



**NEW YORK BATTERY
AND ENERGY STORAGE
TECHNOLOGY CONSORTIUM**

NEWSLETTER

January 18, 2019

Dear NY-BEST Members and Colleagues,

Earlier this week, New York Governor Andrew Cuomo delivered his [2019 State of the State address](#) and proposed a “Green New Deal” for New York. As part of the initiative, Governor Cuomo proposed establishing a mandate to require 100% carbon free electricity in New York by 2040, the most aggressive goal in the nation. To achieve this, the Governor proposed increasing the State’s Clean Energy Standard from 50% to 70% renewable electricity by 2030; quadrupling the State’s offshore wind target to 9 GW by 2035, up from 2400 MW by 2030; doubling solar deployment to 6 GW by 2025, up from 3 GW by 2023; and deploying 3 GW of storage by 2030. This is clearly an exciting time for the State’s clean energy industry.

Tracking the Energy Storage Roadmap

As 2019 moves forward, we expect New York’s energy storage industry and storage deployment in the state to continue growing rapidly.. Between NYSERDA’s proposed energy storage incentive package and the utilities’ bulk procurements required by the PSC Energy Storage Order, it is clear that the economics for deploying storage projects will be significantly improved. Details around these programs are forthcoming and we continue to urge NY-BEST members to contact us with questions or concerns about program design.

As a brief overview, the table below provides a synopsis of the expected timing for some of the key elements of the Energy Storage Order programs and regulatory actions. .

Program or Policy	Description	Timing (Expected)
Bridge Incentive	NYSERDA announced that a \$350 Million incentive package would be launched for energy storage. The	Late Q1 or Early Q2 2019

Bridge incentive refers primarily to the retail incentive, but a portion of the money will also be directed towards the utilities bulk procurements.

Bulk Procurement	The utilities have been directed to procure 350 MW of energy storage (300 MW for Con Ed, 10 MW for each of the other utilities) by 2022. The procurement will be done through a competitive RFP process, where a new RFP is released annually until the utilities reach their targets.	Implementation Plan - February 11, 2019 First RFP - Summer 2019
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Peaking Unit Contingency Plan	The DPS and Con Ed will work together to develop a plan for replacing the aging peaking units in NYC that will be impacted by the DEC's Proposed NO _x regulations.	July 1, 2019
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VDER Value Stack Alterations	DPS Staff released two whitepapers (DRV and Capacity) on proposed changes to the value stack. These proposals change how the DRV and ICAP (Alternative 2) values are calculated. They shrink the measurement window, increasing the value of storage in solar + storage deployments.	Comments due by February 25, 2019.
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Building Applications for Energy Storage

As part of the State's energy storage soft costs reduction program, ERS has been leading the efforts to educate building owners about the opportunity that behind the meter (BTM) energy storage systems present for reducing energy bills. On Wednesday, January 23rd, 2019 NYSERDA, ERS, and the US Green Building Council (Upstate NY Chapter) will host a free, educational webinar focusing on the value proposition for energy storage. We encourage interested parties to attend, and you can find the registration information [here](#). As always, we encourage companies interested in or pursuing energy storage projects in New York State to reach out to the NY-BEST Team, at aidan@ny-best.org, for technical assistance support

[NY-BEST Annual Capture the Energy Conference, March 12-14th, Albany, NY](#)

If you are looking to make business connections in New York's markets, [registration and sponsorship opportunities](#) are open for this year's "Capture the Energy" Annual Conference on March 13th and 14th, 2019 at the Albany Capital Center, with a pre-conference workshop occurring on March 12th. Sponsorship opportunities range from \$500 to \$10,000 and include a variety of options. More information on the sponsorship opportunities can be found [here](#). Contact Ashley Weaver, at weaver@ny-best.org to secure your sponsorship. Register today for discounted early bird rates for what promises to be our biggest and best event yet! We would like to welcome the newest members of NY-BEST:

Mitsubishi Hitachi Power Systems (Lake Mary, Florida) - is a joint venture of Mitsubishi Heavy Industries (MHI), and Hitachi. They offer integrated equipment packages, turnkey projects, project financing, project development expertise, long term warranties, as well as long-term maintenance services.

Glidepath Power Solutions LLC (Elmhurst, Illinois) - is a developer, owner, and operator of low carbon energy generation and storage projects to serve the needs of the interconnected bulk electricity system.

Plus Power (New York City, New York) - develops energy storage projects that enable a more flexible, reliable, and efficient electrical grid. By working collaboratively with electric utilities, independent system operators, regulators, municipalities, and landowners, Plus Power is accelerating the deployment of large-scale energy storage systems.

Storage Power Solutions (Whitby, Ontario) - is a full solution provider of efficient, reliable and cost competitive energy storage solutions. They will tailor projects to the utility, commercial & industrial and renewable markets.

Nikola Power (Denver, Colorado) - is a clean technology company that offers energy storage solutions. We provide services as solar + storage developers as well as our own EMS battery dispatch optimization software.

Sustainable Energy Partners (New York City, New York) – is a developer of distributed energy resources, energy efficiency and microgrid solutions.

Best Regards,



William Acker
Executive Director



Upcoming Events

[Capture the Energy 2019: Pre-Conference Workshop](#)

Mar 12 1:30 pm - 5:00 pm

Join NY-BEST for a Pre-Conference Workshop on Tuesday, March 12, 2019.

[NY-BEST Annual Meeting and Conference: Capture the Energy 2019](#)

Mar 13 8:00 am - Mar 14 1:00 pm

Join NY-BEST for our Annual Meeting & Conference in downtown Albany, NY on March 13-14, 2019!

Member Spotlight: Virtual Peaker

Virtual Peaker  Virtual Peaker is a software as a service (SaaS) company that provides a platform for utilities to manage, aggregate and control residential smart devices and distributed energy resources (DERS). Their customers use these resources for demand response, customer engagement, and the development of new...

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

[Unlayering Peak Demand Could Accelerate Energy Storage Adoption](#)

The debate over energy storage replacing gas-fired peakers has raged for years, but a new approach that shifts the terms of the argument could lead to an acceleration of storage deployments. Rather than looking at peak demand as a single mountainous peak, some analysts now advocate a layered approach that allows energy storage to better match peak needs. The idea is beginning to gain traction with some states and utilities. Some developers of solar-plus-storage projects say they can already compete head-to-head with gas-fired peakers. "I can beat a gas peaker anywhere in the country today with a solar-plus-storage power plant," Tom Buttgenbach, president and CEO of developer 8minutenergy Renewables, recently told S&P Global.

[First Phase of China's Biggest Flow Battery Put Into Operation by VRB Energy](#)

VRB Energy, a maker of flow batteries headquartered in Canada and owned by a metal resources and mining company, said the first phase of a 40MWh flow battery project in China has now been commissioned. VRB Energy (VRB), 82% owned by High Power Exploration, a base metals-focused exploration company led by noted mining financier Robert Friedland, provided Energy-Storage.news with a progress update from Hubei Province at the end of last week. The company said that it has now successfully commissioned a 3MW / 12MWh vanadium redox flow battery energy storage project

which represents Phase 1 of the Hubei Zaoyang Utility-scale Solar and Storage Integration Demonstration Project, set to be 10MW / 40MWh when completed. It represents the latest step since the previous update on the project, when the first 250kW / 1MWh battery module was commissioned a few months ago.

[Invenergy Begins Operation of Battery Storage System for MidAmerican Energy](#)

Invenergy, a privately held global developer and operator of sustainable energy solutions, announced the start of commercial operations of a utility-scale battery storage system located in Knoxville, Iowa that Invenergy developed for MidAmerican Energy. The lithium-iron phosphate battery project will enable MidAmerican Energy to store electricity for later use. The storage project aims to enhance the reliability of renewables by storing energy produced when wind speeds and sun exposure are high for later use.

[California's Changing Utility Rate Schedules Create an Opportunity for Energy Storage](#)

California's rising adoption of solar power has fundamentally altered traditional dynamics on its electric grid. In response, the state's electricity providers are moving ahead with rate changes that will have a significant impact on electricity costs and the financial performance of behind-the-meter solar photovoltaics (PV) on commercial and industrial facilities in the state. Since delivering electricity during periods of high demand is cost-intensive, utilities in California have long implemented time-of-use (TOU) rates that followed the grid's traditional load curve — which ramped in the morning, peaked in the mid-day hours, and gradually decreased in the afternoon into the evening. Higher rates were applied during “on-peak” and “part peak” hours to accommodate the cost of the mid-day peak, while lower rates were applied during “off-peak” hours at night and in the early morning.

[Solar + Storage Half the Cost of Gas Peaker Plants - 8MinuteEnergy](#)

S&P Global reports the cost of solar with battery backup dropped precipitously in 2018. In a few cases in the sunny Southwest region of the United States, several tenders for solar plus storage came in at under \$30 per megawatt-hour last year. Stand alone prices for installed battery storage — based on a 20 megawatt-hour system with 4 hours of storage — dropped 40% from the previous year to \$357 per kilowatt-hour and are expected to keep falling. Bloomberg New Energy Finance projects a further 52% reduction by 2030. Such tumbling prices have led Wood Mackenzie to forecast that as the market for solar plus storage matures, it could put more than 6,400 MW of new natural gas-fired peaking capacity in the US at risk by 2027. “I can beat a gas peaker anywhere in the country today with a solar-plus-storage power plant,” says Tom Buttgenbach, CEO of developer

8minutenergy Renewables. "Who in their right mind today would build a new gas peaker? We are a factor of two cheaper."

[Grid-scale Energy Storage Firm to Launch Two US Projects in 2019](#)

As liquid air energy storage company Highview Power prepares to launch two US projects this year, an official said Thursday, the company has teamed up with engineering firm Citec to help scale its storage facilities from 50 MW/500 MWh to multiple GWh. "We will be starting two projects between 50 MW and 100 MW in the US this year," Javier Cavada, Highview CEO, said in a phone call. Though Cavada could not discuss specific locations or customers, he said Highview is looking at the wind corridor that runs through the Midcontinent Independent System Operator's territory, as well as California, Texas and New York. "It's ideal to mix the technology with renewable generation, but it can be located anywhere," Cavada said. UK-based Highview Power has chosen Finland-based Citec as its engineering partner to help Highview modularize its GW-scale cryogenic energy storage system, according to a Wednesday statement. Highview said Citec will help it "easily and cost-effectively" scale the capacity of its plants up or down.

[Orange & Rockland Issues RFP for 17-MW Microgrid as a Non-wires Alternative in New York](#)

New York utility Orange & Rockland has issued a request for proposals (RFP) seeking a microgrid of up to 17 MW to serve as a non-wires alternative to a substation upgrade in Orange County. Proposals are due March 7. The Consolidated Edison subsidiary seeks business partners to offer a microgrid that employs solar panels, fuel cells, energy efficient equipment, batteries or other distributed energy resources at multiple locations. The microgrid must maintain reliability for the 5,125 customers (4,914 residential; 211 commercial & industrial) served by the Blooming Grove substation. Microgrid developers may market distributed energy to utility customers as part of the project.

[Is the Lithium Battery as We Know It About to Get a Much Needed Overhaul?](#)

Another increase in the efficiency of lithium batteries comes with thanks to a new design developed by Cadenza Innovation. Not only does this innovative design improve performance, but it also lowers costs, and is much safer than the standard lithium-ion batteries in widespread use today. While Cadenza is the brains behind the new battery design, it licenses the technology to various battery manufacturers to be used in a number of different applications. This includes energy grid storage, industrial machinery, and electric vehicles.

[EnelX Wins Canadian Storage Order](#)

Enel X, the energy services division of Italian utility Enel SpA (BIT:ENEL), will install 5 MW/10 MWh of battery storage capacity for Berry Global (NYSE:BERY) under a project that is to help the US packaging producer cut costs in Canada. Enel X said last week it has received a contract to buy, install and operate four lithium-ion energy storage systems for Berry Global's operations in the province of Ontario. The capacity is to be installed next summer. It is expected to help Berry Global lower its energy costs in the province by 20% to 30%, while Enel X will have a share in the economic benefits.

[New York Energy Storage Sector Expected to Create 27,400 Jobs by 2030](#)

New York manufacturing is poised for a job boom in 2019 and beyond. That's according to the American Jobs Project, which predicts that New York's so-called "energy storage industry" could support 27,400 manufacturing and installation jobs by 2030. The organization, in conjunction with the New York Battery and Energy Storage Technology Consortium (NY-BEST), published their findings in a new report. American Jobs managing director Kate Ringness, who co-authored the report, explained that new policies are in place to help bolster this particular niche:

[EDF Renewables and Shell Invest in New Jersey Offshore Wind Power](#)

EDF Renewables North America and Shell New Energies US LLC (Shell) announced today that they have formed a 50/50 joint venture, Atlantic Shores Offshore Wind, LLC to co-develop OCS-0499 lease area within the New Jersey Wind Energy Area (WEA). The lease area holds the potential to produce approximately 2,500 megawatts (MW) of offshore wind energy – enough to power close to one million homes. This transaction is subject to regulatory approvals. Construction is subject to positive final investment decision. The lease comprises 183,353 acres about eight miles off the coast of Atlantic City on the U.S. Outer Continental Shelf (OCS). The area offers strong and steady wind resources in relatively shallow water, close to large population centers with associated electricity demand.

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News From Beyond New York

[Why HECO Drew Such Low Solar-Plus-Storage Prices](#)

Hawaiian Electric Companies (HECO) is seeking approval for seven utility scale solar-

plus-storage projects that could set a new benchmark for low-cost renewable power in the island state. The low prices reflect the high cost of generating electricity in Hawaii and of the state's ambitious 100 percent renewable portfolio standard. The prices in the power purchase agreements (PPA) range from \$0.08/kWh to \$0.12/kWh and are the "largest and lowest cost portfolio of new renewable energy resources to be assembled in Hawaii," according to HECO. Additionally, six of the seven projects represent the lowest prices to date for renewable electricity in the state, coming in at \$0.10/kWh and lower.

Ion Age: Why the Future Will Be Battery Powered

Why have batteries become important? In a world increasingly anxious about climate change, the surge in the generation of renewable energy over the past 20 years offers a sliver of hope. But the variable nature of wind and solar power means that storing energy until consumers need it has become the next big challenge. And so, large-scale battery installations are springing up across electricity grids around the world, to make them more flexible. In 2017, more than 1GW of energy storage capacity was added around the world – a record, yes, but still a drop in the ocean of global energy demand. How do batteries like this work? Of course, we are not talking about a few AAA batteries here. And yet, all batteries broadly work in a similar manner.

Ørsted Diversifies From Offshore Wind With 20 MW UK Battery

Danish energy giant Ørsted has added energy storage to its global clean energy arsenal. The company activated its first large-scale battery in Liverpool in late December. The 20 megawatt Carnegie Road project inaugurates a new business line for the Ørsted, which leads the global market for offshore wind development. It changed its name in 2017 from the cacophonous and emphatic DONG, short for Danish Oil and Natural Gas, after choosing to abandon fossil fuels to create "a world that runs entirely on green energy." The move into storage shows Ørsted is grappling with the implications of a highly renewable grid. Variable wind and solar generation creates grid volatility, which fast-reacting batteries can smooth out. Energy storage can also redistribute renewable energy in times when it's more valuable, although bulk shifting of wind power has not yet been achieved at scale.

Without the Right Policies, Energy Storage Could Increase Emissions

In December, the six major Independent Systems Operators (ISO's) across the country filed their plans for creating new market rules and opportunities for energy storage. While the rules will take at least a year to go into effect and the plans are just an initial step, a recent study suggests that this effort may add up to 50,000 megawatts (MW) of storage

nationwide in the next decade. At the same time, many states – like California, Massachusetts, New Jersey and New York – are recognizing the potential value of energy storage and are starting to integrate it as a key component of their plans to meet climate and renewable energy goals. Combined with falling capital costs, these trends suggest a lot of new energy storage in the pipeline. This presents both opportunities and challenges for states looking to reduce their greenhouse gas emissions.

[GM's Cadillac is Said to Plan to Introduce Electric Vehicle in Fight Against Tesla](#)

Cadillac is expected to become General Motors' lead electric vehicle brand as the largest U.S. automaker gears up to introduce a new model under that luxury marquee to challenge Tesla, two people briefed on the matter said Thursday. GM is set to announce Friday as part of an investor update that a Cadillac will be the first vehicle based on its forthcoming "BEV3" platform, the people said. The vehicle platform is the basis for vehicle underpinnings, including the battery system and other structural and mechanical parts. GM is not expected to disclose on Friday additional details, including precisely when the Cadillac EV will be built, whether it will be a crossover or sedan, or where it will be assembled, the sources said.

[NYC To Discuss Plan To Replace Gas-Fired Plants With Renewables](#)

The Chair of the Committee on Environmental Protection at the New York City council plans to introduce a bill on Wednesday mandating NYC to carry out a feasibility study if the city's gas-fired power plants could be replaced with renewable energy using battery storage, HuffPost reported on Tuesday, citing a draft of the bill it had obtained. The author of the bill, councilman Costa Constantinides, who represents Queens in the NYC Council, confirmed to Huffington Post that there was such a bill, but declined to provide details. According to the draft HuffPost has obtained, the bill would require NYC to come up with a plan by the end of this year on how it could replace the existing in-city gas-fired power plants with solar and wind energy coupled with battery storage.

[10 Predictions for Rooftop Solar and Storage in 2019](#)

With the solar industry chaos of 2018 behind us, many of us are looking toward more predictable growth from 2019...at least until the Investment Tax Credit goes to zero for residential and 10% for commercial on December 31, 2021. Then again, we're on the solar coaster, so it is unwise to be complacent about a rosy solar future -- or the broader economy, for that matter. If both Republicans and Democrats collaborate a bit more on energy policy in Washington, D.C., we have the potential for more stability in the coming

years. Luckily, I was flat-out wrong about my last prediction for 2018: The White House did not convert to coal power in 2018. Here are my 10 predictions for 2019.

Energy Storage as a Service: Why Renting Can be Better than Buying

The burgeoning as-a-service model, offering greater user flexibility and attractive economics, is now a viable option for energy storage. As with transportation, office equipment, and other capital-intensive assets, large-scale energy users both on and off the grid can leverage the benefits of battery storage on a use-only-what-you-need-when-you-need-it basis. What is the main driver behind this new offering? Flexibility. Removing the Risks There are several reasons why storage-as-a-service makes sense in today's fast-evolving energy landscape. First, long-term ownership commitments may lead to stranded assets and tied-up capital (especially with relatively new technology). In certain cases, it might be better to rent a system and see if it proves valuable. Second, as-a-service solutions provide maximum flexibility when market conditions shift. For example, when regulations or the value of ancillary services change, users can more easily adapt. Third, rental customers can generally contract with one supplier who takes responsibility for system design, performance, and maintenance—a "one-stop shop." These new approaches to system deployment offer a virtually risk-free, 100% reliable solution.

DOE Releases Year in Review

Today, the Department of Energy released its Year in Review document, highlighting notable 2018 achievements made throughout the DOE enterprise. In a message to Department staff, Secretary Perry wrote: "Thanks to remarkable innovation in our National Laboratories and across the enterprise, it was a spectacular year for DOE and its mission," said Secretary Perry. "In 2018, America reclaimed the distinction of having the world's two fastest supercomputers, the United States has become the world's leading producer of oil as well as natural gas -- exporting our LNG to 32 countries on five continents -- and we remain a world leader in using energy more cleanly and more efficiently. From fossil fuels to nuclear, wind and solar to hydro and battery storage, our 'all-of-the-above' strategy is advancing our energy security, propelling our prosperity, and strengthening our national security."

Cohen: Long Island can be a clean energy leader for the nation

No one who lives in a coastal area like Long Island can afford to ignore our changing climate. From southeastern hurricanes to California wildfires, extreme weather is becoming the norm. The good news is that we already have a roadmap to a better future. The clean energy economy we have developed on Long Island provides a path to greater

safety and a more durable electric system – all while creating good-paying jobs. As policymakers at the New York Public Service Commission consider new rules for solar energy over the next few months, the Long Island Association urges them to continue supporting clean energy technologies and their positive economic impacts.

[Port Authority of New York & New Jersey Agrees to Procure 18 Proterra Catalyst® E2 Electric Buses for John F. Kennedy International, LaGuardia and Newark Liberty International Airports](#)

Today Proterra, a leading innovator in heavy-duty electric transportation, announced that the Port Authority of New York and New Jersey has agreed to procure 18 Proterra Catalyst® E2 vehicles for shuttle service at John F. Kennedy International Airport (JFK), Newark Liberty International Airport (EWR) and LaGuardia Airport (LGA), representing one of the largest electric bus fleet commitments of any airport authority in the United States. Six of the battery-electric buses are already in service at JFK, with LGA and EWR to each deploy six more in 2019. "The Port Authority continues to look for innovative and eco-friendly ways to support the growth of its airports," said Port Authority Executive Director Rick Cotton. "By providing a more sustainable airport and delivering an enhanced passenger experience, we are continuing our commitment to reduce the agency's carbon footprint."

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