

COMMISSION

RUSSELL L. JONES – CHAIRMAN
JOHN F. SULLIVAN – VICE CHAIRMAN
PHILIP C. BASHAW – COMMISSIONER
KIM OWENS – COMMISSIONER
JIM SWEENEY – COMMISSIONER

STAFF

ED GERAK - EXECUTIVE DIRECTOR
HEATHER COLE - EXECUTIVE SECRETARY



ARIZONA POWER AUTHORITY

1810 W. ADAMS STREET
PHOENIX, AZ 85007-2697
(602) 368-4265

WWW.POWERAUTHORITY.ORG

Executive Director Industry Update – December/January 2021

Articles may be edited for content

Fitch Says Public Power Utilities Are Well Positioned Financially Headed Into 2021 *December 14, 2020*

U.S. public power utilities are well positioned financially headed into next year, as lower expenses have helped preserve margins and liquidity in the wake of pandemic-driven declines in electric demand and revenue, according to Fitch Ratings.

However, Fitch's 2021 outlook report points to some concerns related to the lingering effects of the coronavirus pandemic and economic contraction, as well as more aggressive climate issues, the rating agency said on Dec. 9.

The rating outlook for the public power sector is stable.

Fitch said that electric demand is expected to stabilize in 2021 as the U.S. economy recovers from recession and achieves pre-pandemic gross domestic product levels.

“A continuance of low, stable energy prices and interest rates should also help preserve operating margins and affordability.” These factors are expected to ease “upward pressure on electric rates, support strong cash flow and moderate leverage throughout the sector,” Fitch said.

At the same time, uncertainty surrounding the lingering effects of the pandemic and the potential for more aggressive environmental mandates could disrupt longer term performance, according to the rating agency.

Greater support from public power systems may be required by local governments facing pandemic-related fiscal challenges, particularly those facing severe declines in tax revenue, Fitch said.

Meanwhile, Fitch said that an increased focus on carbon dioxide emissions reduction by federal leadership is expected to develop under President-elect Biden and could lead to more aggressive environmental policies with an evenly divided Senate.

Boston To Launch Community Choice Electricity Program in February

December 14, 2020 Paul Ciampoli

Boston Mayor Martin Walsh on Dec. 4 announced a series of milestones in the development of the City of Boston's community choice electricity (CCE) program, which will officially launch Feb. 1, 2021 and will be the largest municipal aggregation program in New England.

Boston has contracted with Constellation NewEnergy Inc. as the supplier and will offer three product options for customers.

Investor-owned Eversource offers city residents a default electric supply option called basic service. The City of Boston recently began sending notices to residents on Eversource basic service. Those residents will be automatically enrolled in the program unless they actively choose to opt out.

The CCE effort is a key strategy in the city's Climate Action Plan to lower emissions and achieve carbon neutrality by 2050, Walsh's office noted.

Boston's CCE program will offer the opportunity for more than 20,000 low-income customers to receive meaningful discounts on their electricity costs through the Commonwealth of Massachusetts' Solar Massachusetts Renewable Target (SMART) Program.

The City of Boston has partnered with NextGrid Inc. which will build 100 megawatts of new solar PV modules within Massachusetts. When completed, the incentives from the new solar projects will result in an estimated \$72 annual savings for the average low-income household, and more than \$28 million over 20 years.

The city is seeking to contract with other developers for more solar energy capacity to increase low-income customer savings and spur job creation.

OUC Bringing Together Hydrogen Project, Nanogrid To Test Storage Technologies

December 15, 2020 Peter Maloney

OUC—The *Reliable One* is looking forward to combining two research projects to test and demonstrate the possibilities of energy storage technologies, including hydrogen storage, that could be used to smooth out intermittent power from solar resources.

Orlando, Florida-based public power utility OUC has a goal of reaching zero carbon dioxide (CO₂) emissions by 2050, with interim goals of 50% by 2030 and 75% by 2040. There usually is abundant sunshine in Florida, but there is also a lot of cloud cover across the state that can be very sporadic and make solar output particularly erratic.

OUC has two projects that are testing longer duration energy storage technologies. One is a nanogrid now in operation at the public power utility's Gardenia operations center. This spring, OUC completed the installation of the equipment for its Gardenia nanogrid project, including doubling the existing solar panels, which float on a pond at the site, to 64 kilowatts (kW), two vanadium redox flow batteries with a total capacity of 20 kW, 80 kilowatt hours (kWh), and three electric vehicle charging stations, including one with vehicle-to-grid capability that the utility is getting ready for operation.

OUC chose flow batteries because they offer longer durations than lithium ion batteries and because, unlike li-ion batteries, the duration (energy) and capacity (power) of flow batteries can be scaled independently. “As we scale up the energy, we may not need as much power,” Choi said.

The eventual goal is to be able to “island” or separate the nanogrid from the surrounding grid in order to power the Gardenia operations center during a storm or an outage.

The other project is funded by a grant from the Department of Energy (DOE).

In August 2019, OUC and its partners won a \$4 million grant under the DOE’s H2@Scale program, which explores the potential for wide-scale hydrogen production and utilization to enable resiliency in the power generation and transmission sectors.

OUC’s partners in the hydrogen grant are Giner ELX, OneH2 and the Florida Solar Energy Center at the University of Central Florida. After partner contributions are counted, the total value of the project is \$9 million. Progress on the three-year grant was on hold for a few months when Giner was acquired by Plug Power over the summer. OUC, in June, received carbon fiber tanks to store hydrogen and expects to install the rest of the equipment by mid-2021

The remaining equipment includes a 510-kW electrolyzer that produces hydrogen and oxygen from water, two fuel cells, which use hydrogen to produce electricity, one stationary (600 kW), the other mobile (300-kW), a transformer and fuel cell vehicles.

The fuel cell vehicles, both light duty and larger vehicles, will be able to take advantage of the higher energy density of hydrogen compared with lithium-ion batteries for purposes of demonstrating the potential for electrification of the transportation sector, Choi said.

The electrolyzer will be sited near the pond with the solar panels so that their electrical output can be used to produce “green” hydrogen. The hydrogen project is on track to begin operation by late 2021, and the operations of the two projects, hydrogen production and storage and the nanogrid, could be combined as early as 2022.

When both projects come together, OUC will be able to produce solar power and either store it in the flow batteries or run it through the electrolyzer.

OUC will also be able to store hydrogen in tanks and, by combining tanks stored on a trailer with the mobile fuel cell, will have an emergency, backup generator that can deliver green energy where it is needed during storms and outages.

OUC is also in the process of procuring two flywheel energy storage devices. Flywheels have been most often used to store energy for short periods of time to inject bursts of energy into the grid for services such as frequency regulation. Once again, OUC is looking for a longer duration system, 8-kW flywheels with durations of up to four hours. “We are looking for solar smoothing, and flywheels have a very fast response time and no degradation,” Choi said.

OUC plans to use its Gardenia campus as a test bed that will be able to swap out and test different types of storage technologies. “We are looking to see what works and, especially with distributed resources, what potential there is for us as a utility,” Choi said.

Commercial and Municipal Customers Begin Receiving Clean Energy from Salt River Project

Salt River Project announced the beginning of commercial operations at “Saint Solar” the newest 100-megawatt (MW) solar plant added to SRP’s growing renewable energy portfolio. As part of SRP’s ongoing commitment to support customers in achieving their sustainability goals, the 100 MW plant was initiated by SRP’s [Sustainable Energy Offering](#) and is owned and operated by a subsidiary of NextEra Energy Resources, LLC.

Through Saint Solar, SRP has begun delivering solar energy to 11 of its largest energy consumers who now have the ability to lower overall carbon emissions by receiving a portion of their energy from the sun. Adding the plant to its renewable energy generation mix contributes to SRP’s goal to add 1,000 MW of new utility-scale solar energy to its system by the end of fiscal year 2025.

Participating customers, originally [announced in 2018](#) as the first phase of SRP’s Sustainable Energy Offering, include: Air Products, Albertsons Companies, Inc., City of Chandler, City of Mesa, City of Phoenix, CMC Steel Arizona, CyrusOne, Digital Realty, Freeport-McMoRan, Mesa Public Schools and Walmart.

Saint Solar is located in Coolidge, Ariz., built, owned and operated by a subsidiary of NextEra Energy Resources. It will bring approximately \$18 million in tax revenue to the Pinal County area over the life of the project. The project created approximately 150 local, well-paying construction jobs and represents an estimated investment of approximately \$127 million dollars in Arizona.

“We are proud to partner once again with SRP to bring cost-effective, solar energy to its customers,” said Matt Handel, senior vice president of development for NextEra Energy Resources, the world’s largest generator of renewable energy from the sun and wind. “This project will generate clean energy, bring customers closer to their renewable energy goals and at the same time provide significant tax revenue to the community for years to come.”

Receiving solar energy through the Sustainable Energy Offering helps SRP customers achieve their sustainability goals, reduce carbon emissions and invest in clean, renewable energy while sharing the economic benefits of a utility-scale, renewable energy resource.

Saint Solar is one of three new Arizona-based solar resources SRP announced it will add as part of its Phase One and Phase Two Sustainable Energy Offering. Earlier this year, [SRP announced a total of 33 companies](#) signed up to receive approximately 300 MW of solar energy from these new solar resources, decreasing carbon dioxide emissions by about 1.6 million tons.

In addition to adding 1,000 MW of new utility-scale to its system by the end of fiscal year 2025, these renewable energy resources contribute to SRP’s 2035 goals to reduce carbon intensity by 65 percent in 2035 and by 90 percent in 2050 from 2005 levels.

Solar Market Forges Ahead in Q3 as Residential Installations Recover and Utility-Scale Pipeline Grows *Tuesday, Dec 15 2020*

WASHINGTON, D.C. and HOUSTON, TX — U.S. solar companies installed 3.8 gigawatts (GW) of new solar photovoltaic (PV) capacity in Q3 2020, a 9% increase from Q2 installations as the industry experienced a recovery from the worst impacts of the COVID-19 pandemic.

According to the [U.S. Solar Market Insight Q4 2020 report](#), released today by the Solar Energy Industries Association (SEIA) and Wood Mackenzie, solar accounts for 43% of all new electric

generating capacity additions through Q3 2020, more than any other electricity source. The report projects a record 19 GW of new solar capacity installations in 2020, representing 43% year-over-year growth from 2019.

The residential solar market — which was the hardest hit by the business impacts of the pandemic — beat recovery expectations, growing 14% over Q2 but remained below Q1 levels.

The utility-scale market was the primary driver of Q3 installations with 2.7 GW of new capacity, representing 70% of all solar capacity brought online in Q3.

Sun Belt states are leading the way on new capacity additions this year, with Texas and Florida both installing more than 2 GW through Q3 2020. For perspective, that is nearly the amount of solar that each of those states installed over 2018 and 2019 combined.

The utility-scale project pipeline ballooned to a record 69.2 GW, and the U.S. is now forecast to reach 100 GW of cumulative installed solar capacity by mid-2021.

Key Figures:

- In Q3 2020, the U.S. solar market installed 3.8 GWdc of solar PV, up 9% from Q2 as the industry began recovering from the worst impacts of the pandemic.
- A total of 9.5 GWdc of new utility PV power purchase agreements were announced in Q3 2020, bringing the contracted pipeline to a record total of 69 GWdc.
- Solar has accounted for 43% of all new electricity generating capacity added in the U.S. through the third quarter this year, beating out all other generation technologies.
- Wood Mackenzie forecasts 43% annual growth in 2020, with more than 19 GWdc of installations expected.
- Forecasts for 2021-2025 put total solar installations above 107 GWdc, a 10 GWdc increase from last quarter driven primarily by healthy increases to the utility-scale solar pipeline.

EIA Predicts Higher Henry Hub Natural Gas Spot Prices in 2021

December 14, 2020 Victoria A. Rocha

The use of coal in electric generation has been dropping, but that decrease will be tempered by higher natural gas prices in 2021, according to federal energy experts.

In its latest [Short-Term Energy Outlook](#), the Energy Information Administration forecasts U.S. coal production to total 624 million short tons (MMst) in 2021, compared to 521 MMst in 2020. In 2019, coal production was 706.3 MMst.

In 2021, EIA expects higher monthly averages for Henry Hub natural gas spot prices: \$3.01 per million British thermal units, compared to \$2.07/MMBtu for 2020. Prices will increase in coming months, the Dec. 8 report said, because of “rising space heating demand and rising U.S. liquefied natural gas (LNG) exports amid declining U.S. natural gas production.”

EIA expects total U.S. electricity consumption to rise by 1.3% next year, “the result of forecast colder temperatures in the first quarter compared with the same period last year, in addition to continued higher consumption as many people will still be at home more because of the pandemic.”

Meanwhile, electricity consumption is expected to decrease by 3.9% in 2020, the report said. Retail sales to the commercial sector will fall by 5.9% and by 8.8% in the industrial sector. Residential sales will still rise in 2020, the report said. However, they will increase at a lower rate, 1.5%, than the forecast of 2.5% in last month's STEO.

EIA's projections of the growing role of renewables in generating the nation's electricity are holding steady in this month's report. The share of generation from renewable energy sources is expected to rise from 18% in 2019 to 20% in 2020 and 21% in 2021.

Twenty-three gigawatts of new wind capacity are expected to come online in 2020 and 9.5 GW in 2021, the report said, while utility-scale solar capacity is expected to rise by 12.8 GW in 2020 and by 14 GW in 2021.

Starbucks Enters Into First-Ever 'Virtual' Storage PPA

December 17, 2020 Ethan Howland

Starbucks Corp. is entering into solar and solar-plus-storage virtual power purchase agreements to support its corporate sustainability goals.

One of the contracts is tied to a 1,200-megawatt solar project that is combined with energy storage that can deliver 2,165 megawatt-hours before needing to be recharged, according to LevelTen Energy, which runs a marketplace for renewable energy.

Under the deal with Terra-Gen, Starbucks is contracting for 24 MW of solar and 5.5 MW of battery storage from the Edwards and Sanborn project in Kern County, California. The project is expected to be fully online before 2023, according to Terra-Gen, a renewable energy developer owned by Equity Capital Partners, a private equity firm.

Starbucks is the first corporation to execute a virtual PPA for utility-scale storage, according to LevelTen, which helped arrange the transaction.

A virtual PPA is a financial deal under which the buyer pays a set price but doesn't directly buy electricity from the project. Power from the project is sold into the wholesale market. If the wholesale price is higher than the price in the virtual PPA, the offtaker receives the difference. If the price is lower, the offtaker pays the facility owner to make up the difference.

Until now, contracting with utility-scale storage project developers was impractical for most corporations, according to LevelTen.

Also when organizations add storage to their wind and solar power purchase agreements, it can add value and smooth pricing variability by extending the hours of the day the energy is sold, LevelTen said.

Starbucks also entered into a virtual PPA with an undisclosed solar farm in Virginia. The contract will offset half of its company run roasting and beverage production sites' electricity use in the United States by 2022.

The coffee company said it is investing about \$97 million in up to 23 new community solar projects in New York, which will supply solar energy to more than 24,000 homes, small businesses, nonprofits, churches, universities and Starbucks stores.

Starbucks aims to cut in half by 2030 the greenhouse gas emissions from its direct operations and supply chains.

100% Clean Power? Don't Wait For New Technology, Study Says

David Iaconangelo, E&E News reporter. Published: December 15, 2020

The United States could transition to 100% carbon-free electricity more cheaply if it focuses on existing technologies and a national build-out of transmission, rather than next-generation technologies like carbon capture and small nuclear plants, according to a new study.

Published in the journal *Joule* last week, the study finds that expanding transmission lines across states and regions, and implementing a national process for coordinating regional grids, could cut the cost of obtaining carbon-free power by 46% compared with a state-by-state decarbonization process.

Those regional grids could run entirely on technologies that have already been deployed in at least 1 gigawatt of scale, like onshore wind, solar, nuclear, hydropower, and energy storage strategies like short-duration batteries and pumped hydro, according to researchers at the Massachusetts Institute of Technology's Energy Initiative.

Given the scale of that technical and political challenge, the federal government would need to guide the process, they said.

The large-scale expansion of transmission contemplated by the researchers would include new interstate and interregional connections spanning well beyond statewide or regionwide upgrades. Wind power from Texas, for example, could end up feeding into the Southeast, while the mid-Atlantic could soak up Florida solar and Maine hydropower.

It would also require a rethink of how the nation's grids meet their demand. Regional grid operators would need to start coordinating build-out with their peers who handle electricity in places a thousand miles away, for example, and permits for long-distance lines would have to be secured from federal, state and local agencies.

Transmission could turn renewables like onshore wind and solar into the country's reigning forms of power generation without sacrificing the grid's reliability — and without long-duration batteries, small modular nuclear reactors, carbon capture or even offshore wind, he added.

The study arrives as the energy sector braces for a new administration with unprecedented ambitions for clean energy. President-elect Joe Biden has called for a 100% zero-carbon goal in the electricity sector for 2035.

The study splits from other analyses and experts who say that newer, less widely used technologies would be critical to achieve that target. Several of the country's largest utilities, for example, have set a goal of cutting or offsetting all of their CO₂ emissions, and they say it will hinge on the adoption of new low-carbon technologies. Others have noted the political challenges in a mass transmission build-out, such as permitting and moving infrastructure legislation through Congress.

The Joule study suggests the nation would be better off taking a different route: Instead of waiting for emerging technologies, utilities could focus on converting their generation capacity to renewables and short-duration storage that's already available.

The cost of that approach, if carried out nationally, would be lower than a state-by-state transition even if all the country's existing nuclear plants were closed, said Brown.

Adam Benshoff wrote in an email to E&E News, however, that "no current technology has the potential to play as pivotal a role in accelerating [the clean energy] transition as electric transmission." Getting permits from federal, state and local authorities, he added, was "one of the largest barriers to transmission development."

Spokespeople from the Nuclear Energy Institute said they had not reviewed the study, while pointing to an International Energy Agency study finding that, globally, nuclear could be the lowest-cost source of dispatchable low-carbon power in 2025. A second study cited by NEI also found that using small modular nuclear reactors to decarbonize in the states of Washington and Oregon could save \$8 billion per year compared with relying on renewables.

FERC Approves SPP's Resubmitted Proposal For A Western Energy Imbalance Service Market

December 24, 2020

The Federal Energy Regulatory Commission on Dec. 23 approved the Southwest Power Pool's resubmitted Western Energy Imbalance Service (WEIS) Market tariff, Western Joint Dispatch Agreements and Western Markets Executive Committee Charter, effective February 1, 2021.

SPP had resubmitted the WEIS proposal after the Commission [rejected its initial proposal](#) on July 31. In that order, FERC cited a number of reasons for rejection of the proposal and provided guidance for a new submission if SPP chose to do so.

A number of protests of the resubmittal were filed at FERC including by Colorado Springs Utilities and Platte River Power Authority. SPP resubmitted the proposal in early October.

The Commission in its Dec. 23 order found that the WEIS Market "will yield diverse benefits to the participating utilities and customers in the Western Interconnection, and that SPP has both addressed the concerns presented by the Commission in the July Order and demonstrated that its proposal presents a just and reasonable regional solution."

Expected benefits described in the order include having a broader pool of resources available to serve load, which allows participants to meet their energy imbalance needs at lower cost; improved reliability; and better integration and management of higher levels of variable energy resources.

The protestors were aligned in their concerns on most issues.

In the order, the Commission made findings regarding the issues raised by at least one of the protestors.

Among other things, FERC found that:

- A centralized imbalance market can deliver significant benefits, including reliability benefits that are not easily quantified, and FERC policy does not require a quantified cost-benefit analysis of proposals;
- SPP adequately supported its proposal to allocate the initial implementation and ongoing costs of the WEIS Market according to net energy for load;
- SPP provided adequate support for the proposed governance structure. The Commission agrees with limiting voting rights to WJDA [Western Joint Dispatch Agreements] signatories because only those signatories have made a financial commitment to the market. Further, SPP provided avenues for stakeholders who are not signatories to participate; and
- The market mitigation plan proposed in the filing addresses the major market power issues identified by the SPP Marketing Monitoring Unit's study and adequately responds to the Commission's guidance in the July Order.

1st Circuit Asked to Stop Hydropower Corridor Construction

Published: Monday, January 4, 2021

Opponents of a 145-mile electricity transmission corridor aimed at bringing Canadian hydropower to the New England grid are asking a federal appeals court to delay construction set to begin in January.

Denied a preliminary injunction by a federal judge last week in Maine, three conservation groups filed the new request late Wednesday with the 1st U.S. Circuit Court of Appeals in Boston.

They contend the federal judge's ruling was too narrow and overlooked potential environmental harms. They asked for a ruling by Jan. 15.

The Sierra Club, Appalachian Mountain Club and Natural Resources Defense Council want the Army Corps of Engineers, which approved the project, to conduct a more rigorous environmental impact statement instead of the less-stringent environmental assessment (Energywire, Dec. 23, 2020).

The \$1 billion New England Clean Energy Connect would provide a conduit for up to 1,200 megawatts of Canadian hydropower to reach the New England power grid. Much of the project would follow existing utility corridors, but a new swath would be cut through 53 miles of wilderness.

Supporters say the project would reduce greenhouse emissions and stabilize energy costs in the region. Critics say that the benefits are overstated and that the project would destroy unspoiled wilderness.

Water Desalination Breakthrough Would Cut Energy Use

Valerie Yurk, E&E News reporter. Published: January 4, 2021

Problems with water desalination may be evaporating after scientists discovered a way to make the process easier, which they say can increase its efficiency by 30% to 40% and cut costs.

Desalination through reverse osmosis involves pushing salty water through a polymer-based membrane, which retains solids depending on the molecular weight of different particles.

But the way water moves through the polymer has stumped scientists who are looking to speed up the process.

University of Texas, Austin, and Penn State researchers discovered the membrane's inconsistent density is slowing down filter speeds. Less dense areas process water much faster, according to the findings [published](#) this month in Science.

The reverse osmosis membrane process is the most used, but, although more efficient, pushing water through can be energy intensive.

New membranes can increase desalination efficiency by 30-40%, meaning they can clean more water while using less energy, according to the research.

Demand for fresh water is increasing across the U.S. while supplies dwindle. Water managers in 40 states expect shortages in some portion of their jurisdiction within the next 10 years, according to research compiled by the National Environmental Education Foundation.

Rising temperatures are not only increasing freshwater evaporation but also causing people and animals to consume more.

Decreasing freshwater supplies comes at a cost for consumers. A Guardian analysis of water and sewage bills in 12 U.S. cities showed prices increased by an average of 80% between 2010 and 2018.

The findings also promote climate change adaptation techniques like recycling wastewater, he added. Municipalities that recycle wastewater, which requires reverse osmosis, will have the ability to clean water faster and much cheaper.

Kumar predicts that researchers will be able to find the "magical density" and use these energy-efficient membranes in the coming years.

Reprinted from E&E Greenwire with permission from Environment & Energy Publishing, LLC

Vistra Brings World's Largest Utility-Scale Battery Energy Storage System Online *January 06, 2021*

IRVING, Texas, Jan. 6, 2021 /PRNewswire/ -- Vistra (NYSE: VST) today announced that its Moss Landing Energy Storage Facility connected to the power grid and began operating on Dec. 11, 2020. At 300 megawatts/1,200 megawatt-hours, the lithium-ion battery storage system, located on-site at Vistra's Moss Landing Power Plant in Monterey County, California, will be the largest of its kind in the world. Furthermore, construction is already underway on Phase II, which will add an additional 100 MW/400 MWh to the facility by August 2021, bringing its total capacity to 400 MW/1,600 MWh.

"This is a keystone project and it is important in so many ways – it revitalizes an existing power plant site and utilizes active transmission lines, enhances grid stability, fills the reliability gap created by intermittent renewables, provides emission-free electricity, supports California's sustainability goals and mandates, significantly benefits the local community, and ultimately provides affordable electricity to consumers," said Curt Morgan, chief executive officer of Vistra. "A battery system of this size and scale has never been built before. As our country transitions to a clean energy future, batteries will play a pivotal role and the Vistra Moss Landing project will serve as the model for utility-scale battery storage for years to come."

Housed inside the power plant's completely refurbished former turbine building and spanning the length of nearly three football fields, Phase I of the battery system can power approximately 225,000 homes during peak electricity pricing periods. The system is made up of more than 4,500 stacked battery racks or cabinets, each containing 22 individual battery modules, which capture excess electricity from the grid, largely during high solar-output hours, and can release the power when energy demand is at its highest and solar electricity is declining, usually early morning and late afternoon.

Phases I and II of the Vistra Moss Landing Energy Storage Facility are backed up by long-term resource adequacy contracts with Pacific Gas and Electric Company (PG&E).

Vistra's Moss Landing site provides a unique opportunity for extensive future expansion of the battery storage system. With its existing infrastructure and the physical space for potential growth, this world-class industrial-zoned site can support up to 1,500 MW/6,000 MWh of storage capacity should market and economic conditions support it. With the development permit already in place and the site in condition for expansion, Vistra will be able to move quickly when that time comes.

- Upton 2 (10 MW/42 MWh) – online December 2018
- Moss Landing – Phase I (300 MW/1,200 MWh) – online December 2020
- Moss Landing – Phase II (100 MW/400 MWh) – expected online by August 2021
- Oakland (36.25 MW/145 MWh) – expected online 2022
- DeCordova (260 MW/260 MWh) – expected online 2022

Duke, Dominion, Southern File SEEM Proposal with State Regulators, Plan To File With FERC By End Of Year

Catherine Morehouse@cmorehouse10 Dec. 11, 2020

Dive Brief:

- Southeastern vertically-integrated utilities on Friday filed a proposal with North and South Carolina regulators that would form a centralized energy exchange market expected to serve about 50 million customers if approved.
- Duke Energy, Dominion Energy, Southern Company and the Tennessee Valley Authority are among the utilities that would participate in the market. The utilities plan to file the proposal with the Federal Energy Regulatory Commission by the end of the year.
- Though utilities are calling it the creation of a market, “it’s really more of an energy exchange,” said Kate Konschnik, director of the Climate and Energy Program at Duke University. “So on the one hand, it is pretty modest. On the other hand, it’s interesting that a lot of the utilities want to do this right now” in the midst of proposals in the Carolinas calling to open up the markets to more competition, she said.

Dive Insight:

Duke and Southern’s proposal was first reported in July, following discussions in the Carolinas around creating a more open power market. South Carolina’s governor in September signed into law legislation calling for a study on whether electricity market reform could benefit customers in the state. And North Carolina’s Department of Environmental Quality last year released a roadmap following an executive order from Gov. Roy Cooper, D, to study a path to reduce the state's

greenhouse gas emissions. The roadmap suggested the state pursued options to increase competition, "including but not limited to joining an existing wholesale market and allowing retail energy choice."

Clean energy and environmental advocates in the state are concerned Duke, Southern and other utilities are using Southeast Energy Exchange Market (SEEM) to control those efforts, and potentially undermine or inhibit them.

SEEM would constitute a 15 minute energy "market" that would allow utilities in the region to enter bilateral agreements for excess capacity.

"The result will be cost savings while improving the integration of all energy resources, including renewables, which are expanding rapidly in the Southeast, leading to a cleaner, greener, more robust electricity system," the joint utilities said in a press release announcing their intent to file with FERC. Utilities estimate it could save customers anywhere from \$40 million to \$50 million per year in the near term, with the potential to save up to \$150 million with higher penetrations of cheap solar resources expected over the next several years.

The potential cost savings are attractive to at least one regulator — Georgia Public Service Commissioner Tim Echols said in an email he was reassured by conversations Georgia regulators had had with experts on the proposal and he doesn't have "really any reservations" about the idea.

There had also been some trepidation in the Southeast about forming such a market because of the minimum offer price rule (MOPR) expansion in the PJM Interconnection, which Dominion is a part of, said Konschnik.

"When people think about joining a market, the obvious, immediate market that we think of, at least in the Carolinas, is PJM" because of its proximity, she said. "And so the conversations very quickly go to the states down here losing control over capacity planning, [and] the utilities not being able to have a say."

But those concerns are largely misguided, said Duke and other stakeholders. The MOPR expansion is largely a capacity market problem, said Simon Mahan, executive director of the Southern Renewable Energy Association, in an email, and SEEM would not have a capacity market, at least from the outset.

"Usually the concern has been around SEEM leading to [a regional transmission operator] that would then potentially get MOPR'd, which I know some stakeholders have mentioned," he said. "but I'm unconcerned and unconvinced it's a problem. We're aware MOPR is a disaster, but we have several other RTO models to emulate to avoid getting MOPR'd. SEEM is the first step in the market reform journey for the southeast."

Major Hack Hits Energy Companies, U.S. Agencies

Blake Sobczak, E&E News reporter. December 15, 2020

Top cybersecurity officials are scrambling to assess the fallout from a far-reaching hack of U.S. federal agencies and global companies, with electric power utilities, at least two Energy Department national labs and thousands of other organizations potentially breached.

The Homeland Security, Treasury and Commerce departments have each had some networks hacked, Reuters **first reported**, though other agencies also likely fell victim to the cyber espionage campaign given its massive reach.

At the center of the intrusions is U.S. IT service provider SolarWinds. The Austin, Texas-based company said yesterday its widely used Orion software platform had been hit by a "highly sophisticated" cyberattack "likely conducted by an outside nation state." *The Washington Post* **reported** the Russia-backed hacking group nicknamed "Cozy Bear" is believed to be responsible, citing anonymous sources.

SolarWinds counts most U.S. Fortune 500 companies, the National Security Council, the Pentagon and the White House among its customers, according to **its website**.

'Possible disruption'

Electric power industry leaders have taken note. The Electricity Subsector Coordinating Council, a group of energy industry CEOs that meets regularly with top government officials, held a "situational awareness call" yesterday morning about potential threats to the grid.

It was not immediately clear how the global intrusion campaign could affect the operational technology that keeps the lights on and oil and gas facilities online. But experts said some critical infrastructure operators rely on Orion and had been hacked.

Southern California Faces More Blackouts Due to Fire Risk

Mark Chediak, Bloomberg News

(Bloomberg) -- Edison International's Southern California Edison utility warned again that it may need to cut electricity to residents to prevent its power lines from sparking wildfires during windy conditions.

The utility said that as many as 40,000 homes and businesses in high fire risk areas in five counties could be shut off in the coming days, according to a posting Wednesday on its website. The National Weather Service has issued a high wind advisory through Thursday evening for mountain passes east and north of Los Angeles.

©2020 Bloomberg L.P.

Study Finds US Can Reach Net-Zero Emissions By Spending 3% More On Energy

Zack Hale S&P Global Market Intelligence

Five different decarbonization pathways examined

Grid may need to triple in size by midcentury

The U.S. can completely decarbonize its economy by midcentury without spending significantly more on energy, according to a new report released Dec. 15 by a team of researchers at Princeton University.

While the U.S. is projected to spend approximately \$9.4 trillion on energy over the next decade, it could pursue any of five different decarbonization pathways each of which would only cost about 3%, or \$300 billion, more than a business-as-usual approach, the report determined.

Produced by the Princeton researchers in cooperation with external collaborators, the 346-page report is the first to quantify with such specificity the energy infrastructure needed in the coming years to avoid the worst effects of climate change, the school said in a Dec. 15 news release.

The report also projected expected winners and losers down to the county level, finding that a massive clean energy push would create approximately 500,000 to 1 million jobs in this decade alone while displacing some workers in areas that rely on extractive fossil fuel industries.

While researchers used different assumptions to model the five different pathways, all of the scenarios assumed that coal will no longer be used for power generation by 2030. That would avoid 100,000 premature deaths linked to air pollution by midcentury, amounting to nearly \$1 trillion in public health benefits, the report estimated.

A "high electrification" scenario assumes that 100% of cars are electric by 2050, while a "less high electrification" scenario contemplates the U.S. using liquid fuels for longer. No new nuclear plants are built under the report's "all renewables" scenario, which also assumes fossil fuel use is completely eliminated by 2050. Finally, a "limited renewable" case foresees a role for nuclear power along with carbon capture and sequestration technology, and a high-biomass scenario assumes the conversion of some currently productive farmland to energy crops.

Grid expansion

The report also envisions expanding the U.S. electric transmission grid 60% by 2030, warning that it may need to triple in size by midcentury.

"The current power grid took 150 years to build. Now, to get to net-zero emissions by 2050, we have to build that amount of transmission again in the next 15 years and then build that much more again in the 15 years after that. It's a huge amount of change," Jenkins said.

Funders of the research included BP PLC and Exxon Mobil Corp., two oil majors with decarbonization plans that vary in ambition. BP plans to shrink its oil and gas production by 40% in the next 10 years, while Exxon announced on Dec. 14 that it will aim to reduce its upstream emissions 15% to 20% by 2025.

As of Dec. 4, 70% of the 30 largest U.S. electric and gas utilities had net-zero equivalent targets or were moving to comply with a similarly aggressive state mandate, according to a review of utilities' plans by S&P Global Market Intelligence. As part of their aggressive targets, most of the companies are banking on major advances in related technologies such as carbon capture and sequestration, advanced nuclear reactors, green hydrogen, longer-lasting battery storage, and carbon offset credits.

Energy Sector Projects Growth, Job Recovery In 2021

Amy Koczera Updated: Dec 31, 2020

LUBBOCK, Texas — Despite the struggles 2020 has brought to the energy industry, there are some bright spots ahead in 2021, according to officials from Norton Energy Drilling and Xcel Energy. Here were some of their predictions for the new year.

It's projected that both renewable energy and oil will see significant growth by the second half of 2021. Oil prices and energy production are already up from when the pandemic first hit in March.

However, job recovery has not happened quite as fast. Many companies have scaled back to get through the year, and many are still catching up.

According to statistics from West Texas Intermediate Crude Oil, the cost of crude oil currently fluctuates between \$40 and \$50 a barrel – up significantly from April’s dismal drop into the negatives– the lowest drop in decades.

Norton Drilling typically has all six of their oil rigs running, but now, they only have two.

Xcel Energy said it hopes to bring more wind and solar projects to the South Plains and Permian Basin in the new year.

Copyright 2021 Nexstar Inc. All rights reserved. This material may not be published, broadcast, rewritten, or redistributed.

Weekly Fuel Price Watch

Published January 5, 2021

Natural Gas Spot Market (Henry Hub)



December 29: \$2.40 per million Btu

One month ago: \$2.39 per million Btu

One year ago: \$2.10 per million Btu

U.S. Crude Oil Spot Prices (West Texas Intermediate)



December 28: \$47.50 per barrel

One month ago: \$45.72 per barrel

One year ago: \$63.27 per barrel

Retail Gasoline Prices (Regular)



January 4: \$2.25 per gallon

One month ago: \$2.16 per gallon

One year ago: \$2.58 per gallon