NEW YORK INDEPENDENT SYSTEM OPERATOR
10 Krey Boulevard ♦ Rensselaer, NY 12144

THIS FILING LETTER DOES NOT CONTAIN ANY PRIVILEGED OR CONFIDENTIAL INFORMATION. REPORT SECTIONS II AND III DO NOT CONTAIN ANY PRIVILEGED OR CONFIDENTIAL INFORMATION. THE BODY OF REPORT AND ATTACHMENT II, AND ATTACHMENTS V THROUGH VII DO NOT CONTAIN ANY PRIVILEGED OR CONFIDENTIAL INFORMATION. ATTACHMENT I, ATTACHMENT III AND ATTACHMENT IV CONTAIN PRIVILEGED AND CONFIDENTIAL INFORMATION, AND ARE CLEARLY MARKED.

December 19, 2016

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Re: Annual Report in Docket Nos. ER01-3001-000, ER03-647-000 and Request for Privileged Treatment of Attachments I, III, and IV

Dear Ms. Bose:

Enclosed for filing in the above-referenced dockets is the New York Independent System Operator, Inc.'s ("NYISO's") Annual Installed Capacity Report on the NYISO's Capacity Market, Possible Withholding, New Generation Projects, and Net Revenue Analysis (the "Report").[1] By Order dated February 3, 2010, the Commission directed the NYISO to file this report for informational purposes only.[2]

I. List of Documents Submitted

The NYISO submits with this letter, and the below request for confidential treatment, a public version of the Report, with Attachments I, III, and IV redacted. Separately, the NYISO is submitting as confidential, Attachments I, III and IV (the "Confidential Attachments").

As with prior annual Installed Capacity Reports, the Report is comprised of the following separate sections: Section I: Capacity Market Report and Withholding Analysis, Section II: Report on New Generation Projects, and Section III: New Generation Projects and Net Revenue Analysis.

[1] *New York Indepen. Sys. Operator, Inc.*, 117 FERC ¶ 61,086 (2006); *New York Indepen. Sys. Operator, Inc.*, 103 FERC ¶ 61,201 (2003), 108 FERC ¶ 61,280 (2004), 121 FERC ¶ 61,090 (2007), 123 FERC ¶ 61,206 (2008). In Docket ER03-647, the NYISO files an annual report regarding its Demand Side Management programs on January 15, and a semi-annual report on its Demand Side Management programs and new generation projects on June 15 each year.

[2] *New York Indepen. Sys. Operator, Inc.*, Order, Docket Nos. ER01-3001 and ER03-647 (Feb. 3, 2010).

II. Request for Confidential Treatment of Attachments I, III, and IV

In accordance with Sections 388.107 and 388.112 of the Commission's Regulations,[3] Article 6 of the NYISO's Market Administration and Control Area Services Tariff, Sections 1.0(4) and 4.0 of the NYISO's Code of Conduct, the NYISO requests Privileged and Confidential treatment of the contents of the Confidential Attachments. The NYISO also requests that the Confidential Attachments be exempted from public disclosure under the Freedom of Information Act ("FOIA"), 5 U.S.C. §522.[4]

The Confidential Attachments contain privileged, commercially sensitive, and trade secret information that is not made public by the NYISO and that could cause competitive harm to the affected Market Participants,[5] and could adversely affect competition in the markets administered by the NYISO, if publicly disclosed. This information includes the identity of Installed Capacity Suppliers and their respective offering behavior, and the basis therefor. This confidential, commercially sensitive information is exempt from disclosure under 5 U.S.C. §522(b)(4). For this reason, the NYISO requests that the contents of Confidential Attachments receive Privileged and Confidential treatment and be exempt from FOIA disclosure.

A public version of the contents of Attachment I is set forth in Report Section 1.5.4.2. A public version of Confidential Attachment III, summarizing and masking the contents of Attachment III, is included in the Report as Attachment II. A masked and aggregated version of Confidential Attachment IV is set forth in Report Section 1.5.4.4.

The NYISO requests waiver of any obligation it may have under the Commission's regulations or the Secretary's rules to submit a redacted version of the Confidential Attachments. The NYISO incorporated into the body of Report Section I a masked or aggregated version of the information that is contained in the Confidential Attachments and thereby makes publicly available the information contained in Attachment III that is not confidential and commercially sensitive. In that regard, the NYISO has provided a redacted version of the information contained in the Confidential Attachments.

The Confidential Attachments are identified and marked in accordance with the Commission's regulations and rules published by the Secretary's Office for submitting Privileged information.

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[3] 18 C.F.R. §§ 388.107, 388.112.

[4] The information provided by the NYISO for which the NYISO claims an exemption from FOIA disclosure is labeled "Contains Privileged Information – Do Not Release."

[5] Terms with initial capitalization not defined herein have the meaning set forth in the NYISO's Market Administration and Control Area Services Tariff.

III. Correspondence

Copies of correspondence concerning this filing should be addressed to:

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Respectfully submitted,

/s/ Gloria Kavanah

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Larry Parkinson
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Douglas Roe
Kathleen Schnorf
Jamie Simler
Gary Will

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding in accordance with the requirements of Rule 2010 of the Rules of Practice and Procedure, 18 C.F.R. §385.2010.

Dated at Rensselaer, NY this 19th day of December 2016.

/s/ Joy A. Zimberlin

Joy A. Zimberlin
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2016 Annual Installed Capacity Report

Report on the NYISO's Capacity Market, Possible Withholding, New Generation Projects, and Net Revenue Analysis

December 19, 2016

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I. Capacity Market Report

I.2 Overview

This report (the "December 2016 Report") reviews the outcomes of the Installed Capacity ("ICAP") market administered by the New York Independent System Operator ("NYISO"); assesses the effectiveness of the ICAP Demand Curves[1] ("Demand Curves") in attracting investment in new and existing capacity resources; and examines potential withholding activity in the NYISO-administered Capacity auctions for the New York Control Area ("NYCA") by its three Localities, New York City ("NYC"), the G-J Locality ("G-J"), and Long Island ("LI"), and the remaining area that comprises the NYCA, Rest of State ("ROS") (referred to in this report as "capacity areas").[2] The December 2016 Report covers the Winter 2015-2016 and Summer 2016 Capability Periods, which span from November 2015 through October 2016. Similar NYISO reports filed in previous years cover earlier periods.

Capacity prices during the Winter 2015-2016 Capability Period were lower, on average, than those of the previous Winter Capability Period. The average ICAP Spot Market Auction ("Spot Market Auction") prices over the Winter 2015-2016 Capability Period were $0.95/kW-month, $3.24/kW-month, $5.97/kW-month, and $1.65/kW-month, for NYCA, the G-J Locality, NYC, and LI, respectively. These prices compare with $2.03/kW-month, $4.04/kW-month, $8.36/kW-month and $3.14/kW-month during the previous winter for NYCA, the G-J Locality, NYC, and LI respectively.

Capacity prices during the Summer 2016 Capability Period were lower on average than those of the previous Summer Capability Period. The average Spot Market Auction prices in NYC were $12.24/kW-month compared to $15.38/kW-month, and were $4.63/kW-month compared to $5.72/kW-month in LI. The average Spot Market Auction prices over the Summer 2016 Capability Period were higher for NYCA and the G-J Locality, *i.e.,* $4.09/kW-month, and $9.24/kW-month compared to $3.83/kW-month, and $9.10/kW-month respectively during the previous Summer Capability Period.

The average Spot Market Auction prices for Summer 2016 were higher than the Summer 2015 average by $0.26/kW-month in NYCA; by $0.14/kW-month in the G-J Locality; and lower by $3.14/kW-month in NYC; and by $1.10/kW-month in LI. The changes were driven primarily by changes in the respective Locational Minimum Installed Capacity Requirements ("LCRs"), as well as by the changes in available capacity compared to the load forecast throughout NYCA. These dynamics are depicted in Chart 1.

For the Winter 2015-2016 and Summer 2016 Capability Periods, there was minimal change in the proportion of Load Serving Entity ("LSE") Unforced Capacity ("UCAP") requirements met through purchases in the NYISO-administered capacity auctions versus

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[1] Terms in upper case not defined herein shall have the meaning set forth in the NYISO's Market Administration and Control Area Services Tariff ("Services Tariff"), with the exception of Rest of State ("ROS") when such term refers to a period before the Summer 2014 Capability Period. Consistent with the Services Tariff revision to establish the G-J Locality beginning with the Summer 2014 Capability Period and change the definition of Rest of State accordingly, when ROS refers to Winter 2013-2014 or a prior period, it means Load Zones A through I. Any other terms not so defined have the meaning set forth in the Open Access Transmission Tariff ("OATT").

[2] The NYISO's Capacity auctions have four Market-Clearing Prices: NYCA, New York City, Long Island and the G-J Locality.

bilateral transactions when compared to previous Capability Periods. In the Winter 2015-2016 Capability Period, 41.23% of LSE Capacity requirements were met through bilateral transactions (41.44% in the previous Winter Capability Period), while the remaining percent of LSE requirements were met through purchases in the NYISO-administered auctions. Similarly, in the Summer 2016 Capability Period, 39.61% of LSE capability requirements were met through bilateral transactions (43.31% in Summer 2015), while the remaining LSE requirements were satisfied through purchases made in the NYISO-administered auctions.

The seasonal average quantities of unoffered capacity constituted less than 0.5% of available supply in the NYC, LI, and the G-J Locality (see Chart 10). The seasonal average quantities of unsold capacity (*i.e.*, capacity that was offered but went unsold) was below 0.1% for each of the three Localities (see Chart 11).[3] Total unsold and unoffered capacity quantities from ROS resources were at or below 1% in the Winter 2015-2016, and at or below 0.5% in Summer 2016. The UCAP offered and purchased in NYCA and each of the three Localities exceeded the LCRs; therefore, prices were below the base reference point on the respective ICAP Demand Curves.

Overall, the Market-Clearing Prices in the ICAP Spot Market Auctions support the conclusion that the ICAP Spot Market Auctions continue to be attractive to Installed Capacity Suppliers. Previously the NYISO stated that it is difficult to correlate the effect of the ICAP Demand Curves on the level of investment in the NYCA, partially because in the past NYC has had capacity in excess of the LCR, and partially due to the lead-time required to site, develop, and construct a new generator. The ICAP Demand Curves provide transparent capacity market price signals that developers consider in their projections of anticipated future revenues when making near-term investment decisions. Capacity market outcomes are reviewed to ensure market signals are aligned with reliability needs. When market changes are identified, the NYISO works with its stakeholders on prioritizing the need for and developing a suitable market rules.

The NYISO continues to monitor potential reliability risks and other issues that may affect the reliability outlook for New York's bulk electric system. On October 18, 2016, the NYISO Board of Directors approved the 2016 Reliability Needs Assessment ("RNA") Report ("2016 RNA Report"),[4] which is the first step in preparing the *2016 Comprehensive Reliability Plan*. The 2016 RNA Report's key findings identified two transmission security needs in portion of the Bulk Power Transmission Facilities beginning in 2017. This report finds that the resource adequacy criterion is met throughout the Study Period (2017 through 2026).

The NYISO considers updates to Local Transmission Owner Plans and, if necessary, solicits market-based solutions, regulated backstop solutions, and alternative regulated solutions to the identified Reliability Needs. Each of the possible solutions will be assessed for viability and sufficiency by the NYISO, which will result in the Comprehensive Reliability Plan (CRP). The latest 2014 Comprehensive Reliability Plan[5] ("CRP"), produced by the NYISO,

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[3] Section I.5 of this report provides information and analysis of the unoffered and unsold capacity.

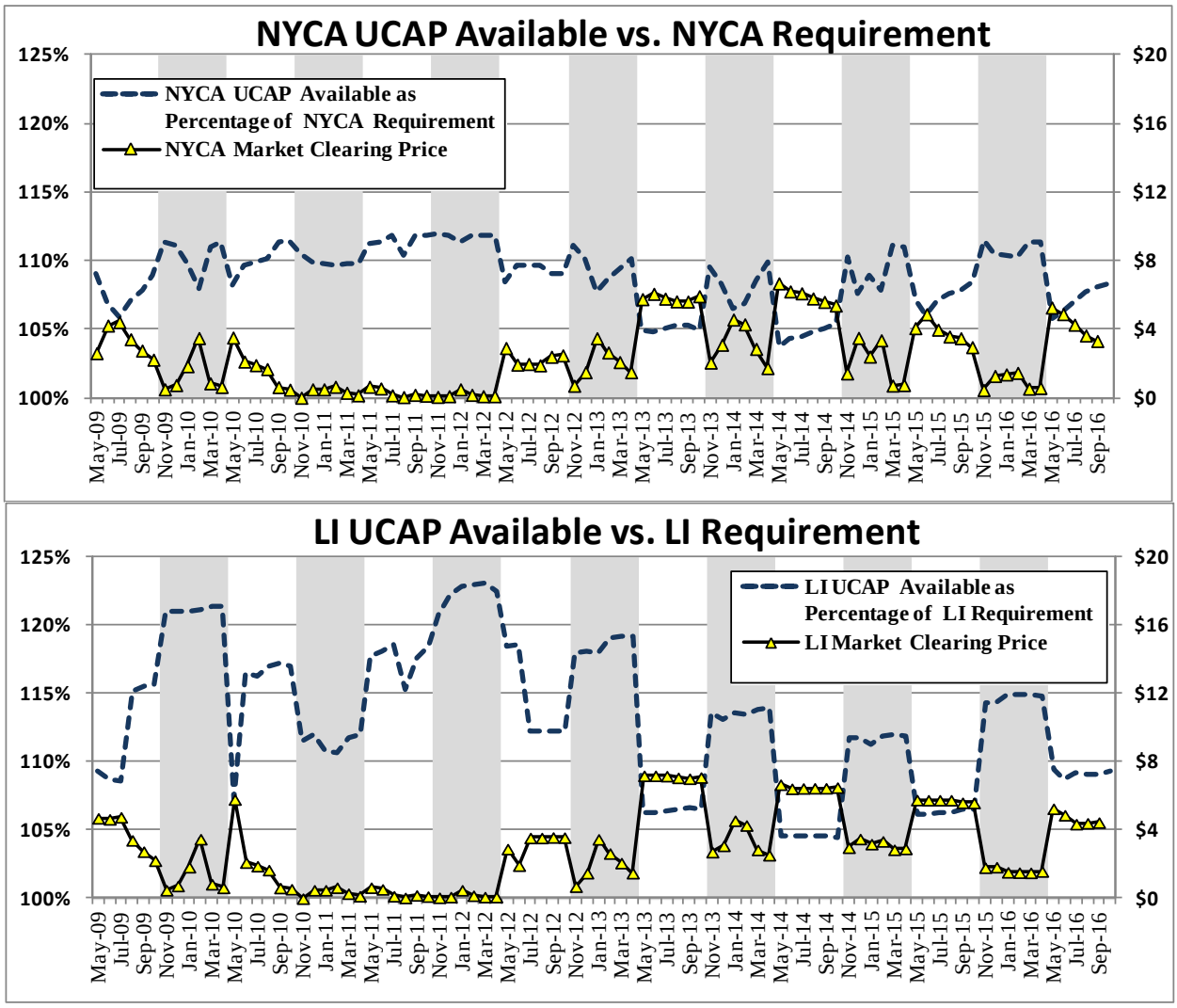
[4] The 2016 RNA Report is available at <http://www.nyiso.com/public/webdocs/media_room/press_releases/2016/Child_2016_RNA/2016RNA_Final_Oct18_2016.pdf>

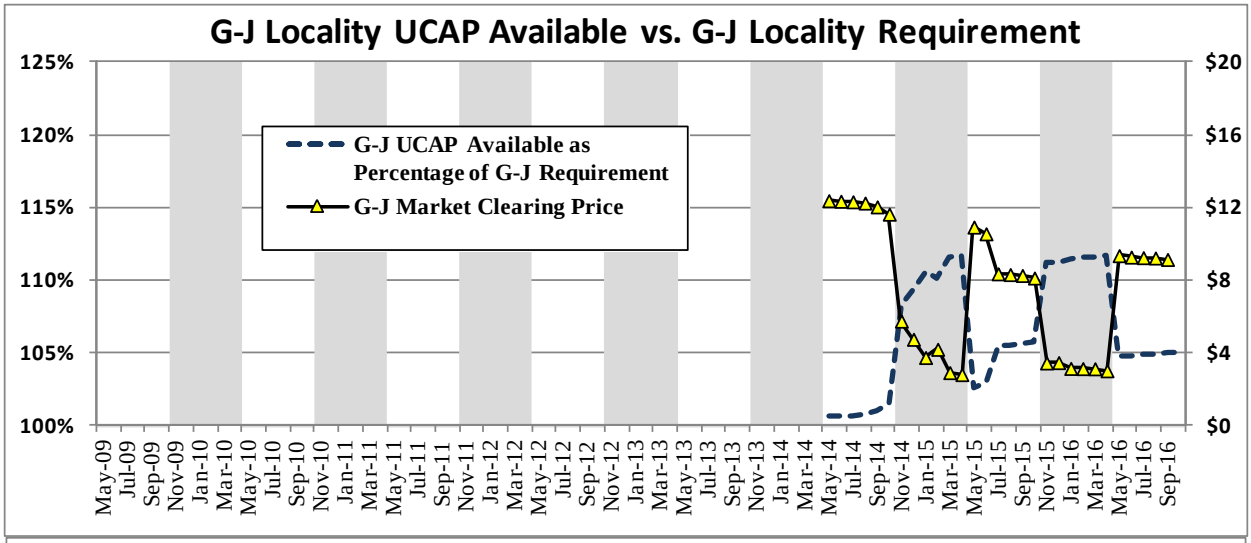
[5] *See* New York Independent System Operator "2014 Comprehensive Reliability Plan" Issued on July 21, 2015, available at: <

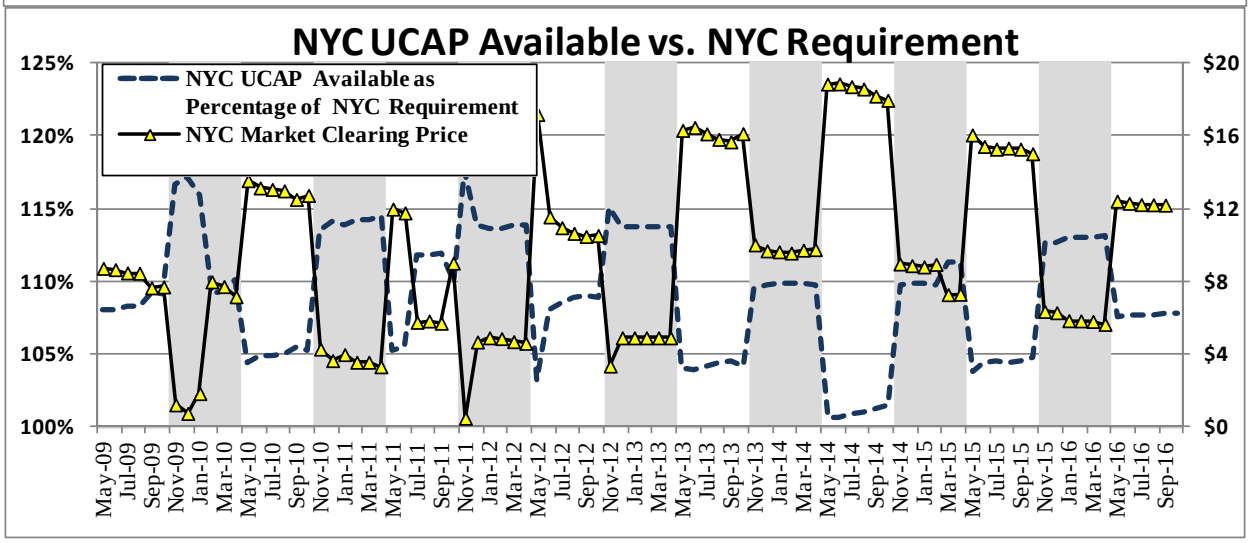
determined that the New York bulk power system will meet all applicable reliability criteria over the 2015 through 2024 study period, and confirmed that the initially identified Reliability Needs in the 2014 RNA are resolved.

http://www.nyiso.com/public/webdocs/markets_operations/services/planning/Planning_Studies/Reliability_Planning_Studies/Reliability_Assessment_Documents/2014CRP_Final_20150721.pdf >.

Chart 1: **UCAP Available Reserve and Spot Market Clearing Prices**




G-J Locality UCAP Available vs. G-J Locality Requirement
G-J UCAP Available as Percentage of G-J Requirement
G-J Market Clearing Price
125%
120%
115%
110%
105%
100%
$20
$16
$12
$8
$4
$0
May-09 Jul-09 Sep-09 Nov-09 Jan-10 Mar-10 May-10 Jul-10 Sep-10 Nov-10 Jan-11 Mar-11 May-11 Jul-11 Sep-11 Nov-11 Jan-12 Mar-12 May-12 Jul-12 Sep-12 Nov-12 Jan-13 Mar-13 May-13 Jul-13 Sep-13 Nov-13 Jan-14 Mar-14 May-14 Jul-14 Sep-14 Nov-14 Jan-15 Mar-15 May-15 Jul-15 Sep-15 Nov-15 Jan-16 Mar-16 May-16 Jul-16 Sep-16


NYC UCAP Available vs. NYC Requirement
NYC UCAP Available as Percentage of NYC Requirement
NYC Market Clearing Price
125%
120%
115%
110%
105%
100%
$20
$16
$12
$8
$4
$0
May-09 Jul-09 Sep-09 Nov-09 Jan-10 Mar-10 May-10 Jul-10 Sep-10 Nov-10 Jan-11 Mar-11 May-11 Jul-11 Sep-11 Nov-11 Jan-12 Mar-12 May-12 Jul-12 Sep-12 Nov-12 Jan-13 Mar-13 May-13 Jul-13 Sep-13 Nov-13 Jan-14 Mar-14 May-14 Jul-14 Sep-14 Nov-14 Jan-15 Mar-15 May-15 Jul-15 Sep-15 Nov-15 Jan-16 Mar-16 May-16 Jul-16 Sep-16

I.3 Market Design and Regulatory Developments

Over the past year there have been several ICAP market design initiatives and regulatory developments pertaining to the NYISO's Installed Capacity market. The significant developments are described below.

I.3.1. Demand Curve Reset

On May 20, 2016, the NYISO filed proposed amendments to its Services Tariff that implement enhancements to its periodic review of the ICAP Demand Curves. These enhancements include: (i) an increase to the period between Demand Curve resets to four years, where previously it had been a three year period; and (ii) the institution of a process to conduct annual updates to certain parameters of the ICAP Demand Curves. FERC accepted the NYISO's proposals on July 18, 2016.[6]

In addition, and in accordance with the Services Tariff, the NYISO's Demand Curve independent consultant studied and proposed the parameters for ICAP Demand Curves for the NYCA, NYC, LI, and the G-J Locality. On November 18, 2016, the NYISO filed proposed tariff amendments to establish the ICAP Demand Curves for the 2017/2018 Capability Year. The proposed methodologies and inputs to be used by the NYISO in conducting the tariff-prescribed annual updates for the 2018/2019 through 2020/2021 Capability Years are also included in the NYISO's November 18, 2016 filing.[7]

I.3.2. Treatment of Capacity Locality Exports

On November 30, 2016, the NYISO filed proposed amendments to its Services Tariff to correct a pricing inefficiency in its ICAP market design related to capacity exports from certain Localities in the NYCA.[8] In its State of the Market Report issued in May 2016, the MMU recommended that the NYISO "[m]odify the capacity market and planning process to better account for capacity that is exported to neighboring control areas from import-constrained capacity zones."[9] The current market design treats a generator that is exporting from an import-constrained Locality as though it is no longer in service, and requires the full amount of exported capacity to be replaced by Resources located within the Locality. It does not recognize that a generator exporting from an import-constrained zone will create an increased counter-flow across interfaces with the Rest of State, and make it possible to replace a portion of the

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[6] *See New York Indep. Sys. Operator, Inc*., 156 FERC ¶ 61,039.

[7] *See New York Indep. Sys. Operator, Inc*., Docket No. ER17-386-000 (November 18, 2016).

[8] *See New York Indep. Sys. Operator, Inc*., Docket No. ER17-446-000.

[9] *See 2015 State of the Market for the New York ISO Markets* at xii, 117 (May 2016), available at: <http://www.nyiso.com/public/webdocs/markets_operations/documents/Studies_and_Reports/Reports/Market_Monitoring_Unit_Reports/2015/NYISO%202015%20SOM%20Report_5-23-2016-CORRECTED.pdf>.

exported capacity with capacity located in Rest of State. The NYISO proposed the use of a Locality Exchange Factor, which would determine the percentage of an export from an import-constrained Locality that can be replaced by Resources located in Rest of State, in order to correctly reflect this phenomenon in the price formation of its capacity market. The Locality Exchange Factor would be used to determine an appropriate decrement to the Locational Minimum Unforced Capacity Requirement of the import-constrained Locality consistent with the export(s) under consideration. The NYISO requested that the Commission accept the revisions by January 29, 2017.

I.3.3 Reliability Must Run Filing[10]

On April 21, 2016, the Commission issued an order accepting some of the NYISO's compliance tariff revisions to establish a reliability must run ("RMR") process, and requiring further tariff revisions. On September 19, 2016, the NYISO submitted the required further compliance filing. The majority of the September 2016 filing centered on the separation of the Open Access Transmission Tariff RMR process and the GAP Solution process. Another key change was to the evaluation and selection of an RMR Solution to meet a Reliability or Resource Adequacy need, if identified.

I.3.4 Behind-the-Meter Net Generation

The NYISO proposed Services Tariff revisions to allow certain "behind-the-meter" generators to participate in the capacity market. These resources are referred to as "Behind-the-Meter Net Generation." Under these rules, a generator that is serving host load will be allowed to participate in the NYISO markets in the amount of its net energy and capacity. On May 17, 2016, the Commission accepted the proposed tariff revisions on the condition that the NYISO submit a further compliance filing with at least two weeks' notice of the actual effective date of the revisions. On November 29, 2016, the NYISO filed with the Commission a compliance filing to establish an effective date of December 13, 2016 for the accepted tariff revisions.[11]

I.3.5 Renewable and Self-Supply Exemption Compliance Filing

On October 9, 2015, FERC issued an order on a complaint directing the NYISO to make a compliance filing to include new tariff provisions to exempt certain "narrowly defined" renewable and self-supply resources from BSM. The NYISO filed proposed tariff revisions in

[10] The "reliability must run" Commission orders and proposed tariff revisions are in the main docket and sub-dockets in ER16-120.

[11] *See New York Indep. Sys. Operator, Inc*., 155 FERC ¶ 61,166 (2016).

accordance with the order on April 13, 2016 (ER16-1404), with the Commission directed effective date of October 9, 2015.[12] FERC has not yet acted on the NYISO's compliance filing.

I.3.6 Unforced Capacity Deliverability Rights "BSM" Principles

Pursuant to the Commission's compliance directive, the NYISO developed Services Tariff provisions that establish guiding principles for the estimation of Energy and Ancillary Services revenues attributable to controllable transmission lines that could received Unforced Capacity Deliverability Rights ("UDR projects"), in its buyer-side capacity market mitigation ("BSM") determinations. These guiding principles take into account, but are not limited to, (i) the design and characteristics of individual controllable transmission lines, (ii) the differing attributes of the regions that they may interconnect, (ii) and any impact they may have on locational pricing. These provisions were accepted by the Commission and will have an effective date established after the completion of Class Year 2015.[13]

I.3.7 New Capacity Zone Study Report

Pursuant to the process in the Services Tariff to evaluate the potential need for new capacity zones ("NCZs"), the NYISO presented the results of its deliverability analysis to the ICAP Working Group on January 13, 2016. In the 2016 NCZ Study, the NYISO concluded that there was no need to trigger the process to establish an NCZ. In accordance with the Services Tariff, the NYISO filed its determination stating the same with the Commission on March 28, 2016. FERC issued an order accepting that filing on May 27, 2016.[14]

[12] *See New York Indep. Sys. Operator, Inc*., Docket No.ER14-1404-000.

[13] *See New York Indep. Sys. Operator, Inc*., ER16-959-000, Delegated Letter Order (August 5, 2014).

[14] *See New York Indep. Sys. Operator, Inc*., Docket No. ER16-1280-000, Delegated Letter Order (May 27, 2016).

I.4. Recent Installed Capacity Auction Results

Capacity committed through self-supply, bilateral transactions, and the NYISO-administered auctions (referred to herein as "committed" capacity) remains above the NYCA Minimum Installed Capacity Requirement and above each Locality's LCRs. In general, the amount of capacity available from many generators in the NYCA increases in the Winter Capability Period because of higher possible output at lower ambient temperatures. Capacity imports from External Control Areas fluctuate both seasonally and monthly. The NYCA Demand Curve price can decline to zero when supply exceeds the NYCA Minimum Installed Capacity Requirement by 12 percent or more. Accordingly, the NYCA Market-Clearing Prices have been consistently at or above ten percent of the NYCA ICAP Demand Curve reference price[15], particularly in the Winter Capability Period when prices were consistently about $1.00/kW-month on average.

The amount of Capacity committed to the NYCA, including imports, continues to be high relative to the minimum requirements. The monthly average import levels into the entire NYCA were about 1,980 MW in the Winter 2015-2016 Capability Period and about 2,680 MW in the Summer 2016 Capability Period. Those values represent approximately a 25 MW decrease in the monthly average over the amount imported in the previous Winter Capability Period and a 435 MW monthly average increase relative to the 2015 Summer Capability Period.

ICAP Market-Clearing Prices and auction activity levels from November 1999 through October 2016 for the NYCA, G-J Locality, NYC, and LI are summarized in tabular form in Attachment VII. Market-Clearing Prices are depicted graphically in Chart 2, Chart 4, Chart 6 and Chart 8; and the amount of capacity committed, MW that were offered, and unsold MW are depicted in Chart 3, Chart 5, Chart 7, and Chart 9.

[15] The reference price when the ICAP Demand Curve is translated to UCAP.

Chart 2: NYCA Market Clearing Prices

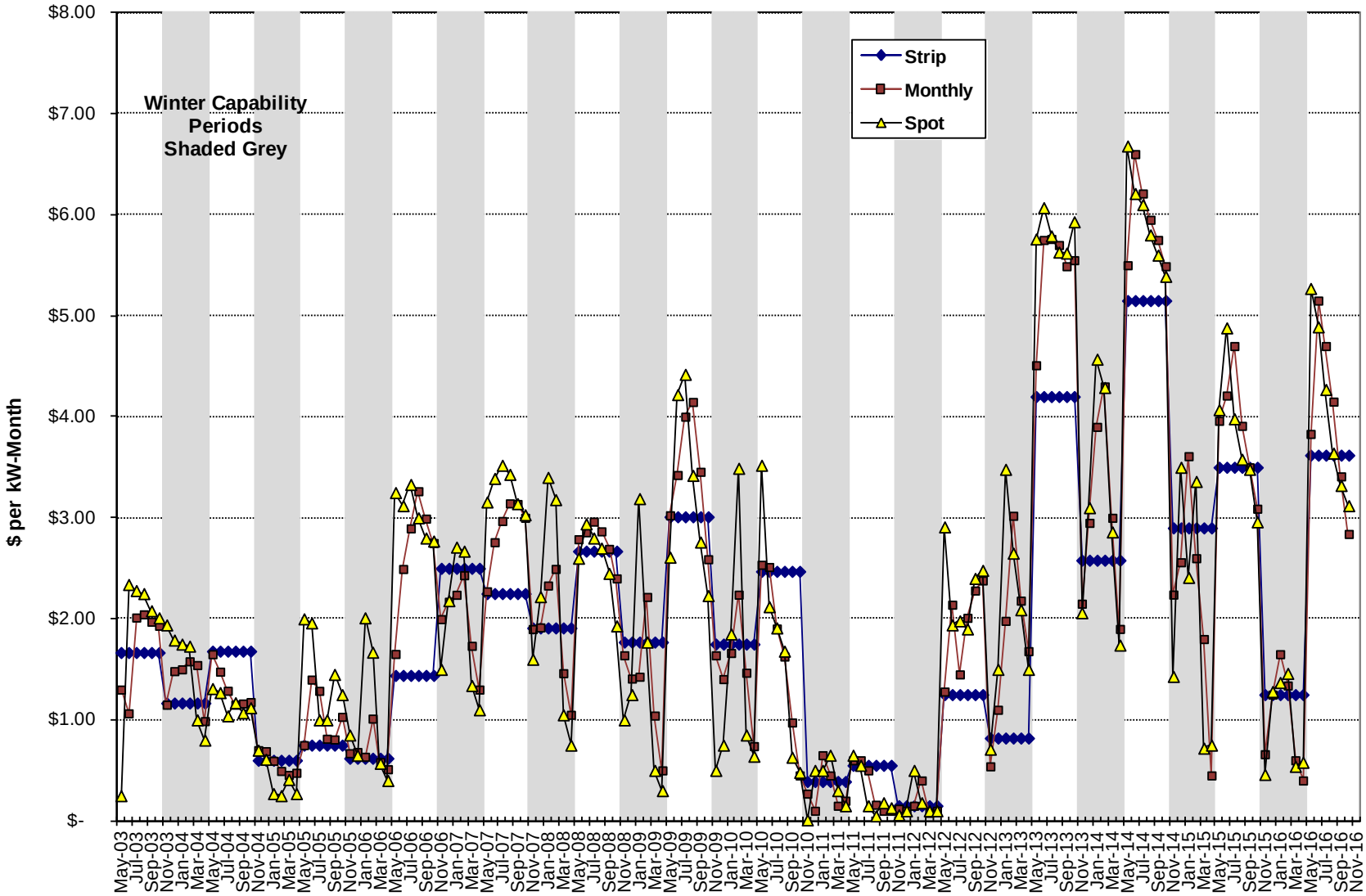


Chart 3: NYCA Offered MW

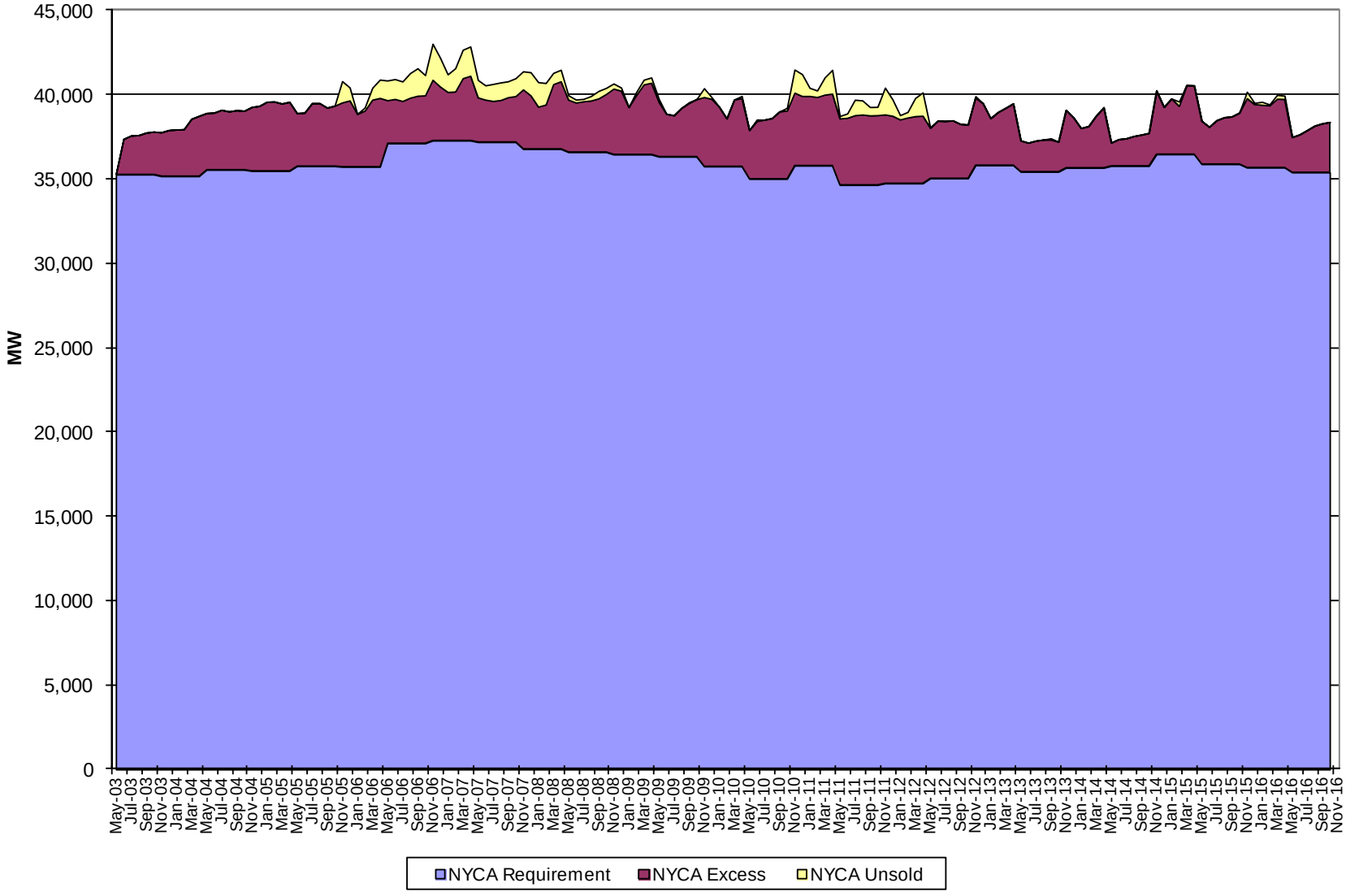


Chart 4: NYC Market Clearing Prices

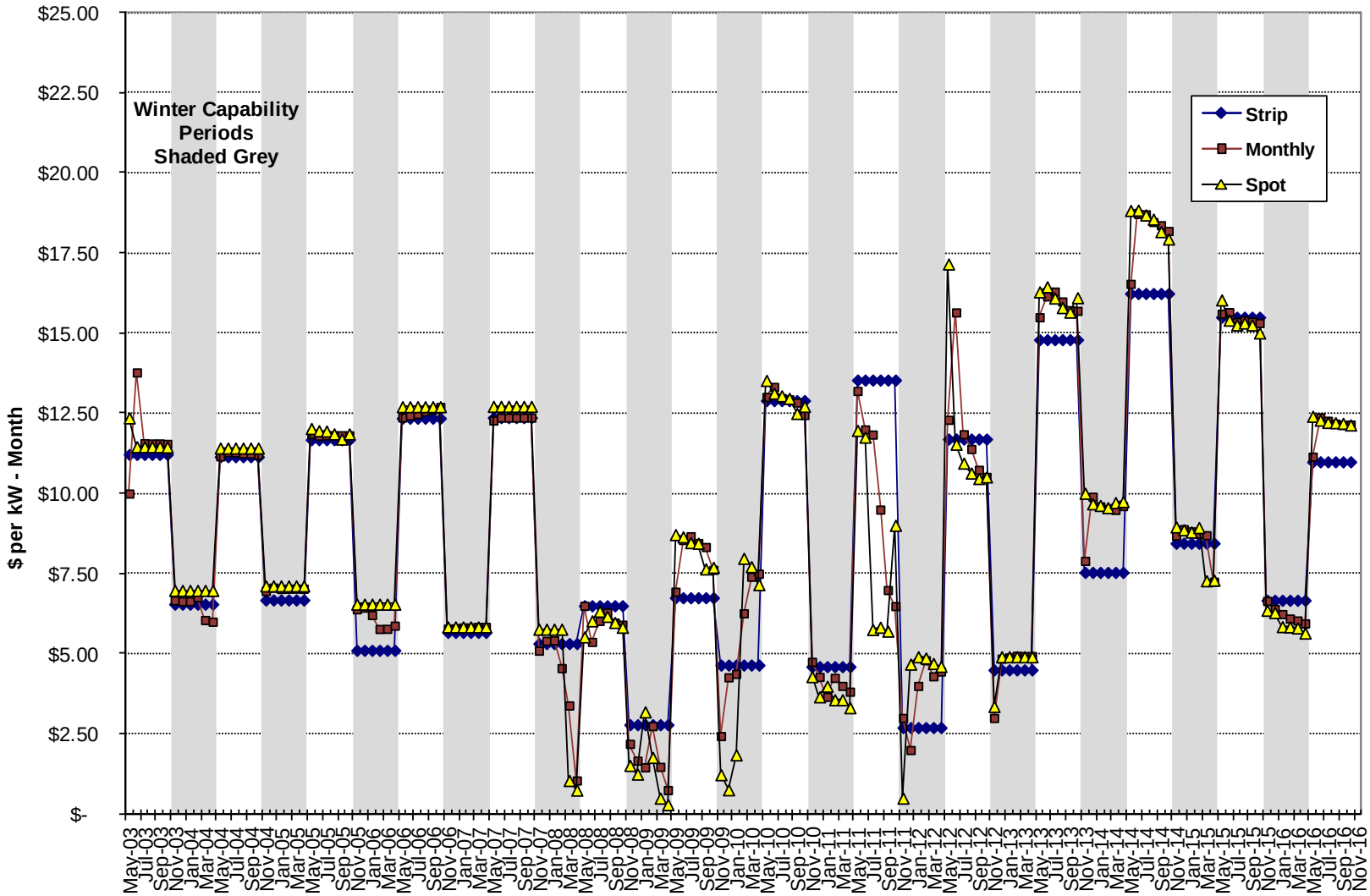


Chart 5: NYC Offered MW

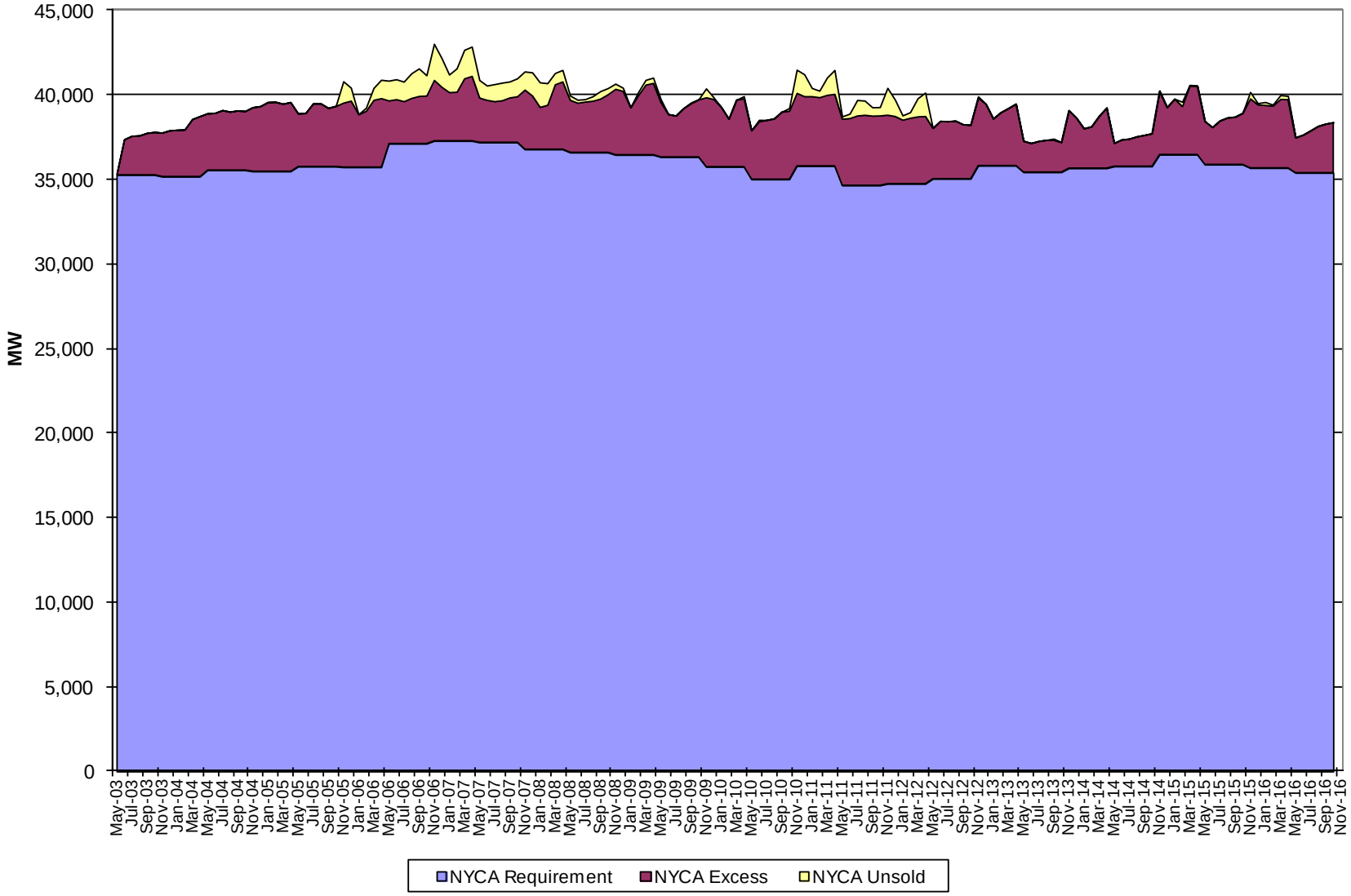


Chart 6: G-J Locality Market Clearing Prices

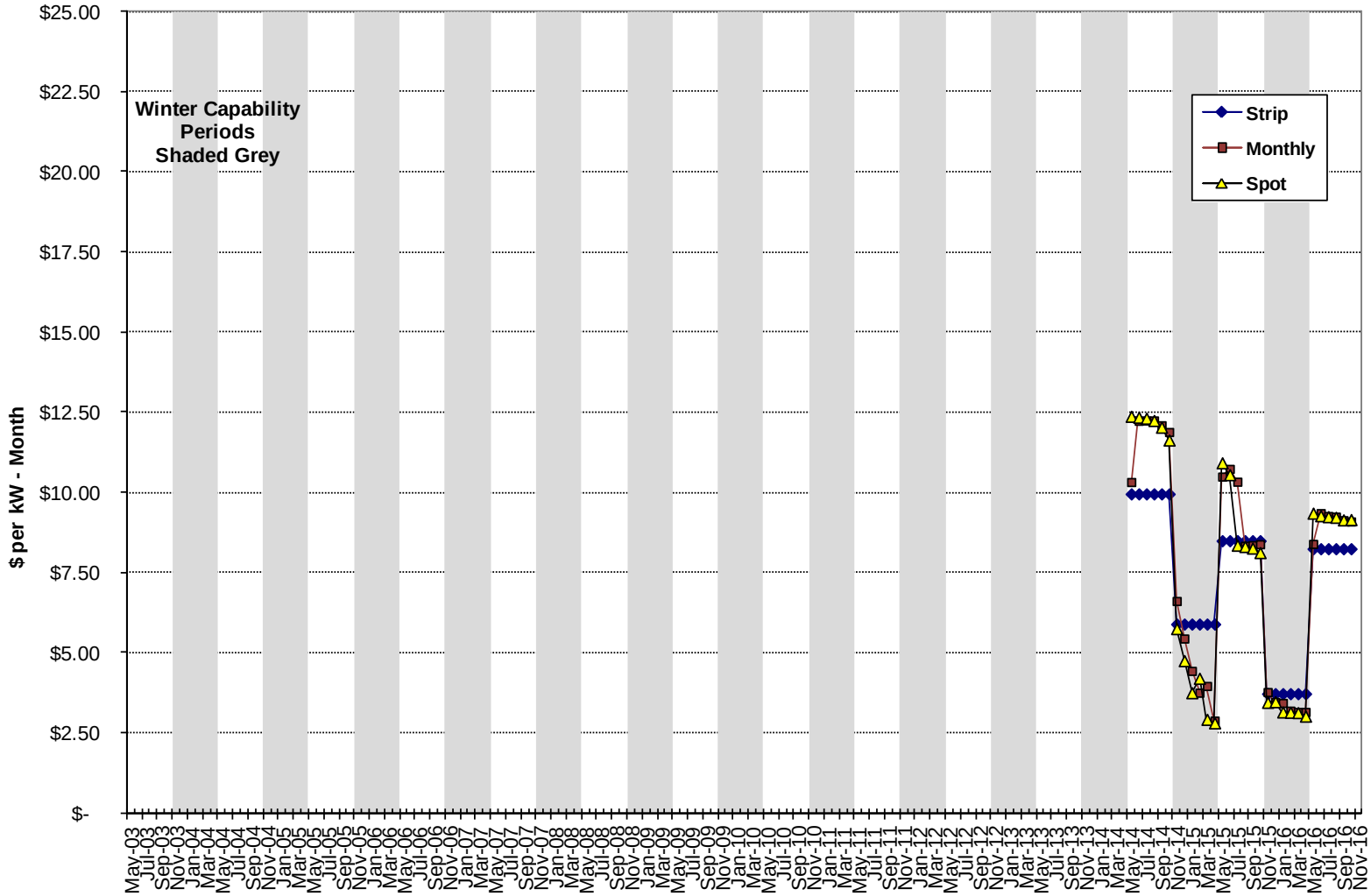


Chart 7: G-J Locality Offered MW

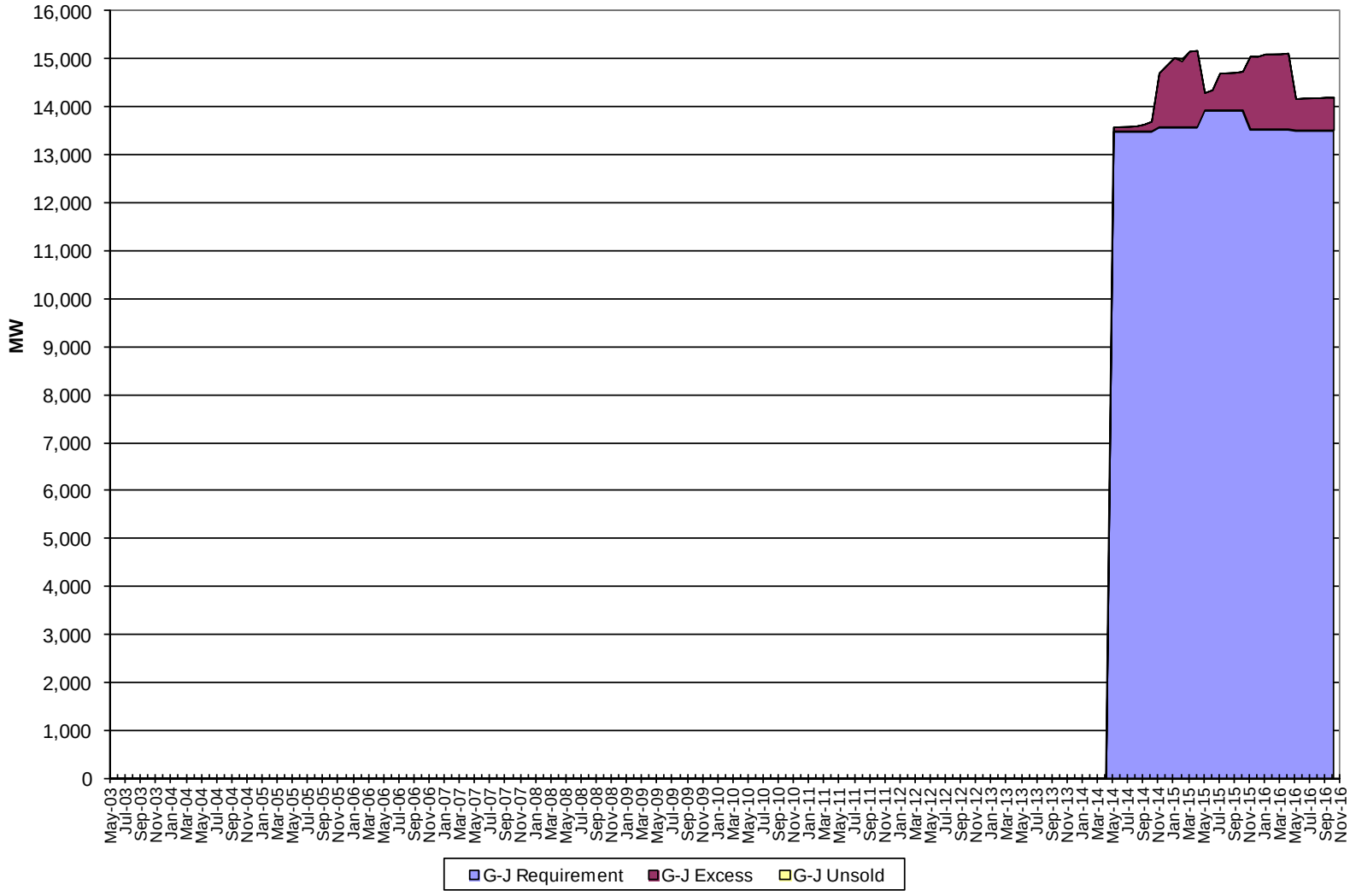


Chart 8: Long Island Market Clearing Prices

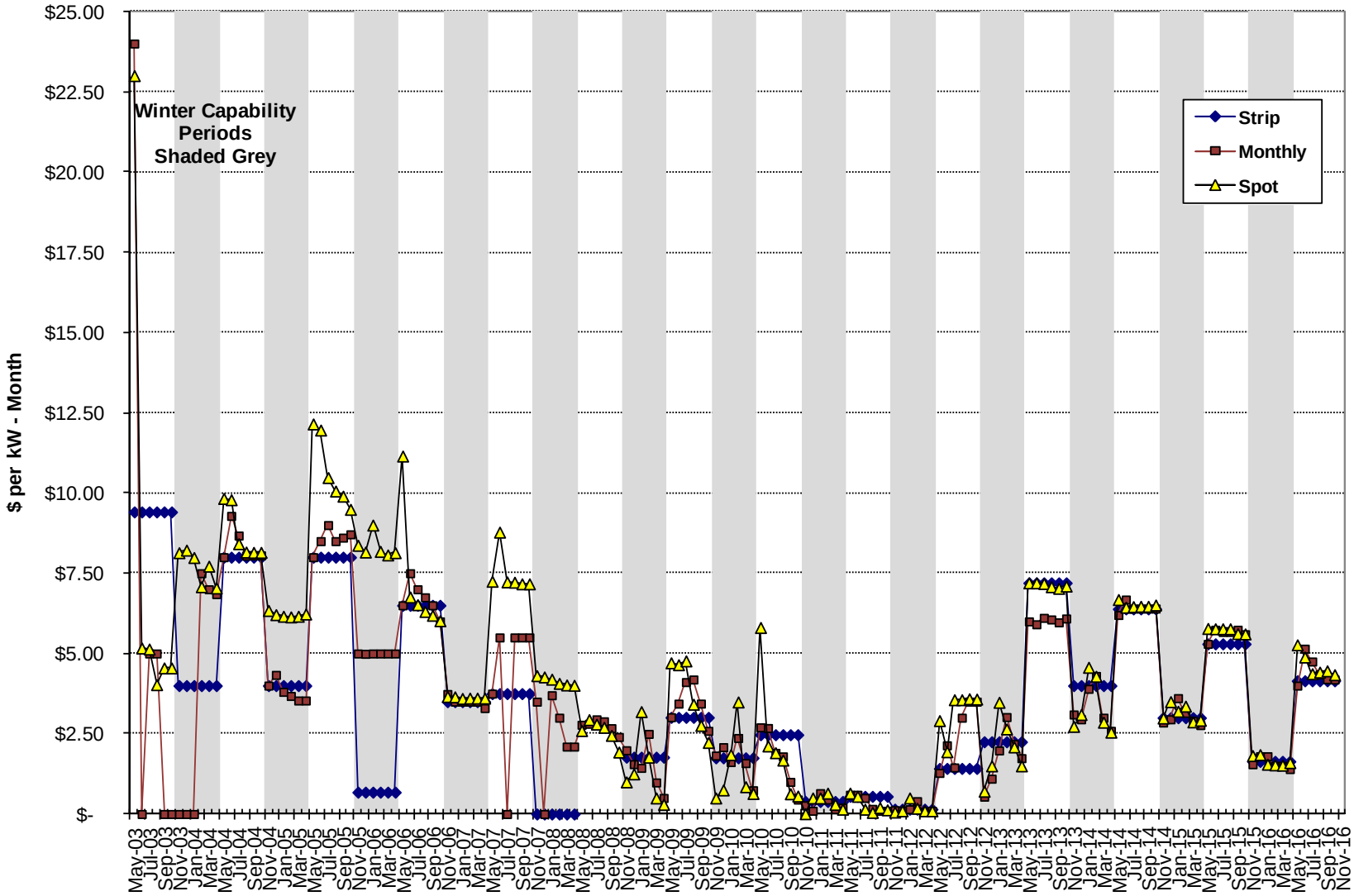


Chart 9: Long Island Offered MW

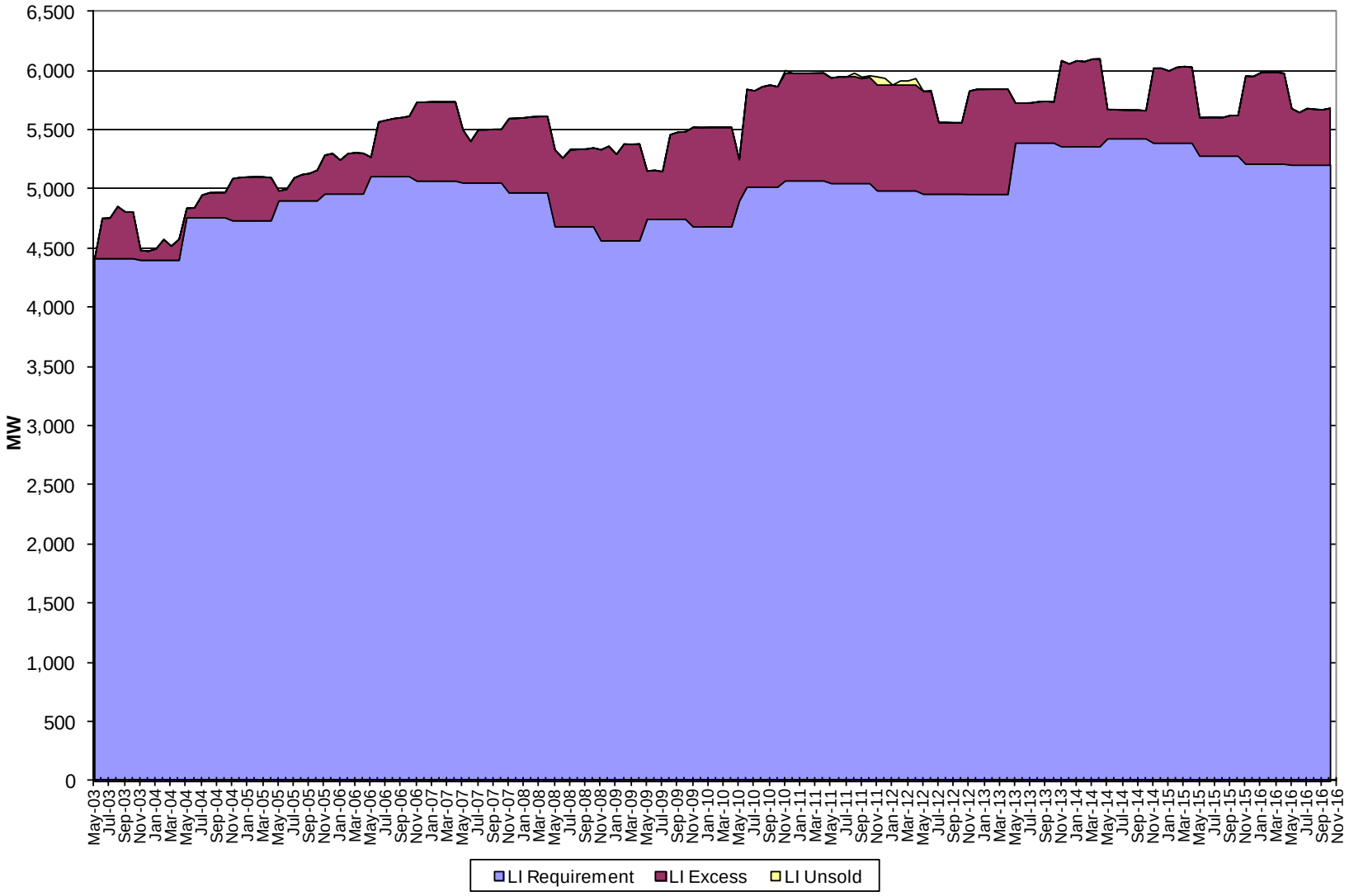


Table 1 summarizes amount of generating capacity throughout the NYCA, either mothballed or retired, during the Winter 2009/2010 through the Summer 2016 Capability Period. Over the fourteen Capability Periods, there were 66 generators that were retired, laid-up, or mothballed, totaling about 3,832MW, with ten of them – totaling about 862MW – returned to service. Particularly, for the period of November 2015 through October 2016, no units returned to service.

Due to increased emission restrictions in environmental regulations, the age of generators in the NYCA fleet, and the low price of natural gas compared to other fossil fuels, this trend of older, less efficient generators ceasing operation is anticipated to continue.

Table 1: List of Mothballed and Retired Units[16]

Organization Name	Unit Name	Zone	MW[17]	Status[18]	Period
AES Eastern Energy LP	AES Greenidge Unit 3	C	52.8	R	Winter 200-2010
AES Eastern Energy LP	AES Westover Unit 7	C	43.5	R	Winter 2009-2010
New York Power Authority	NYPA Poletti	J	891.0	R	Winter 2009-2010
Energy Systems North East LLC	Energy Systems North East	A	82.0	R	Winter 2010-2011
Project Orange Associates	Project Orange_1	C	43.6	R	Winter 2010-2011
Project Orange Associates	Project Orange_2	C	44.0	R	Winter 2010-2011
Long Island Power Authority	Barrett 07	K	17.3	R	Summer 2011
TC Ravenswood	TC Ravenswood GT 3-4	J	35.8	M	Summer 2011
Rochester Gas & Electric Corp.	Beebee GT	B	15.0	R	Winter 2011-2012
Binghamton BOP, LLC	Binghamton Cogen Plant	C	43.8	R	Winter 2011-2012
Long Island Power Authority	Far Rockaway_4	K	110.6	R	Summer 2012
Long Island Power Authority	Glenwood_4	K	118.7	R	Summer 2012
Long Island Power Authority	Glenwood_5	K	122.0	R	Summer 2012
New York Power Authority	Kensico Hydro Project	I	1.8	R	Summer 2012
Astoria Generating Company, LP	Astoria Station Unit 20	J	177.0	M	Summer 2012
Astoria Generating Company, LP	Astoria Station Unit 40	J	375.6	M	Summer 2012
AES Eastern Energy LP	AES Greenidge Unit 4	C	106.1	R	Summer 2012
NRG Power Marketing LLC	Astoria GT 10	J	24.9	M	Summer 2012
NRG Power Marketing LLC	Astoria GT 11	J	23.6	M	Summer 2012
Dynegy Danskammer, LLC[19]	Danskammer 1	G	67.0	R	Summer 2012
Dynegy Danskammer, LLC	Danskammer 2	G	62.7	R	Summer 2012
Dynegy Danskammer, LLC	Danskammer 3	G	137.2	R	Summer 2012
Dynegy Danskammer, LLC	Danskammer 4	G	236.5	R	Summer 2012
Dynegy Danskammer, LLC	Danskammer Diesel (5&6)	G	5.0	R	Summer 2012
NRG Energy, Inc. (Dunkirk Power LLC)	Dunkirk 3	A	201.4	M	Summer 2012
NRG Energy, Inc. (Dunkirk Power LLC)	Dunkirk 4	A	199.1	M	Summer 2012
AES Eastern Energy LP	Westover Unit 8	C	83.8	R	Summer 2012
Cayuga Operating Company, LLC	Cayuga 1	C	154.1	M	Winter 2012-2013
Cayuga Operating Company, LLC	Cayuga 2	C	154.7	M	Winter 2012-2013
Rochester Gas & Electric	Rochester Station 9 Unit 2 CT	B	15.8	R	Winter 2012-2013
NRG Energy, Inc. (Dunkirk Power LLC)	Dunkirk 1 (23563)	A	96.2	M	Summer 2013
NRG Power Marketing LLC	Astoria GT 10	J	(24.9)	RTS	Summer 2013
NRG Power Marketing LLC	Astoria GT 11	J	(23.6)	RTS	Summer 2013
Freeport Electric Municipality	Freeport Electric[20]	K	1.5	R	Summer 2013
National Grid Generation LLC	Montauk 2	K	2.0	R	Summer 2013
National Grid Generation LLC	Montauk 3	K	2.0	R	Summer 2013
National Grid Generation LLC	Montauk 4 (23721)	K	2.0	R	Summer 2013
Niagara Generation, LLC	Niagara Generation Biomass Facility	A	50.5	M	Summer 2013
ReEnergy Chateaugay LLC	ReEnergy Biomass-to-Energy	D	18.6	M	Summer 2013
Syracuse Energy Corporation	Syracuse Energy ST1	C	11.0	R	Summer 2013
Syracuse Energy Corporation	Syracuse Energy ST2	C	58.9	R	Summer 2013
Niagara Generation, LLC	Niagara Generation Biomass Facility	A	(50.5)	RTS	Winter 2013-2014
TC Ravenswood, LLC	TC Ravenswood GT-7	J	16.5	M	Winter 2013-2014

[16] Services Tariff provisions defining the terms Force Outage, Mothball, Retire, and ICAP Ineligible Forced Outage apply to outages on and after May 1, 2015. Therefore, the status shown in this table does not necessarily correspond to the tariff-specified provisions.

[17] The capacity values listed are the CRIS MW values stated in the NYISO's Load and Capacity Data Report (referred to as the "Gold Book").

[18] "R" indicates "retired", "M" indicates "mothballed", "RTS" indicates "Returned to Service after being mothballed or retired", and "M to R stands for "Retired after being mothballed".

[19] The Notice of Intent to Retire Danskammer Units was posted in March 2013; while these units have been out of service since October 2012.

[20] 1.5 MW of Summer Capacity per the 2013 Gold book Table III-2.

Organization Name	Unit Name	Zone	MW[17]	Status[18]	Period
Danskammer Energy, LLC	Danskammer 1	G	(67.0)	RTS	Summer 2014
Danskammer Energy, LLC	Danskammer 2	G	(62.7)	RTS	Summer 2014
TC Ravenswood, LLC	TC Ravenswood GT 3-3	J	37.7	M	Summer 2014
TC Ravenswood, LLC	TC Ravenswood GT 3-4	J	(38.6)	RTS	Summer 2014
Danskammer Energy, LLC	Danskammer 3	G	(137.20)	RTS	Winter 2014-2015
Danskammer Energy, LLC	Danskammer 4	G	(236.50)	RTS	Winter 2014-2015
Astoria Generating Company, LP	Astoria Station Unit 20	J	(177.00)	RTS	Winter 2014-2015
Binghamton BOP, LLC	Binghamton Cogen Plant	C	(43.8)	RTS	Winter 2014-2015
NRG Power Marketing, LLC	Huntley 67	A	196.5	R	Winter 2015-2016
NRG Power Marketing, LLC	Huntley 68	A	198	R	Winter 2015-2016
NRG Power Marketing, LLC	Dunkirk 2	A	97.2	M	Winter 2015-2016
Niagara Power Marketing, LLC	Niagara Generation Biomass Facility	A	50.5	IIFO	Winter 2015-2016
NRG Power Marketing, LLC	Astoria GT 05	J	16	IIFO	Winter 2015-2016
NRG Power Marketing, LLC	Astoria GT 07	J	15.5	IIFO	Winter 2015-2016
NRG Power Marketing, LLC	Astoria GT 08	J	15.3	M	Winter 2015-2016
NRG Power Marketing, LLC	Astoria GT 10	J	24.9	M	Winter 2015-2016
NRG Power Marketing, LLC	Astoria GT 11	J	23.6	M	Winter 2015-2016
NRG Power Marketing, LLC	Astoria GT 12	J	22.7	IIFO	Winter 2015-2016
NRG Power Marketing, LLC	Astoria GT 13	J	24	IIFO	Winter 2015-2016
TC Ravenswood, LLC	TC Ravenswood GT 04	J	15.2	M	Summer 2016
TC Ravenswood, LLC	TC Ravenswood GT 05	J	15.7	M	Summer 2016
TC Ravenswood, LLC	TC Ravenswood GT 06	J	16.7	M	Summer 2016
ReEnergy Chateaugay	ReEnergy Biomass-to-Energy	D	18.6	M to R	Summer 2016

I.5 Capacity Withholding Analysis

I.5.1 All Capacity Areas in the NYCA

This section of the report addresses potential withholding issues in the NYISO-administered capacity auctions for all four capacity areas during the period of November 2015 to October 2016: ROS, NYC, the G-J Locality, and LI. For purposes of this report, in order to identify whether any potential withholding occurred, the NYISO analyzed the differences between available capacity[21] and the supply committed through self-supply, bilateral transactions, and the NYISO-administered auctions. In particular, the NYISO examined:

- The NYCA capacity that was available to be offered into the ICAP Spot Market Auctions, but was not offered ("unoffered capacity"),
- Available NYCA capacity that was offered into the ICAP Spot Market Auctions but was not sold ("unsold capacity"),
- Unoffered capacity as a percentage of available capacity, and
- Unsold capacity as a percentage of offered capacity.

When capacity is available but not offered, it is an indication that physical withholding may have occurred. Similarly, if available capacity is offered at a price that causes it to not clear, it is an indication of possible economic withholding. The amounts of unoffered and unsold capacity are determined from the ICAP Spot Market Auction results because this auction is the last opportunity for an Installed Capacity Supplier to sell its capacity. The existence of unoffered and unsold capacity, however, does not necessarily imply the intent to manipulate market prices.

As reflected in the NYISO's previous reports on the Installed Capacity Demand Curves, patterns of unsold capacity have varied across the three Localities and the NYCA. For the entire NYCA, there generally has been more unsold capacity in Winter months than Summer months, due in part to lower prices in the Winter months. The seasonal monthly average of unsold MW for the Winter 2015-2016 Capability Period for the entire NYCA was 48 MW compared to 19 MW in the Winter 2014-2015 Capability Period. The seasonal monthly average amount of unsold MW for the Summer 2016 Capability Period for the entire NYCA was near zero MW, while it was 3MW in the Summer 2015 Capability Period.

In Long Island, there was a monthly average of 4 MW of unsold capacity in the Winter 2015-2016 Capability Period, compared to 1 MW in the Winter 2014-2015 Capability Period; and 5.4 MW in the Summer 2016 Capability Period compared to 1.9 MW in the Summer 2015 Capability Period.

In NYC, the seasonal monthly average amount of unsold MW for the Winter 2012-2013 Capability Period was 144 MW, for Winter 2013-2014 was zero MW, for Winter 2014-2015 Capability Period was 12.4 MW total, and for Winter 2015-2016 it was 10.6MW total. For the Summer 2012, 2013, 2014, and 2016 Capability Periods that number is zero MW, and almost 12 MW in the Summer 2015.

[21] Available capacity is defined as the lesser of the NYISO-accepted DMNC and the Capacity Resource Interconnection Service ("CRIS") MW value, with the Equivalent Demand Forced Outage Rates ("EFORd") reduction applied.

In the G-J Locality there was no unsold capacity in Sumer 2014, Summer 2015, Summer 2016, and Winter 2015-2016 Capability Periods. The seasonal monthly average amount of unsold MW for the Winter 2014-2015 Capability Period was 8 MW.

There are three types of capacity auctions in each Capability Period: a Capability Period Auction (also referred to as the "strip auction"), six Monthly Auctions, and six ICAP Spot Market Auctions. Available capacity may be offered into any or all of the auctions. There are three distinct minimum ICAP requirements: one each for the NYC, G-J, and LI Localities, as well as one for the NYCA as a whole. LSEs with Load in NYC, G-J, or LI Localities are required to procure minimum levels of capacity that is electrically located within the respective Locality – the "LCRs" in terms of Unforced Capacity, *i.e.*, the Locational Minimum Unforced Capacity Requirement. Such capacity is also credited toward each NYC and Long Island LSE's overall NYCA obligation. The NYISO establishes the NYCA Minimum Installed Capacity Requirement and the LCRs annually.

The Services Tariff does not require Installed Capacity Suppliers to offer UCAP into the ICAP markets except for certain suppliers in Mitigated Capacity Zones (*i.e.*, NYC and the G-J Locality). Until the implementation of the ICAP market power mitigation measures set forth in Attachment H of the Services Tariff, which were effectuated in May 2008, the majority of capacity in NYC – that of the "Divested Generation Owners" – had been subject to Commission-approved ICAP mitigation measures that imposed bid caps and required the units' capacity to be offered into the ICAP auctions. The Commission's March 7, 2008 Order[22] removed the requirements unique to the Divested Generation Owners and approved mitigation measures applicable to all In-City capacity. The March 7, 2008 Order effectuated new In-City mitigation measures, based on Pivotal Supplier determinations combined with offering conduct and price impact thresholds, to determine whether market power had been exercised. ICAP market power mitigation measures became effective for the G-J Locality concurrent with its implementation. These measures for NYC and G-J Locality are set forth in Section 23.4.5 (Attachment H) of the Services Tariff (as revised over time, "Supply-side Mitigation Measures").

In developing the information for this report, the NYISO examined auction outcomes of the Capability Periods from Summer 2007, which began May 1, 2007, through Summer 2016, which ended October 31, 2016. Since the capacity product transacted in the NYISO-administered ICAP auctions is UCAP, the following information was examined:

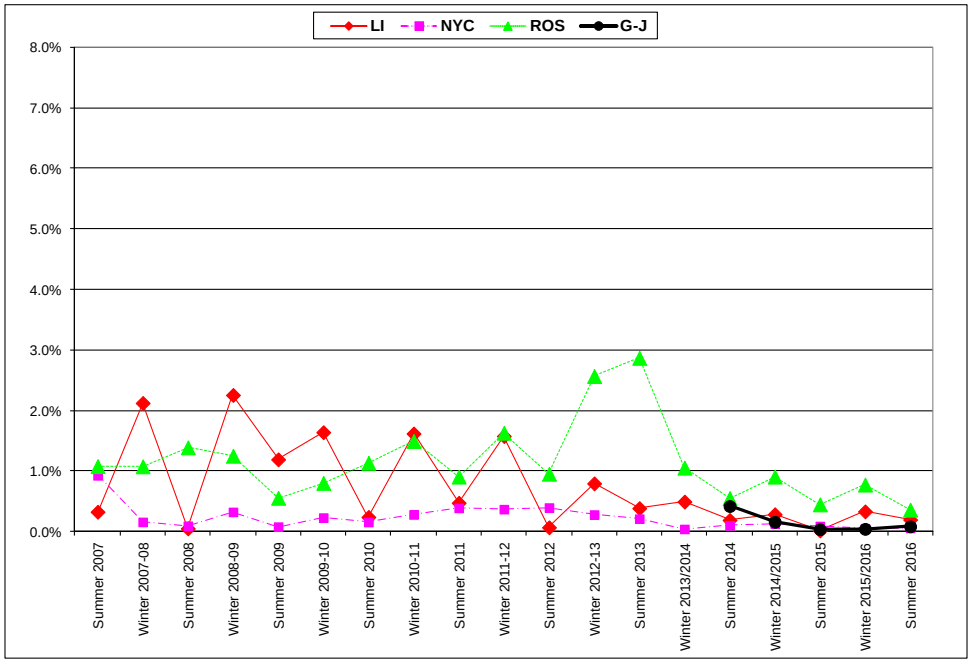
- Certification data, reflecting the certified MW of UCAP from all the Resources physically located within New York available to supply capacity to the NYCA. The analysis did not include resources physically located outside of the NYCA.
- Certification data, reflecting the certified MW of UCAP from all the Resources within the G-J Locality (Load Zones G, H, I, and J) available to supply capacity to the NYCA. The analysis did not include resources physically located outside of the NYCA.
- The amount of UCAP supplied, which includes UCAP sold in any of the NYISO ICAP auctions, UCAP certified as self-supplied against an LSE's Unforced Capacity obligation, and UCAP committed through bilateral transactions.

[22] See *New York Independent System Operator, Inc.*, Docket No. EL07-39-000, Order Conditionally Approving Proposal, 122 FERC ¶ 61,211 (2008).

I.5.2 Unoffered and Unsold Capacity

Chart 10 presents seasonal averages of unoffered capacity as a percentage of available Capacity for each of the three capacity areas.

Chart 10: Average Percent of Unoffered MW



The Long Island Locality has fairly consistent seasonal fluctuations in the amounts of unoffered capacity, which can be seen in Chart 10. The LI Locality is characterized by procurement chiefly through bilateral transactions and self-supply. The amount of unoffered capacity in the LI Locality fluctuates between 0.02% and 2.3%. A portion of that unoffered capacity is not actually available due, in some instances, to site permit restrictions. Another portion arises from purchases due to bidders for NYCA capacity (*i.e.*, not requiring capacity located in Long Island) in the Capability Period and Monthly Auctions.[23] The NYISO has observed that these NYCA bidders sometimes fail to offer the Long Island capacity in the ICAP Spot Market Auction.

In the NYC Locality, prior to the Summer 2008 Capability Period, the low level of unoffered capacity was principally due to the offer requirement applicable to the Divested Generation Owners. Beginning with the Summer 2008 Capability Period, the near absence of unoffered capacity can be attributed to the Supply-side Mitigation Measures effectuated in 2008.

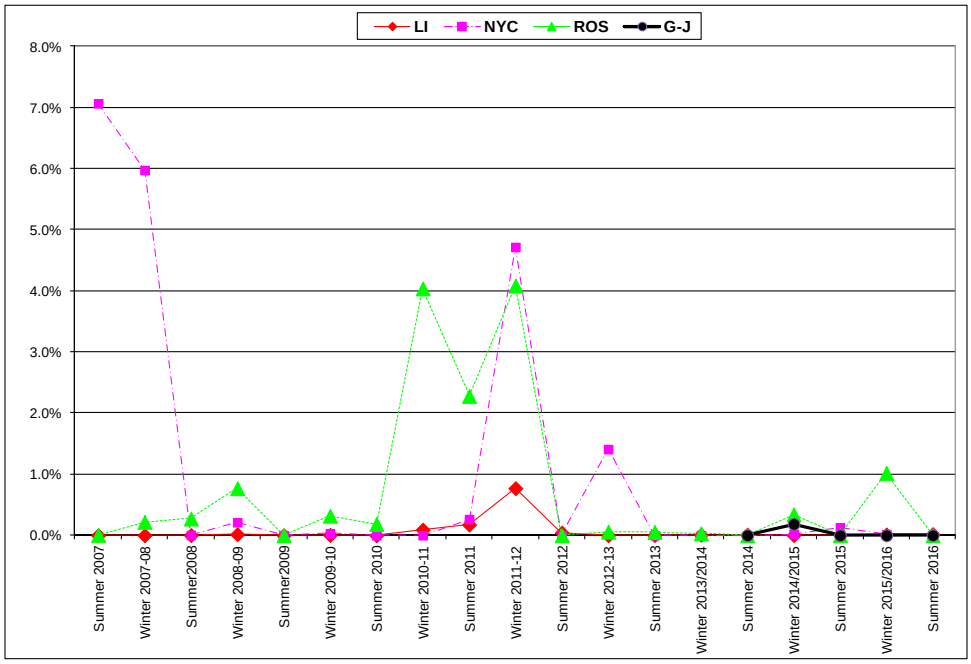
The G-J Locality became effective beginning in May 2014. Initially, the level of unoffered capacity was at the level of that in ROS, but fell to near zero.

[23] When the Market Clearing Price in these auctions is the same for NYCA and Long Island capacity, offers of capacity located in the Long Island Locality is used to meet NYCA bids.

In ROS the unoffered MW for the Winter 2015-2016 and Summer 2016 Capability Periods was consistently below 0.8%.[24]

Chart 11 displays unsold capacity as a percent of available UCAP in each of the four capacity areas, which has been below 1% for the past seven Capability Periods.[25]

Chart 11: Average Percent of Unsold MW



For all Capability Periods beginning with the Summer 2007 Capability Period, nearly all Long Island offered capacity was sold. In NYC, the average amount of unsold capacity as a percentage of available capacity trended at near zero levels from the start of the Summer 2008 Capability Period, except for the Winter 2011-2012, and Winter 2012-2013 Capability Periods when some offered capacity did not clear because it was offered at a price greater than the UCAP Offer Reference Level. The UCAP Offer Reference Level is the price at which the ICAP Spot Market Auction would clear if all available capacity was offered and sold. For the Winter 2015-2016 and Summer 2016 Capability Periods, nearly all of the capacity offered in NYC auctions was sold. The G-J Locality had zero unsold MW in the 2015-2016 Capability Year.

The increased NYCA Minimum Installed Capacity Requirement and LCRs contributed to lower amounts of unsold MW, year-over-year. Table 2 summarizes these values for NYCA and the three Localities over the past ten years.

[24] As noted in n. 1, the definition of Rest of State prior to the Summer 2014 Capability Period was Load Zones A though I, and beginning with the Summer 2014 Capability Period is Load Zones A through F.

[25] Section I.5.4.3 of this report provides information and analysis of the unsold capacity in ROS.

Table 2: Minimum Installed Capacity Requirements (%)[26]

Capability Year	NYC	G-J	LI	NYCA
2007/2008	80.0	-	99.0	116.5
2008/2009	80.0	-	94.0	115.0
2009/2010	80.0	-	97.5	116.5
2010/2011 (May)	80.0	-	102.0	118.0
2010/2011 (June-April)	80.0	-	104.5	118.0
2011/2012	81.0	-	101.5	115.5
2012/2013	83.0		99.0	116.0
2013/2014	86.0	-	105.0	117.0
2014/2015	85.0	88.0	107.0	117.0
2015/2016	83.5	90.5	103.5	117.0
2016/2017	80.5	90	102.5	117.5

Table 3 displays the breakdown of unsold and unoffered capacity for each Locality and ROS. As part of the NYISO's August 24, 2010 ICAP compliance filing,[27] the NYISO stated that it would include unoffered and unsold capacity in the NYC Locality in its annual Installed Capacity Demand Curves reports. The unoffered and unsold capacity values for NYC, G-J Locality, LI, and ROS are included to give a full representation of the data that underlies this report.

Beginning with November 2015, the amount of unoffered MW stayed very low in NYC, LI, and G-J Locality, totaling 149 MW in the Winter 2015-2016 and 115 MW in the Summer 2016. The total amount of unsold MW in NYC, and LI was 14.6 MW in the Winter 2015-2016, and 5.5 MW in the Summer 2016. There were no unsold MW in Load Zones, G, H, or I in the 2015/2016 Capability Year.

Section I.5.4.2 discusses explanations provided by Market Participants for unoffered MW in ROS in Winter 2015-2016. There were no unsold MW in ROS in the Summer 2016. Section I.5.4.3 presents an analysis of unsold MW in ROS in the Winter 2015-2016.

Table 3: Unoffered and Unsold MW

	Unoffered				Unsold			
Month	NYC	GHI	LI	ROS	NYC	GHI	LI	ROS
Nov-15	7.9	0.1	16.6	69.9	10.6	0	1	382.8
Dec-15	10	11.8	21.2	80.6	0	0	0	75.1
Jan-16	3.1	0.1	16.5	191.2	0	0	2	177.6
Feb-16	2.6	0.2	16.4	170.5	0	0	1	61.1
Mar-16	1.5	0.2	16.3	296.4	0	0	0	230.8
Apr-16	5.4	0.7	18.6	47.7	0	0	0	200
May-16	7.7	7.4	4.2	52	0	0	0	0

[26] The New York State Reliability Council issues an annual IRM Study Report, which presents the lowest feasible amount of capacity for the NYCA. Each report includes a comparison of the IRM and LCR values to the previous year along with an explanation of each parameter that contributed to the changes. The NYISO determines the actual LCRs for each Locality taking into consideration changes that have occurred since the Reliability Council approved the IRM Study Report. The 2016 IRM Study Report covering the period of May 2017 through April 2018 is available at: <http://www.nysrc.org/NYSRC_NYCA_ICR_Reports.html>.

[27] *See New York Independent System Operator, Inc.,* Resubmittal of August 24, 2010 Filing, Docket Nos. ER10-2210-000, EL07-39-000, and ER08-695-0004 at p. 16.

	Unoffered				Unsold			
Month	NYC	GHI	LI	ROS	NYC	GHI	LI	ROS
Jun-16	7.3	3	35	35.7	0	0	2.3	0
Jul-16	2.1	2.8		31.8	0	0	2.3	0
Aug-16	3.2	3.7	7.2	52	0	0	0.8	0
Sep-16	1.7	3.8	11.9	87.9	0	0	0	0
Oct-16	9.4	4.5	0.3	106	0.1	0	0	0

I.5.3 New York City and G-J Localities

To administer the Supply-side Mitigation Measures, the NYISO identifies Pivotal Suppliers by examining the NYC UCAP and G-J Locality UCAP that each ICAP Supplier, along with its Affiliated Entities, Controls in excess of the pivotal control threshold.[28] The UCAP under the Control of Pivotal Suppliers ("Mitigated UCAP") must be offered into the ICAP Spot Market Auction at a price at or below the lesser of the UCAP Offer Reference Level or the ICAP Supplier's Going-Forward Costs determined by the NYISO ("GFCs"). Chart 12 and Chart 14 illustrate the effects of the Supply-side Mitigation Measures. The UCAP Offer Reference Level, as shown in these Charts, becomes the price cap that the Pivotal Supplier must offer at or below in the ICAP Spot Market Auction, unless the Pivotal Supplier's GFCs are higher.

The level of unoffered and unsold MW can be inferred from Chart 12 and Chart 14 by comparing the Locality Spot Market Auction price to the UCAP Offer Reference Level, while Chart 13 and Chart 15 depict the levels of available generator and SCR UCAP in the Locality. The difference between the ICAP Spot Market Auction clearing price and UCAP Offer Reference Level can be attributed to Locality capacity that is either not offered or is offered at a price above the UCAP Offer Reference Level. Note that the Locality Spot Market Auction price will diverge from the UCAP Offer Reference Level when the NYCA ICAP Spot Market Auction sets the Locality ICAP Spot Market Auction price.[29] This divergence is the result of the auction rules, and is not caused by unoffered or unsold Locality Capacity.

[28] *See* Market Services Tariff Sections 23.2.1 and 23.4.5.

[29] In the 2015/2016 Capability Year, the NYCA ICAP price set the Long Island ICAP price in May 2016 and June 2016.

Chart 12: NYC Mitigation Results[30]

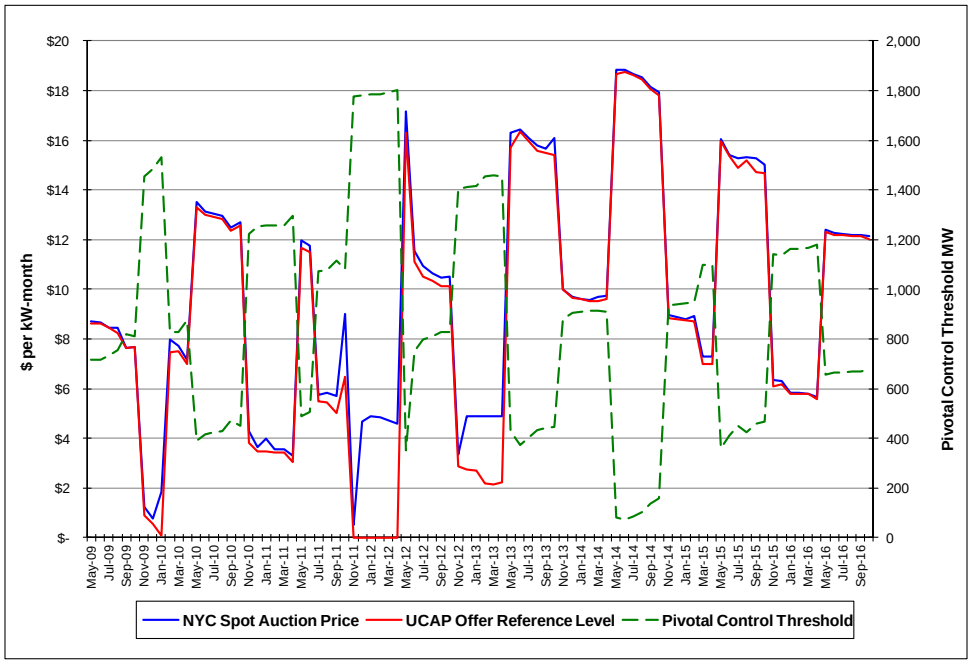
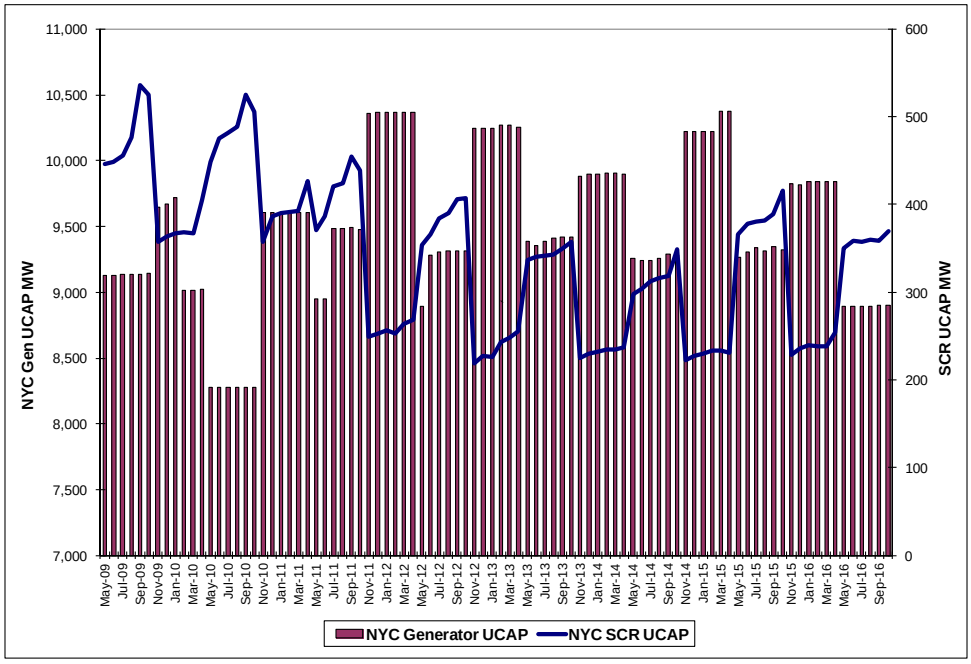


Chart 13: NYC Generator and SCR UCAP



[30] Per Services Tariff Section 23.2, a "Pivotal Supplier" in NYC needs to control at least 500 MW of Unforced Capacity, and a specified portion of the capacity necessary to meet the NYC LCR in an ICAP Spot Market Auction.

Chart 14: G-J Locality Mitigation Results[31]

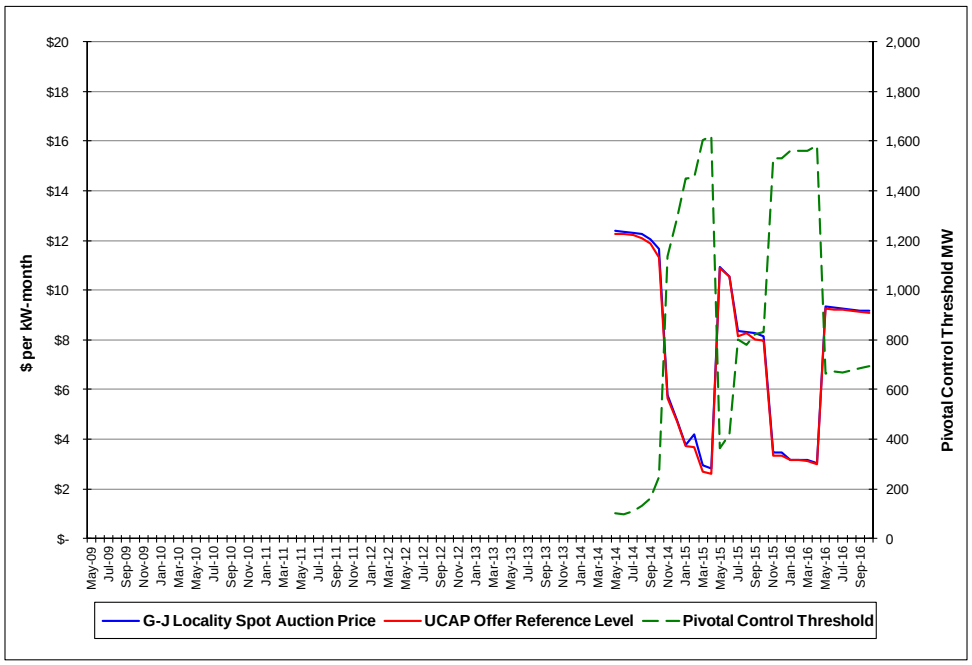
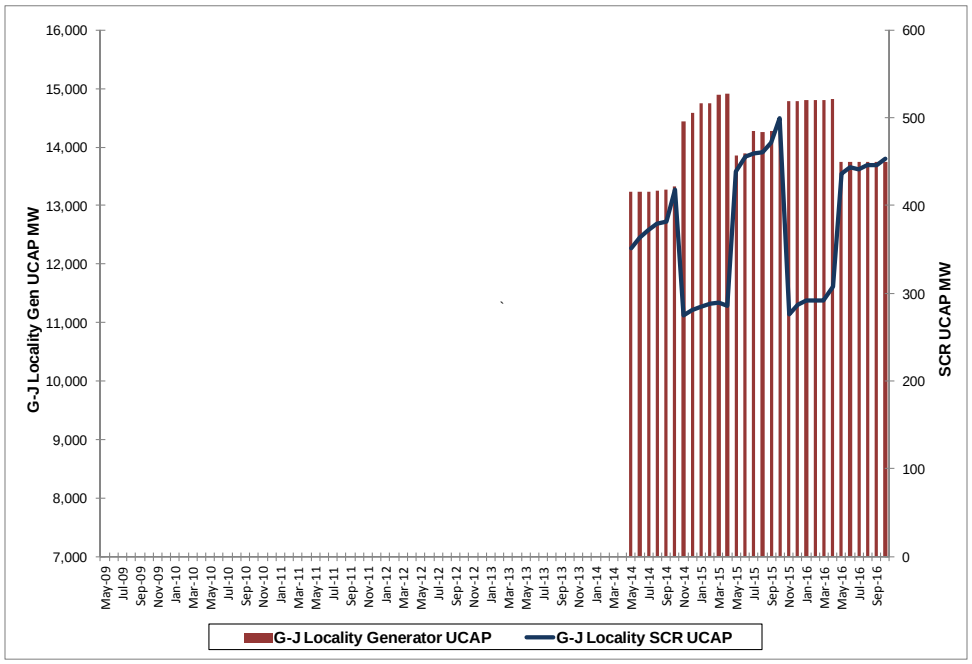


Chart 15: G-J Locality Generator and SCR UCAP



[31] Per Services Tariff Section 23.2, a "Pivotal Supplier" in the G-J Locality needs to control at least 650 MW of Unforced Capacity, and a specified portion of the capacity necessary to meet the G-J Locality LCR in an ICAP Spot Market Auction.

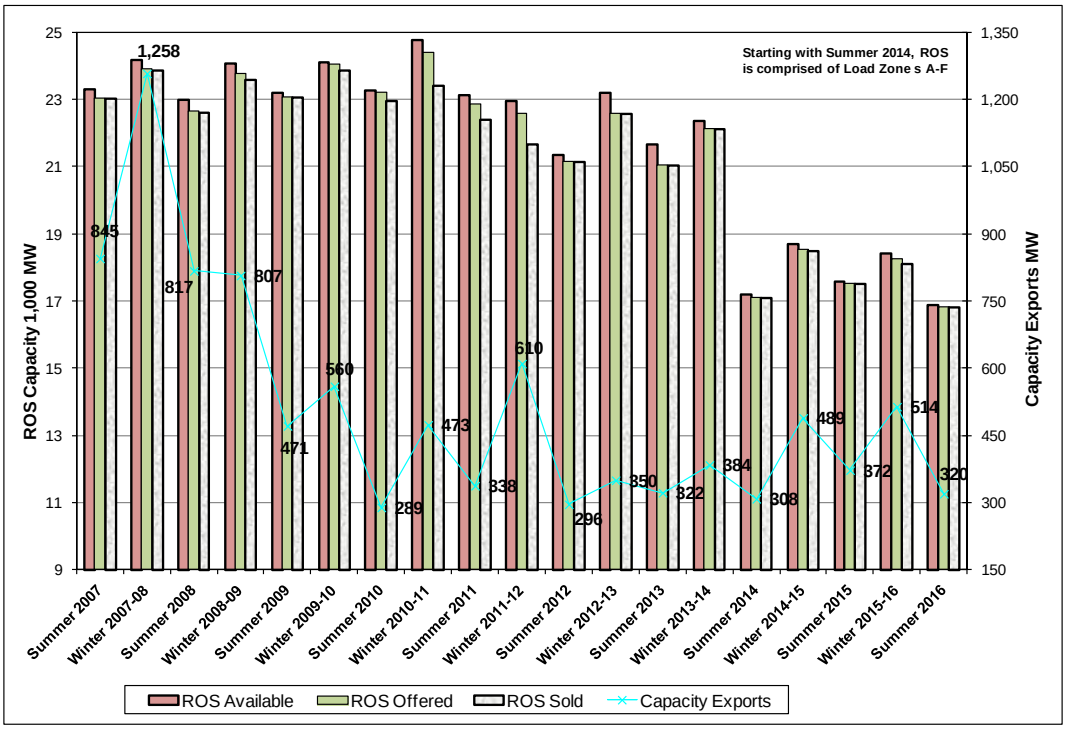
I.5.4 Rest of State

I.5.4.1 Overview

This section of the report addresses possible withholding of Capacity located in the Rest of State[32] from November 2015 through October 2016. For this review, the NYISO conducted a detailed analysis of unoffered and unsold capacity. This section of the report pertains primarily to the NYCA but also contains some explanations for unoffered capacity in NYC, the G-J Locality, and Long Island.

Chart 16 shows the monthly average values over each Capability Period for four ROS capacity types: available, offered, sold, and exported MW.

Chart 16: Rest of State Capacity Available, Offered, Sold and Exported



Examination of Rest of State capacity data pertaining to individual Market Participants revealed general patterns in unsold and unoffered capacity. The patterns suggest a three-way classification of suppliers by market sector: all generation-owning transmission owners, ROS generation owners, and other suppliers (a category which includes SCRs.) Table 4 of this December 2016 Report summarizes the monthly averages of unoffered and unsold capacity for each Capability Period since the Summer 2008.

Table 4: ROS Unoffered and Unsold Capacity MW by Type of Market Participant

ROS Monthly Average Unoffered Capacity MW by Type of Market Participant

[32] Prior to the Summer 2014 Capability Period, ROS consisted of transmission zones A through I; starting May 2014, ROS is defined as transmission zones A through F.

	GenCo	% of GenCo	Others	% Other	TO	% TO	Capability Period Monthly Average
Summer 2008	114.2	32.74%	30.32	8.69%	204.37	58.57%	348.9
Summer 2009	49.2	41.06%	1.42	1.18%	69.25	57.76%	119.9
Summer 2010	98.1	37.13%	7.87	2.98%	158.22	59.90%	264.2
Summer 2011	54.1	25.80%	76.70	36.56%	78.97	37.64%	209.8
Summer 2012	60.1	29.48%	75.32	36.96%	68.40	33.56%	203.8
Summer 2013	486.6	78.28%	64.20	10.33%	70.77	11.39%	621.5
Summer 2014	58.9	62.03%	24.23	25.52%	11.82	12.45%	94.95
Summer 2015	21.3	26.97%	30.73	38.98%	26.85	34.05%	78.9
Summer 2016	6.6	10.81%	15.5	25.42%	38.8	63.77%	60.9

ROS Monthly Average Unoffered Capacity MW by Type of Market Participant							
	GenCo	% of GenCo	Others	% Other	TO	% TO	Capability Period Monthly Average
Winter 2008-2009	236.8	78.54%	0.57	0.19%	64.13	21.27%	301.5
Winter 2009-2010	93.3	48.14%	9.45	4.88%	91.02	46.98%	193.7
Winter 2010-2011	212.6	57.39%	30.35	8.19%	127.45	34.41%	370.4
Winter 2011-2012	138.5	36.98%	93.65	25.00%	142.42	38.02%	374.6
Winter 2012-2013	437.3	73.43%	20.98	3.52%	137.25	23.05%	595.5
Winter 2013-2014	118.2	50.12%	54.12	22.94%	63.55	26.94%	235.9
Winter 2014-2015	70.6	41.63%	47.02	27.72%	51.98	30.65%	169.6
Winter 2015-2016	82.5	57.83%	9.2	6.41%	51.0	35.76%	142.7

ROS Monthly Average Unsold Capacity MW by Type of Market Participant							
	GenCo	% of GenCo	TO	% TO	Others	% Other	Capability Period Monthly Average
Summer 2008	61.6	99.49%	0.3	0.51%	0	0%	61.9
Summer 2009	0	0%	0	0%	0	0%	0
Summer 2010	15.4	35.56%	27.8	64.44%	0	0%	43.2
Summer 2011	479.9	91.01%	44.9	8.52%	2.5	0.47%	527.3
Summer 2012	0	0%	0	0%	0	0%	0
Summer 2013	11.6	100%	0	0%	0	0%	11.6
Summer 2014	0	0%	0	0%	0	0%	0
Summer 2015	0	0%	0	0%	0	0%	0
Summer 2016	0	0%	0	0%	0	0%	0

ROS Monthly Average Unsold Capacity MW by Type of Market Participant							
	GenCo	% of GenCo	TO	% TO	Others	% Other	Capability Period Monthly Average
Winter 2008-2009	178.7	97.65%	4.3	2.35%	0	0%	183.0
Winter 2009-2010	73.4	95.30%	3.6	4.70%	0	0%	77.0
Winter 2010-2011	895.6	89.53%	104.7	10.47%	0	0%	1000.3
Winter 2011-2012	811.3	86.49%	88.4	9.43%	38.35	4.09%	938.0
Winter 2012-2013	8.3	60.98%	5.3	39.02%	0	0%	13.7
Winter 2013-2014	0	0%	7.0	100%	0	0%	7.0
Winter 2014-2015	5.0	7.79%	59.0	92.21%	0	0%	64.0
Winter 2015-2016	127.5	67.86%	17.6	9.38%	42.8	23%	187.9

Salient facts from the above tables are:

- The group of all ROS generation-owning Transmission Owners consistently had unoffered capacity which ranged from 11% to 65% of total unoffered capacity.
- The group of all ROS generation-owning Transmission Owners had up to 23% of offered and unsold capacity.
- The group of generation owners consistently had unoffered capacity which ranged from 25% to 79% of total unoffered capacity.

- The group of generation owners had unsold capacity which accounted for 0% to 100% of total capacity that was offered and unsold capacity.
- The group of all others including SCRs consistently had unoffered capacity that ranged from 0% to 39% of total unoffered capacity.
- The group of all others including SCRs had capacity that was offered and unsold capacity that ranged from 0% to 100%.

I.5.4.2 Analysis of ROS Unoffered Capacity

This section provides a detailed analysis of the unoffered capacity located in the ROS. The section also presents the maximum price impact of the unoffered capacity, in each month and averaged over the six months of each Capability Period. Market Participants with a significant amount of unoffered capacity were provided an opportunity to justify their unoffered MW. Generally, responses suggest that the Installed Capacity Suppliers' reasons for not offering the Capacity were benign, and none of the instances evidenced behavior intended to artificially raise prices.

Instances of unoffered capacity in Mitigated Capacity Zones are potentially subject to a non-discretionary penalty assessment (Services Tariff Section 23.4.5.4.2), and are not included in this section.

The NYISO contacted each Installed Capacity Supplier with at least 15 MW of unoffered capacity in any one month during the period November 2015 through April 2016 for an explanation of why it did not offer all of its capacity. There were six Market Participants with 15 MW or more of unoffered capacity in any given month in ROS, and the NYISO sought and received explanations from each of them.[33]

- Two Market Participants reported that their failure to offer capacity into the ICAP market was due to an administrative oversight. Each instance was limited to up to two months, and the average unoffered capacity of these instances is 15 MW. These responses cited human error. The Market Participants reported that new procedures would be put in place to avoid failing to offer capacity in the future.
- Four Market Participants reported economic, environmental, and/or physical conditions as cause for not offering capacity. These responses detailed causes including conservative operating strategies, change in status (such as retirement or mothball) and compliance with an External Control Area's rules.

Table 5 shows the maximum price impact of the unoffered capacity (15 MW or higher per incident) based on the slopes of the ICAP Demand Curves for the relevant Capability Periods. The maximum price impact is calculated as the lesser of (1) the product of the monthly unsold MW and the slope of the ICAP Demand Curve and (2) the ICAP Spot Market Auction Market-Clearing Price, since the price impact cannot exceed the auction price. Monthly values and seasonal averages of the maximum price impact are reported. The maximum price impact of the unoffered capacity, averaged over the six months of the Winter 2015-2016 and Summer 2016 Capability Periods, was $0.24/kW-month (ranging from $0.07/kW-month to $0.54/kW-month) and $0.09/kW-month (ranging from $0.05/kW-month to $0.19/kW-month), respectively.

[33] Confidential Attachment I provides a detailed summary of the Market Participants' explanations for having unoffered capacity.

Table 5: Maximum Price Impact of ROS Unoffered Capacity (15MW+)[34]

Month	Total Unoffered MW	Monthly Maximum Price Impact	Seasonal Average Maximum Price Impact
Nov-15	29.5	$0.07	$0.24
Dec-15	29.5	$0.07	
Jan-16	163.7	$0.38	
Feb-16	139.9	$0.32	
Mar-16	279.1	$0.54	
Apr-16	29.5	$0.07	
May-16	20.5	$0.05	$0.09
Jun-16	20.5	$0.05	
Jul-16	20.5	$0.05	
Aug-16	20.5	$0.05	
Sep-16	63.2	$0.15	
Oct-16	79.7	$0.19	

[34] The price impact of *all* ROS unoffered capacity average $0.31/kW-month for the Winter 2015-2016 (ranging from $0.11/kW-month to $0.54/kW-month), and $0.15/kW-month for the Summer 2016 (ranging from $0.08/kW-month to $0.25/kW-month). The monthly price impact cannot exceed the ICAP Spot Market Auction clearing price for that month.

I.5.4.3 Analysis of ROS Unsold Capacity

This section analyzes and reports on ROS unsold capacity in the ICAP Spot Market Auction. It also presents the maximum price impact of the ROS unsold capacity, in any one month and the price impact average for the six months of the Capability Period. Attachment II summarizes masked unsold capacity offers.[35]

For each Installed Capacity Supplier that had 15 MW or more of unsold capacity in a given month, the NYSIO (a) requested and received its explanation of its behavior; and (b) performed a unit-specific GFC analysis if the aggregated monthly average price impact over the capability period is greater than or equal to $0.20/kW-month, or $0.35/kW-month in any month.

The process utilized by the NYISO in performing this analysis only requires the development of a unit-specific GFC if the generator had an ICAP Spot Market Auction offer that was greater than the generator's class average Net GFC with half net revenues.[36] Because under the facts presented the NYISO was required to calculate unit-specific GFCs for the Installed Capacity Suppliers meeting the price-impact thresholds described above, the class average Net GFC with half net revenues step was not performed because it was not necessary.

I.5.4.4 Monthly Price Impacts

Table 6 includes the average monthly maximum price impact of unsold capacity for each Capability Period. The average price impacts were $0.36/kW-month in Winter 2015-2016 and $0.00/kW-month in the Summer 2016. Monthly maximum price impact exceeds the $0.35/kW-month threshold for months of November 2015, January, March, and April 2016.

Table 6: Maximum Price Impact of ROS Unsold MW

Month	Total Unsold MW	Monthly Maximum Price Impact	Seasonal Average Maximum Price Impact
Nov-15	382.8	$0.46	$0.36
Dec-15	75.1	$0.17	
Jan-16	177.6	$0.41	
Feb-16	61.1	$0.14	
Mar-16	230.8	$0.53	
Apr-16	200.0	$0.46	
May-16	0.0	$0.00	$0.00
Jun-16	0.0	$0.00	
Jul-16	0.0	$0.00	
Aug-16	0.0	$0.00	
Sep-16	0.0	$0.00	
Oct-16	0.0	$0.00	

[35] Attachment III is a redacted version of the unsold capacity offers.

[36] Going Forward Cost terminology and elements for purposes of ROS unsold capacity analysis were discussed in detail at Table 7 in the 2012 Annual Installed Capacity Report. *See* 2012 Annual Report at Table 7, filed in FERC Docket Nos. ER01-3001-000, E03-647-000 (Feb. 14, 2013) (; *see also*, *New York Indep. Sys. Operator, Inc*. Docket Nos. ER01-3001-000, E03-647-000, "Updated Status Report on Stakeholder Discussions Regarding Annual Installed Capacity Demand Curve Reports and Plan for Further Reports at Attachment A (Nov 12, 2009).

In addition to calculating the monthly maximum and average maximum price impacts, price impacts of unsold capacity offered at varying levels of Going Forward Costs ("GFCs"), as described in Table 7, were estimated. For the purpose of this report, the GFCs are defined as costs that could be reasonably expected to be avoided if the plant was mothballed for at least one year less projected net revenues from energy and ancillary services markets. These GFCs may provide insight into why a generator offered its capacity at a non-zero offer price. In this analysis, GFCs are calculated for the entire capacity of the plant.

Generators face uncertainty about net revenues, among other things, which may influence the prices at which they offer capacity. To account for this uncertainty, the calculated GFCs including varying levels of net revenues: full, half, and no net revenues. Confidential Attachment IV to this report shows the GFCs each Installed Capacity Supplier with at least 15 MW of unsold capacity in any one month during November 2015 – April 2016 time period less the varying levels of net revenues. Table 7 describes and defines the GFCs.

Table 7: Going Forward Cost Definitions

Avoidable Costs (ACs)	Costs that would be avoided or deferred if a generator was mothballed for a year or more, based on the calculation of the industry average cost data for the type of generator.
Net energy and ancillary services revenues (net revenues)	Estimated energy plus ancillary services revenues minus estimated production costs, with a minimum value of zero.
GFCs with full net revenues	ACs minus net revenues. This value is used to represent Net GFCs with certainty of net revenues.
GFCs with half net revenues	ACs minus 0.5 times net revenues. This value is used to represent Net GFCs with some uncertainty.
GFCs with no net revenues	ACs. This value is used to represent Net GFCs without certainty of net revenues.

The Winter 2015-2016 ICAP Strip Auction Price in ROS is $1.25/kW-month, while ICAP Monthly Auction Prices vary between $0.35/kW-month and $1.75/kW-month, and the ICAP Monthly Auction Price for the upcoming auction month varied between $0.40/kW-month and $1.65/kW-month for Winter 2015-2016 Capability Period. Table 8 below shows the amount of unsold capacity by month for which calculated GFCs with full net revenue were exceeding the ICAP Monthly Auction Price for the upcoming auction month.

Table 8: ROS Unsold MW with reported GFCs costs above ICAP Monthly Auction Prices (15MW+)

Month	Total Unsold MW	ICAP Monthly Auction Price	Total Unsold with GFCs above ICAP Monthly Auction Price
15-Nov	381.7	$0.66	225.1
15-Dec	75.1	$1.25	75.1
16-Jan	177.6	$1.65	77.6
16-Feb	61.1	$1.34	61.1
16-Mar	230	$0.60	230
16-Apr	200	$0.40	200

There are three generators associated with unsold capacity and an SCR resource. Attachments IV summarizes the confidential information provided by the Market Participants in response to the NYISO's request for cost information and an explanation of their bidding behavior.

All Market Participants submitted the requested information along with the following qualitative explanations for their behavior:

- The use of bidding strategies based on ICAP Strip and ICAP Monthly Auction prices, as well as in-house forecasts of the expected ICAP Spot Auction Prices

- The use of bidding strategies that reflect unit-specific 'monthly' going forward costs (*i.e.,* the avoidable costs associated with providing capacity for a given month)

After collecting unit-specific cost information, the NYISO performed ICAP Spot Market Auction simulations for a more detailed understanding of how the non-zero price offers may have affected Market Clearing Prices. The NYISO simulated auction outcomes under three scenarios: GFCs with full net revenues, GFCs with half net revenues and GFCs with no net revenues. These scenarios are labeled scenarios 1, 2, and 3 in Table 9. The NYISO performed the simulations by replacing offers that originally did not clear with the unit-specific GFC at varying levels of net revenues. It is important to note that offers were only replaced with the GFCs value if the offers were not awarded any MW. If the offer was marginal and only cleared a portion of its MW, or if the offer was inframarginal, the specific offers at the original offer prices were used. The offers that were analyzed for purposes of the simulations are provided in Attachment II.[37]

Table 9 shows the results of the auction simulations in each of the scenarios, for each month of the analysis period (Winter 2015/2016). For comparison, the original ROS ICAP Spot Market Auction prices are reported, in addition to the simulated ROS ICAP Spot Auction Prices under each of the scenarios. The simulation price deltas relative to the original clearing prices should not be positive. This results from the simulation methodology stated in the previous paragraph: only offers that entirely did not clear and which were originally priced above the ICAP Monthly Auction clearing price were replaced with GFCs. The amount of the price reduction shown in the simulations is strictly decreasing as half or no revenues are recognized in the GFC calculations. That outcome is consistent with what would be expected.

[37] The unmasked unsold capacity offers are provided in Confidential Attachment III.

Table 9: ROS ICAP Spot Auction Price Impact Analysis Results

Month	ROS Spot Prices	S1[1]	S2[2]	S3[3]	S1 delta	S2 delta	S3 delta
Nov-15	$0.46	$0.46	$0.46	$0.46	$0.00	$0.00	$0.00
Dec-15	$1.28	$1.28	$1.28	$1.28	$0.00	$0.00	$0.00
Jan-16	$1.37	$1.37	$1.37	$1.37	$0.00	$0.00	$0.00
Feb-16	$1.46	$1.46	$1.46	$1.46	$0.00	$0.00	$0.00
Mar-16	$0.54	$0.54	$0.54	$0.54	$0.00	$0.00	$0.00
Apr-16	$0.58	$0.58	$0.58	$0.58	$0.00	$0.00	$0.00

Notes to Table 9:
Note 1: GFCs with full net revenues
Note 2: GFCs with half net revenues
Note 3: GFCs with no net revenues

The results of the simulations shown in Table 9 indicate that the NYCA ICAP Spot Market Auction prices would have not potentially been lower if the offers that entirely did not clear were offered at the GFC values. In all three scenarios, there would be no price impact. As noted earlier, the simulations were performed by replacing only offers that entirely did not clear with GFCs, if entire offers were replaced with GFCs, it would be possible for the simulated prices to exceed the original prices. However, the associated potential zero price impact do not indicate that economic withholding occurred.

The analysis shows that no economic withholding occurred over the Winter 2015-2016. During this period, the NYCA ICAP Spot Market Auctions cleared at or below the ICAP Strip and Monthly Auctions clearing prices, which are reflecting market place expectation for upcoming Spot Auction Market Clearing Prices. In addition the Winter 2015-2016 NYCA ICAP Spot Market Auctions cleared below the estimated Going Forward Costs for the majority of the ROS generators with unsold capacity.

II. NYISO Report on New Generation Projects

In its October 23, 2006 order, the Commission ordered the NYISO to submit "a list of investments in new generation projects in New York (including a description and current status of each such project), regardless of the stage of project development at the time of the filing."[38] The NYISO keeps a list of Interconnection Requests and Transmission Projects for the New York Control Area that includes information about all generation projects in the State that have requested interconnection.

The NYISO interconnection process for generators and merchant transmission facilities is described in two attachments of the NYISO OATT: OATT Attachment X entitled, "Standard Large Facility Interconnection Procedures," and OATT Attachment Z entitled, "Small Generator Interconnection Procedures." OATT Attachment X applies to Generating Facilities that exceed 20 MW in size and to Merchant Transmission Facilities, collectively referred to as "Large Facilities." OATT Attachment Z applies to Generating Facilities no larger than 20 MW.

Under OATT Attachment X, Developers of Large Facilities must submit an Interconnection Request to the NYISO. The NYISO assigns a Queue Position to all valid Interconnection Requests. Under OATT Attachment X, proposed generation and merchant transmission projects undergo up to three studies: the Feasibility Study, the System Reliability Impact Study, and the Class Year Interconnection Facilities Study. The Class Year Interconnection Facilities Study is performed on a Class Year basis for a group of eligible projects pursuant to the requirements of Attachment S of the NYISO OATT. Under OATT Attachment Z, proposed small generators undergo a process that is similar, but with different paths and options that are dependent on the specific circumstances of the project.

Proposed generation and transmission projects currently in the NYISO interconnection process are listed on the list of Interconnection Requests and Transmission Projects for the New York Control Area ("NYISO Interconnection Queue"). The generation projects on that list are shown in Attachment IV to this report, which is dated November 30, 2016. The NYISO updates the NYISO Interconnection Queue on at least a monthly basis and posts the most recent list on the NYISO's public web site[39] at the "Planning Documents and Resources", underneath the "Interconnection Studies" section.

The status of each project on the NYISO Interconnection Queue is shown in the column labeled "S." An explanation of this column is provided in Attachment V to this report. Also, note that the proposed In-Service Date for each project is the date provided to the NYISO by the respective Owner/Developer, is updated only on a periodic basis, and is subject to change.

[38] *See New York Independent System Operator Inc.*, 117 FERC ¶ 61,086, at P 14 (2006).

[39] *See* <http://www.nyiso.com/public/markets_operations/services/planning/documents/index.jsp>.

III. New Generation Projects and Net Revenue Analysis

III.1 Overview

The ICAP Demand Curves are designed to send efficient price signals to developers to build new generation and to generation owners to invest in existing generation when and where it is needed. In past ICAP annual reports, the NYISO stated that it is difficult to relate the investment in new generation to the ICAP Demand Curves given the lead-time required to site, develop, and construct new generation, and to address other barriers to new entry; however, the ICAP Demand Curves provide transparency for projecting Spot Market capacity price signals that developers and owners consider prior to making investment decisions. Further, since the creation of the new G-J Locality (encompassing Load Zones G, H, I and J) and the implementation of the ICAP Demand Curves for it, there has been investment in resources in Load Zones G, H, I, and J. This section of the report provides net revenue analysis on a comparable basis to that used in the prior reports.

III.2 Market Design Developments to Enhance ICAP Demand Curve Performance

On January 28, 2014, FERC accepted the proposed tariff revisions that implemented the current ICAP Demand Curves, including the first ICAP Demand Curve for the G-J Locality (the "January 2014 Order").[40] The January 2014 Order accepted the NYISO's proposal to use the dual-fuel F-class frame combustion turbine (Siemens SGT6-5000(F)) with selective catalytic reduction emission controls ("selective catalytic reduction") to develop the ICAP Demand Curves for NYC, LI, and the G-J Locality for purposes establishing the ICAP Demand Curves effective through April 2017. A gas-only Siemens SGT6-5000(F) frame combustion turbine with an operational limit in lieu of selective catalytic reduction was selected as the representative peaking plant for the NYCA ICAP Demand Curve. The current ICAP Demand Curves are sending appropriate price signals. The independent consultant's review of the ICAP Demand Curves for the Capability Year beginning May 2017, with input from stakeholders and the NYISO, was completed. As described in Section 1.3.2 of this report, on November 18, 2016 the NYISO filed, the tariff revisions proposing new ICAP Demand Curves for the 2017/2018 Capability Year, and proposing methodologies and inputs to be used by the NYISO in conducting the tariff-prescribed annual updates for the 2018/2019 through 2020/2021 Capability Years.

III.3 Interconnection Queue Projects

The NYISO's interconnection queue lists the projects that are being and will be evaluated in the interconnection study processes. In-service dates stated on the interconnection queue for projects are provided by the developers, and the NYISO periodically updates the queue (Attachment V). Chart 17 was compiled using data from Attachment V. Chart 17 depicts the amount of generation listed on the NYISO's interconnection queue since 2003 in NYC, LI, and Rest of State ("ROS"), and starting with Summer 2014 Capability Period it includes the G-J Locality. Wind projects are depicted separately from generation projects with other fuel types. The ROS depiction in Chart 17 does account for the change in its composition

[40] *New York Independent System Operator, Inc.*, 146 FERC ¶ 61,043 (2014).

starting in Summer 2014 Capability Period with the creation of the G-J Locality ("G-J"). From 2003 through April 2014, ROS was comprised of Load Zones A through I. Since May 2014, it has been comprised of Load Zones A through F.

Chart 17: NYISO Interconnection Queue Projects

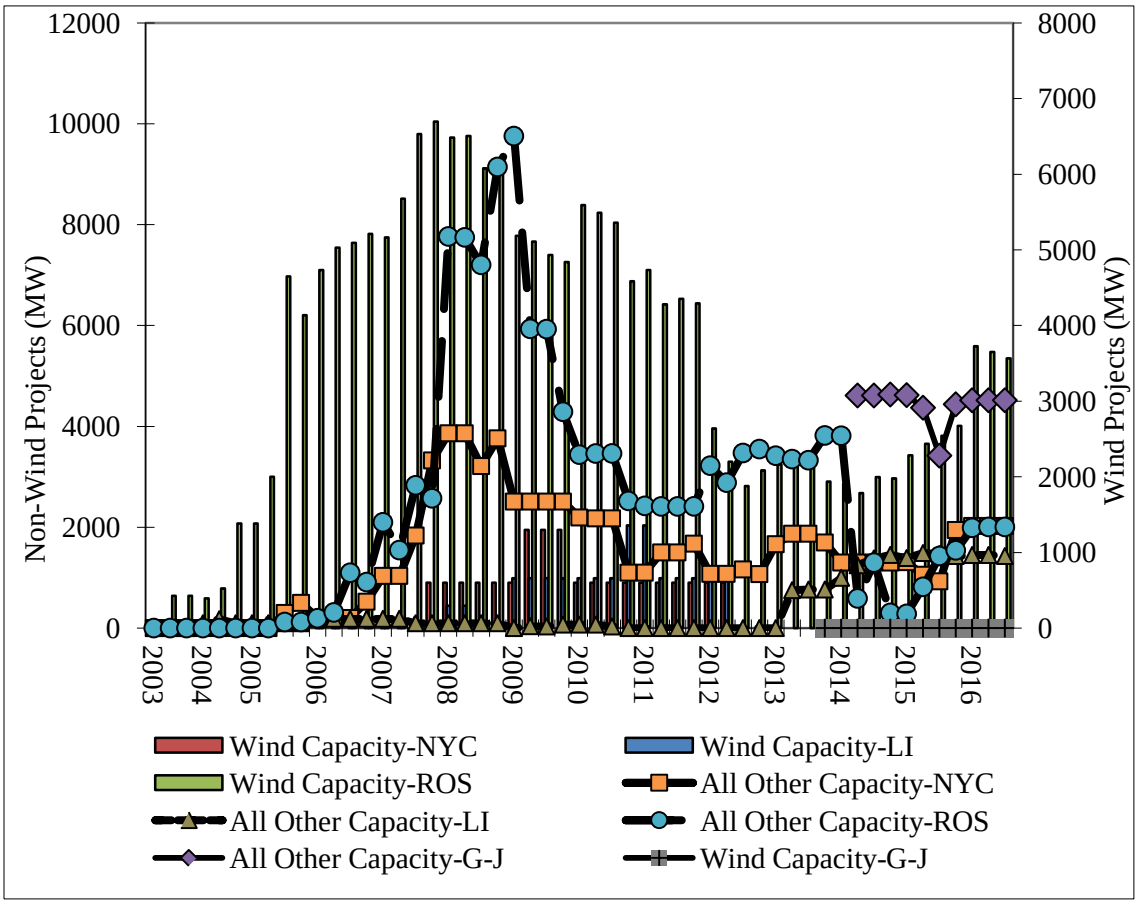


Chart 17 reports only those projects that were placed in the queue after May 1, 2003.[41] Since the queue includes projects at various stages, for purposes of the analysis for this section of the report, the NYISO included those projects that are identified as active. Accordingly, pre-2005 period projects with codes 'I', 'W', or 'C' were excluded; and for 2005 and beyond projects, status codes 0, 1, 12, 13, and 14 were omitted.

The number of generation projects and the amount of MW in the interconnection process has increased since the ICAP Demand Curves became effective in May 2003. The number of

[41] Each project in the queue is provided a status code that identifies its position in the study process that ranges from the initial scoping meeting to entering service. Prior to 2005, each project was provided a status-code based on the NYISO System Reliability Impact Study from the following: *P=Pending, A=Active, I=Inactive, R=Under Review, C=Completed, W=Withdrawn.* Starting in 2005, the classification system was changed and status-codes were based on the standard steps in the NYISO's interconnection process as follows: *1=Scoping Meeting Pending, 2=FES Pending, 3=FES in Progress, 4=SRIS Pending, 5=SRIS in Progress, 6=SRIS Approved, 7=FS Pending, 8=Rejected Cost Allocation/Next FS Pending, 9=FS in Progress, 10=Accepted Cost Allocation/IA in Progress, 11=IA Completed, 12=Under Construction, 13=In Service for Test, 14=In Service Commercial, 0=Withdrawn, where FES=Feasibility Study, SRIS=System Reliability Impact Study, FS=Facilities Study.*

MW associated with projects based on technologies other than wind (measured on the left Y-axis, above) did not increase significantly until the summer of 2005. Chart 17 shows that beginning with the Winter 2007-2008 Capability Period, the number of MW listed in the interconnection queue for the Rest of State rose sharply, particularly new non-wind projects. By the end of 2011, this trend had largely reversed to pre-Winter 2007-2008 Capability Period levels. The sharp decrease in new ROS non-wind generation shown in Chart 17 beginning with the Summer 2014 Capability Period is indicative of Load Zones G, H, I no longer being part of ROS. Wind and non-wind generation have increased in both the ROS and all localities since 2015. No wind projects were proposed in NYC, LI and G-J in 2015 or to-date in 2016.

In addition to the proposed projects reflected in Chart 17, there are proposed HVDC transmission lines. Two of the projects are from External Control Areas, one project with a terminus in NYC, and the other project with a terminus in LI. A third project is proposed to be a connection between Load Zone F (in the ROS) and Load Zone H (in the G-J Locality). If these projects receive CRIS and Unforced Capacity Deliverability Rights ("UDRs"), the UCAP associated with the UDRs can be used to satisfy the applicable LCR in which the facility has a terminus.

III.4 Proposed Resource Additions

On October 18, 2016, the NYISO Board of Directors approved the 2016 Reliability Needs Assessment Report (RNA).[42] This report assessed resource adequacy, transmission security and transmission adequacy of the New York Control Area (NYCA) bulk power transmission system for calendar years 2017 through 2026.

As mentioned above, the G-J Locality and its ICAP Demand Curve are providing market price signals for resources to locate new units and invest in existing units, including returning capacity to service in this area. For example, CPV Valley and Taylor Biomass are new generation projects being built in Load Zone G, and Bowline 2 has requested Additional CRIS MW in order to restore its full capacity. Other indications that the Demand Curve price signals are working is that there are other units in the NYCA that are returning to service. These resource additions are included among the capacity resource changes summarized in Table 10

Table 10: Capacity Resource Changes since the 2014 RNA Base Case[43]

Zone	CRIS MW	Status
A	644.4	Mothballed
A	394.5	Retired
B	582	Notice of Intent to retire
B	15.8	Retired
C	48.9	Increased CRIS
C	308.8	Mothballed
C	858.9	Notice of Intent to retire

[42] The 2016 RNA report ("2016 RNA Report) is available at: <http://www.nyiso.com/public/webdocs/markets_operations/services/planning/Planning_Studies/Reliability_Planning_Studies/Reliability_Assessment_Documents/2016RNA_Final_Oct18_2016.pdf>.

[43] Based on Table 4-4 and Table 4-5 in the 2016 RNA Report.

C	69.9	Retired
D	215.2	Increased CRIS
D	18.6	Mothball to retire
E	20	Increased CRIS
E	79.9	New unit
G	10	Increased CRIS
G	699	New unit
J	24.2	Increased CRIS
J	165.6	Mothballed
K	6	Retired

Table 11 presents the market-based solution projects and Transmission Owners' plans that were submitted in response to previous requests for solutions pursuant to the NYISO's reliability planning process. These solutions were included in the 2012 Comprehensive Reliability Plan. In addition to these solutions, there are a number of other projects in the NYISO Interconnection Queue that are moving forward through the interconnection process.

Table 11: Current Status of Tracked Market-Based Solutions and Transmission Owner Plans

Queue position	Project	Submitted	Zone	Original In-Service Date	Name Plate (MW)	CRIS (MW)	Summer (MW)	Proposal Type	Current Status	Included in 2016 RNA Base Case
339	Station 255	CRP2012	B	-	N/A	N/A	N/A	TO Plan	Q4 2019-2020	Yes
-	Clay-Teall #10 115kV	CRP2012	C	2016	N/A	N/A	N/A	TO Plan	Q4 2017	Yes

III.5 Net Revenue Analysis

FERC's order directing the NYISO to submit an annual ICAP report stated that the NYISO should include a complete net revenue analysis to provide information about whether NYISO market revenues are adequate to incent new capacity resources in regions where capacity is needed. Where there is growing pressure on existing capacity, *e.g.*, the reserve margin is shrinking; there should be a rise in combined revenues from the Energy and Capacity markets.

As in the prior annual reports, the NYISO examined the level of "need" for additional capacity by looking at the percentage of capacity in excess of the applicable minimum Installed Capacity requirement. The NYISO then looked at possible revenues from the Capacity, Energy, and Ancillary Services markets for a hypothetical gas turbine which is similar to what was used to complete the net revenue analysis in the prior reports. This analysis shows, in general, that there is a tendency for revenues to increase as the percentage of excess capacity decreases and vice versa.

III.5.1 Quantification of "Need"

For purposes of this analysis, the excess of capacity relative to the applicable minimum requirement was used as a proxy for need. Capacity margin is calculated as:

$$\textbf{Capacity margin \%} = \frac{\textbf{Availability}}{\textbf{Requirement}} \times 100$$

Using this definition, a value in excess of 100% reflects an excess capacity margin. A relatively high value indicates less of a need for additional capacity and, conversely, declining values suggest an increased need.[44] Table 12 displays the required and available amounts of UCAP as calculated from detailed data from monthly certified capacity, auction offers, and sales awards.

Table 12: Summer Available Capacity vs. Required Capacity

		2011	2012	2013	2014	2015	2016
NYCA	Requirement (MW)	34,684	35,076	35,467	35,812	35,920	35,430
	Availability (MW)	38,041	37,881	36,177	36,081	37,340	36,350
	Capacity margin %	**109.7%**	**108.0%**	**102.0%**	**100.7%**	**104.0%**	**102.6%**
NYC	Requirement (MW)	8,832	8,897	9,325	9,471	9,272	8,589
	Availability (MW)	9,660	9,696	9,721	9,568	9,680	9,251
	Capacity margin %	**109.4%**	**109.0%**	**104.2%**	**101.0%**	**104.4%**	**107.7%**
LI	Requirement (MW)	5,052	4,961	5,394	5,431	5,284	5,207
	Availability (MW)	5,952	5,858	5,740	5,675	5,618	5,679
	Capacity margin %	**117.8%**	**118.1%**	**106.4%**	**104.5%**	**106.3%**	**109.1%**
G-J	Requirement (MW)	n/a	n/a	n/a	13,495	13,934	13,515
	Availability (MW)	n/a	n/a	n/a	13,610	14,581	14,182
	Capacity margin %	**n/a**	**n/a**	**n/a**	**100.9%**	**104.6%**	**104.9%**

In Table 12, the NYCA Minimum Unforced Capacity Requirement is based on the annual NYCA Minimum Installed Capacity Requirement. For each of the NYC, LI, and G-J Localities, the respective Locational Minimum Unforced Capacity Requirement is derived from their respective Locational Minimum Installed Capacity Requirement. "Available Capacity" reflects the aggregate of UCAP ratings excluding the amount of imported capacity via external transactions.[45] The NYCA available capacity decrease from 2015 to 2016 of 990 MW can be seen in the resource changes listed in Table 10.

Since November 2014, the ICAP Demand Curves were established based on a different peaking plant than that used to establish prior curves. For the 2014 data in Table 12, the NYISO assumed a revenue requirement based on the same plant used for the analysis in the 2013 annual report; *i.e.*, the respective peaking plant used to establish the ICAP Demand

[44] The use of "need" in this context is based on the revenue analysis and is not intended to infer whether there may be a system-specific need.

[45] In contrast to the forecasted figures used in the Gold Book, this table reflects data based on realized outcomes over the Summer Capability Periods.

Curves for the 2013-2014 Capability Year. This representation provides a direct comparison of the revenues and revenue margins for the twelve months of market outcomes prior to 2014-2015 Capability Year to those in previous annual reports. For the 2014 G-J Locality revenue analysis, the NYISO used cost assumptions for the LMS100 used in the NYCA region and adjusted the costs based upon information developed by the ICAP Demand Curve reset independent consultant in 2014.

Table 13 shows the annual revenue requirement for the hypothetical plants based on the assumptions used in the previous ICAP Demand Curves. For the G-J Locality the annual revenue requirements for 2014 have been adjusted for six months only — the 2014 Summer Capability Period — the period that corresponds with the initial implementation for the ICAP Demand Curves for the G-J Locality. The notional values used for the New York City, LI, and G-J Localities are based on an LMS100 technology, and for NYCA, figures are based on GE 7FA combustion turbine without selective catalytic reduction for the years 2011 to 2014. For 2015 and 2016 figures, a Siemens F class Frame unit with selective catalytic reduction was used as the peaking plant for the G-J, J, and LI Localities. A Siemens F class Frame unit without selective catalytic reduction was used for the NYCA.

Table 13: Annual Revenue Requirements in UCAP terms ($/MW)

	2011	2012	2013	2014	2015	2016
NYCA	$110,577	$122,650	$124,094	$126,111	$113,738	$117,709
NYC	$233,486	$282,388	$284,578	$288,371	$217,390	$231,098
LI	$214,785	$263,070	$262,912	$263,455	$176,031	$179,684
G-J	n/a	n/a	n/a	$116,966	$154,522	$162,388

Note to Table 13: As with prior annual reports, this table is based on November of the year prior to the year stated in the first row, through October of the year stated, except that the Annual Revenue Requirements for the G-J Locality for 2014 are based on the six month revenue requirement calculated beginning with the Summer 2014 Capability Period when the G-J Locality and its ICAP Demand Curve were first implemented.

Table 14 shows the revenues for individual markets *(i.e.,* the Energy, Ancillary Services (A/S)), and the ICAP Spot Market Auction that the identified hypothetical peaking plant may have received based on actual LBMPs, natural gas prices, and other reasonable parameters used to calculate variable costs from the corresponding Demand Curve reports

For this and previous reports, a model was used to calculate the Energy and Ancillary Services revenue for the respective hypothetical peaking plants: net Energy revenues are earned in hours when the Day-Ahead Market LBMP exceeds the calculated variable cost; otherwise, Day-Ahead Ancillary Services revenues are earned. This approach is similar to the "standard method" used by the Market Monitoring Unit for the NYISO in its annual State of the Market reports.

In annual ICAP reports prior to 2011, Ancillary Services revenues were based on 10-Minute Non-Synchronized Reserve prices. For 2011, 2012, 2013 and the Winter 2013/2014 Capability Period, the Ancillary Services revenues earned by the hypothetical LMS100 technology were based upon 10-Minute Non-Synchronized Reserve prices, whereas Ancillary Service revenues for the hypothetical NYCA peaking plant were based on Day-Ahead 30-Minute Reserve prices. For the Capability Year beginning May 2014, the Frame Combustion Turbine technology Ancillary Services revenues for the hypothetical peaking plant technology in all capacity regions were based upon Day-Ahead 30-Minute Operating Reserve prices. Because Table 15 and Chart 18 utilize data from Table 14, the adjustment from 10-Minute Non-

Synchronized Reserves to the Day-Ahead 30-minute Reserves reflected in Table 14 also affects the corresponding NYCA revenue margins in Table 15 and Chart 18 for years 2012-2016.

ICAP Markets revenues were based on the ICAP Spot Market clearing prices for each Locality.

Table 14: Benchmark Annual Revenues in UCAP terms ($/MW)

		Revenue Elements in $/MW						Revenue Elements as % of Total[46]					
		2011	2012	2013	2014	2015	2016	2011	2012	2013	2014	2015	2016
NYCA	Energy	$16,646	$35,147	$42,916	$72,191	$38,006	$8,775	39%	70%	47%	56%	50%	12%
	A/S	$22,488	$666	$1,873	$2,342	$3,602	$33,496	52%	1%	2%	2%	5%	46%
	Capacity	$3,820	$14,650	$46,730	$54,400	$35,120	$30,200	9%	29%	51%	42%	46%	42%
	Total	**$42,953**	**$50,463**	**$91,519**	**$128,933**	**$76,729**	**$72,471**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
NYC	Energy	$59,028	$55,634	$59,779	$67,397	$27,493	$25,577	41%	35%	31%	27%	16%	16%
	A/S	$12,892	$9,300	$10,366	$14,722	$4,123	$23,399	9%	6%	5%	6%	2%	15%
	Capacity	$72,440	$95,550	$124,320	$169,380	$142,450	$109,260	50%	60%	64%	67%	82%	69%
	Total	**$144,360**	**$160,483**	**$194,465**	**$251,499**	**$174,066**	**$158,235**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Long Island	Energy	$95,780	$117,016	$130,905	$137,433	$70,875	$66,945	86%	81%	68%	67%	56%	55%
	A/S	$11,400	$6,971	$6,388	$9,322	$2,840	$17,428	10%	5%	3%	5%	2%	14%
	Capacity	$3,840	$20,180	$54,720	$59,130	$53,160	$37,620	3%	14%	28%	29%	42%	31%
	Total	**$111,020**	**$144,168**	**$192,013**	**$205,885**	**$126,875**	**$121,992**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
G-J	Energy	n/a	n/a	n/a	$5,174	$14,591	$8,883	n/a	n/a	n/a	6%	15%	8%
	A/S	n/a	n/a	n/a	$11,162	$5,219	$34,522	n/a	n/a	n/a	12%	5%	29%
	Capacity	n/a	n/a	n/a	$72,980	$78,810	$74,850	n/a	n/a	n/a	82%	80%	63%
	Total	n/a	n/a	n/a	**$89,316**	**$98,620**	**$118,255**	n/a	n/a	n/a	**100%**	**100%**	**100%**

Note to Table 14: As with prior annual reports, this table is based on November of the year prior to the year stated in the first row, through October of the year stated, except for the G-J Locality, which is based on the six months of revenues calculated for the Summer 2014 Capability Period.

In order to assess revenue adequacy for purposes of this report, "Revenue Margin" is the metric used. "Revenue Margin" is Benchmark Revenues (as reflected in Table 15) expressed as a percentage of Required Revenues. Revenue Margins are calculated as:

$$\text{Revenue Margin \%} = \frac{\text{Benchmark Revenue}}{\text{Required Revenue}} \times 100$$

A higher value indicates a greater degree of adequacy of revenues using this approach. The following table displays the values of Revenue Margins for the hypothetical peaking plant.

Table 15: Revenue Margins

	2011	2012	2013	2014	2015	2016
NYCA	19%	41%	74%	102%	67%	62%
NYC	62%	57%	68%	87%	80%	68%
LI	52%	55%	73%	78%	72%	68%
G-J	n/a	n/a	n/a	76%	64%	73%

Note to Table 15: As with prior annual reports, this table is based on November of the year prior to the year stated in the first row, through October of the year stated; except for the G-J Locality for 2014, which is based on the six months of revenues and revenue requirement calculated for the Summer 2014.

In 2016, Revenue Margins decreased from prior levels in NYCA, NYC, LI, and G-J largely due to the decrease in energy revenues. To assess whether the revenue streams for

[46] Values may not sum to 100% due to rounding.

the hypothetical plant are adequate in relation to the level of need for new capacity, data from Table 12 and Table 15 are graphed below, showing revenue (Chart 18) and Capacity (Chart 19) margins.

The capacity revenue component of the total net revenue as a percentage of the cost of new entry in the NYCA and in each Locality is depicted in Chart 20. The amount of excess capacity peaked in NYCA, NYC, and LI in 2011, and as a result, the capacity market revenues relative to the cost of new entry requirements shown in this chart dropped precipitously, thereby appropriately signaling to the market that sufficient capacity already existed.[47] As the amount of excess capacity above requirements shrinks, capacity market revenues increase. The effect of the recent increases to the level of excess capacity is reflected in the generally lower revenue margins calculated for 2016 compared to other recent prior years.

[47] 2011 State of Market Report, p. A-13.

Chart 18: UCAP-based Revenue Margins

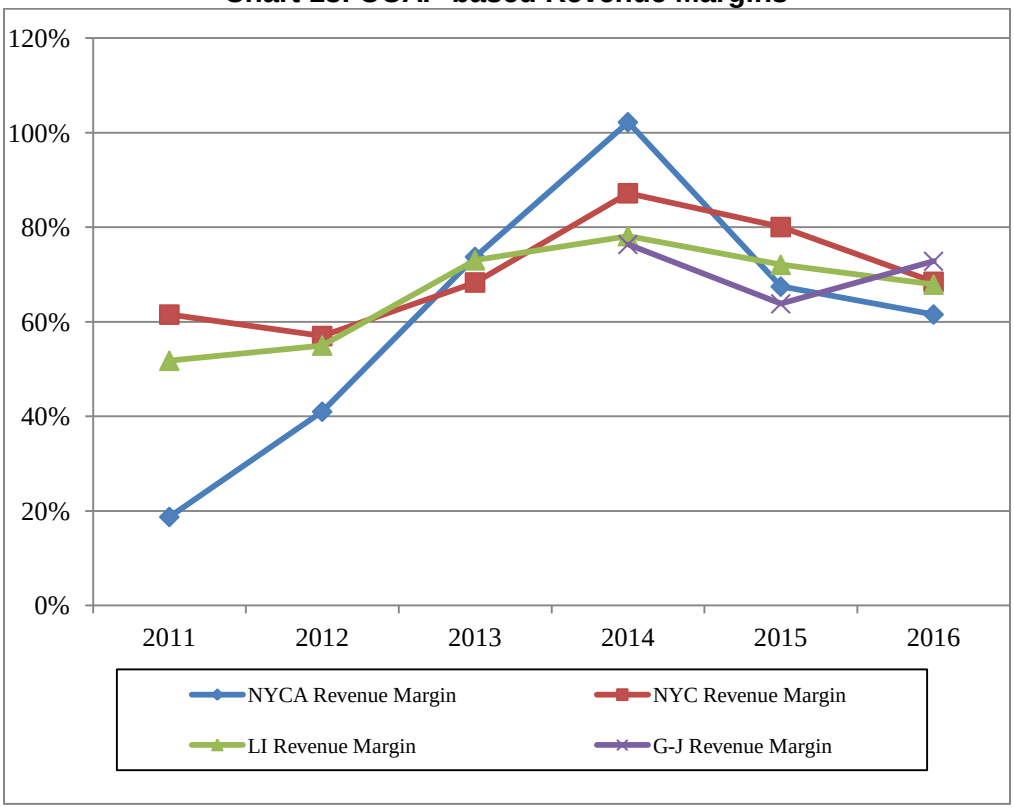


Chart 19: UCAP-based Capacity Margins

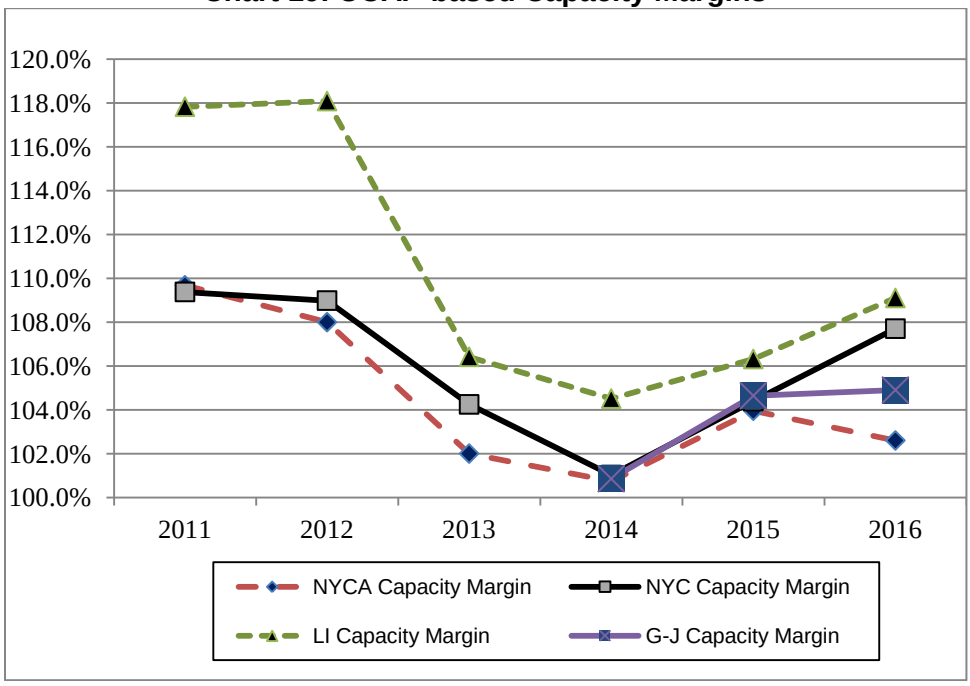
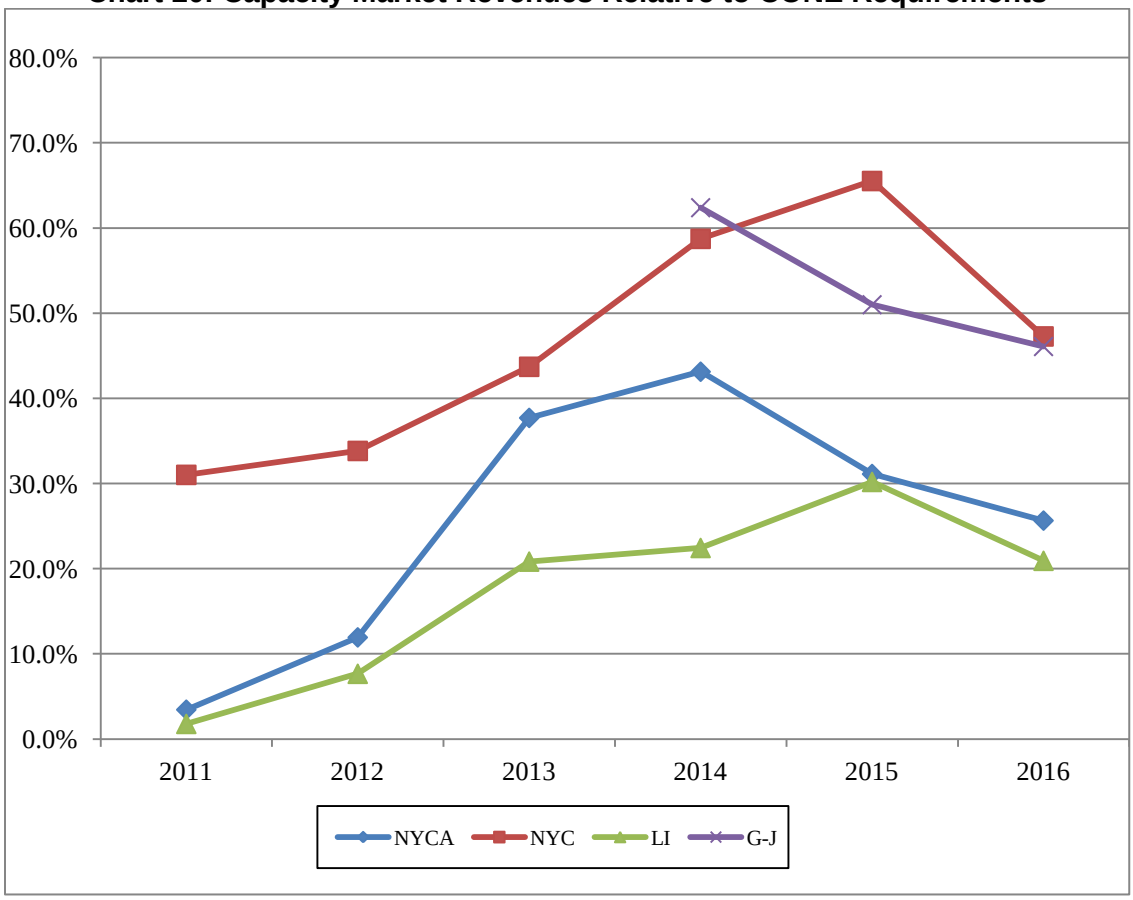


Chart 20: Capacity Market Revenues Relative to CONE Requirements



Attachments

Attachment I: Confidential.

Unoffered Capacity: Market Participant Explanations

(Not included with the public filing.)

Attachment II: Unsold Capacity Offers (Masked)

AUCTION TYPE	AUCTION MONTH	LOCATION DESCRIPTION	Masked PTID Name	OFFER CAPACITY MW	OFFER PRICE	AWARDED CAPACITY MW	MARKET CLEARING PRICE	UNSOLD MW
Spot	Nov-2015	ROS	**Offer I**	405.0	$0.46	248.4	$0.46	156.6
Spot	Nov-2015	ROS	**Offer II**	0.3	$0.50	0.0	$0.46	0.3
Spot	Nov-2015	ROS	**Offer III**	100.0	$0.89	0.0	$0.46	100.0
Spot	Nov-2015	ROS	**Offer IV**	0.8	$1.00	0.0	$0.46	0.8
Spot	Nov-2015	ROS	**Offer V**	100.0	$1.35	0.0	$0.46	100.0
Spot	Nov-2015	ROS	**Offer VI**	25.1	$2.00	0.0	$0.46	25.1
	Nov-2015 Total							**382.8**
Spot	Dec-2015	ROS	**Offer I**	50.0	$1.46	0.0	$1.28	50.0
Spot	Dec-2015	ROS	**Offer II**	25.1	$2.88	0.0	$1.28	25.1
	Dec-2015 Total							**75.1**
Spot	Jan-2016	ROS	**Offer I**	100.0	$1.42	0.0	$1.37	100.0
Spot	Jan-2016	ROS	**Offer II**	50.0	$1.46	0.0	$1.37	50.0
Spot	Jan-2016	ROS	**Offer III**	27.6	$2.63	0.0	$1.37	27.6
	Jan-2016 Total							177.6
Spot	Feb-2016	ROS	**Offer I**	50.0	$1.46	16.5	$1.46	33.5
Spot	Feb-2016	ROS	**Offer II**	27.6	$2.63	0.0	$1.46	27.6
	Feb-2016 Total							**61.1**
Spot	Mar-2016	ROS	**Offer I**	50.0	$0.54	20.0	$0.54	30.0
Spot	Mar-2016	ROS	**Offer II**	50.0	$0.77	0.0	$0.54	50.0
Spot	Mar-2016	ROS	**Offer III**	0.8	$1.00	0.0	$0.54	0.8
Spot	Mar-2016	ROS	**Offer IV**	50.0	$1.00	0.0	$0.54	50.0
Spot	Mar-2016	ROS	**Offer V**	50.0	$1.23	0.0	$0.54	50.0
Spot	Mar-2016	ROS	**Offer VI**	50.0	$1.46	0.0	$0.54	50.0
	Mar-2016 Total							**230.8**
Spot	Apr-2016	ROS	**Offer I**	50.0	$0.77	0.0	$0.58	50.0
Spot	Apr-2016	ROS	**Offer II**	50.0	$1.00	0.0	$0.58	50.0
Spot	Apr-2016	ROS	**Offer III**	50.0	$1.23	0.0	$0.58	50.0
Spot	Apr-2016	ROS	**Offer IV**	50.0	$1.46	0.0	$0.58	50.0
	Apr-2016 Total							**200.0**
	Grand Total							**1,127.4**

Attachment III: Confidential. Unsold Capacity Offers (Unmasked)

(Not included with the public filing.)

Attachment IV: Confidential. Unsold Capacity Offers: Market Participant Explanations

(Not included with the public filing.)

Attachment V: Interconnection Queue

Queue Pos.	Owner/Developer	Project Name	Date of IR	SP (MW)	WP (MW)	Type/ Fuel	Location County/State	Z	Interconnection Point	Utility	S	Last Update	Availability of Studies	FS Complete/ SGIA Tender	Proposed In-Service	Proposed COD
419	NextEra Energy Transmission	Marcy - NS - KB - PV 345	9/16/13	TBD	TBD	AC	Oneida-Dutchess, NY	E, G	Marcy - P. Valley 345kV	NM-NG/NYPA/ ConEd	3	1/31/14	None		2017/07	2017/08
421	EDP Renewables North America	Arkwright Summit	11/1/13	78	78	W	Chautauqua, NY	A	Dunkirk – Falconer 115 kV	NM-NG	5	10/31/15	None		N/A	N/A
422	NextEra Energy Resources, LLC	Call Hill Wind	11/7/13	103.3	103.3	W	Steuben-Allegany, NY	B	Bennett 115kV	NYSEG	4	11/30/15	FES		2017/Q3	2017/Q4
424	Boundless Energy NE, LLC	Leeds Path West	11/26/13	TBD	TBD	AC	Greene-Westchester, NY	G-J	Leeds - Millwood 345kV	NM-NG/NYPA/ Con Hud/ConEd/NYSEG	5	10/31/15	FES		2017/06	2017/07
427	Island Park Energy Center, LLC	Island Park Energy Center CCPP	1/24/14	268	295	CT-NG	Nassau, NY	K	Barrett Power Station 138kV	LIPA	5	11/30/14	None		2019/02	2019/05
428	Island Park Energy Center, LLC	Island Park Energy Center SCPP	1/24/14	262	252	CT-NG	Nassau, NY	K	Barrett Power Station 138kV	LIPA	5	11/30/14	None		2017/02	2017/05
429	Orange & Rockland	North Rockland Station	2/12/14	TBD	TBD	AC	Rockland, NY	G	Line Y88 345kV	ConEd	6	8/31/15	SIS		2018/06	
430	H.Q. Energy Services U.S. Inc.	Cedar Rapids Transmission	3/5/14	TBD	TBD	AC	St. Lawrence, NY	E	Dennison - Alcoa 115kV	NM-NG	5	10/31/14	None		2017/Q1	
431	Greenidge Generation	Greenidge Unit #4	4/11/14	106.3	106.3	ST-NG	Yates, NY	C	Greenidge Substation 115kV	NYSEG	9	8/31/15	SRIS		2015/Q4	2015/Q4
432	New York State Electric & Gas	South Perry Transformer	4/15/14	TBD	TBD	AC	Wyoming, NY	B	South Perry Substation 115kV	NYSEG	5	8/31/14	None		2017/12	
439	Boston Energy Trading	East Garden City-Valley Stream	5/9/14	TBD	TBD	AC	Nassau, NY	K	E. Garden City-Valley Stream 138kV	LIPA	5	11/30/14	None		N/A	N/A
440	Erie Power, LLC	Erie Power	6/2/14	79.4	88	CC-NG	Chautauqua, NY	A	South Ripley Substation 230kV	NM-NG	7	7/31/15	SRIS		2016/04	2016/04
444	Cricket Valley Energy Center, LLC	Cricket Valley Energy Center II	6/18/14	1020	1132	CC-NG	Dutchess, NY	G	Pleasant Valley - Long Mt. 345kV	ConEd	7	9/30/15	SRIS		2017/12	2018/06
445	Lighthouse Wind, LLC	Lighthouse Wind	6/30/14	201.3	201.3	W	Niagara, NY	A	AES Somerset Substation 345kV	NYSEG	5	10/31/15	FES		2017/09	2017/12
448	Alps Interconnector, LLC	Alps HVDC	8/12/14	600	600	DC	NE-Rensselaer, NY	F	Alps Substation 345kV	NM-NG	3	5/31/15	None		2019/06	2019/06
449	Stockbridge Wind, LLC	Stockbridge Wind	8/13/14	72.6	72.6	W	Madison, NY	E	Whitman - Oneida 115kV	NM-NG	5	11/30/15	FES		2016/10	2016/12
458	TDI-USA Holdings, Inc.	NS Interconnection	10/24/14	1000	1000	DC	Albany - NY, NY	F, J	Marcy-New Scotland-Astoria 345kV	NM-NG/NYPA	3	9/30/15	None		2018/Q4	2018/Q4
461	Consolidated Edison Co. of NY	East River 1 Uprate	12/1/14	2.1	2.1	CT-NG	New York, NY	J	East River Complex	ConEd	5, 14	10/31/15	None		I/S	I/S
462	Consolidated Edison Co. of NY	East River 2 Uprate	12/1/14	2.1	2.1	CT-NG	New York, NY	J	East River Complex	ConEd	5, 14	10/31/15	None		I/S	I/S
465	Hudson Transmssion Partners	Hudson Transmission NY to PJM	12/15/14	675	675	DC/AC	New York, NY	J	W49th St 345kV - Bergen 230kV	ConEd	5	5/31/15	None		2016/06	2016/06
466	Atlantic Wind, LLC	Bone Run Win	12/16/14	148.5	148.5	W	Cattaraugus, NY	A	Falconer - Homer Hill 115kV	NM-NG	4	10/31/15	FES		2019/11	2019/11
467	Invenergy Solar Development, LL	Tallgrass Solar	12/22/14	25	25	S	Suffolk, NY	K	Ridge - Wildwood 69kV	LIPA	5	5/31/15	None		2016/09	2016/11
468	Hudson North Country Wind 1, LLC	Galloo Island Wind	12/30/14	105.6	105.6	W	Oswego, NY	C	Hammermill - Wine Creek 115kV	NM-NG	3	6/30/15	None		2017/07	2017/12
469	NextEra Energy Transmission	Edic-PV 345	1/6/15	TBD	TBD	AC	Oneida-Dutchess, NY	E, G	Edic - Pleasant Valley 345kV	NM-NG/ConEd	3	5/31/15	None		2019/09	2019/11
470	NextEra Energy Transmission	Knickerbocker 115	1/6/15	TBD	TBD	AC	Columbia-Rensselaer, NY	F	Greenbush - Churchtown 115kV	NM-NG/NYSEG/ CHGE	3	6/30/15	None		2019/07	2019/08
471	NextEra Energy Transmission	Marcy-Princetown 345	1/6/15	TBD	TBD	AC	Oneida-Albany, NY	E, F	Marcy - Princetown 345kV	NM-NG/NYPA/ ConEd	3	6/30/15	None		2019/07	2019/08
472	NextEra Energy Transmission	Knickerbocker 345	1/6/15	TBD	TBD	AC	Rensselaer-Dutchess, NY	F	Knickerbocker - P. Valley 345kV	NM-NG/ConEd	4	10/31/15	FES		2019/01	2019/02
473	Calverton Solar LLC	Calverton Solar	1/21/15	10	10	S	Suffolk, NY	K	Riverhead - Wildwood 69kV	LIPA	3	8/31/15	None		2016/09	2016/09
474	EDP Renewables North America	North Slope Wind	1/30/15	200	200	W	Franklin-Clinton, NY	D	Patnode 230kV	NYPA	3	8/31/15	None		2017/11	2017/11
476	New York State Electric & Gas	Edic-PV, Oakdale-Fraser	2/12/15	TBD	TBD	AC	Oneida-Delaware, NY	E	Edic-PV, Oakdale-Fraser 345kV	NM-NG/NYSEG	5	8/31/15	None		2019/09	2019/09
477	Riverhead Solar Farm LLC	Riverhead Solar	2/18/15	20	20	S	Suffolk, NY	K	Edwards Substation 138kV	LIPA	3	6/30/15	None		2016/10	2016/10
478	Central Hudson Gas & Electric	Hurley Ave PARs	2/17/15	TBD	TBD	AC	Dutchess, NY	G	Hurley Ave 345kV	CHGE/NM-NG/NYSEG	5	6/30/15	None		2019/06	2019/06
479	Central Hudson Gas & Electric	Edic-NS, Hurley PARs	2/17/15	TBD	TBD	AC	Oneida-Dutchess, NY	E-G	Edic-NS, Hurley Ave 345kV	CHGE/NM-NG/NYSEG/NYPA	5	6/30/15	None		2019/07	2019/07
480	National Grid	Edic-NS, Knickerbocker-PV	2/20/15	TBD	TBD	AC	Oneida-Dutchess, NY	E-G	Edic-NS, Knickerbocker-PV 345kV	NM-NG/ConEd	4	2/28/15	None		2019/09	2019/09
481	National Grid	Leeds - Pleasant Valley	2/20/15	TBD	TBD	AC	Greene-Dutchess, NY	G	Leeds - P. Valley 345kV	NM-NG/ConEd	4	2/28/15	None		2019/02	2019/02
482	National Grid	Edic-NS, NS-Leeds-PV	2/20/15	TBD	TBD	AC	Oneida-Dutchess, NY	E, G	Edic-NS, NS-Leeds-PV 345kV	NM-NG/ConEd	4	2/28/15	None		2018/06	2018/06
483	National Grid	NS-Leeds, Leeds-PV	2/20/15	TBD	TBD	AC	Albany-Dutchess, NY	F, G	NS-Leeds, Leeds-PV 345kV	NM-NG/ConEd	4	2/28/15	None		2019/09	2019/09
484	National Grid	Edic-NS, NS-Leeds, Leeds-PV	2/20/15	TBD	TBD	AC	Oneida-Dutchess, NY	E, G	Edic-NS, NS-Leeds, Leeds-PV 34	NM-NG/ConEd	4	2/28/15	None		2020/02	2020/02
485	National Grid	Knickerbocker-PV	3/4/15	TBD	TBD	AC	Columbia-Dutchess, NY	F, G	Knickerbocker - P. Valley 345kV	NM-NG/ConEd	4	3/31/15	None		2019/09	2019/09
487	LI Energy Storage System	Far Rockaway Battery Storage	3/9/15	20	20	ES	Suffolk, NY	K	Far Rockaway Substation 69kV	LIPA	2	5/31/15	None		2018/10	2018/10
488	LI Energy Storage System	Glenwood Battery Storage	3/9/15	20	20	ES	Suffolk, NY	K	Glenwood Substation 69kV	LIPA	2	5/31/15	None		2018/10	2018/10
490	New York Power Authority	Marcy South Series Comp	3/16/15	TBD	TBD	AC		E		NYSEG/NM-NG	5	5/31/15	None			
492	Setauket Fuel Cell Park, LLC	Setauket Fuel Cell Park	3/23/15	19.6	19.6	FC	Suffolk, NY	K	Terryville Substation 69kV	LIPA	2	8/31/15	None		2016/12	2016/12
493	EPCAL Fuel Cell Park, LLC	EPCAL Fuel Cell Park	3/30/15	19.6	19.6	FC	Suffolk, NY	K	Riverhead 69 kV	LIPA	2	10/31/15	None		2016/12	2016/12
494	Alabama Ledge Wind Farm LLC	Alabama Ledge Wind	3/31/15	79.8	79.8	W	Genesee, NY	A	Oakfield - Lockport 115kV	NM-NG	4	5/31/15	None		2017/09	2017/12
495	Canajoharie Solar LLC	Canajoharie Solar	4/2/15	98	98	S	Montgomery, NY	F	St. Johnsville - Marshville 115kV	NM-NG	3	10/31/15	None		2016/12	2016/12

Updated: 11/30/2015

2015 Annual Installed Capacity Report, December 18, 2015

Attachment V: Interconnection Queue

Queue Pos.	Owner/Developer	Project Name	Date of IR	SP (MW)	WP (MW)	Type/ Fuel	Location County/State	Z	Interconnection Point	Utility	S	Last Update	Availability of Studies	FS Complete/ SGIA Tender	Proposed In-Service	Proposed COD
496	Renovo Energy Center, LLL	Renovo Energy Center	4/13/15	480	504	CC	Chemung, NY - PA	C	Homer City - Watercure 345kV	NYSEG	3	8/31/15	None		2019/05	2019/12
497	Invenergy Wind Development LLC	Bull Run Wind	4/24/15	303.6	303.6	W	Clinton, NY	D	Patnode 230kV	NYPA	3	9/30/15	None		2018/10	2018/12
498	ESC Tioga County Power, LLC	Tioga County Power	4/29/15	550	550	CC-NG	Chemung, NY - PA	C	Homer City - Watercure 345kV	NYSEG	3	8/31/15	None		2020/06	2020/06
505	RES America Devlopments LLC	Ball Hill Wind	6/2/15	120	120	W	Chautauqua, NY	A	Dunkirk - Gardenville 230kV	NM-NG	3	11/30/15	None		2017/09	2017/12
506	Empire State Connector Corp.	Empire State Connector	6/10/15	1000	1000	DC	Onondaga-New York, NY	C, J	Clay - Gowanus 345kV	NYPA/NM-NG/ ConEd	3	10/31/15	None		2021/10	2022/01
507	Erie Boulevard Hydropower, LP	Glens Falls Hydro	7/2/15	14.8	14.8	H	Washington, NY	F	Henry St. - Glens Falls 34.5kV	NM-NG	2	8/31/15	None		2016/11	2016/11
508	Blue Circle DG LLC	Blue Circle	7/17/15	18.2	18.2	FC	Greene, NY	G	Blue Circle Substation	NM-NG	2	10/31/15	None		2016/12	2016/12
510	Bayonne Energy Center	Bayonne Energy Center II	8/3/15	120.4	129.4	CT-D	Bayonne, NJ	J	Gowanus Substation 345kV	ConEd	5	10/31/15	None		2017/06	2017/12
511	AG Energy, LP	Ogdensburg	9/4/15	79	90.1	CT-NG	St. Lawrence, NY	E	North Ogdensburg Substation	NM-NG	4	10/31/15	None		2016/05	2016/05
512	Northbrook Lyons Falls	Lyons Fills Mill Hydro	9/11/15	14.1	14.1	H	Lewis, NY	E	Franklin Street Substation	NM-NG	2	10/31/15	None		2018/03	2018/03
513	Stony Creek Energy LLC	Orangeville	9/21/15	20	20	ES	Wyoming, NY	A	Stony Creek 230kV	NYSEG	2	10/31/15	None		2016/08	2016/08
514	RES Americas Developments Inc.	Empire Wind	10/1/15	120	120	W	Rensselaer, NY	F	Stephentown - Greenbush 115kV	NM-NG	2	10/31/15	None		2019/10	2019/10
515	North Bergen Liberty Energy Center LLC	Liberty Generation	10/7/15	1000	1000	CC-NG	New York, NY	J	W49th St 345kV	ConEd	2	10/31/15	None		2019/06	2019/06
516	East Coast Power LLC	Linden Cogen Uprate	10/12/15	230	234	CT-NG	Linden, NJ-NY,NY	J	Linden Cogen 345kV	ConEd	4	10/31/15	None		2019/Q2	2019/Q2
517	National Grid	Western NY Reactors & Capacitors	10/14/15	N/A	N/A	AC	Niagara, NY	A	Packard - Huntley 230kV	NM-NG	4	10/31/15	None		2016/06	2016/06
518	PPL Electric Utilities	Compass	10/27/15	TBD	TBD	AC	PA-Rockland, NY	G	Lackawanna - Ramapo 345kV	ConEd	2	11/30/15	None		2023/12	2023/12
519	Invenergy Wind Development LLC	Canisteo Wind	11/2/15	290.7	290.7	W	Steuben, NY	C	Bennett 115kV	NYSEG	1	11/30/15	None		2019/10	2019/12

Number of new projects during November	1
Number of new projects year to date	52
Number withdrawn during November	0
Number withdrawn year to date	41

NOTES:

- *The column labeled 'SP' refers to the maximum summer megawatt electrical output. The column labeled 'WP' refers to the maximum winter megawatt electrical output.*
- *Type / Fuel Key: ST=Steam Turbine, CT=Combustion Turbine, CC=Combined Cycle, CS= Steam Turbine & Combustion Turbine, H=Hydro, PS=Pumped Storage, W=Wind, NU=Nuclear, NG=Natural Gas, M=Methane, SW=Solid Waste, S=Solar, Wo=Wood, F=Flywheel ES=Energy Storage, O=Oil, C=Coal, D=Dual Fuel, AC=AC Transmission, DC=DC Transmission, L=Load, FC=Fuel Cell*
- *The column labeled 'Z' refers to the zone*
- *The column labeled 'S' refers to the status of the project in the NYISO's LFIP. Key: 1=Scoping Meeting Pending, 2=FES Pending, 3=FES in Progress, 4=SRIS/SIS Pending, 5=SRIS/SIS in Progress, 6=SRIS/SIS Approved, 7=FS Pending, 8=Rejected Cost Allocation/Next FS Pending, 9=FS in Progress, 10=Accepted Cost Allocation/IA in Progress, 11=IA Completed, 12=Under Construction, 13=In Service for Test, 14=In Service Commercial, 0=Withdrawn*
- *Availability of Studies Key: None=Not Available, FES=Feasibility Study Available, SRIS=System Reliability Impact Study Available, FS=Facilities Study and/or ATRA Available*
- *FS Complete/SGIA Tender refers to the Attachment X milestone used to apply the 4-year COD limitation.*
- *Proposed in-service dates and Commerical Operation Dates (COD) are shown in format Year/Qualifier, where Qualifier may indicate the month, season, or quarter.*

Updated: 11/30/2015

Attachment VI: Status Key for Interconnection Queue

1	Scoping Meeting Pending	Interconnection Request has been received, but scoping meeting has not yet occurred
2	FES Pending	Awaiting execution of Feasibility Study Agreement
3	FES in Progress	Feasibility Study is in Progress
4	SRIS/SIS Pending	Awaiting execution of System Reliability Impact Study (SRIS) or System Impact Study (SIS) Agreement and/or OC approval of SRIS or SIS scope[48]
5	SRIS/SIS in Progress	
6	SRIS/SIS Approved	SRIS/SIS Approved by NYISO Operating Committee
7	FS Pending	Awaiting execution of Facilities Study Agreement
8	Rejected Cost Allocation/ Next FS Pending	Project was in prior Class Year, but rejected cost allocation—Awaiting execution of Facilities Study Agreement for next Class Year or the start of the next Class Year
9	FS in Progress	Class Year Facilities Study or Small Generator Facilities Study is in Progress
10	Accepted Cost Allocation/ IA in Progress	Interconnection Agreement is being negotiated
11	IA Completed	Interconnection Agreement is executed and/or filed with FERC
12	Under Construction	Project is under construction
13	In Service for Test	
14	In Service Commercial	

[48] System Reliability Impact Study (SRIS) applies to a Large Facility Interconnection Request. System Impact Study (SIS) applies to a Small Generator Interconnection Request or a non-merchant transmission study request.

Attachment VII: November 1999 – October 2016 Installed Capacity Auction Activity

	NYCA								NYC								LI								G-J Locality							
	Capability Period* (Strip)		Monthly Auction		Spot Market **		Minimum Required	Excess Sold	Capability Period* (Strip)		Monthly Auction		Spot Market		Minimum Required	Excess Sold	Capability Period* (Strip)		Monthly Auction		Spot Market		Minimum Required	Excess Sold	Capability Period* (Strip)		Monthly Auction		Spot Market		Minimum Required	Excess Sold
Month	MW	Price	MW	Price	MW	Price	MW	MW	MW	Price	MW	Price	MW	Price	MW	MW	MW	Price	MW	Price	MW	Price	MW	MW	MW	Price	MW	Price	MW	Price	MW	MW
Nov-99							35,563.1								8,305.6								4,555.3									
Dec-99							35,563.1								8,305.6								4,555.3									
Jan-00	Installed Capacity Market Existed but all purchases and sales were bilateral						35,563.1		Installed Capacity Market Existed but all purchases and sales were bilateral						8,305.6		Installed Capacity Market Existed but all purchases and sales were bilateral						4,555.3									
Feb-00							35,563.1								8,305.6								4,555.3									
Mar-00							35,563.1								8,305.6								4,555.3									
Apr-00							35,563.1								8,305.6								4,555.3									
May-00	1,976.0	$1.50	434.2	$1.30	32.7	$0.50	35,636.0	1,976.0	5,408.8	$8.75	59.4	$12.50	0.0	-	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
Jun-00	1,976.0	$1.50	528.4	$1.40	37.1	$1.28	35,563.1	1,976.0	5,408.8	$8.75	313.4	$9.46	52.7	$12.50	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
Jul-00	1,976.0	$1.50	344.2	$1.80	140.8	$1.98	35,563.1	1,976.0	5,408.8	$8.75	342.7	$9.40	100.0	$12.50	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
Aug-00	1,976.0	$1.50	351.4	$1.62	194.8	$1.77	35,563.1	1,976.0	5,408.8	$8.75	332.6	$9.42	133.9	$12.50	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
Sep-00	1,976.0	$1.50	648.9	$1.32	81.3	$1.16	35,563.1	1,976.0	5,408.8	$8.75	344.5	$9.40	149.5	$12.50	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
Oct-00	1,976.0	$1.50	681.6	$1.30	96.9	$0.89	35,563.1	1,976.0	5,408.8	$8.75	304.2	$9.49	214.0	$12.50	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
Nov-00	4,010.6	$1.04	1,813.6	$1.00	157.7	$0.80	35,563.1	4,010.6	4,861.4	$8.75	735.0	$8.74	170.3	$8.75	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
Dec-00	4,010.6	$1.04	1,854.1	$0.97	167.2	$0.86	35,563.1	4,010.6	4,861.4	$8.75	785.1	$8.74	154.8	$8.75	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
Jan-01	4,010.6	$1.04	1,847.6	$0.97	170.5	$0.85	35,563.1	4,010.6	4,861.4	$8.75	899.5	$8.74	154.8	$8.75	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
Feb-01	4,010.6	$1.04	1,893.8	$0.95	177.2	$0.83	35,563.1	4,010.6	4,861.4	$8.75	921.7	$8.71	154.8	$8.75	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
Mar-01	4,010.6	$1.04	2,032.8	$0.95	208.1	$0.79	35,563.1	4,010.6	4,861.4	$8.75	936.5	$8.74	156.0	$8.75	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
Apr-01	4,010.6	$1.04	1,659.7	$0.87	192.3	$0.59	35,563.1	4,010.6	4,861.4	$8.75	985.6	$8.56	156.7	$8.72	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
May-01	2,738.6	$1.90	852.3	$2.25	1,022.2	$9.58	36,132.0	2,738.6	5,316.6	$8.75	248.7	$8.75	235.1	$12.50	8,375.0	(est.)	0.0	-	0.0	-	3.2	$10.83	4,625.0									
Jun-01	2,738.6	$1.90	397.6	$2.68	1,521.0	$9.41	36,132.0	2,738.6	5,316.6	$8.75	228.4	$10.92	299.0	$12.18	8,375.0	(est.)	0.0	-	0.0	-	7.0	$10.83	4,625.0									
Jul-01	2,738.6	$1.90	1,776.6	$4.31	1,534.9	$9.44	36,132.0	2,738.6	5,316.6	$8.75	407.8	$9.77	292.5	$8.83	8,375.0	(est.)	0.0	-	0.0	-	20.2	$10.83	4,625.0									
Aug-01	2,738.6	$1.90	1,788.4	$4.56	1,601.3	$9.35	36,132.0	2,738.6	5,316.6	$8.75	440.1	$8.38	350.1	$9.46	8,375.0	(est.)	0.0	-	0.0	-	21.3	$10.83	4,625.0									
Sep-01	2,738.6	$1.90	1,701.2	$4.16	1,498.0	$9.21	36,132.0	2,738.6	5,316.6	$8.75	434.9	$8.42	316.0	$8.34	8,375.0	(est.)	0.0	-	0.0	-	33.0	$10.83	4,625.0									
Oct-01	2,738.6	$1.90	1,787.1	$4.03	1,473.4	$9.14	36,132.0	2,738.6	5,316.6	$8.75	430.1	$7.99	343.4	$8.72	8,375.0	(est.)	0.0	-	0.0	-	33.0	$10.83	4,625.0									
Nov-01	1,760.4	$2.00	878.0	$0.10	5.8	$ -	32,892.3	1,760.4	3,972.5	$9.40	772.8	$9.00	77.7	$4.80	7,613.3		0.0	-	0.6	$3.50	8.5	$12.33	4,077.6									
Dec-01	1,760.4	$2.00	687.2	$0.49	6.5	$ -	32,892.3	1,760.4	3,972.5	$9.40	906.8	$6.88	11.5	$ -	7,613.3		0.0	-	1.3	$3.50	37.4	$12.33	4,077.6									
Jan-02	1,760.4	$2.00	750.5	$0.84	133.0	$0.75	32,892.3	1,760.4	3,972.5	$9.40	492.6	$5.47	377.3	$8.25	7,613.3		0.0	-	1.3	$5.00	39.7	$12.33	4,077.6									
Feb-02	1,760.4	$2.00	836.2	$0.70	25.5	$ -	32,892.3	1,760.4	3,972.5	$9.40	631.1	$6.69	229.3	$9.20	7,613.3		0.0	-	0.0	$ -	40.6	$11.50	4,077.6									
Mar-02	1,760.4	$2.00	901.3	$0.61	30.0	$0.25	32,892.3	1,760.4	3,972.5	$9.40	784.3	$6.92	90.6	$7.50	7,613.3		0.0	-	14.0	$11.50	26.4	$11.49	4,077.6									
Apr-02	1,760.4	$2.00	677.9	$0.69	5.6	$0.02	32,892.3	1,760.4	3,972.5	$9.40	932.9	$7.12	11.6	$9.40	7,613.3		0.0	-	41.4	$11.48	0.0	-	4,077.6									
May-02	3,201.6	$1.75	552.1	$0.33	2.3	$ -	32,479.5	3,201.6	4,355.2	$9.20	684.1	$9.38	30.5	$9.39	7,621.6		0.0	-	0.0	-	0.0	-	4,177.8									
Jun-02	3,201.6	$1.75	438.3	$0.36	20.3	$0.01	32,479.5	3,201.6	4,355.2	$9.20	671.2	$6.11	16.7	$0.50	7,621.6		0.0	-	0.0	-	0.0	-	4,177.8									
Jul-02	3,201.6	$1.75	721.9	$0.97	11.1	$0.01	32,479.5	3,201.6	4,355.2	$9.20	684.7	$5.34	0.3	$0.01	7,621.6		0.0	-	0.0	-	0.0	-	4,177.8									
Aug-02	3,201.6	$1.75	722.6	$0.91	55.4	$0.01	32,479.5	3,201.6	4,355.2	$9.20	693.8	$5.15	15.1	$2.00	7,621.6		0.0	-	0.0	-	0.0	-	4,177.8									
Sep-02	3,201.6	$1.75	714.0	$0.25	71.2	$0.01	32,479.5	3,201.6	4,355.2	$9.20	688.4	$4.83	24.5	$0.01	7,621.6		0.0	-	0.0	-	0.0	-	4,177.8									
Oct-02	3,201.6	$1.75	712.1	$0.16	1.4	$ -	32,479.5	3,201.6	4,355.2	$9.20	699.0	$4.72	19.2	$1.95	7,621.6		0.0	-	0.0	-	0.0	-	4,177.8									
Nov-02	3,486.7	$0.65	1,024.3	$0.50	85.0	$0.40	34,169.7	3,486.7	4,540.0	$7.00	748.1	$6.40	61.1	$4.10	8,021.8		0.0	-	0.0	-	0.0	-	4,256.2									
Dec-02	3,486.7	$0.65	1,219.3	$0.28	51.4	$0.10	34,169.7	3,486.7	4,540.0	$7.00	762.7	$4.09	29.9	$2.80	8,021.8		0.0	-	0.0	-	0.0	-	4,256.2									
Jan-03	3,486.7	$0.65	1,584.4	$0.26	189.1	$2.10	34,169.7	3,486.7	4,540.0	$7.00	787.9	$4.02	13.3	$2.10	8,021.8		0.0	-	0.0	-	0.0	-	4,256.2									
Feb-03	3,486.7	$0.65	1,623.1	$0.34	85.6	$0.50	34,169.7	3,486.7	4,540.0	$7.00	808.6	$3.51	1.5	$3.00	8,021.8		0.0	-	0.0	-	0.0	-	4,256.2									
Mar-03	3,486.7	$0.65	1,825.9	$0.32	58.8	$0.25	34,169.7	3,486.7	4,540.0	$7.00	799.7	$3.97	21.9	$4.00	8,021.8		0.0	-	0.0	-	0.0	-	4,256.2									
Apr-03	3,486.7	$0.65	1,571.5	$0.15	4.2	$0.01	34,169.7	3,486.7	4,540.0	$7.00	829.7	$3.39	9.1	$3.60	8,021.8		0.0	-	0.0	-	0.0	-	4,256.2									
May-03	2,889.2	$1.67	1,634.8	$1.30	101.5	$0.25	35,303.5	0.0	2,501.7	$11.22	3,016.3	$10.00	110.2	$12.36	8,356.7	0.0	6.6	$9.41	2.2	$24.00	0.2	$23.00	4,415.3	0.0								
Jun-03	2,889.2	$1.67	1,866.0	$1.06	2,148.7	$2.34	35,303.5	2,073.2	2,501.7	$11.22	683.0	$13.78	2,375.5	$11.46	8,356.7	0.0	6.6	$9.41	0.0	--------	341.9	$5.17	4,415.3	341.9								
Jul-03	2,889.2	$1.67	1,249.2	$2.01	2,824.2	$2.28	35,303.5	2,274.1	2,501.7	$11.22	527.9	$11.57	2,558.0	$11.46	8,356.7	0.0	6.6	$9.41	1.0	$5.00	344.7	$5.14	4,415.3	344.7								
Aug-03	2,889.2	$1.67	1,344.1	$2.04	3,096.6	$2.25	35,303.5	2,299.3	2,501.7	$11.22	567.9	$11.56	2,497.9	$11.46	8,356.7	0.0	6.6	$9.41	1.1	$5.00	441.8	$4.03	4,415.3	441.8								
Sep-03	2,889.2	$1.67	1,396.7	$1.97	3,134.1	$2.08	35,303.5	2,448.1	2,501.7	$11.22	558.1	$11.56	2,499.5	$11.46	8,356.7	0.0	6.6	$9.41	0.0	--------	397.8	$4.55	4,415.3	396.2								
Oct-03	2,889.2	$1.67	1,408.4	$1.93	3,253.2	$2.01	35,303.5	2,504.8	2,501.7	$11.22	638.8	$11.55	2,415.1	$11.45	8,356.7	0.0	6.6	$9.41	0.0	--------	397.8	$4.55	4,415.3	396.0								
Nov-03	2,163.2	$1.17	2,128.8	$1.15	6,833.0	$1.94	35,203.4	2,566.9	475.0	$6.55	579.3	$6.67	5,029.3	$6.98	8,346.1	571.0	0.0	$4.00	0.0	--------	114.3	$8.14	4,401.9	83.7								
Dec-03	2,163.2	$1.17	1,860.1	$1.48	7,203.1	$1.79	35,203.4	2,698.6	475.0	$6.55	909.4	$6.64	4,711.0	$6.98	8,346.1	571.0	0.0	$4.00	0.0	--------	107.5	$8.22	4,401.9	76.9								
Jan-04	2,163.2	$1.17	2,083.6	$1.50	6,972.2	$1.75	35,203.4	2,732.1	475.0	$6.55	968.9	$6.64	4,644.8	$6.98	8,346.1	571.0	0.0	$4.00	0.0	--------	128.2	$7.99	4,401.9	97.0								
Feb-04	2,163.2	$1.17	2,475.9	$1.58	6,379.9	$1.73	35,203.4	2,747.4	475.0	$6.55	2,167.5	$6.77	3,422.4	$6.98	8,346.1	571.0	0.0	$4.00	0.6	$7.50	202.6	$7.08	4,401.9	176.0								
Mar-04	2,163.2	$1.17	2,180.0	$1.54	6,569.8	$1.00	35,203.4	3,369.3	475.0	$6.55	1,938.0	$6.05	3,841.5	$6.98	8,346.1	571.0	0.0	$4.00	0.6	$7.00	142.6	$7.72	4,401.9	119.9								
Apr-04	2,163.2	$1.17	2,646.7	$0.99	6,987.5	$0.80	35,203.4	3,543.8	475.0	$6.55	2,047.2	$6.00	3,779.1	$6.98	8,346.1	571.0	0.0	$4.00	0.6	$6.85	199.0	$7.04	4,401.9	179.7								

* Starting May 2006, Monthly Auction prices and quantities are reported for the upcoming auction month only

** Including auction sales from neighboring Control Areas

Attachment VII: November 1999 – October 2016 Installed Capacity Auction Activity

	NYCA								NYC								LI								G-J Locality							
	Capability Period* (Strip)		Monthly Auction		Spot Market **		Minimum Required	Excess Sold	Capability Period* (Strip)		Monthly Auction		Spot Market		Minimum Required	Excess Sold	Capability Period* (Strip)		Monthly Auction		Spot Market		Minimum Required	Excess Sold	Capability Period* (Strip)		Monthly Auction		Spot Market		Minimum Required	Excess Sold
Month	MW	Price	MW	Price	MW	Price	MW	MW	MW	Price	MW	Price	MW	Price	MW	MW	MW	Price	MW	Price	MW	Price	MW	MW	MW	Price	MW	Price	MW	Price	MW	MW
Nov-99							35,563.1								8,305.6								4,555.3									
Dec-99							35,563.1								8,305.6								4,555.3									
Jan-00	Installed Capacity Market Existed but all purchases and sales were bilateral						35,563.1		Installed Capacity Market Existed but all purchases and sales were bilateral						8,305.6		Installed Capacity Market Existed but all purchases and sales were bilateral						4,555.3									
Feb-00							35,563.1								8,305.6								4,555.3									
Mar-00							35,563.1								8,305.6								4,555.3									
Apr-00							35,563.1								8,305.6								4,555.3									
May-00	1,976.0	$1.50	434.2	$1.30	32.7	$0.50	35,636.0	1,976.0	5,408.8	$8.75	59.4	$12.50	0.0	-	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
Jun-00	1,976.0	$1.50	528.4	$1.40	37.1	$1.28	35,563.1	1,976.0	5,408.8	$8.75	313.4	$9.46	52.7	$12.50	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
Jul-00	1,976.0	$1.50	344.2	$1.80	140.8	$1.98	35,563.1	1,976.0	5,408.8	$8.75	342.7	$9.40	100.0	$12.50	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
Aug-00	1,976.0	$1.50	351.4	$1.62	194.8	$1.77	35,563.1	1,976.0	5,408.8	$8.75	332.6	$9.42	133.9	$12.50	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
Sep-00	1,976.0	$1.50	648.9	$1.32	81.3	$1.16	35,563.1	1,976.0	5,408.8	$8.75	344.5	$9.40	149.5	$12.50	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
Oct-00	1,976.0	$1.50	681.6	$1.30	96.9	$0.89	35,563.1	1,976.0	5,408.8	$8.75	304.2	$9.49	214.0	$12.50	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
Nov-00	4,010.6	$1.04	1,813.6	$1.00	157.7	$0.80	35,563.1	4,010.6	4,861.4	$8.75	735.0	$8.74	170.3	$8.75	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
Dec-00	4,010.6	$1.04	1,854.1	$0.97	167.2	$0.86	35,563.1	4,010.6	4,861.4	$8.75	785.1	$8.74	154.8	$8.75	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
Jan-01	4,010.6	$1.04	1,847.6	$0.97	170.5	$0.85	35,563.1	4,010.6	4,861.4	$8.75	899.5	$8.74	154.8	$8.75	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
Feb-01	4,010.6	$1.04	1,893.8	$0.95	177.2	$0.83	35,563.1	4,010.6	4,861.4	$8.75	921.7	$8.71	154.8	$8.75	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
Mar-01	4,010.6	$1.04	2,032.8	$0.95	208.1	$0.79	35,563.1	4,010.6	4,861.4	$8.75	936.5	$8.74	156.0	$8.75	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
Apr-01	4,010.6	$1.04	1,659.7	$0.87	192.3	$0.59	35,563.1	4,010.6	4,861.4	$8.75	985.6	$8.56	156.7	$8.72	8,272.0		0.0	-	0.0	-	0.0	-	4,638.0									
May-01	2,738.6	$1.90	852.3	$2.25	1,022.2	$9.58	36,132.0	2,738.6	5,316.6	$8.75	248.7	$8.75	235.1	$12.50	8,375.0	(est.)	0.0	-	0.0	-	3.2	$10.83	4,625.0									
Jun-01	2,738.6	$1.90	397.6	$2.68	1,521.0	$9.41	36,132.0	2,738.6	5,316.6	$8.75	228.4	$10.92	299.0	$12.18	8,375.0	(est.)	0.0	-	0.0	-	7.0	$10.83	4,625.0									
Jul-01	2,738.6	$1.90	1,776.6	$4.31	1,534.9	$9.44	36,132.0	2,738.6	5,316.6	$8.75	407.8	$9.77	292.5	$8.83	8,375.0	(est.)	0.0	-	0.0	-	20.2	$10.83	4,625.0									
Aug-01	2,738.6	$1.90	1,788.4	$4.56	1,601.3	$9.35	36,132.0	2,738.6	5,316.6	$8.75	440.1	$8.38	350.1	$9.46	8,375.0	(est.)	0.0	-	0.0	-	21.3	$10.83	4,625.0									
Sep-01	2,738.6	$1.90	1,701.2	$4.16	1,498.0	$9.21	36,132.0	2,738.6	5,316.6	$8.75	434.9	$8.42	316.0	$8.34	8,375.0	(est.)	0.0	-	0.0	-	33.0	$10.83	4,625.0									
Oct-01	2,738.6	$1.90	1,787.1	$4.03	1,473.4	$9.14	36,132.0	2,738.6	5,316.6	$8.75	430.1	$7.99	343.4	$8.72	8,375.0	(est.)	0.0	-	0.0	-	33.0	$10.83	4,625.0									
Nov-01	1,760.4	$2.00	878.0	$0.10	5.8	$ -	32,892.3	1,760.4	3,972.5	$9.40	772.8	$9.00	77.7	$4.80	7,613.3		0.0	-	0.6	$3.50	8.5	$12.33	4,077.6									
Dec-01	1,760.4	$2.00	687.2	$0.49	6.5	$ -	32,892.3	1,760.4	3,972.5	$9.40	906.8	$6.88	11.5	$ -	7,613.3		0.0	-	1.3	$3.50	37.4	$12.33	4,077.6									
Jan-02	1,760.4	$2.00	750.5	$0.84	133.0	$0.75	32,892.3	1,760.4	3,972.5	$9.40	492.6	$5.47	377.3	$8.25	7,613.3		0.0	-	1.3	$5.00	39.7	$12.33	4,077.6									
Feb-02	1,760.4	$2.00	836.2	$0.70	25.5	$ -	32,892.3	1,760.4	3,972.5	$9.40	631.1	$6.69	229.3	$9.20	7,613.3		0.0	-	0.0	$ -	40.6	$11.50	4,077.6									
Mar-02	1,760.4	$2.00	901.3	$0.61	30.0	$0.25	32,892.3	1,760.4	3,972.5	$9.40	784.3	$6.92	90.6	$7.50	7,613.3		0.0	-	14.0	$11.50	26.4	$11.49	4,077.6									
Apr-02	1,760.4	$2.00	677.9	$0.69	5.6	$0.02	32,892.3	1,760.4	3,972.5	$9.40	932.9	$7.12	11.6	$9.40	7,613.3		0.0	-	41.4	$11.48	0.0	-	4,077.6									
May-02	3,201.6	$1.75	552.1	$0.33	2.3	$ -	32,479.5	3,201.6	4,355.2	$9.20	684.1	$9.38	30.5	$9.39	7,621.6		0.0	-	0.0	-	0.0	-	4,177.8									
Jun-02	3,201.6	$1.75	438.3	$0.36	20.3	$0.01	32,479.5	3,201.6	4,355.2	$9.20	671.2	$6.11	16.7	$0.50	7,621.6		0.0	-	0.0	-	0.0	-	4,177.8									
Jul-02	3,201.6	$1.75	721.9	$0.97	11.1	$0.01	32,479.5	3,201.6	4,355.2	$9.20	684.7	$5.34	0.3	$0.01	7,621.6		0.0	-	0.0	-	0.0	-	4,177.8									
Aug-02	3,201.6	$1.75	722.6	$0.91	55.4	$0.01	32,479.5	3,201.6	4,355.2	$9.20	693.8	$5.15	15.1	$2.00	7,621.6		0.0	-	0.0	-	0.0	-	4,177.8									
Sep-02	3,201.6	$1.75	714.0	$0.25	71.2	$0.01	32,479.5	3,201.6	4,355.2	$9.20	688.4	$4.83	24.5	$0.01	7,621.6		0.0	-	0.0	-	0.0	-	4,177.8									
Oct-02	3,201.6	$1.75	712.1	$0.16	1.4	$ -	32,479.5	3,201.6	4,355.2	$9.20	699.0	$4.72	19.2	$1.95	7,621.6		0.0	-	0.0	-	0.0	-	4,177.8									
Nov-02	3,486.7	$0.65	1,024.3	$0.50	85.0	$0.40	34,169.7	3,486.7	4,540.0	$7.00	748.1	$6.40	61.1	$4.10	8,021.8		0.0	-	0.0	-	0.0	-	4,256.2									
Dec-02	3,486.7	$0.65	1,219.3	$0.28	51.4	$0.10	34,169.7	3,486.7	4,540.0	$7.00	762.7	$4.09	29.9	$2.80	8,021.8		0.0	-	0.0	-	0.0	-	4,256.2									
Jan-03	3,486.7	$0.65	1,584.4	$0.26	189.1	$2.10	34,169.7	3,486.7	4,540.0	$7.00	787.9	$4.02	13.3	$2.10	8,021.8		0.0	-	0.0	-	0.0	-	4,256.2									
Feb-03	3,486.7	$0.65	1,623.1	$0.34	85.6	$0.50	34,169.7	3,486.7	4,540.0	$7.00	808.6	$3.51	1.5	$3.00	8,021.8		0.0	-	0.0	-	0.0	-	4,256.2									
Mar-03	3,486.7	$0.65	1,825.9	$0.32	58.8	$0.25	34,169.7	3,486.7	4,540.0	$7.00	799.7	$3.97	21.9	$4.00	8,021.8		0.0	-	0.0	-	0.0	-	4,256.2									
Apr-03	3,486.7	$0.65	1,571.5	$0.15	4.2	$0.01	34,169.7	3,486.7	4,540.0	$7.00	829.7	$3.39	9.1	$3.60	8,021.8		0.0	-	0.0	-	0.0	-	4,256.2									
May-03	2,889.2	$1.67	1,634.8	$1.30	101.5	$0.25	35,303.5	0.0	2,501.7	$11.22	3,016.3	$10.00	110.2	$12.36	8,356.7	0.0	6.6	$9.41	2.2	$24.00	0.2	$23.00	4,415.3	0.0								
Jun-03	2,889.2	$1.67	1,866.0	$1.06	2,148.7	$2.34	35,303.5	2,073.2	2,501.7	$11.22	683.0	$13.78	2,375.5	$11.46	8,356.7	0.0	6.6	$9.41	0.0	--------	341.9	$5.17	4,415.3	341.9								
Jul-03	2,889.2	$1.67	1,249.2	$2.01	2,824.2	$2.28	35,303.5	2,274.1	2,501.7	$11.22	527.9	$11.57	2,558.0	$11.46	8,356.7	0.0	6.6	$9.41	1.0	$5.00	344.7	$5.14	4,415.3	344.7								
Aug-03	2,889.2	$1.67	1,344.1	$2.04	3,096.6	$2.25	35,303.5	2,299.3	2,501.7	$11.22	567.9	$11.56	2,497.9	$11.46	8,356.7	0.0	6.6	$9.41	1.1	$5.00	441.8	$4.03	4,415.3	441.8								
Sep-03	2,889.2	$1.67	1,396.7	$1.97	3,134.1	$2.08	35,303.5	2,448.1	2,501.7	$11.22	558.1	$11.56	2,499.5	$11.46	8,356.7	0.0	6.6	$9.41	0.0	--------	397.8	$4.55	4,415.3	396.2								
Oct-03	2,889.2	$1.67	1,408.4	$1.93	3,253.2	$2.01	35,303.5	2,504.8	2,501.7	$11.22	638.8	$11.55	2,415.1	$11.45	8,356.7	0.0	6.6	$9.41	0.0	--------	397.8	$4.55	4,415.3	396.0								
Nov-03	2,163.2	$1.17	2,128.8	$1.15	6,833.0	$1.94	35,203.4	2,566.9	475.0	$6.55	579.3	$6.67	5,029.3	$6.98	8,346.1	571.0	0.0	$4.00	0.0	--------	114.3	$8.14	4,401.9	83.7								
Dec-03	2,163.2	$1.17	1,860.1	$1.48	7,203.1	$1.79	35,203.4	2,698.6	475.0	$6.55	909.4	$6.64	4,711.0	$6.98	8,346.1	571.0	0.0	$4.00	0.0	--------	107.5	$8.22	4,401.9	76.9								
Jan-04	2,163.2	$1.17	2,083.6	$1.50	6,972.2	$1.75	35,203.4	2,732.1	475.0	$6.55	968.9	$6.64	4,644.8	$6.98	8,346.1	571.0	0.0	$4.00	0.0	--------	128.2	$7.99	4,401.9	97.0								
Feb-04	2,163.2	$1.17	2,475.9	$1.58	6,379.9	$1.73	35,203.4	2,747.4	475.0	$6.55	2,167.5	$6.77	3,422.4	$6.98	8,346.1	571.0	0.0	$4.00	0.6	$7.50	202.6	$7.08	4,401.9	176.0								
Mar-04	2,163.2	$1.17	2,180.0	$1.54	6,569.8	$1.00	35,203.4	3,369.3	475.0	$6.55	1,938.0	$6.05	3,841.5	$6.98	8,346.1	571.0	0.0	$4.00	0.6	$7.00	142.6	$7.72	4,401.9	119.9								

Attachment VII: November 1999 – October 2016 Installed Capacity Auction Activity

	NYCA								NYC								LI								G-J Locality							
	Capability Period* (Strip)		Monthly Auction		Spot Market **		Minimum Required	Excess Sold	Capability Period* (Strip)		Monthly Auction		Spot Market		Minimum Required	Excess Sold	Capability Period* (Strip)		Monthly Auction		Spot Market		Minimum Required	Excess Sold	Capability Period* (Strip)		Monthly Auction		Spot Market		Minimum Required	Excess Sold
Month	MW	Price	MW	Price	MW	Price	MW	MW	MW	Price	MW	Price	MW	Price	MW	MW	MW	Price	MW	Price	MW	Price	MW	MW	MW	Price	MW	Price	MW	Price	MW	MW
Nov-08	2,810.1	$1.77	2,596.0	$1.60	9,114.6	$1.00	36,492.6	3,877.5	1,260.8	$2.79	1,378.2	$2.28	3,974.3	$1.52	9,003.4	1,447.1	0.3	$1.77	1.8	$1.60	772.8	$1.00	4,566.1	772.6								
Dec-08	2,810.1	$1.77	1,663.3	$1.50	9,113.9	$1.25	36,492.6	3,752.1	1,260.8	$2.79	616.1	$1.59	4,186.0	$1.25	9,003.4	1,558.1	0.3	$1.77	10.0	$1.50	802.4	$1.25	4,566.1	802.2								
Jan-09	2,810.1	$1.77	2,027.2	$1.50	8,448.2	$3.19	36,492.6	2,779.0	1,260.8	$2.79	846.5	$1.51	4,151.0	$3.19	9,003.4	1,579.9	0.3	$1.77	147.9	$1.50	847.0	$3.19	4,566.1	733.9								
Feb-09	2,810.1	$1.77	2,435.3	$2.50	8,250.3	$1.77	36,492.6	3,492.1	1,260.8	$2.79	1,021.1	$3.06	3,729.9	$1.77	9,003.4	1,592.0	0.3	$1.77	66.4	$2.50	821.1	$1.77	4,566.1	820.9								
Mar-09	2,810.1	$1.77	2,083.6	$1.10	8,190.4	$0.50	36,492.6	4,128.2	1,260.8	$2.79	849.6	$1.49	3,622.8	$0.50	9,003.4	1,592.0	0.3	$1.77	97.0	$1.10	849.1	$0.50	4,566.1	816.9								
Apr-09	2,810.1	$1.77	1,759.7	$0.50	8,257.2	$0.30	36,492.6	4,228.6	1,260.8	$2.79	588.0	$0.75	3,755.6	$0.30	9,003.4	1,586.6	0.3	$1.77	25.4	$0.50	821.1	$0.30	4,566.1	820.9								
May-09	2,371.1	$3.01	2,500.2	$3.01	8,492.0	$2.61	36,362.4	3,216.7	436.7	$6.75	757.9	$7.00	4,976.3	$8.72	8,855.3	707.3	53.3	$3.01	69.5	$3.01	414.8	$4.71	4,748.5	410.4								
Jun-09	2,371.1	$3.01	2,187.7	$3.50	8,675.3	$4.22	36,362.4	2,505.4	436.7	$6.75	1,447.7	$8.60	3,854.3	$8.65	8,855.3	714.2	53.3	$3.01	41.5	$3.50	415.8	$4.65	4,748.5	415.8								
Jul-09	2,371.1	$3.01	3,207.0	$4.11	7,495.4	$4.42	36,362.4	2,420.6	436.7	$6.75	1,623.8	$8.71	2,930.4	$8.47	8,855.3	732.7	53.3	$3.01	70.6	$4.11	404.9	$4.77	4,748.5	404.8								
Aug-09	2,371.1	$3.01	3,172.4	$4.19	7,242.4	$3.42	36,362.4	2,857.0	436.7	$6.75	1,281.0	$8.52	2,960.2	$8.45	8,855.3	735.1	53.3	$3.01	67.6	$4.19	717.8	$3.42	4,748.5	717.8								
Sep-09	2,371.1	$3.01	2,719.7	$3.49	7,393.3	$2.76	36,362.4	3,147.7	436.7	$6.75	795.5	$8.40	3,403.2	$7.65	8,855.3	816.4	53.3	$3.01	68.2	$3.49	742.9	$2.76	4,748.5	738.9								
Oct-09	2,371.1	$3.01	2,763.7	$2.59	7,087.7	$2.23	36,362.4	3,380.5	436.7	$6.75	1,095.1	$7.62	2,926.6	$7.70	8,855.3	811.1	53.3	$3.01	20.4	$2.59	749.3	$2.23	4,748.5	743.1								
Nov-09	3,201.1	$1.75	3,044.6	$1.55	9,111.4	$0.50	35,785.3	4,081.4	825.2	$4.65	2,274.7	$1.94	3,124.0	$1.23	8,551.6	1,422.3	35.0	$1.75	31.0	$1.55	843.5	$0.50	4,685.0	843.3								
Dec-09	3,201.1	$1.75	2,665.9	$1.30	8,472.6	$0.75	35,785.3	3,976.7	825.2	$4.65	498.5	$1.68	3,607.0	$0.76	8,551.6	1,467.4	35.0	$1.75	113.1	$1.30	875.3	$0.75	4,685.0	842.3								
Jan-10	3,201.1	$1.75	2,392.3	$1.64	8,871.7	$1.85	35,785.3	3,505.4	825.2	$4.65	485.5	$1.78	4,257.0	$1.85	8,551.6	1,497.1	35.0	$1.75	82.0	$1.64	843.4	$1.85	4,685.0	843.3								
Feb-10	3,201.1	$1.75	2,672.5	$2.56	8,406.4	$3.49	35,785.3	2,810.0	825.2	$4.65	506.1	$6.40	4,240.3	$7.98	8,551.6	782.0	35.0	$1.75	82.3	$2.56	843.3	$3.49	4,685.0	843.3								
Mar-10	3,201.1	$1.75	2,770.9	$1.59	8,211.1	$0.85	35,785.3	3,933.4	825.2	$4.65	1,152.4	$7.49	3,472.0	$7.72	8,551.6	807.3	35.0	$1.75	17.5	$1.59	843.3	$0.85	4,685.0	843.3								
Apr-10	3,201.1	$1.75	2,484.4	$0.74	8,399.0	$0.64	35,785.3	4,021.8	825.2	$4.65	945.5	$7.50	3,468.4	$7.16	8,551.6	860.1	35.0	$1.75	79.5	$0.74	855.4	$0.64	4,685.0	843.3								
May-10	2,868.1	$2.47	4,462.0	$2.70	7,827.0	$3.52	35,045.3	2,860.2	1,096.8	$12.90	335.7	$13.33	4,004.2	$13.53	8,336.0	372.0	26.2	$2.47	16.8	$2.70	354.8	$5.81	4,901.0	354.0								
Jun-10	2,868.1	$2.47	3,439.9	$2.75	8,863.7	$2.12	35,045.3	3,396.5	1,096.8	$12.90	1,451.5	$13.40	2,571.5	$13.13	8,336.0	403.6	26.2	$2.47	54.7	$2.75	829.0	$2.12	5,021.0	829.0								
Jul-10	2,868.1	$2.47	2,413.8	$2.00	8,617.7	$1.91	35,045.3	3,475.3	1,096.8	$12.90	836.2	$13.00	2,797.1	$13.05	8,336.0	412.1	26.2	$2.47	85.7	$2.00	816.9	$1.91	5,021.0	816.9								
Aug-10	2,868.1	$2.47	2,062.7	$1.80	8,123.1	$1.68	35,045.3	3,563.7	1,096.8	$12.90	650.2	$12.98	3,025.4	$12.97	8,336.0	418.7	26.2	$2.47	22.1	$1.80	851.2	$1.68	5,021.0	851.2								
Sep-10	2,868.1	$2.47	2,444.2	$1.00	7,993.5	$0.63	35,045.3	3,964.3	1,096.8	$12.90	992.0	$12.85	2,799.0	$12.50	8,336.0	457.8	26.2	$2.47	8.4	$1.00	865.9	$0.63	5,021.0	865.9								
Oct-10	2,868.1	$2.47	2,283.5	$0.45	8,165.3	$0.48	35,045.3	4,022.9	1,096.8	$12.90	882.1	$12.45	2,838.5	$12.72	8,336.0	439.2	26.2	$2.47	25.7	$0.45	851.8	$0.56	5,021.0	851.8								
Nov-10	2,820.1	$0.39	4,179.3	$0.27	9,383.4	$0.01	35,832.5	4,295.9	1,109.8	$4.60	829.9	$4.75	4,571.0	$4.29	8,737.5	1,179.5	1.2	$0.39	6.1	$0.27	913.4	$0.01	5,073.8	913.3								
Dec-10	2,820.1	$0.39	3,352.0	$0.10	8,433.9	$0.50	35,832.5	4,100.2	1,109.8	$4.60	1,620.7	$4.28	3,389.7	$3.66	8,737.5	1,237.6	1.2	$0.39	17.7	$0.10	915.8	$0.50	5,073.8	913.3								
Jan-11	2,820.1	$0.39	2,719.8	$0.65	9,786.2	$0.50	35,832.5	4,100.2	1,109.8	$4.60	1,154.6	$3.66	3,135.3	$3.99	8,737.5	1,207.6	1.2	$0.39	47.1	$0.65	913.3	$0.50	5,073.8	913.3								
Feb-11	2,820.1	$0.39	2,639.8	$0.45	8,839.8	$0.65	35,832.5	4,040.0	1,109.8	$4.60	736.7	$4.25	3,516.2	$3.57	8,737.5	1,245.8	1.2	$0.39	76.7	$0.45	913.3	$0.65	5,073.8	913.3								
Mar-11	2,820.1	$0.39	2,550.6	$0.15	8,199.3	$0.30	35,832.5	4,180.1	1,109.8	$4.60	801.5	$4.00	4,231.1	$3.57	8,737.5	1,246.0	1.2	$0.39	75.9	$0.15	926.6	$0.30	5,073.8	913.3								
Apr-11	2,820.1	$0.39	2,389.0	$0.20	8,448.2	$0.15	35,832.5	4,240.0	1,109.8	$4.60	800.7	$3.82	3,509.6	$3.32	8,737.5	1,269.1	1.2	$0.39	85.7	$0.20	918.4	$0.15	5,073.8	913.3								
May-11	3,515.9	$0.55	3,416.9	$0.60	7,530.4	$0.65	34,684.4	3,911.1	726.5	$13.54	1,663.8	$13.20	3,354.4	$11.97	8,832.0	462.4	1.2	$0.55	60.4	$0.60	895.3	$0.65	5,051.7	895.3								
Jun-11	3,515.9	$0.55	2,876.9	$0.60	7,382.8	$0.55	34,684.4	3,948.7	726.5	$13.54	1,661.7	$12.00	2,896.2	$11.76	8,832.0	482.3	1.2	$0.55	60.8	$0.60	904.5	$0.55	5,051.7	904.5								
Jul-11	3,515.9	$0.55	2,535.2	$0.50	7,562.7	$0.15	34,684.4	4,104.2	726.5	$13.54	1,254.1	$11.84	3,301.5	$5.76	8,832.0	1,046.9	1.2	$0.55	35.6	$0.50	906.1	$0.15	5,051.7	904.5								
Aug-11	3,515.9	$0.55	2,426.5	$0.16	7,786.3	$0.05	34,684.4	4,142.8	726.5	$13.54	834.6	$9.50	3,361.6	$5.83	8,832.0	1,040.8	1.2	$0.55	32.5	$0.16	910.8	$0.05	5,051.7	908.3								
Sep-11	3,515.9	$0.55	2,204.9	$0.10	7,936.4	$0.18	34,684.4	4,093.1	726.5	$13.54	691.3	$6.99	3,680.6	$5.71	8,832.0	1,052.3	1.2	$0.55	58.5	$0.10	892.1	$0.20	5,051.7	890.0								
Oct-11	3,515.9	$0.55	2,135.9	$0.10	7,384.2	$0.13	34,684.4	4,105.9	726.5	$13.54	646.0	$6.49	3,511.6	$9.01	8,832.0	883.0	1.2	$0.55	61.8	$0.10	900.9	$0.13	5,051.7	900.9								
Nov-11	2,008.0	$0.15	4,091.0	$0.12	9,525.7	$0.06	34,778.9	4,147.4	1,031.2	$2.70	1,089.8	$3.00	4,279.6	$0.50	8,833.0	1,550.7	3.6	$0.15	49.7	$0.12	900.7	$0.06	4,989.3	898.1								
Dec-11	2,008.0	$0.15	4,005.3	$0.10	8,957.9	$0.10	34,778.9	4,130.0	1,031.2	$2.70	763.1	$2.00	3,767.2	$4.68	8,833.0	1,222.5	3.6	$0.15	48.2	$0.10	902.3	$0.10	4,989.3	898.1								
Jan-12	2,008.0	$0.15	4,285.4	$0.15	9,513.6	$0.50	34,778.9	3,956.1	1,031.2	$2.70	647.3	$4.00	3,886.5	$4.91	8,833.0	1,205.0	3.6	$0.15	29.1	$0.15	923.7	$0.50	4,989.3	898.1								
Feb-12	2,008.0	$0.15	3,796.3	$0.40	9,232.3	$0.18	34,778.9	4,095.2	1,031.2	$2.70	1,020.3	$4.80	3,172.1	$4.87	8,833.0	1,208.1	3.6	$0.15	24.2	$0.40	900.4	$0.18	4,989.3	898.1								
Mar-12	2,008.0	$0.15	3,624.5	$0.08	8,976.3	$0.10	34,778.9	4,130.0	1,031.2	$2.70	988.5	$4.30	2,991.7	$4.70	8,833.0	1,221.0	3.6	$0.15	0.6	$0.08	922.2	$0.10	4,989.3	898.1								
Apr-12	2,008.0	$0.15	3,795.0	$0.10	9,215.1	$0.10	34,778.9	4,130.0	1,031.2	$2.70	967.6	$4.45	2,958.9	$4.61	8,833.0	1,228.5	3.6	$0.15	6.6	$0.10	921.4	$0.10	4,989.3	898.1								
May-12	2,421.3	$1.25	3,682.7	$1.28	9,279.4	$2.91	35,076.3	2,970.8	530.8	$11.70	1,335.1	$12.30	3,028.7	$17.16	8,896.9	288.8	2.5	$1.42	12.9	$1.28	877.2	$2.91	4,961.1	873.5								
Jun-12	2,421.3	$1.25	3,104.8	$2.14	9,626.6	$1.94	35,076.3	3,386.1	530.8	$11.70	596.6	$15.65	3,991.5	$11.54	8,896.9	718.6	2.5	$1.42	13.7	$2.14	868.2	$1.94	4,961.1	868.2								
Jul-12	2,421.3	$1.25	3,784.3	$1.45	8,508.7	$1.98	35,076.3	3,367.3	530.8	$11.70	1,074.6	$11.85	3,397.6	$10.95	8,896.9	763.7	2.5	$1.42	4.5	$1.45	609.3	$3.56	4,961.1	608.7								
Aug-12	2,421.3	$1.25	3,439.0	$2.01	8,300.3	$1.90	35,076.3	3,401.0	530.8	$11.70	858.5	$11.39	3,234.6	$10.64	8,896.9	787.5	2.5	$1.42	4.5	$3.00	616.0	$3.56	4,961.1	608.5								
Sep-12	2,421.3	$1.25	3,536.1	$2.28	9,157.8	$2.40	35,076.3	3,190.1	530.8	$11.70	572.9	$10.74	3,230.1	$10.47	8,896.9	800.4	2.5	$1.42	13.9	$3.50	606.8	$3.59	4,961.1	606.8								
Oct-12	2,421.3	$1.25	3,402.8	$2.38	7,906.1	$2.48	35,076.3	3,154.5	530.8	$11.70	699.2	$10.52	2,998.9	$10.52	8,896.9	796.7	2.5	$1.42	17.0	$3.50	607.5	$3.58	4,961.1	607.0								
Nov-12	1,815.7	$0.82	4,428.8	$0.54	12,143.0	$0.71	35,852.6	3,988.0	275.1	$4.50	1,093.6	$3.00	4,579.7	$3.36	9,057.3	1,364.4	28.4	$2.25	0.4	$0.54	877.1	$0.71	4,959.4	876.7								
Dec-12	1,815.7	$0.82	4,696.1	$1.10	10,874.4	$1.50	35,852.6	3,636.9	275.1	$4.50	1,420.2	$4.85	4,785.4	$4.91	9,057.3	1,241.1	28.4	$2.25	0.6	$1.10	891.8	$1.50	4,959.4	891.8								
Jan-13	1,815.7	$0.82	5,452.4	$1.98	10,063.0	$3.48	35,852.6	2,756.2	275.1	$4.50	2,202.4	$4.89	3,851.5	$4.91	9,057.3	1,241.1	28.4	$2.25	7.7	$1.98	891.8	$3.48	4,959.4	891.8								
Feb-13	1,815.7	$0.82	5,684.1	$3.02	9,372.0	$2.65	35,852.6	3,125.2	275.1	$4.50	2,308.4	$4.94	3,521.2	$4.91	9,057.3	1,241.1	28.4	$2.25	22.1	$3.02	892.7	$2.65	4,959.4	892.7								
Mar-13	1,815.7	$0.82	6,064.9	$2.18	9,534.1	$2.09	35,852.6	3,372.6	275.1	$4.50	2,350.1	$4.93	3,641.7	$4.91	9,057.3	1,241.1	28.4	$2.25	1.4	$2.18	892.7	$2.09	4,959.4	892.7								
Apr-13	1,815.7	$0.82	6,067.1	$1.68	9,599.9	$1.50	35,852.6	3,634.2	275.1	$4.50	2,323.2	$4.93	3,840.8	$4.91	9,057.3	1,241.1	28.4	$2.25	1.1	$1.74	892.7	$1.50	4,959.4	892.7								

Attachment VII: November 1999 – October 2016 Installed Capacity Auction Activity

	NYCA								NYC								LI								G-J Locality							
	Capability Period* (Strip)		Monthly Auction		Spot Market **		Minimum Required	Excess Sold	Capability Period* (Strip)		Monthly Auction		Spot Market		Minimum Required	Excess Sold	Capability Period* (Strip)		Monthly Auction		Spot Market		Minimum Required	Excess Sold	Capability Period* (Strip)		Monthly Auction		Spot Market		Minimum Required	Excess Sold
Month	MW	Price	MW	Price	MW	Price	MW	MW	MW	Price	MW	Price	MW	Price	MW	MW	MW	Price	MW	Price	MW	Price	MW	MW	MW	Price	MW	Price	MW	Price	MW	MW
May-13	2,635.9	$4.20	2,898.7	$4.51	8,417.8	$5.76	35,466.8	1,817.2	953.1	$14.80	931.1	$15.50	4,065.1	$16.29	9,325.0	378.0	40.5	$7.20	10.2	$6.00	342.0	$7.20	5,394.3	340.3								
Jun-13	2,635.9	$4.20	3,486.2	$5.75	7,704.8	$6.07	35,466.8	1,685.8	953.1	$14.80	1,250.1	$16.15	3,796.8	$16.45	9,325.0	365.5	40.5	$7.20	20.2	$5.91	340.2	$7.20	5,394.3	340.2								
Jul-13	2,635.9	$4.20	3,908.6	$5.76	7,298.2	$5.79	35,466.8	1,804.3	953.1	$14.80	1,447.0	$16.30	3,553.8	$16.10	9,325.0	393.6	40.5	$7.20	34.8	$6.11	341.4	$7.18	5,394.3	341.4								
Aug-13	2,635.9	$4.20	4,048.4	$5.70	7,056.5	$5.63	35,466.8	1,870.7	953.1	$14.80	1,513.6	$15.99	3,533.5	$15.80	9,325.0	417.3	40.5	$7.20	45.4	$6.06	350.7	$7.08	5,394.3	350.7								
Sep-13	2,635.9	$4.20	4,160.1	$5.49	6,709.4	$5.62	35,466.8	1,877.0	953.1	$14.80	1,107.0	$15.72	3,923.9	$15.66	9,325.0	428.3	40.5	$7.20	51.4	$5.97	354.7	$7.03	5,394.3	354.7								
Oct-13	2,635.9	$4.20	4,238.3	$5.55	6,812.1	$5.93	35,466.8	1,742.8	953.1	$14.80	1,269.8	$15.70	3,790.9	$16.11	9,325.0	392.6	40.5	$7.20	52.7	$6.09	348.6	$7.10	5,394.3	348.6								
Nov-13	2,157.7	$2.58	3,116.4	$2.15	11,895.7	$2.06	35,700.4	3,401.7	431.1	$7.54	533.0	$7.90	5,503.5	$10.01	9,222.2	878.4	30.6	$4.00	9.4	$3.10	729.9	$2.73	5,363.6	728.9								
Dec-13	2,157.7	$2.58	3,040.5	$2.95	10,260.2	$3.10	35,700.4	2,953.8	431.1	$7.54	946.7	$9.90	4,515.1	$9.68	9,222.2	904.0	30.6	$4.00	67.7	$2.95	709.2	$3.10	5,363.6	702.4								
Jan-14	2,157.7	$2.58	3,873.3	$3.90	9,173.5	$4.57	35,700.4	2,322.5	431.1	$7.54	1,273.9	$9.60	4,274.1	$9.63	9,222.2	908.1	30.6	$4.00	73.6	$3.90	729.0	$4.57	5,363.6	729.0								
Feb-14	2,157.7	$2.58	3,832.5	$4.30	8,922.0	$4.29	35,700.4	2,440.5	431.1	$7.54	1,524.0	$9.52	3,783.4	$9.56	9,222.2	913.5	30.6	$4.00	82.3	$4.30	722.4	$4.29	5,363.6	722.1								
Mar-14	2,157.7	$2.58	4,472.5	$3.00	8,925.2	$2.86	35,700.4	3,058.5	431.1	$7.54	1,749.2	$9.49	3,592.2	$9.72	9,222.2	901.0	30.6	$4.00	26.8	$3.00	742.7	$2.86	5,363.6	742.7								
Apr-14	2,157.7	$2.58	4,563.7	$1.90	10,046.8	$1.74	35,700.4	3,535.5	431.1	$7.54	1,668.5	$9.61	3,489.5	$9.75	9,222.2	898.8	30.6	$4.00	12.1	$2.59	745.1	$2.55	5,363.6	744.8								
May-14	2,147.9	$5.15	2,467.4	$5.50	6,600.9	$6.68	35,812.4	1,345.3	655.3	$16.24	516.9	$16.54	4,645.8	$18.83	9,470.5	68.4	10.7	$6.39	40.5	$6.20	298.5	$6.68	5,430.5	249.0	476.1	$9.96	435.4	$10.33	2,384.8	$12.38	13,494.9	81.8
Jun-14	2,147.9	$5.15	2,995.1	$6.60	6,458.0	$6.21	35,812.4	1,549.9	655.3	$16.24	1,239.6	$18.72	3,383.6	$18.84	9,470.5	67.8	10.7	$6.39	51.4	$6.68	290.0	$6.44	5,430.5	247.4	476.1	$9.96	996.6	$12.24	1,775.2	$12.35	13,494.9	86.0
Jul-14	2,147.9	$5.15	3,817.3	$6.21	5,920.2	$6.10	35,812.4	1,598.6	655.3	$16.24	1,608.1	$18.71	3,082.1	$18.69	9,470.5	81.2	10.7	$6.39	61.6	$6.40	287.8	$6.46	5,430.5	245.2	476.1	$9.96	1,150.8	$12.25	1,611.1	$12.32	13,494.9	90.5
Aug-14	2,147.9	$5.15	3,830.9	$5.95	6,594.8	$5.80	35,812.4	1,734.3	655.3	$16.24	1,816.1	$18.47	2,887.8	$18.56	9,470.5	92.5	10.7	$6.39	63.6	$6.40	281.9	$6.47	5,430.5	244.3	476.1	$9.96	1,148.7	$12.25	1,643.1	$12.25	13,494.9	101.3
Sep-14	2,147.9	$5.15	3,849.7	$5.75	6,334.4	$5.60	35,812.4	1,819.9	655.3	$16.24	1,956.9	$18.37	2,937.9	$18.17	9,470.5	125.9	10.7	$6.39	66.5	$6.40	288.7	$6.47	5,430.5	244.3	476.1	$9.96	1,339.2	$12.10	1,650.9	$12.04	13,494.9	135.3
Oct-14	2,147.9	$5.15	4,460.5	$5.49	7,060.7	$5.39	35,812.4	1,915.8	655.3	$16.24	1,955.7	$18.19	3,051.0	$17.94	9,470.5	146.3	10.7	$6.39	102.0	$6.40	275.0	$6.51	5,430.5	239.4	476.1	$9.96	1,319.7	$11.89	1,813.8	$11.64	13,494.9	197.1
Nov-14	2,324.7	$2.90	3,417.2	$2.24	10,141.2	$1.43	36,505.6	3,725.5	1,023.8	$8.45	930.4	$8.69	4,356.8	$8.96	9,508.6	926.9	45.6	$3.00	19.9	$2.85	635.9	$2.99	5,393.5	635.9	389.5	$5.90	675.1	$6.62	3,236.9	$5.76	13,582.3	1,121.1
Dec-14	2,324.7	$2.90	3,575.8	$2.56	8,544.1	$3.50	36,505.6	2,773.5	1,023.8	$8.45	1,292.6	$8.89	3,800.2	$8.87	9,508.6	934.4	45.6	$3.00	19.9	$2.95	636.2	$3.50	5,393.5	636.2	389.5	$5.90	802.8	$5.45	3,275.9	$4.76	13,582.3	1,281.0
Jan-15	2,324.7	$2.90	3,320.2	$3.61	9,299.0	$2.41	36,505.6	3,275.5	1,023.8	$8.45	1,314.3	$8.82	3,754.6	$8.80	9,508.6	940.7	45.6	$3.00	230.4	$3.61	613.4	$3.20	5,393.5	612.7	389.5	$5.90	607.4	$4.44	3,142.8	$3.76	13,582.3	1,438.9
Feb-15	2,324.7	$2.90	3,641.3	$2.60	8,452.9	$3.36	36,505.6	2,837.4	1,023.8	$8.45	1,477.9	$8.74	3,572.7	$8.94	9,508.6	928.3	45.6	$3.00	42.7	$3.15	644.0	$3.36	5,393.5	643.2	389.5	$5.90	556.4	$3.76	2,919.2	$4.21	13,582.3	1,367.7
Mar-15	2,324.7	$2.90	4,372.2	$1.80	9,956.8	$0.72	36,505.6	4,051.9	1,023.8	$8.45	1,567.1	$8.70	3,487.4	$7.28	9,508.6	1,074.0	45.6	$3.00	34.4	$2.90	652.0	$2.87	5,393.5	650.0	389.5	$5.90	726.0	$3.97	3,368.3	$2.93	13,582.3	1,571.5
Apr-15	2,324.7	$2.90	4,489.9	$0.45	8,546.3	$0.75	36,505.6	4,036.2	1,023.8	$8.45	1,820.6	$7.25	3,313.8	$7.30	9,508.6	1,072.1	45.6	$3.00	35.1	$2.77	644.7	$2.92	5,393.5	644.7	389.5	$5.90	791.0	$2.89	3,308.7	$2.82	13,582.3	1,588.1
May-15	2,108.4	$3.50	1,977.6	$3.96	8,381.6	$4.07	35,919.8	2,533.7	548.6	$15.50	986.5	$15.61	3,992.0	$16.04	9,271.7	354.2	20.0	$5.30	42.9	$5.30	339.7	$5.78	5,284.0	327.2	723.0	$8.50	227.6	$10.50	2,617.1	$10.93	13,934.4	356.1
Jun-15	2,108.4	$3.50	2,981.6	$4.21	7,997.7	$4.88	35,919.8	2,178.1	548.6	$15.50	1,648.1	$15.66	3,369.2	$15.41	9,271.7	405.8	20.0	$5.30	56.7	$5.74	328.1	$5.77	5,284.0	328.1	723.0	$8.50	462.8	$10.74	2,351.8	$10.56	13,934.4	413.6
Jul-15	2,108.4	$3.50	2,847.4	$4.70	8,227.6	$3.98	35,919.8	2,570.7	548.6	$15.50	1,822.0	$15.35	3,206.2	$15.26	9,271.7	418.0	20.0	$5.30	57.4	$5.67	328.7	$5.77	5,284.0	328.7	723.0	$8.50	445.0	$10.34	2,756.6	$8.36	13,934.4	762.7
Aug-15	2,108.4	$3.50	3,036.0	$3.91	8,611.2	$3.58	35,919.8	2,744.9	548.6	$15.50	1,781.3	$15.40	3,321.0	$15.32	9,271.7	413.5	20.0	$5.30	57.4	$5.67	327.8	$5.77	5,284.0	327.8	723.0	$8.50	1,061.0	$8.34	2,078.7	$8.32	13,934.4	769.1
Sep-15	2,108.4	$3.50	3,410.3	$3.50	8,650.2	$3.48	35,919.8	2,792.5	548.6	$15.50	1,759.2	$15.36	3,542.6	$15.26	9,271.7	418.0	20.0	$5.30	57.4	$5.74	344.7	$5.62	5,284.0	344.7	723.0	$8.50	1,045.2	$8.36	2,077.8	$8.27	13,934.4	776.9
Oct-15	2,108.4	$3.50	3,392.1	$3.09	8,218.0	$2.96	35,919.8	3,017.9	548.6	$15.50	1,794.5	$15.32	3,509.4	$15.01	9,271.7	438.6	20.0	$5.30	60.4	$5.60	345.7	$5.61	5,284.0	345.7	723.0	$8.50	1,100.3	$8.39	2,100.9	$8.13	13,934.4	799.5
Nov-15	1,806.5	$1.25	2,404.5	$0.66	11,055.6	$0.46	35,715.5	4,087.3	631.2	$6.67	996.1	$6.65	4,166.1	$6.36	8,916.1	1,122.9	12.0	$1.64	34.2	$1.55	866.1	$1.82	5,215.8	747.0	400.5	$3.73	434.4	$3.78	3,872.5	$3.46	13,538.1	1,512.3
Dec-15	1,806.5	$1.25	2,994.1	$1.25	10,170.9	$1.28	35,715.5	3,731.2	631.2	$6.67	958.0	$6.40	4,203.8	$6.29	8,916.1	1,128.0	12.0	$1.64	63.6	$1.80	764.9	$1.85	5,215.8	743.9	400.5	$3.73	578.5	$3.47	3,678.2	$3.48	13,538.1	1,509.3
Jan-16	1,806.5	$1.25	2,969.7	$1.65	10,663.8	$1.37	35,715.5	3,694.4	631.2	$6.67	1,088.6	$6.24	4,187.9	$5.85	8,916.1	1,161.5	12.0	$1.64	75.4	$1.80	776.0	$1.55	5,215.8	776.0	400.5	$3.73	698.8	$3.44	3,413.8	$3.16	13,538.1	1,557.4
Feb-16	1,806.5	$1.25	2,968.2	$1.34	10,383.8	$1.46	35,715.5	3,655.7	631.2	$6.67	1,122.1	$6.10	4,100.1	$5.84	8,916.1	1,162.3	12.0	$1.64	74.9	$1.50	777.4	$1.53	5,215.8	777.4	400.5	$3.73	794.6	$3.20	3,322.5	$3.15	13,538.1	1,558.4
Mar-16	1,806.5	$1.25	3,201.7	$0.60	10,933.4	$0.54	35,715.5	4,052.7	631.2	$6.67	1,042.2	$6.04	4,220.6	$5.81	8,916.1	1,164.3	12.0	$1.64	74.4	$1.50	783.1	$1.52	5,215.8	778.6	400.5	$3.73	820.1	$3.16	3,337.5	$3.14	13,538.1	1,560.7
Apr-16	1,806.5	$1.25	3,154.5	$0.40	10,780.6	$0.58	35,715.5	4,037.0	631.2	$6.67	1,063.1	$5.95	4,189.5	$5.65	8,916.1	1,176.2	12.0	$1.64	70.4	$1.40	775.3	$1.60	5,215.8	771.0	400.5	$3.73	832.0	$3.16	3,365.1	$3.03	13,538.1	1,576.7
May-16	1,823.9	$3.62	2,607.6	$3.83	8,971.6	$5.27	35,429.8	2,058.0	581.0	$10.99	800.8	$11.15	4,091.6	$12.41	8,589.0	650.0	30.0	$4.15	31.3	$4.00	489.2	$5.27	5,207.2	480.3	375.5	$8.25	608.8	$8.40	2,837.6	$9.36	13,514.5	649.4
Jun-16	1,823.9	$3.62	2,887.1	$5.15	9,078.1	$4.89	35,429.8	2,214.7	581.0	$10.99	1,024.2	$12.38	3,986.1	$12.29	8,589.0	658.5	30.0	$4.15	188.8	$5.15	456.8	$4.89	5,207.2	445.5	375.5	$8.25	917.0	$9.36	2,548.6	$9.28	13,514.5	661.4
Jul-16	1,823.9	$3.62	3,373.7	$4.70	9,316.6	$4.27	35,429.8	2,471.4	581.0	$10.99	1,172.0	$12.27	3,731.5	$12.22	8,589.0	663.6	30.0	$4.15	40.3	$4.75	482.5	$4.37	5,207.2	479.9	375.5	$8.25	890.2	$9.27	2,397.2	$9.25	13,514.5	665.1
Aug-16	1,823.9	$3.62	3,330.1	$4.15	9,752.3	$3.64	35,429.8	2,736.0	581.0	$10.99	1,217.5	$12.18	3,714.0	$12.21	8,589.0	664.4	30.0	$4.15	36.3	$4.35	477.0	$4.42	5,207.2	474.1	375.5	$8.25	842.1	$9.25	2,427.8	$9.23	13,514.5	668.6
Sep-16	1,823.9	$3.62	3,434.3	$3.41	9,949.6	$3.32	35,429.8	2,870.0	581.0	$10.99	1,230.6	$12.14	3,661.4	$12.19	8,589.0	666.0	30.0	$4.15	97.1	$4.20	477.9	$4.46	5,207.2	470.3	375.5	$8.25	807.1	$9.14	3,938.0	$9.15	13,514.5	679.7
Oct-16	1,823.9	$3.62	3,605.8	$2.84	10,128.3	$3.12	35,429.8	2,952.9	581.0	$10.99	1,155.4	$12.15	3,905.6	$12.14	8,589.0	669.2	30.0	$4.15	44.9	$4.19	486.7	$4.34	5,207.2	483.0	375.5	$8.25	775.2	$9.10	2,729.2	$9.16	13,514.5	678.5

* Starting May 2006, Monthly Auction prices and quantities are reported for the upcoming auction month only

** Including auction sales from neighboring Control Areas