



NEW YORK BATTERY
AND ENERGY STORAGE
TECHNOLOGY CONSORTIUM

NEWSLETTER

April 29, 2019

Dear Members and Colleagues,

On Thursday, April 25th, NYSERDA announced the release of their market acceleration incentive package. It features a few small changes from the initial proposal, which can be seen in the redlined version of the program plans. All of the materials related to the incentives are available [here](#), including the redlined versions of the program plans. This is an enormous moment for New York's Energy Storage Industry, and is the result of long hours of work by the state and stakeholders. We encourage members to reach out to the NY-BEST Team for more information. NYSERDA will be hosting three webinars related to energy storage deployment this week:

Bulk incentive program on [May 2nd](#),

Retail incentive program on [May 3rd](#) and,

Another [webinar](#) May 2nd, focusing on their large-scale renewables REC RFP.

NYSERDA has also announced 3 new workforce development opportunities for clean energy companies in New York. Three new workforce programs totaling \$27.5 million will ensure that new employees have the right expertise, experience, and credentials to meet the clean energy industry's job demands: The Energy Efficiency and Clean Technology Training Program ([PON 3981](#)) will provide \$7 million in funding for training providers to develop and deliver training at all levels to meet employer needs. The On-the-Job Training Program ([PON 3982](#)) will offer \$10 million in wage support for clean energy businesses that hire new employees. The Clean Energy Internship Program ([PON 4000](#)) will invest \$10.5 million to support intern wages for New York State businesses.

To further facilitate energy storage project deployment, NY-BEST is partnering with Con Edison and NYSERDA to host “[Con Edison Energy Storage Day](#)” on Monday, May 6, 2019 at the Con Edison Learning Center in Long Island City. The one-day event features experts from Con Edison, New York City, NYSERDA and the NYS Department of Public Service, as well as from throughout the energy storage industry to get important updates and hear firsthand about the opportunities for deploying energy storage in Con Edison’s territory. The agenda will consist of panel discussions, featured presentations and an interactive “Networking/Ask an Expert” session with State and utility staff at the end of the day. Registration is currently full, but we encourage interested stakeholders to contact info@ny-best.org to request a spot on the waitlist. We are working with Con Edison to expand the attendance limit.

NY-BEST invites all stakeholders to register for our energy storage technology course, taught by Professor Dan Steingart of Columbia University. Attendees will gain an understanding of how different energy storage technologies work, their benefits and limitations, as well as areas of continued technology development. The course is comprised of five one-hour webinar classes taught over the course of five weeks, with one class per week. Classes will be recorded with attendees receiving access to all recordings. More information on the course can be found [here](#) or by reaching out to info@ny-best.org.

In this same vein, NY-BEST offers technical assistance for any companies looking at developing energy storage projects in the state. Whether you are considering customer sited, distribution-level, or wholesale energy storage projects; our experts can provide expertise to help simplify the path forward. Reach out to the NY-BEST Team for more information.

We’d like to remind energy storage start-ups that NY-BEST offers expert incubation services to qualifying New York based start-ups through our [NY-BEST BRIDGE](#) program. Applications for the program can be found on our [website](#). If you have any questions, please contact us at info@ny-best.org.

For companies interested in battery and energy storage product development and testing services, remember that NY-BEST, together with our partners, offers a variety of services and resources that are available to members for discounted rates, including battery testing services at the [BEST Test and Commercialization Center](#), and prototyping services at the [Battery Prototyping Center at RIT](#).

We would like to welcome the newest members of NY-BEST:

Fisher Associates (Rochester, NY) – is an engineering firm that delivers services in the Transportation, Energy, and Land Development market sectors. These services are complemented by the expertise they provide in their Geomatics and Environmental services lines. The foundation of our approach to every project we undertake is “By living our clientship principles and core values, we create powerful client experiences.”

NRStor C&I (Toronto, Canada) - develops, owns, and operates distributed energy resources, with a focus on energy storage. NRStor C&I has significant experience installing battery energy storage systems behind-the-meter at commercial and industrial facilities, and managing operations in a way that reduces the customer's electricity costs without disrupting their operations.

Best Regards,



William Acker
Executive Director



Upcoming Events

Con Edison Energy Storage Day

May 6 8:30 am - 4:30 pm

The one-day event will provide important updates and discussions about the opportunities for deploying energy storage in Con Edison's territory.

Energy Storage Technology: Understanding the Essentials

May 7 5:00 pm - Jun 4 5:00 pm

This online course will provide busy professionals with an understanding of energy storage technologies that are driving transformational change in the way energy is used.

Member Spotlight: ForeFront Power



ForeFront Power is a solar and energy storage project developer based out of San Francisco, CA with satellite offices in New York, Colorado, and Mexico. ForeFront was established in January 2017, after the successful acquisition of SunEdison's Commercial and Industrial division by Mitsui & Co....

Latest News

The Latest News From The Battery And Energy Storage Industry

Funding Opportunities

NY-BEST members received information in this newsletter about upcoming funding opportunities. Becoming a member is easy and economical. Visit <http://www.ny-best.org/Join> for more information.

If your organization is a NY-BEST member, [simply login](#) to access all funding opportunities.

No account? Click "Create New Account" from the [login page](#).



NY-BEST Member News

[Hochul, Maisel Launch Solar Power & Battery Backup Program](#)

Governor Andrew Cuomo's Office of Storm Recovery (GOSR) and City Council Member Alan Maisel (D-Bergen Beach, Canarsie, Flatlands, Georgetown, Gerritsen Beach, Marine Park, Mill Basin, Mill Island, Sheepshead Bay) were on hand at the Flatlands Volunteer Ambulance Center in Brooklyn as they announced the launch of the Solar Power and Battery Backup power program for flood-prone New York City neighborhoods. The three-part effort will help flood-prone neighborhoods across NYC withstand future extreme weather events. The launch of the project was developed after the effects of superstorm Sandy, Hurricane Irene and Tropical Storm Lee. Phase one of the program, which is set to begin during the Fall of 2019, will invest more than \$980,400 to equip four community facilities in Brooklyn and the Bronx with upgrades designed to ensure continuous access to power and maintain services in the event of an electrical grid failure.

[NextEra: Wind + Solar + Storage the "Next Phase" With 21 GW Available](#)

NextEra headlines that you might have gotten to see in the past: -Jim Robo in 2015 – "Post-2020, there may never be another peaker built in the United States — very likely you'll be just building energy storage instead" -NextEra world's second largest solar owner -Jim Robo: Solar and wind plus storage will be cheaper than coal, oil or nuclear, that this will be "massively disruptive to the conventional fleet". -NextEra expects storage to add half a cent to solar in mid-2020's Building on that, in today's Q1 results NextEra reported an increase in its solar power pipeline of 485 MWac, plus a 110 MW solar plus storage facility, while subsidiary Florida Power & Light (FPL) delivered 300 MWac of solar power projects during the quarter. The company states that it has 2,700 MWac of solar power projects in its pipeline beyond 2021, and that there are more than 21 GW of renewable projects within its long term pipeline that it could sell in the correct market conditions. The energy storage pipeline, beyond 2020, grew to 582 MW of projects (excluding projects owned by FPL).

[GE Announces First Solar + Storage Projects Since Renewables Business Restructuring](#)

The New York project is General Electric's first hybrid solar+storage project since announcing its internal reorganization in late January. Once completed, the project will

provide the state with dispatchable renewable energy. The battery systems will store energy generated by the solar PV arrays during daylight hours, allowing the site to meet power requirements during other peak demand periods, according to a company statement. GE's scope of work on the project includes the integration of two solar PV arrays with two energy storage systems, which are expected to store and generate 3 MW/12 MWh and 2 MW/8 MWh, respectively. The two storage systems will contain GE's Reservoir technology, including inverter units, control systems and combiner boxes.

[High-Speed Hurdle: Designing a Fast-Charging Network for Electric Buses](#)

As states focus on goals to lower their carbon emissions, cities and municipalities are increasingly expressing interest in clean transportation, including electric bus fleets. Utilities are also becoming more involved as transit agencies consider pilot programs and technological improvements promise longer battery ranges and faster charging. The growing interest in electric buses over the last two years has led investor- and public-owned utilities alike to focus on accommodating charging infrastructure. Electric bus charging adds a new layer to the infrastructure puzzle that utilities are trying to solve with consumer electric vehicles through planning and installing. One bus manufacturer, New Flyer, is parlaying its understanding of bus performance and capabilities to craft strategies for deploying bus charging equipment.

[NYC Passes Sweeping 'Climate Mobilization Act'](#)

This legislation represents perhaps the biggest and most ambitious city-level step to fight climate change, and leaders in New York City are urging their fellow major metropolitan areas to act. "We are on the precipice of climate disaster, and New York City is acting," City Council Speaker Corey Johnson said in a statement on Twitter after the bills passed. "I hope other cities follow suit." The move to force large buildings in the city to cut emissions is an especially significant one, given that most emissions come from the building and transportation sectors. With numerous skyscrapers and other large developments in the city, cutting emissions there could be a major boon for the city's environment.

[APS and Fluence Investigating Explosion at Arizona Energy Storage Facility](#)

Fluence has dispatched a team of experts to help utility Arizona Public Service determine what caused an explosion at one of its grid-scale battery facilities. The explosion on Friday reportedly left four firefighters injured, including three who were sent to a burn center. Firefighters responded to a call on April 19 after smoke was seen rising from APS' McMicken Energy Storage facility, one of two identical 2-megawatt/2-megawatt-

hour grid-scale batteries the utility installed in 2017 in Phoenix's growing West Valley region. According to local press reports, the firefighters were inspecting the facility's lithium-ion batteries when they were hit with an explosion. Several of the firefighters received chemical burns, the local fire department told the Arizona Republic. The firefighters were later reported to be in stable condition.

[Welcome to South Korea](#)

Fifteen hours away by air from Denver, is an amazing country doing big things in batteries and clean energy. Nestled on a peninsula in East Asia, South Korea has become a global leader in pop culture, technology, and the production of hardware for solar and energy storage. Earlier this month, Nikola Power was selected as one of 7 winners in LG Chem's first battery challenge and had the opportunity to visit South Korea as a result. Nikola Power was part of an impressive group of startups from around the world that competed for a chance to collaborate with LG Chem on future energy storage solutions, products, and services. After four days in South Korea with some of the most sincere and intelligent energy storage experts in the world, I am more excited about the future of Nikola Power than ever. LG Chem's research facility in Daejeon (South Korea's 5th largest city) is a world class complex with hundreds of dedicated energy storage experts building, challenging, and designing pieces of our clean energy future. I could not be more proud to be one of seven global startups selected to work with LG Chem's terrific Open Innovation and Research teams to map out how we can all collaborate to drive innovation and adoption in clean energy storage.

[New York's VDER Gets a Few Tweaks](#)

The Empire State has grand green ambitions – 100% clean energy by 2040, 6 GW of distributed solar, many more GW of utility solar, 3 GW of energy storage, and 9 GW of offshore wind by 2035. However, its compensation methods for distributed renewable energy has led to investment fall offs (73% less in Q1'18 versus Q1'17), and driven multiple attempts (1 and 2 of a few) to repair a program that was originally massively oversubscribed. With this, per an analysis by the Natural Resource Defense Council (NDRC), the New York state Public Service Commission (PSC) has issued an order, In the Matter of the Value of Distributed Energy Resources (VDER), an Order Regarding Value Stack Compensation (pdf), that aims to help increase the ability of solar power projects in New York to get financing. From the document, specifically, the order includes the following:

[Sterling Light Storage Unit Marks Milestone](#)

The Sterling Municipal Light Department is marking a major milestone related to the department's two energy storage systems. In March, SMLD celebrated over \$1 million in avoided costs to the light department, thanks to the two systems. SMLD's first energy storage system, a 2-megawatt, 3.9-megawatt-hour utility scale battery from NEC Energy Solutions, was the first of its kind in Massachusetts when it went online in December 2016. The project was designed to provide Sterling with up to 12 days of emergency backup power to critical public facilities during severe weather events, as well as lower utility costs by dispatching the battery during peak load periods.

[How Invenergy Quietly Became One of the Biggest Players in Grid Storage](#)

It's not that Invenergy was ever shy about its storage ambitions. The Chicago-based developer, which has built 22,600 megawatts of wind, solar and natural-gas generation, entered the storage market in a big way back in 2015. It delivered two 31.5-megawatt projects within six months of each other, outranking any other batteries installed in the U.S. that year. Then the company went quiet — a fittingly massive followup didn't materialize. Until early this year, when Invenergy revealed that it would supply much of utility Arizona Public Service's landmark 850-megawatt energy storage procurement, designed to shift its ample solar resource into nighttime capacity. APS enlisted Invenergy to supply a 50-megawatt system under a power-purchase agreement, and to build and transfer a portfolio of 140 megawatts connected to APS solar plants (more may follow, as the details get ironed out).

[Federal Funding Will Charge Townsville Battery Plant](#)

Townsville Mayor Jenny Hill is urging both the Federal Government and Opposition to commit their support to the proposed lithium-ion battery plant to help secure up to 1000 direct jobs for our city. Cr Hill is calling for both sides to commit \$50 million in funding to build trunk infrastructure and improve access to the site at Lansdown near Woodstock. "A lot of money if going to be promised right across our country during this Federal Election and it's more important than ever for the North to get its fair share," Cr Hill said. "With all the benefits this project will bring to Townsville and the North Queensland region, it's imperative that both sides of politics commit to supporting it with federal funding."

[Novacab is Set to Create 32 Well Paying Jobs in Plattsburgh](#)

Novacab, a Canadian based green energy company has expanded its manufacturing facility to Plattsburgh their first in the United States. Novacab is a developer and manufacturer of energy storage technologies and more specifically hybrid energy

storage. President & CTO, Dr. Stéphane Bilodeau has a background in thermodynamics, he explains what Novacab does, "hybrid energy storage technologies. That includes and integrates thermal energy storage plus electric energy storage." Dr. Bilodeau has spent the past two decades working on his applications and created five generations. "A conversion of heat, waste heat, solar heat, geothermal heat, industrial waste heat... and convert it back to electricity for later use." Michael Carty, the President, and CEO told us the relocation to Plattsburgh would mean 32 well-paying jobs.

NOHMs Technologies to Develop Energy Storage Battery Optimized for Indoor Use in NYSERDA-Funded Project

NOHMs Technologies, Inc. will develop batteries that are optimized for indoor use and conform to New York State building and fire codes. Funded by the New York State Energy Research and Development Authority (NYSERDA) Technology and Business Innovation group, NOHMs will create optimized electrolyte formulations that overcome traditional barriers to commercialization associated with ionic liquid (IL) electrolyte, including performance and cost. The final goal of this project is to demonstrate an energy storage system (EES) that meets performance and to establish a commercialization path for the new materials, including manufacturing process and cost assessment, market studies and regulatory requirements, and estimates of greenhouse gas (GHG) reductions.

MGX Minerals Announces Conditional Exchange Approval for Listing of Zinc-Air Flow Battery Subsidiary

MGX Minerals Inc. ("MGX" or the "Company") (CSE: XMG / OTCQB: MGXMF / FSE: 1MG) reports that its wholly owned subsidiary MGX Renewables Inc. ("MGXR"), a leader in the development of zinc-air flow batteries for applications requiring long duration, high capacity storage, has received conditional approval to list its shares on the Canadian Securities Exchange ("CSE"). MGXR expects the listing to be finalized and shares to commence trading shortly. For more information on the MGXR plan of arrangement, please refer to the Company's news release dated November 1, 2018, available on the Company's profile on SEDAR at www.sedar.com and at www.mgxminerals.com. UL / CSA / ANSI Approval MGXR reports regulatory approval for its system under UL / CAN / ANSI Standard 1973 is in progress. Recent research and development efforts thus far have focused on ensuring the reliability of materials used in fabrication of the systems. To date no significant issues have been identified and there is no expectation of any

design changes inclusive of Fuel Cell, Energy Storage and Regenerator Modules prior to approval.

[*FERC Staff Seeks Clarification of Proposed RTO/ISO Tariff Revisions to Facilitate Participation of Energy Storage Resources in Regional Markets*](#)

Energy storage resources such as pumped storage hydroelectric generators, lithium ion batteries, and flywheels, are becoming increasingly significant in maintaining the reliability and resilience of the interstate electricity grid. However, these resources, which both inject energy into the grid and receive energy from it, have unique operating characteristics which affect their ability to participate in organized markets for the supply of capacity, energy, and ancillary services. In February 2018, the Federal Energy Regulatory Commission issued its Order No. 841, in which it required each Regional Transmission Organization and Independent System Operator to revise its tariff to facilitate participation of energy storage resources in the capacity, energy, and ancillary services markets that it administers. Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators, Order No. 841, 162 FERC ¶ 61,127 (2018). Among other things, the tariff revisions were required to ensure that each electric storage resource within a region served by an RTO/ISO is eligible to provide all capacity, energy, and ancillary services that it is technically capable of providing, and ensure that such resources can be dispatched and can set the wholesale market clearing price as both a wholesale seller and wholesale buyer consistent with existing market rules.

[*Con Ed's New Commercial Storage Demo Puts the Utility in the Driver's Seat*](#)

New York utility Con Edison is testing a commercial business model where it calls the shots and the customer simply hosts the battery. This model simplifies the commercial energy storage sales process by pitching a lease for space in areas where the utility needs help, rather than the typical bill management use case, where batteries lower the power bill by predicting and neutralizing a customer's demand spikes. Distributed energy company GI Energy (now part of Shell's cleantech empire) is developing four 1-megawatt/1-megawatt-hour systems to test whether this model works. The first two, in City Island (in the Bronx) and Staten Island, have entered commissioning and will be operational in about a month. A third is beginning construction, and site selection for the fourth is ongoing. The companies first announced the effort in early 2017.

[*Governor Cuomo Announces Third Solicitation for Large Scale Renewable Energy Projects to Accelerate the Development of Clean Energy and Combat Climate Change*](#)

Expected to Spur Over One Billion Dollars in Clean Energy Investments and Create Over 1,000 Good-Paying Short- and Long-Term Jobs Accelerates Progress Toward Governor Cuomo's Proposed Mandate for 70 percent of State's Electricity to Come from Renewable Sources by 2030 under the Green New Deal Governor Andrew M. Cuomo today announced the third annual solicitation for large-scale renewable energy projects under the state's Clean Energy Standard. The solicitation is expected to support approximately 1.5 million megawatt-hours of renewable electricity per year, enough to power over 200,000 homes, and will accelerate New York's transition to a clean energy economy. The solicitation is also expected to spur over one billion dollars in private investment, creating over 1,000 good-paying jobs for New Yorkers. Today's announcement advances progress toward New York's proposed nation-leading commitment to secure 70 percent of the state's electricity from renewable resources by 2030 under Governor Cuomo's Green New Deal. "For the third year in a row, New York is continuing to lead by example when it comes to advancing large-scale renewable energy projects that will bring significant economic growth and good-paying jobs to the state," Governor Cuomo said. "This action builds on our strong commitment to renewable energy and will be a critical part of the state's bold plan to meet the unprecedented challenges posed by climate change."

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News From Beyond New York

[Duke, Eversource Commit to Create Energy Storage Safety Standards](#)

The U.S. energy storage market is growing rapidly — expected to double this year after nearly doubling in 2018, according to Speakes-Backman. The ESA initiative seeks to steer the storage industry from the pitfalls of expanding too quickly without safety standards. "If you look at the trajectory of some other industries that kind of went gangbusters in growth but didn't take care of this at the early onset, there were some missteps," Speakes-Backman told Utility Dive. Duke is planning to install about 400 MW of battery storage over the next decade based on its various integrated resource plans, spokesperson Randy Wheelless told Utility Dive. Duke also has a commercial arm that launched battery projects in Texas and Ohio.

[Battery Storage Study to Assess Electric Efficiency](#)

Researchers from Clarkson University will conduct a study to determine whether two Adirondack villages can lower electricity costs by using a form of battery energy storage. The feasibility study for Tupper Lake and Lake Placid will assess whether the villages can use a process called “peak shaving” using battery storage to reduce power use during maximum demand. The two villages receive a fixed amount of hydropower from the New York Power Authority and if they exceed their quota, power prices increase. The goal of the study is to determine whether battery storage can be used to keep the villages within their allocation and avoid the increased costs on the open market.

[Solar + Storage Can Outcompete "Mid-Merit" Gas Units, Not Just Peakers](#)

Solar plus storage has begun displacing new natural gas peaking units in Arizona, and 8minuteenergy Renewables CEO Tom Buttgenbach has said his firm can build solar plus storage at a lower price than gas peakers “anywhere in the country today.” A new study shows that solar plus storage (S+S) also outcompetes new “mid-merit” gas units in four of five grid service areas across the nation in a scenario where current rates of compensation for grid services hold steady over 30 years. S+S also costs less than these gas units in a number of other cases studied. The study was published by battery maker Fluence, a joint venture of Siemens and AES. Mid-merit or “load-following” units operate at an average capacity factor of about 15% to 45%, mid-way between peaker and “baseload” fossil-fired or nuclear units.

[With Utility's Support, Solar-Plus-Storage Takes Off in Vermont](#)

Green Mountain Power is expanding solar-plus-storage pilot programs and finding success in the systems’ ability to reduce peak demand. When Tom Feist and his wife, Linda Schadler, moved to northern Vermont last year, they knew they wanted a backup power source to protect them from bitter cold and snow and for added peace of mind in a relatively remote home. They immediately decided on a solar array to provide electricity, but had choices to make for a backup power system. While a propane generator was cheaper than the initial \$12,000 they eventually spent on the battery, the costs penciled out comparably over the lifetime of energy credits from the system in addition to lower maintenance expenses than what a generator would require. “Long-term it looked like a better deal, for environmental and financial reasons,” Feist said.

[Sungrow Debuts a New Energy Storage System](#)

As one of the first on the US market to offer high-power capabilities, ST556KWH-250 features four units of 60kW modules, which enables flexible design to customize system

capacity and module quantity, and can be widely used in multiple applications, including peak shaving, demand response and micro-grid. The main innovation behind the new ESS solution is its integration with Samsung's latest E3 Battery to obtain a smaller size and higher energy densities, along with minimized on-site labor and wiring. Thanks to its local controller, HAVC and FSS design, ST556KWH-250 ensures flexible operations and easy maintenance. To further strengthen its ESS range, Sungrow introduced its all-new DC-Coupled ESS solution. Compared to an AC-Coupled system, the new DC-Coupled system has a lower connected power distribution, and is easy to transport and install. With its compact mechanical design, this system can reduce initial investment by around 20 percent.

Battery Storage Backers Energized by Prospect of New Tax Credit

Battery and other energy storage companies are seeing their best shot in years at getting an investment tax credit that would kick their industry and renewable energy into higher gear. The Democratic-controlled House is considering the idea as it looks at how to take action on climate change. And in the Republican-controlled Senate, there's a new campaign afoot for an energy storage investment tax credit, led by Sens. Cory Gardner (R-Colo.) and Martin Heinrich (D-N.M.). Lawmakers who support the credits say they're needed because while battery prices have declined, battery storage still hasn't been deployed to a significant degree.

Sens. Moran, Klobuchar Introduce Bill to Help Rural Communities With Energy Storage

U.S. Sens. Jerry Moran (R-KS) and Amy Klobuchar (D-MN) introduced legislation to help rural communities and electricity cooperatives increase renewable energy storage and upgrade grids. The Expanding Access to Sustainable Energy (EASE) Act will provide access to relevant resources and expertise for these rural communities to implement energy storage and upgrade the grid. "Kansas is a nationwide leader in renewable energy and an increased capacity for energy storage is imperative to grow and capitalize on our renewable energy potential," Moran said. "This commonsense, bipartisan legislation will increase grid reliability and resilience, and help communities in Kansas and across the country – especially in rural areas – access energy supplies during peak usage periods with less burdensome rate hikes." The Department of Energy created the Solar Utility Network Deployment Acceleration (SUNDA) project in 2013 to increase the adoption of solar energy in rural communities across the country. The SUNDA project ended in 2018, but the EASE Act would implement similar initiatives.

ENERGY STORAGE:
Changing the way the world uses energy

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