

DRAFT GENERIC ENVIRONMENTAL IMPACT STATEMENT

In

CASE 07-M-0548 – Proceeding on Motion  
Of the Commission Regarding an  
Energy Efficiency Portfolio Standard

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The Action in Case 07-M-0548 is the Adoption and Implementation of an Energy Efficiency Portfolio Standard (EPS) in New York State.

Area Affected by Action: New York State

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## **EXECUTIVE SUMMARY**

By an order issued May 16, 2007, the New York State Public Service Commission instituted Case 07-M-0548 regarding an Energy Efficiency Portfolio Standard (EPS) (Order). The Order establishes a target goal for electricity of a 15% reduction in usage by 2015 compared to the projected level for that year. It also initiated further investigation into a comparable resource acquisition program for natural gas that would include setting an energy efficiency goal for natural gas. The Action to be undertaken by the Commission does not include direct approval for the siting or construction of any facilities nor does it involve any permit approval, permit modification or funding, now or ultimately from any other government agency.

The objective of the proceeding is to balance cost impacts, resource diversity, and environmental effects by decreasing the State's energy use through increased conservation and efficiency. In addition, in order to ensure that the Commission's programs succeed, these objectives also will have to be addressed in Commission efforts to meet the State's needs for comprehensive energy planning. EPS objectives can be attained in a variety of ways: examples from New York and other jurisdictions include a central program such as the System Benefit Fund administered by NYSERDA; a requirement that all electric and natural gas distribution companies purchase a minimum percentage of their resource needs through energy efficiency resources; solely by competitive load-serving entities; or through creation of a State efficiency utility.

The purpose of the proceeding is to design an EPS to meet the targets for energy efficiency which, along with additional renewable resource development and other programs, decreases the State's dependence on fossil fuel-based generation and imported fuels, and reduces its greenhouse gas emissions. In addition, the EPS should reduce customer bills, stimulate State economic development, and create jobs for New Yorkers.

In August 2007, Department of Public Service Staff issued a "Preliminary Proposal for Energy Efficiency Program Design and Delivery"

(Staff's Report). This report presents general principles applicable to both natural gas and electricity programs and for all customer classes that reflect the knowledge and experience gained from energy efficiency programs and providers in New York State and nationwide. The report also describes current program delivery practices as well as descriptions of potential changes for the future. It also identifies new programs and enhancements to existing energy efficiency programs, by customer class and fuel type, which can be implemented on a fast track in early 2008 to accelerate the deployment of energy efficiency resources.

The benefits of energy efficiency include: forestalling the building of new generation; reducing 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, more efficient use of energy has the potential to foster economic development and job growth by encouraging in-state technology advances to deliver energy efficiency programs to consumers.

If the program objectives are achieved, then multiple benefits will accrue to customers. The benefits of the program (for measures implemented from 2008 through 2015, with certain benefits continuing until 2025) are estimated to be about \$12 billion (present value in 2008 dollars) and include: savings of \$6.5 billion in payments for energy that would no longer be needed or consumed; price reductions of \$2 billion; reduced capacity charges of \$3 billion; emission reductions of 6,544 tons of NO<sub>x</sub>; 9,040 tons of SO<sub>2</sub>; and 9,123,570 tons of CO<sub>2</sub> in 2015; and increased economic development associated with the creation of approximately 37,000 sustained jobs by 2015 associated with program implementation.

Benefits for efficiency measures are expected to last more than 15 years; the preliminary Staff analysis assumed that benefits would last only 10 years. As a result, benefits are likely to be even greater than Staff's initial estimates.

Among the considerations in Case 07-M-0548 is development of an EPS target for the natural gas industry. Establishment of that target will allow a more precise estimate of benefits. At this time, two studies -- Staff's Report and a 2006 Study by Optimal Energy, Inc. -- provide some sense of the possible scope of benefits of a natural gas EPS. Given certain target assumptions, the Optimal Gas study concluded a natural gas EPS would result in net benefits to the economy of \$1.1 billion and that for every dollar invested in efficiency, \$2.48 would be returned to the economy. Customer bill savings through 2016 were estimated to be \$293 million and that the program scenario would also result in lifetime reductions of 16 million metric tons of CO<sub>2</sub>, 2000 metric tons of SO<sub>2</sub>, and 1800 metric tons of NO<sub>x</sub>.

The proposed Action is expected to result in numerous economic, environmental and customer benefits. The benefits are correlated to the degree of funding and implementation of the energy efficiency programs. Direct adverse environmental impacts are not expected from implementation of energy efficiency policies but there could be potential secondary impacts. The energy efficiency programs being considered as part of the EPS fall into several categories. Some involve new and retrofit building construction, others will result in lighting and equipment retrofits. In general terms, disposal of replaced equipment is not a new or additional impact; however, disposal of the materials may be accelerated relative to their normal life expectancy. Most equipment and lighting is eventually replaced, so incentives to encourage that replacement would only result in earlier disposal of inefficient equipment. Any of the energy efficiency programs that create incentives to build new energy efficient buildings are not likely to cause more or less waste from construction. Retrofit building construction projects could add to solid waste disposal, but some would be an acceleration of disposal that would eventually occur in the absence of the EPS.

Implementation of an EPS will not directly cause any new construction, disturbance of land or result in any significant adverse environmental impacts. Any secondary consequences that result in an increase in waste materials, such as obsolete and inefficient appliances and equipment or

construction and demolition debris, are closely regulated and no additional regulation or mitigation is necessary.

Increased fuel cost that could result from adoption of an EPS may cause some customers to exercise their option to use alternative fuels. Those customers – primarily customers with on-site generators- are regulated by NYS DEC which regulates emissions from such generators. Regulation of those generators and emissions from whatever fuel the customer uses are not affected by this Action. If significant environmental impacts from on-site generators are identified, the appropriate regulatory and enforcement agencies are the DEC and local permitting authorities.

EPS program costs will be dependent on the reduction target and the types and details of the program selected to achieve that target. A preliminary estimate of costs and benefits of the fast track energy efficiency programs that have been identified for early implementation is provided in Staff's Report. Staff's preliminary analysis indicates that a combination of enhanced energy efficiency programs and significantly upgraded building codes and appliance efficiency standards could achieve approximately 77% of the EPS electric goal by 2012 at annual costs ranging from \$100 million to approximately \$350 million. Details of program costs through 2015 needed to meet the full goal of 15% by 2015 have not yet been developed.

The target level for gas efficiency reductions has not been established, but there are estimates that provide some insight into the potential costs and benefits based on a hypothetical target level. The Optimal Gas Study evaluated the economic implications of the Program Scenario Potential and estimated the program cost by 2016 would be approximately \$400 million. The overall cost benefit ratio was 2.48 and the net benefit would be \$1.1 billion. As the target level and details of the gas EPS are developed, better program costs and benefits can be calculated.

The EPS has the potential to indirectly increase the industries and services necessary to supply and install energy efficient equipment and to increase demand for services required to evaluate, retrofit, construct, and

monitor the energy efficiency measures encouraged by the EPS. Quantification of the economic benefits of increased manufacturing and services related to energy efficiency measures cannot be estimated until the details of the programs are developed and a schedule is established for meeting the goals of a particular program.

There are also potential indirect employment impacts that could result from new businesses, established or expanded to meet EPS program needs. Any new workforce in a community, whether manufacturing, construction or other services, can affect local retail, supply and secondary service businesses.

The purpose of this Action is to reduce energy consumption in New York State. As illustrated in Staff's Report, an EPS has the potential to reduce New York's 2015 electric energy requirement by 27,400 GWh per year, which would correspond to a peak load reduction of 5,487 MW. By reducing peak load, New York could avoid the need for approximately 6,390 MW of installed capacity. The natural gas target for reductions is being developed, but according to initial studies, estimated gas saving could be 15,204 MDth and peak day load reductions at 100 MDth by 2016.

#### **1.0 COMPLIANCE WITH NEW YORK STATE ENVIRONMENTAL QUALITY REVIEW ACT (SEQRA)**

The purpose of SEQRA is to incorporate consideration of environmental factors into the planning, review, and decision-making processes of New York State as well as regional and local government entities. SEQRA requires all governmental entities to determine whether the actions they undertake, fund, or approve may have a significant impact on the environment. If it is determined that the Action may have a significant adverse impact, then the government entity must prepare (or request to be prepared) an Environmental Impact Statement (EIS). The intent of SEQRA is to give appropriate weight to the protection and enhancement of environmental, human, and community resources in determining public policy by incorporating into a government entity's

planning and decision-making process a suitable balance of social, economic, and environmental factors. SEQRA does not, however, require that environmental factors be the sole consideration in decision-making.

No government entity involved in an Action may undertake or approve an Action until it has complied with the provisions of SEQRA, but SEQRA does not change the existing jurisdiction of that entity. It also allows these entities to impose substantive conditions upon the Action to ensure compliance with SEQRA. These conditions, however, must be practicable and reasonably related to impacts identified in the EIS.

### **1.1 Preparation of a Generic Environmental Impact Statement – Purpose and Scope**

SEQRA allows preparation of a Generic Environmental Impact Statement (GEIS) in several circumstances, including consideration of an entire program or plan having wide application or restricting the range of future alternative policies or projects.<sup>1</sup> A GEIS may be broader and more general in scope than a site- or project-specific EIS. The GEIS should include the logic and rationale of the choices advanced, and may be based on conceptual information. The GEIS, as appropriate, may also identify the important elements of the natural resource base, as well as existing and projected cultural features, patterns, and character. SEQRA requires completion of a draft GEIS, which is made available for public comment; subsequently, the lead agency considers the comments and then prepares a final GEIS prior to reaching a decision on the Action under consideration.

On June 11, 2007 the New York State Public Service Commission (PSC or Commission) issued a notice that invited comments on a draft Environmental Assessment Form (EAF) and declared itself lead agency for purposes of environmental quality review of this Action. Comments were

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<sup>1</sup> The required contents of an EIS are listed in the regulations that implement SEQRA (6 NYCRR Part 617.9 and 617.10) and generally provide the structure for an EIS, including a GEIS.

accepted until July 26, 2007. The DGEIS addresses the matters raised in those comments.

At a regular session of the Commission on November 7, 2007, the PSC considered an evaluation prepared by its staff concluding that the adoption and implementation of a energy efficiency portfolio standard generally has numerous positive environmental and social benefits; however, there may also be potential secondary impacts that could result in adverse effects on the environment. The Action involves potential changes in policy, practices, and economic arrangements affecting the choice and development of new and existing energy efficiency programs. The Commission determined that preparation of a broad-based GEIS would be more appropriate than a site-specific EIS because the proposed Action by itself would not involve any activities that would cause a direct effect on the environment at any specific location. Instead, the Action would likely create circumstances that could induce activities affecting the environment statewide. Preparation of a GEIS will allow the Commission to analyze and consider, in general and conceptual terms, impacts that may occur as a result of the Action, and to evaluate those impacts.

Notice that the Action may result in significant environmental impacts, and a determination that the Draft GEIS comported with the requirements of SEQRA, was issued on November 7, 2007. The notice was published in the NYS Environmental Notice Bulletin on November 7, 2007.

## **1.2 Process and Procedures**

Preparation of this draft GEIS and collaborative meetings and technical conferences of the parties in Case 07-M-0548, were conducted simultaneously and, in part, addressed issues related to those discussed in this DGEIS. Those meetings and conferences will continue and are expected to result in further enhancements to the record in Case 07-M-0548. A minimum of 30 days will be allowed for public comment on the DGEIS.

## **2.0 DESCRIPTION OF THE PROPOSED ACTION**

By an Order issued May 16, 2007, the Commission instituted Case 07-M-0548, Regarding an Energy Efficiency Portfolio Standard (EPS Order).<sup>2</sup> The order establishes a target goal for electricity of a 15% reduction in usage in 2015 compared to the projected level for that year. The Order also initiated further investigation into a comparable resource acquisition program for natural gas that would include setting an energy efficiency goal for natural gas. In the order instituting the proceeding, the Commission identified the following threshold issues to be considered in the design of an EPS:

- a) Examining critical design options for the near and longer term, including cost-effectiveness, and whether certain types of efficiency programs are best administered centrally while others are more suited to delivery by utilities, competitive load-serving entities, or others;
- b) Measuring and comparing the expected benefits and costs of various design options;
- c) Integrating generic Commission determinations with existing and new programs developed in individual rate cases;
- d) Considering and prioritizing end-user efficiency programs, market transformation approaches, research and development, and generation, distribution and transmission efficiencies, including the efficiency potential of distributed generation;
- e) Developing target goals and timetables for natural gas usage efficiency;
- f) Developing energy efficiency programs to ensure that all New Yorkers, especially those with low incomes, have the opportunity to benefit from lower bills resulting from lowered usage, and taking environmental justice concerns into consideration in program design;
- g) Assessing best practices to integrate demand response technology and utility rate incentives into program design to encourage customers to shift usage and reduce peak loads;

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<sup>2</sup> Case 07-M-0548, Proceeding On Motion of the Commission Regarding an Energy Efficiency Portfolio Standard (issued May 16, 2007).

- h) Addressing coordination of the development of energy efficiency resources with other State initiatives as well as with New York City and other municipal and local energy efficiency programs; and
- i) Ensuring transparent and technically sound methods for monitoring and verifying net energy savings, benefits, and costs, as well as assessments of customer satisfaction and program efficacy.

The Action to be undertaken by the Commission does not include direct approval for the siting or construction of any facilities nor does it involve any permit approval, permit modification or funding now or ultimately from any other government agency.

## **2.1 Location – New York State**

## **2.2 Background and History of the Proposed Action**

### **2.2.1 General Energy Efficiency Background**

The State has implemented several different policies over the years to realize the benefits of using the electricity sold in New York State with optimum efficiency, implementing a series of programs, variously termed energy conservation, energy efficiency, or demand side management (DSM).<sup>3</sup> New York has fostered DSM since the mid-1980s, when the Commission ordered major electric utilities to design DSM programs on a limited scale. In 1990, the Commission instituted comprehensive programs for DSM and integrated resource planning that realized considerable savings in electricity usage. Between 1990 and 1996, these programs resulted in estimated savings of 5,744 GWh of energy, reducing concomitant capacity needs by 1,374 MW.<sup>4</sup> Programs emphasized energy efficiency and frequently employed financial incentives (e.g., customer rebates) targeted directly at end-use electricity consumers. At the time, although most of the State enjoyed ample electric generation capacity, DSM was

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<sup>3</sup> NYSERDA, New York State Energy Fast Facts, [http://www.nysERDA.org/Energy\\_Information/energy\\_facts.asp](http://www.nysERDA.org/Energy_Information/energy_facts.asp).

<sup>4</sup> Expenditures for these DSM programs totaled \$1.23 billion.

considered an important component of resource planning, necessary to reduce the long-term need for new generation.

In the mid-1990s, almost all new generation resources were fossil fuel-based.<sup>5</sup> In 1998, in conjunction with electric industry utility restructuring, New York established the System Benefit Fund, financed through assessment of a System Benefit Charge (SBC) on customer bills. The SBC funds energy efficiency programs administered by the New York State Energy Research and Development Authority (NYSERDA). SBC programs from 1998 to 2006 have saved an estimated 2,362 GWh, resulting in concomitant capacity savings of 1,091 MW.<sup>6</sup> Those same programs saved almost 29 Mdt of natural gas. In the period 1987 to 2006, the New York Power Authority (NYPA) reports it spent more than \$1 billion on energy efficiency programs, realizing savings of 9,046 GWh and concomitant capacity savings of 2,164 MWs. The Long Island Power Authority (LIPA) has also implemented energy efficiency programs, with savings between 1999 and 2006 of 1339 GWh (150 MWs) at a cost of about \$204 million.

With respect to the pricing of electricity, the Commission requires that the State's largest electricity users be subject to hourly commodity service pricing.<sup>7</sup> Hourly pricing offers customers more accurate price information to encourage usage reduction when demand and costs are high, enabling end-use customers to realize the economic benefit of their own conservation efforts. This program provides energy service companies, meter service providers, and meter data service providers the opportunity to offer customers technologically sophisticated rate and service options to take advantage of hourly prices.

In April 2007, the Commission established policies on revenue decoupling, which will be examined and implemented in upcoming utility rate

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<sup>5</sup> This remained the case until the Commission adopted the Renewable Portfolio Standard (RPS) in 2004.

<sup>6</sup> SBC expenditures, as of the end of 2006, have totaled \$772 million.

<sup>7</sup> Case 03-E-0641, Proceeding on Motion of the Commission Regarding Expedited Implementation of Mandatory Hourly Pricing for Commodity Service, Order Denying Petition for Rehearing and Clarification in Part and Adopting Mandatory Hourly Pricing Requirements (issued April 24, 2006).

cases.<sup>8</sup> Revenue decoupling is designed to remove financial disincentives to pro-active utility participation in energy efficiency initiatives.

The Commission has acted to encourage development of environmentally appropriate generation through the Renewable Portfolio Standard proceeding (RPS).<sup>9</sup> The Commission adopted the RPS in 2004, with the goal of increasing the amount of renewable energy used to meet electric energy requirements in the State from approximately 19% to 25% by the year 2013, with 1% to be provided by a voluntary green energy market.

### **2.2.2 Energy Efficiency Portfolio Standard Background**

The potential to respond to the State's energy needs with economic efficiency and increased awareness of the environmental and climate costs of burning fossil fuels for energy,<sup>10</sup> and of the price of dependence upon imported energy sources, is leading to a renewed emphasis on sustainable economic growth and a more efficient use of electricity and natural gas. At this juncture, the Commission is revisiting its energy efficiency policy. Based upon analysis of the electric energy efficiencies achieved under previous and current programs, studies of New York State's energy efficiency potential, and preliminary cost and benefit data, the Commission determined that realizing the State's energy efficiency potential and reducing New York's electricity usage 15% from expected levels by 2015 may be in the public interest.

Energy use in New York State is increasing. From 2004 to 2005 alone, New York's electricity sales increased 1.3% and natural gas end-user consumption increased 2.2%; efficiency reductions did not keep pace. Electricity

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<sup>8</sup> Case 03-E-0640 – Proceeding on Motion of the Commission to Investigate Potential Electric Delivery Rate Disincentives Against the Promotion of Energy Efficiency, Renewable Technologies and Distributed Generation and Case 06-G-0746 – In the Matter of the Investigation of Potential Gas Delivery Rate Disincentives Against the Promotion of Energy Efficiency, Renewable Technologies and Distributed Generation.

<sup>9</sup> Case 03-E-0188, Order Regarding Retail Renewable Portfolio Standard (issued September 24, 2004). The RPS excluded energy efficiency resources in establishing its goal of generating 25% of the electricity sold in New York from renewable resource-fueled generation.

<sup>10</sup> See Massachusetts v. Environmental Protection Agency, \_\_\_ U.S. \_\_\_, 127 S. Ct. 1438 (April 2, 2007).

consumption is projected to increase approximately 1.3% per year through 2015.<sup>11</sup> Natural gas consumption is expected to increase at an average annual rate of about three quarters of one percent through that time period, according to the federal Energy Information Administration. At current trends, by 2015 electric energy usage in New York State is estimated to top 183,000 GWh annually, nearly 13% higher than current levels. Given volatile fossil fuel prices, concerns about greenhouse gas emissions, the vulnerability of the electrical system to supply disruption, and the need for new investment in infrastructure and supply, New York's existing efforts to promote energy efficiency need review, and the most effective methods to increasing energy efficiency<sup>12</sup> need to be determined. To accomplish these objectives an Energy Efficiency Portfolio Standard (EPS) proceeding has been instituted.

The objective of the proceeding is to balance cost impacts, resource diversity, and environmental effects, by decreasing the State's energy use through increased conservation and efficiency. In addition, in order to ensure that the Commission's programs succeed, these objectives also will have to be addressed in Commission efforts to meet the State's needs for comprehensive energy planning.

EPS objectives can be attained in a variety of ways: examples from New York's and other jurisdictions include a central program such as the System Benefit Fund administered by NYSERDA; a requirement that all electric and natural gas distribution companies purchase a minimum percentage of their resource needs through energy efficiency resources; solely by competitive load-serving entities; or through creation of a State efficiency utility.<sup>13</sup> In addition, the Commission could consider regional or municipal collaborative input or

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<sup>11</sup> NYISO 2007 Load and Capacity Data, p. 4.

<sup>12</sup> The efficient use of energy can result in using less energy (for example, through use of energy-saving appliances or housing stock, managing the use of energy, or load management and demand response) to provide the same level of services.

<sup>13</sup> Efficiency Vermont, for example, was created in 2000 by the Vermont legislature and the Vermont Public Service Board as a statewide provider of energy efficiency services.

assistance in program administration, or the deployment of various new technologies.

The purpose of the proceeding is to design an EPS to meet the targets for energy efficiency which, along with additional renewable resource development, and other programs, decreases the State's dependence on fossil fuel-based generation and imported fuels, and reduces its greenhouse gas emissions. An EPS should be designed ultimately to reduce customer bills, stimulate State economic development, and create jobs for New Yorkers.

### **2.2.3 EPS Staff Proposal**

In August 2007 Department of Public Service Staff issued a Preliminary Proposal for Energy Efficiency Program Design and Delivery.<sup>14</sup> Section II of this report presents general principles applicable to both natural gas and electricity programs and for all customer classes. The principles reflect the knowledge and experience gained from energy efficiency programs and providers in New York State and nationwide. Section III of the report describes current program delivery practices as well as descriptions of potential changes for the future. Section IV of the report identifies new programs and enhancements to existing energy efficiency programs, by customer class and fuel type, which can be implemented on a fast track in early 2008 to accelerate the deployment of energy efficiency resources. The "fast track" programs are listed below with indications of customer class and a notation as to whether the program provides savings of natural gas or electricity industry.

#### **A. Residential Energy Efficiency Programs**

1. New Building Construction-Single and Multiple family (electric and gas)
2. Statewide Residential Point-of-Sale Lighting Program (electric)
3. Residential central A/C-Efficient Equipment and Quality Install (electric)
4. Home Performance w/ Energy Star (electric and gas)
5. Residential Retrofit Program (mostly gas)
6. Residential Efficient Appliances and Equipment Purchases (gas)

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<sup>14</sup> New York Department of Public Service Staff Preliminary Proposal For Energy Efficiency Program Design and Delivery, August 28, 2007 (Staff Report).

7. Low Income Residential Energy Efficiency and Weatherization (electric and gas)
8. NYC Apartment Building Energy Efficient Design (electric and gas)

**B. Commercial and Industrial Energy Efficiency Programs**

1. New Commercial Buildings – “Whole Building Design” (electric and gas)
2. Small Business Direct Installation program (electric and gas)
3. Solicitation to Meet Need for a Block of Energy Efficiency Funds (electric and gas)
4. Commercial building Retro-commissioning (electric and gas)
5. Commercial Target Sectors (electric and gas)
6. Commercial Lighting Rebate Program (electric)
7. Flex Tech including Industrial Process Improvements (electric and gas)

**C. Residential, Commercial and Industrial Sectors**

1. Appliance and Equipment Standards and Building Codes (electric and gas)

Section V of the report addresses evaluation and monitoring. For an effort as large as the EPS Proceeding to succeed, there is a need for rigor and uniformity in program evaluation to ensure that energy efficiency improvements are fully realized. It is also essential that costs and benefits be compared in a reasonable and accurate manner. The section identifies the need for clear directions, presented in an easy to use format, for those performing evaluation and monitoring work.

Unlike electric energy efficiency, where a goal of a 15% reduction compared to the 2015 forecast has already been established, a natural gas energy efficiency goal still needs to be developed. Section VI of the report presents ideas for establishing a natural gas energy efficiency goal to be reached by 2015.

The report also addresses many interesting ideas that do not fit into traditional end use program models or would require planning and refinement to achieve. Many of these ideas have the potential for large, long-term energy savings and deserve careful consideration. Attachments 1 and 2 to the report

capture these concepts, dividing them into short term and long-term efforts. Attachment 3 of the report summarizes Staff's preliminary cost benefit analysis for the proposed fast track programs.

#### **2.2.4 Independent Energy Efficiency Service Provider Proposals**

Various independent energy efficiency service providers have also proposed marketing services and technologies that do not necessarily require ratepayer funding to enable market penetration. At the ISO Symposium and the Overview Forum, attended by many of the parties participating in the EPS proceeding, speakers described a wide range of services and end user technologies with the potential to help New York State achieve its energy efficiency targets via actions in the marketplace. The Commission may consider implementation of some or all of these services and technologies within the EPS.

Service proposals included: tradable energy efficiency certificates ("white tags"); performance contracting; and demand response programs. Technology proposals included: advanced metering to manage and control demand response initiatives, as well as to provide real-time pricing information to consumers; micro-combined heat and power (CHP) systems; solar thermal technology for heat and hot water; energy curtailment and management technology; distributed generation; and electricity storage systems.

#### **2.3 Public Need and Benefits - Electric and Natural Gas**

The benefits of energy efficiency include forestalling the building of new generation; reducing 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.<sup>15</sup> In addition, more efficient use of energy has the potential to foster economic development and job growth by

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<sup>15</sup> The Summary for Policymakers of Working Group III of the Fourth Assessment Report of the U.N. Intergovernmental Panel on Climate Change, released May 4, 2007, called for immediate mitigation of climate change, using available technology, by the adoption of energy efficiency and other measures to reduce reliance on fossil fuels. See <http://arch.rivm.nl/env/int/ipcc/>.

encouraging in-state technology advances to deliver energy efficiency programs to consumers.

Among the benefits of an expanded energy efficiency initiative is the reduction of greenhouse gas emissions resulting from electric generation. Studies estimate that the power generation sector contributes approximately 25% of the State's total greenhouse gas emissions. At least since 2002, reduction in greenhouse gas emissions has been a goal of State energy planning.<sup>16</sup> Draft Department of Environmental Conservation (DEC) regulations implementing the Regional Greenhouse Gas Initiative (RGGI), issued for comment, require New York to cap or limit the total carbon dioxide (CO<sub>2</sub>) emissions from power plants to recent levels beginning in 2007 through 2015;<sup>17</sup> and then to begin to reduce CO<sub>2</sub> emissions incrementally over a four-year period to achieve a 10% reduction by 2019. Taking into account expected increases in emissions absent RGGI, a reduction of approximately 35% of CO<sub>2</sub> emissions would result by 2020.<sup>18</sup> Attaining the 15% reduction in electricity usage by 2015 using efficiency resources will greatly facilitate reaching RGGI goals.

Many recent studies illustrate the vulnerability of our local and regional climate.<sup>19</sup> New York State's temperate climate and seasonal variety contribute to the State's economy, recreation, agriculture and culture. That seasonal cycle is likely to undergo significant variation as a result of atmospheric changes. Because of the increased levels of CO<sub>2</sub> and other greenhouse gases that have accumulated in the Earth's atmosphere since the early days of the

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<sup>16</sup> The last New York State Energy Plan adopted greenhouse gas emission reduction goals of 5% reduction from 1990 levels by the year 2010, and by 2020, a 10% reduction from 1990 levels.

<sup>17</sup> RGGI is an initiative led by a consortium of Northeast region states that requires member states, including New York, to cap or limit the total CO<sub>2</sub> emissions from power plants to recent levels beginning in 2009 through 2015, and then to reduce them.

<sup>18</sup> See RGGI Model Rule, at <http://www.rggi.org/modelrule.htm>.

<sup>19</sup> See, for example, Climate Change in the U.S. Northeast, A Report of the Northeast Climate Impacts Assessment (October 2006), <http://www.northeastclimateimpacts.org>; Climate Change Impacts in the United States, the Potential Consequences of Climate Variability and Change-Overview: Northeast, U.S. Global Change Research Program, <http://www.usgcrp.gov/usgcrp/Library/nationalassessment/overviewnortheast.htm>.

Industrial Revolution, the world's climate, scientists predict – and are observing – will experience shorter and milder winters, longer and hotter summers, altered growing seasons and more extreme precipitation patterns. Unchecked greenhouse gas emissions may also lead to a sea level rise sufficient to threaten the State's coastal areas.

The future path of these changes depends in large part on what is done to control the growing upward curve of greenhouse gas emissions globally. New York is currently responsible for approximately 0.6% of global CO<sub>2</sub> emissions, and has the opportunity to play a leading role in realizing energy efficiency as well as expanding energy generation fueled by renewable resources. These initiatives can also enhance economic development and job growth.

An August 2003 study prepared for the record in the RPS proceeding found that the State realized only one out of every seven kWh of cost-effective, achievable energy efficiency savings.<sup>20</sup> The study predicted that realizing even one-third of this potential would yield over \$2.9 billion in net benefits to New York in five years, and over \$6.2 billion by 2022.

New York State possesses sufficient potential energy efficiency resources to meet its forecast electricity needs and to reduce electric usage by 15% of projected levels by the year 2015. In this proceeding, the Commission will consider establishing targets and programs designed to optimize the State's efficient use of natural gas. To attain these goals, changes in appliance and building efficiency standards, LIPA and NYPA participation or concurrent programs, State facility efficiency measures and municipal government programs will also be essential.

This proceeding will build on the foundation laid by the Renewable Portfolio Standard, the Northeast Regional Greenhouse Gas Initiative and the System Benefit Fund, as well as investor-owned utility and State efficiency programs.

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<sup>20</sup> Energy Efficiency and Renewable Energy Resource Development Potential in New York State, Prepared for NYSERDA by Optimal Energy, Inc. et al. (August 2003) (the Optimal 2003 Report).

### **2.3.1 Summary of Benefits of an EPS – Electricity**

If the program objectives are achieved, multiple benefits will accrue to customers. Staff estimated the benefits of the program (for measures implemented from 2008 through 2015, with certain benefits continuing until 2025) to be about \$12 billion (present value in 2008 dollars) and include the following components:<sup>21</sup>

- Savings of \$6.5 billion – Savings in payments for energy that would no longer be needed or consumed;
- Price reductions of \$2 billion – Reductions in average market prices of energy resulting from reduced energy consumption, and concomitant savings on remaining energy purchases;
- Reduced Capacity charges of \$3 billion – Savings in capacity charges that would no longer be assessed as a direct result of peak load reductions;
- Reduced emissions as a result of less fossil fuel burned. Estimates suggests emission reductions of 6,544 tons of NO<sub>x</sub>, 9,040 tons of SO<sub>2</sub>, and 9,123,570 tons of CO<sub>2</sub> in 2015;.
- Increased economic development associated with the creation of approximately 37,000 sustained jobs by 2015 associated with program implementation.

Benefits for efficiency measures are expected to last more than 15 years although some are longer lasting like building codes and weatherization. The Staff analysis assumed that benefits would last only 10 years. For example, using the ten year figure, benefits for measures commencing in 2008 would last until 2018; for measures commencing in 2015, the last year of the program, benefits would last until 2025. As a result, benefits are likely to be even greater than staff's initial estimates.

The estimates provided above are based on an EPS program mix recommended by Staff. While the Commission may adopt a different mix of programs to achieve the target, or may revise the program mix over time, the estimates provide a sufficiently comprehensive examination to serve as a generic estimate of the expected benefits for this conceptual review.

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<sup>21</sup> New York State Department of Public Service, Preliminary Staff Analysis, Case 07-M-0548, Benefits and costs and Bill Impacts of Energy Efficiency Program for 15 percent Reduction in Electricity Usage by 2015, June 1, 2007.

### **2.3.2 Summary of Benefits – Natural Gas**

Among the considerations in Case 07-M-0548 is development of an EPS target for the natural gas Industry. Establishment of that target will allow a more precise estimate of benefits. At this time, both the Staff Report and a study conducted by Optimal Energy, Inc. on the natural gas energy efficiency development potential in New York<sup>22</sup> provide some sense of the possible scope of benefits of a natural gas EPS. Given certain target assumptions, the Optimal Gas Study estimated the cost and benefits of an EPS. The study evaluated the maximum achievable savings potential of natural gas efficiency resource potential and, more significantly to our analysis, evaluated the maximum achievable potential savings. In its evaluation of its “Program Scenario,” the Optimal Gas Study concluded the program would result in net benefits to the economy of \$1.1 billion and that for every \$1.00 invested in efficiency, \$2.48 would be returned to the economy. Customer bill savings through 2016 were estimated to be \$293 million and that the program scenario would also result in lifetime reductions of 16 million metric tons of CO<sub>2</sub>, 2000 metric tons of SO<sub>2</sub>, and 1800 metric tons of NO<sub>x</sub>.

The Staff Report evaluated and considered the Optimal Gas Study and reviewed other natural gas efficiency programs around the country in addition to the programs already underway in New York. Due to the interactive process established in Case 07-M-0548 regarding an EPS target for natural gas, a precise calculation of benefits is not shown. Instead, the estimates above provide a scalable magnitude of expected benefits suitable for this conceptual review.

## **2.4 Relationship to Other Plans, Programs and Policies And Initiatives**

### **2.4.1 Competitive Opportunities/Bypass Case (COB)**

In 1994, the PSC established a proceeding to address the numerous complex issues related to providing electric service (Case 94-E-0952).

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<sup>22</sup> Natural Gas Energy Efficiency Resource Development Potential in New York, Prepared for NYSERDA by Optimal Energy, Inc.; October 2006 (Optimal Gas Study).

Following collaborative discussions by the parties and a Recommended Decision (RD) by an Administrative law Judge (ALJ), the PSC issued Opinion and Order 96-12 in May 1996, covering many topics, including the provision of a framework for the transition to competition of the commodity portion of electric service. The PSC Order addressed topics relating to the value of retail and wholesale competition, the importance of maintaining system reliability, aspects of strandable cost and its recovery, costs that may be required to be spent on public policy programs, market power issues, corporate structure, and the need for the utilities to remain the provider of last resort to serve while also maintaining current customer protections. Retail access for customers for the commodity portion of their electricity supply was phased in, with full access for all customers available in each utility service area by July 2001.

The State's retail electric industry is fully open to customer choice and many energy service companies (ESCOs) now operate in New York. Changes in the electric market allow utility customers in nearly all areas of the State to choose their supplier of electricity, while the delivery of electricity remains the function of the local utility. The transition toward retail competition has been evolving for several years, and it is expected that further evolution will occur. To enhance customer choice, the PSC has instituted other programs including:

***Net Metering*** – This program allows residential customers operating solar, wind and farm-based biogas to net meter their consumption and generation and receive compensation if production exceeds usage over a given time period. The PSC has developed and maintains interconnection standards that apply to these systems.

***Environmental Disclosure Program*** - The PSC requires electricity providers throughout the state to include “environmental disclosure labeling” information in electricity bills at least twice a year. The label provides information on the mix of fuels used to generate the electricity sold by their supplier over a 12-month period. Customers see the percentage of the electricity sold by their electricity provider that is derived from each fuel source as well as

the air emissions (CO<sub>2</sub>, SO<sub>2</sub>, NO<sub>x</sub>) relative to the State average. This information empowers consumers to make informed choices about their energy sources and is an important tool supporting green power efforts. Environmental Disclosure may also encourage generators to consider providing more green power among their supply offerings.

#### **2.4.2 System Benefits Charge (SBC) Program**

Following the opening of electricity markets to greater competition, the PSC enacted a public benefits program through which System Benefits Charge (SBC) funds (collected through a surcharge through delivery rates) are used to promote energy efficiency, assist low-income customers, encourage research and development (R&D) related to energy efficient and renewable technologies, and protect the environment. This program helps to ensure that electricity service be provided safely, cleanly, and efficiently, and that offering such public benefits programs beyond what competitive markets might provide will continue. This program, administered by NYSERDA, is funded through June 2010 at \$175 million annually. The program provides a wide range of services to residents and business and includes, among other things, support for R&D activities involving renewable energy development.

#### **2.4.3 State Energy Plan (SEP)**

The 2002 SEP recommends and supports policies designed to provide New York State's citizens with fairly priced, clean, and efficient energy resources. The SEP recommends that New York maximize the use of clean and efficient energy and transportation technologies to meet the State's growing demand for energy. The SEP supports increased energy diversity, with greater emphasis on renewable energy development and improved energy efficiency, and innovations in regulatory policies that encourage and support development of competitive energy markets.

#### **2.4.4 Executive Order 111**

In June 2001, Executive Order 111 was issued requiring all state agencies, departments, and authorities to seek a 35% reduction in energy use by 2010, relative to their energy use in 1990. In addition, each agency, department,

and authority is required to purchase 10% of its energy from renewable energy sources by 2005, increasing to 20% by 2010. Local governments and school districts are also being actively encouraged to comply with the Order.

#### **2.4.5 Acid Deposition Reduction (ADR) Program**

The Acid Deposition Reduction (ADR) Program will result in regulations that will require New York's electric generation plants to reduce sulfur dioxide (SO<sub>2</sub>) emissions by 50% below the levels required by the federal CAA Amendments of 1990. The ADR Program will also require such plants to implement year-round controls for nitrous oxides (NO<sub>x</sub>), a substantial extension of the five-month summer ozone season controls required under current federal and State regulations. The first complete year of fully implemented NO<sub>x</sub> controls occurred in 2005; SO<sub>2</sub> controls will be fully phased in by January 2008.

#### **2.4.6 NO<sub>x</sub> Set-Aside Program**

The energy efficiency and renewable set-aside component of the NO<sub>x</sub> budget-trading program provides incentives to implement electric end-use energy efficiency and renewable generation projects by allocating three percent, or about 1,200 tons, of New York's ozone-season NO<sub>x</sub> allowance budget to eligible projects, beginning in 2003. A pilot program under which 115 tons of NO<sub>x</sub> allowances are available for end-use efficiency projects has been in place since 1999. Projects that can be bought and sold on the open market are certified as tradable emissions allowances. This program provides a viable model for the planned development of a carbon registry for reduction credits and trading.

#### **2.4.7 Renewable Portfolio Standard (RPS)**

The RPS is a key component of New York's comprehensive greenhouse gas (GHG) reduction policy. This program will help reduce GHG emissions from the electricity-generating sector. The primary objectives of the RPS are to improve New York's environment, increase energy diversity in order to reduce reliance on fossil fueled energy sources and to provide a competitive energy market. The RPS requires that 25 percent of the electricity purchased in New York State within the next decade be obtained from renewable energy

sources. The state's current energy portfolio includes approximately 19 percent renewables, primarily hydroelectric. Eligible energy sources include biogas (landfill and sewage gas), biomass, fuel cells, hydroelectric, solar, tidal, and wind. The RPS creates a competitive energy market by allowing renewable generators to participate in a centralized procurement method administered by NYSERDA that solicits bids for renewable energy.

#### **2.4.8 RGGI**

RGGI is a cooperative effort by Northeastern and Mid-Atlantic states to reduce emissions of CO<sub>2</sub> – a GHG that contributes to global climate change. Climate change is expected to raise sea level, change precipitation patterns and impact other local climate conditions. Changing regional climate could alter forests, crop yields, and water supplies. It could also affect human health, animals, and many types of ecosystems.

To address this important environmental issue, the RGGI participating states have developed a regional strategy for controlling emissions. Central to this initiative is the implementation of a multi-state cap-and-trade program with a market-based emissions trading system. The proposed cap and trade program will require electric power generators in participating states to reduce CO<sub>2</sub> emissions. New York State is in the process of establishing the programmatic components of RGGI.

### **3.0 ENVIRONMENTAL SETTING**

The Action in Case 07-M-0548 involves consideration of energy efficiency policies that could affect customers, utilities, load serving entities and others in New York State with respect to energy prices and consumption. The policies are not considered to require, allow, or fund construction of physical facilities, or cause disruption to the lands and waters of New York State. Hence a physical and physiographic description of New York State is not needed. To the extent there is any environmentally significant secondary physical construction, land disruption or funding of such activities the physical setting of

that specific activity could be considered in the SEQRA process applicable to that action.

The New York State setting that describes, in general terms, the electricity and natural Gas industry in New York State provides the context for the proposed Action.

**3.1 Energy Efficiency and the Electric Industry in New York State**

In New York State, there are many entities that provide energy efficiency services to customers. This section describes the roles of some of the major players, as well as annual expenditures on energy efficiency for each New York State Agency involved in delivering these services.<sup>23</sup>

**12 Month Program Expenditures (In Thousands of Dollars)**

Agency	Current Annual Budget	Most Recent 12-Month Program Expenditures	Most Recent 12-Month Program Commitments	Current Outstanding Commitments / Encumbrances	Most Recent Quarterly Disbursements (Expenditures)
NYSERDA	\$188,232	\$130,639	\$133,786	\$206,181	\$ 29,561
NYPA	\$102,806	\$103,092	\$106,755	\$316,513	\$ 34,986
LIPA	\$ 36,499	\$ 27,592	\$ 27,592	\$ -----	\$ 6,898
DHCR	\$ 55,875	\$ 55,299	\$ 55,299	\$-----	\$ 18,921

On the utility side, Con Edison has also conducted programs geared at energy reduction. In 2006, it spent nearly \$5 million on these programs (\$3.6 million for electric programs and \$1.4 million on a gas efficiency pilot program). Other New York utilities are in the beginning stages of developing energy efficiency programs.

**NYSERDA**

In the 1980's and early 1990's, energy efficiency programs in New York State were operated by the utility companies with funding included in rates paid by their own customers. In 1996, the Commission established a System

<sup>23</sup> Conservation Coordination Task Force Report to the Governor and Legislature, January 30, 2007.

Benefits Program to fund public policy initiatives not expected to be adequately addressed by New York's competitive electricity markets, including energy efficiency. The Commission designated NYSERDA as the System Benefits Charge (SBC) Program administrator.<sup>24</sup> NYSERDA operates SBC-funded programs under a Memorandum of Understanding with the Commission and the Department of Public Service, which oversees those programs. An independent advisory group also provides guidance on program evaluation.

In 1998, the Commission established SBC funding levels for a three-year period to provide, among other things, statewide energy efficiency programs for commercial and industrial, residential, and low income customer sectors, and energy research and development. The Commission renewed the SBC for a five-year period in 2001 with increased funding and additional focus on programs designed to achieve peak load reductions. In December 2005, the Commission extended the SBC program for an additional five-year period (7/1/2006-6/30/2011) with an annual funding level of \$175 million.

The SBC energy efficiency programs are designed to serve the diverse needs of New York energy consumers from residential homeowners and tenants to manufacturing plants and commercial office buildings. With New York's programs administered through a central entity, it has been possible for resources to be consolidated, providing the ability to engage in market transformation activities that might have been difficult for a single utility to undertake. The statewide approach also has promoted consistency in program evaluation and consumer education activities.

#### New York Power Authority (NYPA)

NYPA is the nation's largest state-owned power-providing organization. As part of its mission, NYPA provides energy-efficiency services to its customers and to public schools and other government facilities, including projects for some customers that are served by utilities.<sup>25</sup> NYPA has

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<sup>24</sup> The New York State legislature established NYSERDA as a public benefit corporation in 1975 with the mission of conducting energy research and development programs.

<sup>25</sup> By law, NYPA offers energy efficiency service to all schools in the state, both public and private.

undertaken more than 1,500 energy-efficiency projects at about 2,300 public buildings across the State. NYPA reports that it has spent a total of over \$1 billion on energy efficiency programs in New York State. These measures have reduced demand by about 200 MW and lowered the electric bills of State and municipal governments by more than \$93 million a year. NYPA's programs are generally designed to address all energy efficiency improvements within a building through a single, comprehensive effort.

NYPA frequently partners with NYSERDA or other entities that can provide energy efficiency resources, serving as the interface for customers seeking to obtain energy efficiency services.<sup>26</sup>

Long Island Power Authority (LIPA)

LIPA is a non-profit electric service provider for Long Island. In May 1999 the LIPA Board of Trustees approved the Clean Air Initiative, a five-year \$160 million effort designed to provide energy and capacity savings. The program was later expanded to a ten-year, \$355 million commitment through 2008. LIPA is now in the process of reevaluating its programs with the intention of expanding its commitments to energy efficiency. LIPA has serious concerns with demand on peak days, so its programs have an emphasis on peak demand reduction. As with NYPA, LIPA frequently partners with NYSERDA to take advantage of its expertise. In addition, LIPA reaches out to customers to provide targeted programs to meet the needs of a local area.

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<sup>26</sup> In many instances, NYPA offers energy efficiency service to all schools in the state, both public and private.

Division of Housing and Community Renewal

The New York State Division of Housing and Community Renewal (DHCR) is responsible for the supervision, maintenance, and development of affordable, low-and moderate-income housing in New York State. DHCR administers the federally funded low-income Weatherization Assistance Program (WAP) in New York through which it weatherizes approximately 12,000 dwelling units each year spending about \$50 million a year. DHCR also administers the New York State HOME Program that provides funding for housing projects and encourages energy conservation improvements, and the Rent Administration Program that, among other functions, encourages use of metering in individual housing units.

Utilities

In the 1980s and early 1990s, New York State electric utilities ran large-scale energy efficiency programs that emphasized services and financial incentives, generally in the form of rebates targeted directly at their customers.<sup>27</sup> Utility annual spending on energy efficiency programs reached a high point of \$286 million in 1992. Total utility spending during the period of 1990-1996 exceeded \$1.2 billion and achieved 5,744 GWh of energy savings.

With the establishment of the SBC in 1996 and the designation of NYSERDA as the administrator, utility energy efficiency programs were scaled back significantly. Over the years, many utility employees who had been involved in energy efficiency programs were reassigned to other duties or left the companies; the expertise that had been resident at the utilities in the early 1990s has been seriously attenuated. Recently, however, the utilities have demonstrated a renewed interest in energy efficiency programs. Consolidated Edison of New York, Inc. (Con Edison) has had a targeted energy efficiency program since 2003, which uses a Request for Proposal solicitation process to acquire predetermined levels of demand reduction from third party providers within a defined geographical area for the purpose of deferring planned distribution and transmission projects. As part of Con Edison's current electric

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<sup>27</sup> Some pilot market transformation programs also were undertaken.

rate plan, approved in March 2005, the targeted program has had a goal of achieving at least 150 MW of load reduction. Funding is capped at \$112 million plus appropriate administrative and evaluation fees. Several other electric and gas utilities have proposed energy efficiency programs and revenue decoupling mechanisms as part of recent electric and natural gas rate case filings.

#### Independent Energy Efficiency Services Providers

NYSERDA typically uses a competitive solicitation process to select vendors to implement its energy efficiency programs. Over the years, a well-established workforce of technical service providers has arisen in New York. These are generally private companies with expertise in one or more specific phases of the energy efficiency delivery business. Many of these companies respond to solicitations for specific NYSERDA-managed programs. In addition, DHCR distributes funds to 64 not-for-profit agencies, which provide services to businesses in every county in the State, to implement the WAP.<sup>28</sup> These community-based agencies also have trained a well-established workforce of technical service providers.

Independent Energy Efficiency Services Providers have also introduced services and technologies into the marketplace that do not necessarily require ratepayer funding to enable market penetration. At the ISO Symposium and the Overview Forum, attended by many of the parties participating in the EPS proceeding, speakers described a wide range of technologies with the potential to help New York State achieve its energy efficiency targets via actions in the marketplace. Ideas proposed included use of: advanced meters, micro-CHP systems, energy curtailment technology, distributed generation, and electricity storage systems.

### **3.2 Energy Efficiency and the Natural Gas Industry in New York State**

The EPS Proceeding uses as its electricity target, a goal of reducing electricity consumption by 15% by 2015. The Initiating Order in the

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<sup>28</sup> Contractors that participate in WAP delivery also work with NYSERDA to deliver the Empower Program for low-income customers.

EPS Proceeding did not, however, specify a companion goal for natural gas consumption. Instead, it stated that “targets should also be established and programs designed to optimize the State’s efficient use of natural gas.”<sup>29</sup> Further, that Order directed that the ALJ and parties should “(d)velop target goals and timetables for natural gas usage efficiency. Staff’s analysis indicates that a natural gas reduction target of 15% percent by 2015 may be feasible. It should be noted that this target applies to residential, commercial, and industrial firm load, and not total gas usage.

Some natural gas utilities currently have energy efficiency programs, and NYSERDA’s SBC programs result in incidental natural gas efficiencies. A higher level of commitment can produce further natural gas savings. In addition, it is expected that changes to building codes and appliance standards would boost gas savings levels.

Although there are a total of 18 natural gas local distribution companies (LDCs) in the State, several are very small. The major LDCs<sup>30</sup> can be divided into upstate and downstate regions, with Con Edison, O&R, KEDNY/KEDLI, and Central Hudson being considered downstate LDCs and the rest being considered upstate LDCs.

The downstate region has been experiencing steady natural gas load growth. Although use per customer has been declining due to weatherization and the replacement of outdated equipment with newer, more efficient models, new customer attachments have been continuing. These attachments result from both conversion of oil or electric heat/hot water customers to natural gas usage and from new construction. The downstate load growth continues to constrain existing capacity. The upstate region has experienced relatively stagnant growth, with shrinking use per customer

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<sup>29</sup> Case 07-M-0548 - Order Instituting Proceeding, p. 3.

<sup>30</sup> Those LDCs are the following: Central Hudson Gas and Electric Corporation (Central Hudson), Consolidated Edison Company of New York, Inc. (Con Edison), Corning Natural Gas (Corning), KeySpan Energy Delivery (KEDNY/KEDLI), National Fuel Gas (NFG), National Grid, New York State Electric and Gas (NYSEG), Orange and Rockland Utilities (O&R), Rochester Gas and Electric (RG&E), and St. Lawrence.

generally offset by new customer attachments, except in the case of NFG, which is experiencing shrinking throughput on an annual basis.

At the present time, National Grid, Con Edison, and KEDNY/KEDLI have natural gas efficiency programs in place, and NFG's natural gas efficiency program was recently approved by the Commission. Some natural gas savings have also been achieved as an indirect benefit of the electric efficiency programs administered by NYSERDA, funded by the SBC, and through the low-income weatherization programs administered by DHCR.

In its report, Staff noted several factors that should be considered when developing reasonable goals, timetables, and programs for natural gas usage efficiency.<sup>31</sup> First, while use per customer of electricity continues to increase due to innovations in consumer products (such as computers, cell phones, etc.), use per customer of natural gas continues to decline due to the lack of new end-use applications, increased efficiency of space and water heating equipment, and building envelope improvements. Second, natural gas is an important fuel choice for the generation of electricity, including micro combined heat and power distributed generation applications. Third, some electricity applications have natural gas fueled alternatives, such as clothes drying and water heating, which are generally more efficient than their electric counterparts. Finally, natural gas competes directly in many applications with petroleum products, including residual and distillate products, but natural gas contributes considerably fewer greenhouse gas emissions than petroleum products when providing the same level of service.

The focus of the Staff analysis is on residential, commercial, and industrial natural gas usage efficiency. There is potential for increased natural gas usage from possible increased use of distributed generation, from the conversion of existing power plants to natural gas fuel from petroleum or coal, and the construction of new gas fired power plants. That potential is not quantified in Staff's analysis.

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<sup>31</sup> See Staff Report at p. 76.

The potential for reductions in natural gas usage due to cost-effective energy efficiency improvements consists of several elements. These include: (1) the savings to be achieved via the new energy efficiency programs; (2) savings from existing natural gas efficiency programs; (3) natural gas savings resulting from existing and possibly expanded SBC programs; and (4) savings resulting from new building codes and standards.

#### **4.0 ALTERNATIVE ACTIONS CONSIDERED**

##### **4.1 EPS Alternatives**

Approaches to EPS alternatives considered in Case 07-M- 0548 include various funding mechanisms, timing of program implementation, reductions in target levels and individual program details, as well as administrative and monitoring issues. Some alternatives could affect the level of benefits but, because potential adverse impacts are limited, alternatives are not likely to change the level of impacts.

##### **4.2 No Action Alternative**

The no Action alternative would preclude the expected economic and environmental benefits and, because there are no substantial adverse impacts, would not result in reduction of impacts. Energy cost and security could be compromised and some energy efficiencies opportunities (e.g. new construction) will be lost.

#### **5.0 EVALUATION OF SIGNIFICANT ADVERSE ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION**

##### **5.1 Overview of Generic Environmental Impact Analysis**

The proposed Action is expected to result in numerous economic, environmental and customer benefits. The benefits are correlated to the level of funding and implementation of the energy efficiency programs. Direct adverse environmental impacts are not expected from implementation of energy efficiency policies but there could be potential secondary impacts that will be discussed in the following sections. The energy efficiency programs under consideration as

part of the EPS fall into several broad categories. Several involve new and retrofit building construction, others will result in lighting and equipment retrofits.

In general terms, disposal of replaced equipment is not a new or additional impact; however, disposal of the materials may be accelerated relative to their normal life expectancy. Most equipment and lighting is eventually replaced so incentives to encourage that replacement only result in earlier disposal of inefficient equipment. Any of the energy efficiency programs that create incentives to build new energy efficient buildings are not likely to cause more or less waste from construction. Retrofit building construction projects could add to solid waste disposal but some of this would be an acceleration of disposal that would eventually occur anyhow. Some energy efficiency programs could add to the cost of the energy commodity and customers who are able to make fuel choices could opt for a different fuel with different benefits (e.g., less cost) and impacts (e.g., more emissions).

#### **5.1.1 Impact to Air**

The Action is not likely to cause any direct environmental effects, since the Action is intended to and would likely reduce the demand for electricity generated by the combustion of coal, oil, and natural gas, this in turn, should result in reductions in the emissions of sulfur dioxide, nitrogen oxides, particulates, and carbon dioxide emitted as byproducts of such combustion processes employed in the burning of fossil fuels by central generating plants. To the limited extent that the Action may cause further development of clean distributed generation (DG) facilities to reduce demand on the electric grid, there could be minor differential increases in ambient levels of emissions of certain criteria pollutants such as sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO) and particulates.

In instances where solar, photovoltaic, wind energy, or fuel cells for DG systems are employed, no increases in ambient emissions will occur. When natural gas is used as a fuel source, minor increases in criteria pollutants may occur. With respect to localized air impacts, the Department of Environmental Conservation (DEC) has regulatory permitting authority and sets limits on criteria

pollutants for DG facilities 150 kilowatts (kW) (200 horsepower) and above in non-attainment areas and 300 kW (400 horsepower) and above in attainment areas. For qualifying projects, DEC requires an analysis to determine whether exhaust emissions from qualifying projects meet applicable national ambient air quality standards and whether there would be any potential significant adverse air quality impacts.

The replacement of air conditioning and refrigeration equipment is a conceivable consequence of this Action, but the potential risks of chlorofluorocarbons (CFCs), a greenhouse gas, being released into the environment is not significant. Section 38-0107 of the NYS Environmental Conservation Law requires the capturing of CFCs prior to disposal of refrigeration or air conditional equipment, thereby minimizing any release into the atmosphere.

In addition, the Action considers programs that promote the use of energy efficient lighting such as compact fluorescent lights (CFLs), trace amounts of airborne mercury that could be released into the environment upon CFL breakage or disposal is not considered to be significant. New York State has led the nation in reducing the amounts of mercury that enter the waste stream and is released into the environment. Section 27-2101 of the NYS Environmental Conservation Law created programs to reduce the use of mercury and minimize its release into the environment. The State's waste-to-energy facilities take steps to remove mercury from the waste stream. Although fluorescent light bulbs do contain trace amounts of mercury (~4-5 milligrams per bulb), the vast majority of mercury currently being emitted into the environment comes from coal-fired electric generation facilities. The electricity reductions resulting from wide spread replacement of traditional incandescent bulbs with fluorescent fixtures is likely to have a greater impact on reducing mercury emissions than any incremental releases associated with increased disposal of fluorescent bulbs.

The Action could induce dual-fueled customers, including large commercial and industrial customers, as well as on-site generators, to choose oil

as a fuel-source in lieu of natural gas as a result of program costs, program design, or implementation issues. This could result in an end user switching from a cleaner fuel, such as natural gas, to a less clean fuel such as oil. The Action, however, would not change any regulatory requirements applicable to these facilities. Fuel switching and localized impacts, if any, could occur with or without this Action (for example if the price of natural gas increases for any reason). State and local regulations of the facilities and emissions are not changed or affected by this action.

The Action is intended to result in reduced demand for electricity in New York State and hence commensurate emissions reductions from generators. However, it is not contemplated that the Action will alter or inhibit a generator's option to sell electricity in other markets or directly affect the dispatch of existing generation. Reduced demand could affect the decisions of entrepreneurs who may have been considering generation additions, but so will a number of other factors. Currently installed capacity market prices are based on the cost of entry for new capacity. If the market is long (excess supply), generators can expect they will not cover their cost of entry. This could be a disincentive to bring new generation into commercial operation. However, other actions by the PSC and DEC are expected to make market entry more attractive. For example, on April 19, 2007, the Commission launched an inquiry into the role long-term contracts might play in the acquisition of infrastructure and other resources. Besides assisting in the financing of new infrastructure, these contracts might be designed to facilitate the realization of public policy goals such as bringing clean new capacity on line in an environment where market prices are volatile. The PSC also provides opportunities for clean renewable generation through the RPS. Actions by the DEC regarding emission limits imposed on generating units may lead their owners to shut down the most inefficient units, thereby leaving an opportunity for the owner, or other potential developers to fill that void and bring new, clean capacity into the state's generation mix. Although emissions reductions from energy efficiency programs have been estimated,

many other economic and environmental factors, especially State and Federal regulation of electric generators, will influence future emissions.

In no case is it contemplated that this Action would cause any exceedances of the ambient air quality standards for criteria pollutants or have any measurable effect on air quality overall. Therefore, it is concluded that the Action will not have a significant effect on air quality.

#### **5.1.2 Impact to Water**

The implementation of the Action would likely result in a reduction in the emission of sulfur dioxide, nitrogen oxides and particulates that could reduce acid rain and similar chemical impacts on fragile water bodies.

#### **5.1.3 Impact to Land**

The implementation of the Action would likely not have any significant adverse impact on land drainage or soil erosion. The replacement of building materials is a conceivable consequence of this Action, and could result in a modest increase in solid waste production and disposal. If new DG facilities are constructed, it is likely that most will be located within or could be a possible expansion of a building's existing footprint. New construction or any possible expansion requires local land use conformance, and must meet state and municipal performance standards and site plan approval.

#### **5.1.4 Impact on Plants and Animals**

The implementation of the Action would likely result in a reduction in the emissions of sulfur dioxide, nitrogen oxides and particulates that could reduce acid rain and similar chemical impacts on fragile terrestrial and aquatic plant and animal species.

#### **5.1.5 Impact on Agricultural Land Resources**

The implementation of the Action would likely not have any significant adverse impact on agricultural land resources.

#### **5.1.6 Impact on Aesthetic Resources**

The implementation of the Action would likely not have any significant adverse impact on aesthetic resources.

#### **5.1.7 Impact on Historic and Archaeological Resources**

The implementation of the Action would likely not have any significant adverse impact on historic and archaeological resources.

#### **5.1.8 Impact on Open Space and Recreation**

The implementation of the Action would likely not have any significant adverse impact on open space and recreation.

#### **5.1.9 Impact on Transportation**

The implementation of the Action would likely not have any significant adverse impact on transportation.

#### **5.1.10 Impact on Energy**

The implementation of the Action would likely result in reduced demand for electricity and natural gas. However, the Action, could have an indirect influence on changes in policy, practices and economic arrangements affecting the choice and development of new generation sources and dispatch and retirement decisions of existing sources. Also, any decrease in electricity demand would likely result in a corresponding decrease in demand for fuels consumed in the generation of electricity. Because of the economic phenomenon known as price elasticity of demand, it is expected that some customers will increase their consumption of electricity in response to lower overall costs. However, given the current high price of energy commodities, it is expected that the price elasticity effect will be minimal.

#### **5.1.11 Impact of Noise and Odor**

The implementation of the Action would likely result in a reduction in noise and odors from central electric generation facilities due to reduced demand for electricity. The Action may also cause further development of distributed generation facilities. Construction and operation of these facilities could cause localized noise impacts. It is anticipated that local municipal noise standards would apply to the construction and operation of DG facilities and that the potential for adverse impacts of sound generated and emanating to receptors outside of the facility property would be considered. Although it is conceivable that some sound may be perceptible to receptors, it is likely not to be significant.

#### **5.1.12 Impact on Public Health**

The implementation of the Action would likely result in a reduction in the emission of sulfur dioxide, nitrogen oxides and particulates. Such a reduction could reduce asthma and other respiratory impacts on humans. In addition, indoor air quality affecting public health may benefit from optimizing the energy performance of buildings and products. The 1988 New York Solid Waste Management Act requires that discarded materials be reused or recycled before considered for disposal.

#### **5.1.13 Impact on Growth and the Character of a Community or Neighborhood**

The implementation of the Action would likely not have any significant adverse impact on the growth and the character of any communities or neighborhoods.

#### **5.1.14 Impact on Solid Waste Disposal**

To the extent the Action encourages replacement of older building materials with new energy efficient materials, the increase of solid waste disposal in landfills is not expected to be significant. The 1988 New York Solid Waste Management Act requires that discarded materials be reused or recycled before being considered for disposal. Construction and demolition debris is often source-separated and recycled at specialized facilities and any amount that eventually gets disposed of in landfills would not account for any significant increase in New York State's daily waste.

### **5.2 Cumulative Adverse Impacts of EPS**

There are no other long-term, short-term, cumulative, or other effects not identified above.

## **6.0 MITIGATION OF POTENTIAL ADVERSE IMPACTS**

### **6.1 Program Implementation and Mitigation**

Implementation of an EPS will not directly cause any new construction, or disturbance of land or result in any significant adverse environmental impacts. Any secondary consequences that result in an increase in waste materials such as obsolete and inefficient appliances and equipment or construction and demolition debris are closely regulated and no additional regulation or mitigation is necessary.

Increased fuel costs that result from adoption of this EPS could cause some customers to exercise their option to use alternative fuels. Those customers – primarily customers with on-site generators- are regulated by DEC. Regulation of those generators and emissions, from whatever fuel the customer uses are not affected by this Action. If significant adverse environmental impacts from on-site generators is identified, the appropriate regulatory and enforcement agency is DEC and local permitting authorities.

### **6.2 Environmental Justice**

Adoption of an EPS is not expected to have any direct implications for new construction or environmental impacts; however, customers will continue to have a choice of fuel for electric generation or the option to pursue on-site generation. A customer that can utilize multiple fuels may make an economic decision to use the least expensive fuel. If the added cost of energy efficiency programs increase cost of one fuel, customers could choose to fuel switch or to build on-site generation. To the extent such projects are initiated, in addition to licensing and permitting requirements, they may be subject to the provisions of DEC Commissioner Policy 29 – Environmental Justice and Permitting (issued March 19, 2003).

PSC consideration of an EPS will not consider or approve any specific project at any specific site. Hence, the case-by-case review of specific projects may trigger applicability of the Environmental Justice Policy, which is dependent on geographic location, the community demographics of the project area and existing impacts on that community. Applicability will be evaluated as

future projects seek permits. However, to the degree that new energy efficiency programs are developed that are targeted specifically to low-income customers, the EPS may result in particular benefits for communities that have been underserved by past energy policies.

Below is a brief discussion of the Environmental Justice Policy and its potential applicability to projects, which, as a secondary effect, may be pursued by customers because of their perceived effect of EPS implementation policies.

#### Environmental Justice Policy

DEC Commissioner Policy 29 defines Environmental Justice as the . . . fair treatment and meaningful involvement of all people regardless of race, color, or income with respect to the development, implementation, and enforcement of environmental laws, regulation and policy. Fair treatment means that no group of people, including a racial, ethnic or socio economic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local and tribal programs and policies.

The procedures described in the policy are to be incorporated into the DEC permit review process when DEC receives an application for an applicable permit as specified in the Policy.

When DEC receives an application for a permit covered by the Environmental Justice Policy, DEC conducts a preliminary screen to identify whether the proposed Action is in or near a potential environmental justice area, and to determine whether potential adverse impacts related to the project are likely to affect a potential environmental justice area. Depending on the outcome of the screening, DEC may provide guidance to the applicant, may require that an enhanced public participation plan be developed, or may require an analysis to ensure that impacts do not disproportionately affect potential environmental justice areas, among other requirements. The disproportionate impact analysis is currently under development by DEC.

Not all energy resources require permits triggering an environmental justice evaluation. However, it is conceivable that some on-site generating alternatives may meet the Environmental Justice thresholds. That determination would be made on a case-by-case basis at the time that the permit application is filed. The details of the DEC Environmental Justice Policy CP 29 can be found on DEC's website (<http://www.dec.state.ny.us/website/ej/index/html>) along with a guidance document titled "Tips for Preparing a Public Participation Plan pursuant to DEC Commissioner Policy CR29 – Environmental Justice and Permitting."

**7.0 UNAVOIDABLE ADVERSE IMPACTS**

No direct unavoidable adverse impacts have been identified.

**8.0 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

No direct irreversible and irretrievable commitment of resources have been identified.

**9.0 GROWTH-INDUCING ASPECTS AND SOCIO-ECONOMIC IMPACTS OF THE PROPOSED ACTION**

**9.1 EPS Program Costs**

EPS program costs will be dependent on the reduction target and the types and details of the program selected to achieve that target. A preliminary estimate of costs and benefits of the fast track electric energy efficiency programs is provided in Staff's Report. Staff's preliminary analysis indicates that a combination of the "fast track" programs and significantly upgraded building codes and appliance efficiency standards could achieve approximately 77% of the EPS electric goal by 2012 at annual costs ranging from \$100 million to approximately \$350 million.<sup>32</sup> Assuming the unit cost of reaching the remaining 23% of the target is 25% higher, the overall cost to achieve the goal of 15% by 2015 would be at an annual cost ranging from \$137 million to approximately \$481 million.

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<sup>32</sup> See Staff Report Attachment 3.

The target level for gas efficiency reductions has not been established but there are estimates that provide some insight into the potential costs and benefits based on a hypothetical target level. Staff reported that the Optimal Study evaluated the economic implications of the Program Scenario Potential and estimated the program cost by 2016 would be approximately \$400 million. The overall cost benefit ratio was 2.48 and the net benefit would be \$1.1 billion.<sup>33</sup> As the target level and details of the gas EPS are developed, better program costs and benefits can be calculated.

## **9.2 Economic Development Benefits**

The EPS has the potential to indirectly increase the industries and services necessary to supply and install energy efficient equipment and to increase demand for services required to evaluate, retrofit, construct and monitor the energy efficiency measures encouraged by the EPS. Quantification of the economic benefits of increased manufacture and services related to energy efficiency measures is not possible to estimate until the details of the programs are developed and a schedule is established for meeting the goals of a particular program.

There are also potential indirect employment impacts that could result from new businesses, established or expanded to meet EPS program needs. Any new workforce in a community, whether manufacturing, construction or other services, can affect local retail, supply and secondary service businesses.

## **10.0 EFFECTS ON ENERGY CONSUMPTION**

The purpose of this Action is to reduce energy consumption in New York State. As illustrated in the Optimal studies and Staff's Proposed EPS Design and Implementation Report, an EPS has the potential to reduce New York's 2015 energy requirement by 27,400 GWh per year, which would correspond to a peak load reduction of 5,487 MW. By reducing peak load, New

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<sup>33</sup> See Staff Report August 28, 2007, p. 78.

York could avoid the need for approximately 6,390 MW of installed capacity.<sup>34</sup> The natural gas target for reductions is being developed but according to the Optimal study, the results of their Program Scenario analysis estimated gas saving could be 15,204 MDth by 2016 and peak day load reductions were estimated at 100 MDth.<sup>35</sup>

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<sup>34</sup> See p.2 of Staff Preliminary Analysis, June 1, 2007

<sup>35</sup> Optimal Gas Study, p. E-8 Section E.2.4.

**11.0 LIST OF REFERENCES**

New York State Public Service Commission - Case 07-M-0548  
Proceeding On Motion of the Commission Regarding an Energy Efficiency Portfolio Standard (Order issued May 16, 2007).

New York State Department of Public Service, Preliminary Staff Analysis, Case 07-M-0548, Benefits and costs and Bill Impacts of Energy Efficiency Program for 15 percent Reduction in Electricity Usage by 2015, June 1, 2007

Energy Efficiency and Renewable Energy Resource Development Potential in New York State: Final Report Volume One: Summary Report; Prepared for NYSERDA by Optimal Energy, Inc; August 2003.

Natural Gas Energy Efficiency Resource Development Potential in New York; Prepared for NYSERDA by Optimal Energy, Inc.; October 2006

New York Department of Public Service Staff Preliminary Proposal For Energy Efficiency Program Design and Delivery, August 28, 2007.

New York State Public Service Commission - Case 03-E-0188  
Proceeding on Motion of the Commission Regarding a Retail Renewable Portfolio Standard (issued September 24, 2004)

## **12.0 COMMONLY USED ACRONYMS AND ABBREVIATIONS**

CO<sub>2</sub> – Carbon Dioxide  
COB – Competitive Opportunities Bypass  
DEC – NYS Department of Environmental Conservation  
DHCR – Division of Housing and Community Renewal  
EJ – Environmental Justice  
EPA – Environmental Protection Agency  
EPS – Energy Efficiency Portfolio Standard  
ESCO – Energy Service Company  
GEIS – Generic Environmental Impact Statement  
GHG – Greenhouse Gas  
Hg – Mercury  
IOU – Investor Owned Utility  
IPP – Independent Power Producer  
LDC – local distribution companies  
LIPA – Long Island Power Authority  
LSE – Load Serving Entity  
MAPS – Multi Area Production Simulation Model  
MSW – Municipal Solid Waste  
MW – Megawatt  
MWH – Megawatt hour  
NO<sub>x</sub> – Nitrogen Oxide  
NYISO – New York Independent Systems Operator  
NYPA – New York Power Authority  
NYSERDA – New York State Energy Research and Development  
Authority  
PSC – Public Service Commission  
PM – Particulate Matter  
PV – Photovoltaic  
RGGI – Regional Greenhouse Gas Initiative  
RPS – Renewable Portfolio Standard  
SBC – System Benefits Charge  
SEP – State Energy Plan  
SEQRA – State Environmental Quality Review Act  
SO<sub>2</sub> – Sulfur Dioxide

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