Attachment XI

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

New York Independent System Operator, Inc.	**)**	**Docket Nos. ER13-___-__**

AFFIDAVIT OF

DAVID B. PATTON, PH.D.

APRIL 29, 2013

I. Qualifications and Purpose

1. My name is David B. Patton. I am an economist and the 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 serves as the Market Monitoring Unit ("MMU") for the New York Independent System Operator ("NYISO"). Potomac Economics serves in a substantially similar role for ISO New England, the Midwest Independent Transmission System Operator, Inc., and the Electric Reliability Council of Texas.

2. As the MMU for the NYISO, Potomac Economics is responsible for assessing the competitive performance of the markets that the NYISO administers, including the ICAP[1] market, and for assisting in the implementation of a monitoring plan to identify and remedy potential market design flaws and abuses of market power. This work has included preparing a number of reports that assess the performance of these markets and providing advice on numerous issues related to market design and economic efficiency. Prior to Potomac Economics becoming the MMU, I served as the independent Market Advisor to the NYISO.

3. I have worked as an energy economist for 22 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 Regional Transmission Organizations 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 ("Commission"), state regulatory commissions, and the U.S. Department of Justice.

4. Prior to my experience as a consultant, I served as a Senior Economist in the Office of Economic Policy at the Commission, advocating on a variety of policy issues including

[1] Terms with initial capitalization not defined herein have the meaning set forth in the NYISO's Market Administration and Control Area Services Tariff ("Services Tariff'), and if not defined therein, then as defined in the NYISO's Open Access Transmission Tariff ("OATT").

transmission pricing and open-access policies, market design issues, and electric utility mergers. As a member of the Commission's advisory staff I worked on policies reflected in Order No. 888, particularly on issues related to power pool restructuring, independent system operators ("ISOs"), and functional unbundling. I also analyzed the competitive characteristics of alternative transmission pricing and electricity auctions proposed by ISOs.

5. Before joining the Commission, I worked as an economist for the U.S. Department of Energy. During this time, I helped to 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.

6. I have a Ph.D. in Economics and a M.A. in Economics from George Mason University, and a B.A. in Economics with a minor in Mathematics from New Mexico State University.

II. Purpose of this Affidavit

7. The purpose of this affidavit is to provide support for two aspects of the NYISO's New Capacity Zone ("NCZ") filing which would establish a new Locality comprised of Load Zones G, H, and I, and J (the "SENY NCZ"). Specifically, I explain in this affidavit the principles that should be applied in determining the configuration of the NCZ and discuss the rationale for the minimum size threshold the NYISO proposes to use in determining which suppliers will be subject to supply-side mitigation. I also describe, however, a potential deficiency in the supply-side mitigation measures that threatens to render them ineffective against certain types of market power abuses. This potential deficiency can be easily remedied by the Commission.

III. The Benefits and Configuration of the SENY NCZ

A. The Benefits of the SENY NCZ

8. This section of my affidavit discusses the benefits of providing efficient locational investment signals in the capacity market and the principles that should be applied in defining any new capacity zone. New capacity zones are intended to reflect the reliability

needs of the system over the planning horizon, since this allows the capacity market to attract investment to the areas where investment provides the greatest reliability benefit.

9. When a new zone is created, resources within the zone will receive the same price and implicitly be deemed to be comparable in satisfying the local reliability needs of the NYISO. In principle, therefore, the boundaries of any new capacity zone should be determined based on the ability of the resources within each area to contribute to satisfying the reliability needs of the zone. This provides investors with incentives to build new resources and to maintain existing resources in areas where investment is most efficient.

10. Since investors risk their capital based on expectations of market conditions decades into the future, it is essential that capacity zones be created and defined based upon transparent and predictable criteria. Otherwise, a prospective investor may be unwilling to make the necessary investments in time to satisfy even an imminent reliability need.

11. The NCZ in this case is designed to reflect the reliability needs in Southeast New York ("SENY") that have become increasingly apparent in recent years. The lack of a capacity zone that reflects the reliability needs of SENY has already diminished the efficiency of investment signals in the capacity market by: a) under-valuing capacity in Lower Hudson Valley and b) inflating prices in other areas of the state. These effects of having delayed the introduction of the SENY zone is described in the 2012 State of the Market Report for the NYISO:

    - The total amount of unforced capacity sold in Zones G, H, and I has fallen by 1 GW (or 21 percent) since the summer of 2006, even as the need for resources to address the UPNY-SENY interface has become more apparent in the NYISO's Comprehensive Reliability Planning Process. Some of this capacity may have been economic to remain in service or been maintained more reliably if the SENY capacity zone had been implemented sooner.

    - Because the binding UPNY-SENY interface limits supply resources from reaching Zones G-K, capacity retirement in Zones G and H has resulted in higher Locational Minimum Installed Capacity Requirements ("LCRs") for Zones J and K. From the 2010/11 Capability Period to the 2013/14 Capability Period, the LCR for Zone J has

risen from 80 percent to 86 percent. A one percent increase in the LCR translates to a $1.30/kW-month increase in capacity prices given the current capacity demand curve and supply in New York City. Consequently, the delay in modeling a SENY capacity zone has led to higher capacity prices in Zone J.

- Although the capacity market will not recognize the higher reliability benefits of capacity in Zones G, H, and I relative to capacity in Zones A to F until 2014, the Highway Deliverability Test has recognized this for several years. Consequently, some capacity suppliers outside SENY have been prevented from selling at the prevailing price levels, which has increased the capacity prices in Zones A to F.

12. As described above, the failure to define a SENY NCZ over the past seven years has resulted in depressed capacity prices in the Lower Hudson Valley that contributed to the loss of capacity in that area. The inefficiently low prices in the Lower Hudson Valley has also likely hindered the development of demand response resources in this area. The affidavit of Mr. Niazi contains estimates of the price effects of creating the SENY capacity zone for August and November 2013. This analysis shows that prices will more than double in the Lower Hudson Valley to $9.34 per kw-month in August 2013 and $5.35 per kw-month in November 2013. These price levels are higher than the levels that have prevailed in both NYISO and ISO New England when large quantities of demand response entered these markets. Hence, defining the SENY capacity zone will improve the incentives to develop new demand response resources in the Lower Hudson Valley

13. This is one of the many benefits of establishing this zone in the near term. Overall, allowing the capacity market to provide efficient price signals reflecting the value of capacity in SENY will facilitate more efficient investment and retirement decisions.

B. Configuration of the SENY Capacity Zone

14. The NYISO is proposing a nested structure for the SENY capacity zone – the proposed zone will include the Lower Hudson Valley Load Zones, as well as New York City (Zone J). Hence, Zone J will be nested within the SENY NCZ so that capacity in Zone J will contribute to satisfying the SENY capacity requirements.

15. The most significant question that has arisen concerning the configuration of the NCZ is whether Long Island (Load Zone K) should be included in the NCZ, along with Load Zones G, H, I, and J ("G-J" or "SENY").

16. While resources on Long Island provide reliability benefits to Load Zones G, H, and I, the NYISO has determined that these benefits are limited by the fact that Long Island is export constrained. The NYISO's reliability analysis is presented in the Affidavit of Dr. Henry Chao and John Adams ("Chao/Adams Affidavit"). Their conclusions are validated by Gary Jordan, who explains in his Affidavit that he concurs with the NYISO's reasons for excluding Load Zone K from the NCZ. Making such reliability determinations are outside of our scope as the MMU and I defer to the NYISO's reliability analysis. Based on these reliability analyses, the NYISO's proposal to exclude Long Island is consistent with the market design principles that I articulate above and the SENY NCZ is, therefore, a reasonable configuration.

17. In the long-run, however, we are recommending in our 2012 State of the Market Report that the NYISO improve its capacity market by introducing export constraints from zones like Long Island.[2] We recognize that such improvements would require substantial software changes and likely require several years to implement. However, this would allow Long Island to be included in a SENY NCZ and compensated for the additional reliability benefits resources on Long Island provide when the export constraint is not binding.

IV. The Pivotal Supplier Threshold Proposed by the NYISO for Supply-Side Mitigation is Reasonable

18. As a matter of principle, mitigation should apply to entities that possess market power. The objective of choosing a size threshold is to balance the benefits of effectively applying market power mitigation to suppliers that have market power with the benefits of minimizing NYISO's intervention in the market.

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[2] *2012 State of the Market Report for the New York ISO Markets* (April 2013) *available at* <http://www.nyiso.com/public/webdocs/markets_operations/documents/Studies_and_Reports/Reports/Market_Monitoring_Unit_Reports/2012/NYISO2012StateofMarketReport.pdf>.

19. To achieve this balance, we have recommended that NYISO determine how large a supplier's portfolio would have to be (*i.e.*, the "size threshold") for it to have the incentive to withhold capacity and raise prices in the NCZ. The NYISO agreed with my recommendation. Essentially, the supplier may have the incentive to withhold capacity when the percentage of its portfolio that it withholds is smaller than the percentage by which the price will increase. For example, if the supplier can achieve a 20 percent price increase from withholding 10 percent of its capacity, then its total revenue will be higher if it engages in withholding.

20. The size threshold will principally be determined by three factors:

- The slope of the NCZ ICAP demand curve;
- The amount of UCAP needed to satisfy the NCZ's Locational Minimum Installed Capacity Requirement ("LCR"); and
- The amount of supply in the NCZ (*i.e.*, how far down the demand curve the market is clearing).

21. The first two factors are determined by the demand curve for the NCZ, while the last factor can vary over time with load growth, new investment, and unit retirements. For purposes of developing a reasonable UCAP size threshold, I've recommended that the NYISO choose the point that is 50 percent down the demand curve. This will ensure that the suppliers are subject to supplier-side mitigation if they actually have the incentive to withhold capacity over a relatively wide array of market conditions. It is also the lowest level on the demand curve where a supplier whose capacity size equals the minimum size threshold can simultaneously satisfy both this incentive criteria and the pivotal supplier criteria.

22. At this point, the LCR and the demand curve parameters for the NCZ are not known. Therefore, I calculate the threshold for three LCRs and three assumed slopes (determined by the zero-crossing point).

23. The NYISO estimated the G-J NCZ UCAP LCR.[3] Translated into UCAP, it is 13,375 MW based on the 2012 derivation of the Zone J LCR. The derivation of the LCRs for Zone J in 2012 in the MARS analysis is premised on an assumed level of capacity in GHI. Hence, to estimate the LCR for the SENY NCZ, NYISO estimated the amount of GHI capacity assumed in deriving the LCR for Zone J in 2012. NYISO then added the GHI capacity to the actual Zone J UCAP LCR to derive the estimated SENY NCZ UCAP of 13,375 MW. To provide a range around this estimate, I also calculated the threshold based on an UCAP LCR of 13,000 MW and 14,000 MW.

24. In addition to the LCR, the zero crossing point for the NCZ demand curve is not known. Therefore, I calculate the threshold based on zero crossing points of 110, 112, and 115 percent. These points capture the range of zero crossing points that have been discussed as reasonable potential zero-crossing points for the NCZ. Although the reference price for the NCZ capacity demand curve is also not known at this time, the threshold is not affected by changes in the reference price. The following table shows each of these scenarios applied to the UCAP values on the ICAP Demand Curves.

Assumed UCAP-LCR (MW)	Zero Crossing Point	Threshold
13000	110%	650
13000	112%	780
13000	115%	975
13375	110%	669
13375	112%	802
13375	115%	1003
14000	110%	700
14000	112%	840
14000	115%	1050

25. Based on these results, we support the NYISO's proposal to establish the minimum UCAP size threshold at 650 MW for the SENY NCZ. It is appropriate to be conservative in selecting the minimum size threshold because this will ensure that suppliers with market

[3] UCAP LCR is the LCR converted into UCAP, and is the same as a capacity zones' Locational Minimum Unforced Capacity Requirement.

power will be subject to mitigation.[4] Additionally, market power mitigation measures are not designed to be punitive and thus will not "harm" the suppliers to which it is applied. Therefore, we recommend that the Commission find that the 650 MW minimum size threshold is reasonable.

26. However, it is important to recognize that large suppliers with market power can potentially evade the supply-side mitigation measure by reducing the amount of UCAP they are deemed to control to less than 650 MW. Because of this deficiency, no threshold will be truly reasonable. This issue is discussed in the next section.

V. Deficiency in the Supply-Side Mitigation Measure

27. As currently designed, the proposed mitigation measure will not be fully effective at mitigating market power in the NCZ. The pivotal supplier test and minimum size threshold are both applied based on the amount of capacity a supplier controls as it enters the ICAP Spot Market Auction each month. In other words, UCAP that is sold in advance of the monthly spot auction is deducted from the portfolio of the supplier.

28. Under Services Tariff Section 23.4.5.5(1), the presumption that a supplier controls capacity that it owns can be rebutted by "the sale of Unforced Capacity from the Installed Capacity Supplier in a Capability Period Auction or a Monthly Auction."

29. Hence, a large supplier with market power can reduce the amount of capacity that it is deemed to control by selling some of its capacity in the Capability Period Auction or the Monthly Auction. While this treatment of forward capacity sales may be logical in an auction conducted one time, it is not reasonable in an auction framework that is repeated each month. The problem in the repeated auction is that the forward auctions (the Capability Period and Monthly Auctions) are voluntary and their prices are determined based on the expected spot auction prices. Therefore, a pivotal supplier may:

- In an initial month, sell enough capacity in the Monthly Auction to circumvent the pivotal supplier test or minimum size threshold; then

[4] This statement assumes that the deficiency discussed in Section V is addressed.

  - Withhold some or all of its remaining capacity from the spot auction for the given month to substantially raise prices; and

- Receive the inflated capacity prices in future Monthly or Capability Period auctions as they converge with the inflated spot auction prices.

30. This is a relatively simple means for a large supplier to exercise market power against which the supply-side mitigation measures proposed for the NCZ and currently applied to New York City would be completely ineffective. Additionally, it seems unlikely that such a strategy would be deemed a Market Violation under the Commission's current enforcement rules because such a strategy involves no fraud or deception, and is arguably expressly allowed under the NYISO Tariff. Hence, there may be little to deter a supplier from exercising market power in this manner.

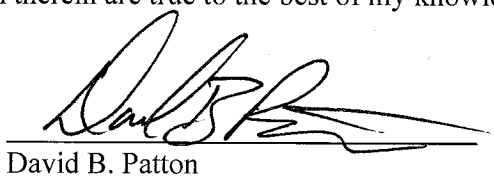
31. Indeed, in the 2011 State of the Market Report for the NYISO, we identified that a large supplier was able to avoid selling capacity in the spot auction by selling a portion of its capacity in the forward auctions. Because the prices in the forward auction reflected the expected higher spot auction prices, the supplier was able to benefit from not selling its capacity in the spot auction.

32. I understand that the Commission has yet to act on the proposed NCZ mitigation measures that were filed by NYISO on June 29, 2012. We believe these measures are essential to ensure the competitive performance of NYISO's installed capacity market and encourage the Commission to approve them. Given the deficiency described above, however, we urge the Commission to require NYISO to delete the current exclusion of forward capacity sales in Section 23.4.5.5(1). Assuming this change is made, I find the NYISO's proposed minimum UCAP threshold to be reasonable and recommend the Commission approve it.

33. This concludes my affidavit.

ATTESTATION

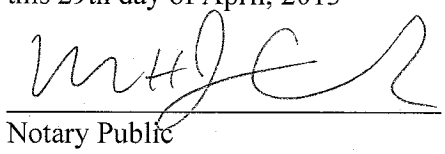
I am the witness identified in the foregoing affidavit. I have read the affidavit and am familiar with its contents. The facts set forth therein are true to the best of my knowledge, information, and belief.



David B. Patton

April 29, 2013

Subscribed and sworn to before me
this 29th day of April, 2013



Notary Public

MATTHEW JAMES CARRIER
Notary Public
City/County of Fairfax
Commonwealth of Virginia
Notary registration number - 7233763
My commission expires - Nov. 30, 2013

My commission expires: 11/30/13