

# New York State Energy Research and Development Authority (NYSERDA)

## Operations and Accomplishments Annual Report Fiscal Year Ended March 31, 2011

*Pursuant to Public Authorities Law Section 2800(1)*

### **NYSERDA**

New York State Energy Research and Development Authority (NYSERDA) is a public benefit corporation created in 1975 under Article 8, Title 9 of the State Public Authorities Law. NYSERDA is governed by a board consisting of 13 members, including the Commissioner of the Department of Transportation, the Commissioner of the Department of Environmental Conservation, the Chair of the Public Service Commission, and the Chair of the Power Authority of the State of New York, who serve ex officio. The remaining nine members are appointed by the Governor of the State of New York with the advice and consent of the Senate and include, as required by statute, an engineer or research scientist, an economist, an environmentalist, a consumer advocate, an officer of a gas utility, an officer of an electric utility, and three at-large members.

### **MISSION AND VISION**

*NYSERDA's mission is to:*

Advance innovative energy solutions in ways that improve New York's economy and environment.

*NYSERDA's vision is to:*

Serve as a catalyst – advancing energy innovation and technology, transforming New York's economy, empowering people to choose clean and efficient energy as part of their everyday lives.

NYSERDA strives to facilitate change through the widespread development and use of innovative technologies to improve the State's energy, economic, and environmental wellbeing. NYSERDA's programs and services provide a vehicle for the State to work collaboratively with businesses, academia, industry, the federal government, the environmental community, public interest groups, and energy market participants.

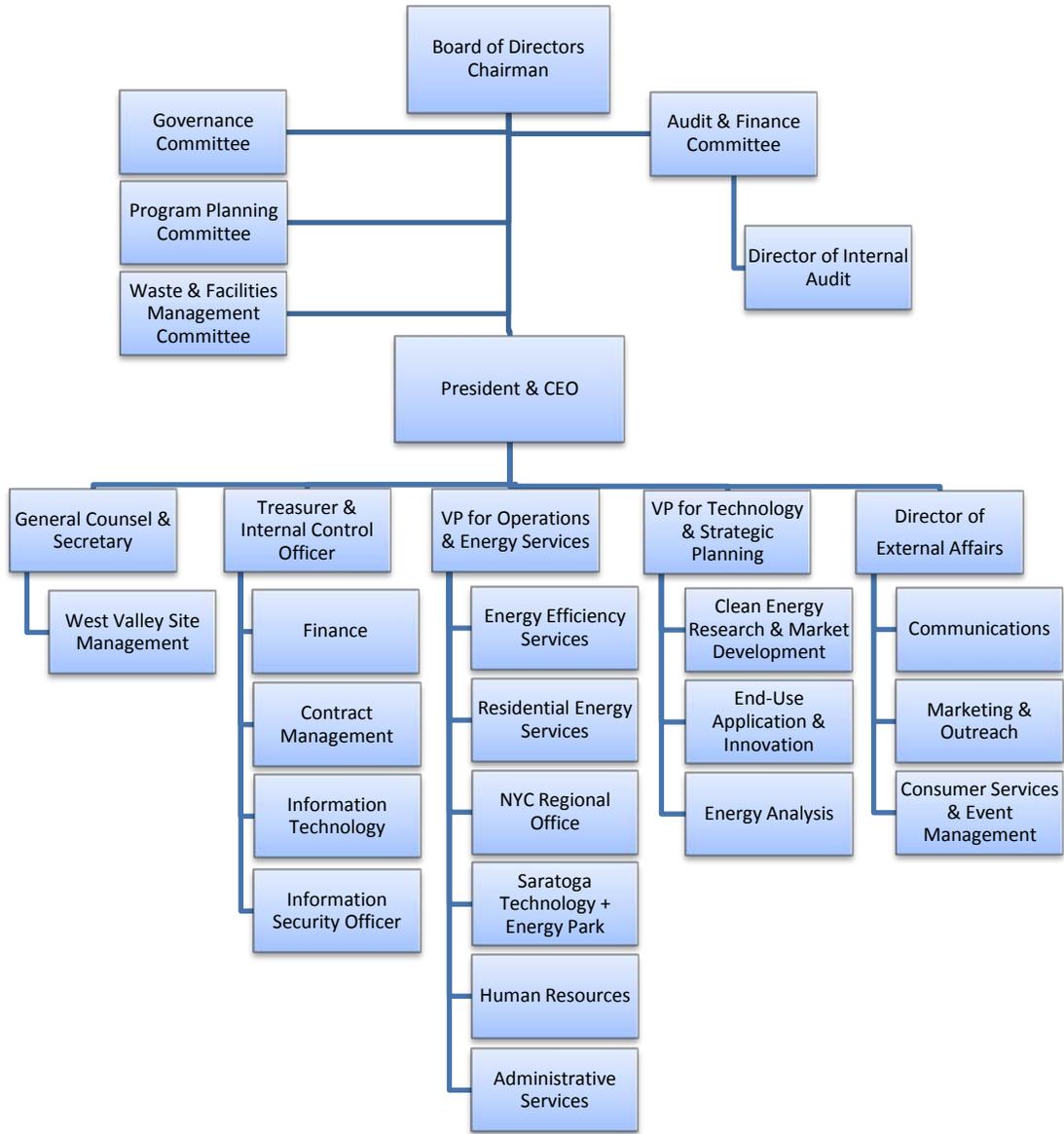
### **OPERATIONAL CHANGES AND NEW INITIATIVES**

#### **Organizational Changes**

- The **Residential Energy Services** (RES) unit re-organized its one-to-four family services to create an existing homes program area and a separate new construction program area. The existing homes

program area includes: the Home Performance with ENERGY STAR and EmPower programs. The new construction program area includes: the New York ENERGY STAR Homes program, the new Green Residential Buildings Program, and an “Advanced Technologies” program area with responsibilities for administering a new solar hot water incentive program, the photovoltaic (PV) incentive program that was transitioned to the RES unit from NYSERDA’s research and development (R&D) program area, and facilitating the residential market’s adoption of emerging and underutilized technologies. In addition, the RES unit created a new “Quality, Standards and Compliance” program group to enhance quality assurance and standardization across all RES programs and all NYSERDA’s workforce development initiatives were consolidated into a single program area within the RES unit.

- The **Energy Efficiency Services (EES)** unit created a new Operations unit and a new Strategic Planning unit and moved the Energy Codes and Standards unit to the New Construction Program unit. The new Operations unit is responsible for all EES data functions, including data management, data integrity, and reporting and is also tasked with streamlining EES business processes, including improvements to databases, integration of online application forms, and automated messaging to applicants as application status changes. The new Strategic Planning unit is involved in early development work in support of new program offerings and communication of programmatic issues directly to DPS staff. The creation of a stand-alone department reflects the importance of the strategic planning function on the long-term success of commercial industrial programs, particularly early commercialization of new energy efficiency technologies and systems.
- The **New York City Office** assumed operational responsibility for managing NYSERDA’s Multifamily Programs.
- The Research and Development program area which consists of two units, the “**Clean Energy Research and Market Development**” (CERMD) unit and the “**End-Use Application and Innovation**” (EUAI) unit (previously the “Industry and Buildings” unit) was also re-organized. NYSERDA’s business development activities were moved from CERMD to EUAI; the Environment and Energy Resources groups were merged into a single unit under CERMD; the Smart Grid and Energy Markets groups were merged into a single unit under CERMD; and the customer-sited fuel cell, anaerobic digester, on-site wind, and new geographic balancing programs were consolidated into a single program under the EUAI unit.



## New Initiatives

- NYSERDA began implementation of the **Green Jobs- Green New York (GJGNY)** audit and energy efficiency finance program in coordination with the Home Performance with ENERGY STAR program. A GJGNY workforce development initiative was also initiated.

The Green Jobs - Green NY legislation created a statewide program, funded with \$112 million from the proceeds of selling CO<sub>2</sub> allowances under RGGI, to promote energy efficiency and the installation of clean technologies to reduce energy costs and greenhouse gas emissions. The program was designed to support sustainable community development, create opportunities for green jobs, and establish a revolving loan fund to finance energy audits and energy efficiency retrofits or improvements for residential, multifamily, small business, and not-for-profit property owners.

- NYSERDA implemented the **State Energy Efficient Appliance Rebate Program**, the “*Great Appliance Swap Out*”, to provide cash rebates to New York residents who purchase high-efficiency appliances. The “*Great Appliance Swap Out*” was funded through the American Recovery and Reinvestment Act and provided high-efficiency appliances to over 140,800 households in 2010.

NYSERDA continued to administer ARRA funds in five additional program areas: (1) the Energy Efficiency and Conservation Block Grant Program (“EECBG”) which provides grants to U.S. local governments, states, territories, and Indian tribes, to fund projects that reduce energy use and fossil fuel emissions, and improve energy efficiency; (2) the State Energy Program (“SEP”) which provides funds to states from the U.S. Department of Energy (DOE) for the state to support energy efficiency and renewable energy programs and initiatives; (3) an Energy Assurance Planning grant to strengthen and expand State and local government energy assurance planning and resiliency efforts by incorporating response action for new energy portfolios and smart grid applications; (4) a Clean Cities grant which supports a partnership with five clean Cities coalitions and 40 vehicle fleets to deploy alternative fuel vehicles and infrastructure sites; and (5) the Retrofit Ramp-up / Better Buildings grant to leverage new and existing energy efficiency retrofit and finance programs to create large-scale, sustainable approaches to financing energy retrofits across the State.

- New **customer-sited tier (CST) programs** aimed at encouraging geographic balance and the installation of solar thermal systems were initiated in accordance with the New York Public Service Commission’s January 2010 Renewable Portfolio Standard (RPS) Order.

The goal of the RPS program is to increase the proportion of renewable electricity to be consumed by New Yorkers from 25 percent to 30 percent by 2015.

# PROGRAM ACCOMPLISHMENTS

NYSERDA’s activities are focused on achieving the five strategic outcomes shown in Table 1. NYSERDA’s 2010 accomplishments are organized and reported in alignment with these five strategic outcomes.

**Table 1: NYSERDA Strategic Outcomes**

<b>Efficient Use of Energy</b>	<b>Diverse / Renewable Energy Resources</b>	<b>Clean Energy Economy</b>	<b>A Cleaner Environment</b>	<b>Satisfied Customers</b>
NYSERDA provides energy solutions that reduce the energy consumption and increase the energy efficiency of New York’s residents and businesses.	NYSERDA diversifies New York’s portfolio of energy resources by growing renewable and distributed generation resources and reducing petroleum use.	NYSERDA catalyzes economic growth by supporting technology and business innovation and by developing a skilled clean energy workforce.	NYSERDA reduces the environmental impact of energy production and use.	NYSERDA is responsive to customer needs – delivering accurate and timely information, services and programs

The five accomplishments tables that follow (i.e., Tables 2 through 6) provide performance information for each of the five outcomes, including: data that describes NYSERDA’s cumulative performance prior to 2009, NYSERDA’s annual incremental performance for calendar years 2009 and 2010, and the total achievement for all years through December 2010. A target for calendar year 2011 is provided for performance measures, where possible. The quantitative performance measurement data are supplemented with a brief bulleted list of 2010 accomplishments.

NYSERDA continues to identify and incorporate additional performance measures that provide a more complete strategic focus and direction to our programmatic efforts. Newly defined performance measures are noted, as such in Tables 2 through 6.

**Table 2: Performance Measures - Efficient Use of Energy**

<b>EFFICIENT USE OF ENERGY</b>						
<i>NYSERDA provides energy solutions that reduce the energy consumption and increase the energy efficiency of New York's residents and businesses.</i>						
Performance Measures	Prior to 2009	CY 2009 Addition	CY 2010 Addition	Total at end of CY 2010	TARGET CY 2011 Addition	TARGET Total at end of CY 2011
Electricity <sup>1</sup> (MWh) saved due to improved energy efficiency in New York's buildings and facilities.	3,173,615 MWh	644,301 MWh	857,624 MWh	4,675,541 MWh	759,009 MWh	5,434,550 MWh
Fossil Fuels (MMBtu) saved due to improved energy efficiency in New York's buildings and facilities.	6,014,970 MMBtu	244,330 MMBtu	1,581,020 MMBtu	7,840,320 MMBtu	2,270,599 MMBtu	10,110,919 MMBtu
Number of New York households served. <sup>2</sup>	79,500 Households	75,000 Households	167,000 Households	321,500 Households	133,500 Households	455,000 Households
Number of commercial and industrial customers served.	10,659 Customers	3,478 Customers	3,627 Customers	17,764 Customers	3,917 Customers	21,681 Customers
Energy Bill Savings <sup>3</sup> –						
1) Annual direct energy bill savings realized by participating customers	\$590 million	\$90 million	\$124 million	\$804 million	**	Growth
2) Energy bill savings realized by participating customers per energy efficiency dollar spent by NYSERDA	\$2.1 dollars saved per dollar spent	N/A	N/A	\$2.5 dollars saved per dollar spent	**	**
Number of net additional jobs created as a co-benefit of NYSERDA's SBC-funded energy efficiency activities <sup>4</sup>	3,060 Jobs	480 Jobs	540 Jobs	4,080 Jobs	**	**
<i>** The measure will be monitored and reported but a 2011 target has not been set. NYSERDA has elected not to establish a target in cases where the measure is a function of a parameter that cannot be reliably predicted (e.g., energy costs) or in cases where the metric is new to NYSERDA.</i>						

**Highlights of Additional “Efficient Use of Energy” Accomplishments:**

<sup>1</sup> Electricity saved includes CHP generation from NYSERDA's existing facilities and technical assistance programs. Efforts are underway to segregate CHP energy impacts. Future reports will contain revised electricity savings values.

<sup>2</sup> Households served in 2010 and 2011 include over 165,000 households served through the ARRA appliance rebate program. This program will be completed in 2011.

<sup>3</sup> Energy bill savings reflects savings associated with System Benefits Charge funded New York Energy Smart and Energy Efficiency Portfolio standard programs only.

<sup>4</sup> Net additional jobs created are estimated using the Regional Economic Models, Inc. (REMI) Policy Insight™ model, and reflect the net macroeconomic impacts stimulated by the program activities. The estimated jobs impacts are largely driven by the additional purchasing power that results from the electricity and fossil fuel savings to customers, and also include the macroeconomic impacts of program expenditures, customer expenditures, lower sales by energy providers, and the opportunity costs of the program funds collected from ratepayers. The impacts of utility revenue decoupling are also accounted for across all years. The job figures represent the number of jobs that are estimated to exist as a result of cumulative program activity through the program year, relative to the number of jobs that would have existed in that year in the absence of the energy efficiency programs. The estimates of net jobs created are based on assumptions for average distributions of residential and commercial customer spending, and could be somewhat higher or lower in a given year depending on specific spending patterns, such as the proportions applied to pay off debt or to re-invest in a business.

- More than \$3.7 Billion dollars in cumulative direct energy bill savings have been achieved through NYSERDA's SBC and EEPS programs.
- NYSERDA achieved 74% (1,627,900 MWh) of its SBC3 electricity savings goal (2,198,900 MWh) with an expenditure of 62% of the SBC3 budget.
- Through the Green Jobs-Green New York (GJGNY) program, an innovative finance program was established allowing building owners to make energy saving improvements. Seed money consisting of \$112 million acquired by auctioning carbon emission credits through the Regional Greenhouse Gas Initiative (RGGI) and an \$18.6 million grant award from the U.S. Department of Energy is being used to leverage private investment.
- NYSERDA's Energy Efficiency Services programs managed 3,100 commercial, industrial and institutional project applications in 2010, a 185% increase since 2008 and installed energy efficiency measures.
- NYSERDA's Residential Energy Services programs supported the construction of 2,439 New York ENERGY STAR® homes in 2010, representing approximately 24% of all new single-family homes built in SBC territory in 2010.
- As of December 2010, NYSERDA's multifamily programs have improved the energy efficiency of over 78,000 units yielding projected per unit tenant energy bill savings of approximately \$200 annually.
- As a result of NYSERDA programs, more than 1,300 retailers now sell and promote ENERGY STAR qualified products, with 288 new retail partners added in 2010. By the end of 2010, ENERGY STAR qualified products at partner retail stores saw a 9% average increase in market share across all ENERGY STAR qualified products.

**Table 3: Performance Measures – Diverse / Renewable Energy**

<b><u>DIVERSE / RENEWABLE ENERGY</u></b>						
<i>NYSERDA diversifies New York’s portfolio of energy resources by increasing renewable and distributed generation resources and reducing petroleum use</i>						
Performance Measures	Prior to 2009	CY 2009 Addition	CY 2010 Addition	Total at end of CY 2010	TARGET CY 2011 Addition	TARGET Total at end of CY 2011
Electricity (MWh) produced from renewable sources – 1) Electricity Production (MWh) delivered to wholesale power market from incentivized installations	843,419 MWh	931,036 MWh	166,148 MWh	1,940,603 MWh	192,149 MWh	2,132,752 MWh
2) Electricity Production (MWh) from on-site installations	531,041 MWh	14,340 MWh	84,504 MWh	629,885 MWh	31,941 MWh	661,826 MWh
Number of operating renewable resource installations	1,261 installations	830 installations	1,348 installations	3,439 installations	1,328 installations	4,767 installations
Electricity (MWh) produced from combined heat and power (CHP) sources	132,991 MWh	237,825 MWh	179,125 MWh	549,941 MWh	47,460 MWh	597,401 MWh
Number of operating CHP installations	48 installations	13 installations	17 installations	78 installations	26 installations	104 installations
Petroleum Displacement (Thousands of gallons) in transportation sector	45,479 thousand gallons	6,704 thousand gallons	8,550 thousand gallons	60,733 thousand gallons	9,075 thousand gallons	69,808 thousand gallons

**Highlights of Additional “Diverse / Renewable Energy” Accomplishments:**

- Approximately 39% of the NYSERDA’s RPS Main Tier and Customer Sited Tier 2015 target is under contract with 29% of the total RPS budget.
- 39 large-scale generation project representing more than 1,546 MW of new renewable generation capacity have been selected to provide electricity to New York consumers. Of the 39 projects selected, 30 are now operating, and 9 are under construction.
- Awarded funding to support Phase 3 of Verdant Power’s Roosevelt Island Tidal Energy (RITE) project. The RITE project will eventually include 30 marine and hydrokinetic (MHK) turbines in the east channel of New York City’s East River and will demonstrate the commercial viability and widespread application potential of Verdant’s Kinetic Hydropower System. Over 50% of the system components will be manufactured in New York along with final assembly of the system.
- NYSERDA’s CHP Demonstration Program received a “State Stepping Forward Program Award” from the American Council for an Energy-Efficient Economy (ACEEE) in recognition of excellence in energy efficient program design and delivery, and for achieving substantial cost and energy savings for customers, expanding the market for energy efficiency technologies and guiding states towards an energy-efficient-economy.

- In December 2009, NYSERDA received \$13.3 million in ARRA funds from the US Department of Energy's Clean Cities program to deploy alternative fuel vehicles and infrastructure across NYS. In 2010, NYSERDA contracted with over 40 public and private sub-recipients to purchase over 300 AFVs and nine infrastructure projects. By the end of 2010, more than half of the vehicles were on the road and four of the infrastructure projects had been completed. This included CNG vans and street sweepers, propane school buses and pick-up trucks, hybrid electric delivery trucks and dump trucks, and CNG, propane, and electric fueling stations.
- NYSERDA continued to provide incentives for early adoption of alternative fuel vehicle, emission reduction, fuel efficiency, alternative-fuel refueling infrastructure and transportation efficiency technologies. In 2010, NYSERDA support deployment of: 253 medium and heavy-duty alternative fueled vehicles; 37 public E85 fueling facilities; 200 diesel fired anti-idling coolant heaters on school buses; 20 private fleet vehicles, 5 ferry vessels and 347 school buses retrofitted with emission reduction technologies.

**Table 4: Performance Measures – Clean Energy Economy**

<b>CLEAN ENERGY ECONOMY</b>						
<i>NYSERDA catalyzes economic growth by supporting technology and business innovation and by developing a skilled clean energy workforce</i>						
<b>Performance Measures</b>	<b>Prior to 2009</b>	<b>CY 2009 Addition</b>	<b>CY 2010 Addition</b>	<b>Total at end of CY 2010</b>	<b>TARGET CY 2011 Addition</b>	<b>TARGET Total at end of CY 2011</b>
<b>Impacts of Product Development Activities –</b>						
1) Annual product sales	\$1,079 million	\$213 million	Data lags by one year	\$1,292 million (at end CY 2009)	Growth	Growth
2) Number of products <sup>5</sup> in the market as a result of previous technology and business development investment	175 Products	6 Products	20 Products	201 Products	15 Products	216 Products
3) Change in GSP as a Result of R&D Product Development, expressed as a ratio of GSP impact to NYSERDA investment in R&D product development	new metric for 2011	N/A	N/A	5.2 Change in 2007 GSP (Analysis lags by 3 years)	N/A	**
4) Number of net additional jobs created as a result of the net macroeconomic activity stimulated by R&D product development activities <sup>6</sup>	630 Jobs	180 Jobs	180 Jobs	990 Jobs	**	**
5) Number of new clean energy products in development	new metric for 2011	new metric for 2011	new metric for 2011	new metric for 2011	25 Products	new metric for 2011
Funding leveraged <sup>7</sup> by NYSERDA's investment in business and technology product development	new metric for 2011	new metric for 2011	new metric for 2011	new metric for 2011	\$50 million	new metric for 2011

<sup>5</sup> The number of new products reported for 2009 and 2010 and the 2011 target are from NYSERDA's incubator programs only. Efforts are underway to collect new product data from other program efforts and will be incorporated in future reports.

<sup>6</sup> Net additional jobs created are estimated using the Regional Economic Models, Inc. (REMI) Policy Insight™ model, and reflect the net macroeconomic impacts stimulated by the program activities. The estimated jobs impacts are largely driven by the additional purchasing power that results from the electricity and fossil fuel savings to customers, and also include the macroeconomic impacts of program expenditures, customer expenditures, lower sales by energy providers, and the opportunity costs of the program funds collected from ratepayers. The impacts of utility revenue decoupling are also accounted for across all years. The job figures represent the number of jobs that are estimated to exist as a result of cumulative program activity through the program year, relative to the number of jobs that would have existed in that year in the absence of the energy efficiency programs. The estimates of net jobs created are based on assumptions for average distributions of residential and commercial customer spending, and could be somewhat higher or lower in a given year depending on specific spending patterns, such as the proportions applied to pay off debt or to re-invest in a business.

<sup>7</sup> Leveraged funding includes co-funding and a subsequent follow-on private funding. Data collection for follow-on private funding is an ongoing effort. The reported values represent an incomplete data set that will be supplemented in future years.

**Table 4: Performance Measures – Clean Energy Economy**

<b>CLEAN ENERGY ECONOMY</b>						
<i>NYSERDA catalyzes economic growth by supporting technology and business innovation and by developing a skilled clean energy workforce</i>						
<b>Performance Measures</b>	<b>Prior to 2009</b>	<b>CY 2009 Addition</b>	<b>CY 2010 Addition</b>	<b>Total at end of CY 2010</b>	<b>TARGET CY 2011 Addition</b>	<b>TARGET Total at end of CY 2011</b>
Dollars invested by NYSERDA in business development activities	\$59 million	\$34 million	\$38 million	\$131 million	\$36 million	\$167 million
Number of clean energy businesses receiving financial support <sup>8</sup>	331 businesses	170 businesses	180 businesses	Not additive (some businesses are assisted for multiple years)	180 businesses	Not additive (some businesses are assisted for multiple years)
Number of patents, UL Listing certifications, license agreements, copyrights and other knowledge certifications	new metric for 2011	new metric for 2011	new metric for 2011	new metric for 2011	**	**
Number of workers trained in clean energy sectors <sup>9</sup>	10,960 trainees	6,586 trainees	6,144 trainees	23,690 trainees	7,150 trainees	30,840 trainees
** The measure will be monitored and reported but a 2011 target has not been set. NYSERDA has elected not to establish a target in cases where the measure is a function of a parameter that cannot be reliably predicted (e.g., energy costs) or in cases where the metric is new to NYSERDA.						

**Highlights of Additional “Clean Energy Economy” Accomplishments**

- Through the Clean Energy Technology Business Incubator Program, NYSERDA supports six incubators across NYS. As of the end of 2010, the program had been active for 18 months and had assisted client companies in raising \$16,465,000 in private capital; created 217 jobs at client companies within the incubators; developed and refined 26 new clean energy products; and assisted client companies in attracting \$11,028,000 in federal funding.
- NYSERDA has completed the contracting process in support of four Energy Frontier Research Centers across NYS. NYSERDA provided letters of support, pledging \$250,000, to each of the New York applicants to the DOE funded program. Four of the New York entities received a DOE award resulting in a combined total of \$73,000,000 in federal funds to conduct fundamental research in new energy technologies.
- Through its Clean Energy Technology Manufacturing program, NYSERDA is supporting ten projects manufacturing products ranging from energy storage devices, photovoltaic modules and efficient lighting fixtures. The leverage ratio for the capital investment in the program is 8.4:1.
- NYS received approximately \$261 million in federal ARRA funding for smart grid investments due in part to the development of NYSERDA’s Power Delivery research program as well as the formation of

<sup>8</sup> Incubator sites are currently fully occupied and funding levels are flat so growth in the number of clean energy companies assisted in 2011 is not anticipated.

<sup>9</sup> Number of workers trained is a count of the occupied seats at training sessions. A worker that attends more than one training session will be counted more than once.

the NYS Smart Grid Consortium. The NYS Smart Grid Consortium, of which NYSERDA is a member, completed a comprehensive smart grid roadmap for New York that analyzed the relative costs, benefits and priorities of various smart grid technologies, business models, and policies that should be considered over the next 10-15 years.

- Supported the nation's first flywheel energy storage and regulations facility (20 MW) in Stephentown, NY and supported the site study and demonstration project, with NYSEG, of a 150 MW, 10 Hr Compressed Air Energy Storage (CAES) plant near Watkins Glen, NY.
- NYSERDA continued to develop the Saratoga Technology and Energy Park (STEP), a 280 acre knowledge community that currently houses 12 clean energy and high tech tenant companies with over 300 employees. STEP employment numbers are expected to increase as NYSERDA constructs new buildings and attracts additional clean tech companies to the Park.
- Continued to support the New York Battery and Energy Storage Technology Consortium (NY-BEST), an industry-driven consortium that is helping to position New York as a global leader in energy storage technology for heavy-duty transportation, electric grid, and other applications. NY-BEST research and development awards supported 18 projects comprising \$8 million in NYSERDA funds and \$7 million in cost share.
- NYSERDA's training network has expanded to over 40 training entities delivering training in energy efficiency and building science, solar electric and thermal, small and large wind, geothermal, fuel cells, and anaerobic digester training.

**Table 5: Performance Measures – A Cleaner Environment**

<b><u>A CLEANER ENVIRONMENT</u></b>						
<i>NYSERDA reduces the environmental impact of energy production and use.</i>						
Performance Measures	Prior to 2009	CY 2009 Addition	CY 2010 Addition	Total at end of CY 2010	TARGET CY 2011 Addition	TARGET Total at end of CY 2011
CO <sub>2</sub> equivalent emission reductions due to NYSERDA's energy efficiency, renewable and diverse energy programs (annual tons) <sup>10</sup>	2,240,000 annual tons	679,000 annual tons	563,000 annual tons	3,482,000 annual tons	541,000 annual tons	4,023,000 annual tons
NO <sub>x</sub> emission reductions due to NYSERDA's energy efficiency, renewable and diverse energy programs (annual tons) <sup>10</sup>	2,160 annual tons	680 annual tons	550 annual tons	3,380 annual tons	520 annual tons	3,900 annual tons
SO <sub>2</sub> emission reductions due to NYSERDA's energy efficiency, renewable and diverse energy programs (annual tons) <sup>10</sup>	4,170 annual tons	1,630 annual tons	1,150 annual tons	6,940 annual tons	920 annual tons	7,860 annual tons
Energy-related environmental policies informed by NYSERDA reports / studies	new metric for 2011	new metric for 2011	new metric for 2011	new metric for 2011	List will be maintained	List will be maintained

**Highlights of Additional “Cleaner Environment” Accomplishments**

- Supported the development of NYS’s Interim Climate Action Plan, including providing an updated greenhouse gas inventory, greenhouse gas abatement cost curves, technical data for greenhouse gas mitigation options, risk-based climate information, and assessments of potential climate change vulnerabilities and adaptation strategies.
- Since 1980, NYSERDA has collaborated with the Brookhaven National Laboratory, equipment manufacturers and fuel oil distributors to improve fuel oil combustion efficiency and validate cleaner fuel oil formulations including low-sulfur and bio-heat blends. The cumulative impact of this effort, according a Federal study, has resulted in savings of over \$5 billion in fuel oil costs to New York consumers and avoided over 32 million metric tons of CO2 emissions.
- Continued to support air quality monitoring of atmospheric pollutants that NYSDEC depends on for air-quality planning. The monitoring is particularly relevant in the context of anticipated 2011 changes to ozone and fine particle National Ambient Air Quality Standards (NAAQS).
- Supported the installation of the first made-in-NY high-efficiency pellet boiler integrated with a solar-thermal hot water system in Tupper, NY. An evaluation of the thermal efficiency and emissions on the unit served as a basis for NYSERDA’s comment to EPA on the Area Source Boiler

<sup>10</sup> These emission reductions are associated with electric and fossil fuel energy efficiency measure savings and renewable and CHP generation.

Rule. NYSERDA is also developing technical information on residential wood boiler performance to support EPA’s 2011 updates to the New Source Performance Standard for wood boilers.

- Completion of a Final Environmental Impact Statement (EIS) on West Valley Demonstration Project decommissioning and the removal or management of the remaining facilities at the Western New York Nuclear Service Center.
- Approval by the U.S. District Court of a Consent Decree that settles litigation filed by New York State in 2006 against DOE and the federal government in regard to cost responsibilities at the Western New York Nuclear Service Center.
- NYSERDA’s extensive maintenance and monitoring programs continue to keep the radioactive waste safely contained at the Western New York Nuclear Service Center, protecting public health and the environment.

**Table 6: Performance Measures – Satisfied Customers**

<b>SATISFIED CUSTOMERS</b>				
<i>NYSERDA is responsive to customer needs – delivering accurate and timely information, services and programs</i>				
Performance Measures	Prior to 2009	CY 2009	CY 2010 <sup>11</sup>	CY 2011 Target
<b>Contract processing time - Median time to process (weeks):</b>				
1) Contracts Awarded from Solicitations;			31.5 weeks	28.3 weeks
2) Open Enrollment Incentives;	new metric for 2010	new metric for 2010	14.6 weeks	13.1 weeks
3) Direct Contracts			7.0 weeks	6.3 weeks
4) Modifications / Task Orders			3.3 weeks	3.0 weeks
<b>Invoice payment –</b>				
1) Number of invoices paid within 30 days	new metric for 2010	new metric for 2010	42,356 invoices	**
2) Percent of payments made within 30 days	new metric for 2010	new metric for 2010	99.98%	100%
** <i>The measure will be monitored and reported but a 2011 target has not been set. NYSERDA has elected not to establish a target in cases where the measure is a function of a parameter that cannot be reliably predicted (e.g., energy costs) or in cases where the metric is new to NYSERDA.</i>				

**Highlights of Additional “Satisfied Customers” Accomplishments**

- This is a new metric established in 2011. Additional highlights, beyond the quantitative targets above, may be reported in subsequent annual reports.

<sup>11</sup> Baseline data are provided for 2010.

## **MAJOR OPERATIONAL UNITS**

### **Energy Efficiency Services (EES)**

NYSERDA's EES Program promotes energy efficiency, sustainability, and informed decision making by serving New York's non-residential customers including: business and industry, agriculture, institutions, municipalities, and State government. EES Programs provide technical assistance and capital incentives to purchase and install energy efficient equipment that reduces natural gas and electricity consumption in new and existing non-residential buildings and to support energy saving process improvements in New York's data centers and manufacturing facilities. EES Programs are primarily funded through the New York System Benefit Charge (SBC) and EEPS. EES program funding has recently been supplemented by ARRA funds.

### **Residential Efficiency Services (RES)**

NYSERDA's residential programs improve the energy efficiency of New York's one- to-four family homes, reduce the energy cost burden on the State's low-income households, and facilitate the installation of photovoltaic and solar thermal systems in the residential sector. RES programs increase the availability of energy-efficient products, improve the delivery of energy services to the residential sector, including low-interest financing, and educate energy consumers to reduce energy use and lower peak energy demand. In addition, RES programs provide training to New York's clean tech workforce and educational professionals. RES Programs are primarily funded through the New York System Benefit Charge (SBC) and EEPS. RGGI funding supports low-interest financing and ARRA funds provided significant additional support for the energy efficient products program during 2010.

### **New York City Regional Office**

The NYC Office manages the Multifamily Performance Programs (MPP) and supports implementation of EES and RES programs within the NYC region. MPP provides technical assistance and cash incentives to help low-income and market rate multifamily buildings reduce annual energy use. MPP promotes and facilitates relationships between independent, pre-qualified energy consultants and building professionals and New York multifamily property owners and managers. New York City staff devotes considerable effort to coordinating NYSERDA's programs with those offered by Con Edison, New York City, and others. New York City staff promotes NYSERDA's energy efficiency programs by working very closely with the Mayor's office, the New York City Department of Buildings, and the New York City Department of Environmental Protection, and through participation on the New York City Energy Policy Task Force.

### **Clean Energy Research and Market Development (CERMD)**

The CERMD program strives to accelerate the development and commercial introduction of emerging clean energy technologies in New York. These include wind, solar, biomass, marine, energy storage, advanced transportation technology, and environmental pollution control. The program also supports research to better understand and mitigate the environmental effects of energy production, including climate change. Additionally, the program facilitates delivery of renewable resources, improving grid performance, reliability and security, and enabling customer/utility interaction. The CERMD Program is delivered through three integrated program elements: Environmental & Energy Resources, Energy

Markets & Power Delivery, and Transportation and Power Systems. The program supports a wide range of technology development and market development activities.

### **End-Use Application and Innovation**

The Energy End-Use Application and Innovation Program includes three program areas: the Manufacturing Technology Development & On-Site Power Applications program, the Buildings Research & Development program, and the Innovation & Business Development program. The Manufacturing Technology Development & On-Site Power Applications program helps New York manufacturers become more resilient to competition through modernization of production processes, increases penetration of CHP applications, increases productivity in new product development, and reduces carbon and the environmental footprint of manufacturing operations. The Buildings Research & Development program develops and applies technologies that allow new and retrofit construction to achieve significant load reduction and increase the use of on-site and renewable energy resources. The Innovation & Business Development program supports a series of initiatives to increase the likelihood and speed to commercialization of clean energy products.

### **Energy Analysis Program**

The Energy Analysis Program provides timely, objective and credible data and analysis of energy issues to New York's energy policymakers and stakeholders. The Program: (1) provides energy market intelligence for all fuels and sectors of the economy; (2) conducts quantitative assessment of the State's energy, environmental, and economic policies, as well as NYSERDA programs; (3) identifies and evaluates policy alternatives for addressing vital public needs; (4) assists NYSERDA and other state agencies with public benefits program design, goals, incentives, operations, and evaluation; and, (5) supports other State responsibilities, including State energy planning, energy emergency planning and response, coordination of nuclear materials matters, and Low-Level Radioactive Waste reporting.

### **Saratoga Technology + Energy Park® (STEP®)**

The Saratoga Technology + Energy Park® (STEP®) is a 280 acre parcel of land in Malta (Saratoga County), New York that is owned by NYSERDA, on behalf of the State of New York. In 2001, the site was designated as a business park to attract clean energy and environmental companies. STEP is home to 12 business partners with more than 300 employees.

### **West Valley Site Management Program**

NYSERDA holds title on behalf of New York State to the Western New York Nuclear Service Center (Center), a 3,300-acre property located near the hamlet of West Valley in Cattaraugus County.

NYSERDA's activities at the Center are managed by the West Valley Site Management Program (WVSMP). The WVSMP's key responsibilities include managing NYSERDA's interests in the completion of the West Valley Demonstration Project (WVDP), a cooperative Federal and State project to decontaminate and decommission a former spent nuclear fuel reprocessing facility. The WVSMP also manages the State-Licensed Disposal Area, a shut-down radioactive waste disposal facility, and the balance of the of the Center property.