

## **New York Power Authority — 2017 Accomplishments**

The 86th year of the New York Power Authority (NYPA) is filled with many important milestones and breakthroughs. We should be proud of what we were able to accomplish throughout 2017 and how we are successfully preparing the organization for the challenges of our marketplace. We are now far better prepared to respond to the increasingly varying needs of our consumers.

### **Turning on the Lights in Puerto Rico**

The New York State public and private utility workers who have been deployed to Puerto Rico are providing heroic technical and logistical expertise and are going to great lengths to restore electric service; and the staff of the New York Power Authority operations and management are demonstrating enormous leadership in this rescue effort, as they contend with the massive damage caused by hurricanes Irma and Maria. They are daily providing extraordinary examples of the public power mission in action and are writing another proud chapter in the Power Authority's eminent history.

We are enormously grateful for what our transmission and distribution system experts from across New York State have already accomplished, as they bring back the lights of schools, homes, businesses, hospitals and municipal buildings in urban and rural areas across Puerto Rico. They are applying the many lessons gained from dealing with past storms in New York and will take the necessary steps to enable the Puerto Rican power system to be more resilient in the future. Each and every rescue worker from NYPA and the other New York utilities reveals a generosity of spirit in overcoming unimaginable challenges. They deeply care about helping Puerto Rico recover from the enormous hardships caused by the incredibly destructive storms that struck the island. Here is a useful chronology for our Puerto Rican rescue activities:

- Governor Rossello made an official Governor-to-Governor request to Governor Cuomo on September 21 for New York to assist Puerto Rico with aid in the aftermath of Hurricane Maria. The next day, September 22, Governor Cuomo and I accompanied 10 NYPA engineers, planners and technical supervisors to the island to assist with power recovery. One week later, on September 29, NYPA sent an additional 10 personnel to support the effort.
- Those 20 technical experts embedded themselves within PREPA to assist in the necessary triage of the power grid throughout the month of October, including the completed assessment of virtually all of the island's 330 substations by October 26.
- Also in October, plans were established to send to Puerto Rico a NYPA-led, 28-member Tactical Power Restoration team that specializes in damage assessment of the power distribution system and a team of 15 accountants who are assigned to help expedite the necessary filings for funding reimbursements with the Federal Emergency Management Agency. That team arrived in Puerto Rico in November and is still operating today.
- On November 2, Governor Rossello of Puerto Rico visited New York and both governors agreed to an Emergency Management Assistance Compact (EMAC) that called for New York State utilities (New York Power Authority, Con Edison, National Grid, PSEG, Central Hudson Gas & Electric Corp and AVANGRID) to deploy 350 utility personnel and 220 bucket trucks and special equipment. The NYS contingent became responsible for power restoration in the San Juan metro area.
- The governors also called for the formation on the Puerto Rico Energy Resiliency Working Group, assigned to take a comprehensive look at the state of Puerto Rico's power grid and the next steps needed in its recovery and future resiliency. The working group commissioned the "Build Back Better: Reimagining and Strengthening the Power Grid of Puerto Rico" report, which was released on December 11 in connection with another visit by Governor Rossello to NY.

- The report gathered input from public and private utilities and leading entities in the energy sector with the intention to provide a foundational document for use by the Transformation Advisory Council, formed by PREPA to provide PREPA’s Governing Board and management team with advice on the development of a long-term vision and transformation execution plan for the power system in Puerto Rico.
- At the time the report was commissioned on December 11, the New York State contingent in Puerto Rico had grown to more than 450 utility experts, which is still being maintained on the island today as the team works to restore power to the San Juan metro area.

### **Pursuing NYPA’s Public Power Mission**

As always, we served our public power mission, providing reasonably-priced electricity throughout New York State. Specifically, our programs, including ReCharge New York, Expansion and Replacement Power, Industrial Economic Development Power and Preservation have led to the creation of 2,348 jobs, the retention of 22,471 employees and \$2.3 billion in capital investment. These numbers tell a great story: how we are helping such as businesses as Confer Plastics, Triad Recycling, PSPI and Mind SHIFT grow and prosper.

We have similarly exciting results for our energy efficiency initiative. During 2017, we signed contracts committed to doubling our energy efficiency efforts from \$157 million in completed energy efficiency projects in 2017 to \$300 million in completed projects in 2019. Last year we completed 44 projects leading to 45,600 tons of GHG reduced annually.

### **Refreshing NYPA 2020 Strategy**

While we continued to pursue our historic responsibilities, we also recognized that our industry and marketplace were rapidly changing. Out of necessity, we needed to rethink what NYPA had to do to stay relevant and productive. We started this journey in 2013 and after significant internal discussion, we decided to refresh our 2020 Strategic Plan. Our overarching objective was to transform the Authority into a leading 21st century utility while leading the transformation of New York State’s energy system.

In the fall, we released our refreshed strategy and explained how we wanted to reimagine the electricity grid, the role of the utility in the coming years, and how technology will affect energy usage by individuals, businesses, non-profits and communities. At the center of our new recast strategy is our announced goal of NYPA becoming the first end-to-end “digital utility” in the United States. By using data and digital tools to provide customers insight into their energy supply and demand, we are reducing costs through better facilities management, and helping to provide more sustainable options.

By moving this new direction, we are putting our customers at the center of all that we do. We are providing them with greater choice, empowerment and control over their energy use. We will also gain access to a much cleaner and more distributed set of generation resources and become more adept operating in a world where energy is increasingly distributed, digitized, data-driven and, perhaps most importantly, customer-controlled.

### **Rethinking Asset Management in the 21st Century**

Our Asset Management initiative is making great strides in this direction. By establishing a partnership with GE, we acquired a new set of digital tools, all controlled through a new Integrated Smart Operations Center (ISOC). In this way we will lead the way toward a fully digitized New York electric grid, which will be agile, flexible and responsive.

By moving in this direction, we will be supporting customer decisions to use, generate and store their own power, as well as the variability that will come from much greater use of wind, solar and other intermittent

renewables. Online monitoring of power plants, sub-stations and power lines will increase plant efficiency and productivity, reduce unplanned downtime, lower maintenance costs and minimize operational risks.

The technology also will help NYPA make continued progress in meeting the Governor's Clean Energy Standard, which requires that half of all electricity in New York comes from renewable sources and that greenhouse gas emissions be reduced 40 percent by 2030.

As part of our Asset Management effort, NYPA announced a new partnership with Israeli software company mPrest to launch a first-of-its-kind, high-tech predictive tool that initially monitored the function of power transformers at New York State's Robert Moses Niagara Power Plant. The new, innovative technology, developed by the New York Power Authority in collaboration with mPrest, will now identify and prevent potential costly problems with the plants electrical transformers before they occur.

With the opening of this state-of-the-art center, we are modernizing our state energy system and creating a more resilient, reliable and flexible power grid, helping to grow our clean energy economy. This hub keeps New York at the forefront of innovation while leading the nation in combatting climate change through bold investments in clean energy technology, helping to secure a greener future for all.

This means the grid must become more efficient in transporting power over greater distances, but it also necessitates the use of sophisticated computer control systems to instantaneously re-route power to prevent outages. We see this future in our Smart Generation and Transmission initiatives, and in the development of the Advanced Grid Innovation Lab for Energy (AGILE).

### **Expanding New York Energy Manager**

One of the first ways, we achieved these objectives is through our New York Energy Manager (NYEM) initiative, linking 11,000 buildings in New York on a single platform that combines the power of big data, advanced analytics and machine learning. We are applying digitization to our generation and transmission assets, enabling greater resilience by making assets smarter to detect outages before they occur.

NYEM is a key piece of Governor Cuomo's state energy plan. It allows us to monitor the energy efficiency of state-run buildings down to 15-minute intervals. With this regular assessment we are able to not only save costs, but also to recommend more efficient and cleaner energy generation for our customers. This year we announced that NYPA is expanding its energy management center, the systems and recommended efficiencies at state buildings, to offer more comprehensive energy and cost-saving services to a wider net of state government entities, schools, municipalities and businesses.

Newly appointed Vice President, Emilie Bolduc will oversee enrollment of more customers and expand the roster of services offered by NYEM.

### **Expanding Large Scale Renewables in New York**

Another important initiative was our Large Scale Renewable project. NYPA and NYSERDA issued requests for proposals (RFP) to renewable energy developers as we sought to develop up to 2.5 million megawatt-hours (MWh) of large scale renewable energy for New York State. The renewable energy generation will help to meet Governor Cuomo's Clean Energy Standard goal of 50 percent of the state's electricity sourced from renewables by 2030.

NYPA and NYSERDA received more than 200 proposals from large-scale, clean energy project developers in response to two requests for proposals that will add historic amounts of renewable energy to New York's power supply. The state expects to invest up to \$1.5 billion in new clean energy projects through the two RFPs.

## **Rethinking New York's Transmission System**

We also made major progress in the area of transmission. The Board of Trustees approved a total of \$9.1 million for the initial engineering and permitting and licensing phase of the planned rebuild of the Authority's major North-South power transmission line at their September 26 board meeting. Completion of the project, known as the Moses-Adirondack Smart Path Reliability Project, will help to further strengthen the reliability of New York State's electric power grid and allow more upstate renewable energy to connect to the power system throughout the state. The upgraded line also will help accelerate the Clean Energy Standard. These transmission lines were NYPA's very first asset, originally built in 1942. While NYPA's crews have done a great job maintaining them over the years to keep the electricity flowing, it is now time for replacement and modernization. With this ambitious effort, we are investing in New York's transmission health and preparing the system for many more years of reliable service.

We completed a joint project with Vermont Electric Power Co. to replace 115 kV submarine cables between the NYPA and Vermont transmission systems that date from the 1950's.

We also co-led the effort that filed and received FERC approval for a new "formula rate" structure for transmission investments that allows us to quickly and with more certainty recover our costs of those investments such as Transmission Life Extension and Modernization. We expect NYPA's revenue from transmission cost recovery to increase by over \$40MM per year by 2022.

## **A Newly Strengthened Environment Justice Presence**

In 2017, we continued building our relationships with Environmental Justice (EJ) stakeholders and executed energy related programming, including: STEM camps for middle and high school students both upstate and downstate; educator training for adults teaching at community centers and afterschool programs; speaker series for NYPA employees to share their career path with K-12, College students and families in EJ areas.

In NYC we engaged with 6 schools to support Greenhouse science labs including greenhouse supplies, curriculum and teacher training. For low income homeowners and renters, we conducted Energy Education and Weatherization workshops, providing them with free weatherization kits and education on how to save on energy bills.

Additionally we are in the process of developing non-recoverable energy services projects for our EJ stakeholders including a refrigerator replacement program that will benefit seniors and public housing residents within our EJ communities in Massena.

## **Financial Achievements**

NYPA had a very strong 2017 from a financial standpoint, finishing the year with net income of \$119 million, well above the budget of \$77 million. Cash flow was very strong as well, enabling NYPA to fund its capital program without resorting to new borrowing, and exceeding our debt service coverage targets.

While strong water flows at our hydropower plants contributed to the increase, management actions such as successfully concluding a transmission rate proceeding also produced immediate returns and will continue to do so in the future. Operating expenses were less than budget, reflecting cost controls and improved financial management especially by NYPA's utility staff.

NYPA's financial team continued to innovate in a number of ways in 2017. It developed a financing structure for NYPA's large-scale renewables RFP that uses pre-paid power purchase agreements to lower the projected cost of wind and solar projects by about 15%. It implemented a new tax-exempt municipal lease program with banks to fund the expansion of our customer energy efficiency program.

And in a major transformation that is nearly complete, NYPA's Strategic Supply Management group implemented an entirely new operating model for procurement that digitized supplier and customer interactions, while changing the culture of the organization to dramatically improve customer response and service quality. These actions saved over \$13 million in 2017, and are expected to save up to \$20 million in 2018.

### **Looking Ahead**

We are looking at an even brighter, more productive future. We are perceived as a major leader in the utility industry as we move forward in our efforts to achieve Governor Andrew Cuomo's ambitious Reforming the Energy Vision plan and Clean Energy Mandate.

## **Canal Corporation Accomplishments — 2017**

### **Transition of Canals from Thruway to NYPA**

Effective January 1, 2017, the Canal Corporation successfully transitioned from the New York State Thruway Authority to the Power Authority, which followed a year-long planning and implementation effort. This transfer included a shift in responsibility for management of the State Canal System from the Thruway Authority to the Power Authority.

### **Erie Canal Bicentennial**

The Canal Corporation sponsored and engaged in a host of activities in 2017 to commemorate the 200th anniversary of the start of construction on the Erie Canal in 1786, and the beginning of nine year bicentennial period which culminates in the 200th anniversary of the Canal's opening in 2025. Several signature events marked the milestone, beginning with an official opening of the Erie Canal in Waterford with the Lt. Governor on May 19. Other signature events in Lockport, Fort Hunter, Syracuse, Rochester, and Lockport were held throughout a season which also featured the waiver of fees for recreational vessels on the Canal.

The replica Canal Schooner Lois McClure toured the Canal from end to end, providing visitors and residents alike an opportunity to step aboard and travel back through history to a time when boats like the Lois McClure were ubiquitous on the Canal. The Lois McClure was joined in certain ports by the Corning Museum of Glass, as it provided live glass blowing demonstrations aboard its glass blowing barge as part of a preview for its 2018 cross-canal journey, which will recreate Corning's move of its factory from Brooklyn to Corning by barge in 1868.

The Albany Symphony Orchestra also performed live in canal communities during a week-long "Water Music NY" tour. The performances featured traditional pieces, as well as original works from local artists which debuted during the project. Performances occurred on both land and aboard barges, with the last performance taking place aboard a barge moored in Lock 35 in Lockport in conjunction with a Canal Corporation Bicentennial Signature Event.

### **World Canals Conference**

The World Canals Conference returned to New York State for only its third time in 2017 to mark the start of the Erie Canal Bicentennial. The annual event is hosted by Inland Waterways International and was held in Syracuse from September 24 to September 28. Canal entrepreneurs, enthusiasts, historians and government leaders traveled to Syracuse from around the world to hear from contemporaries about projects, initiatives and strategies being employed by governments and canal managers around the globe. Next year's conference is being held in Athlone, Ireland.

### **Lock O-7 Rehabilitation**

The Canal Corporation embarked on a 3-year, \$25 million complete rehabilitation of Lock O-7 on the Erie Canal. The lock, which was constructed in the early 20th century, will be substantially rebuilt to ensure its stability, safety and operational readiness for the next 100 years. The project, which got underway last November, will include the construction of a new lock house and lock operator shelters, installation of a cofferdam and rock anchors, refacing of lock walls and approach walls, and refurbishing of operating machinery.

### **Reimagine the Canals**

The Canal Corporation announced a major global competition – Reimagine the Canals – in September, 2017 to solicit visionary, implementable concepts and initiatives that promote the Canal System's heritage, foster economic development and tourism, and improve the Canal System's long term financial sustainability. The goals of the competition include promoting the Canal System as a tourist destination and recreational asset; sustainable development along the route; the heritage and historic values of the Canal System; and the long-term financial sustainability of the Canal System.

A jury of experts from a variety of related fields have been empaneled to review 143 applications and select up to 8 finalists which may receive up to \$50,000 to further refine proposals. It is anticipated that up to 3 winners will be announced in September, 2018.