

**CASE 07-M-0548**

**NEW YORK STATE ENERGY RESEARCH AND DEVELOPMENT AUTHORITY  
RESPONSES TO  
NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE STAFF QUESTIONS**

**Introduction**

On May 16, 2007, the Public Service Commission (PSC) issued an Order instituting a proceeding to consider the adoption of an Energy Efficiency Portfolio Standard (EPS) in New York. In the Order, the PSC stated that realizing the State's energy efficiency (EE) potential and reducing New York's electricity use by 15% from expected levels by 2015 are in the public interest.<sup>1</sup> The purpose of the proceeding is to design an EPS to meet the targets for energy efficiency which, along with additional renewable resources being developed in the State and other efficiency activities, decreases the State's dependence on fossil-based electricity generation and imported fuels and reduces greenhouse gas emissions.

The State, through its energy authorities,<sup>2</sup> is currently administering a variety of energy efficiency, demand management, conservation, and renewable energy programs.<sup>3</sup> Coupled with the State's leadership and membership in the Regional Greenhouse Gas Initiative (RGGI)<sup>4</sup>, the State, in partnership with the investor-owned utilities, has an unprecedented opportunity to strategically plan and chart a comprehensive energy and environmental policy course that will yield significant energy, environmental, and economic benefits well into the future. In addition, given the significant activities underway and planned, the State will be well positioned as an exporter of knowledge, innovation, and technology to the rest of the world in fostering sustainable development.

NYSERDA views the 15 by 15 initiative as the cornerstone of New York's energy and environmental policies. Governor Eliot Spitzer's announcement of the 15 by 15 initiative put it plainly: "the cheapest and cleanest power plant in the world is the one you never have to build."<sup>5</sup> To that end, the success in implementing the initiative should not diminish the need to increase renewable energy supply in the State's electricity generation portfolio nor should it diminish the need to reduce greenhouse gas emissions. Rather, these policy initiatives, including the State's

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<sup>1</sup> Case 07-M-0548, Proceeding on Motion of the Commission Regarding an Energy Efficiency Portfolio Standard, "Order Instituting Proceeding," issued and effective May 16, 2007.

<sup>2</sup> New York State Energy Research and Development Authority (NYSERDA), New York Power Authority (NYPA), and Long Island Power Authority (LIPA).

<sup>3</sup> Conservation Coordination Task Force Report to the Governor and the Legislature, January 30, 2007.

<sup>4</sup> RGGI is a cooperative effort by Northeastern and Mid-Atlantic states to reduce carbon dioxide emissions from electricity generation.

<sup>5</sup> <http://www.ny.gov/governor/keydocs/CleanEnergySpeech-final.pdf>

System Benefits Charge program administered by NYSERDA, the Lieutenant Governor's Renewable Energy Task Force, the Renewable Portfolio Standard, Executive Order 111 on State buildings, the public benefits programs of NYPA and LIPA, the efforts by the Department of State to update the State's building code and appliance standards for greater energy efficiency, and the State tax credits for energy efficient vehicle and appliance purchases, RGGI, and future State programs and initiatives should be strategically integrated and periodically calibrated to account for the inherent interaction between one another and the State's progress towards achieving key public policy goals.

Importing energy and exporting dollars makes the State more vulnerable to energy supply disruptions and price volatility and supports economic development in other parts of the world at the State's expense. Reducing energy use through improvements in energy efficiency and greater reliance on renewable and indigenous energy resources benefits all New Yorkers. NYSERDA offers its considerable policy, analytical, and technical resources to the Department of Public Service (DPS) and the parties in this proceeding to further study the relevant issues, developing and execute policy, implement programs, and assess the progress and successes of programs toward the State's energy and environmental goals.

### **Background**

In 1998, New York established the public benefits program, financed through an assessment of a System Benefits Charge (SBC) on retail electricity customer bills. The SBC is collected by investor-owned utilities and provided to NYSERDA for the administration of statewide energy efficiency programs, low-income energy affordability programs, and research and development (R&D) and environmental programs. As reported in the most recent **New York Energy \$mart<sup>SM</sup>** program evaluation report,<sup>6</sup> SBC-funded energy efficiency programs administered by NYSERDA from 1998 through year-end 2006 have saved an estimated 2,360 gigawatt-hours (gWh) of electricity, resulting in associated capacity savings of 1,100 megawatts (mW). Energy savings flow from \$444 million in spending for program services and incentives in the commercial and industrial, residential, and low-income sector energy efficiency programs. An additional \$328 million were used for research and development, marketing, and program administration and evaluation helping achieve other important public policy goals. Spending for all SBC programs and services through year-end 2006 totaled \$772 million. In addition to direct benefits of the **New York Energy \$mart<sup>SM</sup>** programs, substantial macroeconomic benefits have been and will be realized<sup>7</sup> including an average increase in jobs of 3,700 per year, \$361 million per year in labor income represented by employee compensation and proprietor income, and non-energy impacts, e.g., monetized benefits of comfort, safety, and productivity gains, of \$1.3 billion. Clearly, the **New**

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<sup>6</sup> New York State Energy Research and Development Authority, **New York Energy \$mart<sup>SM</sup>** Program Evaluation and Status Report: Final Report, March 2007.

<sup>7</sup> During the program implementation period 1999 through 2012.

**York Energy \$mart<sup>SM</sup>** program has demonstrated significant progress in achieving the benefits outlined in the PSC Order,<sup>8</sup> including: forestalling the building of new generation; reducing the use of finite fossil fuels; reducing customers' energy bills; developing independent energy sources for New York State to reduce energy imports; and mitigating the environmental impacts of burning fossil fuel for energy, including greenhouse gas emissions. In addition, NYSERDA's programs have fostered economic development and job growth by encouraging in-state technology advances to deliver energy efficiency programs to consumers.

### **Responses to Questions**

Following the June 4, 2007 Procedural Conference in this proceeding, DPS disseminated a series of Staff questions seeking interested party input on a variety of topics. In addition to requesting feedback from the parties in the form of responses to questions, DPS has also asked if parties would be willing to work more extensively (or even take the lead) in developing a program design on a particular topic. NYSERDA has played an important and critical role in helping the State to address its energy, economic, and environmental challenges and offers a variety of tested and innovative strategies to lead the State toward greater energy independence and environmental health.

As the central administrator of the energy efficiency and renewable energy programs funded by the SBC and the RPS, NYSERDA stands willing work with DPS, utilities, and other interested parties more extensively in developing a comprehensive EPS program design. NYSERDA is prepared to work with all parties to develop common metrics, evaluation protocols and methods, and reporting requirements for all energy program sponsors to use to ensure consistent and timely reporting of program progress toward the State's public policy goals. NYSERDA is prepared to serve as lead on any of the topics identified.

NYSERDA submits the following responses to Staff's questions, bringing its experience and expertise in energy policy and planning, energy technology, and as energy efficiency program administrator of the State's public benefit funds and of the State's renewable energy portfolio standard (RPS) to bear.

1. What approaches hold the greatest potential to contribute to New York achieving the overall target of 15% electricity consumption reduction by 2015? Are there any energy consuming sectors and markets that are currently underserved by the existing available portfolio of energy efficiency programs and services in New York State? How should those deficiencies be addressed in implementation initiatives?

Answer: Achieving the Governor's ambitious 15 by 15 initiative goal will require a significant increase in investment in energy efficiency, and a comprehensive statewide approach. In light of NYSERDA's experience, which

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<sup>8</sup> Case 07-M-0548 Proceeding on Motion of the Commission Regarding an Energy Efficiency Portfolio Standard, issued and effective May 16, 2007.

includes both statewide (*e.g.*, SBC) and region-specific (*e.g.*, Con Ed System-Wide Program) program implementation and coordination, NYSERDA is prepared to assist the PSC in its efforts to establish goals, implement and coordinate programs, measure progress, and evaluate results, in an effort to ensure that the most cost-effective programs and strategies are considered in order to meet the 15 by 15 goal.

The 15 by 15 initiative requires that electricity load growth be more than offset by efficiency gains, resulting in negative load growth through 2015. Given the aggressiveness of this initiative, this proceeding and all ensuing discussions should build upon the successful efficiency infrastructures already in-place in New York.

Substantial coordination, planning, and evaluation among individual program sponsors, including State Authorities and investor-owned utilities (IOUs) will be required to meet the ultimate 15% goal. The anticipated ramp-up in efficiency programs will likely require the participation of additional entities (program sponsors) in the identification and implementation of successful, widely-supported, effective, and accountable efficiency programs. All program sponsors should agree to the same degree and level of transparency and accountability, in program design, delivery, and evaluation, including measurement and verification and regular reporting of consistent data. Programs must deliver desired results, in a cost effective manner, and in an appropriate time frame. Programs must complement and reinforce one another, as opposed to competing, and will therefore require a high degree of coordination in the planning phases.<sup>9</sup> 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, to ensure that program planning among all parties will take these concerns into account.

In order to substantially ramp-up program activity and achieve energy reductions, State Authorities and utilities face significant challenges in terms of organizational infrastructure (including staffing), program development, procurement and contractor management and oversight, resource and data management, as well as administrative and reporting processes. The industry, including program sponsors and contractors, is experiencing a lack of available trained individuals to implement and oversee energy efficiency programs. NYSERDA addresses this question in further detail under Question 14.

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<sup>9</sup> For example, a rebate program on high-efficiency furnaces in the absence of a comprehensive building performance program (a program that evaluates air leakage, ensures insulation and air-sealing are accomplished, ensures ducts are properly sealed, right-sizes the furnace to account for improved building performance, and checks for health and safety problems), leaves energy efficiency gains on the table and is detrimental to the whole-building program on which it competes in the marketplace. Likewise, a rebate program on an ENERGY STAR product that already has significant market share in the region, in the absence of an early-replacement strategy and consumer education might be ill-advised due to the potential for high free-ridership and lacking spillover to influence purchasing patterns for other products.

Increasing the scale of programs calls for sufficient resources and activities, carefully developing and delivering the most cost-effective programs, and identifying outcomes that would demonstrate progress toward public policy goals. The full spectrum of program offerings needs to recognize and harness unique attributes of New York's competitive markets, including energy efficiency and distributed resources service providers. Recognizing that competitive market actors typically provide limited services to municipal and public power customers who pay lower retail electricity prices, other steps may be appropriate to address technical opportunities with such customers. This could include a requirement that recipients of such low-cost power perform detailed audits and invest in cost-effective efficiency opportunities identified in such audits. There are energy consuming sectors that are currently underserved by the existing portfolio of energy efficiency programs in the State due to the limited funding available for such programs in light of the opportunities available for efficiency improvements. One such example includes industrial and municipal customers that receive low cost power from NYPA (*e.g.*, municipal wastewater treatment facilities in New York City which consume considerable load in an electrically constrained area of the state). The participation of these underserved customers would provide a substantial statewide benefit to all consumers, particularly those customers in the electricity constrained NYC area, by reducing demand and freeing up low cost power that can be used to continue to stimulate New York's economy. The New York City subway system provides another potential source of significant savings.

Program design that emphasizes comprehensive whole-building approaches to new construction and building retrofits frequently reveals opportunities to mine greater savings from projects. To ensure lasting impacts from these initiatives (meaning permanent changes in how energy is thought of and used in New York, up to and beyond 2015), attention must be given to balancing energy efficiency resource acquisition, market infrastructure development, and efficiency equipment demonstration and commercialization efforts. Although resource acquisition in isolation provides immediate impacts, its impacts may be short-lived without development of viable market infrastructures. Necessary efforts include training for construction trades and codes officials; retail point-of-purchase training, education on the merits of high efficiency products; working with lending institutions on low-cost financing and leveraging energy efficiency investments, and monetizing the value of efficiency improvements. Such infrastructure development and market transformation efforts require up-front investments, including staff resources and consultant services, to ensure that energy impacts are realized consistently in the future.

A number of new technologies introduced into the market are emerging to play a more significant role in ramping up programs. Advanced metering, direct load controls, and open protocols for building management systems are increasingly ready for large-scale deployment. There are also a great number of technologies that are nearing commercial readiness, including a range of technologies for grid modernization that extend to the customer-side of the meter and offer substantial

promise. Such opportunities can be brought to market sooner with effective demonstration and commercialization efforts.

In addition to increased emphasis on voluntary programs, numerous important long-term initiatives promise significant, lasting energy savings including enhancing the existing Energy Efficiency Building Code; enacting appliance standards; expanding the ancillary services market and long-term capacity markets to accommodate demand-side resources (see also Question 7). Substantially expanding the market infrastructure that fosters private sector energy services companies (ESCOs) builds on existing voluntary programs and offers significant promise for the future.

2. What is a reasonable goal for natural gas energy efficiency programs?

Answer: Based on the results of a gas efficiency potential study, a reasonable goal to reduce statewide gas use in all sectors (residential, commercial, and industrial) using existing and emerging efficiency technologies and practices would be 15% from expected levels by 2015.<sup>10</sup> Obtaining this reduction through a well designed successful statewide program has the potential to yield many benefits to New Yorkers, including forestalling the construction of new natural gas infrastructure such as pipelines and storage facilities, reducing customers' energy bills, improving the environment through reduced emissions, and enhancing the stability and certainty of supply of the natural gas system during periods of critical peak demand. In addition, more efficient use of natural gas has the potential to foster economic development and job growth by encouraging in-state technology advances and services to deliver energy efficiency programs to consumers.

While studies show that the State can economically improve natural gas energy efficiency by 15% from expected levels in 2015 based on current technology, the State should work to ensure that performance and cost improvements in emerging technologies are steady and continuous to meet future needs, through some investment in natural gas efficiency R&D. To that end, the State should increase its commitment to advancing currently available technologies that can support the 15 by 15 initiative, while at the same time continuing to invest in the emerging technologies that are not yet cost-effective but have the great potential to contribute to this long range policy objective (*e.g.*, high-efficiency gas cooling, high-efficiency hot water heaters).<sup>11</sup>

Similar to the structure of the 15 by 15 electricity initiative, pursuit of natural gas efficiency should be guided by annual volume reductions based on forecasted future demand. These volume reductions should begin low and scale up over time to reflect a lag in market penetration, actual performance of related policy goals, and

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<sup>10</sup> Optimal Energy, Inc., *Natural Gas Energy Efficiency Resource Development Potential in New York: Final Report*, October 2006.

<sup>11</sup> *Id.*

the impacts of market penetration barriers.<sup>12</sup> Based on semiannual updates to the initial demand forecasts, the annual volume reductions should be revisited and adjusted accordingly. Furthermore, any natural gas or electricity forecasts and associated policy reduction targets should be closely coordinated with related policy goals such as RGGI and the RPS program.

3. What are the most appropriate methods and processes for establishing program specific goals and for measuring progress towards long term goals (including program monitoring, measurement, and evaluation)?

Answer: Above all, establishing goals and measuring progress should be undertaken through a collaborative process under the aegis of a central administrator. The collaborative effort would standardize methodologies and processes for establishing program goals, monitoring progress, and measuring and verifying program results. Accordingly, these standardized methodologies and processes developed for each program would be evenly applied by all program sponsors. In light of NYSERDA's experience, which includes both statewide (*e.g.*, SBC) and region-specific (*e.g.*, Con Ed System-wide Program) program implementation and coordination, NYSERDA stands ready to assist the PSC in its efforts to establish goals and measure progress in order to meet the 15 by 15 goal.

Program specific goals should be established based on the known or estimated energy and demand reduction and monetary savings potential for the particular measures and services offered by a program in its targeted sector, be it commercial, industrial, or residential. Program reduction goals should be established through 2015 reflecting the amount of funding made available for a particular program and determining the amount of reasonable penetration based on funding which is dedicated to overcome selected market barriers to measure adoption and service provision.

Program evaluation efforts should be fully integrated with program design and implementation so that data and information on markets, participants, non-participants, impacts, and other relevant metrics are collected regularly throughout the programs' operations. Evaluation results should be reported quarterly and annually and used to improve programs for greater efficiency and effectiveness, similar to the manner in which evaluation is currently conducted and used for NYSERDA's SBC and SWP programs. NYSERDA is prepared to work with all parties to develop common metrics, evaluation protocols and methods, and reporting requirements for all energy program administrators to use to ensure consistent and timely reporting of program progress toward the State's public policy goals.

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<sup>12</sup>The demand forecasts should be based on a comprehensive strategy that includes the impacts of related policy goals such as the RPS and RGGI.

4. What load forecasting models and methodologies should be used in developing and refining the objectives of the EPS Proceeding?

Answer: The existing NYISO forecast is sufficient for use in developing and refining the objectives of the EPS proceeding for electricity energy and demand. NYSERDA's statewide natural gas forecasts should be used as the basis for developing and refining the natural gas reduction objectives. NYSERDA's regression-based forecasts are vetted against other forecasts, including those of the U.S. Energy Information Administration (EIA) and Energy and Environmental Analysis (EEA), and have been found to be reasonable. Both electricity and natural gas forecasts should be bounded forecasts, rather than point estimates, and objectives should be established as a range of impacts. NYSERDA advises against a formally established energy savings goals in terms of gWh, mW, or mmBtu, as forecasts change each year and hence, the 15% will increase and or decrease from year-to-year. Rather, the progress made toward the 15% goal should be measured each year retrospectively based on the actual load for that year and the actual measured and verified savings achieved in that year. With these two data points, the PSC can determine accurately the percentage reduction achieved in any given year and measure it against the projected 15% reduction from the forecast load in 2015. Given the fluctuation in forecasts from year-to-year, program sponsors should be afforded sufficient flexibility in their program administration to make necessary changes to ensure the best success in meeting the 15% goal. Necessary changes may include actions such as ramping existing programs up or down, making meaningful modifications to programs, or reallocating funds among programs and program areas.

5. What other national, state, and municipal government and private initiatives would help New York meet the objectives of the EPS Proceeding? In what ways can we leverage the impact of these initiatives to help us meet the objectives of the EPS Proceeding? How should the impact of these initiatives be counted and measured?

Answer: National, state, regional, municipal, and private initiatives can, and should contribute toward meeting New York's objectives in this proceeding. Energy policy continues to be debated nationally, given heightened concern for energy security and global climate change. The prominence of these issues will almost certainly increase over time. New York should continue to work with its congressional delegation to ensure that the aggressive goals of this administration — embodied by this proceeding, the 15 by 15 initiative, RGGI, RPS, and other evolving state policies — are supported and reinforced at the federal level through appropriate national appliance standards, reauthorization of the renewable energy production tax credit, support for national climate mitigation measures, and aggressive support for continued technology development — from substantial increases in basic research in the energy sciences to applied research and demonstration in concert with states and

private entities, and increased federal financial support for the expanded state-based deployment initiatives (e.g., the U.S. DOE State Energy Program).

In addition, the State should coordinate efforts with industry, utilities, and local governments for mandatory and voluntary actions investing in energy efficiency. Close coordination with entities planning or implementing similar voluntary initiatives can improve consistency of information dissemination, outreach, education, and marketing messages that are critical to the success of a statewide EPS.

6. The Commission instituted a pilot natural gas efficiency program within Consolidated Edison Company of New York, Inc.'s (Con Edison) service territory.<sup>13</sup> As part of that pilot program, the Commission directed the New York State Energy Research and Development Authority (NYSERDA) to prepare a study of the natural gas energy efficiency potential within Con Edison's service territory. NYSERDA filed that study on June 22, 2006, and it was then issued for comment.<sup>14</sup> Subsequently, NYSERDA prepared a study entitled "Natural Gas Efficiency Programs Resource Development Potential in New York," which was issued on October 31, 2006 and is available on both the Commission's and NYSERDA's web sites. In considering issues associated with a Con Edison electric efficiency/demand management program, the Commission specified how the total resource cost test should be applied to measure the cost effectiveness of measures under that program.<sup>15</sup> In the statewide study, NYSERDA used a different benefit/cost approach to measure cost effectiveness.
  - a. Please comment on the appropriateness of the approach used in the statewide study.
  - b. If a different test of cost effectiveness should be used (*i.e.*, other than the total resource cost test), what test should be adopted and why?

If you have not already commented on this previously, please provide your observations, critiques, and other comments on the data, assumptions, methodologies, and analyses used to develop the estimated potential savings and benefits in the statewide study.

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<sup>13</sup> Case 03-G-1671, Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Consolidated Edison Company of New York, Inc. for Gas Service and Case 03-S-1672, Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Consolidated Edison Company of New York, Inc. for Steam Service, *Order Adopting the Terms of a Joint Proposal*, issued September 27, 2004.

<sup>14</sup> Case 03-G-1671, *supra*, *Notice Soliciting Comments*, issued August 14, 2006.

<sup>15</sup> Case 04-E-0572, Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Consolidated Edison Company of New York, Inc. for Electric Service, *Order on Demand Management Action Plan*, issued March 16, 2006.

Answer: NYSERDA agrees with the cost-effectiveness methodology and definition used in the referenced natural gas studies. NYSERDA believes that the methodology and definition is consistent with the total resource cost test prescribed by the PSC and used by NYSERDA in the evaluation of cost-effectiveness of SBC programs.

7. What role should building codes and appliance standards play in reaching New York's energy efficiency goals and should such standards vary by geographical area (*i.e.*, metropolitan New York City versus upstate)?

Answer: Energy building codes and appliance standards can play a significant role in helping improve energy efficiency. A review of California's experience with scaling up efficiency programs suggests that as much as 50% of the savings can be achieved through enhanced codes and standards. In light of New York's electricity rates and the opportunities available to strengthen the State's building code and code enforcement, this represents an important opportunity. If developed comprehensively, these strategies would affect all sectors and regions of the State and can help put the State on a path toward implementing the 15 by 15 initiative. It is important, however, that codes and standards be performance-based as much as possible to provide maximum flexibility to designers, builders, and consumers in compliance and that funding be made available for training code officials and improving enforcement.<sup>16</sup>

Enhancements to codes and standards address only a small subset of equipment and projects in any one year (*i.e.*, equipment at the end of its service life, new construction, or major renovations). In addition, governance processes to secure changes to codes and standards will require substantial investments of time, effort and technical expertise. NYSERDA continues to provide technical support to the Department of State and others in the development of new codes and standards; yet, even after such changes have been promulgated, there is a lag before large-scale efficiency capture is delivered. The impact of updating codes and standards, while significant, will not materialize immediately and, as a result, major investments in energy efficiency through publicly-supported programs is still required in order to meet the State's efficiency objectives.

After promulgation of enhanced codes and standards, efficiency programs must review program rules to reflect and accommodate regulatory changes. Programs should continue to raise the level of efficiency required to move the market well above current code requirements. Even when codes and standards enhancements are fully promulgated in a timely ongoing manner, important opportunities will remain for efficiency programs to influence consumer choices.

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<sup>16</sup> NYSERDA's High Performance Buildings Program, while very successful in reaching more than 10% of the new commercial building market, still is not addressing the full market. Codes, on the other hand, can address this remaining market as they set minimum standards for all buildings, benefiting building owners and occupants while contributing large energy savings.

Publicly-funded efficiency programs can capture efficiency opportunities above code requirements, implement technical strategies not covered by codes and standards (including federal requirements), and spur early replacement.

With regard to variances in building codes by geographic area, NYSERDA is supportive of the efforts of New York municipalities that have developed and implemented local codes and requirements that exceed current State Energy Code standards.<sup>17</sup> Geographic variances in local building codes and appliance standards should be approached cautiously; they should be subject to cost-effectiveness screening, should minimize product availability disruption, and establish methods for ensuring tracking compliance.

8. What role should outreach and education play in an enhanced energy efficiency effort and what changes in approach should be made in various demographic or market segments from the methods now being used?

Answer: For early and continued success in implementing the 15 by 15 initiative, a statewide energy efficiency outreach, education and marketing campaign must be a priority. A statewide multi-media campaign must be centrally managed and function as a partnership between the State, utilities, local governments, businesses, institutions, and nonprofit organizations working together to bring increased awareness of the critical need to reduce energy use, save money, and improve the environment. A coordinated statewide effort will reduce the risk of bringing confusion to businesses and residents with respect to the opportunities available to improve energy efficiency and affordability, as opposed to having several campaigns target different utility service areas with overlapping marketing. A consistent and actionable message can be more easily and cost-effectively disseminated across a broad audience in many geographic locations. In this statewide effort, it is critical that, regardless of the location of the utility service provider and customer, information and resources regarding energy efficiency and conservation be easily accessible, contain consistent messages, and include information on incentives, technical assistance, retailer participation, product guides, case studies, and more. The campaign should revolve around an easy to understand brand and logo and should be supported by a range of retail promotions, an easily accessible website, an electronic newsletter, educational materials and specific advertising and marketing efforts.

To be successful, a statewide campaign must make substantial use of customer relationship information originating and housed at the utilities and competitive load serving entities (LSEs). For example, every retail customer who interacts with a utility or LSE at the point of service entry (*e.g.*, request for new service) should be provided with general educational materials about energy

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<sup>17</sup> Examples of these municipalities include: The City of Rochester, New York City, Westchester County, Ulster County, and the Town of Irondequoit. More information is available at [www.nyserda.org/programs/Green\\_Buildings/local\\_gov.asp](http://www.nyserda.org/programs/Green_Buildings/local_gov.asp).

efficiency and of opportunities to improve efficiency. Each utility or LSE should also be required to provide customer specific information, such as rate class, business type, and energy use and demand, to the program sponsor to improve marketing and follow-through for implementation.<sup>18</sup>

A multi-media awareness and marketing campaign could be developed and managed by NYSERDA on behalf of the State and utilities building on demonstrated successes to date and given NYSERDA's statewide presence and customer recognition. For example, NYSERDA's consumer awareness campaigns, to date, have resulted in awareness and understanding of the ENERGY STAR® label in excess of 75% of New Yorkers, among the highest rates in the country. The campaign would maintain the State's overall message while taking into consideration regional differences, defined and integrated into messaging in collaboration with local utilities and program sponsors.

9. What role could innovative rate design play in enabling greater penetration of energy efficiency and how might this vary by market segment? Should energy tariffs recognize and differentiate between the relative levels of energy efficiency designed into new buildings?

Answer: Innovative rate design should be explored as a possible means to encourage the incorporation of higher-efficiency systems and controls in new and rehabilitated buildings. Utility time-of-use and hourly day-ahead pricing options should be expanded to test the efficacy of various rate structures in improving energy efficiency and reducing energy bills. Given that customers frequently see time-of-use and hourly day-ahead rates as confusing and challenging, increased information, outreach, and education are clearly needed, particularly if load shifting and clipping strategies are to translate into more comprehensive efficiency opportunities. A growing number of technical opportunities, including controllable electronic ballasts and enhanced building management systems, can be expanded to integrate load reduction and energy efficiency technologies and practices. Utilities should also consider providing "high-efficiency" tariffs or tariff riders (discounts) to building accounts that meet pre-defined efficiency performance standards, such as LEED.

10. What programmatic and outreach efforts, within and beyond the current scope of the Commission's jurisdiction, that have not been generally considered as energy efficiency programs, should be integrated into overall strategies and plans to reach energy usage reduction targets?

Answer: Many individuals, institutions, governments and businesses are beginning to take issues of sustainability and climate change very seriously. In light of the close relationship between energy use and emissions of greenhouse gasses

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<sup>18</sup> The California Flex Your Power campaign is an excellent example of a highly successful centrally managed campaign that is closely coordinated with utilities, local governments, and trade associations. This campaign has been highly successful in helping Californians save energy since 2001 and has been nationally recognized many times over.

and other pollutants, customers motivated by environmental issues will be more prone to taking steps to move forward with energy efficiency projects. This suggests an opportunity to develop effective messaging in outreach and education that integrates energy and environmental activism. As stated previously, NYSERDA believes that this outreach and education role can be best coordinated by a lead statewide entity. In addition to a capacity to develop and deliver a coherent statewide message, a lead statewide entity would be positioned to develop outreach and marketing that will serve the interests of all stakeholders and potential program participants.

Utility efficiency financing is an opportunity that should be further explored. This type of financing would allow customers to borrow money at competitive, possibly subsidized, rates from their local utility for investment in efficiency with repayment being made through a service charge on their bills. When linked with energy audits, financial incentives, and referrals to energy efficiency services providers, such financing would enable utilities to significantly improve customer relations while promoting energy efficiency and energy affordability for their customers.

There are a range of programs offered by neighboring ISOs that should be considered for implementation in New York, including broad-scale participation of demand-side resources in ancillary services and multi-year capacity markets. Additionally, the State should build on efforts to educate consumers on the benefits of clean distributed combined heat and power projects as part of a comprehensive whole building approach to improving energy efficiency.

Making customer utility account information more readily accessible to customers and designated contractors would allow for more accurate project screening, management and performance verification. As noted under our response to Question 1, utility activities such as advanced metering, grid modernization and day-ahead hourly pricing can provide customers with access to information and programs that have not heretofore been available to them. Over time and with utility support, customers will become accustomed to accessing energy use data more frequently, expediting analyses and decisions on fuel choice, commodity purchasing, operational decisions and efficiency projects.

11. Should customers of natural gas utilities served under value of service or market-based rates, such as interruptible customers be included in the overall efficiency program? If so, what types of programs are appropriate for these customers? In what ways would a natural gas efficiency program affect the oil and propane competitive markets and what steps could be taken to eliminate or minimize such impacts (*e.g.*, limiting the program to non-dual fuel customers)?

Yes, all feasible retail end-use customers, including those with dual-fuel capability, should be included if statewide goals are to be met or exceeded. The Optimal Study based its natural gas efficiency potential estimates on the assumption that all program services would be developed to target all gas customers in New York

and to address all major end uses. This study shows that 13.7% of the total natural gas savings over the period of analysis would be attributable to the industrial sector, which includes those on interruptible rate schedules.<sup>19</sup>

While one recent Commission decision found it proper to exclude interruptible customers from a gas efficiency program, and from collection of the associated surcharge, the economic assumptions supporting that decision should be fully analyzed.<sup>20</sup> Specifically, the relative effect that the addition of a program surcharge might play in the competitiveness of gas versus oil should be analyzed using actual current market pricing data. Experience suggests that this affect may be minor in relation to other influencing factors. In addition, the inquiry should analyze the benefits interruptible customers will receive from the overall commodity cost reduction attributable to those participating in the program and contributing to reducing total statewide demand, thus lowering overall gas requirements and hence the cost for full-service and interruptible customers alike.

A major benefit of a natural gas efficiency program would be an increase in the availability of natural gas during peak use periods, and the potential to reduce operational flow orders (*i.e.*, curtailment) issued by local utilities and pipeline companies during peak use periods.<sup>21</sup> Including the industrial sector could provide the greatest potential for New Yorkers to realize this benefit. Furthermore, including industrial customers in a natural gas efficiency program can assist in reducing local spot market gas prices and associated price volatility. Programs for interruptible customers should be integrated into and packaged with current commercial and industrial electricity efficiency program offerings. Programs should include technical assistance, prescriptive measure programs such as boiler efficiency programs, and flexible custom approaches that pay incentives on the basis of energy or dollar savings.

12. What role should a) distributed generation, b) demand response, and c) combined heat and power play in reaching New York's energy efficiency goals?

Answer: Distributed Generation (DG) is a broad term that includes all forms of non-central power plant electricity generation. DG systems renewably powered by biogas, photovoltaic arrays, and customer sited wind can contribute to the State's energy goals by displacing the use of fossil fuels. Biogas from animal manure,

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<sup>19</sup> Optimal Energy, Inc., *Natural Gas Energy Efficiency Resource Development Potential in NY, Final Report*, prepared for NYSERDA, October 2006.

<sup>20</sup> Case 03-G-1671 Proceeding 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 Establishing Gas Efficiency Program for 2007-08 Heating Season*, issued and effective May 16, 2007, p. 10.

<sup>21</sup> Operational flow orders are issued during peak usage periods and require interruptible customers to reduce load or cease using gas altogether to make gas available to those with critical natural demand such as residential customers and hospitals.

sewage treatment, industrial waste, and landfill gas are often allowed to escape into the atmosphere unless it is collected and combusted. If DG systems are configured to use waste heat in combined heat and power (CHP) systems, the overall use of fuel is reduced, contributing to the State's efficiency goals and contributing to the EPS. CHP is a particularly important and potentially widely-applicable form of efficiency if it is implemented appropriately.<sup>22</sup> This requires thorough analysis of customer needs, rigorous quality control, and a careful assessment of environmental issues and utility-system integration.

NYSERDA studies have shown that there is the potential of over 8,500 MW of CHP in the State. An active State program could achieve 2,200 MW of this potential within 10 years, compared to an expected, business as usual anticipation achievement of 760 MW. This would save energy, money, and reduce harmful pollutant emissions.

The potential contributions of demand response (DR) actions should not be overlooked in designing the EPS. DR actions produce valuable system reliability benefits when taken when the grid is at maximum capacity. While these conservation actions are typically short-term in nature, NYSERDA has found that many customers who invest in enabling DR technology, such as smart meters and associated energy management software, do so to reap the benefits of short term demand reduction and the efficiency and cost-saving benefits afforded by the advanced software platform. Specifically, metering systems supported by sophisticated front-end software installed in existing building stock are designed to meter loads and sub-loads within a customer's complex and, in more sophisticated applications, control building loads. This sophisticated front-end software typically analyzes and presents data so that it can be used to better identify efficiency

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<sup>22</sup> Over the last seven years, NYSERDA's Distributed Generation and Combined Heat and Power (DG-CHP) program has had two specific objectives: to demonstrate examples of innovative applications of clean, efficient, commercially-available and emerging CHP systems in a wide array of end-use sectors (see performance data at <http://chp.nyserdera.org>); and to sponsor the development of improved generator and power system component technologies. Almost 100 demonstration projects, representing more than \$55 million of NYSERDA funding, have been selected through annual competitions and are in progress; nearly half of these are operational and the remainder are in various stages of engineering design, construction, and commissioning. An additional \$22 million of NYSERDA funding has been invested in nearly 70 projects for power system technologies development. These program objectives will continue with slight modifications in the future and will be complemented by additional funding sources and additional objectives as follows: deployment of mature DG-CHP systems in the Con Edison territory (covering metropolitan New York City) is being promoted through the Enhanced Commercial and Industrial Performance Program (ECIPP) which offers first-come first-served funding, has contracted with 2 projects, and is working with applications from another 16 projects. These 18 projects represent \$16 million of NYSERDA investment — an additional \$11.5 million of NYSERDA funding is currently available. Collectively, covering the last seven years, DG-CHP programs have invested over \$94 million of NYSERDA funding, of which \$72 million has been allocated to get permanent DG-CHP equipment installed in the field. When fully installed, this equipment will have capacity of 192 mW.

opportunities and fully understand load patterns. For these reasons, DR should be included in the EPS as an important system reliability measure and a critical energy efficiency enabling technology.

13. How can gas efficiency programs best complement electric efficiency programs? Similarly, how can electric efficiency programs be adapted to serve the needs of gas customers?

Answer: Natural gas efficiency programs can best complement electric efficiency programs by using a whole-buildings approach to delivering energy efficiency services. Studies consistently show large opportunities for both natural gas and electricity savings across all energy consuming sectors in the State. Simultaneously addressing deficiencies for an entire building provides the best opportunity for coordination, advances the delivery of energy efficiency in a more fuel-neutral manner (thereby increasing the objectivity of the information provided) and reduces redundancy while improving economies of scale. NYSERDA can play a critical role in multi-fuel energy efficiency programs based on its statewide experience in the delivery of whole-building energy efficiency programs, knowledge of statewide building stock, experience with the statewide network of equipment installers and service providers, and access to statewide data.

14. What could be an appropriate role for utilities with respect to the delivery of energy efficiency programs within their service territories? How might that role vary by market segment?

Answer: 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.

Since 1998, NYSERDA has been administering the **New York Energy \$mart<sup>SM</sup>** 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' public policy and program goals.<sup>23</sup> 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. These reports are reviewed by the 22-member System Benefits Charge Advisory Group, which serves as the Independent Program Evaluator and submitted to the PSC. The **New York Energy \$mart<sup>SM</sup>** Program has emerged as a national model of efficiency and a cost-effective delivery vehicle for programs.<sup>24</sup> 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 benefits corporation, NYSERDA has unique strengths and competencies to design and implement statewide public benefits programs including: credible, independent, and unbiased information delivery; governance principles that require staff to transact business openly, transparently, and ethically; a stakeholder-driven planning process to develop and implement its various initiatives; 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 management, low-income, and research and development initiatives consistently across the state.

In addition to NYSERDA's role, in order to meet the aggressive goals of the 15 by 15 models, additional public benefits funding must be made available in New York and the role of utility companies in delivering programs and services would need to be enhanced. Utilities could directly support enhancement and expansion of the **New York Energy \$mart<sup>SM</sup>** Program and those of NYPA and LIPA. Rather than competing with the Authorities, utilities could play an important and supporting role.

In the interest of aligning utility and shareholder interests in supporting investment in energy efficiency and demand response, all efforts must be coordinated among program sponsors so that ratepayer dollars are used most efficiently and effectively toward the public good. Complementary programs and services should be encouraged. No one program should replace another – rather, each of the Authorities and utilities have their own distinctive competencies – the

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<sup>23</sup> 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.

<sup>24</sup> Bruce Tonn, *Assessing Early Signs of Synergies Attributable to New York Energy \$mart<sup>SM</sup> Programs*, Oak Ridge, TN, Oak Ridge National Laboratory, 2002.

goal should be to capitalize on these for the benefit of all New Yorkers.

Achieving the goals of this proceeding will require significantly increased program activities from both State Authorities and utilities. Utilities should build upon their track record delivering effective mass market resource acquisition programs that leverage bill inserts and commercially-proven technologies. Utilities are also exploring opportunities for advanced metering and grid modernization (*i.e.*, smart-grid) as strategies for real-time transmission and distribution analysis, asset optimization, and reliability. In addition, significant opportunities also exist to offer customers defined and ready access to their energy use information 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 discussions of these coordinated roles should occur in a collaborative setting.

15. What role should key stakeholders play in an enhanced energy efficiency effort (*e.g.*, Staff, Departments of State and Environmental Conservation, utilities, NYSERDA, Division of Housing and Community Renewal, NYPA, LIPA, NYISO and energy service companies), and how should they coordinate their efforts? What factors should be taken into account in determining how the implementation of various program elements should be managed and monitored?

Answer: As a starting point for the coordination of efforts, the Conservation Coordination Task Force Report (CCTF)<sup>25</sup> to the Governor and the Legislature dated January 30, 2007, set forth recommendations of the seven<sup>26</sup> involved State entities. These recommendations are intended to further facilitate the coordination of energy programs of the various State entities. The recommendations fell into three broad categories: policy development and program deployment; technical and financial assistance coordination; and marketing and outreach. This exercise provided a beneficial and necessary first step in identifying potential duplication, gaps and overlaps in programs and services provided by these State entities. Even in the absence of legislation, NYSERDA is committed to further identify these areas and to more effectively expand the implementation of energy efficiency efforts.<sup>27</sup>

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<sup>25</sup> Conservation Coordination Task Force Report to the Governor and the Legislature, January 30, 2007.

<sup>26</sup> The Department of Public Service, New York Power Authority, Long Island Power Authority, the State Department of Education, Department of Environmental Conservation, and the Department of Housing and Community Renewal, with NYSERDA chairing the CCTF.

<sup>27</sup> As stated in the CCTF Report, "The mission of the CCTF is related to the broader mission of the Advisory Council on State Energy Efficiency (Advisory Council), created by Executive Order 111. The Advisory Council focused on energy use by State-owned buildings and the procurement of energy-efficient products, while the CCTF has reviewed the coordination of public programs that affect both public and private buildings. This situation presents an opportunity to combine the efforts of both, the Advisory Council and the CCTF, to further

Factors that should be taken into account in determining how the implementation of programs should be managed and monitored include, but are not limited to:

- Building on existing collaboration and coordination among State entities through a more formal, routine interaction and by establishing inter-agency working groups whose purpose is to address specific issues;
- Increasing inter-agency coordination in the program design phase;
- Standardizing protocols for program budgets, tracking impacts and periodic reporting;
- Developing an energy program clearinghouse to provide clarity and streamline participation by energy consumers.

NYSERDA has a record of leading and coordinating State energy policy efforts. As the former Chair of the State Energy Planning Board, NYSERDA is a natural fit to lead these coordination efforts that would address many energy efficiency issues including, but not limited to, updating building codes and appliance standards, the implementation of Executive Order 111 (EO 111), issues and activities related to the New York State Independent System Operator (NYISO) and its committees, initiatives of the Regional Greenhouse Gas Initiative (RGGI), the development of common measurement and verification protocols and reporting requirements, the implementation of the State's Renewable Portfolio Standard (RPS) and efforts under the Coordinated Electricity Demand Reduction Initiative (CEDRI). This experience includes leading collaborative groups, for both statewide (*e.g.*, SBC) and region-specific (*e.g.*, Con Ed System-wide Program) program coordination and implementation.

NYSERDA's statewide presence and credibility in offering unbiased, fuel neutral information and programs make it well suited to increase its outreach and education roles as well as using staff's highly technical expertise and program experience. NYSERDA's experience and expertise are particularly important when multiple fuels must be balanced in complex implementation decisions (*e.g.*, CHP, geothermal heat pumps, hybrid chiller plants, and industrial process energy).

16. What role should the private sector (*e.g.*, financing and educational institutions) play in program development and implementation? How should these efforts be coordinated with utility and government entities' programs? Are there additional incentives (or tax relief) that could be provided by Federal, State and Local governments which would enable greater penetration of energy efficiency initiatives?

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improve energy efficiency program coordination efforts. In order to be thoroughly comprehensive, any additional efforts going forward should include representatives from additional key State entities that are materially involved in the delivery of energy efficiency programs that have not been included in either the efforts of the Advisory Council or the CCTF." Conservation Coordination Task Force Report to the Governor and the Legislature, January 30, 2007, p. 4-1.

Answer: Private financing of energy efficiency investments could be expanded through programs similar to NYSERDA's current Loan Fund program, which subsidizes interest rates for qualifying investments. Likewise, tax-exempt municipal financing for state facilities under NYSERDA's State EnVest program could also be expanded to capture even greater energy savings potential in public facilities, such as schools and local government buildings. Also, the tax code could supply tax credits or other favorable treatment upon proof of energy efficiency investments, which might be particularly effective in the residential sector which could employ existing ENERGY STAR® standards. The deployment of energy efficiency measures is dependent on the existence of workforce infrastructure, including design, installation and maintenance firms and employees with the requisite training. Support for development of training curriculums at educational institutions throughout the State will enable the market to meet the demand for services that energy efficiency programs are expected to create, while serving the economic development goals of the EPS program. For example, NYSERDA recently contracted with Hudson Valley Community College to deliver training and certification to residential contractors. This public/private partnership provides a profit center for the college, while meeting program needs for infrastructure development.

NYSERDA has a well-established history in fostering successful collaborations among academia, industry, and government. Additional public-private partnerships will be needed to further advance the development, commercialization, and market penetration of new technologies, as well as the development of the necessary infrastructure.

17. Should utilities (or other entities) receive incentives for implementing successful energy efficiency programs? If so, what is the appropriate level and form that these incentives should take and should such incentives be performance based?

Answer: No, other than an administrative fee, utilities should not receive any financial incentive above their regulated rate of return. While the utilities might be well positioned to implement certain efficiency activities as detailed in our example provided in response to Question 14, those advantages will be offset and overcome if the utilities are awarded financial incentives. Efficiency funding to be administered by utilities should be disaggregated and collected as follows: if the funding is used for utility administration, evaluation, and or advertising and marketing, it should be expensed in the year incurred; if the funding is used as an incentive to purchase longer-lived appliances and equipment, it should be capitalized (rate-based) and recovered over a length of time commensurate with the expected life of the hardware complete with a rate of return on the investment equal to a utility's regulated rate of return. Any incentive above the rate of return would increase costs unnecessarily.

18. What are the best methods for ensuring that low income customers have access to efficiency programs?

Answer: New York has actively pursued policies to address the specific needs of lower income energy consumers by designing programs to provide comprehensive energy efficiency services as a means of helping these consumers to manage their energy use and bills. The earliest investor-owned utility program for low-income consumers in the State was approved by the Public Service Commission in 1988. As the State initiated electric industry restructuring, and as competitive forces began to emerge, the government's role in providing services to low-income and other energy customers lacking market influence was revisited. Mindful that a competitive energy market might reduce services to these customers, the SBC public benefits program was created.

The success of the SBC program helped confirm that public benefits programs can be implemented in a cost-effective manner. Such programs are designed through extensive collaboration with organizations that understand the specific needs of this market sector (community-based organizations, for example). Results indicate that the SBC program is meeting the needs and delivering benefits that would otherwise not be available to energy customers in New York that have less market influence and unique energy needs.

NYSERDA maintains that the most easily accessed and cost-effective manner to deliver these services is through a statewide low-income energy efficiency program initiative, as is currently provided the **New York Energy \$mart<sup>SM</sup>** program administered by NYSERDA and closely coordinated with other low-income programs delivered by state and local agencies and utilities, such as the Weatherization program and payment assistance programs.

19. How should environmental justice be considered in program design?

Answer: Environmental justice (EJ) issues must be appropriately considered in the context of an overall strategy for maximizing energy efficiency achievements, consistent with energy and environmental policy, rather than as part of specific program design.

20. How should existing gas utility efficiency programs, and those under development in rate proceedings, be integrated into an overall energy efficiency effort?

Answer: Existing natural gas utility efficiency programs and those under development in rate proceedings can be integrated with current and future energy efficiency program implementation efforts through collaboration and thoughtful program design. At a minimum, all energy efficiency programs implemented in New York should be subject to similar implementation guidelines, measurement and verification protocols, and evaluation and benefit/cost analysis, regardless of who administers the program. It should be acknowledged early in this proceeding, that substantial coordination is required so that programs currently under development are cost-effective, and do not conflict with or duplicate existing, proven programs.

Specifically with regard to programs currently under development, the practice of implementing interim programs for the initial year of program operation,

with collaborative efforts to determine program design issues for ensuing years is the best strategy for ensuring consistent and successful program design into the future. This strategy should also eliminate duplication and maximize economies of scale. For instance, whole-building programs designed to include a gas efficiency component can greatly increase energy savings achievements. Other issues of program design in future years should include, but not be limited to: the most appropriate administrator; funding levels; targeted participants; rate of ramp-up (or exit strategies); geographic scope, etc. Above all, all new programs should be revisited in their infancy to ensure their most appropriate, effective design. In order to ensure that programs are open and transparent, utilities should have advisory boards and accessible processes and policies.

21. Are there any modifications or adjustments that could be made in the current System Benefits Charge portfolio that would achieve higher levels of energy efficiency market penetration and saturation?

Answer: The strategic mission of SBC programs addresses a broad set of societal objectives that include reaching underserved markets, R&D, addressing electric reliability, market development activities, low-income services, and resource acquisition (reductions in mW and mWh). These programs were developed given the balance of public policy priorities at that time, and fund allocations were committed (and recently modified, as approved by the Commission) across R&D, LI, EE programs. Significantly higher levels of market penetration and saturation and efficiency capture are achievable with a different strategic mission and increased funding.

Enhancing and expanding resource acquisition programs with increased funding, while maintaining current funding levels for the rest of the current SBC programs, would allow for both a rapid ramp-up to capture energy efficiency resources while also assuring that the broad range of societal objectives continues to be met. Given that the competitive market is highly unlikely to address broader societal objectives, and given the fact that a broad cross section of customers contributes to program funding, preserving support for programs that satisfy broad public policy objectives is a sound approach.

For over a decade, State Authority efficiency programs have grown in scope, scale, maturity and energy efficiency resources delivered. This has entailed significant development of staff and program infrastructure, and positions Authority efficiency programs to seamlessly ramp-up in the near-term. Given differences among utility proposals with regard to scale and timeline for developing effective efficiency programs, and the potential lag time for program delivery (designed, approved and marketed), the utilities may not be positioned to make significant headway in delivering desired results in the near-term.

22. How should the expected benefits and costs of various design options be measured and compared? What externalities should be included and why? What expenditures or benefits should be characterized as transfer payments and perhaps excluded from the analysis? Why?

Answer: The total resource cost test (TRC) as defined by the PSC and used by NYSERDA for its SBC program evaluation is sufficient as a first screen for programmatic cost-effectiveness for resource acquisition programs. The PSC in its most recent Con Edison rate agreement<sup>28</sup> for the System-Wide Program (SWP) expanded this test to include market price effects for three years for programs that do not pass the first screen, recognizing that wholesale electricity prices would be lower because of energy efficiency for some time before markets reached a new equilibrium. NYSERDA continues to support the approach included in the Consolidated Edison SWP as an appropriate cost-effectiveness testing methodology. This approach will be best used for the portfolio rather than for individual projects, recognizing that certain individual projects, such as consumer education and market transformation efforts, are often not assigned their full value or an individual program basis.

NYSERDA also includes non-energy and macroeconomic impacts in testing the cost-effectiveness for its programs, knowing that customers assign and value benefits of energy efficiency more broadly than at the avoided cost of electricity. However, these additional tests do not replace the TRC nor are they used to justify programs; the more narrowly defined TRC is used by NYSERDA for this purpose. The more expansive tests, however, are used to quantify and value other benefits important to customers, and are used to support program planning.

Regarding the awarding of rate of return incentives to utilities for investing in energy efficiency, such incentives, if awarded, to investors should justifiably and by definition be included as a cost in the TRC, as the return to investors is a cost-of-service provision just like the return to investors on plant and equipment. In addition, to the extent possible, environmental benefits and impacts should be considered in evaluating various design options.

23. What are the best methods for ensuring transparent and technically sound methods for evaluation of program energy savings (gross and net), non-energy benefits (*e.g.*, economic, environmental) and program performance and administration?

Answer: In order to address the ambitious goals set forth in the 15 by 15 initiative, substantial new or expanded programs must be added to existing efforts now being undertaken by the program sponsors including NYSERDA, NYPA, LIPA, and the IOUs. As discussed throughout the answers to these questions, care must be taken to ensure that delivery of diverse services by diverse parties does not lead to fragmentation and waste.

NYSERDA is prepared to support and assist the Commission in its efforts to manage and coordinate the development of centralized evaluation, prospective evaluation, and traditional evaluation modalities. These common modalities are key to designing

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<sup>28</sup> Case 04-E-0572, Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Consolidated Edison Company of New York, Inc. for Electric Service, *Order on Demand Management Action Plan*, issued and effective March 16, 2006.

and measuring the success of programs in delivering the necessary savings to meet the 15 by 15 goal.

Based on its extensive experience in portfolio evaluation<sup>29</sup>, NYSERDA believes the following elements are crucial to a well-designed statewide program:

- Program indicators and measures must be consistent across all programs
- Program sponsors should be responsible for evaluating their own programs in order to ensure they learn from success and failures
- A central advisory committee, analogous to the SBC Advisory Committee, should be established with responsibility for evaluating all components of the statewide program, possibly with subcommittees serving individual program sponsors.

24. How should customer satisfaction and program design efficacy be assessed?

Answer: Optimal program evaluation, whether measuring customer satisfaction, design efficacy, or other program attributes, requires the services of objective, third-party evaluators. Evaluating customer satisfaction, in particular, should be conducted by evaluators not involved with the day-to-day delivery of program services to avoid possible bias stemming from program ownership issues.

Customer satisfaction and program design efficacy are primarily evaluated using process evaluation techniques. Customer satisfaction can be directly inferred from surveys of program participants but evaluating program design efficacy requires more complex techniques. By using program logic models, i.e., schematic representations of the interrelationships among program elements, evaluators can identify potential blockages, overlaps, and unnecessary processing loops within and among programs of similar types. Program logic models can be prepared for individual programs, groups of programs, and for portfolios of programs. Program logic models could be valuable tools for evaluating programs addressing similar technologies and services offered by diverse entities within the state. Using program logic models for programs offered by diverse program sponsors enables evaluators to develop libraries of common current and prospective indicators to further facilitate evenhanded evaluation of programs. Again, a central evaluator would be necessary to coordinate review and analysis efforts.

Strictly speaking, customer satisfaction and program design efficacy are distinct issues, and customer satisfaction is an important indicator of program efficacy. Customer satisfaction measures indicate how satisfied customers are with the services and incentives delivered by programs. Program design efficacy implies that services and incentives are delivered optimally but within appropriate constraints such as available staffing levels and appropriate incentives. Customers would be extremely satisfied with programs that deliver prompt, individualized

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<sup>29</sup> **New York Energy \$mart<sup>SM</sup>** *Program Evaluation and Status Report, Year Ending December 31, 2006, Final Report, March 2007.*

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services and provide generous incentives whether or not the design demonstrates optimal use of resources. On the other hand, customer dissatisfaction may reflect failures in program design or failures in services and information delivery outside the control of program staff.

25. What constitutes a reasonable level of funding for the electric and gas energy efficiency programs? How, and from whom, should the various program costs be funded, allocated and recovered?

Answer: Recently completed electric energy and natural gas efficiency potential studies<sup>30</sup> completed for New York demonstrate significant savings potential — enough to achieve the 15 by 15 initiative addressed above. In order to achieve these goals, NYSERDA recommends a level of funding on the order of \$600 million to \$900 million annually for electric programs, through 2015.<sup>31</sup> This amount may vary based on the configuration of the efficiency program and services portfolio. If the portfolio is constructed around the procurement of least cost efficiency resources first, regardless of public policy concerns for fairness and equity, the costs might be less. If the objective is to satisfy policy concerns of customers having access to a full complement of programs and services across service classifications, including research and development opportunities; fairness in terms of customers being able to participate in programs based on the amount of funding they provide; and offering programs and services to lower income households to improve energy affordability, the amount would be higher.

Program funding should be determined based on the policy and program considerations noted above, and once determined, funding should be collected from electricity and natural gas ratepayers through a fixed monthly service charge on their local utility distribution company bill. Collections should be allocated and collected among local distribution companies and among customer classes based on electric and natural gas commodity usage. All customers should be required to pay into the fund, without exception.

For administrative ease, funding provided to NYSERDA for administration should be provided in a manner as is currently provided for with the SBC program. Funding to be administered by utilities should be disaggregated and collected as follows:

- Funding used for utility administration, evaluation, advertising, and marketing should be expensed in the year incurred.
- Funding used for incentive payments to purchase appliances and equipment should be capitalized (rate-based) and recovery provided over the period

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<sup>30</sup>Optimal Energy, Inc., *Energy Efficiency and Renewable Energy Resource Development Potential in New York State, Final Report*, prepared for NYSERDA, August 2003.

Optimal Energy, Inc., *Natural Gas Energy Efficiency Resource Development Potential in New York, Final Report*, prepared for NYSERDA, October 2006.

<sup>31</sup> With regard to the potential for natural gas savings, various technical and economic scenarios were developed in the Optimal Gas Potential Study.

commensurate with the expected life of the hardware and with a rate of return on the investment equal to a utility's regulated rate of return.

### **Concluding Statement**

The goals articulated in this proceeding are ambitious and relatively long term. In addition to the matters addressed in the 25 questions, NYSERDA believes the proceeding should address the need to make investments in emerging electric and gas end-use technology to improve performance and continuously reduce cost, thereby providing the next generation of technology to meet the long term needs of energy consumers in the State.

While the goals of 15x15 and the EPS proceeding are laudable, such reductions in energy use are likely to be only the beginning of what will be a necessary transformation of our energy system - one driven by the need to stabilize the climate and provide enhanced energy security. Such an energy system will need to embrace energy efficiency to an unprecedented degree - pushing the limits of currently available technology. Estimates of global CO<sub>2</sub> emission reductions needed to support a climate stabilization goal range from 50% reduction in CO<sub>2</sub> emissions to 80% reduction. As such, New York should view the 15x15 initiative and the EPS proceeding in this context and ensure that a component of the resulting programs supports the continued improvement in technology performance and cost, as well as a shift in consumer behavior.