



NEW YORK BATTERY
AND ENERGY STORAGE
TECHNOLOGY CONSORTIUM

NEWSLETTER

April 11, 2019

Dear NY-BEST Members and Colleagues,

It is an important and active time for New York's energy storage industry. We are anticipating that NYSERDA's incentive package for energy storage will be acted on at the April 18th meeting of the NYS Public Service Commission and we will certainly share an update with members following the Commission's actions.

The state's major utilities are finalizing details on their bulk system energy storage procurements, and the State's market design working group has begun analyzing New York's energy industry for inefficiencies and opportunities. These are all significant steps that are moving the energy storage industry in the direction toward achieving our deployment goals.

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. Space is limited, so we encourage you to [register](#) early.

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.

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:

Young/Sommer LLC (Albany, NY) – is a recognized leader in environmental and energy law in New York. Our attorneys' decades of experience in private practice and State government allow us to understand the challenges facing small businesses, municipalities, large corporations and individuals.

Accencore LLC (Burnt Hills, NY) - is a multi-dimensional infrastructure development firm led by a team of professionals with decades of experience in turnkey infrastructure rollouts, acquisition, and deployment. Comprehensive development and project management is their hallmark, spanning from site identification to shovel ready sites.

Saturn Power (Baden, Ontario) - is passionate about being part of the solution to providing clean, sustainable renewable energy. All the members of the Saturn Power Team have deep experience in their respective fields, with high quality and complementary educational backgrounds, professional qualifications, and operational experience. Collectively, the Saturn Power team has over 50 years of renewable energy development experience and is exceptionally skilled in all areas of power development including siting, land use planning, financing, construction and operation.

Best Regards,



William Acker
Executive Director



Upcoming Events

Con Edison Energy Storage Day

May 6 8:30 am - 4:30 pm

Presented in Partnership by Consolidated Edison of New York, NY-BEST and NYSERDA.

NY-BEST Energy Storage Innovation Conference

Oct 2 8:00 am - 6:30 pm

Clean Energy and Energy Storage Technologies: Growing a Clean Energy Economy

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

[New Program Will Spur Energy Storage and Electric Vehicle Innovations](#)

Governor Andrew M. Cuomo announced Tuesday an innovative partnership between the New York University Tandon School of Engineering Urban Future Lab and the New York Power Authority that will recruit and support startup businesses pursuing electric vehicle and energy storage technologies. The partnership will help advance Cuomo's Green New Deal, a nation-leading clean energy and jobs agenda that will aggressively put New York State on a path to economy-wide carbon neutrality. "As a national leader in the clean energy economy, New York State is working to stimulate growth that will generate jobs and economic opportunities, while achieving a healthier environment," said Cuomo. "This new innovative partnership will recruit and support a new wave of entrepreneurs who have the knowledge and expertise needed to develop new technologies with utilities and help us build a cleaner, greener New York for generations to come."

[States Can Grow Battery Resources with 'One Simple Step,' Report Finds](#)

The cost of batteries is declining, but a key to expanding their use may actually be found in how another resource is defined. "One of the key findings of this report is that the old definition of efficiency needs to be updated," CEG Project Director Todd Olinsky-Paul said. "As more renewable energy is deployed, reducing peak demand becomes more important." Olinsky-Paul, the report's author, said that while traditional energy efficiency measures cannot address peak demand, storage can. More states should expand their ideas of efficiency, "to embrace peak demand reduction and the new technologies, like battery storage, that can accomplish it."

[NEC Helps Develop Three Energy Storage Sites in China](#)

Massachusetts-based NEC Energy Solutions has completed two energy storage projects in China totaling 18 MW and is working on another 6-MW site. Through its exclusive distributor in China, Puxing Energy, NEC developed two 9-MW battery facilities providing frequency regulation for the Hang-Jin and Feng-Run power plants located in Ordos City, Neimongol Province and Tanshan City, respectively. Ray Power owns and operates the energy storage systems. In addition, NEC was awarded a 6-MW project by Ray Power that is now under construction and located in Puzhou City, Shanxi Province. "Since China has one of the fastest growing renewables and energy storage markets in the world, our global expansion has been accelerated across the country," said Steve Fludder, CEO of NEC Energy Solutions. "Our collaboration with Puxing Energy has been instrumental in our success with Ray Power, a leader of frequency regulation services in the market, since we first started working together in 2012. They are an excellent customer and we look forward to working with them in the future as the market continues to grow."

[LA Could Replace Traditional Power Plants with Home Solar, Experts Say](#)

Renewable energy experts and a new report from the solar industry say Los Angeles could generate a larger portion of its electricity with wider use of residential solar panels backed up by battery storage. The concept of a "virtual power plant" that could replace one of three natural gas plants being phased out by the city has already been deployed successfully in Orange County and Waltham, Vermont. But Los Angeles, where officials want to rely entirely on renewable energy by 2050, would be the largest U.S. city to go virtual. The report from San Francisco-based residential solar company Sunrun amounts to a sales pitch to the city to expand the number of solar residences to at least 75,000, which would be enough to collectively replace the power production of one gas-powered plant and save \$60 million.

[Legislation Would Give Energy Storage the Same US Tax Benefits as Solar](#)

If energy storage advocates have their way, storage will receive the same US tax benefits as does solar — an investment tax credit for new installations. Legislation to do just that was introduced in the House of Representatives late last week. Rep. Mike Doyle, D-Pa., would create a separate energy storage infrastructure investment tax credit based on the existing tax credits for solar energy. He introduced a similar bill in the last session of Congress, as did the U.S. Senate. The senate is expected to follow suit again during this session of Congress, all to provide parity among 21st century clean energy technologies. "We commend Congressman Doyle for his leadership in the introduction of

today's legislation, which if enacted, would immediately boost investment in the energy storage industry and create even more economic opportunity," said Energy Storage Association Chief Executive Kelly Speakes-Backman, in a statement. "It is a simple and impactful clarification of the current investment tax credit that would ensure equitable access for standalone storage and send long-term investment signals to an industry that supports tens of thousands of jobs nationwide."

[Analysis Group Presents NYISO Carbon Pricing Study Plan](#)

Stakeholders expressed some skepticism last week as the Analysis Group revealed the outline of a new study underway to provide insights into pricing carbon in NYISO's markets. The ISO surprised stakeholders in February when it announced it had commissioned Analysis Group to supplement the Brattle Group's foundational study in order to finalize a pricing scheme. (See NYISO Commissions New Social Cost of Carbon Study.) Susan Tierney, a senior adviser with Analysis Group, allayed their concerns with poise and humor as she told the Installed Capacity/Market Issues Working Group on Thursday that she and colleague Paul Hibbard "had some ideas for additional things that we didn't think were captured in the Brattle report, starting with macroeconomic or co-benefits, known as extra-market activities," and second, discussing "some reasonable but less conservative assumptions."

[SUSI Partners Acquires 50% of Innovative California-Based Energy Storage Portfolio](#)

SUSI Partners acquires a 50% stake of a portfolio of behind-the-meter battery storage systems from Macquarie's Green Investment Group through SUSI's dedicated Energy Storage Fund. The projects are located in the Western LA basin in California and have a total capacity of 63MW/340MWh. The portfolio of lithium-ion battery storage projects is expected to be a key enabler for the State of California to reach their target of 100% carbon-free electricity by 2045. The portfolio was originally developed by AMS, a local developer who will continue to manage and dispatch the assets. The diversified portfolio has a total storage capacity of 340MWh and comprises over 90 individual battery storage assets, which are substantially contracted for 10 years and are spread across multiple high-load commercial and industrial host sites.

[NYPA Initiative Targets Quicker Commercialization Path for Storage, EV Startups](#)

New York is continuing to search for innovative ways to enable clean energy businesses, working to leverage investments in new technology alongside improvements to the environment and electric grid. "Investments in clean energy technologies are advancing our aggressive clean energy goals and resulting in economic growth across the state,"

Lieutenant Governor Kathy Hochul, D, said in a statement. The state is rushing to modernize its grid and electric industry through its Reforming the Energy Vision (REV) initiative, searching for new utility business models that will grow investment in technologies like solar, wind and energy efficiency. The state's Green New Deal builds on the REV strategy and aims for New York's power to be 100% carbon-free by 2040.

[FERC Asks Grid Operators for More Detail on Storage Participation](#)

FERC's Monday letters to regional grid operators are the latest development on Order 841, which has yet to be finalized more than a year after its unanimous approval. Last February, FERC directed regional grid operators to devise new tariffs for storage market participation that allow the resources to provide multiple electricity market services, as well as set power market prices as purchasers and sellers of energy. The nation's regional transmission organizations and independent system operators filed their responses in December, detailing a wide range of tariff changes for storage participation. Many energy storage backers, however, saw the filings as incomplete. At the time, analysts told Utility Dive that many of the grid operators are "leaving some required pieces out" of their orders.

[Governor Cuomo Announces Selection of Developer to Install Rooftop Solar Arrays at Javits Center](#)

Governor Andrew M. Cuomo today announced the selection of a developer to design and install up to 1.4 megawatts of solar renewable energy on the green rooftop of the Javits Center on Manhattan's West Side. New York City's largest rooftop solar generation project to date will offset the building's electric load and directly support the Governor's Green New Deal, a nation-leading clean energy and jobs agenda for 100 percent carbon-free electricity in New York by 2040 and a ramp up for 70 percent of electricity to come from renewable energy by 2030. Siemens, a technology company and infrastructure provider with nearly 4,000 employees across New York State, was selected in the New York Power Authority's competitive bid process and will now begin final designs and permitting for the rooftop project.

[The Race to Build the World's Largest Solar-Storage Plant Is On](#)

Last year, a company won a contract to build a 65-megawatt solar and battery farm in Arizona. A month later, the Saudis came out with a \$200 billion plan to build the world's biggest battery-backed solar farm by 2030. Then a firm proposed a nearly 500-megawatt solar-storage site in Texas's oil patch. The race to build the biggest solar-battery plant is officially on. And the latest to join the competition is renewable energy giant NextEra

Energy Inc., which said Thursday that it'll build a project in Florida that will claim the title of the largest solar-powered battery in the world. The 409-megawatt battery will be added to an existing 74.5-megawatt solar plant on the west coast of the state near Tampa, a company statement shows.

[Enel Moves on 13 GW Pipeline, Flips 6 GW of Solar+Storage](#)

The wall of money often comes in sums greater than hundreds of millions of dollars at a time: a \$200 million fund seeking C&I and small-scale utility solar projects, or wind+solar developers selling pipelines for more than \$100 million. And while we don't know the official purchase price, Italian energy giant Enel has revealed that it has bought Tradewind Energy and its U.S. project pipeline of 7 GW of wind and 6 GW solar+storage — and 13 GW of projects almost always costs more than a cool hundred million. Immediately following the transaction to purchase the portfolio, Enel flipped the solar+storage portion to Australia's Macquarie. Tradewind Energy principals Rob Freeman and Geoff Coventry will stay on to manage the portfolio, and Enel says that it has earned a positive return on the flip.

[New York's Latest Innovation Challenge Targets Long Duration Energy Storage Startups](#)

The development of systems capable of storing over six hours of energy economically is being supported in New York with an Innovation Challenge launched by the New York Power Authority (NYPA) and Urban Future Lab, a cleantech innovation centre. Also aimed at supporting promising new technologies and business models for electric vehicles (EVs) and their related infrastructure, the challenge will support a “handful” of selected startups to support and help prepare them for working with large utilities. New York has in place a roadmap to reach 3GW of energy storage deployment by 2030. Similarly, the state has a goal of putting 800,000 EVs on the road by 2025, in an overall long-term energy and climate strategy that also targets 40% emissions reductions based on 1990 levels by 2030.

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News From Beyond New York

[Will FERC Trample State and Local Authorities in DER Rulemaking?](#)

The Federal Energy Regulatory Commission may be poised to upset a long-standing balance among local, state and federal decision-making as it considers aggregating

distributed energy resources in a way that eliminates local jurisdiction. This outcome would represent a short-sighted and severe overreach by the commission. The commission has issued a final rule requiring regional transmission organizations (RTOs) and independent system operators (ISOs) to enable storage resources, including those connected to distribution systems or behind the meter, to participate in the wholesale market. FERC has also proposed the same approach for all aggregated distributed energy resources (DER), including distributed generation and electric vehicles.

[Eversource Battery Storage Project Gets Green Light from P-Town Voters](#)

In a unanimous vote at a town meeting this week, the residents of Provincetown approved a lease for Eversource to operate a community battery storage project at the town's transfer station. The state-of-the-art community battery will provide back-up power for customers in Provincetown, Truro and Wellfleet during a power outage on the power distribution line that runs along Route 6 serving the Outer Cape towns. "We're proud to be building this community battery project in partnership with the Town of Provincetown, and we're excited to deliver a clean energy solution to our customers on the Outer Cape," said Eversource Director of Clean Energy Development Charlotte Ancel. "The project is a strong example of how clean energy transformation can help enhance system resiliency and reflects our commitment to serve as a clean energy catalyst for the region and an environmental steward for our customers."

[Congress Must Pass Energy Storage Tax Credit Bill](#)

Today, Rep. Mike Doyle (D.-Pa) introduced a bill that would establish a federal investment tax credit for business, residential, and utility-scale use of batteries and other energy storage technologies. Among other things, the legislation seeks to establish a 30 percent tax credit for both commercial and residential energy storage through 2021. That incentive would be phased down annually before leveling off to a permanent 10 percent tax credit after 2021 for commercial projects and zeroing out for residential projects. Battery storage is a fast-growing energy technology. In the last year alone, the costs of manufacturing and deploying battery storage has fallen by over a third, according to research by Bloomberg NEF. The legislation would help get energy storage deployed at both the commercial and residential level, and when combined with the falling costs of wind turbines and solar power, would make renewable electricity even cheaper than running existing fossil fuel plants in many parts of the country, according to the Union of Concerned Scientists (UCS).

[APS Seeks Proposals for Two Solar, Storage Projects in Arizona](#)

Arizona's largest electric company, APS, has issued two requests for proposals (RFPs) this week to add partners on two clean energy projects. One project would add batteries to existing APS solar plants in the more rural stretches of Arizona, to allow the facilities to store unused energy after daily production halts. The second project requires a partner for development of a brand new solar plant and storage combination. Both efforts, APS contends, will allow the company to provide its customers more solar energy after sundown. "These projects aim to make solar work harder for APS customers and ensure our state's peak energy needs are met with even more clean energy," Brad Albert, vice president of Resource Management for APS, said. "Gone are the days of the sun dictating solar power's hours. With our new energy storage projects, APS will be giving customers solar after sunset."

[Battery Reality: No Breakthroughs Will Top Lithium-Ion Technology Anytime Soon](#)

Clean-energy visionaries have long argued that the world needs a better battery capable of selling skeptical consumers on electric cars and running the grid on renewable power. And yet the battery of the future — at least for the coming decade — will almost certainly be the battery of the past. The humble lithium-ion battery has built up such a commanding lead in the market that competing technologies may struggle to catch up. That lead will only widen as a wave of planned new lithium-ion factories comes online in the next five years. The batteries pouring from new factories in China, the U.S., Thailand and elsewhere will further drive down prices, which have already plunged 85 percent since 2010. And the billions spent on factories will create a powerful incentive for the industry to keep tweaking lithium-ion technology, improving it bit by bit, rather than adopting something else.

[Tesla's Vision of an EV + Solar + Battery Storage Future Now Becoming Industry Norm](#)

Part of investors' fascination with Tesla has long been the company's focus on the evolution of manufacturing hardware and software. The plan to integrate energy generation and storage — to "create stunning solar roofs with seamlessly integrated battery storage," as described in Master Plan, Part Deux — has also provided allure. Sure, the Tesla acquisition of SolarCity and how it has been rolled into Tesla has been controversial, but solar is a necessary element of Tesla's EV + solar power + battery storage vision for a sustainable future. When, on April 6, Tesla CEO Elon Musk made a confirmed visit to Buffalo to scope out the RiverBend plant, a 96-acre site at a sharp turn on the Buffalo River, the media, plant workers, and Tesla fans were all a-flutter. No, Musk

has not spent much time on the premises at what's called Gigafactory 2 (perhaps no time before this), but he has personally supervised the design and testing of the solar tiles that are Tesla's next-gen solar rooftop product there.

[Another Breakthrough for Energy Storage? Innovative Auctions Made Prices Plummet.](#)

Rapid and low-cost development of renewables can reduce greenhouse gas emissions, but a lack of affordable energy storage is one factor preventing wind, solar and other clean energy sources from dominating the energy mix. That could change with the use of an innovative procurement method that's generating excitement in the electricity sector: reverse auctions. Storage such as lithium-ion batteries and hydroelectric dams is key to integrating renewables into the grid. It allows us to stow renewable energy when it is abundant, and use it later on cloudy days, when there is little wind or other times when those resources are scarce.

[New NFPA Battery Standard Could Impact Data Center UPS Designs](#)

A new standard being developed by the National Fire Protection Association could have a big impact on the use of batteries in UPS systems, according to a group of data center energy experts, who are seeking to mobilize the industry to seek revisions. The new NFPA 855 standard was developed to provide safety guidance for the growing use of lithium-ion batteries in uninterruptible power supply systems (UPS) that provide emergency power in data centers and other mission-critical facilities. NFPA 855 includes new design and testing protocols for lithium-ion UPS systems. But data center professionals say the standard has been broadened in ways that could alter current practices in deploying other types of data center UPS systems, and could potentially be applied to existing facilities.

[Maryland Passes Energy Storage Pilot Program to Determine Future Regulatory Framework](#)

HB 650, which passed the state Senate in a 47-0 vote on Thursday after passing the state House, requires the PSC to set up a pilot program in order for Maryland's four investor-owned utilities to start developing energy storage projects under specific commercial and regulatory models. The pilot program is the "outgrowth of years of work by many people on energy storage in Maryland," Montgomery County Del. Marc Korman, who sponsored the measure, told Utility Dive. "There are a lot of different things that the regulators, utilities and the other stakeholders need to figure out, and we want to make

sure they're doing that and moving the ball forward," Korman said. "These pilots create a structure for them to do that."

Clean Energy Group: Massachusetts Creates Nationwide Precedent to Reduce Storage Costs

Batteries are now eligible for state energy efficiency incentives in Massachusetts, and this first-in-the-nation policy should be considered by other states, according to a new report published today by Clean Energy Group (CEG). The report details how Massachusetts, a national leader in energy efficiency, recently became the first state to formally incorporate energy storage as an active demand reduction measure in its energy efficiency funding program, and it explains the simple steps other states can take to do the same. The state's January 2019 action was supported with original economic analysis provided by CEG. The report, "Energy Storage: The New Efficiency — How States Can Use Efficiency Funds to Support Battery Storage and Flatten Costly Demand Peaks," explains the steps Massachusetts took to become the first state to integrate energy storage technologies into its energy efficiency plan, including 1) expanding the goals and definition of energy efficiency to include peak demand reduction, and 2) showing that customer-sited battery storage can pass the required cost-effectiveness test. It also concludes that battery storage would have been found to be even more cost-effective had the non-energy benefits of batteries been included in the calculations.

Thermal Energy Storage Market to Grow

As per a recent industry report put forward by Global Market Insights Inc., the thermal energy storage market is forecast to register its name in the billion-dollar fraternity down the line of six years, by exceeding a revenue of \$55 billion by 2024, with a projected compound annual growth rate of 18.5 percent over 2018-2024. Favorable government initiatives toward renewable energy-based power generation, along with increasing demand for uninterrupted power supply, will augment the thermal energy storage market. In addition, increasing customer focus toward energy efficiency, coupled with the implementation of energy storage plans, will further complement the industry landscape. The molten salt thermal energy storage market was valued over \$9 billion in 2017. Surging demand for large-scale storage capacity across the industrial and commercial establishments along with rising deployment of CSP plants will increase the product penetration. Further, limited heat loss coupled with the ability to provide superheated steam are some of the underlying features stimulating the product adoption across various applications.

[Tennessee Seeks 200 MWac of Renewables + Energy Storage](#)

The Tennessee Valley Authority's (TVA) 2019 Integrated Resource Plan included the potential for 3-8 GW of solar power through 2038. Some thought this number was a bit soft with the amount of flexible generation – specifically a number of large hydropower plants – the region has, and the amount of fossils still needing be shut within the utility region. The company did note that they'd have a new solar program in place by 2020. On April 1, the Tennessee Valley Authority (TVA) issued a Request for Proposals (RFP) for 200 MWac of renewable energy resources, with a strong interest in energy storage. The RFP requests respondents submit proposals with 12-, 15- and 20-year delivery periods. The deadline to submit questions is May 1, with proposals due by May 15 and selection of projects expected in October. The projects must be online by October 31, 2022.

[City of Dover Issues Renewable Energy RFP](#)

Looking to diversify its current resource mix, the City of Dover, Del., has issued a request for proposals (RFP) for clean energy. The city is soliciting bids for solar and/or solar-plus-storage but will also consider bids for wind power. In issuing the RFP, Dover says it wants to reduce market exposure and its carbon footprint, increase self-reliance, and exceed sustainability goals. The notice of intent to bid is 4:00 p.m. on April 15. Respondents are expected to submit an intent to bid form, participate in a pre-bid conference and submit their proposal in accordance with RFP guidelines.

[Utilities Should Consider These Creative Tools to Speed System Decarbonization](#)

If we needed another proof point of the growing role sustainable business practice is playing in guiding investment decisions, the recent announcement (PDF) that an institutional investors group representing \$1.8 trillion in global assets has asked the country's 20 largest publicly traded energy generators to commit to achieving net-zero carbon emissions should serve as a mic drop. Environmental, social and governance (ESG) considerations are an ascendant force in financial markets, emerging to play a key role in financial decision-making with some estimates finding ESG-focused investments totaling \$20 trillion in assets under management around the globe — about one-quarter of all professionally managed investments. That's about equal to the total U.S. economic output for a full year. New York City Comptroller Scott Stringer, a lead signatory for the initiative, noted in a press release, "The climate crisis is an imminent threat not only to our planet, but to pensions systems, and ultimately, our beneficiaries. Delaying climate action is like denying climate change — it's not an option for these companies or for anyone else." The coalition — which includes among others the largest U.S. pension

