NEW YORK INDEPENDENT SYSTEM OPERATOR
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07-M-0548
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July 25, 2007

VIA HAND DELIVERY

Hon. Jaclyn A. Brilling, Secretary
Public Service Commission of the State of New York
Three Empire State Plaza, 14th Floor
Albany, New York 12223-1350

Subject: Case 07-M-0548 – Proceeding on Motion of the Commission Regarding an Energy Efficiency Portfolio Standard

Dear Ms. Brilling:

Enclosed for filing in the above-entitled proceeding are an original and five copies of the Answers of the New York Independent System Operator, Inc. ("NYISO")to Judge's Questions to the Parties. Pursuant to Judge Stein's procedural rulings in this proceeding, the NYISO is serving this document on all parties via electronic mail to the list service established for this matter. Should you have any questions, please contact me by phone at (518) 356-6220 or by e-mail at cpatka@nyiso.com.

Very truly yours,

Carl F. Patka
Senior Attorney

Hon. Eleanor Stein, Administrative Law Judge
Public Service Commission of the State of New York
Three Empire State Plaza, 3rd Floor
Albany, New York 12223-1350

All Parties

State of New York
Public Service Commission

Case 07-M-0548 - Proceeding on Motion of the Commission Regarding an Energy Efficiency Portfolio Standard.

Answers of the New York Independent System Operator, Inc. to Judge's Questions to the Parties

The New York Independent System Operator, Inc. (NYISO) respectfully submits these answers to the questions posed by Administrative Law Judge Eleanor Stein (Judge's Questions) in the above-entitled proceeding. As stated in our answers to the Staff's Questions and at the June 4, 2007 procedural conference, the NYISO is committed to working with the parties and DPS Staff in their effort to establish an energy portfolio standard that would assist in reducing electricity consumption by New York consumers by 15 percent from forecasted levels in the year 2015.

The NYISO can assist in the PSC's Energy Efficiency Portfolio Standard (EPS) proceeding in several ways. First, the NYISO can lend its technical expertise in load forecasting analysis, demand reduction and conservation effectiveness. The NYISO presented its analysis and ideas on measurement and verification of demand reduction measures resources at the Overview Forum on July 20, 2007. Second, the NYISO can assess the effects of energy efficiency and demand reduction measures on bulk power system reliability. Finally, the NYISO can facilitate market-based approaches for delivery of energy efficiency and demand response products and services. The NYISO will continue to administer its Installed Capacity/Special Case Resource (ICAP/SCR) Program, Emergency Demand Response Program (EDRP) and Day-Ahead Demand

Response Program (DADRP), which should help the State meet its energy reduction goals.

The NYISO wishes to emphasize that Market signals (*i.e.* prices) provide powerful incentives for producing sought-after market behavior, including robust energy efficiency response levels. For example, the NYISO's hourly Day-Ahead and interval-level Real-Time wholesale energy prices signal the cost-saving potential for moving energy usage from high-price to lower-priced periods of the day. The savings available could be used to fund the development of cost-effective technologies for energy-storage or thermal storage devices which convert lower-cost off-peak power into higher-cost on-peak energy. While these devices do not reduce energy consumption, they may reduce power-plant emissions to the extent that marginal off-peak facilities have better emission profiles than marginal on-peak facilities. Similarly structured retail prices, linked to smart-meter technologies, can provide similar incentives to end-users to move, or reduce, their energy usage. In sum, innovative market-based approaches can complement traditional energy efficiency programs to achieve the State's electricity consumption reduction goals.

Set forth below are the NYISO's answers to the questions posed to it by Judge Stein and to the questions directed to all parties.[1]

For NYISO:

Q1. Please provide actual annual sales data for 2006 and an annual sales forecast (in MWhs) for all electric utilities, LIPA, NYPA, and any other load serving entities to the

[1] The NYISO has no comment on the questions it has not answered.

degree you can for each year 2007 through 2015. The data should be broken down in such detail as you have available. Please identify the source of the forecasts.

A1. The tables in the attached spreadsheet, PSC_Case07M0548.xls, summarize actual and forecast energy and peak demand data in each of the NYISO's zones, together with results for the State as a whole. The NYISO began reporting actual and forecast load data by Zone in 2004. Forecasts prior to 2004 were reported by transmission owner. The tables in the attached spreadsheets are taken from the NYISO's 2007 Annual Load and Capacity Report.

The NYISO generates a ten-year econometric forecast in March of each year. The forecasts are generated for each of the eleven NYISO Load Zones and consist of annual and quarterly energy usage, summer peak demand and winter peak demand. The exogenous inputs are provided in quarterly intervals and consist of: (i) employment levels, (ii) gross domestic product, (iii) population, (iv) households, (v) personal income, (vi) electric fuel prices, (vii) heating and cooling degree days, and (viii) other variables derived from this primary set of data. The fuel prices are derived from the forecast developed in February each year by the U.S. Energy Information Administration and aligned with current fuel prices in New York State.

The NYISO also receives energy and peak demand forecasts from LIPA, Consolidated Edison and Orange & Rockland. The forecast methods employed by the individual Transmission Owners often include sector detail that is absent from the NYISO's

econometric models of total usage. Their methods may also employ end-use techniques that permit an explicit inclusion of conservation and load management impacts. The NYISO evaluates these forecasts and compares them to the zonal forecasts to which they correspond. NYISO staff then engages in discussion and evaluation with the Transmission Owner's staff to reconcile any differences that may occur.

Q2. Does NYISO provide any end-user energy efficiency programs (not including peak shaving or demand response type programs)? If so, please provide actual annual achieved end-user energy efficiency data for 2006 and annual end-user energy efficiency forecasts (in MWhs) for your own already-planned end-user energy efficiency programs each year 2007 through 2015. The data should be broken down by program. If possible, provide a description, cost per MWh, and total resource cost test score for each program.

A2. The NYISO does not provide end-use/energy efficiency programs *per se*. Its locational based real time (and day-ahead) prices, however, encourage efficient energy usage at the wholesale level. See the NYISO's answer to Question 6, below, for a description of the peak-shaving and demand response programs administered by the NYISO.

For All Parties:

Q1. Can you please identify any inventories in New York State of existing building stock, appliances and fixtures that might be used to identify and target efficiency opportunities?

A1. The 2003 Conservation Potential Study published by NYSERDA contains information on sector and end-use energy dating from the late 1990s. The U.S. Energy Information Administration (EIA) maintains data on monthly and annual energy sales by customer class. The last EIA Residential Energy Consumption Survey was conducted in 2001. The 2005 Residential Energy Consumption Survey is underway and results will be available by the end of the summer. New York is one of four states for which a special sample is collected The most recent EIA Commercial Energy Consumption survey was 2003, and the last Manufacturing Energy Consumption Survey was 2002. Information on housing stocks and commercial/industrial firms is also available from publicly-available economic databases.

Appliance information for refrigeration and room air conditioners is available for purchase from the Association of Home Appliance Manufacturers (AHAM). Additional information on refrigeration and air conditioning performance and stocks is available from the Air-Conditioning and Refrigeration Institute (ARI).

Given all this available information, it is possible to construct a sector-by-end-use-energy profile specific to New York State that is benchmarked to a given reference year. With the assistance of NYSERDA, the PSC could obtain an accurate, New York-specific energy profile with which to craft an Energy Efficiency Portfolio Standard that enables it to pursue the "15 by 15" goal.

Q2. Can you please identify any specific methods, used in this or other jurisdictions, of creating inventories of existing building stock, appliances and fixtures that might be used to identify and target efficiency opportunities?

A2. A correct assessment of the current level of energy efficiency by sector and end-use is critical to the accurate implementation and ongoing assessment of the Energy Efficiency Portfolio Standard. The data sources listed in response to Question 1 above are a beginning, but they are not sufficient to complete the assessment.

In every sector of the economy there are new trends that must be accounted for. In the residential sector, the size of new homes is increasing. A higher percentage of homes have central air conditioning, and with larger capacity. This offsets naturally occurring efficiency improvements and makes it difficult to establish the potential for residential air conditioning efficiency improvements. A second trend in residential homes is increased use of computers, VCRs, and other discretionary plug loads. Research on the current typical residential load profile is therefore needed. In the commercial sector, there is increased air conditioning load caused by heat generated by personal computers, printers, and network equipment. In the industrial sector, there are downward trends in load due to a loss of manufacturing firms and employment. But this trend is offset by increased electrification, which has made those firms that remain more productive.

Representative samples of appliance and equipment inventories are required in order to accurately determine the conservation potential of energy efficiency measures in every

sector. These are best accomplished by conducting new on-site surveys, designed specifically for this purpose, in every sector. This assessment should be augmented by load research using non-intrusive whole house meters for the residential sector, and premises-level load research for the commercial and industrial sectors. This will enable the state to establish the correct weather-sensitive components of each sector and link consumption to efficiency levels. Without accurate load research data, the avoided cost analysis of energy efficiency measures cannot be assured.

Q6. *The NYISO is answering subdivision (b) of this question:* What entities would be most appropriate and effective in delivering: (b) peak shaving/demand response type programs?

A6 (b). The NYISO is an appropriate entity to deliver peak shaving and demand response programs. The NYISO's peak shaving and demand response programs offer reliability benefits in real time and allow demand reduction to compete with generating capacity to serve New York's electricity needs. The NYISO offers two demand response programs to support bulk power system reliability; the Emergency Demand Response Program (EDRP) and the Installed Capacity-Special Case Resource Program (ICAP/SCR). In addition, the NYISO offers the Day-Ahead Demand Response Program (DADRP), a market-based economic program that makes energy payments to interruptible load resources, with scheduled load reductions in the Day-Ahead energy market, to reduce demand in real time.

EDRP provides resources with an opportunity to earn the greater of $500/MWh or the prevailing location-based marginal price (LBMP) for energy curtailments they provide when the NYISO calls on them. There are no consequences for enrolled participants that fail to curtail. Resources participate in EDRP through Curtailment Service Providers (CSPs), who serve as the interface between the NYISO and participants.

The ICAP/SCR program allows customers that can meet certification requirements to offer unforced capacity (UCAP) to Load Serving Entities (LSEs). Special Case Resources can participate in the ICAP Market just like any other ICAP Resource. Resources are obligated to curtail when called upon to do so with two or more hour's notice, provided that they were notified the day ahead of the possibility of such a call. In addition, ICAP/SCR resources are subject to testing to verify that they can fulfill their curtailment requirement. ICAP/SCR resources are compensated in the ICAP program at the auction clearing prices and in the energy markets at the greater of their strike price or the prevailing LBMP. Failure to curtail could result in penalties administered under the ICAP program. Curtailments are called when reserve shortages are anticipated. Participants register either for EDRP or ICAP/SCR but not both. Resources participate in ICAP/SCR through Responsible Interface Parties (RIPs), who serve as the interface between the NYISO and participants. Both of these programs provide valuable services in managing the critical peak-load periods. These high load periods, as a rule, also correspond to high emission periods as all available generating resources are being utilized.

The DADRP provides retail customers with an opportunity to bid their load curtailment capability into the day-ahead spot market as an energy resource. Customers submit bids specifying the hours and amount of load curtailment they are offering for the next day, and the price at which they are willing to curtail. Prior to November 1, 2004, the bid price had to be $50/MWh or higher. Currently the bid floor price is $75/MWh. Bids are structured like those of generation resources. DADRP program participants may specify minimum and maximum run times and effectively submit a block of hours on an all or nothing basis. They are eligible for production cost guarantee payments to make up for any difference between the market price received and their block bid price across the day. Load scheduled in the Day-Ahead Market (DAM) is obligated to curtail during its scheduled hours. Failure to curtail results in the imposition of a penalty defined by the MW curtailment shortfall times the greater of the corresponding Day-Ahead or Real-Time Market price. The NYISO's Market Participants have not subscribed to the DADRP at expected levels, The NYISO conducts an annual evaluation of this program in which we evaluate whether there are any market barriers to entry.

Q8. Is your entity or organization interested in being a provider of energy efficiency programs? If so, what types?

A8. The NYISO does not offer energy efficiency programs at this time. However, the NYISO's experience in providing reliability and market-based demand reduction programs within New York's wholesale Locational-Based Marginal Price (LBMP)

energy market demonstrates several market principles that can be utilized in designing an effective energy efficiency effort.

Market signals (*i.e.* prices) provide powerful incentives for producing sought-after market behavior. For instance, NYISO's hourly Day-Ahead and interval-level Real-Time wholesale energy prices signal the cost-saving potential for moving energy usage from high-price to lower-priced periods of the day. The savings available could be used to fund the development of cost-effective technologies for energy-storage or thermal storage devices which convert lower-cost off-peak power into higher-cost on-peak energy. While these devices do not reduce energy consumption, they may reduce power-plant emissions to the extent that marginal off-peak facilities have better emission profiles than marginal on-peak facilities.

Similarly structured retail prices, linked to Smart-Meter technologies, can provide similar incentives to end-users to move, or reduce their energy usage. The NYISO is pursuing a comprehensive Advanced Metering Infrastructure (AMI) initiative to improve market efficiencies and the opportunities for the market to respond to new energy initiatives driven by State & Federal energy policy. The availability of enhanced metering technology and design can increase the reliability, accuracy, and specificity of metering data with the potential for providing economic, service reliability, and environmental benefits including:

- Increased price sensitivity and consumer-driven energy conservation,
- Cost savings,

- New demand-side options, including load management, load aggregation, and rate choices and
- Customer access to personal, interval-based energy usage data through the Internet.

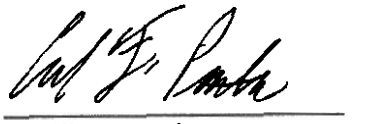
The NYISO is interested in partnering with the Public Service Commission in support of its retail AMI initiative and exploring with it, and other interested stakeholders, the ancillary benefits this initiative can offer.

Programs that are specifically-designed to compensate private sector intermediaries for energy savings they provide encourage innovation, reduce governmental administration and speed program delivery. NYISO's experience with its EDRP and SCR programs indicate that proper market signals, with appropriate measurement and verification rules can tap the ingenuity and market aggressiveness of private sector intermediaries, producing effective and significant program responses.

Q9. Is your entity or organization opposed to being a provider of energy efficiency programs? If so, what types?

A9. No. Nevertheless, any new wholesale market-based energy efficiency product would have to be developed through the NYISO's stakeholder process and would have to be approved by the NYISO's governance process and the Federal Energy Regulatory Commission.

Respectfully Submitted,



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July 25, 2007

Table I-1

NYISO 2007 Long Term Forecast - 2007 to 2017

Energy - GWh

Year	Low	Base	High
2006		162,853	
2007	160,258	165,214	170,170
2008	160,408	167,440	174,472
2009	160,319	169,470	178,621
2010	160,581	171,744	182,907
2011	162,074	174,032	185,990
2012	164,383	176,615	188,847
2013	166,277	178,759	191,241
2014	168,372	181,126	193,880
2015	170,508	183,544	196,580
2016	172,910	186,256	199,602
2017	175,082	188,728	202,374

Summer Peak Demand - MW

Year	Low	Base	High
2006		32,992	
2007	31,775	33,447	35,119
2008	31,331	33,871	36,411
2009	31,042	34,300	37,559
2010	30,901	34,734	38,567
2011	31,239	35,141	39,043
2012	31,591	35,566	39,541
2013	31,917	35,962	40,007
2014	32,247	36,366	40,485
2015	32,557	36,749	40,941
2016	32,874	37,141	41,408
2017	33,276	37,631	41,986

Winter Peak Demand - MW

Year	Low	Base	High
2006-07		25,030	
2007-08	23,045	25,324	27,603
2008-09	22,661	25,748	28,835
2009-10	22,911	26,048	29,185
2010-11	23,152	26,341	29,530
2011-12	23,413	26,656	29,899
2012-13	23,846	27,170	30,494
2013-14	24,136	27,522	30,908
2014-15	24,442	27,893	31,344
2015-16	24,724	28,238	31,752
2016-17	25,031	28,614	32,197
2017-18	25,350	28,978	32,606

Average Annual Growth - Percent

Period	Low	Base	High
2006-17	0.66%	1.35%	1.99%
2007-12	0.51%	1.34%	2.10%
2012-17	1.27%	1.34%	1.39%

Period	Low	Base	High
2006-17	0.08%	1.20%	2.22%
2007-12	-0.12%	1.24%	2.40%
2012-17	1.04%	1.14%	1.21%

Period	Low	Base	High
2006-17	0.12%	1.34%	2.43%
2007-12	0.69%	1.42%	2.01%
2012-17	1.23%	1.30%	1.35%

Notes

1. 2006 results are for weather-normalized energy and peak demand.
2. 2007 summer peak corresponds to the 2007 ICAP forecast.
3. Summer Capability period is from April 1 to October 31. Winter Capability period is from November 1 of the current year to April 30 of the next year.

Table I-2a

Forecast of Annual Energy by Zone - GWh

Year	A	B	C	D	E	F	G	H	I	J	K	NYCA
2007	15,654	10,472	17,181	6,783	6,849	11,523	10,770	2,677	6,741	53,921	22,643	165,214
2008	15,738	10,731	17,353	6,995	6,822	11,480	10,909	2,719	6,841	54,940	22,912	167,440
2009	15,855	10,959	17,518	7,147	6,846	11,563	11,050	2,772	6,966	55,719	23,075	169,470
2010	16,032	11,208	17,629	7,227	6,943	11,600	11,199	2,805	7,063	56,708	23,330	171,744
2011	16,261	11,454	17,733	7,285	7,054	11,641	11,345	2,830	7,150	57,709	23,570	174,032
2012	16,504	11,689	17,824	7,323	7,225	11,694	11,479	2,840	7,219	58,899	23,919	176,615
2013	16,776	11,915	17,939	7,346	7,410	11,752	11,602	2,844	7,283	59,770	24,122	178,759
2014	17,149	12,137	18,070	7,295	7,656	11,823	11,712	2,818	7,304	60,744	24,418	181,126
2015	17,548	12,357	18,199	7,230	7,911	11,901	11,820	2,785	7,315	61,747	24,731	183,544
2016	17,855	12,583	18,318	7,241	8,084	11,971	11,935	2,784	7,376	62,907	25,202	186,256
2017	18,077	12,827	18,420	7,307	8,225	12,025	12,051	2,806	7,472	63,977	25,541	188,728

Forecast of Coincident Summer Peak Demand by Zone - MW

Before Reductions for Emergency Demand Response Programs

Year	A	B	C	D	E	F	G	H	I	J	K	NYCA
2007	2,593	2,017	2,925	811	1,367	2,247	2,262	618	1,505	11,780	5,322	33,447
2008	2,607	2,067	2,956	837	1,361	2,238	2,291	627	1,528	11,975	5,384	33,871
2009	2,626	2,111	2,984	855	1,366	2,254	2,321	639	1,555	12,150	5,439	34,300
2010	2,656	2,159	3,003	864	1,386	2,262	2,352	647	1,577	12,325	5,503	34,734
2011	2,694	2,206	3,020	871	1,408	2,269	2,383	653	1,597	12,480	5,560	35,141
2012	2,734	2,251	3,036	876	1,442	2,280	2,411	655	1,612	12,645	5,624	35,566
2013	2,779	2,295	3,055	879	1,479	2,291	2,437	656	1,626	12,780	5,685	35,962
2014	2,841	2,338	3,078	873	1,528	2,305	2,460	650	1,631	12,915	5,747	36,366
2015	2,907	2,380	3,100	865	1,579	2,320	2,483	642	1,633	13,030	5,810	36,749
2016	2,958	2,423	3,120	866	1,613	2,334	2,507	642	1,647	13,140	5,891	37,141
2017	2,994	2,470	3,137	874	1,641	2,344	2,531	647	1,669	13,360	5,964	37,631

Forecast of Coincident Winter Peak Demand by Zone- MW

Year	A	B	C	D	E	F	G	H	I	J	K	NYCA
2007-08	2,304	1,639	2,651	988	1,059	1,866	1,706	427	1,068	7,980	3,636	25,324
2008-09	2,321	1,674	2,676	1,009	1,063	1,880	1,728	436	1,088	8,111	3,762	25,748
2009-10	2,347	1,712	2,693	1,020	1,078	1,886	1,751	441	1,103	8,237	3,780	26,048
2010-11	2,380	1,749	2,709	1,029	1,096	1,892	1,774	445	1,116	8,344	3,807	26,341
2011-12	2,416	1,785	2,723	1,034	1,122	1,901	1,795	446	1,127	8,451	3,856	26,656
2012-13	2,455	1,819	2,740	1,037	1,151	1,911	1,814	447	1,137	8,758	3,901	27,170
2013-14	2,510	1,853	2,760	1,030	1,189	1,922	1,831	443	1,140	8,894	3,950	27,522
2014-15	2,568	1,887	2,780	1,021	1,228	1,935	1,848	438	1,142	9,044	4,002	27,893
2015-16	2,613	1,922	2,798	1,022	1,255	1,946	1,866	438	1,152	9,217	4,009	28,238
2016-17	2,646	1,959	2,814	1,032	1,277	1,955	1,884	441	1,167	9,367	4,072	28,614
2017-18	2,674	1,996	2,828	1,042	1,298	1,963	1,902	445	1,183	9,522	4,125	28,978

Table I-2b

Forecast of Non-Coincident Summer Peak Demand by Zone - MW

Year	A	B	C	D	E	F	G	H	I	J	K
2007	2,709	2,079	3,022	899	1,505	2,288	2,340	649	1,634	11,780	5,422
2008	2,724	2,131	3,053	927	1,499	2,279	2,370	659	1,658	11,975	5,485
2009	2,744	2,176	3,082	948	1,504	2,296	2,401	672	1,689	12,150	5,541
2010	2,775	2,225	3,101	958	1,526	2,303	2,433	680	1,712	12,325	5,607
2011	2,814	2,274	3,120	966	1,550	2,311	2,465	686	1,733	12,480	5,664
2012	2,856	2,321	3,136	971	1,588	2,322	2,494	688	1,750	12,645	5,730
2013	2,903	2,365	3,156	974	1,628	2,333	2,521	689	1,766	12,780	5,791
2014	2,968	2,410	3,179	967	1,682	2,347	2,545	683	1,771	12,915	5,855
2015	3,037	2,453	3,202	959	1,738	2,363	2,568	675	1,773	13,030	5,919
2016	3,090	2,498	3,222	960	1,776	2,377	2,593	675	1,788	13,140	6,002
2017	3,128	2,547	3,240	969	1,807	2,387	2,619	680	1,812	13,360	6,076

Forecast of Non-Coincident Winter Peak Demand by Zone - MW

Year	A	B	C	D	E	F	G	H	I	J	K
2007-08	2,415	1,685	2,798	1,091	1,109	1,944	1,749	459	1,155	8,230	3,678
2008-09	2,433	1,721	2,825	1,115	1,113	1,958	1,772	468	1,176	8,365	3,806
2009-10	2,460	1,760	2,842	1,127	1,129	1,965	1,795	474	1,193	8,495	3,824
2010-11	2,495	1,799	2,859	1,136	1,147	1,972	1,819	478	1,207	8,605	3,852
2011-12	2,532	1,835	2,874	1,142	1,175	1,981	1,840	480	1,219	8,715	3,901
2012-13	2,574	1,871	2,892	1,146	1,205	1,990	1,860	480	1,230	9,032	3,947
2013-14	2,631	1,906	2,913	1,138	1,245	2,002	1,878	476	1,233	9,172	3,996
2014-15	2,692	1,940	2,934	1,128	1,286	2,016	1,895	470	1,235	9,327	4,049
2015-16	2,740	1,976	2,954	1,129	1,315	2,028	1,914	470	1,245	9,505	4,056
2016-17	2,774	2,014	2,970	1,140	1,338	2,037	1,932	474	1,262	9,660	4,119
2017-18	2,803	2,053	2,985	1,151	1,359	2,045	1,950	478	1,279	9,820	4,173

Table I-2c

Forecast of Coincident Summer Peak Demand by Zone - MW

Before Reductions for Emergency Demand Response Programs

Year	A	B	C	D	E	F	G	H	I	J	K	NYCA
2007	2,593	2,017	2,925	811	1,367	2,247	2,262	618	1,505	11,780	5,322	33,447
2008	2,607	2,067	2,956	837	1,361	2,238	2,291	627	1,528	11,975	5,384	33,871
2009	2,626	2,111	2,984	855	1,366	2,254	2,321	639	1,555	12,150	5,439	34,300
2010	2,656	2,159	3,003	864	1,386	2,262	2,352	647	1,577	12,325	5,503	34,734
2011	2,694	2,206	3,020	871	1,408	2,269	2,383	653	1,597	12,480	5,560	35,141
2012	2,734	2,251	3,036	876	1,442	2,280	2,411	655	1,612	12,645	5,624	35,566
2013	2,779	2,295	3,055	879	1,479	2,291	2,437	656	1,626	12,780	5,685	35,962
2014	2,841	2,338	3,078	873	1,528	2,305	2,460	650	1,631	12,915	5,747	36,366
2015	2,907	2,380	3,100	865	1,579	2,320	2,483	642	1,633	13,030	5,810	36,749
2016	2,958	2,423	3,120	866	1,613	2,334	2,507	642	1,647	13,140	5,891	37,141
2017	2,994	2,470	3,137	874	1,641	2,344	2,531	647	1,669	13,360	5,964	37,631

Emergency Demand Response Program Reductions by Zone - MW

Year	A	B	C	D	E	F	G	H	I	J	K	NYCA
2007	20	2	15	50	20	21	17	2	2	65	60	274
2008	20	2	15	50	20	21	17	2	2	65	60	274
2009	20	2	15	50	20	21	17	2	2	65	60	274
2010	20	2	15	50	20	21	17	2	2	65	60	274
2011	20	2	15	50	20	21	17	2	2	65	60	274
2012	20	2	15	50	20	21	17	2	2	65	60	274
2013	20	2	15	50	20	21	17	2	2	65	60	274
2014	20	2	15	50	20	21	17	2	2	65	60	274
2015	20	2	15	50	20	21	17	2	2	65	60	274
2016	20	2	15	50	20	21	17	2	2	65	60	274
2017	20	2	15	50	20	21	17	2	2	65	60	274

Forecast of Coincident Summer Peak Demand by Zone - MW

After Reductions for Emergency Demand Response Programs

Year	A	B	C	D	E	F	G	H	I	J	K	NYCA
2007	2,573	2,015	2,910	761	1,347	2,226	2,245	616	1,503	11,715	5,262	33,173
2008	2,587	2,065	2,941	787	1,341	2,217	2,274	625	1,526	11,910	5,324	33,597
2009	2,606	2,109	2,969	805	1,346	2,233	2,304	637	1,553	12,085	5,379	34,026
2010	2,636	2,157	2,988	814	1,366	2,241	2,335	645	1,575	12,260	5,443	34,460
2011	2,674	2,204	3,005	821	1,388	2,248	2,366	651	1,595	12,415	5,500	34,867
2012	2,714	2,249	3,021	826	1,422	2,259	2,394	653	1,610	12,580	5,564	35,292
2013	2,759	2,293	3,040	829	1,459	2,270	2,420	654	1,624	12,715	5,625	35,688
2014	2,821	2,336	3,063	823	1,508	2,284	2,443	648	1,629	12,850	5,687	36,092
2015	2,887	2,378	3,085	815	1,559	2,299	2,466	640	1,631	12,965	5,750	36,475
2016	2,938	2,421	3,105	816	1,593	2,313	2,490	640	1,645	13,075	5,831	36,867
2017	2,974	2,468	3,122	824	1,621	2,323	2,514	645	1,667	13,295	5,904	37,357

Table I-3a

Historic Annual Energy by Zone - GWh

Year	A	B	C	D	E	F	G	H	I	J	K	NYCA
1997	18,450	8,225	16,223	4,708	9,201	11,777	8,697	1,954	5,436	44,463	18,241	147,374
1998	18,207	8,408	14,878	5,488	9,545	11,781	8,956	1,958	5,702	46,076	18,856	149,855
1999	18,210	8,611	15,713	6,184	8,956	11,994	9,266	1,894	6,060	48,281	19,671	154,841
2000	16,785	9,635	16,182	6,527	8,182	11,398	9,304	1,942	5,929	49,183	20,072	155,140
2001	16,209	9,661	16,034	6,374	7,403	11,429	9,396	2,003	5,782	50,227	20,723	155,240
2002	16,355	9,935	16,356	6,450	7,116	11,302	9,970	2,162	5,962	51,356	21,544	158,507
2003	15,942	9,719	16,794	5,912	6,950	11,115	10,451	2,219	6,121	50,829	21,960	158,013
2004	16,102	9,888	16,825	5,758	7,101	11,161	10,696	2,188	6,216	52,073	22,203	160,211
2005	16,498	10,227	17,568	6,593	7,594	11,789	10,924	2,625	6,435	54,007	22,948	167,208
2006	15,998	10,003	16,839	6,289	7,339	11,337	10,417	2,461	6,274	53,096	22,185	162,237

Historic Summer Coincident Peak Demand by Zone - MW

Year	A	B	C	D	E	F	G	H	I	J	K	NYCA
1997	2,837	1,529	2,718	559	1,411	2,188	2,109	349	1,198	9,596	4,205	28,699
1998	2,643	1,442	2,381	623	1,465	1,998	2,045	419	1,168	9,581	4,396	28,161
1999	2,769	1,564	2,615	669	1,273	2,169	2,321	429	1,277	10,467	4,758	30,311
2000	2,462	1,644	2,459	757	1,185	1,872	2,176	417	1,265	9,771	4,130	28,138
2001	2,519	1,889	2,719	780	1,260	2,068	2,361	537	1,347	10,602	4,900	30,982
2002	2,631	1,842	2,787	777	1,252	2,073	2,076	498	1,335	10,321	5,072	30,664
2003	2,510	1,782	2,727	671	1,208	2,163	2,146	498	1,395	10,240	4,993	30,333
2004	2,493	1,743	2,585	644	1,057	1,953	2,041	475	1,280	9,742	4,420	28,433
2005	2,726	1,923	2,897	768	1,314	2,164	2,236	592	1,409	10,810	5,236	32,075
2006	2,735	2,110	3,128	767	1,435	2,380	2,436	596	1,467	11,300	5,585	33,939

Historic Winter Coincident Peak Demand by Zone - MW

Year	A	B	C	D	E	F	G	H	I	J	K	NYCA
1997-98	2,752	1,289	2,337	651	1,516	1,816	1,539	401	787	6,491	2,866	22,445
1998-99	2,616	1,273	2,330	849	1,555	2,030	1,712	369	852	7,161	3,131	23,878
1999-00	2,454	1,499	2,497	870	1,443	1,906	1,726	420	976	7,072	3,177	24,041
2000-01	2,489	1,510	2,506	880	1,263	1,798	1,690	366	877	7,206	3,188	23,774
2001-02*	2,248	1,455	2,340	843	1,129	1,742	1,626	344	860	7,013	3,198	22,798
2002-03	2,418	1,507	2,679	925	1,223	1,903	1,590	437	927	7,373	3,472	24,454
2003-04	2,433	1,576	2,755	857	1,344	1,944	1,720	478	981	7,527	3,647	25,262
2004-05	2,446	1,609	2,747	918	1,281	1,937	1,766	474	939	7,695	3,729	25,541
2005-06	2,450	1,544	2,700	890	1,266	1,886	1,663	515	955	7,497	3,581	24,948
2006-07	2,382	1,566	2,755	921	1,274	1,888	1,638	504	944	7,680	3,505	25,057

Table I-3b

Historic Summer Non-Coincident Peak Demand by Zone - MW

Year	A	B	C	D	E	F	G	H	I	J	K
1997	2,936	1,582	2,728	609	1,432	2,195	2,133	452	1,225	9,670	4,273
1998	2,788	1,539	2,697	764	1,585	2,139	2,045	497	1,269	9,586	4,396
1999	2,976	1,583	2,627	789	1,446	2,225	2,321	543	1,358	10,473	4,782
2000	2,625	1,694	2,710	884	1,216	1,919	2,178	586	1,265	9,809	4,386
2001	2,745	1,938	2,764	806	1,304	2,107	2,401	549	1,397	10,602	4,901
2002	2,770	1,898	2,879	804	1,361	2,114	2,097	562	1,364	10,457	5,082
2003	2,611	1,790	2,745	762	1,223	2,170	2,146	579	1,395	10,240	4,993
2004	2,523	1,743	2,601	705	1,149	1,997	2,041	502	1,366	9,769	4,728
2005	2,787	2,037	3,042	823	1,360	2,254	2,296	632	1,492	11,162	5,295
2006	2,786	2,144	3,153	845	1,435	2,380	2,497	627	1,545	11,350	5,752

Historic Winter Non-Coincident Peak Demand by Zone - MW

Year	A	B	C	D	E	F	G	H	I	J	K
1997-98	2,752	1,289	2,531	762	1,718	1,968	1,647	473	991	6,693	2,928
1998-99	2,778	1,346	2,744	889	1,555	2,030	1,712	413	920	7,161	3,131
1999-00	2,739	1,547	2,665	1,094	1,471	1,912	1,749	502	998	7,072	3,245
2000-01	2,489	1,534	2,540	922	1,333	1,872	1,732	479	985	7,206	3,269
2001-02	2,329	1,511	2,611	872	1,190	1,792	1,646	470	1,005	7,067	3,296
2002-03	2,870	1,538	2,687	941	1,259	1,910	1,619	490	1,155	7,440	3,496
2003-04	2,434	1,576	2,966	1,052	1,362	1,944	1,720	530	1,286	7,595	3,647
2004-05	2,463	1,609	2,804	945	1,305	1,958	1,794	571	1,080	7,695	3,767
2005-06	2,450	1,546	2,700	912	1,266	2,196	1,663	541	1,058	7,668	3,584
2006-07	2,400	1,566	2,755	943	1,280	1,932	1,641	532	944	7,680	3,506