \$20 to \$40/MWh for frequently mitigated units).<sup>4</sup> This proposal is unreasonable for a number of reasons.
25. First, there is no competitive or economic theory that would justify increasing the mitigation thresholds as a generator is committed more frequently for reliability. PJM filed similar measures in 2004 to address revenue adequacy problems under circumstances that were very different from the current situation in New York. At the time, PJM did not have a shortage pricing mechanism or a capacity market that provided substantial revenues.<sup>5</sup> In contrast, the NYISO market currently has effective shortage pricing provisions and a robust capacity market. Hence, the economic signals provided by the energy, ancillary services, and capacity markets are generally sufficient to sustain generators that are necessary for reliability. Furthermore, if a contractual mechanism is in place for ensuring that generators that need to be kept in service for reliability have an opportunity to receive their going-forward fixed costs, there is no reason to also allow these generators to increase their offers above competitive levels.
26. Second, Dr. Shanker never explains why the revenues that would result from his proposal would be more appropriate than those that would result from the \$10/10% threshold

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<sup>4</sup> See Shanker paragraph 38.

<sup>5</sup> See January 25, 2005 Order in EL03-236-003 for a discussion of the circumstances.

proposed by the NYISO, nor does he articulate a standard for evaluating the threshold. He simply asserts that his proposal would result in more revenue to the generator without justifying why this revenue would be efficient or appropriate.

27. Third, as I described earlier in this affidavit, allowing generators to raise their offers above competitive levels provides no guarantee that such generators receive appropriate compensation. Appropriate compensation would be sufficient to allow such generators to just cover their going-forward fixed costs. However, Dr. Shanker's proposal could result in revenue that is insufficient or excessive depending on how frequently a generator is committed. Hence, an RMR contract, when and if needed, is a better mechanism for ensuring such generators receive appropriate compensation.
28. Fourth, Dr. Shanker's proposal would result in inefficiencies to the extent that generators are committed and dispatched less frequently as a consequence of offering above the competitive level. The primary virtue of the uniform price auction is that it gives generators incentives to offer at marginal cost, which allows the ISO to commit and dispatch generators efficiently. However, allowing generators that are necessary for reliability to offer substantially above their marginal cost will cause them to run less frequently, and may actually result in fewer economic commitments and more reliability commitments.
29. For example, suppose a coal-fired generator is committed for 5,000 hours per year, 2,000 hours by DARU instructions and another 3,000 hours for economic reasons at an average profit of \$10/MWh. Further suppose that if the generator was never economic, it would be committed for 3,000 hours per year through DARU. If Dr. Shanker's proposal was

implemented using the PJM thresholds, the generator would not initially be considered a frequently mitigated unit (because only 40 percent of its run hours resulted from a reliability commitment) and would be subject to the lowest (\$10/MWh or 10 percent) mitigation threshold, allowing it to earn \$10/MWh for the 3,000 economically committed hours and the greater of \$10/MWh or 10 percent of its costs in the 2,000 reliability-committed hours. However, the generator's owner would quickly realize that it would be more profitable to raise the generator's offer to \$39.99/MWh above its marginal cost in order to increase the share of its hours when it was mitigated, since this would allow the generator to earn \$39.99/MWh for 3,000 hours per year. This change in the generator's offer would result in significant inefficiencies because the generator would run much less frequently when the generator would have been economic (the example posits that some of the reduction in economic commitments would be offset by an increase in reliability commitments) and would earn \$39.99/MWh above its costs for its committed hours, without being required to compete for commitments or to show that the compensation it received was just and reasonable.

30. This example is not unrealistic since six generators were committed for reliability reasons between 20 percent and 50 percent of their total run hours from September 2009 to August 2010. The six generators, which comprise almost 800 MW of capacity, ran for almost 60 percent of all hours during the year. The majority of these run-hours occurred when the units were economically committed. Hence, the inefficiencies of Dr. Shanker's proposal illustrated in the example above are a real concern.

**VI. Pivotal Supplier Test when Multiple Generators are Located in the Constrained Area**

31. IPPNY argues that the provisions are unnecessary when the generator is one of several generators capable of satisfying the reliability need, but: (i) it is the only one that has submitted a valid offer (this would only apply to generators committed by SRE instructions), or (ii) it is committed by a TO's DARU instruction and it was notified of this by the TO in advance of the day-ahead market. IPPNY says that when the owner of such a generator does not know why it was committed by a SRE or DARU instruction, the uncertainty leads the owner to offer competitively.
32. I do not agree with this assertion. Even if the owner of a generator does not know the reason for a DARU or SRE instruction, a firm that frequently receives DARU and SRE instructions can determine that it likely has local market power. The firm will make a profit-maximizing decision under uncertainty that balances (a) the probability of higher revenues from raising its offers above the competitive levels against (b) potential losses from foregone sales if it is economic and does not have local market power. In most circumstances, such a firm would not offer competitively unless it estimated a very low probability of having local market power.

**VII. Conclusion**

33. In conclusion, the protests filed in response to the NYISO's market power mitigation proposals in this docket have not raised issues that would suggest the proposed measures are not just and reasonable. Because these measures will address legitimate local market

power concerns, we recommend that the Commission approve the measures filed by the NYISO.

34. This concludes my affidavit.