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New York is reeling from its hot battery summer

Canary News, Julian Spector, 8/21/23

New York state is grappling with how to adjust its ambitious buildout of clean energy storage after fires broke out at three separate battery projects between late May and late July.

The immediate damage was quite limited, beyond the battery containers themselves. No injuries were reported from any of the fires, according to the New York State Energy Research and Development Authority (NYSERDA), which plays a leading role in the state’s grid storage efforts. **Nor is the agency aware of any resulting toxic emissions.**

But the string of fires has put **Governor Kathy Hochul** in a tight spot: She **is pushing to increase the state’s battery storage capacity from about 300 megawatts today to 6,000 megawatts in 2030**, to complement an expansive buildout of renewable generation. **Batteries play a valuable role in balancing the ups and downs of solar and wind production, but they can’t deliver clean power on demand if they’re catching fire.**

First, on May 31, a battery that NextEra Energy Resources had installed at a substation in East Hampton caught fire. A spokesperson for NextEra, one of the top developers and owners of grid batteries, told the East Hampton Star that the water-based fire suppression system “operated as designed” and “no further emergency response was required.” That’s pretty much a best-case scenario for a grid battery fire.

Then, on June 26, fire alarms went off at two battery units owned and operated by Convergent Energy and Power in Warwick, Orange County; one of those later caught fire. On July 27, a different Convergent battery at a solar farm in Chaumont caught fire and burned for four days straight. After the latest fire, Hochul took action to prevent repeats: She created an interagency working group on battery safety and directed NYSERDA to inspect other operational battery projects for safety lapses. Now the state needs to find out how three different fires occurred at projects owned and operated by reputable industry veterans. Then it needs to reassure rattled residents that this kind of thing won’t continue as the state ramps up its battery capacity to 20 times more than its current level.

“New York state has very aggressive goals around the electricity grid that really require quite a bit of energy storage, so it’s very important that we do deploy these systems,” said William Acker, executive director of the energy storage industry group NY-BEST. “Our industry is incredibly focused on making sure that these resources can be safely deployed.”

What’s the fallout for New York’s clean grid push?

Three fires in two months pose both optical and operational problems for New York’s clean grid push.

The bad optics are readily apparent, even with zero injuries and no evidence of contaminated air or water. Local press covered the “four-day-long” fire at Chaumont, noting that the adjacent town of Lyme postponed its Community Days festivities due to the “chaotic mess” at the solar-battery plant.

New Yorkers in other parts of the state voiced concerns about similar projects cropping up in their communities. The Warwick project leased land from a school district, raising the specter of what might happen if another fire breaks out during the school year. State Senator Mark Walczyk (R) called on the governor to freeze new storage installations until the investigation wraps up. Battery developers, neighbors and politicians alike have every reason to stamp out the fire problem before installing gigawatts of new battery capacity, hence Hochul's intervention. Acker said the storage industry is "very open to continuous improvement," such as new safety codes and standards based on whatever root causes the investigations reveal.

For their part, state leaders are standing behind the long-term storage vision. "Energy storage is a critically needed resource to achieve a decarbonized electric grid and is essential to deploy at scale to meet New York's Climate Act requirements," a NYSERDA spokesperson told Canary Media. Longer-term, battery fires risk jeopardizing the operations of the electrical grid. Battery storage is poised to replace dirty, outdated peaker plants, storing clean power and injecting it into the grid during hours of peak demand. The technology can't deliver on its duties if it's bursting into flames and then remaining inoperational for months of investigations and refurbishment.

The Long Island Power Authority told the East Hampton Star that the temporary loss of NextEra's battery won't prevent the local grid from meeting the seasonal summer electricity demand this year. That's good news, but Long Island got lucky to have lost the battery at a moment when it didn't really need it. If batteries are going to assume a key role in meeting demand, grid operators won't have this luxury.

We don't know yet if the batteries themselves caused the fires

Convergent declined to comment on possible causes until the investigations wrap up, as did Powin and GE, the vendors of the affected battery systems. Until the final reports come out, it's important not to assume the fires originated in the batteries themselves: In fact, recent high-profile grid battery fires elsewhere have been traced to malfunctions in the supporting equipment at battery storage plants.

That's to say, there is a difference between batteries starting a fire and batteries catching fire from another source. Which of those turns out to be the case in New York will determine what remedies the state should pursue.

Investigators traced a 2019 Arizona battery explosion (still the most injurious grid battery fire thus far, hurting four emergency responders) back to a defect in one lithium-ion cell made by LG Chem, although other design choices at the installation exacerbated the outcome. GM's \$2 billion Chevy Bolt recall a couple of years ago was intended to prevent possible fires due to a battery defect as well.

The storage industry quickly improved its designs to prevent a repeat of the explosive gas buildup that made the Arizona fire so dangerous. In case a failure happens, the goal is to fail safely. Since then, several fires have been traced not to the batteries themselves but to banal supporting equipment at the power plants.

In the most ironic cases, systems intended to fight fires leaked water onto perfectly healthy batteries, causing short circuits that sparked a conflagration. That took out part of Moss Landing, the biggest grid battery in the world, last summer. A Tesla battery pack caught fire in Australia in July 2021, and it turned out a leaky cooling system triggered that one, too.

If New York's investigations point to faulty auxiliary equipment — wiring, inverters, fire suppression, HVAC — that's the kind of thing that state policy can address. Hochul's task force could identify ways to inspect the quality of those other components in battery plants, and push developers to up

their game on all the little stuff. This might add to the time and expense of doing business in the state, but it'll be far less costly than continuing to put out literal and figurative fires.

The battery fire blame game has already begun

The outcome of the investigation will also determine who's to blame for the incidents, and already we're seeing the risks of having too many cooks in the kitchen for energy storage projects.

Convergent got in early on New York's storage market and was acquired in 2019 by private equity firm Energy Capital Partners, which promised to invest hundreds of millions of dollars in new storage projects. The developer had not struggled with fires at its facilities before this summer.

Shortly after its first fire, Convergent seemed to implicate its supplier, Powin, an Oregon-based company that buys battery cells and integrates them into fully packaged power plant enclosures, with inverters, controls and safety equipment.

"While Convergent is responsible for developing and operating these two sites, we rely on partners to manufacture and install the battery storage systems," the company wrote in a June 29 statement. "We are now working in a support role with Powin's team as they assess the source of the problem and coordinate a response."

Convergent reiterated the same talking point about its suppliers when its Chaumont system went up in smoke. GE's battery storage division manufactured those systems.

"When we install battery storage systems, we partner with reputable third-party manufacturers who provide the systems, including the batteries that are inside them," Convergent said in a statement to local press. "The manufacturers ensure that their products satisfy highest-level safety standards set by the independent agency UL, including fire containment and fire suppression capabilities."

Convergent trusted its suppliers, and it had good reason to: Neither GE nor Powin had ever previously experienced any fires at storage plants they supplied. GE launched its product in 2018 backed by a hefty corporate balance sheet and a century of experience crafting power equipment. Powin is a much younger company than GE, but it has quickly grown into one of the most prolific suppliers of grid storage enclosures. The company vocally promoted better safety standards after the Arizona fire in 2019.

But, as anyone who has struggled to assemble Ikea furniture can attest, even a well-made product is only as good as its installation. Convergent's statements neglected to mention who installed the battery systems in Chaumont and Warwick.

Powin's business model is selling products, not providing what the industry calls "EPC" services (engineering, procurement and construction). When the Warwick project came online in May, Convergent noted that it had "designed, constructed, and operated" that plant.

The same held true for the Chaumont project. "We were a product supplier," said Troy Miller, sales leader for GE's storage product. In this case, the customer, Convergent, held the responsibility for correctly installing and operating the project.

When asked, a spokesperson for Convergent confirmed the company "relies on qualified contractors to carry out the engineering and construction of its projects."

In short, different companies manufactured the cells, assembled them into enclosed grid storage products, oversaw construction and physically hooked them up to the grid in Warwick and Chaumont. This is not always the case — sometimes, the company integrating the battery enclosure installs it as well. LG recently moved from simply manufacturing cells to packaging them into finished grid battery products, precisely so it could stand behind the whole finished product, per a recent interview with Canary Media.

Any one of these links in the chain could prove to be the weak one, but all the named parties are in

the news for it.

New York City's energy grid faces a power shortfall. Here's why.

Politico, Marie French, 8/21/2023

New York City's electric grid is forecasted to be at risk of falling short of the demand to light Times Square, power Wall Street and crank air conditioners — and it is triggering a process to fill the short-term gap.

The state's independent grid operator has been sounding the alarm for months, warning that emissions rules targeting some of the city's highest-polluting plants that run infrequently pose a reliability risk to the grid. To avoid potential blackouts under certain conditions, those plants may have to remain online beyond 2025 when they are set to shutter, the grid operator said.

"The power grid is going through a monumental change," said Rich Dewey, president and CEO of the New York Independent System Operator, a nonprofit that oversees the state's electricity system. "When we look at these reliability studies, it's really about making sure we balance the entry and the exit — we don't prematurely retire resources until we're sure that that replacement supply is there and it can perform."

Keeping the peaker plants online would be a last resort and a temporary step, Dewey said. Proposals to fill the gap are due in October. If completed on schedule in 2026, a transmission line from Canada is expected to resolve the issue.

In the meantime, the state's decision to close the Indian Point nuclear plant in Westchester County has in the short term led to more reliance on natural gas to power homes and businesses in the New York City area.

The reliability gap is an early sign of the challenges for New York's aggressive mandate to have a zero emissions electric grid by 2040. It also reflects the concerns of utilities and grid operators nationally as federal regulators push to ratchet down power plant emissions in the coming decades. Turning off fossil fuel plants as renewable energy projects face delays has proved challenging across the country. California regulators recently decided to keep three gas plants online to ensure reliability and avoid blackouts.

New York policymakers see the NYISO's process kicking off as a sign that the system is working. "It's a timing gap that we just need to plan for," said NYSERDA president and CEO Doreen Harris. "We all know that this transition is not necessarily going to be completely smooth for a variety of reasons."

The looming issues in New York City are outlined in NYISO's most recent quarterly reliability report. The grid operator used to do the reviews once every two years, but now does them four times a year as the state pushes to decarbonize more quickly.

These "peaker" power plants — called that because they run on peak demand days and are typically the last to be turned on by the NYISO due to their higher costs — are aging units. They're also the highest polluting units on the system and are located mainly in low-income and predominantly Black and brown communities due to a history of environmental racism.

Shutting the units down is a top priority for environmental justice groups in the city.

"We think it's unacceptable that for the sake of reliability, we would have to sacrifice communities for two more years or potentially even longer just to ensure that we don't have blackouts or brownouts," said Daniel Chu, the energy planner for the NYC Environmental Justice Alliance. "We don't want blackouts or brownouts, but we also don't want continued pollution."

Tougher regulations loom

Light from the setting sun reflects off buildings in New York City.

New York has a goal to take offline peaker plants used when energy use hits high rates in the coming years, but there are concerns there may not be enough options to replace them. | Ted Shaffrey/AP Photo

New York has some of the strictest reliability requirements in the nation.

Dewey said the portions date back to the historic 1977 blackout in New York City after lightning took out a transmission lines in the Hudson Valley. Building in a cushion of power plants and transmission capacity for such incidents has become routine.

The NYISO's report indicates that on a 95-degree day in 2025, there's expected to be a gap of 446 megawatts of electricity for nine hours when two generators or transmission lines are unexpectedly offline. That is the equivalent of needing to power about 446,000 homes.

"What I see as most critical is the fact that we have systems and processes in place that can plan for these contingencies, rather than planning for blackouts or brownouts, which is what we saw happen in Texas," Harris said. "It would simply not be acceptable in the state of New York to be planning in the way that they're planning in Texas."

What she is referring to is Texas' grid has been strained in summer heatwaves, which are more likely because of climate change caused by humans burning fossil fuels. The state also experienced blackouts during a winter storm in 2021.

But the shortfall estimated in New York indicates the state is not preparing for its own goals, said Gavin Donohue, the president and CEO of the Independent Power Producer of New York. The group represents the state's merchant fossil fuel, nuclear and renewable power plant owners.

"The pace of planning isn't keeping up with the pace of the promises," Donohue said. "We can work to make progress towards a clean energy transition, but we can't do it at the expense of reliability." The last phase of New York's 2019 peaker rules, which have already led 1,000 megawatts of power to retire, kicks in in 2025. Unless the NYISO decides other solutions won't be ready and directs them to stay on, another 509 megawatts are set to shut down in May 2025. One megawatt powers about 1,000 homes.

"It just seems like the state is hiding behind NYISO and saying 'NYISO has a reliability gap. Therefore, there's nothing we can do but keep the power plants open,' even though the state very much has a lot of tools in their toolkit," Chu said.

There could be storage or demand response projects that will "shave" some of the reliability need, Dewey said. And longer term solutions would be transmission to better connect the areas where demand is high to the rest of the system.

"It seems unlikely that we're going to get enough of a response to completely eliminate the gap," Dewey said.

The peakers slated to shut down are only the first wave of fossil fuel retirements likely under New York's climate plan.

Hochul announced in 2022 that state agencies would develop a "blueprint" to guide the retirement and redevelopment of New York City's oldest fossil fuel plants by 2030. That report is due out this year led by Department of Public Service staff.

NYP&A, whose fossil fuel plants ran more in 2022 than the previous two years, is required by state law to craft a plan to shut its New York City peakers by 2030.

A plan is due by May 2025, but there are caveats if there's a reliability issue or the authority finds retiring its plants would increase emissions from other plants in disadvantaged communities.

Role of Indian Point

New York City's grid has become more reliant on fossil fuel power plants, including peakers, since the closure of Indian Point.

The nuclear facility provided 2,000 megawatts of zero-emissions energy to the downstate grid — enough to cover roughly 2 million homes. But the last unit stopped running in April 2021, and data shows that more emissions have been released after the closure as gas plants filled the gap.

"You're talking about a third of the electricity in New York City that was removed," Donohue said. "It just frustrates me because we want to reduce carbon, and we're doing things to increase carbon." Dewey said he couldn't be certain that the closure of Indian Point contributed to the shortfall. That's because it's based on transmission security requirements, so power from the nuclear plant might not have reached the load pockets impacted by the peakers slated to retire.

New resources for New York City's fossil fuel dominated grid are coming.

The under-construction Champlain Hudson Power Express, a transmission line that will run more than 300 miles and carry 1,250 megawatts of Canadian hydropower into New York City, is expected to resolve the shortfall.

That project was originally scheduled to be completed in 2025, but was delayed to 2026. Any further delays will pose continued reliability issues, according to the NYISO.

"We're only talking about a short duration extension of those peakers, and it's really just to have them to hit those peak loads, not to run on a regular basis," Dewey said. "I know that that's not consistent with what a lot of people want to see, but the alternative is jeopardizing the reliability of the power system, which is also pretty impactful to health, safety and the economy in New York." Offshore wind projects plugging into the city's grid will also be key to providing the electricity needed. Those have also faced delays, and the largest project developers are asking for increased state subsidies and warning they otherwise won't get built.

Harris said the NYISO report highlights the importance of staying on schedule with the new developments.

"We need to think about not just the vision for projects, but the realities of projects, and all the things that are necessary to support the transition," she said.

Progress can be full of wind, but it's worth it

Newsday, Charles Komanoff, 8/21/23

Charles Komanoff is widely known for his work as an energy-policy analyst, transport economist and environmental activist in New York City.

Hannah Komanoff, who served Long Beach for three decades as a school official and county legislator, didn't live long enough to see wind turbines nearly as tall as the Chrysler Building. Hannah, my mom, died in 2000 at age 89, not long before the destruction of the World Trade Center, which she would have witnessed from her bay-front house opposite Island Park and Oceanside.

The new millennium also saw wind and solar power emerge as viable forms of clean energy. I have no doubt that Mom, a lifelong conservationist and a stalwart supporter of clean energy during her dozen years representing Long Beach on the Nassau County Legislature, would have moved heaven and earth to help get the Equinor Empire Wind Farm in the Atlantic Ocean off Long Beach up and running as quickly as possible.

Mom would have vouched for the wind farm at every public forum, just as in the 1970s she repeatedly urged the Long Island Lighting Company and state officials to treat energy efficiency and conservation as antidotes to filling Suffolk County's north coast with nuclear power plants.

Big offshore wind farms would have been a no-brainer for Mom. The intrusion of super-tall wind towers and giant blades would have paled next to the benefits: good-paying union jobs, bustling maintenance and support industries, the free harvesting of nature’s bounty, and the climate benefit from producing power without burning fossil fuels.

My mother was a doer with a special place in her heart for big doers. She revered President Franklin D. Roosevelt and the New Deal, and she knew and admired Eleanor Roosevelt. At a Rev. Martin Luther King Jr. benefit dinner in Long Beach in 1990, she beseeched the audience to venerate King not as a dreamer but as a doer.

King’s civil rights call to action, his book “Why We Can’t Wait,” could have been Mom’s mantra for Long Island offshore wind. Advocating energy stewardship in the 1970s would have impressed upon her that delaying Empire Wind Farm’s up to 147 wind turbines means spewing more climate-wrecking carbon dioxide we can never claw back from earth’s atmosphere. That’s why wind power can’t wait.

This too: Mom kept her word. At a meeting I attended in the 1970s, she told LILCO’s CEO that Long Island’s strengths lay in manufacturing and installing solar roofs and wind farms and energy-proofing our homes. Those words carried a pledge: When clean energy arrives in abundance, we can’t block the way.

By itself, offshore wind won’t stop climate chaos. But it’s a big part of winning the fight. Those hundreds of spinning blades will literally keep carbon fuels in the ground, where they can’t wreak havoc. They’ll also set a positive example for future rounds of climate progress.

In a year or two, work crews are to begin laying power cables to connect Equinor’s ocean-based turbines to the power grid. Recently, I rode my bike along the ocean through the Rockaways and Long Beach to one of the landing spots in Island Park. Once a popular seafood eatery, it’s now asphalt and weeds.

Change isn’t easy, and big change can be wrenching. But I learned from Mom that the pain of progress is worth bearing. I hope to be on hand when the shovels hit the ground, placing pebbles and stones in tribute to my mother and all who work for a livable future.



