De-Carbonization / DER Report for NYSRC Executive Committee Meeting 7/18/2025

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The July 2025 edition of the De-Carbonization / Distributed Energy Resources (DER) Report includes the following items:

- NY Times: The World Is Warming Up. And It's Happening Faster
- NY Times: There's a Race to Power the Future. China Is Pulling Away
- NY Times: At Amazon's Biggest Data Center, Everything Is Supersized for A.I.
- New York Power Authority to Develop a New Nuclear Facility to Be Built in Upstate New York
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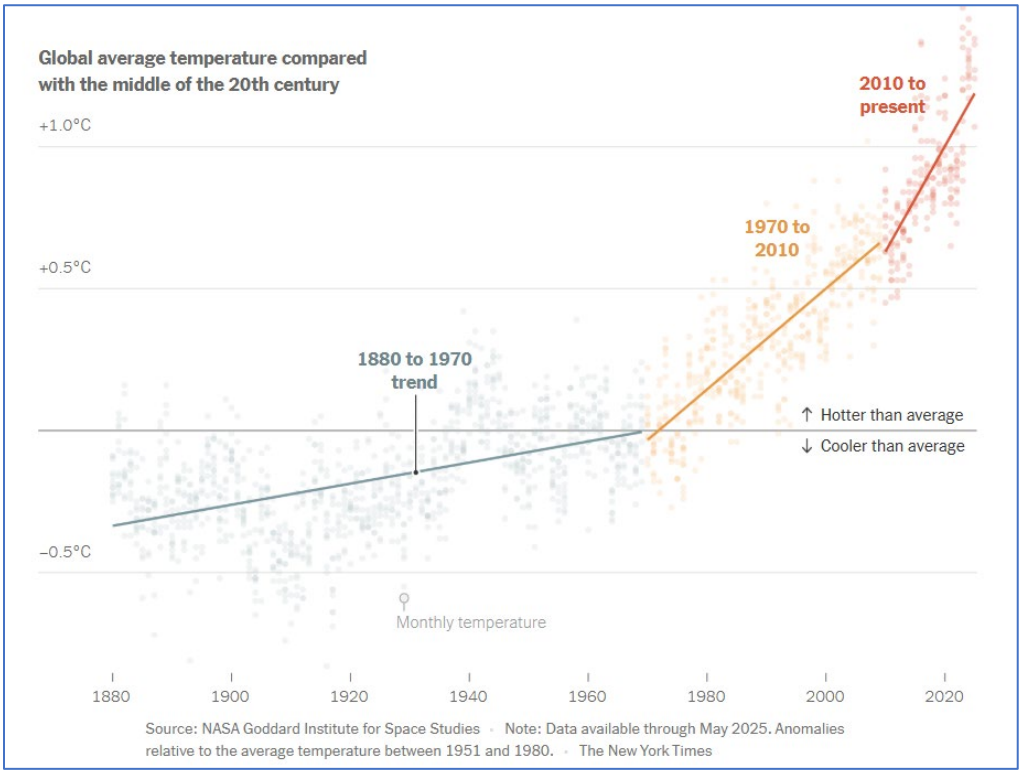
NY Times: The World Is Warming Up. And It's Happening Faster

This Article describes how Human-caused global warming has been increasing faster and faster since the 1970s' Summer started barely a week ago, and already the United States has been smothered in a record-breaking "heat dome." Alaska saw its first-ever heat advisory this month. And all of this comes on the heels of 2024, the hottest calendar year in recorded history. The world is getting hotter, faster. A report published last week found that human-caused global warming is now increasing by 0.27 degrees Celsius per decade. That rate was recorded at 0.2 degrees in the 1970s, and has been growing since.



This doesn't surprise scientists who have been crunching the numbers. For years, measurements have followed predictions that the rate of warming in the atmosphere would speed up. But now, patterns that have been evident in charts and graphs are starting to become a bigger part of people's daily lives. "Each additional fractional degree of warming brings about a relatively larger increase in atmospheric extremes, like extreme downpours, severe droughts and wildfires," said Daniel Swain, a climate scientist at the University of California.

While this aligns with scientific predictions of how climate change can intensify such events, the increase in severity may feel sudden to people who experience them. “Back when we had lesser levels of warming, that relationship was a little bit less dramatic,” Dr. Swain said. “There is growing evidence that the most extreme extremes probably will increase faster and to a greater extent than we used to think was the case,” he added.

Take rainfall, for example. Generally, extreme rainfall is intensifying at a rate of 7 percent with each degree Celsius of atmospheric warming. But recent studies indicate that so-called record-shattering events are increasing at double that rate, Dr. Swain said. “There is no weather that’s happening outside of climate,” said Kate Marvel, a climate scientist and author of the book “Human Nature.” “This is stuff that’s manifesting in the real world,” she said, citing catastrophes like Hurricane Helene and Vermont’s historic floods in 2023.

According to Dr. Swain, scientists have yet to come to a universal understanding of these events, in part because the infrequent nature of outliers makes them difficult to study.
And as warming has intensified, so have the impacts on vulnerable regions of the planet like the Arctic and Antarctic, making previously rare or hidden consequences more apparent. Scientists are fine-tuning their models to understand the behavior of the vast ice sheets in such places to match the rapid changes they’re observing.

In March, a NASA analysis found that sea levels had risen faster than expected in 2024, in part because of a combination of melting glaciers and heat penetrating deeper into oceans, causing them to expand thermo-dynamically. Sea surface temperatures are rising faster than previously predicted as well, according to a study published in April by researchers at the National Center for Earth Observation in Britain.

Cecilia Bitz, a professor of climate science at the University of Washington, said that modeling the Earth is complex, and that there are many small factors that could be considered. But even with these uncertainties, scientists have ways of building their models to identify trends that are largely accurate. “Nothing is defying our big picture about the physics of the climate system,” Dr. Bitz said.

Overall atmospheric warming has consistently followed modeling predictions for decades. But recently, the fundamental imbalance responsible for this heat has been tilting — catching even scientists off guard.
Global warming is a symptom of Earth’s energy imbalance, which is a measure of the difference between the total amount of heat reaching Earth from the sun, and the amount radiating back into space. In May, a paper analyzing data from a NASA satellite found that this imbalance had grown faster than expected, more than doubling in the past two decades and becoming nearly twice as large as it was previously predicted to be.

Zeke Hausfather, a research scientist at Berkeley Earth, said climate scientists were still working to understand these findings. There are various theories, such as fewer emissions of aerosols, a type of air pollution that is harmful to human health that increases the reflectivity of clouds, which bounce the sun’s heat back into space.

Historically, aerosol emissions have masked the warming effect of greenhouse gases like carbon dioxide. Over the past half-century or so, as nations reduced certain kinds of air pollution, aerosol emissions fell significantly. According to Dr. Hausfather, this change is the primary reason atmospheric warming has accelerated in recent decades. But the most worrying possibility behind Earth’s energy imbalance, he said, is how the general nature of clouds may be changing in response to climbing temperatures. It’s a feedback loop that could potentially exacerbate warming and is “one of the single biggest uncertainties in predicting future climate.

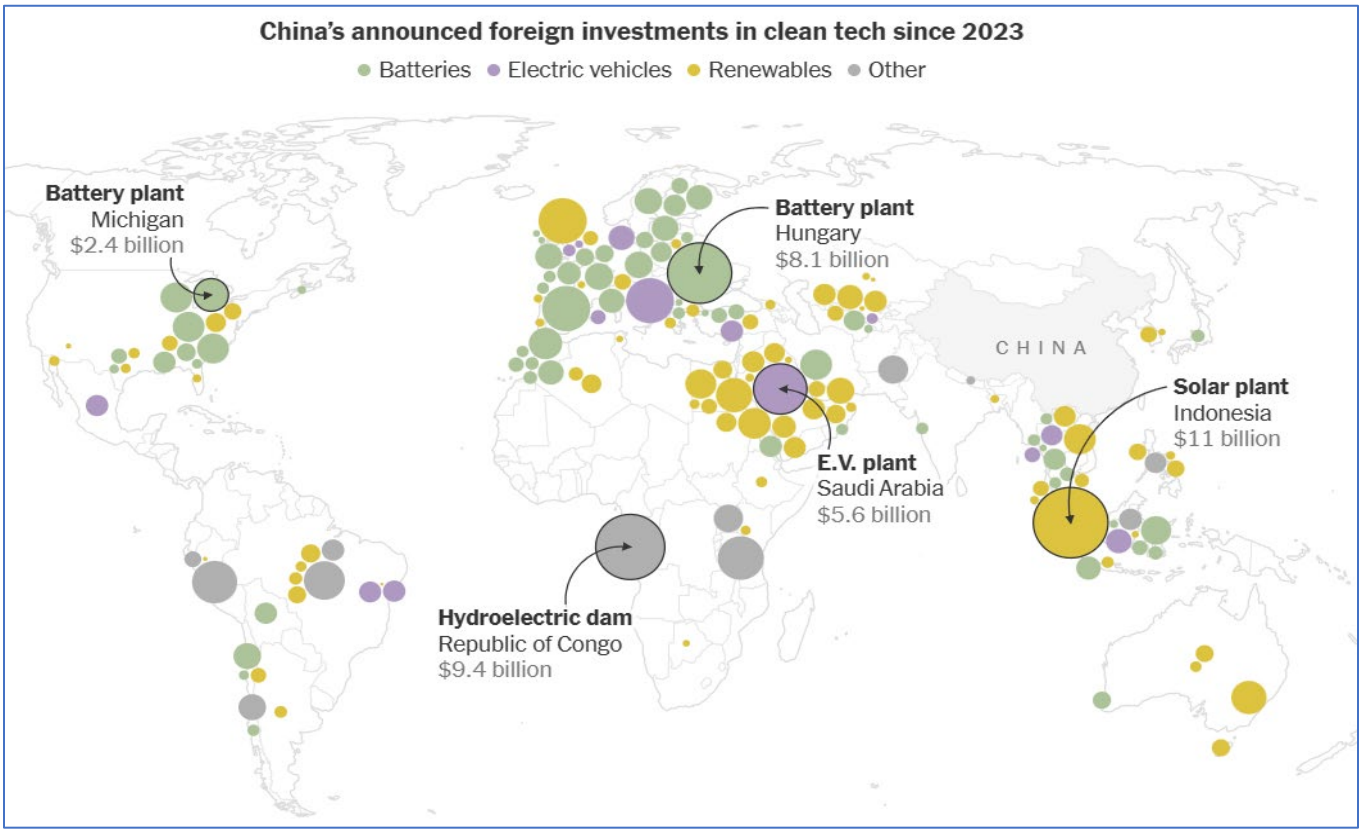
Additional Supplementary Material: NY Times: See How Marine Heat Waves Are Spreading Across the Globe
Sea surface temperatures in 2024 broke records and about a quarter of the world’s oceans are experiencing temperatures that qualify as a marine heat wave.

NY Times: There's a Race to Power the Future. China Is Pulling Away

This Comprehensive Article describes how China is moving forward with all aspects of renewable energy. In China, more wind turbines and solar panels were installed last year than in the rest of the world combined. And China's clean energy boom is going global. Chinese companies are building electric vehicle and battery factories in Brazil, Thailand, Morocco, Hungary and beyond.

The race is on to define the future of energy. Even as the dangers of global warming hang ominously over the planet, two of the most powerful countries in the world, the United States and China, are pursuing energy strategies defined mainly by economic and national security concerns, as opposed to the climate crisis. Entire industries are at stake, along with the economic and geopolitical alliances that shape the modern world.
The United States is the world's largest producer of oil and the largest exporter of natural gas, offering the potential for an era of American "energy dominance" that eliminates dependence on foreign countries, particularly rival powers like China.

China is racing in an altogether different direction. It's banking on a world that runs on cheap electricity from the sun and wind, and that relies on China for affordable, high-tech solar panels and turbines. China, unlike the United States, doesn't have much easily accessible oil or gas of its own relative to its huge population. So it is eager to eliminate dependence on imported fossil fuels and instead power more of its economy with renewables. The dangers for China of relying on politically unstable regions for energy were underscored recently when Israel attacked Iran, which sells practically all its oil exports to China.



While China still burns more coal than the rest of the world and emits more climate pollution than the United States and Europe combined, its pivot to cleaner alternatives is happening at breakneck speed. Not only does China already dominate global manufacturing of solar panels, wind turbines, batteries, E.V.s and many other clean energy industries, but with each passing month it is widening its technological lead.

China's biggest automaker, its biggest battery maker and its biggest electronics company have each introduced systems that can recharge electric cars in just five minutes, all but erasing one of the most annoying hassles of E.V.s, the long charging times. China has nearly 700,000 clean energy patents, more than half of the world's total. Beijing's rise as a clean power behemoth is altering economies and shifting alliances in emerging countries as far afield as Pakistan and Brazil.

The country is also taking steps that could make it hard for other countries, particularly the United States, to catch up. In April, Beijing restricted the export of powerful "rare earth" magnets, a business China dominates, unless they're already inside fully assembled products like electric vehicles or wind turbines. While China recently started issuing some export licenses for the magnets, the moves signal that the world may face a choice: Buy China's green energy technology, or do without.

China has also begun to dominate nuclear power, a highly technical field once indisputably led by the United States. China not only has 31 reactors under construction, nearly as many as the rest of the world combined, but has announced advances in next-generation nuclear technologies and also in fusion, the long-promised source of all-but-limitless clean energy that has bedeviled science for years.

While China is dominating clean energy industries, from patented technologies to essential raw materials, the United States is opening up public lands and federal waters for new drilling, fast-tracking permits for pipelines and pressuring other countries to buy American fuels as a way of avoiding tariffs.

The scientific consensus is that warming, if unchecked, will continue to cause increasingly severe droughts and storms, potentially alter ocean currents and global weather patterns, disrupt food production, deepen a biodiversity crisis, and inundate some of the world's biggest cities as sea levels rise, among other risks.
The United States energy secretary, Chris Wright, a former natural gas executive, has described climate change as "a side effect of building the modern world."

Most of the world's energy still comes from fossil fuels. Yet as countries try to address the perils of climate change, they've been steadily adopting cleaner alternatives. By 2035, solar and wind power are expected to become the two largest sources of electricity production, surpassing coal and natural gas, according to the International Energy Agency. As the cost of renewables keeps falling, the U.S. strategy may leave China poised to capitalize on the world's growing appetite for not only cleaner but cheaper power.

China's goal of dominating clean energy technology wasn't about climate change. It was born in a moment of strategic self-awareness two decades ago, when the country's leaders looked to the future and understood that controlling energy production was vital to national security. In 2003, Wen Jiabao became China's premier, the country's second-highest position. A rare-earths geologist, Mr. Wen saw energy policy as both a business opportunity and geopolitical necessity.

China had become dependent on imported oil. It felt vulnerable to upheavals in the Middle East and to the control of shipping lanes by the United States and India, two sometimes hostile powers. Air pollution in China was terrible, killing people and creating a global embarrassment with images of cities smothered in gray. And the economy still relied on relatively unskilled manufacturing. Mr. Wen saw in energy a chance to solve both problems by making China an energy innovator.

Mr. Wen's government essentially wrote a blank check. China provided hundreds of billions of dollars in subsidies to wind, solar and electric car manufacturers while protecting its markets from foreign competitors. It established a global near-monopoly over many key raw materials, such as cobalt for batteries. Low-cost electricity from heavily polluting coal plants allowed the country to run aluminum smelters and polysilicon

factories more cheaply than anywhere else. Critics have also accused China of using forced labor in places like Xinjiang to drive down costs, though China denies this. At the same time, China has invested in research and a skilled workforce. These moves offered Chinese clean energy companies a level of sustained support that was nonexistent in the United States.

China's efforts paid off. Little more than a decade ago, CATL was a start-up created to buy a Japanese electronics company's nascent electric-car battery division. Today, from its headquarters that are shaped like an enormous battery, it operates a global network of mines, chemical processors, and factories. Its founder is one of the wealthiest people in the world. Over that same short stretch of time, China came to dominate even clean energy industries the United States had once led. In 2008 the United States produced nearly half of the world's polysilicon, a crucial material for solar panels. Today, China produces more than 90 percent. China's auto industry is now widely seen as the most innovative in the world, besting the Japanese, Germans, and Americans.

To slash manufacturing costs, China has automated its factories, installing more robots each year from 2021 through 2023 than the rest of the world combined, and seven times as many as the United States. Eric Luo, vice-president of LONGi Green Energy Technology, a Chinese solar panel maker, said that a practice known as "cluster manufacturing" had proved beneficial. "There are places where, within a three- to four-hour drive, you can have everything," he said. The components, the manufacturer, the skilled workforce, everything. "There's nowhere else globally where you can have all that innovation clustered together."

Clustering also imparts huge benefits in the car battery business. Robin Zeng, CATL's founder, said in an interview last summer that it costs six times as much to build a battery factory in the United States as in China. Beyond its domination of manufacturing and technology, China has gone on an epic clean-energy building spree.

Last June, the Urumqi solar farm, the largest in the world, came online in the Xinjiang Autonomous Region in China. It is capable of generating more power than some small countries need to run their entire economies. It's hardly an anomaly. The other 10 largest solar facilities in the world are also in China, and even bigger ones are planned. The Chinese automaker BYD is currently building not one but two electric vehicle factories that will each produce twice as many cars as the largest car factory in the world, a Volkswagen plant in Germany.

The future is being defined one deal at a time. The United States is pressing South Korea and Japan to buy more Alaskan natural gas and invest in a huge, longshot pipeline project there. China has been demanding that the European Union allow electric cars from China into its large market, although that could cause widespread job losses in Europe's own car industry. There is unlikely to be an immediate winner in this global race. The world is only becoming more energy-hungry, stoking an appetite for both solar panels and oil, nuclear and natural gas. That may work well both for Beijing and for Washington in the short term. The United States still has many customers for its enormous stores of oil, gas, and coal. Roughly 80 percent of global energy needs are still met by fossil fuels.

But that proportion is widely expected to decline. The International Energy Agency forecasts that by midcentury, oil, gas and coal will fall below 60 percent of global energy needs. And China is positioned to pick up the extra business. "When the federal government of the United States decides to go out of the race, it doesn't stop the race," said Rafael Dubeux, a senior official in Brazil's Finance Ministry. "Other countries keep moving."

At Amazon's Biggest Data Center, Everything Is Supersized for A.I. Link to Article

A year ago, a 1,200-acre stretch of farmland outside New Carlisle, Ind., was an empty cornfield. Now, seven Amazon data centers rise up from the rich soil, each larger than a football stadium. Over the next several years, Amazon plans to build around 30 data centers at the site, packed with hundreds of thousands of specialized computer chips. With hundreds of thousands of miles of fiber connecting every chip and computer together, the entire complex will form one giant machine intended just for artificial intelligence. The facility will consume 2.2 gigawatts of electricity — enough to power a million homes. Each year, it will use millions of gallons of water to keep the chips from overheating. And it was built with a single customer in mind: the A.I. start-up Anthropic, which aims to create an A.I. system that matches the human brain.

The complex — so large that it can be viewed completely only from high in the sky — is the first in a new generation of data centers being built by Amazon, and part of what the company calls Project Rainier, after the mountain that looms near its Seattle headquarters. Project Rainier will also include facilities in Mississippi and possibly other locations, like North Carolina and Pennsylvania.

Project Rainier is Amazon's entry into a race by the technology industry to build data centers so large they would have been considered absurd just a few years ago. Meta, which owns Facebook, Instagram and WhatsApp, is building a two-gigawatt data center in Louisiana. OpenAI is erecting a 1.2-gigawatt facility in Texas and another, nearly as large, in the United Arab Emirates. These data centers will dwarf most of today's, which were built before OpenAI's ChatGPT chatbot inspired the A.I. boom in 2022. The tech industry's increasingly powerful A.I. technologies require massive networks of specialized computer chips — and hundreds of billions of dollars to build the data centers that house those chips. The result: behemoths that stretch the limits of the electrical grid and change the way the world thinks about computers.

Amazon, which has invested $8 billion in Anthropic, will rent computing power from the new facility to its start-up partner. An Anthropic co-founder, Tom Brown, who oversees the company's work with Amazon on its chips and data centers, said having all that computing power in one spot could allow the start-up to train a single A.I. system. After building seven data centers in Indiana, Amazon plans to build 23 more.

Amazon has been working on the technology used in this complex for almost a decade. In 2015, the tech giant acquired an Israeli chip designer, Annapurna Labs. A year later, at a lab in Austin, Texas, Annapurna — which continued to operate as a largely independent team of engineers — began designing the company's first computer chip dedicated to A.I.

This initial chip, called Inferentia, was not widely used. But developing a viable computer chip requires years of design. Annapurna Labs developed its latest new chip, Trainium 2, alongside engineers at Anthropic. They tailored it for a massive complex like the one in New Carlisle. "It's a journey," said Gadi Hutt, senior director of customer and product engineering at Annapurna Labs.

The Amazon chips are not as elaborate or as powerful as the latest chips from Nvidia, the Silicon Valley chipmaker that dominates A.I. work. But Amazon believes that by packing twice as many of these simpler chips into each data center, it can provide more computing power using the same amount of electricity. “If we provide the performance that our customers want,” Mr. Hutt said, “then why choose to make a lot of exotic engineering choices that will just slow us down and cause delays?”

Just a few months after OpenAI released ChatGPT in late 2022, Amazon was in talks with electrical utilities to find a site for its A.I. ambitions. In Indiana, a subsidiary of American Electric Power, or AEP, suggested that Amazon tour tracts of farmland 15 miles west of South Bend that had been rezoned into an industrial center. By the end of May 2023, more than a dozen Amazon employees had visited the site. By early 2024, Amazon owned the land, which was still made up of corn and soybean fields. Indiana’s legislature approved a 50-year sales tax break for the company, which could ultimately be worth around $4 billion, according to the Citizens Action Coalition, a consumer and environmental advocacy organization. Separate property and technology tax breaks granted by the county could save Amazon an additional $4 billion over the next 35 years.

The exact cost of developing the data center complex is not clear. In the tax deal, Amazon promised $11 billion to build 16 buildings, but now it plans to build almost twice that. The total number of buildings is not yet determined and will depend in part on whether the company gets permission, over vocal community opposition, to build on a 10-acre wetland in the middle of the complex. Amazon intends to build on the wetland, pointing out that it is a small, shallow wetland, not a major nature preserve.

In addition to drawing electricity from the power grid, Amazon is installing its own generators for backup when the grid goes down. On a typical week, about 4,000 workers are on site, Mr. Schalliol said. Local hotels have been full, and there has been such an uptick in congestion and traffic accidents that Amazon agreed to pay $120,000 to cover overtime for traffic enforcement and an additional $7 million for road improvements.

To bury the fiber optic cables connecting the buildings and to install other underground infrastructure, Amazon had to pump water out of the wet ground. One permit application showed that the company requested permission to pump 2.2 million gallons an hour, for 730 days. State officials are now investigating if the process, known as dewatering, is the reason some neighbors are reporting dry wells. Some locals have protested the way the project has progressed, complaining that it has caused water problems, increased traffic and noise and significantly altered the look and feel of this agricultural community, and that it could ruin the small natural wetland in the middle of the complex.

Amazon’s approach differs from that of Google, Microsoft and Meta, companies that are packing far more powerful chips into their data centers and relying on more energy-intensive techniques to cool the chips down. Because Amazon is using a significantly smaller chip, the company can cool its new complex in simpler ways. It pumps air from outside the buildings through handlers the size of cargo containers and in hot months uses municipal water to cool the air. Although Amazon can cool its machines with outside air, in the summer it will rely on evaporators that use water to control the temperature. The approach is more efficient, according to Mr. Kalyanaraman, so the company can use more of the available electricity to run its A.I. chips.

AEP has told regulators that new, large-scale data centers will more than double the amount of peak power it must provide Indiana, from about 2.8 gigawatts in 2024 to more than seven gigawatts by approximately 2030. Amazon’s campus alone accounts for about half of the additional load growth. The utility told regulators in April that it expected to use natural gas plants to provide about three-quarters of the additional power that would be needed by 2030. The local utility will largely use natural gas to generate the additional electricity needed to power Amazon’s data center.

New York Power Authority to Develop a New Nuclear Facility to Be Built in Upstate New York

This Announcement from the Governor's Office describes Governor Kathy Hochul's directive for the New York Power Authority (NYPA) to develop and construct a zero-emission advanced nuclear power plant in Upstate New York to support a reliable and affordable electric grid, while providing the necessary zero-emission electricity to achieve a clean energy economy. This builds on other opportunities announced in Governor Hochul's 2025 State of the State to catalyze nuclear energy development in New York.

"As New York State electrifies its economy, deactivates aging fossil fuel power generation and continues to attract large manufacturers that create good-paying jobs, we must embrace an energy policy of abundance that centers on energy independence and supply chain security to ensure New York controls its energy future," Governor Hochul said. "This is the second time during my administration that I am calling on the New York Power Authority to lead a critical energy initiative, and just as it is doing with the expedited buildout of renewable energy and transmission, it will now safely and rapidly deploy clean, reliable nuclear power for the benefit of all New Yorkers."

As a result of economic growth and fossil fuel power plant retirements, New York needs new, clean electricity resources to meet growing power demand from new industrial development, building electrification and electric vehicles. The advanced nuclear plant will complement New York's ongoing deployment of renewable energy by adding zero-emission baseload power, providing reliable and affordable clean energy to advance the State's goal to achieve a clean energy economy.

NYPA, in coordination with the Department of Public Service (DPS), will seek to develop at least one new nuclear energy facility with a combined capacity of no less than one gigawatt of electricity, either alone or in partnership with private entities, to support the state's electric grid and the people and businesses that rely on it.

NYPA will immediately begin evaluation of technologies, business models, and locations for this nuclear power plant and will secure the key partnerships needed for the project. This process will include site and technology feasibility assessments as well as consideration of financing options, in coordination with the forthcoming studies included in the master plan for Responsible Advanced Nuclear Development in New York, led by the New York State Energy Research and Development Authority (NYSERDA) and DPS. Candidate locations will be assessed for suitability based on public safety, strength of community support, compatibility with existing infrastructure, as well as skilled labor and land availability.

This initiative also builds on the State's ongoing financial support to Constellation to pursue an early site permitting process for a new project at its Nine Mile Point Clean Energy Center and will allow for future collaboration with other states and Ontario, building on regional momentum to strengthen nuclear supply chains, share best practices, and support the responsible deployment of advanced nuclear technologies.

New York currently has three active nuclear plants, all located upstate along Lake Ontario and owned by Constellation. The Nine Mile Point, Robert Emmett Ginna and James A. FitzPatrick plants provide about 3.3 gigawatts of power, or roughly 20% of the state's electricity, according to Hochul's office. The last nuclear power plant built in the state was Unit 2 at Nine Mile Point in 1989. At its peak, nuclear power provided about 5.4 gigawatts, or roughly one-third of the state's electrical supply, according to the advocacy group Nuclear New York.

Utility Dive: FERC's Christie calls for dispatchable resources after grid operators come 'close to the edge'

This Article recounts proceedings from the recent FERC Open meeting on June 26th, including comments from Mark Christie, the current chairman of the Federal Energy Regulatory Commission. It was noted that Midcontinent and East Coast grid operators were able to narrowly handle that week's extreme heat and humidity without blackouts, but reflects the urgent need to ensure the United States has adequate power supplies. "We're simply not building generation fast enough, and we're not keeping generation that we need to keep," Christie said. "Some of our systems really came close to the edge."

During the heat wave, the PJM Interconnection, the largest U.S. grid operator, hit a peak of about 161 GW on Monday, nearly 5% above its 154 GW peak demand forecast for this summer and the highest demand on its system since 2011. The grid operator had about 10 GW to spare at the peak, according to Christie. At that peak, PJM's fuel mix included gas at about 44%, nuclear at 20%, coal at 19%, solar at 5% and wind at 4%, according to Christie. Also, PJM told Christie that demand response was "essential" at reducing load. PJM used nearly 4,000 MW of demand response to reduce its load, according to FERC Commissioner Judy Chang. "I see load flexibility as a key tool for grid operators to meet the challenges that we face," Chang said.

PJM called on demand response resources on Monday in its mid-Atlantic and Dominion regions, on Tuesday across its footprint and on Wednesday in its eastern zones, according to Dan Lockwood, a PJM spokesman. "PJM was within its reserve requirements, but used DR to provide additional resources for the grid."

The Midcontinent Independent System Operator hit a peak on Monday of 119 GW, about 6% below the grid operator's all-time system peak of 127 GW set in July 2011, according to Brandon Morris, a MISO spokesman. MISO issued emergency orders to make sure it could provide electricity during the extreme heat, he said.

ISO New England's electricity demand peaked Tuesday evening at 26,024 MW, the highest level seen since 2013, according to Mary Cate Colapietro, a spokeswoman for the grid operator. ISO-NE set a peak record of 28,130 MW in August 2006. ISO-NE managed its grid under a "power caution" after the unexpected loss of generation in the late afternoon on Tuesday, Colapietro said in an email. The power caution status allows system operators to take additional actions, including calling on reserve resources, to balance the system, Colapietro said. The ISO also declared an Energy Emergency Alert Level 1, the lowest of three alert levels. During that day of record setting heat for parts of New England, grid-connected solar output rose to about 800 MW by 10 a.m., according to ISO-NE data. It began to dip around 3 p.m. and fell to about 350 MW by 6 p.m., around the time the grid operator's load peaked for the day. Gas-fired generation supplied about 12,280 MW at 6 p.m. on Tuesday, followed by nuclear power with 3,350 MW, oil with 3,180 MW, net imports with 3,015 MW, hydroelectric generation with 2,070 MW, renewables with 1,540 MW and "other," which includes grid-level demand response, with 405 MW, according to ISO-NE data.

FERC's review of PJM's rules for co-locating data centers at power plants could be addressed next month. Capstone expects FERC will issue an order on the colocation proceeding, "likely disallowing 'fully isolated' load arrangements and supporting the transmission cost allocation arguments put forward by incumbent utilities," analysts at the research firm said Thursday. If the order is delayed until after Christie leaves in July, it will likely be more favorable to independent power producers and data center developers seeking flexibility, the analysts said.

Christie supports requiring inverter-based resources such as wind and solar to be able to ride through frequency and voltage excursions, such as faults on the transmission system, instead of tripping offline. FERC proposed IBR ride-through reliability standards in December. "It's very controversial because people whose ox is gored obviously don't like it … but I have no reason to think that what [the North American Electric Reliability Corp.] has proposed is not the proper engineering solution," Christie said.

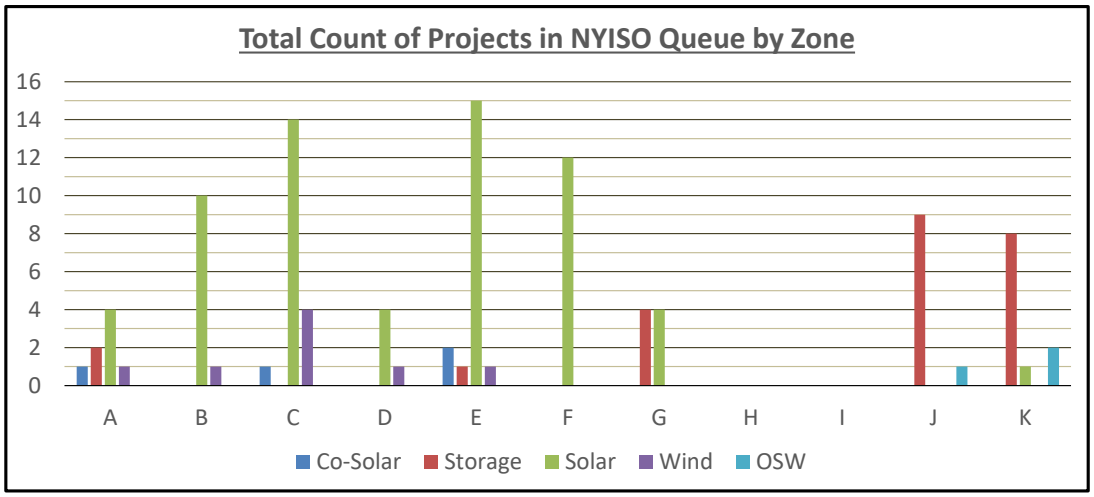
Interconnection Queue: Monthly Snapshot – Storage / Solar / Wind / CSRs (Co-located Storage)

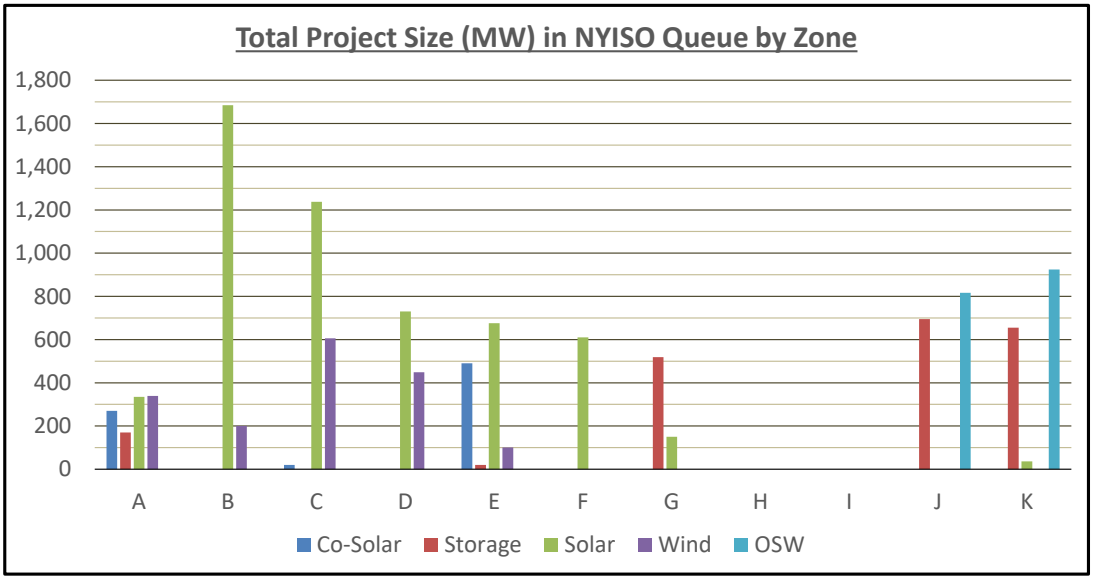
The intent is to track the growth of Co-Located Solar / Storage, Energy Storage, Solar, Wind, and Offshore Wind (OSW) projects in the NYISO Interconnection Queue, looking to identify trends and patterns by zone and in total for the state. The information was obtained from the NYISO Interconnection Website, based on information published on June 20th, and representing the Interconnection Queue as of May 31st. Note that two projects were added, and 5 were withdrawn during the month of May.

Total Count of Projects in NYISO Queue by Zone					
Zone	Co-Solar	Storage	Solar	Wind	OSW
A	1	2	4	1	
B			10	1	
C	1		14	4	
D			4	1	
E	2	1	15	1	
F			12		
G		4	4		
H					
I					
J		9			1
K		8	1		2
State	4	24	64	8	3

Total Project Size (MW) in NYISO Queue by Zone					
Zone	Co-Solar	Storage	Solar	Wind	OSW
A	270	170	335	339	
B			1,685	200	
C	20		1,238	606	
D			730	449	
E	490	20	676	101	
F			611		
G		519	150		
H					
I					
J		695			816
K		655	36		924
State	780	2,059	5,461	1,695	1,740

Average Size (MW) of Projects in NYISO Queue by Zone					
Zone	Co-Solar	Storage	Solar	Wind	OSW
A	270	85	84	339	
B			169	200	
C	20		88	151	
D			183	449	
E	245	20	45	101	
F			51		
G		130	38		
H					
I					
J		77			816
K		82	36		462
State	195	86	85	212	580


Total Count of Projects in NYISO Queue by Zone
16
14
12
10
8
6
4
2
0
A
B
C
D
E
F
G
H
I
J
K
Co-Solar
Storage
Solar
Wind
OSW


Total Project Size (MW) in NYISO Queue by Zone
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
A
B
C
D
E
F
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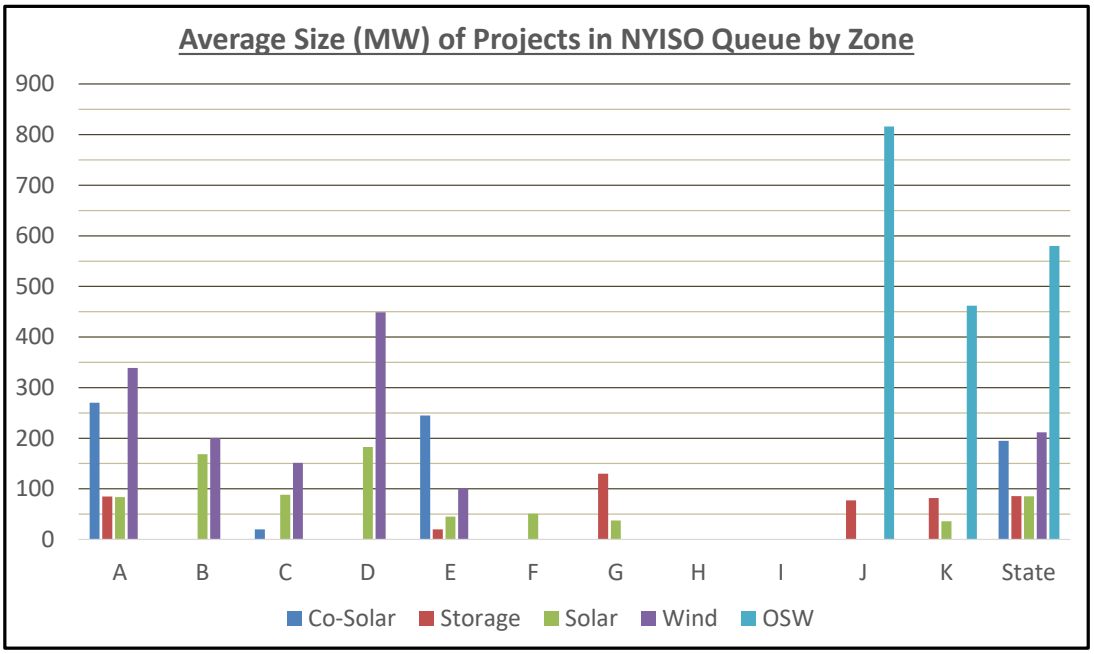
J
K
Co-Solar
Storage
Solar
Wind
OSW


Average Size (MW) of Projects in NYISO Queue by Zone
900
800
700
600
500
400
300
200
100
0
A
B
C
D
E
F
G
H
I
J
K
State
Co-Solar
Storage
Solar
Wind
OSW

Cluster Interconnection Queue: Monthly Snapshot – Storage / Solar / Wind / CSRs (Co-located Storage)

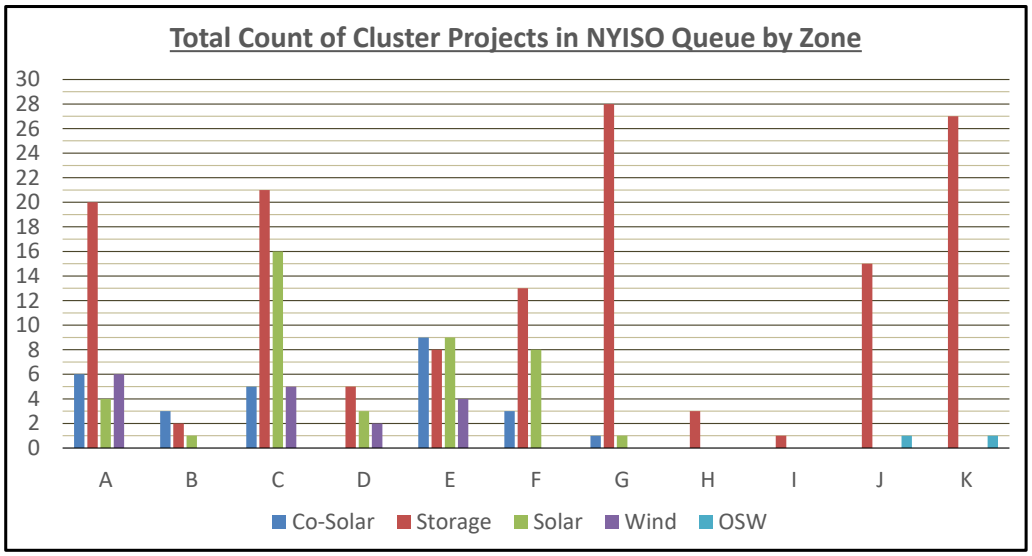
The intent is to track the growth of the Cluster-based projects, including Co-Located Solar and Wind / Storage, Energy Storage, Solar, Wind, and Offshore Wind (OSW) projects in the NYISO Interconnection Queue, looking to identify trends and patterns by zone and in total for the state. The information was obtained from , based on information published on May 20th.

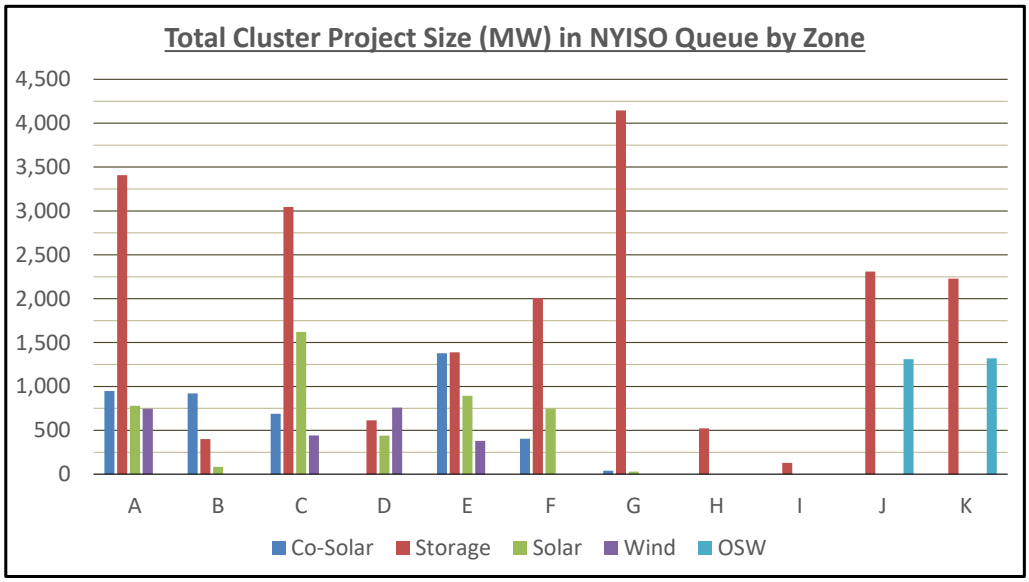
Note that within the Cluster Queue, there are currently 234 projects totaling 34,133 MW. This represents a drop of 3 projects, totaling 300 MW from the previous month. A total of 142 projects representing 41,350 MW are listed as having been withdrawn to date.

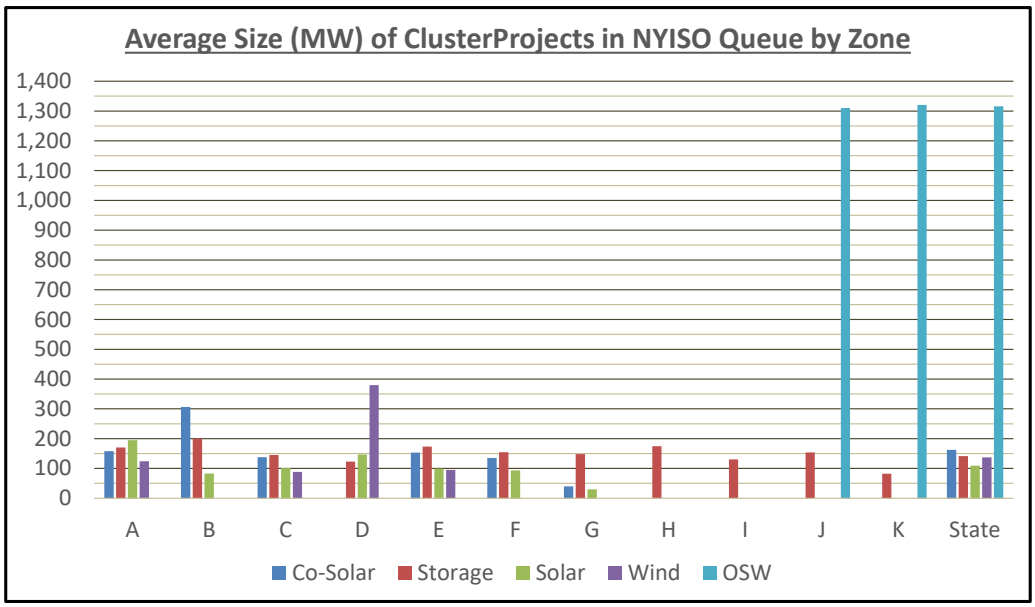
Total Count of Cluster Projects in NYISO Queue by Zone					
Zone	Co-Solar	Storage	Solar	Wind	OSW
A	6	20	4	6	
B	3	2	1		
C	5	21	16	5	
D		5	3	2	
E	9	8	9	4	
F	3	13	8		
G	1	28	1		
H		3			
I		1			
J		15			1
K		27			1
State	27	143	42	17	2

Total Cluster Project Size (MW) in NYISO Queue by Zone					
Zone	Co-Solar	Storage	Solar	Wind	OSW
A	947	3,408	780	746	
B	920	400	83		
C	690	3,045	1,621	442	
D		615	440	760	
E	1,378	1,389	893	380	
F	405	2,009	747		
G	40	4,146	30		
H		524			
I		130			
J		2,309			1,310
K		2,228			1,321
State	4,379	20,202	4,593	2,328	2,631

Average Size (MW) Cluster Projects in NYISO Queue by Zone					
Zone	Co-Solar	Storage	Solar	Wind	OSW
A	158	170	195	124	
B	307	200	83		
C	138	145	101	88	
D		123	147	380	
E	153	174	99	95	
F	135	155	93		
G	40	148	30		
H		175			
I		130			
J		154			1,310
K		83			1,321
State	162	141	109	137	1,316


Total Count of Cluster Projects in NYISO Queue by Zone
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
A
B
C
D
E
F
G
H
I
J
K
Co-Solar
Storage
Solar
Wind
OSW


Total Cluster Project Size (MW) in NYISO Queue by Zone
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
A
B
C
D
E
F
G
H
I
J
K
Co-Solar
Storage
Solar
Wind
OSW


Average Size (MW) of ClusterProjects in NYISO Queue by Zone
1,400
1,300
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
A
B
C
D
E
F
G
H
I
J
K
State
Co-Solar
Storage
Solar
Wind
OSW