Sharing the Future

Generating Sustainability

•WORKPLACE •COMMUNITY •ENVIRONMENT •MARKETPLACE •OPERATIONS

Annual Report 2012

New York Power Authority

Generating more than electricity

Welcome

John R. Koelmel
Chairman

Gil C. Quiniones
President & CEO

The New York Power Authority has championed the principles of sustainability since it first began producing electricity from flowing water more than 50 years ago. In the last two decades, our various energy efficiency and clean energy programs have further demonstrated NYPA's commitment to protecting the environment while strengthening the economy. Most recently, we have dedicated hundreds of millions of dollars to modernize our generation and transmission assets so they will be available for future generations.

The need to act in a more sustainable manner became especially apparent in 2012 after the devastation wrought by Superstorm Sandy. Under the leadership of Governor Andrew M. Cuomo, NYPA, along with New York's other governmental entities and providers of essential services, is taking whatever steps are necessary to confront the growing threat of climate change.

And yet, sustainability is much more than just ecological concerns. Our Sustainability Action Plan was developed to reflect the "triple-bottom-line" goals of environmental stewardship, social equity and economic prosperity. As we continue to review our operations and refine this action plan in the coming months and years, we pledge our commitment to realizing a more sustainable future that will benefit all of New York State.

John R. Koelmel
Chairman

Gil C. Quiniones
President & CEO

Kerry-Jane King
Sustainability Manager

Three years ago, the Power Authority released its first Sustainability Action Plan, which identified goals and targets for key aspects of NYPA's activities. With this report, I am pleased to present our progress in reaching these goals. NYPA has achieved many successes, including the launch of Governor Cuomo's ReCharge NY and Energy Highway initiatives. We continue to expand our Green Power and energy efficiency programs, and are also supporting state efforts to accelerate the market for distributed renewable generation and energy efficiency technologies.

Climate change is a critical issue and a daunting challenge that must be addressed by both the public and the private sector. Carbon dioxide levels in the atmosphere are now higher than scientists believe is safe for humanity and for all life on Earth. New York State's investments in renewable energy generation and technology innovation will help reduce our dependence on fossil fuels and build a more sustainable economy while preserving precious natural resources for future generations.

Kerry-Jane King, Sustainability Manager



Fulfilling Our Plan 2010-2012

FOCUS AREAS

WORKPLACE

- Culture of Sustainability
- Dynamic Workforce
- Green Workspaces
- Health and Safety

NYPA IS COMMITTED to leading by example, cultivating a workplace that respects and encourages diversity, health, safety and active employee engagement in meeting its sustainability goals.

COMMUNITY

- Stakeholder Engagement
- Community Investment
- Public Education and Communication

NYPA IS COMMITTED to working directly with its stakeholders to ensure it is responsive to community needs and continues to act as a good corporate citizen.

ENVIRONMENT

- Carbon Reduction
- Water Management
- Land Management
- Waste Management

NYPA IS COMMITTED to reducing its environmental impact and developing strategies to enhance the resources under its management.

MARKETPLACE

- Demand-Side Management
- Renewable Energy
- Alternative-Fuel Transportation
- Clean Energy Procurement
- Economic Development

NYPA IS COMMITTED to promoting economic development in New York State and supporting the maturing clean energy industry through various programs.

OPERATIONS

- Strategic Planning
- Generation and Transmission Reliability
- Generation and Transmission Efficiency
- Clean Energy Demonstrations
- Climate Change Adaptation

NYPA IS COMMITTED to continuing the reliable and efficient operation of its assets and investment in its infrastructure to ensure long-term performance.

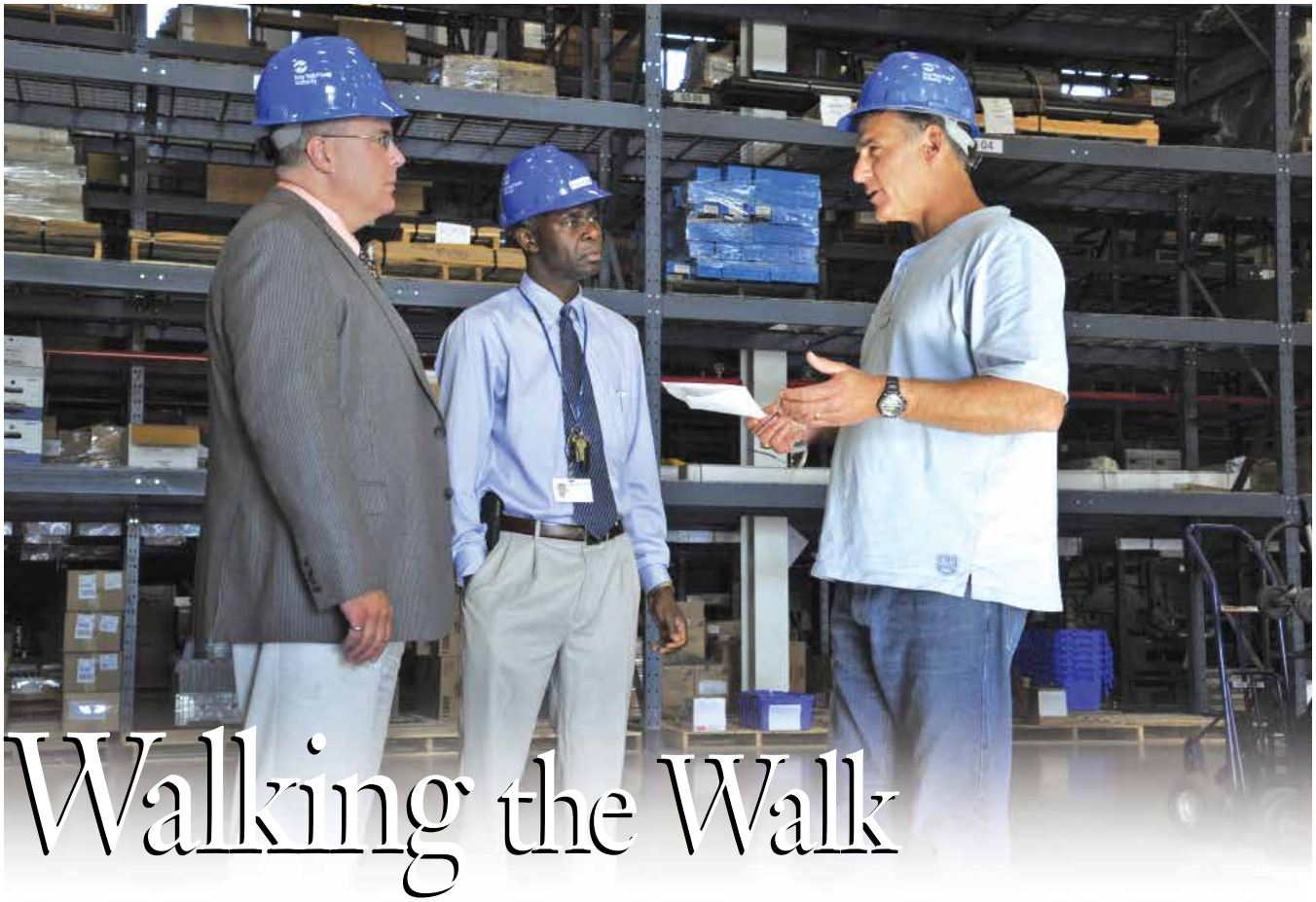
NYPA's first Sustainability Action Plan,

released in 2010 as part of a larger sustainability initiative, was built around five key areas: workplace, community, environment, marketplace and operations. The plan identified 21 focus areas and 39 specific action items for NYPA employees to target. Each of the five sections of this report covers one of the plan's key areas and contains a chart with all relevant action items and the results achieved in the last three years.

Sustainability requires adaptability, and this action plan will evolve with the diverse needs and opportunities that continue to arise in New York State. Feedback from Power Authority stakeholders and the general public will help keep NYPA's efforts relevant. Yet it is the active engagement of individual employees and the collective commitment of the Power Authority as a whole that will ultimately determine the success of NYPA's sustainability initiative.

NYPA's plan follows Level C guidelines set by the Global Reporting Initiative (GRI) for the Electric Utility sector. More information and a GRI index may be found on page 23 of this progress report.

WORKPLACE



Walking the Walk

NYPA is committed to leading by example, cultivating a workplace that respects and encourages diversity, health, safety and active employee engagement in meeting its sustainability goals.

The Power Authority's sustainability efforts begin in the workplace, which encompasses eight major sites around the state: five generating stations, two administrative offices and one facility that coordinates transmission operations. Additional generation and transmission facilities are also operated and maintained by NYPA's workforce, which in 2012 totaled 1,633 employees (601 of which were covered by collective bargaining agreements). Contract employees also assist with certain specialized functions.

Since 2010, the message of sustainability, like safety, has become part of the NYPA culture as employees are encouraged to adopt business practices and make personal choices that lessen their impact on the environment. Green Team volunteers organize special events that range from a monthly eco-cinema series to seasonal sustainability festivals, balancing employee activities with informational presentations by outside experts. Monthly FYI emails and electronic bulletins on sustainability-related topics provide green tips to staffers at all facilities.

NYPA's admission-free visitors centers, open seven days a week, host weekend activities that are enjoyed by employees and their families as well as the general public. The sustain-

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Action Items and Results

Culture of Sustainability

We will create a culture of sustainability that recognizes and rewards contributions to NYPA's triple bottom line.

• **Raise employee awareness through workshops, education, communications and contests**	In 2010, NYPA started to encourage the creation of volunteer Green Teams, urging all employees to get involved. Most of NYPA's employee awareness efforts have originated in White Plains, where the Green Team coordinates a variety of events and activities and produces regular communications disseminated to employees at all sites electronically. The Green Team has also established a lending library of relevant books and films available to all employees.

Dynamic Work Force

We will build and maintain an inclusive work environment where each individual's contribution is valued and respected while preserving institutional knowledge and providing career opportunities.

• **Enhance the skills and knowledge of our employees through a comprehensive succession planning program**	In addition to ongoing professional development training available to NYPA employees at all sites, succession planning efforts have been strengthened through a knowledge capture process that has been designed to help more experienced employees, who may be approaching retirement, share their wisdom and expertise with co-workers who may be in line to take their places in future years.
• **Expand diversity programs at NYPA that seek to build upon our myriad of backgrounds and skill sets**	The position of Chief Diversity Officer was created in 2011. The Chief Diversity Officer organizes events to celebrate NYPA's increasingly diverse employee population, reviews NYPA's corporate diversity policies and procedures, and directs the alignment of workforce and supplier diversity initiatives.

Green Workspace

We will create healthy work environments for our employees and utilize environmentally-friendly products and materials.

• **Identify environmentally-friendly substitutes for commonly purchased products**	All NYPA sites have switched to "green" cleaning products that are non-hazardous and biodegradable. As part of the recertification of the LEED Gold-EB rating for its White Plains Office, in 2011 NYPA created Environmental Preferable Purchasing (EPP) guidelines that "seek to support products and materials that optimize environmental, social, community, economic and performance goals." Everything from construction materials and furniture to lamps and other electrical equipment are assessed and recommended.
• **Develop green guidelines for office renovations, which promote access to natural light, indoor air quality and workplace efficiency**	The White Plains Office, which became New York's first LEED Gold-EB building in 2006, earned a LEED Silver rating for renovation of its fifth floor in 2011; future renovations of other WPO floors will follow and build on these LEED design guidelines. In 2012, as part of an effort to achieve WPO LEED Gold recertification, NYPA implemented new green measures and expanded others (see Highlights, page 5).

Health and Safety

We will institute programs to enhance the health, safety and well-being of our employees.

• **Conduct an industrial hygiene analysis at all NYPA generating sites with a particular emphasis on noise and indoor air quality**	NYPA's own safety program has been supplemented by a third-party assessment from an industrial hygiene consultant, which conducted risk assessments at all of NYPA's major facilities. Noise monitoring resulted in several recommendations, including double hearing protection in some cases to ensure compliance with applicable regulations. Indoor air quality assessments were also completed, but no major changes were found to be needed.
• **Establish a safety program for completing Job Safety Analyses (JSA)**	Worker safety, for both employees and contractors, continues to be a priority. Occupational health evaluations of work practices at all major NYPA facilities have been conducted by an industrial hygiene consultant, resulting in recommendations on specific regulations - e.g., air quality and sound levels - to improve worker health and safety and to ensure compliance with applicable safety practices.

Photos, from left: NYPA earned another LEED certification at its new Niagara warehouse; a safety milestone is celebrated in Astoria; in White Plains, tomorrow's consumers learn how to make smart energy choices today.

NYPA's Safety Performance

Total Recordable Incident Rate	1.85
Injuries/Non-Lost Time Rate	1.85
Lost Day Rate	0.76
Occupational Disease Rate	0
Occupational Fatalities	0

ability message is reinforced during Earth Day events held each spring and Wildlife Festivals, which include an emphasis on environmental issues, each fall. Throughout the year and across the state, at Power Authority sites and at public venues, NYPA's Community Relations teams help to educate audiences of all ages about energy and the environment.

The Power Authority prides itself on a commitment to safety, with performance targets considerably lower than those set by the U.S. Bureau of Labor Statistics. Since 1994, NYPA has placed among the top three utilities in its category for the American Public Power Association's Safety Award of Excellence. Most recently, for 2012, NYPA earned a second place award; it has achieved first place six times since 1994.

The emphasis on safety is reinforced with both employees and contractors with weekly staff meetings, educational videos, NYPA-wide emails and updates to the employee intranet. Mandatory "Right-to-Know" training informs all employees about hazardous materials as well as emergency evacuation procedures. Monthly performance metrics are tracked and presented to executive management, including NYPA's trustees, to demonstrate the importance of safety in the workplace.

Health and wellness is also emphasized, with a comprehensive benefits program that offers employees a variety of insurance coverage options. Human Resources holds health fairs at each major NYPA site to encourage employees to learn more about healthy choices; various communication materials are also made available to further educate staff members and their families. Free flu shots are offered as well.

In order to realize every employee's potential, a performance management process is in place throughout the Power Authority. "Performance Plus" is more than an annual review; the process requires managers to meet with their direct-reports multiple times during the year to encourage better two-way communication so that employee goals are clearly identified and individual work plans are developed. And, in keeping with sustainable practices, NYPA's performance review process is now completely electronic, allowing for easier administration while saving resources.

Main Training Programs	Duration Hrs	% Employees Complete
NYPA Cyber Security Awareness	0.5	90.0%
NYPA Ethics Code of Conduct	0.5	98.5%
FERC Standards of Conduct	0.5	100%
NERC CIP Cyber Security Training*	0.5	97.5%

**100% of security personnel complete this program*

Workplace Highlights

NYPA's "Investing in Employees" initiative, conceived at a strategic planning conference for senior management in 2012, has many different aspects. Efforts are also made to engage NYPA's statewide workforce through a variety of activities.

Mentoring, first introduced as a pilot project in 2010 with 30 participants, has proven popular and successful, with 54 employees from throughout the Power Authority matched up for the start of 2013. Plans were finalized in 2012 to introduce a new MBA degree program, offering a select group of high-quality applicants free tuition for an accelerated course of study with a nationally recognized university. NYPA has also expanded its commitment to workplace diversity through its participation in the national Troops to Energy Jobs campaign, helping veterans transition from the military into careers in the utility industry.

A new Employee Community Forum was developed in 2012 for the Powernet, NYPA's internal website. The forum is intended to encourage two-way communications on both work-related and non-work-related topics to foster teamwork, friendships and greater understanding of the diverse backgrounds of NYPA employees, and to facilitate the exchange of ideas about sustainable practices at work, at home and in transit.

Investing in employees also means providing a sustainable workplace. In 2012, NYPA applied for LEED recertification of its White Plains building under a new, more stringent category, Existing Building: Operations and Maintenance. To meet the stricter criteria, enhanced sustainability measures have been incorporated at White Plains, including: new air filters for indoor air quality; expanded use of non-hazardous paints, green cleaning products and recycled carpeting; reduced water usage through toilet and faucet upgrades along with a new landscaping control system; increased recycling of paper and other materials; designated parking for drivers using hybrid-electric vehicles. NYPA also began purchasing renewable energy credits for 30 percent of the building's energy use.

Photos, counter-clockwise from top left: In White Plains, special events promote diversity and sustainability, including a program honoring military veterans, a harvest festival featuring New York apples, and giveaways of reusable water bottles. The WPO's fifth floor uses a more flexible layout for office space.

COMMUNITY

Good Neighbors

NYPA is committed to working directly with its stakeholders to ensure it is responsive to community needs and continues to act as a good corporate citizen.

The list of NYPA's stakeholders is long and diverse. Just about every New Yorker benefits from the Power Authority, either directly through low-cost economic development power allocations that help create and protect jobs all around the state, or indirectly through low-cost municipal power for public buildings and services, such as subways and street lights, and energy efficiency projects that lower utility bills at public facilities. Maintaining good working relationships with these stakeholders is an important part of NYPA's Sustainability Plan.

One key group of stakeholders is made up of the host communities where NYPA facilities are located. Other stakeholder groups include the business and governmental customers that buy NYPA electricity, operators of the public facilities that contract with NYPA for energy efficiency projects, local utilities that help distribute NYPA power and the many non-governmental organizations that advocate for specific issues, such as the environment. Regulatory agencies on the state and federal level are also considered stakeholders, as are the elected officials who represent New York voters.

Two-way communication is vital to building relationships. To encourage greater engagement with its stakeholders and the general public, the Power Authority tries to host trustee meetings at various locations across the state. Videoconferencing venues for trustee meetings are also open to the public. Trustee meetings are now webcast, making them available to anyone with Internet access.

Action Items and Results

Stakeholder Engagement

We will engage with NYPA stakeholders in a respectful, productive manner and ensure that communities impacted by NYPA operations are treated fairly and with due process.

• Develop an environmental justice action agenda that encompasses all of NYPA's activities, providing guidance on engagement with the communities near NYPA facilities, stakeholders and First Nations	NYPA trustees approved an Environmental Justice Action Plan in 2012, formalizing efforts to better serve stakeholders and communities near NYPA facilities. Besides enhanced opportunities for two-way communication, these efforts include energy education programs, especially for underserved students.
• Continue to host trustee meetings at locations across the state where stakeholders are welcome to attend and observe	Each year's schedule of trustee meetings includes venues across the state. Trustee meetings are also webcast live for greater transparency.

Community Investment

We will support investment within communities where NYPA operates that furthers sustainability, social justice and community development.

• Continue to support community efforts that are related to NYPA's mission	NYPA provides financial support to government entities and not-for-profit organizations that demonstrate a clear link to NYPA's mission. It also supports local first-responder organizations that serve and protect NYPA facilities.

Public Education & Communication

We will communicate our sustainability performance in a transparent manner and utilize opportunities to educate the public on our initiatives.

• Expand and promote the sustainability page on NYPA's website to demonstrate commitment and track progress	NYPA continues to expand the sustainability section on its website where it posts upcoming events, provides updates on relevant initiatives and publishes sustainability reports.
• Publish an annual sustainability report to update the public on progress of NYPA's sustainability initiatives	Annual sustainability reports have been produced and published on the NYPA website since 2010.

Besides its trustee meetings, NYPA tries to hold any public hearings or forums on special topics near the areas that will be most directly affected by the matters being considered. For example, prior to trustee decisions on certain contract and rate proposals, more than a dozen public meetings were held around the state in 2012, including Long Island, Massena, Lewiston and Syracuse.

Stakeholder engagement was critical to the successful relicensing of NYPA's two largest hydropower plants. St. Lawrence-FDR, in the North County's Town of Massena, received a new 50-year license in 2003 while Niagara, located in the Western New York Town of Lewiston, received its 50-year federal license in 2007. In both cases, more than 100 stakeholders actively participated in regular meetings with NYPA and state and federal regulators to identify issues of regional concern and negotiate settlement agreements to meet specific local needs.

The results are a variety of benefits that are being implemented in those communities over the 50-year lifespan of each license. These benefits include a series of Habitat Improvement Projects (see Environment Highlights, page 13) for ecological purposes and Recreational Enhancement Projects for the enjoyment of local residents and tourists alike.

Funding for recreational enhancements has gone to both local and state-owned facilities, and always meets federal guidelines associated with the Americans with Disabilities Act. Over the last three years, about a dozen parks in the vicinity of St. Lawrence-FDR received improvements that ranged from new playgrounds and fishing piers to refurbished campsites and bath houses. Because of post-9/11 security concerns, NYPA built a new visitors center separate from its St. Lawrence-FDR power dam on nearby Hawkins Point; the building now provides meeting space for local community organizations and other special events. Separate from the relicensing, NYPA has pledged to help rebuild Robert Moses State Park's Nature Center, which was destroyed in a fire in 2010.

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Photos, from left: Kids encounter friendly animals, and tour guides, at NYPA Wildlife Festivals. NYPA built a new park on the Buffalo River near its new ice boom storage site.

Community Highlights

The Power Authority has a long history of working with the communities surrounding its facilities, and was an original member of New York State's Environmental Justice Interagency Task Force, which was established in 2008. In keeping with NYPA's Sustainability Action Plan, environmental justice concerns are now considered with any new infrastructure projects, especially those near low-income or minority communities.

While NYPA trustees approved an Environmental Justice Action Plan in 2012, outreach efforts had already been underway for several years. In 2001, for example, a $23 million Emission Offset program was established to provide a series of clean air initiatives in New York City neighborhoods located near small, clean power plants being built by NYPA. That effort helped open lines of communication and create cooperative relationships that have strengthened over the years.

More recently, plans by NYPA to build a natural gas-fired cogeneration power plant for the New York City Department of Correction on the Rikers Island prison complex included early input from representatives of environmental justice communities nearby. The new power plant will help reduce carbon dioxide emissions by 22,000 tons annually while improving electric service reliability for Rikers Island.

Other aspects of NYPA's Environmental Justice Action Plan include training for Power Authority employees, especially those working on large capital projects, and energy education efforts, particularly for underserved students.

NYPA is also working with other agencies and educational institutions to develop a curriculum for students in the fourth and eighth grades to help these consumers of the future better understand how to make smart energy choices for the environmental and economic benefits that may be realized.

Photos, this page: Above, NYPA funded a new stone staircase to improve access to the Niagara River. Below, the "Sustainability on the Move" electric van transports clean energy exhibits to school children in environmental justice communities of New York City.

For the Niagara relicensing, NYPA improved access and amenities for recreational fishing at three sites: the fishing pier located at the base of the main power dam, a roadside park along the Upper Niagara River Rapids (near the intakes that feed NYPA's hydropower plant) and at the Lewiston Reservoir, a manmade lake that serves the Niagara facility.

As it did for its North Country relicensing, NYPA is also funding recreational enhancements at state parks along the Niagara Frontier. Reservoir State Park, a 133-acre site adjacent to the Lewiston Reservoir, received major renovations to its ball fields, playground, walking trail, pavilions, landscaping and parking lots. A new ice skating rink was added as well.

In the gorge area of the Lower Niagara River, NYPA constructed a stone stairway that connects existing hiking trails at the top and bottom of the Niagara Gorge. Hand-cut, dry-laid stone steps were manually rigged into the gorge and placed along the steep slope over rugged terrain, earning NYPA its fifth Outstanding Stewards of America's Waters Award from the National Hydropower Association.

The Niagara relicensing also included establishment of four separate funds, totaling $9 million a year, for activities related to creation of the Niagara River Greenway in both Niagara and Erie counties. These funds are disbursed through a cooperative effort involving local communities, environmental groups, Native Americans and state agencies working toward a joint goal of preserving open space along the riverfront while revitalizing the Western New York economy. At Niagara Falls State Park, $25 million in Greenway funds helped complete the first phase of a multiyear improvement effort.

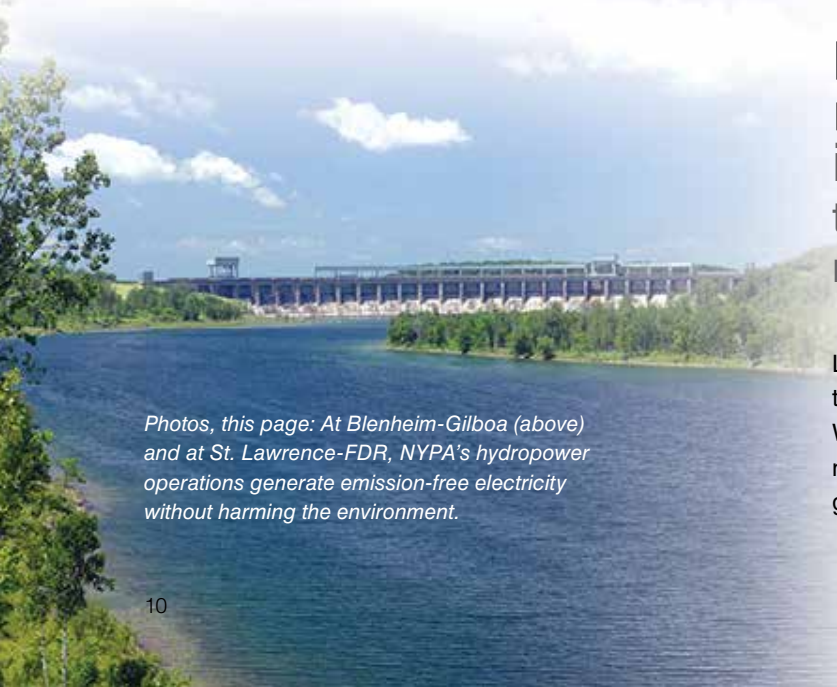
In addition to these recreation enhancement projects around NYPA's facilities, in the last three years NYPA has provided funding to those government entities or not-for-profit organizations that demonstrate a clear link to NYPA's mission: to provide clean, low-cost and reliable energy consistent with the Authority's commitment to the environment and safety, while promoting economic development and job development, energy efficiency, renewables and innovation, for the benefit of its customers and all New Yorkers. Examples of this include the Adirondack Youth Climate Summit at The Wild Center; the Yonkers Science Barge; and the Green Roof Demonstration at the Greenburgh Nature Center.

Since being a good neighbor means being a good citizen, the Power Authority follows strict ethics guidelines as well, which in 2012 resulted in no legal action for any anti-competitive, antitrust or monopoly practices.

As a further benefit to local communities, NYPA supports the first responder organizations that serve the immediate vicinity of its facilities. The Power Authority regularly practices its emergency planning procedures and is also an active participant in utility-focused mutual aid efforts around New York State following natural disasters. Most recently, NYPA President and Chief Executive Officer Gil Quiniones was designated by Governor Cuomo to lead a "Public Power Assistance Team" of transmission linemen and equipment operators from other parts of New York and the nation, who joined NYPA line crews in helping restore electrical service to Long Island after Superstorm Sandy in 2012.

Photos, this page: Community support includes NYPA line crews responding to natural disasters, like Superstorm Sandy on Long Island (above) and financial assistance for first responder groups near NYPA facilities, including the Blenheim-Gilboa plant in the Catskills.

Our Children's World



Photos, this page: At Blenheim-Gilboa (above) and at St. Lawrence-FDR, NYPA's hydropower operations generate emission-free electricity without harming the environment.

NYPA is committed to reducing its environmental impact and developing strategies to enhance the resources under its management.

Like other corporate citizens, the Power Authority is working to reduce its carbon footprint through a variety of strategies. While more than 70 percent of NYPA's electricity comes from non-polluting hydropower, its statewide operations still result in greenhouse gas (GHG) emissions and combustion byproducts.

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Action Items and Results

Carbon Reductions

We will reduce our carbon emissions by looking at all aspects of our footprint and aggressively identifying reduction opportunities.

• **Calculate carbon footprint per the Climate Registry protocol and publicly disclose analysis**	Work continues on a comprehensive baseline analysis of NYPA's carbon footprint using the Climate Registry protocol. In the last three years, NYPA has calculated and reported its emissions of carbon dioxide, nitrous oxide and methane from stationary combustion sources, plus sulfur hexafluoride from transmission sources. NYPA expects to expand the scope of its reporting in the coming years and to include the emissions associated with purchased electricity that is delivered to NYPA customers.
• **Conduct energy audits at all NYPA facilities and implement energy conservation measures**	Since 2010, energy audits were conducted at all major facilities. Several conservation measures are being implemented, including replacement of a chiller at Clark and air conditioners at Flynn. At St. Lawrence-FDR, construction is expected shortly on lighting and HVAC upgrades; other energy-saving measures will also be implemented.
• **Pursue LEED certification for all existing visitors centers and all new buildings**	Feasibility studies for LEED certification were completed at all three visitors centers and NYPA has now started monitoring energy usage and implementing conservation measures. A new warehouse at Niagara was built in 2010 that has earned LEED Gold certification.
• **Collaborate with relevant entities to enact a comprehensive climate change policy**	NYPA has continued to work with other utilities and industry groups to advocate for clear and reasonable climate change policy for electric utilities. With no climate change legislation passed on the federal level, NYPA and other utilities have focused on the EPA's efforts to develop standards for greenhouse gas emissions under the Clean Air Act.
• **Develop a carbon reduction program for NYPA fossil-fuel generation facilities to ensure compliance with federal climate change legislation**	With no federal climate change legislation enacted, NYPA continues to comply with existing regulations; its emission releases meet or are less than current standards.
• **Conduct a green Information Technology audit to identify energy savings and other efficiency measures**	In 2010, an energy audit was conducted at the White Plains data center to identify ways to reduce energy use. IT implemented many of the recommendations, including greater use of virtual servers and the introduction of blade technologies. Despite a 16 percent increase in the number of servers and other equipment, IT's energy consumption has risen by only 5 percent.
• **Conduct a green fleet management study to maximize carbon reductions**	NYPA conducted a comprehensive evaluation of its fleet procurement and maintenance practices in 2010. Measures were identified that could lead to a reduction in annual petroleum use of up to 22,200 gasoline gallon equivalents. NYPA began implementing some of these recommendations in 2011.

Water Management

We will manage our water resources efficiently and optimize conservation opportunities.

• **Conduct audits of non-process water use at all NYPA facilities to reduce the use of potable water starting with NYPA's visitors centers in association with LEED efforts**	Since 2010, NYPA has conducted non-process water audits at its three visitors centers and has identified measures that will be implemented as part of the LEED certification process. NYPA has also conducted non-process water audits at each of its power plants. Several conservation measures have been implemented, including installation of variable-speed fans at the Flynn plant that reduce water evaporation in the generator's cooling loop; an evaporative water reclamation project at the 500-MW site that captures condensate from the air stream, saving 2.7 million gallons of potable water per year; and a chiller replacement at Niagara that has saved 7 million gallons of potable water annually, and eliminated 1.4 million gallons of discharge into the sanitary system.

Land Management

We will manage the land under our care to protect sensitive habitats and species.

• **Complete Habitat Improvement Projects and Recreation Enhancement Projects per relicensing agreements for Niagara and St. Lawrence-FDR**	Work continues on completing all Habitat Improvement Projects and Recreation Enhancement Projects scheduled as part of the relicensing agreements for the Niagara and St. Lawrence-FDR power plants (see page 13 for HIP and page 9 for REC details).
• **Continue to manage rights-of-way according to NYPA's Vegetation Management Plan and implement EPRI recommendations**	NYPA has continued to update its vegetation management plan and program to meet new federal requirements. In 2011, NYPA received an environmental technology transfer award from EPRI for a best management practices plan to control the spread of invasive plant species along its rights-of-way. Best-practice procedures include removal of invasive species, cleaning of clothing, gear and equipment, proper disposal of soil and seeds, education and site restoration.

Waste Management

We will reduce and manage our waste stream in an environmentally responsible manner.

• **Develop a waste management plan to obtain a 10% reduction per state requirements**	Non-hazardous waste audits have been completed at all NYPA facilities to establish a baseline for reducing waste, and a NYPA-wide recycling program has been implemented that includes staff education and training.

2012 Facility Emissions (Combustion Byproducts)	
Sulfur dioxide (SO_x)	12.0 tons
Nitrogen dioxide (NO_x)	244.0 tons
Particulate matter (PM_{10})	97.6 tons

As a member of The Climate Registry, NYPA joins other North American business and governmental entities in measuring and reporting its GHG emissions. In 2010, its first year with The Climate Registry, NYPA filed as a transitional reporter and provided carbon dioxide (CO_2) measurements from stationary sources. Since then, the Power Authority has expanded its reporting to include methane (CH_4), nitrous oxide (N_2O) and sulfur hexafluoride (SF_6).

The Power Authority's fossil-fuel power plants, all located in the New York City-Long Island region, account for approximately 1,128 megawatts (MW) of NYPA's total net rated output of 5,786 MW. These facilities, which can burn either natural gas or low-sulfur oil, account for most of NYPA's GHG emissions, which totaled 2,039,211 metric tons in 2012.

The decision to cease operations at the Charles Poletti Power Plant, located in Queens, in 2010, resulted in a significant decrease in carbon emissions. The Poletti facility was closed in response to community concerns about air pollution; its deconstruction, which began in 2012, is being handled in an environmentally sensitive manner to minimize any impacts on the surrounding neighborhoods.

NYPA's efforts to reduce SF_6 emissions are proving successful. In 2011, NYPA began using a new SF_6 laser imaging camera during transmission system maintenance to detect releases of this colorless, odorless and extremely potent greenhouse gas. SF_6 sensors have also been installed at remote substations for early intervention on any leaks at those locations. NYPA's tracking system to monitor SF_6 continues to be refined, to ensure accuracy and enable trending in NYPA's equipment. NYPA's 2012 leakage percent was 2.8%, well below its target of 6%. With increases in nameplate capacity every year, this low percentage is a testament to the dedication and awareness of NYPA's staff responsible for SF_6 maintenance and management.

According to the Environmental Protection Agency, motor vehicles account for more than half of the GHG that is released into the atmosphere. It is estimated each gallon of gasoline consumed by an internal combustion engine produces 20 pounds of CO_2. To address this source of greenhouse gases, NYPA commissioned a Green Fleet Study in 2010.

Working with the Fleet Operations group, the study evaluated NYPA's procurement and maintenance practices and recommended several actions to "green" its fleet of vehicles. Starting in 2011, NYPA began reducing its purchase of No. 2 diesel fuel and increased its use of biodiesel, especially during the warm-weather months, and installed diesel particulate filters on 14 work trucks to reduce exhaust emissions.

NYPA also added several electric-drive vehicles to its fleet, including two all-electric cars, the Nissan Leaf and the Ford Focus, plus a plug-in hybrid Chevrolet Volt, two hybrid-electric Chevrolet Tahoe SUVs and 14 hybrid-electric Ford Fusion sedans. In addition, GPS telematic tracking devices were installed in all fleet vehicles to encourage more fuel-efficient driving behavior and improve driver safety. By adopting all of the measures in the Green Fleet Study, NYPA expects to reduce its carbon dioxide equivalent emissions by more than 177 tons a year.

Maximizing energy efficiency improvements are another sure way of cutting greenhouse gas emissions. The Power Authority continues to expand its portfolio of energy-saving initiatives for public facilities and other NYPA customers around the state (see Marketplace section); it is also increasing conservation measures at its own sites.

Energy audits have been completed at all major NYPA facilities – including its power plants, visitors centers and administrative offices – and efficiency improvements are being designed and implemented on an ongoing basis. They include basic lighting, heating and cooling upgrades to meet the latest efficiency standards. The goal is to have all three visitors centers achieve LEED ratings with the U.S. Green Building Council. These projects, high profile because of the number of visitors passing through these sites, are being pursued separately from NYPA's power plants and office buildings.

Besides energy usage, LEED criteria include water and waste management. Water audits have been conducted at all of NYPA's major facilities. Water coolers, already in place at the

main White Plains office building, are being installed at the Clark Energy Center and at St. Lawrence-FDR to provide ready supplies of drinking water while reducing the number of plastic bottles ending up in the waste stream. NYPA has expanded its recycling efforts, with an employee awareness campaign and more collection receptacles for paper, plastics, bottles and cans. In 2012, 5,632 tons of waste were recycled.

Spill prevention and response continue to be important concerns for the Power Authority, since many of its operations involve the use of oil-based products for insulating, lubricating hydraulics and other industrial purposes. In 2012, NYPA had 21 reportable oil releases; all but three were less than 100 gallons. One event involved a catastrophic failure of a large circuit breaker. NYPA utilized a model to compute the amount of oil consumed in the resulting fireball and quantified how much was expected to be recovered. For this effort, NYPA's environmental team won the prestigious EPRI technology transfer award for utilizing EPRI technologies to solve real-world problems.

Photos, this page from top: NYPA's environmental staffers monitor recycling efforts, track SF6 emissions and monitor Habitat Improvement Projects.

Opposite page: The WPO garage now has charging stations for fleet EVs.

Environment Highlights

The relicensing of NYPA's two largest hydropower plants, St. Lawrence-FDR in 2003 and Niagara in 2007, included a commitment by NYPA to invest millions of dollars to preserve and enhance the environment around these facilities.

Under the two new federal licenses, NYPA has been implementing almost 20 different Habitat Improvement Projects (HIPs) along the St. Lawrence and Niagara rivers with input from local stakeholders. These projects often serve multiple purposes, aiding in the recovery of threatened or endangered species while encouraging greater diversity in the flora and fauna.

One measure of success for these efforts is in the recognition they generate. Since 2007, the National Hydropower Association has presented NYPA with its Outstanding Stewards of America's Waters Award five times for relicensing-related projects (the latest announced in early 2013). Among the environmental improvements cited were nesting sites for common terns in Lake Erie, spawning beds for lake sturgeon in the St. Lawrence River and restoration of an entire wetland on Little Beaver Island in the Niagara River. NYPA was also honored for an upstream passage facility added to its St. Lawrence-FDR power dam to aid American eels migrating inland from the Atlantic Ocean.

Another indication is the improved health and diversity of the ecosystem. Wildlife surveys conducted by state environmental officials showed in 2011 that NYPA's common tern HIP in Buffalo Harbor led to the highest numbers of nests and chicks observed in the 25 years monitoring has been conducted. On the St. Lawrence River, a project to construct osprey nesting platforms has been temporarily halted due to the success of the project and the growing numbers of these raptors now in the area.

NYPA is committed to promoting economic development in New York State and supporting the maturing clean energy industry through various programs.

Photo, above: Anchor Glass in Elmira is a long-time NYPA power customer.

Our Customers Our Partners

The Power Authority has more than a dozen programs that provide value to specific customer groups across the state. These include programs that offer low-cost power allocations tied to jobs, and programs that provide financing and project management services for energy efficiency improvements. In some cases, the programs overlap so customers can receive low-cost power and also take advantage of financing for energy conservation upgrades.

The ultimate goal is for the Power Authority to leverage its resources and expertise so that the money its customers save on their utility bills can be used to achieve benefits that serve the greatest number of New Yorkers.

While environmental considerations are a major part of NYPA's sustainability efforts, economic development is also paramount. Governor Cuomo's ReCharge NY power allocation program has greatly enhanced the Power Authority's previous job sustaining efforts (see Highlights, page 17). This new statewide initiative joins other region-specific programs – Replacement Power, Expansion Power and Preservation Power – that benefit the areas immediately adjacent to NYPA's largest hydropower plants in Western and Northern New York.

continued on page 16

Action Items and Results

Demand-Side Management

We will foster demand-side management by helping our customers and energy services participants achieve their energy efficiency goals, conserve resources and reduce their environmental impact.

• **Continue to provide turn-key energy efficiency services, including consulting, financing and project management**	NYPA increased its financing of energy efficiency at public facilities such as schools, universities, hospitals, and state and municipal buildings from $175 million in 2010 to $270 million in 2012, completing 251 projects and launching 240 new projects (see page 16). Greenhouse gas emissions were reduced by 129,000 tons of CO2 in this three year period.
• **Explore rate structure for governmental customers that incentivizes demand-side management**	After conducting a re-design study for governmental customer rates in 2010, NYPA held public hearings in early 2011. Comments from those hearings were incorporated into NYPA's plans, and in July 2011 new rates took effect that incentivize demand-side management. These rates, based on a marginal cost study, are seasonally differentiated and time differentiated, sending a signal to manage load and conserve energy during the summer higher-priced, on-peak period.

Renewable Energy

We will expand the amount of emission-free, renewable energy available in New York State.

• **Formalize and promote NYPA's ability to offer green power and credits to its customers**	In the past three years, NYPA has continued to build its Green Power Program. NYPA entered into a contract for the development of a new biomass facility and began purchasing additional renewable energy credits from several existing facilities, primarily wind farms. NYPA streamlined the procurement process to minimize customer cost and expanded the program to serve a broader customer base, which now includes all public entities in the state, not-for-profit schools and NYPA business customers (see pages 16-17).
• **Increase distributed renewable energy generation in New York State**	Since 2010, NYPA has installed 80 solar photovoltaic systems around the state with a combined capacity of 2,163 kW, bringing the total number of solar arrays installed to 120. NYPA continued to invest in fuel cells, procuring equipment in 2010 and 2012 to extend the life of one of the world's largest fleets of fuel cells powered by anaerobic digester gas. NYPA also conducted feasibility studies on wind power and biomass projects for state, county and municipal customers, and is currently working with NYSERDA on projects for dairy manufacturers using anaerobic digester gas.
• **Foster utility-scale renewable energy generation capacity in New York State**	Since 2010, NYPA has been an active participant in the Long Island-New York City Offshore Wind Collaborative, which seeks to build a utility-scale wind farm in the Atlantic Ocean near the Rockaway Peninsula. In 2012, the U.S. Bureau of Ocean Energy Management established NYPA's legal, financial and technical qualifications to hold a lease on the Outer Continental Shelf for a proposed wind farm.
• **Continue to fund research of large-scale renewable energy storage**	NYPA received a NYSERDA grant in 2012 to conduct an economic evaluation and engineering design study for a proposed above-ground compressed air energy storage system in the New York City area. NYPA has partnered with EPRI and Dresser Rand to conduct the study.

Alternative Fuel Transportation

We will build upon our alternative-fuel transportation programs to accelerate market penetration.

• **Continue to participate in national, state and regional programs to promote the development and demonstration of electric, hybrid-electric and plug-in hybrid-electric vehicles**	NYPA continues to support the deployment of electric, hybrid-electric and plug-in hybrid-electric vehicles in fleets around the state. Since 2010, NYPA has helped three municipalities buy hybrid shuttle buses and nine New York City agencies purchase 10 electric vans and 50 extended-range electric vehicles. NYPA has also partnered with EPRI and vehicle manufacturers to test and demonstrate plug-in cars and buses (see page 17). In 2012, NYPA completed a three-year field test that was the nation's first real-world comparative evaluation of hybrid and plug-in hybrid school buses.
• **Develop and demonstrate renewable energy smart charge infrastructure for electric and plug-in hybrid-electric vehicles**	During the past three years, NYPA has been working with EPRI and other utilities on a project to test and demonstrate smart charge stations equipped with solar canopies. NYPA is exploring opportunities to install solar carports as part of Governor Cuomo's Charge NY initiative, announced in early 2013 (see page 17).

Clean Energy Procurement

We will encourage the procurement of clean energy on behalf of our customers.

• **Establish policy regarding fuel source and environmental impacts for bilateral energy contracts**	NYPA has established a Clean Energy Procurement procedure stating it will not procure power from coal-based resources, to the extent possible.

Economic Development

We will utilize NYPA low-priced power to create and maintain family-supporting jobs in New York State.

• **Continue to maximize NYPA power resources to attract business capital and quality jobs to New York State**	More than 18 months in the making, ReCharge NY was launched in 2012 with the allocation of more than 700 MW (out of a total of 910 MW) of low-cost electricity for eligible businesses and not-for-profits. Criteria for the new program include mandatory energy audits for all customers (see page 17).

Overall, more than 400,000 jobs at almost 900 businesses and not-for-profit organizations across the state were linked to the Power Authority's various economic development efforts in 2012. The total number of customers for NYPA power in 2012 was 985.

The numbers associated with NYPA's energy efficiency programs are equally impressive. Over the last two decades, these conservation measures have saved customers, primarily the operators of taxpayer-supported public facilities, some 1.2 million megawatt-hours, resulting in utility bill savings of about $148 million annually. Through these efforts, more than 2.5 million barrels of oil were not consumed at fossil-fueled power plants, thus avoiding approximately 890,000 tons of greenhouse gas emissions.

The significance of these efforts was underscored in 2012 when Governor Cuomo designated NYPA as the lead entity to coordinate the implementation of Executive Order 88, which requires that all state agencies and authorities reduce their energy usage 20 percent by 2020. A similarly ambitious undertaking, to cut energy use on the local and county level, joins the state facility initiative as part of the governor's comprehensive Build Smart NY initiative.

One strategy to help achieve these goals, introduced in 2012, is NYPA's Energy Efficiency Market Acceleration Program (EE-MAP). This $30 million initiative will speed deployment of commercial energy efficiency products and systems that are not yet widely available for general use. A Request For Proposals was issued in September 2012; once selected, the awardee will assist in the preparation of energy efficiency master plan programs and market development plans.

Equally important are investments in clean power sources. NYPA's Sustainability Plan includes several action items intended to increase the amount of emission-free renewable energy available in New York State.

In 2012, NYPA expanded on its past involvement with renewables by announcing a new Solar Market Acceleration Program (Solar MAP), part of Governor Cuomo's NY-Sun Initiative. Similar to its energy efficiency MAP, NYPA's solar program will provide funding and facilitate competitive solicitations for research efforts, demonstration projects and soft-cost reduction strategies. Balance-of-system costs—such as permits, hardware and labor—often represent more than half of the total price for a solar installation.

Since 2010, the Power Authority has been building on its track record of solar photovoltaic projects for distributed generation purposes and completed numerous projects, including 54 installations made as part of its municipal utility solar incentive program. Additional solar arrays were installed at police and fire stations in New York City.

NYPA's wind power activities continued to increase as well. Besides its participation in the LI-NYC Offshore Wind Collaborative, NYPA also completed feasibility studies for small-scale wind turbine installations at several sites around the state. Wind projects are being explored for the campus of SUNY Canton and a wastewater treatment plant at Staten Island's Oakwood Beach.

NYPA's Green Power Program is another important way of supporting clean generation projects. Trustees expanded the program in 2012 so that NYPA can now offer Renewable Energy Credits (RECs) to a broader customer base. NYPA's program is unique in that it only includes RECs from clean energy projects based in New York or an adjacent state that export their power to New York, ensuring that New York receives the environmental benefits. National RECs, by contrast, may come from renewable energy projects elsewhere in the United States.

Marketplace Highlights

The economic development action item included in NYPA's original Sustainability Plan, released in early 2010, makes no mention of ReCharge NY. Yet the directive— "continue to maximize NYPA power resources to attract business capital and quality jobs to New York State"— clearly states the intention and subsequent results of the new power allocation program announced by Governor Cuomo in 2011.

NYPA staff helped craft the legislation, which established a block of 910 megawatts (MW) to create and retain jobs at businesses and not-for-profit organizations meeting strict new criteria. Half of the electricity comes from NYPA's low-cost hydropower sources; the remainder is provided through market power purchases subsidized by NYPA.

Among the features of ReCharge NY is the active participation of 10 regional economic development councils, which provide local input in the selection of customers,and a requirement that energy audits be performed to ensure efficient use of the economical electricity.

To help potential customers apply for the program, which utilized the state's new Consolidated Funding Application process, NYPA set up a dedicated call center to handle the flood of inquiries, including hundreds of phone calls and more than 5,000 emails.

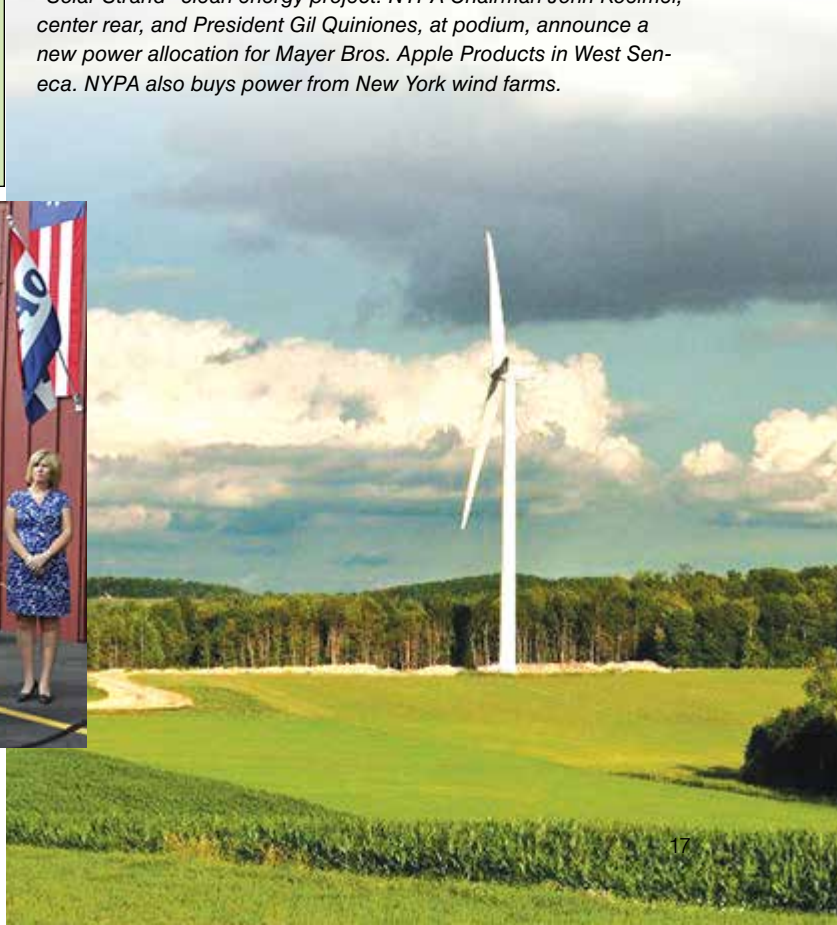
NYPA trustees began approving the first in a series of allocations in April 2012; the electricity started flowing on July 1. By year's end, more than 700 MW had been approved for over 600 businesses and not-for-profit organizations, like hospitals and cultural institutions, throughout the state. More than 385,000 jobs were linked to ReCharge NY, along with commitments of over $680 million in capital investments. Additional allocations will be made in 2013.

Examples of green power projects supplying the NYPA program are wind farms in Northern New York and a combined-cycle biomass plant in Central New York. Since the program's inception in 2005, NYPA's green power purchases have grown more than sevenfold and now exceed 200 gigawatt-hours per year.

The Power Authority also has a strong electric transportation program. NYPA participates in national, state and regional programs to promote the development and demonstration of electric-drive vehicles. Working with its customers, NYPA has helped place almost 1,300 electric, hybrid-electric and plug-in hybrid-electric vehicles into service since 1994 that together have traveled more than 11 million miles.

Working with NYSERDA, NYPA is helping install electric vehicle charging stations at parking facilities around the state. In 2012, NYPA was awarded a NYSERDA grant that will be used to install 100 charging stations at public and workplace parking facilities. A Request for Proposals was prepared for release in 2013. This effort is part of Governor Cuomo's Charge NY initiative, intended to create a statewide network of up to 3,000 charging stations over the next five years and to place up to 40,000 plug-in electric vehicles on the road during that period.

Photos, counter-clockwise from far left: NYPA helped finance a hybrid-electric bus in Lake Placid and the University at Buffalo's "Solar Strand" clean energy project. NYPA Chairman John Koelmel, center rear, and President Gil Quiniones, at podium, announce a new power allocation for Mayer Bros. Apple Products in West Seneca. NYPA also buys power from New York wind farms.



Photo, above: A new transformer is installed at the Lewiston Pump-Generating Plant.

Preparing For the Future

NYPA is committed to continuing the reliable and efficient operation of its assets and investment in its infrastructure to ensure long-term performance.

Up to 25 percent of the electricity used in New York State is provided by the Power Authority, through its 16 generation facilities and with supplemental power purchases. Hundreds of millions of dollars have been invested in recent years to maintain the reliability and improve the efficiency of NYPA's critical assets.

The results are consistently high performance in terms of readiness and reliability. In 2012, NYPA's Generation Market Readiness, which represents the availability of the Power Authority's generating facilities for bidding into New York's wholesale electricity marketplace, was 99.7%. Its Transmission System Reliability for 2012 was 97.64%. Both totals were above NYPA's targets for that year; they also exceeded general industry goals.

Major upgrades to NYPA's infrastructure, especially its large hydropower facilities, are continuing. Since 2010, the Blenheim-Gilboa Pumped Storage Power Plant has returned to full service, having completed a four-year, $135-million Life Extension and Modernization (LEM). In 2012, a $460-million multiyear LEM at the Lewiston Pump-Generating Plant, part of the larger Niagara hydropower facility, moved into high-gear as workers began replacing the first of 12 pump-turbines.

Also in 2012, a 15-year, $281-million LEM at the St. Lawrence-FDR hydropower plant – NYPA's first generating facility, which began commercial operation in 1958 – neared completion. For these and similar upgrades at other facilities, the Power Authority replaces old components and equipment to extend the lives of these important power producers well into the 21st century, improving output and efficiencies whenever possible.

Action Items and Results

Strategic Planning

We will ensure that our strategic plan reinforces our sustainability efforts and that sustainability remains a driving factor in our strategic planning process.

• **Incorporate sustainability into NYPA's strategic planning process**	*Sustainability has been incorporated into NYPA's Strategic Plan as a Corporate Value. The Corporate Values inform all decisions and actions taken. A multiyear strategic initiative was also created to track implementation of the Sustainability Action Plan. Progress on this and other strategic initiatives is reported quarterly.*

Generation & Transmission Reliability

We will maintain the reliability of NYPA's generation and transmission facilities for the benefit of our customers and New York State.

• **Continue to maintain generation and transmission equipment to meet and exceed industry reliability goals per NERC and FERC requirements**	*NYPA has established internal standards for generation and transmission reliability that exceed NERC and FERC requirements. Ongoing maintenance and strategically scheduled outages for major overhauls at both the hydro and fossil-fueled facilities have helped NYPA achieve its annual reliability goals.*
• **Facilitate interconnection of renewable power generation to NYPA's transmission infrastructure**	*Working with local utilities, NYPA has provided points of interconnection for multiple wind farms in upstate New York, and continues to play an active role in supporting the addition of generation sources to the state's electric grid. NYPA is also proceeding with separation of its Moses-Willis lines to improve transmission reliability and accommodate additional generation.*

Generation & Transmission Efficiency

We will improve the efficiency of NYPA's generation and transmission facilities for the benefit of our customers and New York State.

• **Complete the current hydropower Life Extension and Modernization (LEM) programs and evaluate similar programs for remaining hydro facilities and for transmission infrastructure**	*In the last three years, a Life Extension and Modernization (LEM) program was completed at the Blenheim-Gilboa pump storage facility; a LEM at the St. Lawrence-FDR power plant was also largely completed by the end of 2012, and a LEM was started at Niagara's Lewiston plant. Also in 2012, trustees approved a $726 million LEM for NYPA's statewide transmission system.*
• **Integrate smart-grid technology into NYPA's transmission system**	*NYPA has installed Phasor Measurement Units at substations across the state to track voltage and current fluctuations. It is also monitoring thermal conditions along its transmission lines using Dynamic Thermal Circuit Ratings technology (see pages 20-21). NYPA is working with EPRI to collect and analyze the data.*
• **Explore use of non-petroleum-based oils in NYPA's electrical equipment**	*NYPA evaluated the use of non-petroleum-based oils as an alternative to petroleum-based oils for new transformers during the past three years but determined this switch was not feasible for the type of equipment that was being installed. NYPA will continue to explore opportunities to use non-petroleum-based oils going forward.*

Clean Energy Demonstrations

We will lead by example and demonstrate clean energy technologies at our own facilities.

• **Install renewable distributed generation systems at select NYPA facilities**	*NYPA has installed a 16 kW solar array at the Niagara Power Vista and a 25 kW solar array and 2.4kW wind turbine at the Blenheim-Gilboa Visitors Center. Graphic displays at both sites report real-time electricity generation from these systems for visitors to see clean energy in action.*

Climate Change Adaptation

We will acknowledge the significant impact climate change can have on NYPA infrastructure and plan accordingly.

• **Identify climate change impacts on NYPA infrastructure and develop adaptation plan**	*Over the past three years, NYPA staff has been working to identify potential threats to critical infrastructure and developing adaptation strategies to increase the resilience of generation and transmission assets around the state (see page 21).*

Since 2010, two of NYPA's generating facilities have been removed from service to accommodate a greater community need. The 885-megawatt (MW) Poletti plant, which was located in Queens and could run on either low-sulfur oil or natural gas, ceased operation in early 2010 in response to community concerns about emissions. Plans to deconstruct, rather than demolish, the plant in a careful, environmentally sensitive manner began to take shape in 2012. Also in 2012, the 2-MW Kensico small hydropower plant, located in Westchester County at the south end of New York City's Catskill and Delaware aqueduct system, was taken off-line after a new water treatment plant built nearby affected the hydro plant's ability to generate electricity.

A major refurbishment of NYPA's high-voltage power lines and auxiliary equipment commenced in 2012 with trustee approval of a $726 million Transmission LEM. Expected to run through 2025, this multiphase improvement project will

Operations Highlights

The Power Authority's ongoing investments to maintain and upgrade its generation and transmission assets are consistent with NYPA's Sustainability Plan. They also support Governor Cuomo's Energy Highway initiative, introduced during the 2012 State of the State address.

Several NYPA staffers, from senior executives to mid-level management, have played key roles in bringing the Governor's vision of a stronger, more flexible energy infrastructure to reality.

NYPA President and Chief Executive Officer Gil Quiniones served as co-chair of the New York Energy Highway Task Force along with Joseph Martens, commissioner of the New York State Department of Environmental Conservation. A team of Power Authority employees also provided the task force with critical assistance in analyzing more than 130 proposals that resulted from a Request for Information issued in April 2012.

By October, the task force had compiled 13 specific actions to be pursued through public-private partnerships. Because of NYPA's statewide operations and recognized expertise, a number of the actions call for Power Authority involvement.

The decision by NYPA trustees in December to approve a $726 million Life Extension and Modernization (LEM) to modernize the Power Authority's transmission network is a major step in advancing the Energy Highway.

An action by the New York State Public Service Commission, announced in November, to explore and plan for possible major power plant retirements also involves the Power Authority, directing NYPA to work with Consolidated Edison in developing a contingency plan addressing the energy needs that would arise in the event that the Indian Point nuclear power plants shut down.

In addition, the Power Authority is participating in Energy Highway action items that include evaluating field conditions for offshore wind resources and developing more smart grid technologies.

incorporate the latest engineering and technologies to make NYPA's 1,400 circuit-miles of transmission lines less susceptible to weather disruptions and more flexible for increased use of intermittent renewable resources, like wind and solar power.

The Power Authority's Transmission LEM is a key element in Governor Cuomo's Energy Highway initiative, which seeks to rebuild and modernize the state's energy infrastructure to meet current and future needs (see Highlights, this page). While NYPA owns and operates approximately one-third of New York's high-voltage power lines, initial work will focus on improvements to the switchyards and substations near the Niagara and St. Lawrence-FDR hydropower facilities.

NYPA's use of smart grid technologies is expected to continue and expand as the Transmission LEM proceeds. Since joining the New York Smart Grid Consortium in 2009, NYPA has begun introducing the use of devices that improve the efficiency and reliability of its transmission system. Because the capacity of power lines can vary by several hundred megawatts depending upon weather conditions – such as temperature, humidity and wind speed – better monitoring can result in higher rates of transmission.

A technologically advanced monitoring system, called

NYPA's Generation Assets

	Installed Capacity (MW)	Net Energy Output (Gwh)	Average Plant Availability (% of hours available to produce power/8760)	Forced Outage Factor (# of outage hours/8760)	Average Power Outage Duration (# of outage hours/# of outages)	Average Thermal Heat Rate (BTU input/ Kwh output)
Hydro Facilities						
St. Lawrence-FDR	800	6,693	96.5	0.9	48.4	N/A
Niagara	2,675	13,373	89.2	0.6	136.5	N/A
Blenheim-Gilboa	1,160	(103)	86.5	9.4	53.3	N/A
Small hydro plants	23	129	59.4	29.5	150.3	N/A
Natural Gas/Oil Facilities						
500 MW	500	3,087	84.4	0.7	93.5	7,374
Flynn	167	1,209	96.4	0.1	29.1	7,949
Small Clean Power Plants	461	517	91.1	2.1	42.0	10,623

Dynamic Thermal Circuit Ratings (DTCR), measures thermal conditions and guards against overheating along stretches of power lines. For faster, more accurate real-time data tracking of voltage and current conditions, NYPA uses Phasor Measurement Units (PMUs), which can alert operators to the potential for imminent disturbances and allow rapid response to prevent or minimize damage to the transmission system.

Protecting and strengthening its assets from extreme weather events has become even more imperative for the Power Authority in the aftermath of 2012's Superstorm Sandy. NYPA's generation and transmission facilities survived this latest disaster unscathed, thanks in part to emergency planning procedures, and were made available to assist with post-storm recovery efforts in hard-hit areas of Long Island and the Lower Hudson Valley.

The Power Authority is also playing a role in Governor Cuomo's investigations into future actions deemed necessary to prepare New York for the growing threat of climate change. NYPA President and Chief Executive Officer Gil Quiniones was chosen to join a team of business and governmental leaders on the NYS 2100 Commission tasked with finding ways to protect and strengthen the state's critical infrastructure against future disasters.

Since 2010, NYPA has been working with other governmental and utility representatives to explore climate change threats and responses. An adaptation plan for NYPA assets in Central New York was completed in 2011, and in 2012, staff conducted an assessment of NYPA's infrastructure in New York City as part of a citywide study by the Mayor's Office of Long-Term Planning and Sustainability Climate Change Adaptation Task Force.

NYPA's Transmission Assets

	Underground (circuit miles)	Overhead (circuit miles)	Total
765kv	0	154.9	154.9
345kv	44.6	883.1	927.7
230kv	0	338.1	338.1
115kv	1.2	34.2	35.4
Total	**45.8**	**1410.3**	**1456.1**

Photos, from left: In support of Governor Cuomo's Energy Highway, NYPA is facilitating transmission system upgrades, industry summits and public hearings, smart grid demonstration projects and power line improvements.

LOOKING FORWARD

Taking a More Strategic Approach to Sustainability

In 2013, NYPA continues to use the framework developed for its 2010-2012 Sustainability Action Plan while transitioning to a more integrated approach to this key initiative.

NYPA's Sustainability program will be developed and implemented as an integral part of NYPA's corporate strategic planning process, and embedded into its goals and business strategies. By doing so, sustainability can be made a guiding principle in day-to-day practices and long-term program development.

Strategic planning will explicitly include climate change as a driver so that NYPA's plans incorporate current climate science, which will in turn inform NYPA's investment strategy going forward.

NYPA and GRI

The Global Reporting Initiative (GRI) is an international network established to help companies and organizations measure and report on their sustainability performance in terms of economic, environmental and social impacts. Its reporting framework provides consistency for the thousands of entities that are working toward more sustainable operations worldwide.

The Sustainability Reporting Guidelines, now in their third generation, are the foundation of GRI's Framework. They feature sustainability disclosures that participating companies and organizations can adopt flexibly and incrementally, enabling them to be transparent about their performance in key sustainability areas.

NYPA's Sustainability Action Plan includes select GRI indicators chosen for their materiality and relevance to Power Authority operations. The index provided in each year's progress report allows readers to easily locate those items of particular interest to them.

Additional details about the GRI network are available at: www.globalreporting.org. For questions about NYPA's sustainability activities, email: **GeneratingSustainability@nypa.gov.**

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**Partial Reporting*
^2012 data
•See the NYPA 2012 Annual Report for this information.

GLOSSARY of Acronyms

APPA –American Public Power Association

B-G – NYPA's Blenheim-Gilboa Pumped Storage Power Plant

BTU – British Thermal Unit

CEC – NYPA's Clark Energy Center

CH_4 – Methane

CO_2 – Carbon Dioxide

DEC – New York State Department of Environmental Conservation

DTCR – Dynamic Thermal Circuit Rating

EE-MAP – Energy Efficiency Market Acceleration Program

EJ – Environmental Justice

EPA – U.S. Environmental Protection Agency

EPIC – NYPA's Environmental Performance and Improvement Committee

EPP – Environmental Preferable Purchasing guidelines

EPRI – Electric Power Research Institute

EV – Electric Vehicle

FERC – U.S. Federal Energy Regulatory Commission

GHG – Greenhouse Gas

GRI – Global Reporting Initiative

GWH – Gigawatt-Hour

HIP – Habitat Improvement Project

HR – Human Resources

HVAC – Heating, Ventilation and Air Conditioning

KW – Kilowatt (1,000 watts)

KWH – Kilowatt-Hour

LEED – Leadership in Energy and Environmental Design (also, EB – Existing Building category)

LEM – Life Extension and Modernization

LI-NYC – Long Island-New York City

LPGP – NYPA's Lewiston Pump-Generating Plant

MBA – Master of Business Administration degree

MTA – Metropolitan Transportation Authority

MW – Megawatt (1,000 kilowatts)

MWH – Megawatt-Hour

N_2O – Nitrous Oxide

NERC CIP – North American Electric Reliability Corporation's Critical Infrastructure Protection

NHA – National Hydropower Association

NOx – Nitrogen Dioxide

NYISO – New York Independent System Operator

NYPA – New York Power Authority

NYSERDA – New York State Energy Research and Development Authority

NYSOPRHP – New York State Office of Parks, Recreation and Historic Preservation

OSAW – Outstanding Stewards of America's Waters awards program

OSHA –Occupational Safety and Health Administration

PM_{10} – Particulate Matter

PMU – Phasor Measurement Units

PV – Photovoltaic

REC – Renewable Energy Credits

REP – Recreation Enhancement Project

RFP – Request for Proposals

RNY – ReCharge New York

ROW – Right of Way

SF_6 – Sulfur Hexafluoride

SO_x – Sulfur Dioxide

Solar MAP – Solar Market Acceleration Program

St. Lawrence-FDR – NYPA's St. Lawrence-Franklin D. Roosevelt Power Plant

SUNY – State University of New York

USGBC – U.S. Green Building Council

VOCs – Volatile Organic Compounds

WPO – NYPA's White Plains Office

About NYPA

The New York Power Authority (NYPA) is a public authority and the country's largest state power organization. NYPA operates 16 generating facilities, of which more than 70 percent of the output is sourced from renewable hydropower, and over 1,400 circuit-miles of transmission lines. NYPA provides about one-quarter of New York State's electricity from its generating facilities and economical power purchases. NYPA sells power to governmental agencies, community-owned electric systems and rural cooperatives, and to business customers that support more than 400,000 jobs in New York. NYPA also provides power to private utilities for resale, without profit, to New York State ratepayers, and to neighboring states, as provided by federal requirements.

NYPA is overseen by trustees who are appointed by the Governor and confirmed by the State Senate. Individuals serving on the seven-member board are independent and non-executive. Standing trustee committees include audit, governance and finance.

NYPA's main administrative offices are located at
123 Main Street, White Plains, NY 10601.
All other facilities are located in New York State.

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New York Power Authority

Generating more than electricity

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