



## New York State Energy Research and Development Authority

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March 4, 2005

Honorable Jaclyn A. Brillling  
Secretary  
New York State Public Service Commission  
3 Empire State Plaza  
Albany, New York 12223-1350

RE: Case 05-M-0090 – In the Matter of the System Benefits Charge III.

Dear Secretary Brillling:

Pursuant to the *Notice Soliciting Comments* issued January 28, 2005 in the above-referenced case, enclosed please find an original and 15 copies of responses to the matters for comment on behalf of the New York State Energy Research and Development Authority (NYSERDA).

Respectfully Submitted,

/s/

Robert G. Callender  
Vice President for Programs

Enclosures

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## MATTERS FOR COMMENT

### 1. To what extent have the goals and objectives established by the Commission been achieved?

The **New York Energy Smart<sup>SM</sup>** Program is making considerable progress in meeting its public policy goals, as established by the New York State Public Service Commission<sup>1</sup>, and that progress is expected to continue at a steady rate through June 2006 as presented in the most recent *New York Energy Smart<sup>SM</sup> Program Evaluation and Status Report* (Evaluation Report) issued in May 2004. The overarching conclusion of the evaluation effort finds that the Program has fostered and accelerated market development in the areas of energy efficiency, peak load reduction, and renewable energy that would not have occurred absent the Program.<sup>2</sup> The attached tables from the Evaluation Report, Table 4, Progress Toward Goals, and Table 5, Cumulative Program Benefits from Installed Measures, document these results. The entire results of the evaluation efforts are available on NYSERDA's website ([www.nyserdera.org](http://www.nyserdera.org)), as well as the Department of Public Service website ([www.dps.state.ny.us](http://www.dps.state.ny.us)). The next evaluation report will be available in May 2005 and will report on program activities and progress through year-end 2004.

Additionally, the System Benefits Charge Advisory Group (Advisory Group)<sup>3</sup>, which serves as the Independent Program Evaluator, acknowledged in its June 7, 2004 transmittal letter to the Department of Public Service, that it continues to believe that the **New York Energy Smart<sup>SM</sup>** program "is demonstrating real and substantial progress in achieving energy efficiency, providing reductions in demand, encouraging renewables, supporting energy R&D in New York and improving affordability for many low-income customers."<sup>4</sup> The letter also states, as evidenced in the Evaluation Report, that there

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<sup>1</sup> *New York Energy Smart<sup>SM</sup> Program Evaluation and Status Report*, Final Report, Volume 1, Executive Summary, May 2004, p. ES-vi.

<sup>2</sup> *Id.* at p. ES-iv.

<sup>3</sup> The System Benefit Charge Advisory Group consists of 24 individuals representing varied interests, including utilities, business and environmental groups, energy service companies, community organizations, professional and trade organizations, government, and national energy efficiency and energy research and development organizations.

<sup>4</sup> Letter from SBC Advisory Group to Secretary Jaclyn A. Brillling, and Mr. Jim Gallagher (June 7, 2004).

are “clear economic and environmental benefits for the citizens of New York.”<sup>5</sup> A cost-effectiveness analysis of the largest **New York Energy Smart**<sup>SM</sup> programs finds that the portfolio of programs across sectors are cost-effective with benefit-cost ratios greater than one.<sup>6</sup>

The **New York Energy Smart**<sup>SM</sup> Program has begun to transform markets and end-use consumer decision-making in support of greater and sustainable levels of energy efficiency that would not have occurred absent the Program, which has helped to transform the market for residential ENERGY STAR<sup>®</sup> Appliances in New York. An extensive network of energy services companies, contractors, and service providers are implementing energy efficiency projects throughout the **New York Energy Smart**<sup>SM</sup> Program service area. The Program’s marketing, consumer awareness, and deployment programs have contributed to greater knowledge and awareness of energy conservation and efficiency, and directly resulted in the increase of market-share for energy-efficient products across all end-use categories.<sup>7</sup>

**2. Should the SBC program continue beyond its current expiration date of June 30, 2006? If so, for what duration should the SBC be extended and at what funding level?**

Consideration should be given to extend the **New York Energy Smart**<sup>SM</sup> Program beyond its current expiration date of June 30, 2006. Although significant progress is being made toward achieving the public policy goals set forth by the Public Service Commission, there remains potential for even greater energy savings, economic development, and environmental benefits to be realized by New Yorkers.

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<sup>5</sup> Id.

<sup>6</sup> *New York Energy Smart*<sup>SM</sup> *Program Cost-Effectiveness Assessment*, December 2004.

<sup>7</sup> Ibid at 5.

In Opinion 98-3, the Public Service Commission found that programs could deliver greater benefits and operate more effectively if offered on a Statewide basis.<sup>8</sup> The State's public benefits program is designed to ensure that all New Yorkers have the ability to choose reliable, affordable, efficient, and clean energy that contributes to a vibrant and secure economy, healthy environment, and an improved quality of life. The public benefits program has proven to date that it can reduce energy costs for all consumers and particularly for those customers participating in its programs; that it can improve air quality; and that it can create new jobs in New York. The annual energy bill savings for participating customers is estimated to be \$140 million for Program activities through year-end 2003, including electricity, oil, and natural gas savings from energy efficiency and peak load management services provided. Assuming that the installed energy-efficiency measures will continue to save ratepayers money for an average of ten years, the \$1.4 billion in savings available from activities to date compares favorably to the \$350 million investment to date through the Program. Participating customers' bill savings are expected to increase to \$380 million annually when the Program is fully implemented. Total annual energy cost savings for all customers, including non-participating customers, is estimated to be \$196 million for Program activities through year-end 2003, increasing to \$420 million to \$435 million at full implementation.<sup>9</sup>

The investment of approximately \$350 million in the **New York Energy Smart<sup>SM</sup>** Program portfolio has brought about an estimated additional investment of \$850 million, for a total of \$1.2 billion, in public and private sector energy-and efficiency-related investment in the State as of December 31, 2003 – when fully implemented, the Program is expected to have resulted in a total of \$2.8 billion of new investment in the State. The program has created an average of 3,500 jobs annually over the 1998-December 31, 2003 period, and is expected to create an average of 5,500 jobs annually over the full eight-year Program period (1998-2006).<sup>10</sup> The jobs created are net new jobs, over and above those that

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<sup>8</sup> *Opinion and Order Regarding Competitive Opportunities for Electric Service*, Case No. 94-E-0952, *et al.*, Opinion 98-3, issued and effective January 30, 1998.

<sup>9</sup> *New York Energy Smart<sup>SM</sup> Program Evaluation and Status Report*, Final Report, Volume 1, Executive Summary, May 2004, p. ES-iv.

<sup>10</sup> *Id.*

would have been created had the program not existed and the SBC money remained with ratepayers. Moreover, these benefits are being provided at net cost savings – meaning that the costs of these programs, including costs shared by participants, are less than the value of benefits being provided.

The Program is also helping to improve the State’s air quality by reducing air pollutant emissions from the combustion of fossil fuels. The Program has reduced nitrogen oxide (NO<sub>x</sub>) emissions by 950 tons, sulfur-dioxide (SO<sub>2</sub>) emissions by 1,700 tons, and carbon dioxide (CO<sub>2</sub>) emissions by 750,000 tons.<sup>11</sup>

While New York’s public benefits program has made significant progress toward meeting the goals set for the program by the PSC, more can be done. Substantial potential still exists for improving energy efficiency and developing new resources. Reductions in the use of electricity could provide added benefits by reducing electricity price volatility and by mitigating potential negative consequences of supply shortages. Moreover, as New York meets virtually all of its energy resource needs through imports, SBC programs encourage energy efficiency and distributed generation and reduce reliance on imported resources and foster economic development within New York State.

**3. Have conditions changed since the establishment of the SBC that would necessitate a change in the overall goals and objectives of the SBC? If so, what changes are recommended?**

Conditions have not changed significantly enough to warrant wholesale program changes. However, as discussed in the answer to Question 4 below, NYSERDA believes that conditions have changed enough to warrant adjustments to specific programs beyond those modifications and refinements to programs that occur regularly as new information becomes available or market forces dictate.

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<sup>11</sup> Id at p. ES-v.

**4. If assuming continuation of the SBC, how should programs be prioritized to meet those goals and objectives?**

Several major events have occurred and new policy initiatives have been undertaken that directly effect the energy industry in New York since the inception of the SBC. In 2003, New Yorkers spent a record amount, \$42 billion on energy to support the State's economy and residents. As demand for energy grows, bills will continue to rise. Satisfying the expected growth in electricity demand alone will require the addition of as much as 500 MW of new generating capacity each year. A combination of new generation resources and energy efficiency improvements that will reduce demand are needed. Reducing this demand by 50 percent through cost-effective improvements in energy efficiency would account for approximately 250 megawatts of new generation each year. Substantial potential improvements in energy efficiency exist in all sectors. Statewide electricity demand can be reduced, economically, by 25% by 2022: cost-effective reductions of 24% can be realized in the residential sector, 32% in the commercial sector, and 13% in the industrial sector.<sup>12</sup> These savings are over and above current levels of efficiency achieved through the activities of the State's public benefits program and resulting from naturally occurring efficiency. Public benefits programs provide a hedge against increasing energy demand and costs.

In light of the September 11, 2001 terrorist attacks in New York and Washington, D.C., the State is working to protect energy and transportation infrastructures against future attacks. Also, the August 14, 2003 Blackout that affected the Northeastern United States and portions of Canada, along with the more recent price and supply volatility that have been prevalent in the energy markets, represent significant events that may require a reexamination of the current goals and objectives of the SBC. These events present opportunities to address research, development, and demonstration of technologies suited to protect and enhance critical energy infrastructures, such as transmission and distribution, as well as to focus on opportunities to increase natural gas energy efficiency as a means of addressing price and supply volatility.

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<sup>12</sup> *Energy Efficiency and Renewable Energy Resource Development Potential in New York State, Final Report, Volume One: Summary Report*, Optimal Energy, Inc., August 2003.

In addition, environmental initiatives undertaken since the inception of the SBC may also necessitate a reexamination of the overall goals and objectives of the SBC to consider strong efforts to step-up energy efficiency efforts in the electric generation sector. These policy initiatives include reducing carbon emissions through the State's involvement in the Regional Greenhouse Gas Initiative (RGGI) and achieving air emission caps through New York's Acid Deposition Reduction Program. When considering all of the options, energy efficiency initiatives have consistently been shown to be the least-cost strategy to reduce harmful air emissions attributable to the generation of electricity.

The goals and objectives of the SBC program should strike a balance between the new conditions brought about by the events of the recent past that have affected energy markets; the continuing needs of the State's energy consumers that have yet, nor may ever, be met by the competitive energy markets; and the desire to fulfill the State's energy and environmental policy initiatives.

**5. How might the SBC programs be adjusted given the Commission's order, issued September 24, 2004, regarding a Renewable Portfolio Standard (Case No. 03-E-0188)?**

There should be no duplication of efforts with regard to administration of the **New York Energy Smart<sup>SM</sup>** program and administration of the RPS. In light of the renewable energy production incentives provided under the RPS, such incentives are no longer available under the **New York Energy Smart<sup>SM</sup>** program.

However, there are myriad opportunities for the SBC and RPS efforts to be complementary resulting in additional clean renewable energy technologies and their attendant benefits for New York's energy consumers while ensuring the success of the State's established RPS program goals. Some of these opportunities include supporting the business infrastructure needed to encourage new renewable energy technologies and the businesses that manufacture them; expanding training and education initiatives to ensure safety and high-quality installation standards; assisting developers in site-identification and permitting to keep New York competitive in pursuing the goals set forth under the RPS; supporting the competitive green power market; pursuing wind forecasting technologies as

recommended in the Wind Reliability Study<sup>13</sup> and supporting an aggressive R&D program to take advantage of the energy, environmental, and economic development potential of new renewable technologies. NYSERDA's continued success in the areas of traditional renewable energy R&D, and related efforts in building renewable industry business infrastructure will complement and ensure the success of the State's Renewable Portfolio Standard goals.

**6. In what ways might the current SBC fund collection and allocation process be improved?**

NYSERDA believes that the current SBC fund collection and allocation process is functioning well and that no changes are recommended at this time.

**7. What specific program(s) should be eliminated, expanded or created?**

NYSERDA is currently undertaking a comprehensive review of the **New York Energy Smart<sup>SM</sup>** program portfolio, the results of which will be reported in the *New York Energy Smart<sup>SM</sup> Program Evaluation and Status Report* to be released in May 2005. As a result of this review, NYSERDA will make specific program recommendations to the Department of Public Service.

**8. How can future SBC funded programs be more responsive to the needs of New York's energy consumers?**

NYSERDA's ongoing evaluation of all SBC-funded programs and specific activities within the programs currently being assessed are critical for ensuring that the key goals of the SBC program are identified and tracked to confirm program effectiveness. If evaluation results show that activities are not yielding anticipated results in certain areas, NYSERDA is sufficiently flexible to make program-level and portfolio-wide modifications to align its activities for achieving the public policy goals outlined in the PSC's orders.

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<sup>13</sup> *The Effects of Integrating Wind Power on Transmission System Planning, Reliability, and Operations*, GE Power Systems Energy Consulting, February 2005.

**9. How can SBC funded programs be marketed more effectively?**

NYSERDA's experience has been that the marketing of the **New York Energy Smart<sup>SM</sup>** program has been effective. Demand for certain programs has consistently exceeded available funding. However, as noted above in the answer to Question 8, NYSERDA is always considering ways to build upon the effectiveness and administrative efficiencies in its marketing efforts.

**10. In what ways can NYSERDA improve its administration of the SBC?**

NYSERDA continually makes changes to improve its administration of the **New York Energy Smart<sup>SM</sup>** program. The **New York Energy Smart<sup>SM</sup>** program is coordinated to work in tandem to achieve the State's public policy goals. Where possible, NYSERDA integrates its programs and services to meet customer needs in an efficient and effective manner. These integration efforts include cross-fertilization activities between research, development, and deployment efforts through the issuance of joint program solicitations; sharing customers; addressing common barriers; seeking common program objectives; and streamlining administrative tasks, among others.

NYSERDA develops internal and external mechanisms that enable staff to monitor changing market conditions and the evolving needs of customers by developing programs that are deliberate, flexible, and efficiently-administered. For example, progress in meeting program goals are constantly monitored, and as certain goals are achieved, programmatic changes are made to decrease emphasis in one area and transition emphasis to another. For example, when the Keep Cool Room Air Conditioner (RAC) Bounty Program resulted in an over 70% market share of ENERGY STAR RACs among program partners, the bounty was reduced, and then eliminated from the program. This was an acknowledgment that the program strategy resulted in achieving market share goals. However, a public awareness message has continued, through the Stay Cool initiative, to maintain that high market share.

Also, to address potential constraints on the electric system during summer periods, **New York Energy Smart<sup>SM</sup>** programs have been designed and implemented to reduce peak electricity demand. As a result, through December 31, 2003, **New York Energy Smart<sup>SM</sup>** programs have reduced peak demand through installed energy efficiency measures by 270 MW and have enabled another 610 MW of callable

load reduction projects to participate, if needed, in New York Independent System Operator (NYISO) emergency demand response programs. Through the Peak Load Reduction and Enabling Technologies programs, the amount of load that could be reduced, curtailed, or shifted increased from 10 percent to 25 percent, if called. The 880 MW of potential demand reduction (range of 850 to 1,050 MW) represents 2.9 percent of the 2003 peak Statewide energy demand of 30,333 MW.

To ensure that programs meet their expectations for participation and their established energy and cost-saving goals, NYSERDA's evaluation efforts are fully integrated with program design and delivery. As a result of this process, several recommendations stemming from the evaluation process are being implemented to improve program delivery. A few examples include standardizing data collection and tracking systems; streamlining programs to improve timeliness and responsiveness of program service delivery; better use of targeted marketing strategies to attract projects at the optimum points in the design process; and the consolidation of programs resulting in increased efficiency and consistency in the delivery of programs. NYSERDA is considering structural and administrative changes to improve customer service, making the organization even more customer-centric and less program-centric.

**11. Is the current NYSERDA program evaluation process adequate? How might it be improved?**

The current program evaluation process is adequate and working well. The SBC Advisory Group, in its Transmittal Letter,<sup>14</sup> dated June 7, 2004, to the Department of Public Service for the *New York Energy Smart<sup>SM</sup> Program Evaluation and Status Report*, May 2004, states that the evaluation performed through May 2004 is the most comprehensive and detailed review of the **New York Energy Smart<sup>SM</sup>** programs since the establishment of the programs in 1998, and has resulted in better ways to implement the programs. This experience will be reflected in the May 2005 *New York Energy Smart<sup>SM</sup> Program Evaluation and Status Report*, and subsequent Evaluation Reports due in 2006 and 2007, as required by the PSC's orders.

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<sup>14</sup> Ibid at 4.

The role of the SBC Advisory Group as the Independent Program Evaluator, as required by the MOU between the Department of Public Service (DPS), Public Service Commission, and NYSERDA is working well. SBC Advisory Group members and members of DPS staff have helped design the **New York Energy Smart<sup>SM</sup>** evaluation plan, allocated the evaluation budget, and helped select evaluation contractors. Advisory Group members and DPS staff helped draft requests for proposals (RFP's) to solicit proposals from evaluators, served on technical evaluation panels (TEP's) that reviewed proposals and recommended contract awards, and reviewed contractor statements of work and work plans prior to commencing the evaluation. Draft reports are shared with the Advisory Group and DPS staff and discussed and refined prior to their submission to the Public Service Commission. This process provides an independent review and evaluation that meets the needs of a credible, fair, and objective evaluation. Moreover, because the evaluation activities are fully integrated with program administration and implementation, NYSERDA is able to quickly use the results of evaluation to improve program administration and service to customers.

**12. Should SBC funds be extended to programs that encompass research and development into retail and/or wholesale electric market competitiveness issues, or transmission and/or distribution of the State's energy resources?**

The SBC could be extended to address the types of transmission and distribution research and development activities that were once the focus of the former statewide electric utility research organization — the Empire State Electric Energy Research Corporation (ESEERCO). During its tenure, this organization was a collaborative R&D organization that served New York's electric utilities through its development of new technologies that benefitted the individual electric transmission and distribution (T&D) systems, as well as the statewide electric system as a whole. Analysis has shown that engaging in these types of R&D activities can lead to the avoidance or delay of costly infrastructure upgrades,<sup>15</sup> resulting in cost savings to electric ratepayers. An R&D commitment keeps the electric utility industry competitive and helps to maintain an efficient, secure, and environmentally-sound mix of generation, transmission, and distribution capacity. Until such time as these efforts are fully addressed by the competitive electricity market, much could be gained for New York's energy consumers by engaging in a

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<sup>15</sup> *New York State Electric System Reliability Study, Final Report*, Power Systems Energy Consulting, November 30, 2000, p. 6.27.

statewide public benefit effort targeted to these specific T&D needs.

**13. Should the scope of the SBC program be expanded to include programs for natural gas customers?**

The scope of the SBC program could be expanded to include public benefit programs for natural gas customers. Through its experience delivering the **New York Energy Smart<sup>SM</sup>** program, NYSERDA believes that there are currently missed opportunities for achieving energy savings and environmental benefits associated with the use of natural gas by New York's energy consumers.

As part of the recently adopted Joint Settlement Agreement in the Consolidated Edison Company of New York, Inc. (Con Edison) gas rate case,<sup>16</sup> NYSERDA is commissioning a comprehensive gas efficiency study as part of the Gas Efficiency Program Plan. This study will examine the potential to achieve cost-effective gas efficiency savings for Con Edison's service territory and will include an examination of the benefits of gas price reductions; gas use reductions; environmental and societal potential program designs; implementation recommendations; and other issues. The study is expected to be completed in February 2006.<sup>17</sup>

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<sup>16</sup> Case 03-G-1671, Pursuant on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Consolidated Edison Company of New York, Inc. for Gas Service, Order Adopting the Terms of the Joint Proposal, Issued and Effective September 27, 2004.

<sup>17</sup> Additionally, the American Council for an Energy-Efficient Economy (ACEEE) issued a study that examined the economic savings potential for gas demand-side management (DSM) and fuel-switching measures in New York and to review gas demand-side management and fuel-switching program experience throughout the country. The study found that there is a substantial resource available from cost-effective gas efficiency. Even the worst-case sensitivity analysis indicated a cost-effective gas efficiency potential of at least 12% in the residential sector, and at least 16% in the commercial sector in New York. (ACEEE, Nadel, Steven, Eto, Joseph, Kelley Mark, and Jord, Jennifer, Gas DSM and Fuel Switching: Opportunities and Experiences, 1994.)

**Table 4. Progress Toward Goals**

<b>Progress toward goals</b>
<p><b>Goal 1: Improve system-wide reliability and increase peak electricity reductions through end-user efficiency actions</b></p> <ul style="list-style-type: none"> <li>• Through December 31, 2003, the <b>New York Energy Smart<sup>SM</sup></b> programs have reduced peak demand through installed energy efficiency measures by 270 MW and have enabled another 610 MW of callable load reduction projects to participate, if needed, in New York Independent System Operator (NYISO) emergency demand response programs. A number of the participants said that the Peak Load Reduction and Enabling Technologies programs increased the load that could be reduced, curtailed, or shifted by 10 percent to 25 percent, if called. The 880 MW of potential demand reduction (range of 850 to 1050 MW) represents 2.9 percent of the 2003 peak statewide energy demand of 30,333 MW.</li> <li>• As a result of the Keep Cool Tips marketing campaign, approximately 90 MW of load was shifted hourly in summer 2002 and approximately 35 MW in summer 2003 by residents using clothes washers and dishwashers during off-peak hours.</li> <li>• The DG-CHP program has approved 83 systems for funding representing 90 MW of peak demand reduction.</li> <li>• Through December 31, 2003, <b>New York Energy Smart<sup>SM</sup></b> programs have reduced energy use in New York by approximately 1,000 GWh (range of 950 to 1200 GWh) annually, which is approximately 0.7 percent of the 150,000 GWh of 2003 electricity sales in the State.</li> <li>• The Commercial/Industrial Performance Program (CIPP), which supports the development and expansion of the energy services industry in New York is saving more than 1000 participants 280 GWh a year and has lowered peak demand by 40 MW.</li> </ul>
<p><b>Goal 2: Improve energy efficiency and access to energy options for underserved customers.</b></p> <ul style="list-style-type: none"> <li>• The Comprehensive Energy Management program has installed advanced metering and direct load control systems in 93 buildings representing more than 9,500 multifamily units.</li> <li>• The Low-Income Assisted Multifamily program has provided more than 1,000 multifamily units in 16 buildings with energy efficiency review and financing services, and 93,000 units in 333 buildings are ready to participate in the program.</li> <li>• The Business and Institutional Innovative Opportunities Program has promoted the use of light emitting diode (LED) traffic lights, which use 80 - 90 percent less energy than incandescent lights. A post program survey of municipalities revealed that 43 of 44, or 98 percent, were aware of LED traffic lights, 58 percent reported using at least one such light, and 20 percent of municipalities not using LED traffic lights had plans to do so within one year. If all traffic lights in New York were converted to LED, the energy savings would be more than 200 GWh per year.</li> <li>• Since the inception of the program, more than 100 Building Performance Institute (BPI)-accredited contractors have begun participating in the Home Performance with ENERGY STAR<sup>®</sup> program and have provided energy efficiency services to more than 3,800 households.</li> <li>• The Residential Technical Assistance program has conducted energy efficiency audits in more than 2,680 apartments in 150 multifamily buildings.</li> </ul>

<b>Progress toward goals</b>
<p><b>Goal 3: Reduce environmental impacts of energy production and use.</b></p>
<ul style="list-style-type: none"> <li>• Through December 31, 2003, the <b>New York Energy Smart<sup>SM</sup></b> programs have enabled 41.5 MW of installed wind generation capacity and 500 KW of installed photovoltaic capacity. Renewable energy generation from these facilities totals about 100 GWh a year. Energy efficiency and renewable energy production projects have resulted in reducing NO<sub>x</sub> emissions by 825 tons per year, SO<sub>2</sub> emissions by 1,650 tons per year, and CO<sub>2</sub> emissions by 600,000 tons per year. The Madison and Fenner wind projects were installed at a Program cost of \$170 per KW.</li>   <li>• Research by the Environmental Monitoring, Evaluation, and Protection (EMEP) program has led the U.S. EPA to change its guidance for complying with ozone air quality standards. It was instrumental in the development of New York's Acid Deposition Reduction Program and contributed to the development of instruments that are manufactured in New York and are used worldwide to measure fine particles. EMEP is providing the scientific foundation to formulate effective strategies for meeting fine particle air quality standards.</li>   <li>• The Wholesale Renewables Program is promoting wind development and working with communities to lay the groundwork for potential wind development in their localities. Another 267 MW of new wind generation installed capacity is in planning. The Program is responsible for nearly 90 percent of the wind energy development in New York.</li>   <li>• Approximately 141,000 old room air conditioners were removed from residential households, recycled, and replaced with ENERGY STAR<sup>®</sup> models as a result of the Keep Cool bounty program and marketing campaign.</li> </ul>
<p><b>Goal 4: Facilitate competition in the electricity markets to benefit end-users.</b></p>
<ul style="list-style-type: none"> <li>• The annual energy bill savings for participating <b>New York Energy Smart<sup>SM</sup></b> customers is estimated to be \$140 million for Program activities through year-end 2003, including electricity, oil, and natural gas savings from energy efficiency and peak load management services provided. Participating customers' bill savings increases to \$380 million annually when the Program is fully implemented. Total cost savings for all customers, including non-participating customers, is estimated to be \$196 million for Program activities through year-end 2003, increasing to \$420 million to \$435 million at full implementation.</li>   <li>• Ten wind developers and operators and 11 green power marketers and green power ESCOs are currently active in the State.</li>   <li>• Approximately 50 installers of PV systems are participating in the Program and 18 training programs have been conducted in New York for PV and small wind technicians, consumers, and others.</li>   <li>• A survey of motor vendors in New York found that 56 percent of the participants in the Premium-Efficiency Motors Program now have an excellent knowledge about premium efficiency motors compared to 15 percent that had an excellent knowledge before entering the program.</li>   <li>• The number of energy service companies operating in New York has increased from 13 in 1998 before the Program began to about 150 in 2003.</li> </ul>

**Progress toward goals**

- ENERGY STAR® dishwashers and room air conditioners each account for more than 60 percent of the displays in New York ENERGY STAR® retail-partner stores, up from 18 and 26 percent, respectively, in 1999. ENERGY STAR® room air conditioners, promoted by the Keep Cool Program, are now one of the high-efficiency products specifically requested by consumers. ENERGY STAR® market shares are increasing for most appliances while incremental costs are decreasing. Agreements to participate in the ENERGY STAR® Products program have been signed by 576 retailer shops and 19 manufacturers.
- To date, more than 140 R&D projects have received funding for information dissemination, product development, and product demonstration to ensure that market penetration of existing, but underused, innovative technologies will increase .
- The New Construction Program (NCP) has increased knowledge about energy efficiency options for nearly 100 percent of the building owners and 92 percent of the architects and engineers that participated in the program, and for 40 percent of the non-participating architects and engineers. Between 40 and 60 percent of the largest architecture and engineering firms in New York have participated in the NCP. For all participants, 27 percent of those surveyed said the NCP increased their familiarity with building-integrated photovoltaic systems and 47 percent said the program increased their familiarity with green building strategies.

Electricity customers have more choices available today among electricity commodity providers and energy efficiency services than ever before. All customers can now choose among multiple energy services providers. Approximately 60 percent of large business and institutional electricity customers have selected alternative electric service providers; more than 250,000 residential customers receive electric commodity service from energy services companies.

Table 5 shows a summary of the energy savings and economic and environmental outcomes from the **New York Energy Smart<sup>SM</sup>** Program through year-end 2001, 2002, and 2003. As of December 31, 2003, annual electricity savings from installed measures is approximately 1,000 GWh. The peak demand reduction<sup>31</sup> is 880 MW, with 270 MW resulting from permanent reductions available through energy efficiency improvements and the potential for another 610 MW available to be called upon when needed through load management programs. The ranges of energy benefits shown in Table 5 represent the approximate upper and lower bounds based on the variability of net-to-gross ratios calculated using currently available data and information, and an adjustment for potential double counting among selected programs that has yet to be confirmed.

Figure 3 depicts the CO<sub>2</sub> reductions that result from the Program's activities compared with projected emissions for selected years in the absence of the Program. The Program has helped reduce CO<sub>2</sub> emissions by an additional 1.6 percent in 2002 and is expected to contribute about 4.5 percent in additional reductions through 2010.<sup>32</sup>

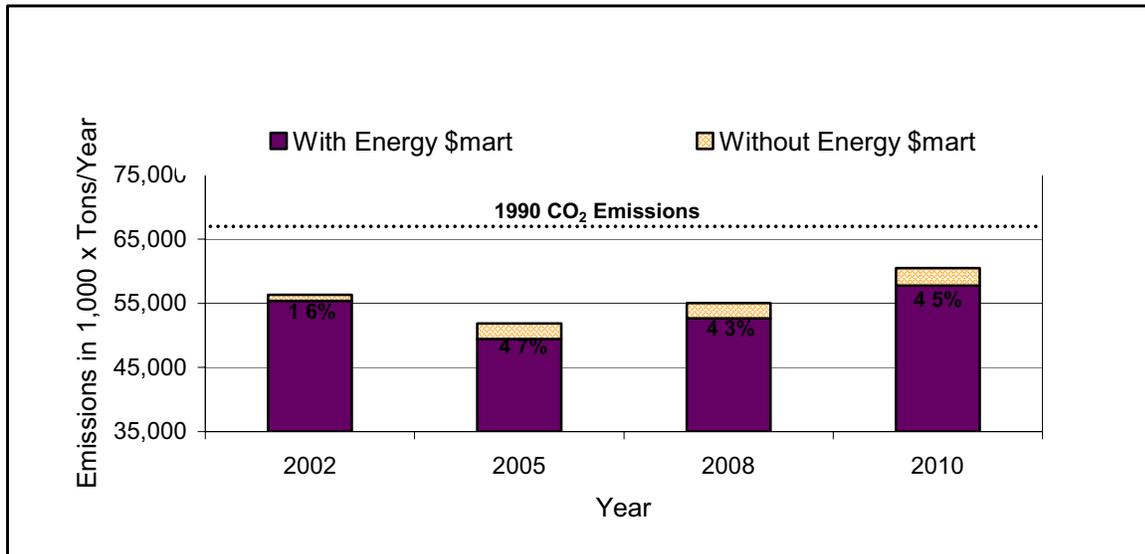
<sup>31</sup> The peak demand period is the time when the demand for electricity is at its highest. In the New York Control Area, this usually occurs mid-to-late afternoon on a day when the temperature is high.

<sup>32</sup> The *State Energy Plan and Final Environmental Impact Statement*, June 2002, recommends a statewide goal of reducing CO<sub>2</sub> emissions five percent below 1990 levels by 2010 and ten percent below 1990 levels by 2020.

**Table 5. Cumulative Program Benefits from Installed Measures**

Benefits	Through Year-End 2001	Through Year-End 2002	Through Year-End 2003
Electricity Savings From Energy Efficiency (Annual GWh)	400	690	1,000 (900-1,200)
Peak Demand Reduction (MW)	270	652	880 (850-1,050)
Permanent Measures (MW)	96	218	270
Potential/Curtailable (MW)	174	434	610
Annual Energy Bill Savings (\$ Million)	\$57	\$103	\$140
Renewable Energy Generation (Annual GWh)	28	103	103
Average Number of Jobs Created per Year because of Energy Bill Savings	2,800	3,200	3,500
NOx Emissions Reductions (Annual Tons)	77	790	950
SO <sub>2</sub> Emissions Reductions (Annual Tons)	155	1,270	1,700
CO <sub>2</sub> Emissions Reductions (Annual Tons)	560,000	640,000	750,000
Equivalent number of cars removed from New York roadways.	110,000	127,000	150,000

**Figure 3. Estimated Annual CO<sub>2</sub> Emissions With and Without New York Energy Smart<sup>SM</sup> Programs**



The Program’s impact on peak demand for the last five years is shown in Figure 4. Permanent demand reductions are achieved through energy efficiency measures. Callable demand reductions result from load curtailment. While the Program was initiated in 1998, two years of program implementation were necessary to bring about real, noticeable reductions in peak energy load. In 2000, the actual peak energy load was 23,473 MW, approximately 50 MW less than it could have been absent the Program. The peak-