

Case 07-M-0548

New York State Energy Research and Development Authority Responses to Administrative Law Judge Eleanor Stein's Questions

On June 22, 2007, Administrative Law Judge Eleanor Stein sent a letter to Active Parties in the above-referenced proceeding that contained a request for selected parties to submit answers to specific questions and for all parties to submit answers to a series of nine questions. NYSERDA hereby submits the following responses to Judge Stein's NYSERDA-specific and all party questions.

Questions Specific to NYSERDA

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

The forecast data series requested for electricity and natural gas is provided in the tables presented on the following page. Tables 1 and 2 provide electricity sales forecast data derived from the New York Independent System Operator (NYISO) forecasts reported in its 2007 *Load and Capacity Data* book. Table 3 provides natural gas sales forecast data, derived by NYSERDA.

Zonal electricity sales reported in Table 1 were derived assuming a 9% loss between generation and end-use for each zone reported by the NYISO. Residential and commercial electricity sales were predicted from the NYISO forecast by NYSERDA using an Ordinary Least Squares (OLS) econometric model with population, per-capita income and gross state product as the predicting variables. Industrial electricity sales equal the total sales minus the sum of the residential and commercial sector sales.

The natural gas demand forecast for each sector is provided in Table 3. The forecast, developed by NYSERDA, applies annual growth rates in sales by sector derived by Energy and Environmental Analysis, Inc. to historic sales by sector for New York.

Table 1. New York State Forecasted Electricity Sales by Zone (MWh)

Year	A	B	C	D	E	F
2006	14,041,569	9,393,338	15,411,281	6,084,321	6,143,523	10,336,080
2007	14,245,140	9,529,520	15,634,710	6,172,530	6,232,590	10,485,930
2008	14,321,580	9,765,210	15,791,230	6,365,450	6,208,020	10,446,800
2009	14,428,050	9,972,690	15,941,380	6,503,770	6,229,860	10,522,330
2010	14,589,120	10,199,280	16,042,390	6,576,570	6,318,130	10,556,000
2011	14,797,510	10,423,140	16,137,030	6,629,350	6,419,140	10,593,310
2012	15,018,640	10,636,990	16,219,840	6,663,930	6,574,750	10,641,540
2013	15,266,160	10,842,650	16,324,490	6,684,860	6,743,100	10,694,320
2014	15,605,590	11,044,670	16,443,700	6,638,450	6,966,960	10,758,930
2015	15,968,680	11,244,870	16,561,090	6,579,300	7,199,010	10,829,910

Year	G	H	I	J	K	NYCA*
2006	9,660,643	2,401,257	6,046,647	48,366,899	20,310,671	148,196,230
2007	9,800,700	2,436,070	6,134,310	49,068,110	20,605,130	150,344,740
2008	9,927,190	2,474,290	6,225,310	49,995,400	20,849,920	152,370,400
2009	10,055,500	2,522,520	6,339,060	50,704,290	20,998,250	154,217,700
2010	10,191,090	2,552,550	6,427,330	51,604,280	21,230,300	156,287,040
2011	10,323,950	2,575,300	6,506,500	52,515,190	21,448,700	158,369,120
2012	10,445,890	2,584,400	6,569,290	53,598,090	21,766,290	160,719,650
2013	10,557,820	2,588,040	6,627,530	54,390,700	21,951,020	162,670,690
2014	10,657,920	2,564,380	6,646,640	55,277,040	22,220,380	164,824,660
2015	10,756,200	2,534,350	6,656,650	56,189,770	22,505,210	167,025,040

* Total NYCA forecasted electricity sales was estimated as 91% of the total electricity requirement forecasted by the NYISO. This methodology is based on a 9% average annual loss factor between the generating level and end-use level.

Table 2. New York State Electricity Sales by Sector (MWh)

Year	ISO Total Generation	Residential Sales	Commercial Sales	Industrial Sales	Total Sales
2006	162,853,000	46,347,330	79,944,593	21,904,307	148,196,230
2007	165,214,000	46,871,864	82,033,525	21,439,351	150,344,740
2008	167,440,000	47,400,950	84,172,102	20,797,348	152,370,400
2009	169,470,000	47,784,024	86,407,893	20,025,783	154,217,700
2010	171,744,000	48,299,188	88,815,407	19,172,445	156,287,040
2011	174,032,000	48,866,914	91,246,884	18,255,322	158,369,120
2012	176,615,000	49,580,458	93,790,001	17,349,191	160,719,650
2013	178,759,000	50,207,101	96,126,536	16,337,053	162,670,690
2014	181,126,000	50,943,319	98,583,125	15,298,216	164,824,660
2015	183,544,000	51,821,835	100,645,612	14,557,594	167,025,040

Table 3. Natural Gas Demand by Sector (Decatherms)

Year	Residential	Commercial	Industrial	Total
2005	415,600	367,500	77,387	860,487
2006	414,078	359,242	69,726	843,047
2007	416,447	359,850	71,411	847,707
2008	421,048	360,993	69,812	851,853
2009	420,298	358,586	68,983	847,866
2010	425,577	365,023	70,590	861,190
2011	429,492	368,382	71,576	869,450
2012	436,783	375,335	72,025	884,143
2013	439,720	379,989	72,190	891,900
2014	443,342	382,778	71,977	898,098
2015	446,333	384,505	73,394	904,233

THE FOLLOWING TABLE REPLACES THE PRECEEDING ONE.

Table 3. Natural Gas Demand by Sector (Decatherms)

Year	Residential	Commercial	Industrial	Total
2005	415,600,000	367,500,000	77,387,246	860,487,246
2006	414,078,110	359,242,353	69,726,491	843,046,954
2007	416,447,027	359,849,634	71,410,531	847,707,192
2008	421,048,281	360,992,632	69,812,218	851,853,131
2009	420,297,750	358,585,533	68,983,095	847,866,378
2010	425,577,057	365,023,422	70,589,523	861,190,002
2011	429,491,973	368,382,227	71,575,621	869,449,821
2012	436,782,520	375,335,074	72,025,054	884,142,648
2013	439,720,473	379,989,442	72,190,236	891,900,150
2014	443,342,432	382,778,397	71,977,148	898,097,977
2015	446,333,351	384,505,450	73,394,121	904,232,921
2016	452,109,307	388,169,667	74,481,007	914,759,982
2017	453,018,449	388,985,684	74,646,581	916,650,714
2018	456,305,151	391,281,332	74,596,413	922,182,896
2019	459,125,482	392,519,761	74,514,004	926,159,247
2020	463,019,417	392,830,525	74,201,562	930,051,504
2021	462,079,949	390,367,651	74,033,199	926,480,799
2022	464,606,082	391,184,639	76,374,868	932,165,588
2023	468,207,499	394,002,562	77,073,943	939,284,004
2024	474,382,404	398,427,641	78,112,003	950,922,049
2025	476,275,342	401,094,554	79,139,809	956,509,706

2. Please provide actual annual achieved end-user energy efficiency data for 2006 and an annual end-user energy efficiency forecast (electric in MWhs, gas in Decatherms) for your service territory or your own already-planned end-user energy efficiency programs each year 2007 through 2015. The data should be broken down by program and should not include peak shaving or demand response programs. NYSERDA programs provided solely for Con Edison or others should be stated separately. If possible, provide a description, cost per MWh or Decatherm, and total resource cost test score for each program.

The achieved annual electricity savings from energy efficiency and on-site generation through 2006, as shown in Table 4 is 2,360,000 MWh. This reduction does not include curtailable load, nor the impacts of the System-Wide Demand Reduction Program (SWP) administered in the Consolidated Edison service area. NYSERDA program savings in the Con Edison service area resulting from SWP are reported separately in NYSERDA's annual report to the Public Service Commission; achieved SWP energy savings are 17,242 MWh, as reported for rate year ending March 31, 2007.¹

Table 4. Cumulative Annual Program Benefits from Installed Measures Summary²

Benefits	Through Year-End 2004	Through Year-End 2005	Through Year-End 2006
Electricity Savings from Energy Efficiency and On-Site Generation (Annual MWh)	1,400,000	1,950,000	2,360,000
Peak Demand Reduction (MW)	325	445	495

Based on performance to date, NYSERDA anticipates an annual increase in electricity savings of 500,000 MWh per year, and the projected annual savings through 2011, (year in which currently approved funding for the **New York Energy SmartSM** Program expires), is 4,860,000 MWh. Electricity savings projections for individual programs are not available. Cumulative annual savings extrapolated through 2015 (assuming continuation of funding at current levels) is 6,860,000 MWh.

The energy, peak demand, and fuel savings for individual programs within the **New York Energy SmartSM** Program are presented in Table 5. The total resource cost ratios are also shown for those programs with benefit-cost

¹ System-Wide Demand Reduction Program Annual Evaluation and Status Report: For the Rate Case Year Ending March 31, 2007, Report to the Public Service Commission, June 2007. Achieved peak demand savings is 16.7 MW. Achieved energy savings is 17,242 MWh.

² Data from Table ES-4 of the **New York Energy SmartSM** Program Evaluation and Status Report: Year Ending December 31, 2006, March 2007, page ES-6.

analysis results. Program offerings included in Table 5 are described more fully in Appendix A.

Table 5. Achieved Cumulative Annual Energy, Demand, and Fuel Savings through 2006³

Program	Energy Savings (MWh)	Peak Demand Reduction (MW)	Fuel Savings (Decatherms)	Total Resource Cost Test Ratio ⁴
Enhanced Commercial/ Industrial Performance	836,300	142.0	4,615	1.9
New York Energy \$martSM Business Partners	60,700	13.3	Not Available	2.6
New York Energy \$martSM Loan Fund and Financing	51,300	15.0	139,621	Not Available
New York Energy \$martSM Focus	0	0	Not Available	Not Available
High Performance New Buildings	250,300	53.5	Not Available	3.4
Flex Tech Technical Assistance: Permanent	697,600	130.0	2,864,903	3.1
Overlap Removed	141,900	26.1	Not Available	-
Subtotal Commercial/ Industrial	1,872,200	862.9	3,009,140	-
Single Family Home Performance (excluding Assisted Home Performance)	18,400	2.5	987,109	1.2
Single Family Home Performance: Assisted Home Performance	5,500	0.8	242,207	
Multifamily Building Performance (Excluding Assisted Multifamily Program)	15,100	3.3	Not Available	0.8
Multifamily Building Performance: Assisted Multifamily Program	23,100	1.8	140,541	
Market Support Program	303,800	72.8	341,920	2.4
EmPower New York	27,900	3.3	66,891	1.5
Subtotal Residential and Low-Income	393,900	84.5	1,778,668	
DG-CHP Demonstration Program	96,700	21.1	-738,327	Not Available

³ Data from Table 2-7 of the **New York Energy \$martSM** Program Evaluation and Status Report: Year Ending December 31, 2006, March 2007, page 2-16 to 2-18; and from Tables 3-4 and 3-5 of the **New York Energy \$martSM** Program Quarterly Evaluation and Status Report: Quarterly Report to the Public Service Commission, Quarter Ending March 31, 2007, May 2007, pages 3-4 to 3-5. Sector level savings have been adjusted to remove overlap between complementary programs. Savings numbers for the ENERGY STAR Products program is through year-end 2005.

⁴ The Total Resource Cost test ratios provided in this table are based on spending and achieved benefits, to date.

Program	Energy Savings (MWh)	Peak Demand Reduction (MW)	Fuel Savings (Decatherms)	Total Resource Cost Test Ratio⁴
Renewable Energy Production	104,600	8.4	Not Available	Not Available
Subtotal R&D	201,300	166.7	-738,327	-
Cross Sector Overlap Removed	7,700	1.5	-	-
NYE\$ Portfolio Total⁵	2,360,000	495	4,049,481	-

Questions for All Parties

1. *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?*

The U.S. government conducts national surveys and provides an array of national and regional information that is generally available on the U.S. Energy Information Administration website.⁶ This information includes such resources as the Residential Energy Consumption Survey (RECS) and the Commercial Buildings Energy Consumption Survey (CBECS), both of which are described in more detail below. Dunn and Bradstreet maintains a database of over 30,000 buildings in New York City that includes information on building size, height, square footage, owner, an energy-use and gas-use indices. New York State agencies also maintain building information on certain types of building stock, such as the State Education Department maintenance of information on K-12 schools. NYSERDA relies on these and other resources when designing and refining the full complement of programs it administers to ensure the most effective and economical efforts are undertaken.

NYSERDA's evaluation of its System Benefits Charge (SBC) Program (**New York Energy SmartSM**), as well as some of its implementation programs includes a variety of surveys to collect market data. The goals of the surveys vary, but do address customer satisfaction, consumer awareness of and action on energy-related topics and behaviors, or market penetration of certain ENERGY STAR[®] products. This survey data could be further examined to determine the extent to which additional representative data might be culled for use in this proceeding. NYSERDA also conducts Market Characterization, Assessment and Causality (MCAC) work on selected

⁵ The total reflects that portion of the **New York Energy SmartSM** portfolio that does not include demand response or curtailable load program efforts. Including those programs would result in a total energy savings of 2,459,700 MWh; a peak demand reduction of 1,112.6 MW; and fuel savings of 4,049,481 Decatherms.

⁶ <http://www.eia.doe.gov/emeu/consumption/index.html>

programs⁷ to: collect and compile descriptive data on markets served or targeted by programs; set market progress indicators (such as awareness, sales, etc.); identify and measure short and longer-term market effects; and assess causal attribution (*i.e.*, assessing the claim that the program was responsible for the observed impacts and market effects).

Programs collect extensive data on buildings as part of the home assessment and building audit process. This information is used for building energy modeling purposes and can also be used to establish building inventories. Data can be analyzed regionally and to some degree by household income levels. Currently, approximately 15% of New York's multifamily buildings have undergone an audit of some kind – primarily buildings located in New York City. The percentage of single family buildings surveyed is less at this point, and largely upstate. Both of these data sets are expected to grow over time. Similarly, over 15% of the SBC-eligible public schools have undergone energy benchmarking to identify their energy intensity.

- The RECS is a national survey that collects energy-related data for primary housing units. The 2005 survey collected data from 4,381 households in housing units statistically selected to represent the 111.1 million housing units in the U.S. RECS data are tabulated for the four Census regions, the nine Census divisions, and for the four most populous States--California, Florida, New York, and Texas. The 2005 survey data will be available in late summer 2007. The most recent data currently available is from the 2001 RECS survey. The RECS provides information on the use of energy in residential housing units in the U.S., including the following: physical characteristics of the housing units; appliances used, including space heating and cooling equipment; demographic characteristics of the household; types of fuels used; and other information that relates to energy use. The RECS also provides energy use and expenditures data for: natural gas, electricity, fuel oil, liquefied petroleum gas (LPG), and kerosene.
- CBECS collects information on the stock of U.S. commercial buildings energy-related characteristics, and energy use and expenditures. Commercial buildings include all buildings in which at least half of the floor space is used for a purpose that is not residential, industrial, or agricultural. Therefore, building types that might not traditionally be considered commercial, such as schools, correctional institutions, and buildings used for religious worship, are included. Data is presented by census region and climate zone, but unlike the residential survey, data is not presented specific to New York. The most recent survey was conducted in 2003; the next survey will be completed in 2007.

⁷ This work was most recently undertaken for the Enhanced Commercial/Industrial Performance Program, the High Performance New Buildings Program, and the FlexTech Technical Assistance Program.

The referenced data sources should be reviewed to develop a comprehensive inventory of buildings in New York and their energy use characteristics. If additional data is required to develop a more complete or specialized data set for buildings, such data and consulting services should be sought through this proceeding.

NYSERDA, through its research and development efforts, has actively supported collaborative efforts that identify emerging energy-saving technologies and practices for the buildings⁸ and industrial sectors⁹, and makes recommendations on promising technologies.

With regard to appliance standards, NYSERDA works and collaborates with other states and with the Appliance Standards Awareness Project (ASAP), the American Council for an Energy Efficient Economy (ACEEE), and Northeast Energy Efficiency Partnerships (NEEP), among others to keep abreast of and coordinate on state and national appliance standards opportunities. NYSERDA has given input to the ASAP/ACEEE report *Leading the Way: Continued Opportunities for New State Appliance and Energy Efficiency Standards*, and participates in the development of a multi-state certification system. Through its work on appliance standards for New York, NYSERDA has conducted analyses¹⁰ for a number of products to identify potential standard levels, evaluate product availability and assess cost-effectiveness of the various levels. This work helped establish efficiency standards for State purchasing and for point-of-sale Statewide standards. The work on the Statewide standards for the lighting, consumer audio and video, and external power supply products also included identifying the baseline efficiency product in each category and estimating its market penetration in the State.

2. 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?

⁸ ACEEE, *Emerging Energy-Saving Technologies and Practices for the Buildings Sector as of 2004*, Report Number A042 October 2004.

⁹ LBNL and ACEEE, *Emerging Energy-Efficient Industrial Technologies*, October 2000.

¹⁰ The analyses did not include primary research, but identified and used relevant information and appropriately related it to New York. Sources of information came from, among others: the U.S. Department of Energy, U.S. Census Bureau, National Electrical Manufacturers Association, Consumer Electronics Association, California Energy Commission, Natural Resources Defense Council, Pacific Gas and Electric Corporation, and manufacturers. Examples of three sources used in the analyses are: The U. S. Department of Energy report *U.S. Lighting Market Characterization, Volume I: National Lighting Inventory and Energy Consumption Estimate*, September 2002; Natural Resources Defense Council. *Televisions: Active Mode Energy Use and Opportunities for Energy Savings*, March 2005; and Consumer Electronics Association. *Energy Consumption by Consumer Electronics in U.S. Residences*, January 2007.

NYSERDA's commercial and industrial and residential programs continue to collect whole-buildings data during technical audits and home assessments, and specific questions could be added to occupant and consumer surveys conducted for program evaluation purposes, to collect specific data. NYSERDA is unaware of any other specific efforts within New York or any other data available to characterize building stock, or appliance and fixture inventories.

3. Can you please identify any specific energy efficiency programs targeted to existing building stock, appliances and fixtures rather than to new construction? If possible, provide a description, cost per MWh or Decatherm, and total resource cost test score for each such program.

Numerous NYSERDA programs target existing building stock, and appliances and fixtures. Detailed descriptions of these programs are provided in Appendix A. Table 5, referred to in NYSERDA's response to Question 2 of the NYSERDA-specific questions, presents these programs and total resource cost (TRC) scores, where available.

4. Can you please identify any specific energy efficiency programs targeted to participants lacking available capital to invest in energy efficiency measures? If possible, provide a description, cost per MWh or Decatherm, and total resource cost test score for each such program.

Many NYSERDA programs serve participants lacking available capital to invest in energy efficiency measures (refer to detailed program descriptions provided in Appendix A). The strategic mission of these programs addresses a broad set of societal objectives that include reaching underserved markets, research and development (R&D), addressing electric reliability, market development activities, low-income services, and energy efficiency resource acquisition (reductions in mW and mWh). These programs were developed given the balance of public policy priorities and fund allocations were committed (and recently modified, as approved by the PSC) across R&D, low-income, and energy efficiency programs. Higher levels of market penetration and saturation and efficiency could be captured with a significantly different portfolio of programs tailored to meet a different strategic mission and policy objectives, with increased funding.

Table 5, referred to in NYSERDA's response to Question 2 of the NYSERDA-specific questions, presents these programs and total resource cost (TRC) scores, where available.

5. Are you aware of any specific market transformation energy efficiency programs that are not already being pursued in New York? If possible, please provide a description, cost per MWh or Decatherm, and total resource cost test score for such program.

NYSERDA is unaware of any specific market transformation energy efficiency programs that are not currently being implemented in New York in some

manner. This said, however, NYSERDA has identified certain program efforts that could be expanded within the scope of NYSERDA's existing programs, assuming new funding to secure the additional efficiency resources. Through its extensive electric efficiency work, particularly through the use of a whole-building approach, NYSERDA has become aware of additional energy and fuel-savings potential that could be realized should existing program efforts be expanded. Among the possible areas to be expanded with regard to electric energy efficiency are the following:

- Building analysis software could be developed for modeling of certain low-rise multifamily buildings. Some styles of these buildings commonly found in New York City are not adequately addressed with existing software models. A similar effort could be targeted to low-rise mixed use (three story commercial/residential buildings often located in downtown areas of small cities.) Technical training and certification would follow such development efforts to develop an adequate workforce capability.
- NYSERDA is currently working with the Department of State to strengthen building codes and appliances standards. This effort requires more resources to move the process along at the necessary pace. Following the implementation of changes to the codes and standards, training of code officials, designers, builders, and others will be needed.
- Data centers and servers represent a new and fast growing opportunity that may deserve a significant focus. Today, this equipment accounts for more than 1.5% of US electricity consumption (>30 GWh). Consumption roughly doubled between 2000 and 2005, and is projected to continue to increase. NYSERDA has an innovative opportunities project focusing on data centers, which is more of a pilot. Additionally, California (PG&E) launched a Data Center Initiative in 2006.¹¹
- Additional opportunities exist to build energy efficiency partnerships and programs focused on specific sectors, similar to sector-based market transformation program for schools and State buildings by NYSERDA and with State colleges, universities and State buildings managers similar to the Higher Education Energy Efficiency Partnership in California.¹²

¹¹ The PG&E initiative includes incentives for: higher efficiency EE computing equipment; virtualization/server consolidation; airflow control systems; high efficiency UPS and power distribution systems, and technical services assistance (new construction, renovation).

¹² The California program, established in 2004, uses 4 main strategies to meet its goals: energy efficiency retrofits, monitoring-based commissioning, emerging technology demonstrations, and training and education. The program has

6. *What entities would be most appropriate and effective in delivering: (a) market transformation type programs; (b) peak shaving/demand response type programs; (c) end-user rebate type programs; (d) energy audit type programs; (e) weatherization type programs; (f) programs for participants; (g) programs targeted to new construction; and (h) programs targeted to existing building stock, appliances and fixtures?*

As stated in NYSERDA's July 13, 2007 submission in this proceeding in response to the New York State Department of Public Service staff's questions, achieving the goals of this proceeding will require significantly increased program activities from both State Authorities and utilities.

Since 1998, NYSERDA has been administering the **New York Energy \$martSM** public benefits program (Program) on behalf of the PSC. The Program is evaluated rigorously and regularly with NYSERDA submitting quarterly and annual reports to the PSC and stakeholders, demonstrating the progress being made toward the PSC's and NYSERDA's public policy and program goals.¹³ The success of the Program, including its cost-effectiveness, has been documented in a number of annual Evaluation and Status reports prepared by NYSERDA with assistance from third-party evaluation and specialty contractors. The New York Power Authority (NYPA) and Long Island Power Authority (LIPA) also sponsor programs to improve the energy efficiency and demand response of customers.

As a public benefit corporation, NYSERDA has unique strengths and competencies to design and implement statewide public benefits programs including: credible, independent, and unbiased information discovery and dissemination; governance principles that require staff to transact business openly, transparently, and ethically; a stakeholder-driven planning process to develop and implement its various initiatives; a history of investing in new energy technologies, comprehensive long-term projects, and technology diversification; centralized administration; comprehensive, innovative program design that strategically addresses broad State energy, economic, and environmental policy goals; and a cost effective delivery system. By capitalizing on these inherent strengths, NYSERDA has created a framework of long-term energy efficiency, market transformation, and resource acquisition strategies that deliver widespread energy efficiency and load

significantly exceeded its goals and has been renewed for 2006-2008. More information is available online at <http://uccsu.northwoodsoft.com/index.html>.

¹³ This is consistent with the Memorandum of Understanding signed by NYSERDA, PSC, and Department of Public Service (DPS), with NYSERDA evaluating programs and reporting to the external SBC Advisory Group created by PSC and NYSERDA as the "independent program evaluator." The SBC Advisory Group helps plan the evaluation, allocate the evaluation budget, and review the work of independent evaluation contractors and NYSERDA regarding the Program's progress.

management, low-income services, and research and development initiatives consistently across the state.

Utilities have experience delivering effective mass market resource acquisition programs in their respective service areas that leverage bill inserts and commercially-proven technologies. To be effective, such programs should be delivered in close coordination with market transformation programs, as discussed below. Utilities have opportunities for advanced metering and grid modernization (*i.e.*, smart-grid) as strategies for real-time transmission and distribution analysis, energy use characterizations, asset optimization, and reliability. Significant opportunities exist to offer customers defined and ready access to their energy use data to enable participation in current and emerging demand-response markets. NYSERDA has particular strengths in technical innovation using demand-response techniques that could be integrated with utility smart metering and grid upgrades. NYSERDA believes that more detailed identification and discussions of these coordinated roles should occur in a collaborative setting.

NYSERDA offers the following preliminary thoughts on the characteristics most appropriate or effective in delivering the following types of energy programs:

1. Market transformation-related programs – organizations that have a statewide and multi-sector presence; all-fuels experience; some level of funding certainty; ability to form public/private partnerships; ability to work with and leverage regional and national initiatives. NYSERDA meets all of these criteria as a result of administering market transformation programs funded from various resources, particularly the SBC, as well as a long history of developing and supporting commercialization of and market market support for emerging technologies and products. NYSERDA also supports market transformation programs with statewide, multi-media marketing and consumer education efforts.
2. Peak shaving/demand response-related programs – organizations that can facilitate aggregation; address system-wide reliability; coordinate activity among various entities to develop strategies and protocols for program implementation. NYSERDA has experience with such coordination efforts and would work closely with utilities and ESCOs to expand on effective programs. Utilities could provide customer data, advanced meters and other systems to support these programs.
3. End-user rebate programs – an organization well-tuned to market and program activity would be best suited to lead the coordination and planning efforts, and an organization that can readily handle many hundreds and perhaps thousands of transactions easily. NYSERDA's role as administrator of market transformation programs, as well as its knowledge of the broad marketplace due to research and evaluation studies, make it well-suited to oversee planning and coordination of rebate-type programs. Some rebate programs (for example, ENERGY

STAR® furnaces) are best delivered to the public through energy service providers participating in whole building energy efficiency initiatives. Appliance rebates, selected as part of a specific product acquisition strategy, can be marketed effectively by utilities using their customer outreach mechanisms, such as bill-stuffers or web sites. Utilities could also offer on-bill financing options to promote acquisition of efficient products.

4. Energy audit programs – an organization that has the means to address all fuels and end-uses in buildings comprehensively; and can coordinate financing and incentives to facilitate work scope implementation. The organization should also be able to meet the demand for services, provide training and certification of service providers, and ensure consistent standards and procedures are used in auditing processes statewide. An organization should also have the ability to integrate its efforts with those implementing the State's economic development initiatives. Through NYSERDA's FlexTech Technical Assistance, whole-building programs, and workforce development efforts, it is well-suited to expand the availability of audit services and follow-on work scope implementation as funding allows.
5. Weatherization programs – organizations best suited to this purpose can serve the statewide low-income sector and have the flexibility to target resources at households most in need, regardless of location within the state; can perform whole-building work scopes; can coordinate programs across various agencies and community-based organizations, ensuring programs complement each other in a manner that provides holistic services to the household, have the flexibility to use programs to fill gaps where needed; have the flexibility to address health and safety issues related to energy-consuming equipment and products; can provide and have the ability to adjust the strength of a statewide network of service providers based on regional needs. The programs offered by NYSERDA are described in detail in Appendix A, and when appropriate, NYSERDA coordinates with the Weatherization Assistance Program (WAP) to provide more comprehensive efficiency services to participants. NYSERDA also uses private contractors to supplement WAP, and believes that this flexible approach is most effective in providing services, more effectively supports weatherization agencies who demonstrate initiative, and enhances the development of the private sector.
6. Programs for participants lacking capital – organizations that can finance broadly and leverage capital from networks of private lending institutions; that can work at a national level to develop new financing mechanisms based on federal guarantees or other opportunities. NYSERDA has already established a number of financing mechanisms for energy efficiency work, and continues to collaborate at a national level for others. In addition to NYSERDA's efforts, the utilities should be encouraged to develop on-bill financing options to enable those

lacking capital to fund improvements from savings on their electric or gas bills.

7. Programs targeted to new construction – organizations that can broadly implement voluntary standards, such as those of the New York State Department of Education in their requirements for new school construction or ENERGY STAR standards for residential and commercial buildings, network with economic development agencies/regional planning organizations, and train the design community and builders on above-code techniques. The organization must also have the ability to broadly address the architectural, engineering and design community, so as to not cause confusion with varying or limited program offerings. NYSERDA has established a statewide training network (community colleges and adult training centers) that will continue to expand as a primary means for workforce development. NYSERDA is a national leader in expanding the ENERGY STAR label to new building types through pilot efforts and new modeling capability.
8. Programs targeted to existing building stock, appliances and fixtures – organizations that can broadly stimulate and impact the vast mid-stream market of equipment vendors, installers, energy service companies and service providers; and are able to leverage the buying power of the state or region (in collaboration with other states.) NYSERDA has a long history of partnerships with manufacturers, retailers and other suppliers, and has used those relationships to increase market share of energy efficient products to among the highest in the nation. NYSERDA has also established a strong network of designers, contractors, installers and others who are trained and certified to perform energy efficiency work in existing buildings.

7. What entities would be least appropriate and effective in delivering: (i) market transformation type programs; (j) peak shaving/demand response type programs; (k) end-user rebate type programs; (l) energy audit type programs; (m) weatherization type programs; (n) programs for participants; (o) programs targeted to new construction; and (p) programs targeted to existing building stock, appliances and fixtures?

As offered in NYSERDA's July 13, 2007 submission in this proceeding, NYSERDA believes that it is premature at this time to define specific roles for potential program sponsors, including investor-owned utilities with respect to the delivery of energy efficiency programs. However, given the aggressive goal of achieving the 15 by 15 initiative, opportunities will likely exist for multiple program sponsors to deliver energy efficiency programs and services. It is critical to define complementary roles and to avoid duplication and waste by incorporating all the State's program sponsors under a strong overarching administrative structure. Essentially, utilities and other entities, such as State's Authorities, should not be competing among themselves; rather, cooperation and collaboration should be encouraged with each entity doing what it does best on behalf of the State's ratepayers.

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

As the central administrator of the energy efficiency and renewable energy programs funded by the SBC and the RPS, and as administrator of the Consolidated Edison System-wide program, as well as some small natural gas efficiency programs, NYSERDA stands willing to work closely with DPS, NYPA, LIPA, investor-owned electric and gas utilities, and other interested parties in designing, implementing, and evaluating a comprehensive statewide energy efficiency portfolio standard (EPS) program. NYSERDA believes that these programs should continue to be coordinated by a central administrator. The Commission stated in its Opinion and Order Concerning System Benefits Charge Issues (Opinion No. 98-3, January 30, 1998): “We expect the use of a third party fund administrator will produce economies in fund management by eliminating duplicative tasks and cumbersome decision making and will ensure that the funds are administered in a competitively neutral manner.” The need for a central administrator to avoid the inefficiencies of balkanized regional programs remains as compelling now as then.

In addition to implementing programs that leverage NYSERDA’s unique strengths and capabilities, as discussed below, NYSERDA will work with all parties to develop common metrics, evaluation protocols and methods, and reporting requirements for use by all energy program sponsors to ensure consistent and timely reporting of the program’s progress in meeting the State’s EPS goals. NYSERDA believes it could best help meet statewide EPS goals in the following areas:

- As stated in NYSERDA’s July 11, 2007 response to Staff questions, given its current administrative responsibilities over public benefits programs, NYSERDA is well-positioned to serve as the Statewide central coordinator of program sponsors, in close collaboration with DPS;
- Coordination of monitoring, evaluation, and reporting for a statewide EPS program as discussed in NYSERDA’s July 11, 2007 submission in this proceeding;
- Continuing and expanding existing **New York Energy \$martSM** programs;

- Continuing existing research, development, and demonstration programs that address near-term emerging technologies for future energy efficiency opportunities relevant to the statewide EPS program.

Appendix A.

The New York State Energy Research and Development Authority

List of Energy Efficiency Programs

Commercial, Industrial, Institutional, Municipal

- Peak Load Management Program
- Enhanced Commercial/Industrial Performance Program
- **New York Energy \$martSM** Business Partners
- **New York Energy \$martSM** Loan Fund and Financing Program
- Energy Smart Focus Program
- High Performance New Buildings Program
- FlexTech Technical Assistance Program
- Consolidated Edison System-Wide Program
- Consolidated Edison Natural Gas Efficiency Program

Residential Efficiency and Affordability Programs

- Single Family Home Performance Program
- Multifamily Building Performance Program
- Market Support Program
- EmPower New YorkSM
- Communities and Education Program
- Buying Strategies and Energy Awareness Program

Peak Load Management Program. The Peak Load Management Program (PLMP) works to improve New York's energy system reliability and security by reducing energy demand. Formerly known as the Peak Load Reduction Program (PLRP), in 2006 the program was renamed to reflect an increasing focus on enhanced building automation and dynamic retail pricing strategies. PLMP encourages measures for demand management by offering financial incentives to allow participation in dynamic retail pricing, commodity purchase, and managing financial risk. The program provides incentives for equipment and technical solutions that enable significant demand reduction (MW) resources and requires participation in New York Independent System Operator demand response programs. In addition the incentives for load curtailment and shifting (LC/S), distributed generation (DG), and interval meters (IM), are also given for permanent demand reductions that are coincident with the electric system peak.

Enhanced Commercial/Industrial Performance Program. The Enhanced Commercial and Industrial Performance Program (ECIPP) serves commercial and industrial businesses, healthcare facilities, and State and local governments. It provides information and incentives to improve

existing building loads, non-building loads, and process equipment. Building off the successful Commercial and Industrial Performance Program (CIPP) and Smart Equipment Choices (SEC), ECIPP is a consolidation of the two programs that simplifies customer access to incentives by having a single point of entry into NYSERDA and by providing to customers a streamlined and simplified process to the marketplace. ECIPP has three tiers of incentives, and adds a custom project incentive path serving industrial process opportunities, system approaches, and unique applications. Allowing customers, ESCOs, and contractors access to multiple incentive strategies to support their energy projects will enable the New York ESCO community to continue to grow the market for energy efficiency in existing buildings, process equipment and non-building leads.

New York Energy \$martSM Business Partners. The **New York Energy \$martSM Business Partners** Program is a consolidation of the Small Commercial Lighting Program (SCLP), Premium Efficiency Motors (PEM) Program, the Commercial HVAC Program, and the Innovative Opportunities Program. This new program focuses on market development. **New York Energy \$martSM** business partners are allies that agree to work with NYSERDA to promote energy-efficient products and services. In exchange, business partners gain access to special training, tools, guidelines, and performance incentives. NYSERDA works with its business partners to help them differentiate their business in a highly competitive marketplace, while assuring that appropriate quality control mechanisms are in place. The strategy of partnering with businesses helps to strengthen the market infrastructure leading to increased energy-efficient product and service availability and demand. Thus, business partner efforts will also help to increase activity in NYSERDA's customer-targeted programs.

New York Energy \$martSM Loan Fund and Financing Program. The **New York Energy \$martSM Loan Fund and Financing Program** expands the availability of low-interest capital to help implement energy-efficiency projects and process improvements. Lenders enroll in the program by signing participation agreements and agreeing to reduce the interest rates on energy-related loans in exchange for a lump sum subsidy paid by NYSERDA. The Program's ongoing training of the financial sector includes tools to allow lenders to calculate the cash flow advantages their customers will gain from making energy-efficiency improvements. While the Loan Fund has met the needs of customers who do not avail themselves of other NYSERDA programs, the reduced-interest financing will also continue to be available to program participants.

Energy Smart Focus Program. Energy Smart Focus provides services to facilitate and encourage sector-specific energy efficiency improvements and practices. The program is a marketing and information transfer effort that will use existing core **New York Energy \$martSM** programs and services to sponsor deployment, demonstration, research, and development projects in conjunction with sector customized strategies. Such strategies include benchmarking, targeted marketing materials and messages, training,

partnerships with trade associations, and integration with regional and national efforts.

High Performance New Buildings Program. The High Performance New Buildings Program (formerly operating as the New Construction Program) was established to encourage energy-efficient design and building practices among architects and engineers and to urge them to inform building owners about the long-term advantages of building to higher energy efficiency standards. The program aims to create long-term changes in design practices by integrating energy efficiency and green building concepts into new building designs. The program offers a performance-based approach in which incentives are determined by total electricity savings and are tiered to reward progressively more efficient designs. Through design team incentives and recognition, the program promotes green building projects and projects seeking Leadership in Energy and Environmental Design (LEED) certification.

FlexTech Technical Assistance Program. The FlexTech Technical Assistance Program is a consolidation of services previously offered under the FlexTech, Technical Assistance, and the Energy Audit Programs. The Program provides customers with objective and customized information to facilitate wiser energy efficiency, energy procurement, and financing decisions. The Program is available to all commercial and industrial customers. Cost-shared technical assistance is provided for detailed energy efficiency studies from energy engineers and experts. Small customers are eligible for quick walk-through energy audits, with the cost share reimbursed upon implementation of recommendations. Participants may use NYSERDA-contracted or customer-selected consultants.

Consolidated Edison System -Wide Program. This program offers funds through its *Power-Saving Partners* initiative. This program is available to eligible customers in the Con Edison Service territory and offers more than \$112 million in incentives through enhanced versions of several **New York Energy \$martSM** programs.

Natural Gas Efficiency Program. This program is for natural gas customers served by Consolidated Edison and offers firm-rate Con Ed gas customers audits and analyses to help manage gas costs and run facilities more productively and efficiently. It assists businesses in making informed energy decisions and implement energy efficiency strategies.

Residential and Low-Income Programs

Single Family Home Performance Program. This program, which addresses one- to four-unit homes, includes the Home Performance with ENERGY STAR[®] Initiative (HPwES) for existing homes, and the New York ENERGY STAR Labeled Homes Initiative (NYESLH) for new construction. On the supply side, these initiatives support market development through recruitment, training and incentives for builders and contractors, in order to

encourage them to offer energy efficient options. On the demand side, these initiatives market the benefits of energy efficiency to residential consumers in order to increase demand for efficient products and services. Both HPwES and NYESLH have low-income components providing additional incentives for low-income households.

Multifamily Building Performance Program. The Multifamily Building Performance Program provides a single point of entry for multifamily building owners and developers interested in improving the energy efficiency of new and existing buildings. The new construction track supports the ENERGY STAR Multifamily Building Initiative, whereby a building meeting certain performance criteria can earn the ENERGY STAR label. Both the new construction and existing buildings tracks are performance-based, providing incentives based on achieving performance levels as identified in a building performance plan. The Multifamily Building Performance Initiative also has a low-income component, providing technical and financial assistance to low-income building owners and their tenants to make energy efficiency improvements, thus reducing energy bills and providing increased health and safety benefits to building occupants.

Market Support Program. The New York Energy \$martSM Market Support Program provides support services to the building performance and low-income programs by increasing the availability of energy-efficient products and by increasing consumer demand. There are three major components to the Market Support Program: 1) the ENERGY STAR[®] Products Initiative, which seeks to increase the availability and sales of residential ENERGY STAR appliances, lighting and home electronics products; 2) the Program Marketing Initiative, which provides marketing for the Single Family Home Performance Program, the Multifamily Building Performance Program, the summer and winter tips campaigns, and leveraged campaigns such as “Change a Light, Change the World” as well as marketing assistance to mid-stream partners; and 3) the GetEnergySmart.org website, which provides consumers with information about programs, names of contractors and retailers, and energy efficiency tips, provides potential program partners with participation information, and serves as a communication tool with current partners.

EmPower New YorkSM. The EmPower New YorkSM program provides energy efficiency services to utility customers earning less than 60% of the state median income and households enrolled in utility low-income payment assistance programs, targeting both owners and tenants of one- to four-family homes and multifamily buildings with fewer than 100 units. The program coordinates with the delivery of federal weatherization services through New York State Division of Housing and Community Renewal (DHCR).

Communities and Education Program. This program provides energy efficiency information on NYSERDA programs through schools, local seminars, workshops and events. The program has two components: Energy

\$mart Students and **New York Energy \$martSM** Communities. Although energy savings are not directly attributable to this program, they are captured, at least in part, by increased participation in other programs.

Buying Strategies and Energy Awareness Program. This program provides additional outreach, education, communication and marketing support targeted at under-served low-income regions or sectors. Initiatives include buying strategies, targeted marketing and outreach, Energy \$mart Students, and the Low-Income Forum on Energy (LIFE). As with the Communities and Education Program, although energy savings are not directly attributable to this program, they are captured, at least in part, by increased participation in other programs. Where possible, behavioral changes are also captured.