

Energy Efficiency Assessment

New York State Energy Plan 2009

December 2009

1 Overview

The State's need for energy can be met by either increasing supply or by reducing energy demand through energy efficiency. This Assessment provides an overview of the benefits, costs, and market impacts of New York's energy efficiency resources and estimates the potential for additional cost-effective energy savings. The Assessment looks at the impacts of the State's ongoing energy efficiency programs, identifies new initiatives, and provides direction for further action. For purposes of this Assessment, energy efficiency resources are defined as actions or technologies that provide reductions in energy use at the end-use level while maintaining equal or greater quality of services.

Energy efficiency resources provide value by meeting the State's energy needs in a cost-effective manner and by reducing energy bills, thereby making New York businesses more competitive and allowing families to save money. They also help the State to achieve its environmental goals by reducing emissions of greenhouse gases and other harmful pollutants. Energy efficiency resources enhance the quality of life by increasing comfort, safety and productivity. Finally, energy efficiency resources increase energy security by reducing exposure to supply disruptions and price volatility associated with reliance on imported fossil fuels, particularly petroleum.

New York has been among the nation's leaders in implementing market-based programs to ensure that energy efficiency is developed, valued and recognized as a cost-effective alternative to supply-side energy resources. More than a decade ago, the Public Service Commission (PSC) instituted a System Benefits Charge (SBC) to fund energy efficiency programs. The New York State Energy Research and Development Authority (NYSERDA) has administered these funds to achieve more than 3,000 GWh in annual electricity reductions.¹ During this same time period, the New York Power Authority (NYPA) and the Long Island Power Authority (LIPA) contributed an additional 2,000 GWh in annual electricity reductions. These energy reductions have saved consumers billions of dollars in electricity and fuel costs. Other State agencies, including the Division of Housing and Community Renewal (DHCR), also administer successful energy efficiency programs. Moreover, New York's Energy Conservation Construction Code (ECCC or simply hereinafter as the "Energy Code") has been in place since 1979, and both this Code and State appliance standards have been periodically updated.

Beyond reducing the amount of energy used by customers who install energy efficiency measures, New York's energy efficiency program efforts are designed to transform markets by changing the products, services and delivery mechanisms that are available. For example, programs directed at upstream market participants, including distributors, contractors, trade associations, and manufacturers, seek to induce structural changes in the marketplace that will result in accelerated adoption of energy efficient technologies and practices. Programs are designed to promote permanent changes, including changes in consumer behavior that result in the availability and adoption of innovative energy efficiency products and services. New York's research and development efforts, carried out through NYSERDA and other

¹ NYSERDA. **New York Energy SmartSM Program Evaluation and Status Report: Year Ending December 31, 2008.** 2009. <http://www.nyserd.org/publications/SBC%20March%202009%20Annual%20Report.pdf>

entities, have also been instrumental in creating new markets, adopting new products, changing consumer behavior and transforming markets.

Recent studies indicate that there continue to be extensive and cost-effective opportunities for energy efficiency in New York. A draft electric energy efficiency potential study, the 2008 Optimal Study, concluded that a 14 percent reduction in projected levels of electricity use, over and above what can be realized from compliance with expected updates in energy efficiency codes and appliance standards, could be “achievable” by 2015 with well designed, fully funded statewide energy efficiency programs.² Achievable potential for cost-effective natural gas efficiency savings is estimated to be approximately 18 percent of forecasted load for 2016, according to a natural gas energy efficiency potential study, the 2006 Optimal Study.³ Comparable savings potential is expected for heating oil and propane use, though comprehensive State-specific studies have not been done.

In his 2009 State of the State address, Governor Paterson reaffirmed New York’s commitment to achieve high levels of energy efficiency by announcing the ‘45 by 15’ clean energy goal, which challenges the State to meet 45 percent of its electricity needs by 2015 through increased energy efficiency and renewable energy.⁴ The ‘45 by 15’ clean energy goal proposes to reduce electricity end-use by 15 percent below 2015 forecasted levels, while simultaneously meeting 30 percent of the State’s electricity supply needs through renewable resources. Achievement of this aggressive goal will require the cooperative efforts of many entities, including State agencies and authorities, energy utilities, municipalities, and third party program administrators. Energy efficiency targets to be achieved by NYSERDA and other program administrators, as well as through new codes and standards, were recently established by the PSC as part of its Energy Efficiency Portfolio Standard (EEPS) proceeding. Specific targets for natural gas efficiency have also been established. Expanded and new energy efficiency programs to be administered by NYSERDA, as well as new utility and third-party administered initiatives, are also being established by the PSC. All energy efficiency programs should be rigorously monitored and evaluated to ensure that funds are well spent, and to make sure that energy and gas system planners can rely on forecasts of energy efficiency savings in assessing the need for new supply-side resources.

This Assessment emphasizes the need for New York to continue to pursue ongoing initiatives while identifying and developing the new strategies critical to maximizing the potential benefits of energy efficiency. An important focus is to work toward mitigating various impediments or barriers that prevent achievement of cost-effective energy efficiency. For example, there is a need to expand the portfolio of energy efficiency programs to include non-regulated fuels, such as heating oil and propane, thereby overcoming the limited access to funds for energy efficiency improvements in these areas. Also needed is development of legislation to expand the reach of the State’s Energy Code and to enhance its enforcement. There is a need to expand consumer access to information regarding the energy efficiency attributes of housing at the time of purchase or lease by updating the State’s Truth in Heating Law.⁵ Federal stimulus funding through the American Recovery and Reinvestment Act (ARRA) provides an

² Optimal Energy, Inc. *Achievable Electric Energy Efficiency Potential in New York State*. 2008.

³ Optimal Energy, Inc. *Natural Gas Energy Efficiency Resource Development Potential in New York*. 2006. To realize the maximum achievable potential, programs would be required to deliver for a full 10 year period and pay 100 percent of the incremental cost of the measure plus an additional 30 percent in excess of the measure cost to fund program delivery.

⁴ Governor David A. Paterson. *Our Time to Lead: State of the State Address*. 2009.
http://www.state.ny.us/governor/keydocs/speech_0107091.html

⁵ New York Energy Law § 17-103. The Truth in Heating Law was established in 1981 to afford potential real estate purchasers and renters a right to receive the past two years utility, or fuel bills, for any property they are considering purchasing or renting.

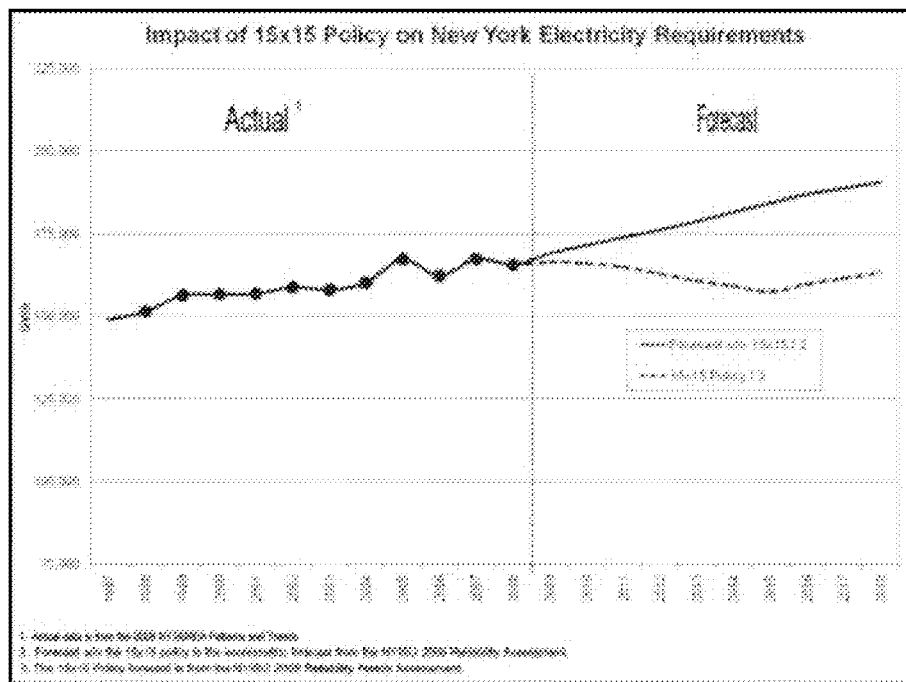
important new set of energy efficiency strategies that will complement current State programs.⁶ New York's ARRA plan, recently approved by U.S. Department of Energy (DOE), will allow NYSERDA to provide additional financial support for the installation of energy efficiency measures and renewable energy systems across the State, and for the introduction of alternative fuel vehicles into fleets.

⁶ Public Law 111-05 was signed into law on February 17, 2009.

5.1.3 Energy Efficiency Portfolio Standard Proceeding

The EEPS proceeding was initiated by the PSC in May 2007 as part of the overall effort to reduce New York State's electricity use by 15 percent from forecasted 2015 levels.³² The EEPS is designed to forestall an otherwise expected rise in electricity use by establishing efficiency targets for the State's investor-owned electric utilities and NYSERDA.³³ Figure 9 shows the expected impact of the '15 by 15' policy on New York's total electricity needs, compared to forecasted total electricity needs without the policy.

Figure 9. Impact of '15 by 15' Policy on New York Electricity Requirements



Source: NYSEDA. 2009.

In June 2008, the first programs were approved.³⁴ Approximately \$74 million per year through 2011 was approved for NYSEDA to expand and enhance a number of existing programs, including a lighting program, low-income program, and programs to encourage high-performance energy-efficient buildings, improve industrial processes and expand the number of service providers available to facilitate more informed decision-making with respect to energy efficiency, energy procurement, and project financing.

³² PSC. *Case 07-M-0548: Proceeding on Motion of the Commission Regarding an Energy Efficiency Portfolio Standard, Order Instituting Proceeding*. Issued May 16, 2007.

³³ Implementation of EEPS programs will be the responsibility of NYSEDA, the utilities, and third party program administrators.

³⁴ PSC. *Case 07-M-0548: Proceeding on Motion of the Commission Regarding an Energy Efficiency Portfolio Standard, Order Establishing Energy Efficiency Portfolio Standard and Approving Programs*. Issued June 23, 2008. This approved funding is incremental to funding of \$175 million annually for the pre-existing SBC Program, which is used in part to support energy efficiency programs.

An additional \$74 million per year through 2011 was authorized for investor-owned utility programs that could be implemented quickly and build internal energy efficiency program administration capabilities within the companies. The electricity programs include a residential heating, ventilation and air conditioning (HVAC) program, and a small business direct install program for retrofits of various types of existing equipment with high-efficiency equipment. The approved natural gas program is a residential efficient gas equipment program focusing on such measures as furnaces, boilers and water heaters.³⁵

New York has taken several steps to ensure that energy efficiency funds are well spent and that forecasts of energy savings are reliable and can be used with confidence by energy system planners, including at the NYISO and utilities. The PSC has reinforced New York's commitment to rigorous, accurate, timely and transparent program evaluation by expanding evaluation budgets from 2 to 5 percent of overall program budgets; requiring detailed evaluation and reporting guidelines; and mandating that program proposals be accompanied by detailed evaluation plans. It has also established a statewide Evaluation Advisory Group to advise the Commission on critical evaluation issues, comprised of administrators of energy efficiency programs in New York including those not under the PSC's jurisdiction, as well as nationally recognized evaluation experts. Evaluation protocols for estimating energy savings with a goal that reported values will be within 10 percent of actual results are being established. Similarly, formal standards for collecting program data are being established to ensure quality, uniformity and reliability. These efforts are essential to ensuring the reliability and transparency of the evaluation, monitoring and verification of all energy efficiency programs and program results, and should continue throughout the planning period.

Throughout the remainder of 2009, it is anticipated that the PSC will consider additional programs to be operated through 2011 as proposed by EEPS Program Administrators. The PSC will institute a comprehensive review of the programs included in its EEPS initiative in advance of the December 31, 2011 expiration of the initiative's initial phase to inform its decisions regarding funding beyond 2011.

Achieving the EEPS objectives would result in multiple benefits to customers. The June 2008 EEPS Order estimated that the total savings generated from EEPS-funded efficiency programs would yield approximately 7,639 GWh of energy efficiency savings in 2015. Program benefits for measures implemented from 2008 through 2015 are estimated to be about \$12 billion and include:

- \$6.5 billion – savings in avoided energy payments
- \$2 billion – reductions in average market prices of energy resulting from reduced energy use, and concomitant savings on remaining energy purchases
- \$3 billion – savings in avoided capacity charges as a direct result of peak load reductions
- Reduced emissions as a result of less fossil fuel burned. Staff estimates emission reductions of 6,544 tons of NO_x, 9,040 tons of SO₂, and 9,123,570 tons of CO₂ in 2015
- Increased economic development associated with the creation of approximately 37,000 sustained jobs by 2015 associated with program implementation

³⁵ The PSC approved "Fast Track" utility-administered electric energy efficiency programs with modifications on January 15, 2009. Utility-administered natural gas programs are being considered by PSC. NYSERDA began implementing additional electric energy efficiency programs on March 13, 2009.