RTO Insider

Your Eyes and Ears on the Organized Electric Markets CAISO = ERCOT = ISO-NE = MISO = NYISO = PJM = SPP

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Western Utilities Eye RTO Membership in SPP

By Tom Kleckner

SPP signaled it could be on the verge of further expanding its RTO footprint with an announcement Thursday that several Western utilities are committed to evaluating membership in its regional electricity market.

Basin Electric Power Cooperative, Deseret Power Electric Cooperative, the Municipal Energy Agency of Nebraska (MEAN), Tri-State Generation and Transmission Association and the Western Area Power Administration would become the first SPP members to have facilities in the Western Interconnection under the RTO's Tariff.

WAPA's membership would include participation of its Upper Great Plains-West (UGP-West) region and Loveland Area Projects, the RTO said.

The utilities, some already members of SPP in the Eastern Interconnection, have all sent letters expressing their interest in placing

their Western facilities under the RTO's Tariff. The letters indicate they will work with SPP to evaluate the terms, costs and benefits of doing so, the grid operator said.

Tri-State staked out a leadership position within the group, devoting part of a Thursday press conference with Colorado Gov. Jared Polis to extoll the benefits of RTO membership. The virtual event was to highlight Tri-State's electric resource plan, to be filed with the Colorado Public Utilities Commission next month, that will "dramatically" increase its renewable resources and reduce emissions. Under Polis, Colorado has established a goal of 100% renewable energy by 2040.

Tri-State CEO Duane Highley said connecting the West's solar capacity with the East's abundant wind capacity - Kansas and Oklahoma both produce more wind energy than they can use - will efficiently facilitate the transfer of additional generating resources across the

Continued on page 38

MISO West Risks Becoming 'Dead Zone,' Stakeholders Warn

By Amanda Durish Cook

MISO stakeholders sounded alarm bells last week, saying another round of prohibitively expensive system upgrades would render the RTO's West planning region a "dead zone" for new generation.

MISO West - which includes Minnesota, Iowa, parts of the Dakotas and western Wisconsin — is again facing high system upgrade costs for interconnection hopefuls, this time from SPP studies of generator interconnections, or affected-system studies, along the seams.

SPP's draft studies of a 2017 cycle of generation projects in MISO West recommend about \$500 million of upgrades for 250 MW of projects.

"There are still a lot of coordination issues

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EEI Panelists Predict Protracted Economic Recoverv (p.11)



Chief Ethics, Legal Officers 'Separate' from FirstEnergy (p.33)

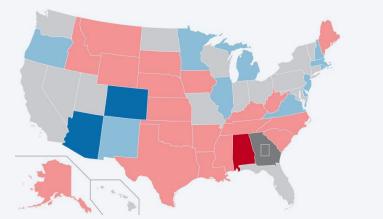


PJM IMM Warns on **Capacity Market** Overhaul (p.34)



Evergy Disputes NextEra Purchase

NARUC ANNUAL MEETING AND EDUCATION CONFERENCE



Democrats flipped two Senate seats (Arizona and Colorado), while Republicans flipped one (Alabama). Two runoff elections in Georgia on Jan. 5 (represented by the rectangle), both with GOP incumbents, will decide control of the chamber during the first two years of the Biden administration.

NARUC Hears of 'Incremental Change' to Federal Policy (p.3)

NARUC Panel Takes on West's 'Surreal Summer' (p.5)

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Editorial

Editor-in-Chief / Co-Publisher Rich Heidorn Jr. 202-577-9221

Deputy Editor / Daily Michael Brooks 301-922-7687

Deputy Editor / Enterprise Robert Mullin 503-715-6901

Art Director Mitchell Parizer 718-613-9388

Associate Editor Shawn McFarland 570-856-6738

Copy Editor/Production Editor Rebecca Santana 770-862-6004

CAISO/West Correspondent Hudson Sangree 916-747-3595

ISO-NE Correspondent Jason York 860-977-7830

MISO Correspondent Amanda Durish Cook 810-288-1847

NYISO Correspondent Michael Kuser 802-681-5581

PJM Correspondent Michael Yoder 717-344-4989

SPP/ERCOT Correspondent Tom Kleckner 501-590-4077

NERC/ERO Correspondent Holden Mann 205-370-7844

Subscriptions

Chief Operating Officer / Co-Publisher Merry Eisner 240-401-7399

Account Executive Kathy Henderson 301-928-1639

Account Manager Phaedra Welker 773-456-4353

Marketing Director Margo Thomas 480-694-9341

RTO Insider LLC

10837 Deborah Drive Potomac, MD 20854 (301) 299-0375

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NARUC Hears of 'Incremental Change' to Federal Policy

By Michael Kuser

Without the blue wave forecast by some pollsters, the Biden administration will likely go for moderate, incremental change to federal energy policy rather than large, ambitious packages, National Association of Regulatory Utility Commissioners' Energy Resources and the Environment (ERE) Committee heard on Nov. 10.

"It's really about the art of the possible, given the divided government at the national level, assuming Republicans hold the Senate," said Emily Duncan, director of federal government relations for National Grid, who presented a brief post-election



Emily Duncan, National Grid | NARUC

assessment for the committee.

Two runoff elections in Georgia scheduled for Jan. 5 will determine which party controls the Senate: If the two parties are tied, effective control would go to the Democrats, as Vice President-elect Kamala Harris would have the tie-breaking vote.

President-elect Joe Biden has said his top four priorities are the coronavirus, the economic recession, systemic racism and climate change.

"We could see the Democratic-controlled House put together packages on each of those issues; however, I think it's highly unlikely that a Republican-controlled Senate would take any of those up," Duncan said. "The real question is what is Majority Leader [Mitch] McConnell [R-Ky.] willing to negotiate with a President-elect Biden?" (See GOP Senate May Limit Biden Climate Ambitions.)

Path of Least Resistance

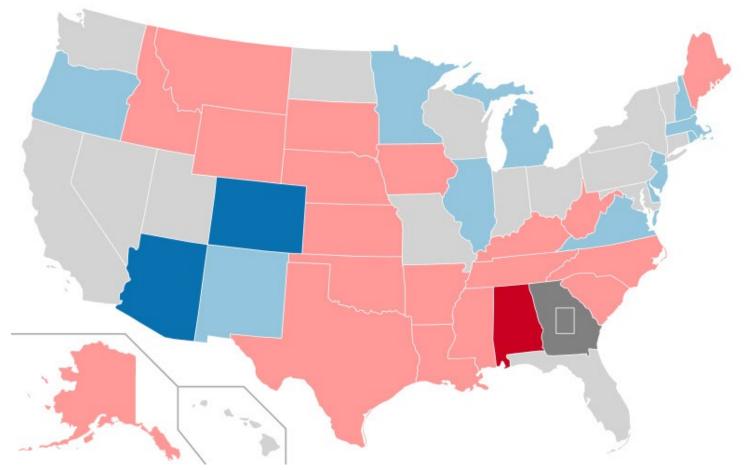
The new administration will likely pursue

regulatory action under existing statutory authorities rather than legislative wins, Duncan said. Biden spent 40 years of his career in the Senate and knows the people and the rules, so "if there is going to be any bipartisanship, Biden is the one to get it done," she said.

McConnell has called for a COVID relief package to be passed during the lame-duck session of Congress, and if that happens, there may not be another in the first 100 days of the new administration, she said.

"I think we will continue to see pressure at the federal level on energy items related to COVID, in particular federal efforts to implement moratoriums on utility shutoffs and disconnections," Duncan said. "Obviously as an industry, we work very hard with you, our state regulators, on those issues and would prefer to keep that at the state level, so we'll be following that closely."

There also is the possibility for increased



Democrats flipped two Senate seats (Arizona and Colorado), while Republicans flipped one (Alabama). Two runoff elections in Georgia on Jan. 5 (represented by the rectangle), both with GOP incumbents, will decide control of the chamber during the first two years of the Biden administration.

funding for the Low Income Home Energy Assistance Program, and technology R&D has always enjoyed bipartisan support, she said.

But there will also be increased conservative judicial scrutiny of any regulations that the administration issues, and a Republican Senate will moderate Biden's cabinet nominations, and more moderate cabinet secretaries will likely moderate regulations that come out of those agencies, she said.

On FERC

President Trump on Nov. 5 replaced FERC Chairman Neil Chatterjee with fellow Republican Commissioner James Danly. (See *Trump Names Danly FERC Chair*.)

"We are hearing that [the] Senate Energy [and Natural Resources Committee] may vote as early as [this] week to advance the two FERC nominees," Democrat Allison Clements and Republican Mark Christie, Duncan said. With Danly becoming chair, "it will be interesting to see what happens over the next two and a half months" at FERC.

Duncan said that Biden would very quickly move to name Commissioner Richard Glick as chairman, even though Democrats would remain in the minority if the full Senate confirms Clements and Christie.

While Danly has not been supportive of carbon pricing, there is even a question as to whether

Glick would be supportive or choose another path, she said.

"However, as chairman, Glick will set the agenda and determine what items are voted on, so it will be interesting to see if the Senate moves to confirm the two commissioners and bring FERC to its full quorum," she said. "Certainly most in the regulating community would like to see five commissioners at FERC, so we're hopeful that that will happen."

Under Glick, the commission is likely to revisit its policies on certifying new natural gas infrastructure projects and probably revise how it conducts environmental assessments under the National Environmental Policy Act, Duncan said.

Colorado Public Utilities Commission Chairman Jeffrey Ackermann, who also chairs the ERE Committee, asked how the Energy Department and EPA might differ under Biden.

Duncan listed an expanded definition of "Waters of the United States" under the Clean Water Act, "fuel economy standards for model years beyond what the original California waiver was for ... new source performance standards on methane on private lands ... [and] methane flaring controls on public lands as well."

Nonetheless, with the federal government still divided, states will remain in the driver's seat in terms of transitioning away from fossil fuels

"I think we will continue to see pressure at the federal level on energy items related to COVID, in particular federal efforts to implement moratoriums on utility shutoffs and disconnections."

-Emily Duncan, director of federal government relations for National Grid

and toward renewable energy resources, she said. ■



Emily Duncan of National Grid on Nov. 10 presented an outlook on post-election federal energy policy to NARUC's Energy Resources and the Environment Committee. | NARUC

NARUC Panel Takes on West's 'Surreal Summer'

By Hudson Sangree

Rolling blackouts, massive wildfires and extreme heat produced a "surreal summer" in the Western Interconnection that panelists examined during the National Association of Regulatory Utility Commissioners' annual meeting Wednesday.

The blackouts ordered by CAISO on Aug. 14-15 were not the only extraordinary measures taken to deal with a heat wave that outstripped even normal August highs and sent the temperature in Death Valley to 130 degrees Fahrenheit on Aug. 16.

"This wasn't just a California event," said Washington Utilities and Transportation Commissioner Ann Rendahl, who moderated the online panel entitled "Lights Out! Lessons from the West's Surreal Summer Season."

"The excessive heat across the Western United States resulted in stress for many balancing authorities due to the high air conditioning demand," Rendahl said. "WECC identified 18 emergency alerts from balancing authorities across the West between Aug. 14 and Aug. 19. A similar event could have occurred in several areas in the West."

The summer wildfires that blanketed the West in smoke and shut down power in parts of California and Oregon added to the stress on residents and the grid, she said.

Learning from the summer's events to avoid future blackouts is vital, Rendahl said.

Other panelists were former FERC Commissioner Cheryl LaFleur, a member of the ISO-NE Board of Directors; Ahmad Faruqui, an energy economist and principal with the Brattle Group; David Geier, COO of San Diego Gas & Electric; and Mark Rothleder, COO of CAISO.

Geier spoke about his utility's lauded efforts to prevent fires in the past decade, such as grid hardening, weather monitoring and public safety power shutoffs (PSPS) to keep utility equipment from sparking blazes.

Rothleder walked through the findings of a preliminary report on the causes of the August blackouts, including day-ahead forecasting failures, untimely exports and limited transmission to import energy from neighboring states. (See CAISO Says Constrained Tx Contributed to Blackouts.)

Faruqui said the summer's blackouts and



Washington UTC Commissioner Ann Rendahl moderated a NARUC panel on the West's 'surreal summer.' | NARUC

PSPS events reminded him unpleasantly of the Western energy crisis and rolling blackouts of 2000/01. This time, his family had battery backup in their home, but hundreds of thousands of customers lost power and air conditioning amid triple-digit temperatures and thick smoke from wildfires.

"We felt we were living at the edge of darkness," Faruqui said.

Talking with colleagues around the world, he said, he realized "everyone was watching what was happening in California."

Spur to Regionalization?

LaFleur said that to prevent future outages, California and other Western states pursuing aggressive decarbonization must work harder to ensure they have adequate resources. Arizona, California, Nevada, New Mexico and Washington have ambitious clean energy goals, with other states expected to follow suit.

Renewable resources are not the problem, LaFleur said. The extreme weather conditions and fires of August argue for more carbon-free energy to stem climate change, she said.

But states switching to large amounts of wind and solar need dispatchable resources for the times when wind and solar drop offline, she said.

"I think part of the issue in California, systemically, has been not enough dispatchable resources at the right time to balance the solar and wind," LaFleur said. "California has been very decisive about what resources it doesn't want, but it's suffered from a pattern of closing resources before the ones that were supposed to replace them were online. That included losing 10,000 MW of gas in recent years, [while] planning on new resources, including largescale storage that's not online yet."

Studies have shown states can substantially decarbonize the grid while retaining gas plants that are infrequently used but available when needed, she said.

The other big issue is who's in charge of resource adequacy, she said. RA planning can only work with "clear lines of authority and clear handoffs to make sure that whoever has their hand on the switch running the grid has enough energy when they need it."

California has a "particularly tangled and complex set of responsibilities for making sure there's enough resources available to keep the lights on," LaFleur said. The state Energy Commission forecasts long-term demand; the Public Utilities Commission orders yearly procurement; the ISO runs the grid on the resources it is given, with limited backstop purchasing authority; and the legislature dictates what type of resources are acceptable for load-serving entities to buy, she noted.

The agencies and the ISO need to work together better and with FERC to make sure there are adequate resources going forward, she said.

Western regionalization could also help California and other states ensure there's sufficient energy while pursuing decarbonization, she said. In past years, California lawmakers have considered efforts to change CAISO's governance structure to allow it to lead a Western RTO, but without success. Other Western states have also resisted the idea. (See Western RTO Proponents Vow to Keep Trying.)

"I hope that this summer's events are a spur to think about that one again," LaFleur said.

Utility M&A Expert Gives NARUC a Scolding

By Michael Kuser



NARUC on Nov. 9 hosted author and former NRRI director Scott Hempling, top, to discuss his new book on mergers and acquisitions with current Director Carl Pechman. | NARUC Regulators respond to power industry mergers and acquisition pressure by ceding leadership, underestimating the negatives and accepting minor positives, lawyer and author Scott Hempling said last week during National Association of Regulatory Utility Commissioners' annual meeting.

"M&A applicants tend to frame a proposal as simple and positive, and

commissions tend to start by viewing it that way, not as a transfer of a government-created franchise for gain; they view it as 'oh, these people are coming and they're going to bring us something," Hempling said. "The regulators don't question what transaction they are precluding by considering a deal, and some commissions actually advocate for the transaction by trying to fix it with conditions."

NARUC hosted Hempling, former director of the National Regulatory Research Institute (*NRRI*) to talk about his new *book*, "Regulating Mergers and Acquisitions of U.S. Electric Utilities," on Nov. 9.

A self-professed "blunt-speaking" New Jersey native now living in the D.C. metro area, Hempling described his book between fielding questions relayed by current NRRI Director Carl Pechman.

Razzle Dazzle

When electric utility monopolies try to acquire other utilities "undisciplined" by competition, they present the deal in "wrapping paper" that distracts regulators, who tend to be unprepared and thus fall for the "WYSIATI" syndrome: believing that "what you see is all there is," Hempling said.

These deals can be described as "mergers," but they are acquisitions, and what is being acquired is control of a government-protected franchise to sell electricity, he said.

"Make the mental effort to think it through, and take a stand; define your terms; say you won't accept too much debt buying the target, or you'll only accept such a percentage of debt and why," Hempling said. "There is no invisible hand in these government-created monopo-lies."

Commissions have checklists instead of visions, he said. Laws tend to say only that a merger shall be consistent with the public interest, and so they grant regulators vast discretion over defining the public interest.

"I have looked and have yet to find a commission that has actually defined the public interest in terms of a vision ... of enforceable expectations for the types of services that the public wants in a state," Hempling said.

The term "economies of scale" is a marketing tool, not a data point, and people use it without understanding what exactly it means, he said.

Public Utilities Commission of Ohio Chair Samuel Randazzo asked Hempling whether he could identify any merger not driven by economies of scale that nonetheless has served the public interest.

Hempling replied that none came to mind, but he talked about a hypothetical situation in which a state seeks a better performing company to replace an incumbent utility.

"The issue is not economies of scale; the issue is somebody is more innovative; somebody can run a pipeline system without blowing up neighborhoods; somebody can run a transmission system without causing fires across thousands of acres in California ... so I can hypothesize a transaction not driven by economies of scale but that does serve the interests of customers because its core purpose is performance," he said. "These mergers have wrapping paper that talk about performance but ... are not driven by performance."

Pechman mentioned a current exception. "The city of San Diego is investigating reissuing the franchise to San Diego Gas & Electric, and they're looking at alternatives, which could potentially lead to a merger in terms of providing better customer service," he said.

Hierarchical Conflict

Harms may arise from the changed market structure, and the current era is characterized by a desire to decentralize supply, while at the same time PUCs are presiding over concentration of control, Hempling said.

"Remember that at the top of the merged company is a holding company. Well, the holding company has no statutory obligation to utility customers, so its private, for-profit aspirations can conflict with its utility subsidiary's public service obligations," Hempling said. "Let us not kid ourselves: There is conflict between the parent and the utility."

As an example, he brought up D.C. regulators in 1999 getting Potomac Electric Power Co. (Pepco) to divest its generation assets because the district's legislature wanted to introduce retail choice.

"Well, along comes Exelon as a prospective acquirer of Pepco," Hempling said. "That merger was going to convert Pepco from a wires-only company into a minor subsidiary of a major generation owner, so you're going to have a conflict, because a wires-only company is going to want low generation prices, and the generation company wants high generation prices."

In approving Exelon's acquisition of Pepco, D.C. regulators "completely ignored" their own policy of separating generation from monopoly distribution services, he said.

Public Service Company of New Mexico (PNM) is its own entity, but if acquired by Iberdrola, it will be a small part of a multinational conglomerate, he noted. (See Avangrid to Acquire PNM Resources for \$4.3B.)

Regulators underestimate the conflicts, and "I have yet to see a commission decision that is straight about the private/public conflict," Hempling said.

Commissions have erred in focusing on avoiding harm rather than maximizing benefits, and "there is a failure to recognize that now that Exelon has bought Pepco, it can buy anybody else," he said. "When the Connecticut commission approved Iberdrola's acquisition of United Illuminating ... did the commission think about whether Iberdrola would next be acquiring [PNM]? Does it matter?"

Hempling credited reading the work of behavioral economists in helping him understand what it is about the regulators' mindset that causes them to make what he believes are legal and logical errors.

"I will argue that there's a passion gap ... as exemplified by the maximizing return versus no harm, and that passion gap leads to deference," he said. He faulted regulators for taking mental shortcuts, opting for automatic thinking instead of making the effort required to find what is best for the public interest.

The aim is a deal that is excellent, not the best financial engineering, Hempling said. ■

NARUC Panel Debates Clean Energy and Markets

Alternatives to Carbon Pricing, Capacity Markets Discussed

By Rich Heidorn Jr.

Four present and former regulators told the National Association of Regulatory Utility Commissioners last week they are skeptical that carbon pricing and mandatory capacity markets would achieve decarbonization goals.

Instead, consultant Rob Gramlich, who served as an aide to former FERC Chair Pat Wood III, touted the energy-only market his former boss helped design in ERCOT. Former Montana regulator Travis Kavulla cited the simplicity of a clean energy credit market, saying it could save PJM billions annually. Rhode Island regulator Abigail Anthony warned against mixing clean energy goals with economic development, while Kentucky regulator Talina Mathews predicted the role of PJM's capacity market would diminish.

Judith Jagdmann, a three-term member of the Virginia State Corporation Commission, moderated the general session discussion on clean energy and the markets at NARUC's Annual Meeting and Education Conference. The session Nov. 10 came less than a week before Monday's deadline for comments on FERC's proposed policy statement inviting states to introduce carbon pricing in wholesale electricity markets (AD20-14). (See FERC: Send Us Your Carbon Pricing Plans.)

Don't Mix Economic Development with Energy Goals

Anthony, who was appointed to the Rhode Island Public Utilities Commission in 2017, opened the session by listing the criteria she said were needed for a wholesale market design to meet state clean energy objectives: It should deliver incremental carbon reductions; allow clean energy projects to secure financing; include penalties for facilities that fail to deliver; and internalize externalities that are associated with the markets.

What the market should not attempt to do, she said, is "deliver on policies that are not direct externalities of power generation," including economic development.

"It's going to take many billions of dollars in investments to mitigate climate change and achieve our states' greenhouse gas reduction targets, and we risk not having the means to meet those greenhouse gas-reduction goals when we make economic development and

CLEAN ENERGY AND THE MARKETS



Speaking at the NARUC conference on clean energy and markets were (clockwise from top left) moderator Judith Jagdmann, Virginia State Corporation Commission; Abigail Anthony, Rhode Island Public Utilities Commission; Talina Mathews, Kentucky Public Service Commission; Rob Gramlich, Grid Strategies; and Travis Kavulla, NRG Energy. | *NARUC*

local jobs the primary purpose of clean energy," she said. "So, I think that for our own good kind of to save us from ourselves — we need markets that are designed to deliver maximum carbon reductions at the least cost.

"I think that [ISO-NE] can certainly design a market that internalizes carbon externalities. The *Forward Clean Energy Market* seems to be a good example of a market structure that internalized the carbon value of clean energy and provides the stable medium- or long-term revenue stream that allows projects to be financed," Anthony said. "But to realize cost savings over current practice, states would have to cede control and allow the market to deliver the most efficient projects."

Carveouts for in-state resources would make the market less efficient, she said. "States have a lot of policies, and very few of them should be reflected in wholesale markets."

Similarly, the market should not attempt to internalize externalities such as concerns about the land-use impact of solar generation, Anthony said. "The loss of farmland, or pollinator habitat — those are externalities of land development, and the externality needs to be internalized via the price of developing land so that those additional costs flow to whatever development goes on that land, whether it's solar or condominiums."

Asking Markets to Do More than they Can

Mathews, who joined the Kentucky Public

Service Commission in 2017, said markets are best at security-constrained economic dispatch: "The megawatts get to the customers at the least cost available."

But she said their success depends on a large footprint and a uniform commodity. "I think when you start to carve out the footprint and then you start to change [to] green megawatts, blue megawatts, red megawatts, black megawatts, then you've suddenly started segmenting that market and it becomes less efficient."

That, she said, is PJM's problem: dealing with a patchwork of state laws and executive actions, including goals for renewable energy, clean energy, carbon and energy efficiency.

"You're kind of asking the market to do more than it was designed to do or that it can do efficiently," she said. "I think fundamentally you will get to a point in an RTO like PJM where there will be state policies that get promoted at the expense of other state policies, and I think you'll see then either [state] commissions making the decision to pull their utilities out [of the RTO], or maybe in other states, they'll tell their utilities they have to [use] fixed resource requirements ... to acquire their own resources to meet their load, and the capacity market will just be residuals."

Clean Energy Credit Market, not Carbon Pricing

Kavulla, vice president of regulatory affairs for NRG Energy, noted that 30 jurisdictions

have adopted clean energy standards (CES) or renewable portfolio standards and a quarter of the U.S. population is in areas that have declared 100% clean energy goals. But only a handful of them, such as members of the Regional Greenhouse Gas Initiative (RGGI), price carbon.

"For PJM, which has both CESes, RPSes and carbon pricing, the market for [renewable energy credits] is about four times as large as the market for emission allowances within RGGI. ... So, if FERC and states are really going to be speaking the same policy language here, it really needs to center around that trade in credits – renewable energy credits or something hopefully more technology-neutral so you can fulfill Commissioner Anthony's mandate for the same value for the same increment of carbon reduction.

"I think states and FERC alike would be well advised to consider setting up state-led, RTO-facilitated markets for these clean energy credits," continued Kavulla, who served as NARUC president during his term on the Montana Public Service



Travis Kavulla, NRG | NARUC

Commission. "The Forward Clean Energy Market is one type of market design that could facilitate that; there are real efficiencies to be wrung out of the system now."

RPS and CES programs are often targeted toward particular technologies or include locational requirements, he said. And they are usually secured through long-term contracts that undermine RTO markets' shift of risk to generation owners like NRG, he said. "So, that same basic model that's worked fairly well for restructured jurisdictions is something that I think can apply to a trade in clean energy credits to get it to look a little bit more like a competitive market where investors have to take risk."

Kavulla cited a *study* published last month by Energy and Environmental Economics that found an efficient regional CES could save \$2.5 billion annually in PJM. The study also said that existing state carbon policies and subsidies will increase electricity costs by more than \$3 billion in 2030 and achieve less than half of emissions reductions that could be achieved through a competitive, market-based approach. (See *Study Recommends Carbon Price for PJM*.)

"That study shows that a regional, efficient CES can also rival the efficiency of a regional carbon price" without concern over the kind of carbon leakage seen in RGGI, Kavulla said. "In a regional carbon price configuration, in order for it to really work, you need price uniformity across an entire region. And it's going to be hard to achieve that in a mix of states as diverse as West Virginia and Maryland, to use two neighbors."

In contrast, a CES market would provide "a lot more flexibility for the states, as well as more of a seat at the table in terms of governance and market design oversight, simply because they ultimately control the spigot of demand.

"I think a more voluntary market like a regional clean energy standard or a clean energy market is probably a more politically appealing way to go, simply because a lot of states have voluntarily expressed the quantity they want as well as the reserve price — the price ceiling. And you don't have to worry about FERC playing carbon referee on leakage," Kavulla continued. "I think it's worth FERC considering carbon pricing ... but they really need to be considering alongside that a policy for a regional clean energy standard. Because without it, I fear, states and FERC are still going to end up two ships passing in the night."

ERCOT Model

Gramlich, president of Grid Strategies and executive director of *Americans for a Clean Energy Grid* and the WATT Coalition, said he was confident the U.S. can achieve more than 80% renewable penetration and up to 95% carbon-free generation with existing technologies.

"But you operate that system differently, and so, we're going to have to think about how do we not only get the long-term procurement for the carbon-free, clean renewable resources ... but also the flexible and firm resources, because we need to acknowledge there will be three-day periods where there isn't a lot of wind or sun."

Gramlich said he supports ERCOT's energyonly model, which makes competitive retailers responsible for resource adequacy. "Of course, if a state has more ambitious clean energy objectives, they can pass a CES or carbon price and do that if they wish. If a state is not interested in that much retail competition ... they can do a New Jersey-style [*basic generation service* auction] under that same market structure, where ... you still get the benefit of competitive generation.

"Right now, it's really unclear between a lot of different entities who has the responsibility" for resource adequacy, he said.

Commissioner Jagdmann noted that Texas has

shown reserve margins as low as 3%. "Are you comfortable with that?" she asked Gramlich.

"Every year is another test of the ERCOT model, and every year it works," Gramlich replied. "And then every skeptic or every fan of central capacity markets says, 'Oh well, there was something unique about last year. We'll see how it goes next year.' You know, we're in Year 20. ... It's been working great every year. I don't think reserve margin is necessarily the right metric of reliability; it will be different in the future if you get that active demand-side" response.

"Texas isn't perfect," Gramlich continued. "They need more dynamic retail rates, like most states do — some type of real-time, time-ofuse [pricing] or some other type of pricing on the retail end.

"We all need to get used to scarcity pricing in any RTO. I think all of them should have prices that go ... well into the four digits, because there are times when the accurate wholesale price in terms of the value of energy is up there. Now the key from a consumer protection standpoint ... is you want to make sure nobody actually has to pay that. And you do that by making sure there is forward contracting or hedging. And that basically is what happens in Texas. You get to \$9,000[/MWh] prices, but you look around and pretty much everybody is hedged. So, it's sort of like: You don't want to get the speeding ticket, but you didn't have to speed."

Pricing Carbon in Electricity but not Heating, Vehicle Fuel



Abigail Anthony, Rhode

Island PUC | NARUC

Anthony said the focus on carbon pricing in wholesale power markets alone is myopic.

"What we're really, really going to need if we're going to achieve our goals is an economy or energy sector retail carbon price, which

theoretically would be a much more efficient tool to achieve the New England states' goals around transportation and heating electrification.

"If we continue to price carbon in electricity like we do through RGGI and all of our other clean energy goals and continue to ignore it in the price of natural gas and heating oil and transportation fuels, we're going to fail at our electrification efforts because we're just going to keep driving up the price of electricity even more relative to its substitute fuels."

Do Natural Gas Bans Make Cents?

'Exceptionally Bad' Strategy, says Former NARUC Economist

By Rich Heidorn Jr.

San Francisco and Ojai, Calif., last week banned natural gas in new buildings, bringing the number of cities in the state that have adopted building codes to reduce their reliance on gas to 39, *according to* the Sierra Club.



While such bans have become increasingly popular in the push for electrification, they are an "exceptionally bad" way to attack climate change, regulatory economist Ken Costello told the National Association

Ken Costello | NARUC

of Regulatory Utility Commissioners' Annual Meeting and Education Conference during a panel discussion Nov. 10.

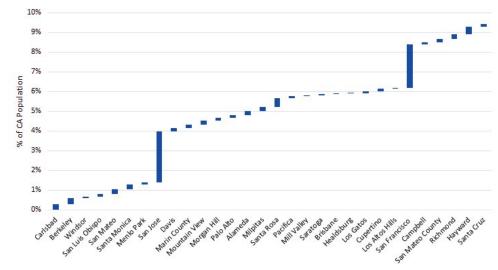
"Less than 9% of carbon emissions in the U.S. are from direct use of natural gas in homes and buildings. The U.S. emits about 15% of world carbon emissions. Thus, under the condition where all buildings are converted to be electric and we have electricity produced only from clean sources, the reduction in worldwide carbon would be less than 1.5%, which would have no impact at all ... on global climate," said Costello, an independent consultant who formerly worked for NARUC's National Regulatory Research Institute. "We know there's more efficient ways to deal with climate change."

'Incongruent'

Richard Meyer, managing director of energy analysis for the American Gas Association, was also critical, saying natural gas is desired by consumers and that its infrastructure will be essential for decarbonizing. Bans represent "an all-or-nothing approach that seems incongruent with the size and the scale of the challenge" of climate change, he said.

Residential natural gas represents 4% of U.S. GHG emissions, with the commercial sector adding another 3%. "Residential natural gas emissions on average are about 250 million metric tons per year of CO_2 . That's equivalent to two weeks of Chinese coal emissions," Meyer said.

The third member of the panel, Amber Mahone, a partner in San Francisco-based consulting firm *Energy and Environmental Economics*



Percent of Californians living in jurisdictions with clean-energy building codes | Sierra Club

Amber Mahone, E3 |

NARUC

(E3), acknowledged that U.S. natural gas use is a small contributor to worldwide GHG emissions.

"I would say there's two reasons for action despite that fact," she said. "One is the incredible power of the U.S.

market to drive innovation. We've seen that with investments in solar and wind, bringing down the capital cost of that equipment dramatically and leading to widespread economic adoption of renewables. I think we could see similar innovation occurring in decarbonizing buildings, both with innovations in heat pumps as well as innovations with renewable natural gas. Bringing down the cost of biomethane and hydrogen would certainly be beneficial globally for reducing emissions.

"The other [reason] I would say is that deciding not to take action is a bit of a cop-out for one of the most advanced industrialized economies that historically has contributed to the predicament that we find ourselves in today."

A Trend?

Although more than three dozen California cities have adopted gas bans, the idea has not taken root elsewhere.

Brookline, Mass., banned natural gas hookups in new buildings last year, but the state's at-

torney general *struck it down* because state law pre-empted the city's ordinance.

Meanwhile, Arizona, Tennessee, Oklahoma and Louisiana passed laws this year barring local governments from adopting electrification measures or natural gas bans similar to those in California, *according to* InsideClimate News. At least four other states introduced similar measures, it reported.

Meyer said bans have been enacted without sufficient analysis on costs and benefits, including the strain on electric infrastructure and the impact on jobs, taxes, wages and low-income residents. "I'm not saying [carbon emissions from natural gas] can't and shouldn't be reduced," he said. "I'm not saying they're unimportant. Quite the opposite: AGA is committed to reducing GHG emissions through smart innovation, new modernized infrastructure and advanced gas technologies."

But he said gas is the most affordable way to heat homes, with electric heat costing about 3.7 times as much. "The natural gas system today delivers a tremendous scale of energy to homes and businesses when they need it most. The gas system delivers about three times more energy on the coldest day of the year than the electric system does on the hottest."

As evidence of consumer demand for gas, Meyer noted that although California has led the way on gas bans, it has also added almost 600,000 residential gas customers since 2010, more than any other state. He said natural gas

and its infrastructure will be crucial to meeting climate goals, which some say will require a future "hydrogen economy."

"One of the key ways to make hydrogen is via natural gas. And you can use carbon capture with a steam reformation process and have low-carbon sources of hydrogen," he said. "Europe has ... come to a recognition that you really do need to leverage the gas system to achieve your goals quickly, effectively and cost-efficiently. I think the U.S. will come to the same realization."

No Easy Solutions

Mahone acknowledged that decarbonizing existing buildings is difficult and expensive, but she said their contribution to climate change is too important to ignore.

"All of the options on the table have challenges and costs if you look at the economics today. But we also know that reducing greenhouse gases is difficult in many sectors of the economy, including in the industrial sector and aviation and heavy-duty trucking," she said. "So, if we shied away from one area where it looks hard, we might find ourselves not taking action anywhere. So, I do think it's important to tackle greenhouse gases for buildings."

Costs Vary by Region

Mahone also said the economics of replacing gas heating with electricity varies by region. In the Bay Area, she said, there has been a trend toward all-electric new construction, particularly in multifamily buildings, because of the cost savings and reduced permitting time from avoiding natural gas hookups.

Berkeley, one of the first cities to adopt a gas ban, has "a relatively mild climate. ... We get an



Richard Meyer, American Gas Association | NARUC

"The other [reason] I would say is that deciding not to take action is a bit of a cop-out for one of the most advanced industrialized economies that historically has contributed to the predicament that we find ourselves in today."

-Amber Mahone, a partner in San Francisco-based consulting firm Energy and Environmental Economics (E3)

occasional winter frost and that's about it," she said. "We do see that electrification can reduce energy bills in some cases."

Some colder regions are opting for dual-fuel heating systems, "where you can gain the benefit of high-efficiency heat pumps during most hours of the year and still have access to backup thermal heat in colder times," she said.

She noted that Pacific Gas and Electric supported the Berkeley gas ban to avoid investments in new gas assets that may later prove to be underutilized. "That's a pretty remarkable statement, I think, coming from a gas utility."

Mahone noted that gas pipelines and distribution systems are typically financed and amortized over 30 to 50 years, meaning a gas line installed today would not be paid off until as late as 2070. "So, I don't think that it's exactly right to look at the economics of a gas ban just purely from the [position] of an individual customer, because the gas infrastructure that our regulatory environment supports is actually ... socialized over many customers.

"The alternatives to electrification are quite expensive as well," she added. "Renewable natural gas has supply limitations. We see it costing about \$10/MMBtu today – three to five times the cost of fossil natural gas."

She noted that while some research suggests the cost of green hydrogen — which uses renewable energy to produce hydrogen from water — may be reduced to between \$11 and \$20/MMBtu, it would still be well above the cost of fossil natural gas.

Geoengineering?

Costello said policymakers also could consider options for adapting to climate change rather than attempting to eliminate GHG emissions, such as *geoengineering*, which includes CO₂ removal and solar radiation management, or sunlight reflection.

"If you look at the history of mankind, humans have adapted to very drastic conditions of climate and other things over time, and that's sort of one way to deal with this. But I think the savior of all this is technology, innovation," Costello said.

"Geoengineering ... is somewhat controversial, but still, it's an option that's on the table. In fact, some of the best minds now are saying that we have to have a portfolio of different actions to deal with climate change. So far, we have disproportionately focused in on emission reductions."

So far, we have disproportionately focused in on emission reductions."

-Ken Costello, regulatory economist

EEI Annual Financial Conference

EEI Panelists Predict Protracted Economic Recovery

By Amanda Durish Cook

Experts said last week that 2020's impacts on the energy sector will be lasting, predicting a gradual economic recovery but swifter and permanent social transformation.

Utilities' financial outlooks are steady but fragile as 2020 wanes, panelists said during the final two sessions of Edison Electric Institute's 55th Financial Conference on Wednesday.

"What's the saying? May you live in interesting times," joked Brandon Presley, outgoing president of National Association of Regulatory Utility Commissioners and a member of the Mississippi Public Service Commission. He added that he never thought he would conduct NARUC business from a Mississippi conference room for an entire year.

American Electric Power Executive Vice President Lisa Barton said that in March, her company was already agility testing for telework opportunities when social distancing mandates wiped out office commutes.

"And we haven't been back to the office since," she said.

Leslie Rich, managing director of J.P. Morgan Asset Management, said electric utilities were quick to cut costs after a steep decline in demand in March and April.

She said the question remains on how long lowered demand will persist into 2021 and how regulators will consider that when utilities' rate cases come before them.

"Revenues are down, sales are down and [operations and maintenance] are down," Rich said.

Fitch Ratings Senior Director Barbara Chapman agreed that the recession will need to be factored into upcoming rate cases. She said Fitch initially forecasted a quadrupling of bad debt among electric utilities that fortunately did not come to pass. She also said Fitch underforecasted residential energy demand in the pandemic's early phases.

"But certainly there's things on the horizon to give us concern," Chapman said.

Rich warned that winter will bring the heftiest utility bills, as home and business heating ramps up.

"You don't want to see customers get buried by their arrearages," she said, but she added that utilities have been "creative" so far in keeping a steady cash flow.



Lisa Barton, AEP | EEI

NARUC remains opposed to a national moratorium on utility shutoffs for the remainder of the pandemic, Presley said.

"State regulators did not have to be prodded by anyone. ... Nobody rang our phones and said, 'You have to step up.' We did it out of our own volition," Presley said. "State regulators are on the ground and listening to health and human service departments and wisely making decisions in their respective jurisdictions."

He also warned that "what works in New York may not work in North Carolina, and what

"Revenues are down, sales are down and [operations and maintenance] are down."

-Leslie Rich, managing director of J.P. Morgan Asset Management works in North Carolina may not work in North Dakota."

"The worst thing we could have happened is a fast and loose national policy that wasn't tailored to constituents. Utilities have to have a heart, not just a head, and regulators have shown that.... But bills do have to get paid."

Barton said when AEP has lifted shutoff moratoriums, it has been "pleasantly surprised" by customers' willingness to enroll in payment plans. "It's often people that have never been in this kind of situation before."

Chapman said utilities generally want to avoid any "PR nightmares" and the perception of callousness as they resume disconnections.

New York Public Service Commissioner Diane Burman agreed with Presley about a national moratorium, but she warned that customers are incurring balances that they might not be able to pay off.

"We have to realize that there is growing debt on customers not being able to pay these bills," she said. Regulators and utilities should enact measures such as deferred payment plans and investigate the fallout from shuttered businesses that will never cover their final bills. Their arrears should not be absorbed by other ratepayers, she said.

She also said she has noticed stronger corporate commitment to decarbonization and clean energy, even if the pandemic interrupted steady revenues and some technological breakthroughs. She noted the docket her commission opened in October to consider collecting financial disclosures on climate change-related risks.

EEI Annual Financial Conference

Barton said going forward, the grid must be "reinforced" so it can support an onslaught of electrification and make it possible for old generation assets to continue to retire and be replaced by renewable sources.

Rich said more utilities have spun off fossil fuel businesses to become pure-play utilities, both for the revenue and the improved public reception.

Social and Environmental Justice

Racial equity and sustainability had a watershed year, despite the coronavirus, panelists agreed. The pandemic and the police killing of George Floyd amplified a social justice focus for virtually all businesses, the energy sector included.

Fortis CFO Jocelyn Perry said social justice is a relatively new investor expectation. Before this year, Perry said Fortis had focused on gender equality, with a goal of women making



Jan Childress, Con Ed | EEI

"Utilities have to have a heart, not just a head, and regulators have shown that. ... But bills do have to get paid."

-Brandon Presley, outgoing president of National Association of Regulatory Utility Commissioners and a member of the Mississippi Public Service Commission

up 40% of its board and 33% of its executives.

"But you throw a pandemic and social unrest in this, and we have to broaden more quickly than we thought we had to. ... Our customers and our communities are hurting," she said.

ISS Corporate Solutions Vice President Ben Magarik said an emerging trend is investors voting against or withholding votes on prospective board members. He also said there is increasing pressure on businesses to make disclosures "on a basic level of ethnic or racial



Fortis CFO Jocelyn Perry | EEI

diversity" in their workforces.

"There's an enormous amount of uncertainty in the next few weeks, but there's also a palpable sense of change among investors and businesses," Magarik said. "I think society's pretty clear that we've got some hard challenges to tackle."

Consolidated Edison Director of Investor Relations Jan Childress said his company is tracking metrics on diversity and progress on climate change and tying them to executive compensation. He said coupling climate and cultural progress to salaries is necessary for change and "simply opening our eyes to the truth."

Data tracking on diversity and sustainability has emerged throughout 2020 for electric utilities, Magarik said.

"I risk a cliché, but what gets measured gets managed," he said.









Former CPUC President Calls for CAISO Probe

Lynch Says Calif. AG Should Investigate Grid Management Practices

By Hudson Sangree

A former president of the California Public Utilities Commission said last week that the state attorney general should look into the rolling blackouts of mid-August with an eye toward signs of market manipulation in CAISO's grid.

Loretta Lynch, CPUC president from 2000 to 2002 and a commissioner through 2005, spoke during a webinar held Nov. 10 by the Clean Coalition, a Santa Barbara, Calif., group that advocates for renewable energy and microgrids.

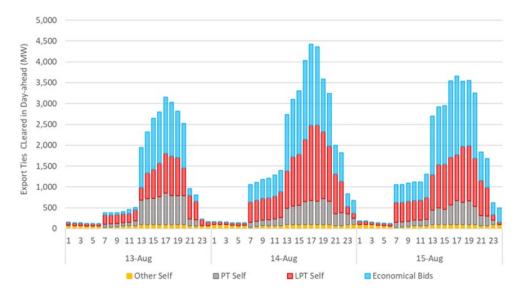
"I think it's time for the California attorney general to investigate what happened at the ISO and, more than that, the ISO's market practices that can't keep the lights on," Lynch said.

California should have had ample supply to meet peak demand this summer, including Aug. 14-15, when CAISO ordered rolling blackouts, she said in her online *presentation*.

The state had ordered load-serving entities to procure nearly 53,000 MW for summer load, including a 15% reserve margin. Blackouts



Loretta Lynch | University of California



Lynch cited a CAISO chart showing exports from California on Aug. 14-15, the days with rolling blackouts. | CAISO

were ordered when demand was less than 46,000 MW on Aug. 14 and less than 45,000 MW on Aug. 15, she noted.

Lynch asked why CAISO had allowed large amounts of energy to be exported on those days despite knowing that a Western heat wave would stretch supply and limit imports.

"On Aug. 14, as Californians are being begged to conserve power, the ISO allowed over 4,000 MW of electricity to be exported out in the middle of an extreme heat wave despite the carefully constructed and planned-for demand forecast," she said.

As a public benefit corporation, CAISO is primarily responsible for ensuring in-state reliability, and the attorney general has additional authority to investigate it, she said.

Like other critics, Lynch questioned the role that convergence bidding, a purely financial hedge, may have played in exacerbating the August shortages. CAISO maintained convergence bidding during the blackouts but stopped it in the days afterward, explaining that the practice was clouding its picture of physical supply.

To illustrate her points, Lynch used graphs from a joint *report* by CAISO, the CPUC and the California Energy Commission (CEC) on the causes of the August shortfalls. (See CAISO Says Constrained Tx Contributed to Blackouts.)

The preliminary root cause analysis will be followed by a final report in the coming weeks, CAISO has said. FERC, WECC and CAISO's Department of Market Monitoring are conducting separate analyses of the August blackouts. (See CaICCA Seeks 'Objective' Review of Blackout Report.)

CAISO spokeswoman Anne Gonzales said the ISO has been open and forthright in its take on what happened, including regarding exports.

Among its findings, the preliminary root cause report said that on Aug. 14 and 15, "under-scheduling of load [by LSEs' scheduling coordinators] and convergence bidding clearing net supply signaled that more exports were supportable."

That report "has been shared publicly and presented in a public hearing to the California State Assembly shortly after its release," Gonzales said in an email. "The ISO, CEC and CPUC stand behind the preliminary findings and will continue to work on a final report, which will be completed by the end of the year.

"There has been no factual basis to suspect that market manipulation played a role in the August outages," she said. ■

Ex-CAISO Board Chair to Retire

Olsen Recognized as Clean Energy Pioneer

By Hudson Sangree

David Olsen, who until last month served as chair of the CAISO Board of Governors, plans to retire Nov. 30, the ISO said Wednesday.

A clean energy leader and former head of outdoor-gear maker Patagonia, Olsen joined the board more than eight years ago and served as its chair from February 2018 to Oct. 1. He led the ISO during a time of great change, as California moved to phase out carbon-emitting resources and adopt renewable energy and storage.

He was also instrumental in the creation of the Western Energy Imbalance Market (EIM), which by 2022 is scheduled to include 22 participants in states across the West.

"I'll be 75 years old soon and have been on the CAISO board for almost nine years. That's long enough on both fronts," Olsen said in an email explaining his decision to retire more than a year before the end of his term.

"Dave Olsen has been a pioneer in the development of the renewable energy industry," CAISO CEO Elliot Mainzer said in a statement. "His knowledge, vision and operating experience with highly reliable, low-carbon microgrids helped CAISO embrace the broader opportunities offered by new resources. His life's work in the fields of clean energy and corporate sustainability initiatives is reflected in thousands of megawatts of clean energy projects and progressive policies adopted across the country.

"All of us at the ISO thank him for his service and wish him the very best," Mainzer said.

The search for Olsen's replacement has begun, the ISO said.

California Gov. Jerry Brown appointed Olsen to the board in 2012, and Gov. Gavin Newsom reappointed him in January 2019 to a term that expires at the end of 2021.

Olsen served as managing director of Western Grid Group from 2003 to 2013, leading an organization of former Western state energy officials who advocated for grid modernization, a transition to a clean energy economy and the creation of the EIM, according to his CAISO biography.

In the business world, Olsen led development of wind, solar, hydroelectric and geothermal power projects in more than 20 countries as president of Clipper Windpower (2001-2003), founder and president of Peak Power (19881995), vice president of Magma Power (1993-1995) and CEO of Northern Power Systems (1984-1988), the ISO said.

From 1996 to 1999 he served as president and CEO of Patagonia, leading the company's carbon-reduction efforts and making it the first U.S. corporation to get its electricity from wind and solar power.

"I'm extremely grateful to Dave for his commitment to the ISO and California's decarbonization goals," said Angelina Galiteva, who took over as board chair last month. "He is a thoughtful, innovative and collaborative leader and leaves a legacy of championing the transition to 100% renewable energy while safeguarding the health and wellbeing of all Californians. His dedication, deep knowledge and tireless enthusiasm for building the grid of the future will be difficult to replicate."

Olsen said in the statement he was privileged to have worked with such "excellent board colleagues and outstanding management and staff."

"Together, we've steadily improved the organization's capabilities and made it an internationally recognized leader in the transition to a low-carbon future," he said. "I'm leaving CAISO in very good hands." ■



David Olsen, second from right, chaired the CAISO Board of Governors until Oct. 1. | © RTO Insider



PG&E Working to Improve Safety Blackouts

IOUs Made Strides this Year but Still Work to Do, CPUC Says

By Hudson Sangree

Pacific Gas and Electric on Thursday acknowledged it needs to get better at notifying local authorities and customers before shutting off power to prevent wildfires, but the utility said it performed far better this fall than it did last year.

In its *report* to the California Public Utilities Commission on the public safety power shutoffs (PSPS) of Oct. 25-28, the largest this year, PG&E said it had generally met its goals of notifying emergency officials and residents about potential blackouts in the days ahead of an event, but it still sees "opportunities for improvement"

That was unlike the PSPS events last October, when PG&E blacked out more than 2 million residents, many without warning. The utility's websites crashed under heavy traffic, requiring state agencies to intervene. Its phone lines were also overloaded, and its shutoff maps often were inconsistent or incorrect, then-CEO Bill Johnson said. (See PG&E Restores Power amid Backlash.)

In a meeting Nov. 5, Lee Palmer, director of the CPUC's Safety and Enforcement Division, said the state's three big investor-owned utilities, including PG&E, had generally provided PSPS notifications at the "right cadence" in late October, alerting local authorities 48 to 72 hours before an event and telling customers they could lose power 24 to 48 hours beforehand.

In some cases, PG&E failed to notify customers of imminent blackouts because its "process broke down," Palmer said. Southern California Edison and San Diego Gas & Electric had to make emergency adjustments to their shutoffs because of shifting Santa Ana winds and did not alert some residents before cutting power, he said.

In its report, PG&E said it had made significant strides since last year but acknowledged shortcomings, including that its "delivery of in-event information to [local emergency authorities and customers] needs to improve."

"Although the situation has improved relative to 2019, there are still some timing inconsistencies between information posted in our online portal, information posted on our customer website and that provided by PG&E liaisons and representatives," the utility said. "PG&E is working for ways to improve and expedite



| PG&E

our information processes and flows to better serve our local partners and first responders."

CPUC President Mary-

bel Batjer, a vocal critic

of PG&E after the 2019

shutoffs. acknowl-

edged that the IOUs

had "greatly improved,

particularly the PG&E

service area, over last

year." She said, howev-

er, that the commission

was still waiting to hear



CPUC President Marybel Batjer | California State Assembly

from county officials and community representatives about their experiences in the blackouts.

In the late-October PSPS events, PG&E shut down power to 345,000 account customers, or about 1 million residents, across 35 counties. SCE blacked out 19,000 customers, and SDG&E shut off power to about 2,900 customers.

"The scale of these PSPS events makes it clear to all of us that the threat of wildfires and impact of PSPS events are not limited to a specific county or city," Palmer said. "This is a statewide and regional concern."

Batteries not Provided

CPUC commissioners focused in their Nov. 5 *meeting* on another problem: the lack of backup batteries provided by IOUs to at-risk residents.

PG&E had promised to deliver 8,000 backup

batteries to customers who rely on medical devices in 2020 but had only provided 2,500 units, Palmer said. The utility has said it will deliver 1,500 more batteries by the end of the year, he said.

Rather than address the shortfall in its report, PG&E said it had worked "to provide a cumulative total of approximately 2,525 portable batteries to qualifying customers who need power during a PSPS event" along with food boxes, hotel stays and wellness checks to seniors and others in need.

SCE told the CPUC it would enroll 2,500 residents in its battery-backup program in 2020 but so far has provided only 200 batteries, Palmer said.

Logistical holdups and manufacturing delays caused by the COVID-19 pandemic are partly to blame, he said.

Batjer said she had repeatedly asked the utilities for updates on battery distributions during briefings this year, but the IOUs had only recently provided numbers. The figures fell short of what the commission had hoped for, commissioners said.

"None of them, frankly, lived up to the pledge they made to us in August and then updated by written memo in September," Batjer said. "It's something we must indeed continue to work on, so the medically baseline and critically in-need customers have backup batteries that they need during these unfortunately called PSPS."



Industry Leaders Talk Diversity in the West

By Robert Mullin



Lisa Grow, Idaho Power | *CREPC-WIRAB*

Idaho Power CEO Lisa Grow said she didn't really understand the "nuance" between the concepts of "equity" and "equality" until she began "leaning into" the ideas after taking the top job at the Boise-based utility this year.

"I sit here as a 55-year-old, fourth-generation Idahoan from the middle class. I'm a hetero, cis, white engineer. I'm married; I'm a working mother, although my children are now grown," Grow said Friday during a panel discussion on "Diverse Energy Leadership in the West," hosted by the Committee for Regional Electric Power Cooperation and Western Interconnection Regional Advisory Body (CREPC-WIRAB).

Grow said there are many things she has had to "learn, relearn and unlearn" during a year that's been tumultuous on multiple fronts, such as public health, the economy, education, housing, food security, voting rights and "safety and policing."

"Especially as I stepped into this CEO role, I just see that we collectively have a lot more work to do," Grow said. "When I think about the essential service that we provide, I think it's imperative that we take a good hard look at ourselves, as individuals, as companies and as an industry, and really ask ourselves how do we stack up when we talk about diversity, equity and inclusion."

On the subject of equity, Grow said she has come to realize that "you don't get equality until you have equity."

"And when you think about equity, not everyone is starting in the same place. There are groups that have been excluded and virtually oppressed. And so how do we get equity? How can we help those that haven't had the same access?" Grow said.

Joining Grow in a discussion that ranged from how the electricity sector can honor diversity among workers and ratepayers to tapping the diversity of resources across the Western Interconnection were John Hairston, acting administrator at the Bonneville Power Administration; Janea Scott, vice chair of the California Energy Commission; and Dionne Thompson,



Dionne Thompson, WAPA | *CREPC-WIRAB*



John Hairston, BPA CREPC-WIRAB

assistant administrator for corporate liaison at the Western Area Power Administration.

Following is more of what we heard during the discussion.

Cultivating Diversity

"I was born in New Orleans but raised in Oregon, and I consider myself an Oregonian, but [the state is] a pretty homogenous environment," Hairston said, relating his perspective as a Black Portlander. "I had an opportunity to go to school in a more diverse environment in the South, and that really opened my eyes to different cultures' approaches and how people even looked at me being from Oregon and the way I spoke. It was kind of interesting how folks made judgments or assumed things about me."

Hairston said BPA has embarked on an "aggressive" program of cultural transformation. "Part of that change was my ascent into the front office, which I think allowed ... for folks to kind of see someone different in the front office and see themselves and maybe aspects of their culture reflected in the leadership," he said.

He cautioned that organizations won't see much change around diversity without opening up hiring opportunities that create diversity. "What I find is that folks tend to talk diversity, but they really don't believe or understand the benefits of having diverse teams."

"I think the Energy

Commission is also

thinking very much

about diversity and

how to bring that to our

staff, so that the people

that work at the Energy

Commission look like

the people of the state

of California - look like

the people across our

nation." Scott said. "A



CEC Commissioner Janea Scott | CREPC-WIRAB

lot of that has to do with how we recruit and

where we recruit and when we recruit."

The commission is also engaging in an "outwardfacing" take on diversity in how it implements its policies with respect to communities that have been "historically overburdened by pollution and industry," Scott said. "When we're looking to make this transition to a 100% clean energy standard, how can we put those communities at the forefront of that transition?"

Thompson said WAPA's leadership is "extremely dedicated to the idea of diversity," with a strong focus on recruiting and retaining diverse talent. She also pointed to the diversity of WAPA's base of preference customers, which includes Native American tribes. "We have programs in place to try make sure that connection is made and we serve that customer base equally," she said.

RA Challenge

"We've looked at recent studies that said, in the Pacific Northwest as a whole, we're going to be nearing periods of time during the year where regional supplies may not be adequate to meet demand," Hairston said. "For us, looking at this as a collective approach to solving these problems is important."

For that reason, BPA joined the Northwest Power Pool's effort to create a formal resource adequacy program for a large swathe of the West, which Hairston called a "really great opportunity" to collaborate with other regional utilities. (See NWPP RA Effort Quickly Ramping Up.)

"This initiative is voluntary, but it will be enforceable, and this program will ensure how we're able to maintain a balance of supply and demand during these very high periods of uncertainty," Hairston said.

Grow expressed concern about the changing "paradigm" in the industry, in which many utilities' integrated resource plans are "saying 'we're going to go to the market'" to fulfill RA requirements without fully grasping what resources will be available.

"The Northwest has all the hydro. ... On the east side with Wyoming and Montana, there's a lot of wind, and in the Desert Southwest, a lot of solar," Grow said.

"When we look at it much more broadly, I think you can do it in a much more reliable, efficient [way] and optimize the system we have, and transmission is the thing that facilitates that, so we can take advantage of the diversity across the entire Western Interconnection. Idaho

RTO Insider: Your Eyes & Ears on the Organized Electric Markets

CAISO/West News

Power sits in the middle of that, really, and that's why we're very bullish on transmission," she said.

"As you can imagine, [resource adequacy] is something that's very forefront of mind in California," Scott said. Given the tight RA margins, she said the industry needs "the most accurate and up-to-date information about what's going on in the system at any given time," including resource retirements.

"I think we need to adjust our planning, which is probably not a surprise to any folks," she said. "There are situations that we were not anticipating, like in August, [when] the entire West was really, really hot, versus just one part being hot," which allows grid operators to "move resources around" to meet demand in certain load pockets.

"In reference to the situation this summer with power costs and the heat in the West, WAPA was able to provide about 5,400 MW of hydro to help out in that situation from our [Colorado River Storage Project] facilities ... and even from our Desert Southwest region," Thompson said.

Thompson added that, after the mid-August heat wave, WAPA realized that it has facilities along the border of the Eastern and Western interconnections that could have been positioned to assist the West during the heat wave.

"Had they been up and running and able to send power back and forth across the interties, there was a significant amount of surplus available in the Eastern Interconnection that could've been sent over and used to help ameliorate the situation," she said.

Push-pull

"I think a lot about the siloes that our energy systems are in," Scott said, pointing to the separation between the electric, natural gas and transportation systems. "But as we work towards the 100% clean energy standard, I think we will see the systems come together in a way that we need to be looking around corners and trying to look a few steps ahead."

Scott pointed to the paradox of striving to reduce the energy use of buildings while simul-taneously seeking to electrify transportation.

"That means I'm going to plug a whole bunch of things into that building," she said. "So, you've got this kind of push-pull, and you want to make sure you don't have a policy set up in a way that you can't get both of those things done as we're moving forward."

'Freakishly' Flawless

Thompson said development of an organized market in the West has been "a long saga of stops and starts and successes and failures over the years."

"There's not a real RTO in the West, and utilities over the years have preferred to maintain control over their own transmission and planning, but that's changing," Thompson said.

She noted that WAPA operations in the Eastern Interconnection joined SPP in 2015. Some of WAPA's Western operations last year decided to join SPP's Western Energy Imbalance Service, while its Sierra Nevada region will link up with CAISO's Western Energy Imbalance Market (EIM) next March.

Thompson also noted WAPA's announcement last week expressing interest in joining SPP's westward expansion. (See related story, *Western Utilities Eye RTO Membership in SPP*.)

Hairston said BPA has "started on this march toward joining the EIM," which would occur in March 2022 contingent on final approval by the agency.

"Markets are fundamentally important ... being able to leverage the diversity of the various resources both regionally and extra-regionally" and offset risks, Hairston said. "It also gives us an opportunity to utilize the hydro system and share some of the value ... in integrating renewable resources."

But Hairston said the full regionalization of CAISO continues to be hampered by the "governance issue" around who would oversee the market.

"That's a real issue," Grow agreed. "It's hard in the West for people to completely give up control."

But Grow thinks the expansion of the EIM has shown progress.

"I think CAISO has been really smart in how they've developed" the EIM, she said, adding that expansion has gone "freakishly flawlessly."

"We need to have these markets develop."

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ERCOT News



Early-evening Solar Trough has ERCOT's Attention

By Tom Kleckner

ERCOT has learned to live with a wind trough during the early afternoon hours, when coastal breezes drop and West Texas turbines aren't spinning.

The same phenomenon is taking place with solar energy as it becomes a more reliable resource for the grid.

Dan Woodfin, ERCOT's senior director of system operations, said last week that the summer sun sets about 7:30 or 8 p.m. in the west, where most of Texas' wind farms are. The loss of solar production took place shortly after thermal generation shut down after helping meet peak demand, resulting in tighter operating conditions and lower operating reserves.

"There's kind of an interaction there that hasn't typically been there," Woodfin said during a Gulf Coast Power Association webinar Wednesday. "It didn't cause us a problem, but it did cause us to be a little tighter on some of those days during the early afternoon. As solar continues to grow on the system, it's something we're going to have to watch over."

ERCOT had about 2.1 GW of additional

installed solar capacity at the start of last summer than it did in 2019. Solar farms generally provided between 2.2 and 3.7 GW of energy from 2 to 3 p.m. this summer after producing a fairly steady 1.5 GW during the same period last summer.

"There was a little more variability around the solar output this year," Woodfin said. "That's just a matter of having more installed capacity."

To address the solar trough, staff proposed a system change request (*SCR811*) that the Board of Directors approved in October. The SCR adds the short-term solar forecast to the resource-limit calculator's formula for calculating the generation-to-be-dispatched value.

"Every five minutes it will start to look at the drop-off in solar and dispatch the rest of the generation," Woodfin said.

He said the change is designed to avoid adding more system requirements to cover the balancing during each five-minute interval as solar production drops off.

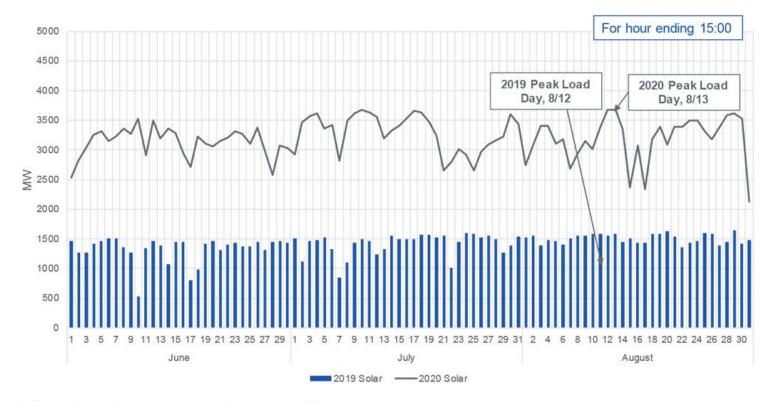
"It will also provide an incentive for [thermal] generation to incrementally stay online as solar drops off by having the prices reflect that,"



Dan Woodfin, ERCOT | ERCOT

Woodfin said.

ERCOT began the year with about 2.3 GW of installed solar capacity but expects to end the year with about 5.2 GW. The grid operator expects to install as much as 10 GW of solar capacity by the end of 2022, with more planned for the future. The interconnection queue contains a staggering 81.3 GW of solar projects under some form of study. ■



Additional solar capacity has led to the resource's increased variability. | ERCOT

ISO-NE News



Overheard at the 28th NECBC Annual Conference

NE Officials Push for Cooperation Among States, RTO

The rush to transition to clean energy resources, ambitious offshore wind targets and increasing goals for net-zero emissions are combining to spur cooperation among the New England states, officials said last week during the New England-Canada Business Council's 28th Annual Executive Energy Conference.



Commissioner Katie

Dykes | NECBC

states, with all their diversity, are coming together and speaking with a common voice," Connecticut Department of Energy and Environmental Protection Commissioner Katie Dykes said Thursday.

"Our six different

When the governors

of Connecticut, Maine, Massachusetts, Rhode Island and Vermont released a joint statement in October calling for reforms to ISO-NE, they insisted on changes to market design, transmission planning and RTO governance. (See *States Demand 'Central Role' in ISO-NE Market Design.*)

"We desperately need to pursue a more unified market design to ensure that the renewables we're contracting for are counted and credited appropriately in the capacity market, and that we also can align future procurements with transmission planning," Dykes said. "We're at a really positive moment here with our six states and in partnership with the ISO."



van Welie | NECBC

don van Welie, who appeared on the preceding panel, said the RTO has long had the same concerns as the states and that its strategic *plan* "aligns quite well with the recent statements from the governors of New

ISO-NE CEO Gor-

England." (See "ISO-NE Shares 'Vision for the Future," NEPOOL Participants Committee Briefs: Nov. 5, 2020.)

Offshore Transmission

Foley Hoag partner Kevin Conroy asked whether transmission to support offshore wind generation is a regional asset or one that belongs to the generator.



Clockwise from top left: Dan Dolan, NEPGA; NECBC President Jon Sorenson; Mollie Johnson, Canada Department of Natural Resources; and Cheryl LaFleur, ISO-NE. | *NECBC*



Kevin Conroy, Foley Hoag | NECBC

Department of Energy Resources (DOER) Commissioner Patrick Woodcock said. "I don't think we have arrived at the point where the limitations on the trans-

mission system are going to impede [OSW] development, but we will arrive at that point very quickly." It is important to make sure that the new industry "does not hit a wall, and I am concerned that transmission could bring paralysis to offshore wind development."



"At the scale that we

developing, a gener-

ator lead line that is

developed as part of

one individual project

will have some limita-

tions in creating a real

optimized transmission

system," Massachusetts

see offshore wind

Massachusetts DOER Commissioner Patrick Woodcock | NECBC

The idea of a planned and shared OSW grid is earning support both locally and nationally. At a conference in September, New Jersey Board of Public Utilities President Joseph Fiordaliso said the board was committing to a shared network approach after procuring 3,500 MW of offshore wind, lower than half the state's

goal of 7,500 MW by 2035.

More recently, the National Association of Regulatory Utility Commissioners at its annual meeting Wednesday adopted a *resolution* urging FERC to consider "that a well planned OSW grid may result in enhanced transmission efficiency and reliability ... [and] may reduce the impacts of OSW development on the marine environment and fishery."

Dykes agreed with Woodcock and said that the commitment to decarbonization by most New England governors provides a strong foundation for discussions on regional cost allocations for a shared OSW transmission system.

"The states need to be in the lead and in control of those cost allocation discussions," Dykes said. "I think that's one of the big tragedies of [FERC] Order 1000 is that it took away some of the state control."



Dan Burgess, Maine | NECBC

"We're very excited about offshore wind," said Dan Burgess, director of the Maine Governor's Energy Office. "We're slated to have the first floating offshore wind project in the country with our University of Mainedeveloped Aqua Ventus

floating technology, with one turbine in the Gulf of Maine."

Simon d'Entremont,

Nova Scotia's deputy

minister of energy

and mines, touted

the province's work

on tidal energy in the

Bay of Fundy. In a rare

Canadian reference to

hockey, he said, "We're

not looking to go where

ISO-NE News



Simon d'Entremont, Nova Scotia | NECBC

the puck is; we're going where the puck is headed." He welcomed the new U.S. administration as "an opportunity for us to partner on initiatives where we have common supply chains and technologies we want to invest in. ... If you are advancing a green economy, we're doing likewise."

'Weird' Gas Situation

Because the role of natural gas in power production will decline as more renewables come online, some believe that it is irresponsible to think about continuing to use the fuel or invest in anything to do with it.



NERC CEO Jim Robb

| NECBC

not one of those people.

NERC CEO Jim Robb is

"As we see declining volumes, particularly on the gas system related to power generation because it's being displaced by other fuels, we create this very weird and challeng-

ing situation where there probably, almost certainly, needs to be more investment in gas infrastructure," Robb said.

The pipelines and compressor stations may not be needed for the full 50 or 100 years over which such assets might normally be depreciated, he said. "However, it may be really important over the next 15 or 20 years, so there is a real pricing issue around how to recover the cost of those assets," Robb said. "The New England electrical system is especially vulnerable during the clean energy transition because of not having invested enough in natural gas infrastructure."



Former FERC Chair Cheryl LaFleur, now serving on ISO-NE's Board of Directors, said the region will transition to clean energy by "concentrating on the facts" and relying on solid analysis of greenhouse gas emissions outcomes under

NECBC

various scenarios.

"In New England, we're used to seeing natural gas as baseload, because it displaced a lot of the coal and oil baseload, and it did so very well," LaFleur said. "But in the future ... given the decarbonization goals, I don't see fossil fuels as a baseload; I see them as a balancing fuel in conjunction with a very heavy portfolio of variable, renewable generation."

ENMAX CEO Wayne O'Connor said the clean energy transition needs "massive" amounts of capital.

"If modernizing time-of-use is our approach, we're in big, big trouble," O'Connor said. He said he disagreed with a *New York Times op-ed* on the future of natural gas that decried a "poverty of imagination" in the energy industry. "I think quite the opposite: that our industry has a great deal of imagination; that we're looking for solutions for a better future."

Dan Dolan, president of the New England Power Generators Association, said he



Dan Dolan, NEPGA | NECBC

thought of natural gas's role "less about a fuel or a specific technology, and more about what are the types of services and attributes we need. The reason that we're focusing on natural gas is that today it provides that dispatchable energy

more cost-effectively than a lot of the alternatives, and as long as it continues to serve that role, while hopefully having the constraint within from an emissions standpoint, then we will continue to rely on it."

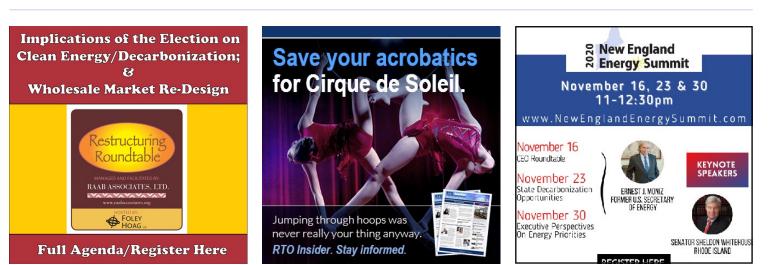
Energy Security

Asked about his main takeaway from the California power troubles this past summer, van Welie said it was an energy-security problem. There was enough nameplate capacity around the system, but there were unusual demand patterns and insufficient supply, he said.

"It's all around the assumptions one is making about what resources are going to show up and when, and I think it's indicative of the kind of volatility we should expect on a system that's going to be dominated by renewable resources," van Welie said. "The real question is how much insurance do you want to pay for in the region to cover those types of situations."

On FERC's rejection of the RTO's Energy Security Improvements (ESI) proposal, van Welie said, "We hit 'pause' until we can consult with the new commissioners and staff. ... Our basic thought is that the concepts behind ESI are still fundamentally sound." (See FERC Rejects ESI Proposal from ISO-NE.)

– Michael Kuser



ISO-NE News



ISO-NE to FERC on Fuel Security: What Now?

By Jason York

ISO-NE asked FERC on Friday whether it was free to seek its directions on how to improve its fuel security following the commission's *ruling* last month rejecting the RTO's proposed Energy Security Improvements (ESI) market design (*ER18-1509*, *EL18-182*, *ER20-1567*).

"The region is at a crossroads with respect to energy security and its reserve markets," ISO-NE said. "The ISO does not believe that it is prudent to move forward without the opportunity to speak freely with the commission and its staff. Accordingly, we are stalled."

In July 2018, FERC found that ISO-NE's Tariff is not just and reasonable because the RTO lacks a way to address fuel security concerns, prompting a nearly two-year-long effort that resulted in the ESI proposal. (See FERC Denies ISO-NE Mystic Waiver, Orders Tariff Changes.) The commission on Oct. 30 rejected the proposal because of what it said were the addition of substantial costs "without meaningfully improving fuel security." (See FERC Rejects ESI Proposal from ISO-NE.)

ISO-NE told FERC that it, along with New England states and other stakeholders, "expended considerable resources and time evaluating the region's fuel and energy security and possible market design enhancements." Still, its efforts, which included more than a year of stakeholder meetings, "did not benefit from a consultation" with the commission because of *ex parte* communication rules following the 2018 order.

The RTO requested confirmation of its under-



FERC headquarters | © RTO Insider

standing that the commission's rejection of ESI left it up to ISO-NE "to determine whether to pursue market solutions to the region's needs" and that it does not have a pending obligation from the 2018 order to file another proposal.

ISO-NE spokesperson Matt Kakley said that the filing explicitly seeks clarity on whether "*ex parte* communication rules that are part of a [Federal Power Act Section] 206 proceeding still apply" following the commission's decision. Kakley noted that the RTO did not request a rehearing of the decision.

The RTO asked that FERC act on its request by Dec. 1, contingent on no other party filing a rehearing request.

ESI would have allowed the RTO to procure energy call options for three new day-ahead ancillary service products to improve the region's energy security, particularly in winter, when natural gas shortages can leave generators without fuel. Option awards would have been co-optimized with all energy supply offers and demand bids in the day-ahead market.

FERC ruled that the products "do not provide enough time for resources to take the steps necessary to perform during stressed conditions if they have not already taken them" as arranged fuel, for example. The proposal would have allowed resources that have not made advance arrangements to not participate because of its voluntary nature, undermining its ability to address fuel security, the commission said.

The commission also rejected an alternative proposed by NEPOOL, which would have had lower costs to ratepayers than the RTO's proposal but contained the same deficiencies.





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ISO-NE News

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NEPOOL Markets Committee Briefs

Amended Motion to Update FCM Parameters Passes

The NEPOOL Markets Committee passed a five-time-amended motion to update Forward Capacity Market (FCM) parameters for the 2025/26 capacity commitment period during a marathon two-day meeting.

The motion won with 64% in a sector-weighted vote. Of the five amendments passed, four of them came from the Union of Concerned Scientists on behalf of RENEW Northeast; the other was from Borrego Solar and Enel X.

The committee rejected the initial motion from ISO-NE and *Concentric Energy Advisors* (CEA) and *Mott MacDonald* (MM), two consulting firms hired by the RTO to help update the cost of new entry (CONE), net CONE, offer review prices (ORTPs) and performance payment rate values for the FCM. It gained only 16.7% support, with only the Publicly Owned Entity sector voting in favor.

The RTO said the calculations it put forth did not include changes from its Energy Security Improvements (ESI) proposal and assumed the continuation of the Forward Reserve Market. FERC recently rejected ISO-NE's proposed ESI market design because it would add substantial costs "without meaningfully improving fuel security." (See FERC Rejects ESI

Proposal from ISO-NE.)

The proposed CONE and net CONE values were based on a new combustion turbine unit in New England, identified as the lowest-cost, economically viable technology likely to be built in the region. ORTPs were proposed for gas turbines, combined cycle, onshore wind, battery, energy efficiency and demand response technologies. The PPR value was based upon the CT technology recommended for the proposed CONE values. The CONE, net CONE and ORTPs were from CEA and MM.

ISO-NE also put forth Tariff revisions to align the calculations for updating the energy and ancillary services revenues input in the years where there is no full recalculation to revise the indices used to update these revenues.

The RTO previously stated that interdependencies among the FCM parameters present unique challenges when calculating the combined effect of more than one amendment on the values. The RTO said it would tabulate and publish the five amendments' impacts before a vote on Dec. 3 by the Participants Committee.

Monitor and RENEW Duel in Memos

Abigail Krich and Alex Worsley of Boreas Renewables presented RENEW's four amendments, *including* capital costs and the investment tax credit for the ORTP calculation for

offshore wind.

RENEW used an overnight capital cost of \$3,326/kW (2019\$) and an 18% tax credit for OSW in Forward Capacity Auction 16 and added that the RTO's capital cost is 161% of expected prevailing market conditions for 2024/25 projects.

The RTO's Internal Market Monitor posted a *memo* critical of RENEW's calculations and methodology, saying "the use of a top-down method to infer a capital cost from contract rates is not an accurate means of establishing capital cost and the resulting ORTP value as compared to the bottom-up approach taken by the ISO and prescribed by the Tariff."

According to the Monitor, the approach taken by CEA and MM is a direct estimation of capital cost.

"It uses actual capital cost data; [it] can be scrutinized in its components; and the value does not vary with assumed model parameters," the Monitor wrote. "While the details were not made available to NEPOOL for confidential/ commercial sensitivity reasons, they were scrutinized by MM, CEA and the ISO — none of which has a financial or other interest in having a higher or lower capital cost value other than one that accurately represents the capital cost of a new OSW project in New England."



The Block Island Wind Farm, off Rhode Island | Block Island Ferry

RTO Insider: Your Eyes & Ears on the Organized Electric Markets

ISO-NE News

In *reply* to the Monitor, RENEW said ORTPs in FCA 16 would affect capacity commitment periods between 2025 and 2028, when many OSW projects will come online.

"Offshore wind plays a significant role in states' plans to reach their renewable energy and decarbonization objectives," the memo said. "Without an appropriate ORTP, these projects will be prevented from clearing in the market due to unreasonable mitigation, which will deprive them of revenue critical to their implementation and consequently increase costs to consumers."

The Monitor also noted that setting the ORTP "too low ... carries with it the potential for significant market harm."

RENEW countered that setting the ORTP at the low end is "exactly what we should be doing according to the Tariff and FERC directives." It added that the RTO itself in its December 2013 filing updating ORTPs for FCA 9 described the intent of the calculation is to set ORTPs "at the low end of the competitive range of expected offers so as to strike a reasonable balance by only subjecting resources to IMM review which plainly appear commercially implausible absent out-of-market revenues."

"If it is the position of the ISO and IMM to subject offshore wind resources to a higher bar than that specified in the Tariff or FERC directives, that could explain why the ISO's proposed ORTP values are head-andshoulders higher than all public estimates," RENEW said.

Order 841 Compliance Filing Nets Support

The committee unanimously supported ISO-NE's *plan* for its third Order 841 compliance filing.

The RTO proposed Tariff changes to comply with three FERC directives. The first change was removing Tariff language that could have created a barrier to the participation of a storage resource in its markets, effective in the first quarter of 2021. The second is the inclusion of four bidding parameters and a newly defined term into the Tariff that the RTO will use to account for the state of charge and duration characteristics in the day-ahead energy market. It would be effective Jan. 1, 2026.

Separately at the NEPOOL Transmission Committee, the RTO and Participating Transmission Owners Administrative Committee have proposed Tariff changes to clarify the application of transmission-charge exemptions associated with storage. In addition to the compliance revisions, ISO-NE also proposed several clean-up revisions to Appendix C of the Tariff to correct outdated terminology.

The RTO will next seek support from the Participants Committee, which will vote on the plan at its Dec. 3 meeting, and has asked FERC to allow a Dec. 7 filing date.

Modifications for EERs, RAs Approved

The committee also voted to support the RTO's modifications to the qualification process for energy efficiency resources (EERs) to better account for expiring measures. ISO-NE's Ryan McCarthy wrote in a prevote *memo* to the committee that the modifications "will more appropriately balance the performance and expiration of energy efficiency measures and will produce qualification results that are more reflective" of EER capabilities.

There will also be changes to the monthly reconfiguration auction (RA) and bilateral qualification rules to better account for new financial assurance and performance accounting rules. Additionally, the RTO will assign monthly qualification to resources that become commercial during the capacity commitment period. The monthly qualification will track delayed commercial resources and allow noncommercial capacity to participate in monthly RAs and bilateral qualifications.

The EER qualification changes would become effective in February 2021 for FCA 16. The monthly qualification changes would become effective in January 2022 and implemented for the March 2022 RA and bilateral qualification period.

The Participants Committee will vote on the modifications at its Dec. 3 meeting. ■

— Jason York



The 1,143-MW pumped-storage hydroelectric Northfield Mountain Project on the Connecticut River in Massachusetts | FirstLight Power Resources

ISO-NE News



Study Outlines Challenges of Decarbonizing New England

By Jason York

The decarbonization of New England's electricity system will require deployment of significant quantities of renewables and energy storage complemented by firm capacity from nuclear, gas-fired power plants, carboncapture facilities, hydrogen generation or other options, according to a new *study*.

"Net-Zero New England: Ensuring Electric Reliability in a Low-Carbon Future," co-authored by Energy and Environmental Economics (E3) and Energy Futures Initiative (EFI), studied how the electricity system can meet the challenges of growing demand and reducing economy-wide greenhouse gas emissions to nearly zero by 2050.

All six New England states have adopted economy-wide GHG reduction targets of at least 80% by 2050, with Massachusetts recently adopting a net-zero commitment. Through decarbonization of electricity supply and the electrification of transportation and buildings, the grid will play a critical role in achieving regional and state targets.

EFI CEO and founder Ernest Moniz, former secretary of energy during the Obama administration, presented the study's key findings in a keynote address to the New England Energy Summit on Monday.

Net-zero Goals vs. Increased Demand

Profound change is required across all energy sectors to achieve the decarbonization goals in New England, the study stated. Presently, transportation and buildings make up twothirds of the region's emissions. The study listed prime strategies for mitigating economywide GHGs, including aggressive deployment of energy efficiency, widespread building and transportation electrification, development of low-carbon fuels and deep decarbonization of electricity supply.

Regionally, electricity demand will increase significantly over the next three decades under the study's net-zero scenarios. In the two bookend scenarios, annual electricity demand grows 60 to 90% – 70 to 110 TWh – from the present. Peak demand is predicted to reach 42 to 51 GW as peaking shifts from summer to winter in the 2030s. The growth is driven by the electrification of transportation and buildings that currently rely on fossil fuels. This demand increase will occur even with significant energy efficiency resources.

Study scenarios selected a diverse mix of 47 to

64 GW of new renewable generation capacity needed by 2050. The study found renewables – which include land-based solar and wind, offshore wind and distributed solar, along with 3.5 GW of new incremental Canadian hydro – will play a significant role in providing zerocarbon energy to the region.

New England's limited land availability means greenfield development will be required for renewables to reach adequate scale, even if opportunities to develop brownfield sites, rooftops and marginal lands are maximized, the study found. It also found that New England's geography, the slow pace of electric transmission planning and historical difficulty siting new infrastructure are significant challenges.

A decarbonized grid requires firm generating capacity, and natural gas and nuclear generation are the primary sources of firm capacity in New England. Solar, wind and battery storage technologies will play large roles in the future regional system, but reliance on these resources alone would require substantial quantities of renewable energy and storage and would be too costly.

In practice, as much as 46 GW of firm capacity could be needed in 2050 to ensure resource adequacy. The study included 34 GW of gas generation, 3.5 GW of existing nuclear, 8 GW of imports and 1 GW of biomass and waste.

Significant gas capacity is retained even though the gas plants operate far fewer hours and contribute less energy and emissions to the region. New resources potentially developed and deployed to provide low-carbon firm capacity, such as advanced nuclear, natural gas plants with carbon capture and sequestration, long-duration energy storage or generation from carbon-neutral fuels such as hydrogen. These resources would require significant investments in supporting infrastructure; for example, natural gas with CCS or hydrogen would require pipelines connecting New England to regions with suitable geology for carbon sequestration or hydrogen storage.

"Fundamentally, one way or another, we are going to need significant firm generation in order to have a reliable and resilient system," Moniz said. "There are still some uncertainties that need to be addressed in that context, such as the need for long-term storage. There will be substantial infrastructure needs, and that frankly has been a significant challenge in New England. The path forward is not only through technical innovation but also through innovation in the policy and regulatory environment to allow the needed infrastructure to be built in a timely way."

Technology Choices

The study also concluded that a broad range of technology choices could lower costs and risks. The availability of low-carbon firm generation technologies — such as advanced nuclear or natural gas with CCS — could provide significant savings and reduce the pressure of renewable development on New England's lands and coastal waters. In addition to reducing costs, a portfolio approach to making low-carbon firm generating resources available mitigates the risks that one or more technologies do not materialize as expected.

Meeting net-zero GHG emissions requires carbon dioxide removal (CDR), though that alone will not be enough to achieve economy-wide decarbonization or meet the region's policy targets. The lack of suitable geology for carbon sequestration makes direct air capture and bioenergy with CCS an imperfect solution, but a large stock of forests provides an excellent opportunity for in-region CDR.

"We need CDR to get to net-zero, probably beyond the borders of New England," Moniz said. "We need to use the innovation capacity that this region is blessed with, hand in hand with what I believe will be a major federal push and a bipartisan push for really upping the game on the innovation of these clean energy pathways." He added that the New England congressional delegation "should get fully behind a thrust to increase the innovation focus in the federal government."

"By increase, I'm not talking here about 10% increases," Moniz said. "I mean a doubling or tripling of the federal research and development budgets."

Commercialization of emerging technologies can be additionally aided by leveraging regional innovation capacity, according to the study. Policymakers can increase the likelihood of commercializing emerging technologies by orienting the homegrown efforts of private, public and academic researchers already developing science and business innovations relevant to decarbonization. Specifically, advanced nuclear, long-duration storage and renewable fuels are innovation areas with tremendous regional potential, the study stated, and could play a role in supporting a low-carbon power sector, especially when localized efforts coordinate with federally funded programs.



MISO Plots Filing to Restrict Mid-queue Fuel Swaps

By Amanda Durish Cook

MISO is down to two options to curb generation developers' ability to change their proposed projects' fuel type in the interconnection queue.

Ryan Westphal, MISO manager of resource utilization, said the RTO may use either a combination of a new selection on its interconnection application that temporarily leaves the door open to the fuel change, or a hard deadline on when interconnection customers can make that change.

The issue stems from a FERC order in September that exposed MISO's lack of protection against swapping fuel sources for proposed projects in the queue's definitive planning phase (DPP). (See MISO Moves to Constrain Midqueue Fuel Changes.)

Leeward Renewable Energy Development has a wind project currently in the DPP. The developer wants to convert the project to solar energy while also retaining its position in the queue. MISO has expressed concerns that allowing fuel-type changes in the DPP could delay studies and allow developers to submit speculative or ill conceived projects.

Staff may introduce a check box on interconnection requests where the customer could preserve its option to switch fuel types. That would have the RTO studying the interconnection request at 100% dispatch of the most conservative fuel type until the customer can confirm its fuel type. Speaking at an Interconnection Process Working Group teleconference Nov. 10, Westphal said MISO might also create a fixed deadline for interconnection customers to name any fuel changes. He cautioned that proof-of-site control is predicated on fuel type. For instance, a wind farm usually requires more acreage than a solar array or storage facility. He said flexibility in fuel types "would create difficulty in processing site-control documentation."

Customers in MISO's interconnection queue must demonstrate 100% site control 90 days before their proposed projects enter the DPP.

Westphal said MISO would most likely disallow fuel-type changes after the queue's second decision point, which occurs roughly 220 days after the DPP begins. He said staff would make an exception for interconnection customers who want to apply to use surplus interconnection service after the second decision point. He said it's MISO's preference to not allow fuel type changes while engineers are conducting studies.

The two surviving options are down from four that MISO initially offered.

A previous MISO suggestion to study every interconnection request at a 100% output proved unpopular among stakeholders because it would have created unnecessary transmission upgrades.

"This option is out the door. We're not even looking at it anymore," Westphal said.

Stakeholders also said they didn't want MISO to place a blanket ban on fuel-type changes in

the DPP.

Westphal said stakeholders seem most interested in fuel changes that involve adding storage to existing projects.

"It feels like the feedback we're getting focuses on the option to add storage to an existing interconnection request," he said. "Because of that, we did try to mold our proposal around that."

Entergy's Yarrow Etheredge asked whether MISO considered that a late storage addition to a generation project could be classified as a technological advancement instead of a material modification.

Westphal said too many storage additions to existing project proposals would still burden the study team.

"If we've got 10 of these stacked up, do we delay the decision point while we study all of them?" he asked rhetorically.

Etheredge said it's incumbent on the interconnection customer to have already completed a study to make sure that the technological advancement wouldn't have an adverse impact on other generation projects in the queue.

Nevertheless, Westphal said that storage additions in the DPP would introduce new dispatch assumptions that have not been studied until that point.

Westphal said MISO would consider some changes to its proposal. He promised he would return in January with a more final proposal that could be filed at FERC as soon as June.





MISO West Risks Becoming 'Dead Zone,' Stakeholders Warn

Continued from page 1

remaining with SPP," EDF Renewables' Anton Ptak said in raising the issue during the Interconnection Process Working Group's (IPWG) teleconference Nov. 10.

Several stakeholders agreed, saying that few projects will proceed in the west at this rate and characterizing the issue as a process failure. They said part of the problem lies in SPP using the stricter network resource interconnection service (NRIS) standard to model all service requests, making upgrades costlier and unnecessary in some cases. MISO uses the more relaxed energy resource interconnection service (ERIS) standard in its affected-system modeling.

"It is a bigger issue. Everyone should be concerned about this," Savion's Chad Craven said. "It's basically going to roadblock everything in the west."

Craven said the problem should alarm all stakeholders, not just interconnection customers and transmission owners. "The west is essentially going to be a dead zone," he warned.

"We're aware of the report and the costs that came from that report. ... We understand the difficulties," said Ryan Westphal, MISO's manager of resource utilization. Staff said that if stakeholders have an issue with SPP criteria, they should follow the issue in that RTO's interconnection stakeholder groups.

"MISO should significantly care about this. Without MISO trying to do something about it, it's going to become a big problem and stalemate things in the west and then in the south," Craven said. "If nothing else, MISO should be educating stakeholders on why this is happening."

MISO Senior Corporate Counsel Christopher Supino said there are limits to what the RTO can do about SPP's study process. He said FERC recently decreed that RTOs are free to choose between NRIS or ERIS modeling standards.

Stakeholders said MISO should make the effort to have meaningful conversations about the problem with them.

"It is extremely concerning. This is going to kill MISO West generation projects," IPWG Vice Chair Angela Maiko said, adding that the August 2017 batch of projects will probably also be imperiled by high upgrade costs. She said the region runs the risk of never welcoming new generation unless it's for replacement or surplus interconnection service.

Maiko said MISO may want to consider waiving its project withdrawal fees if SPP's affected-system studies continue revealing

high upgrade costs.

"In my opinion, this is a MISO issue. Even if SPP doesn't return huge costs for [the] August 2017 [cycle], upgrades are going to cascade. You can see where the problem is going to persist. It's a fundamentally huge issue," Craven said, calling the situation "toxic."

The RTO's West region has been routinely flagged by stakeholders as a problem area for interconnecting generation. (See MISO West Planning Belies Upgrade Needs, Critics say.)

The Clean Grid Alliance, Solar Energy Industries Association and the American Wind Energy Association said recent upgrade costs have been raising renewable projects' costs by more than 60% on average in MISO West.

A Siemens system impact *study* prepared for MISO in March showed that a cluster of 60 western wind generation projects dating back to 2018 and totaling 9 GW would collectively require more than \$1 billion in transmission upgrades before they could interconnect.

The estimate prompted MISO to examine ways it could coordinate its interconnection upgrade studies and planning studies under its annual Transmission Expansion Plan. Its hope is to approve more multifunctional transmission projects. (See MISO Processing Heftiest Interconnection Queue Ever.)





PepsiCo ex-CIO Makes 1st Woman Majority on MISO Board

By Amanda Durish Cook



Stakeholders have tapped former PepsiCo Chief Information Officer Jody Davids to serve on MISO's Board of Directors, creating a first-ever woman majority for the body.

Jody Davids | Premier

Davids' appointment means the nine-member board of independent directors tips to a woman majority for the first time since it was established in 1998. Davids *joins* female Directors Theresa Wise, Barbara Krumsiek, Nancy Lange and Chair Phyllis Currie.

"Even amidst this most challenging year, MISO continues its commitment to diversity and inclusion — this extends to our staff and board. We recognize that we need diverse voices and experiences to move us forward," MISO CEO John Bear told *RTO Insider*. "Ms. Davids brings robust information technology knowledge to help us innovate and adapt to the accelerating changes in our industry."

Members also voted to retain incumbent Directors Wise and Robert Lurie, who are both rounding out their first terms and applied for reappointment. Lurie served the final year of former Director Thomas Rainwater's term, which expires next month. (See MISO Sets Candidate Slate for Board Elections.)

The three-year terms begin Jan. 1.

The election means veteran Director Baljit Dail will not return to the board's U-shaped table in 2021. Dail served 12 years on the board — three more than technically allowed — through a special waiver that allowed him to stand an extra term to allow the board to retain a person with technology knowhow.

A technology expertise vacuum among board members is no longer a problem with the entry of Davids, who brings more than three decades of experience managing the technology workings of large companies. She has also served as CIO for Agrium, Best Buy and Cardinal Health, and currently sits on the board for Premier, a Charlotte, N.C.-based health care improvement company. Davids holds an MBA from San Jose State University.

"We are pleased to welcome Jody to the board and excited that Bob and Theresa will continue serving. We thank Bal for his service and wish him continued success," Currie said in a release. "The diversity of thought and experience has never been more important to the MISO board. As we continue to innovate during these challenging times, we are confident that these leaders will help us continue to move forward."

Bear said Davids' experience will complement an already "solid team of leaders" on the board.

"I am honored to be selected and delighted to join the MISO board. As a reliable and affordable grid operator, MISO has already achieved much success. I look forward to contributing to this well respected group of experienced professionals," Davids said.

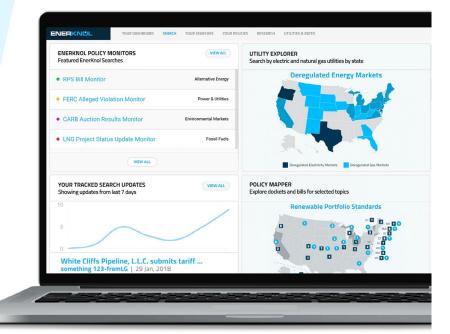
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MISO Rules out Special MTEP 21 Studies

MISO is sticking with its usual slate of transmission planning studies for next year, opting not to include specially targeted analyses in its annual package.

Project Manager Sandy Boegeman said MISO intends to conduct the usual studies for the 2021 Transmission Expansion Plan (MTEP 21), despite a few specific requests from stakeholders. The grid operator collected ideas for new studies through September. (See MISO Winds down MTEP 20 Planning, Focuses on 2021.)

The Environmental Groups sector *requested* that MISO conduct two studies examining footprint change if either LG&E and KU or Memphis Light, Gas and Water join the RTO within the next five years.

"MISO does works directly with entities to understand the potential value of joining MISO, as requested by interested entities. Those requests are independent of the MTEP planning cycle," Boegeman said during a Planning Advisory Committee teleconference Wednesday.

The Environmental sector had also asked that MISO study the three MTEP 21 futures



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scenarios using \$0/MWh hurdle rates with its neighboring regions. The sector said it wants the RTO to better document the use of hurdle rates in MTEP studies.

American Transmission Co. had asked MISO to study short-circuit ratios and analyze the costs and benefits of designing transmission projects to handle multiple needs instead of a singular need. Boegeman said these requests did not merit independent studies but could be investigated by tweaking modeling assumptions or methodologies in existing MTEP studies. She said MISO will explore accommodating them and discuss them in upcoming Planning Subcommittee meetings.

— Amanda Durish Cook

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NYISO News



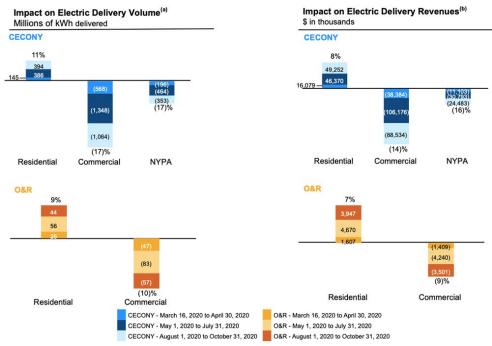
Con Ed Q3 Earnings up Despite COVID

Consolidated Edison on Nov. 5 *reported* third-quarter net income of \$493 million (\$1.47/share), about 4% higher than the same period in 2019, even as total revenue slipped because of the COVID-19 pandemic.

The company brought in \$3.33 billion for the quarter, down about 1% from last year off of lower gas and steam revenues to its primary New York City utility, Consolidated Edison Company of New York (CECONY). The "lower non-weather-related steam net revenues due to lower usage by customers" impacted earnings by about \$6 million, Con Ed said.

However, CECONY residential electric delivery volume and revenue were up 11% and 8%, respectively, from March 16 to Oct. 31 compared to the same period last year. This helped offset lower commercial and industrial delivery (17%) and revenue (14%) during the same period. Between CECONY and Con Ed's other utility subsidiary, Orange and Rockland Utilities (O&R), the company brought in \$2.77 billion in electricity revenue, up by less than 1% from last year.

When the pandemic-related shutdowns began in March, Con Ed suspended service disconnections, certain collection notices, and new late payment charges, among other fees and collection activities, for all customers. For the nine months ending Sept. 30, the company estimates foregone revenues of approximately \$44 million and \$2 million for CECONY and



Con Edison reported impacts of COVID-19 on electric delivery volume and revenues for March 16 to Oct. 31, 2020. | Consolidated Edison

O&R, respectively.

Con Ed narrowed its earnings guidance for the year to \$4.15 to \$4.30/share, with the upper bound sliding by 5 cents, which the company attributed to "revised expectations due to the effect of the COVID-19 pandemic on the utilities."

More than 8,000 of its employees continue to work from home or remotely, the company said. ■

– Michael Kuser

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NYISO News



NYISO OKs Changes on Hybrid, Fast Start Resources, TCCs

By Michael Kuser

The NYISO Business Issues Committee on Wednesday approved rule changes regarding transmission congestion contracts (TCCs), hybrid storage facilities, and pricing of fast-start resources and ancillary services, along with six manual changes.

Reserving Capacity for TCC BoP Auctions

The BIC approved the proposed market design for a *project* to reserve a portion of available transmission capacity for the sale of TCCs in monthly balance-of-period (BoP) auctions.

The Tariff currently requires that all transmission capacity not associated with grandfathered rights or outstanding TCCs be made available for sale in the centralized TCC auctions. NYISO said that could limit the ability of market participants to acquire shorter-term TCCs in the BoP auctions, noting that other ISOs and RTOs reserve some portion of transmission capacity for sale in their monthly financial transmission rights auctions.

The ISO will work on developing software requirements for the approved design next year; the ultimate timeline for implementation, including seeking further stakeholder approval on the proposal, will be determined as part of the annual project prioritization process, said Gregory R. Williams, manager for TCC market operations. NYISO will limit the amount of transmission capacity that can be reserved from a centralized TCC auction to no more than 10% of the of the transmission capacity not otherwise required to support already outstanding grandfathered rights and TCCs. The proposal would also provide NYISO authority over determining the manner in which any reserved capacity would be released into the BoP auctions.

Ancillary Services Shortage Pricing

Members approved the Ancillary Services Shortage Pricing *project*, which proposes revisions to the structure of the New York Control Area 30-minute reserve demand curve. It would apply in real time during activations of special-case resources (SCRs) and the emergency demand response program (EDRP) in less than all zones.

It would also make adjustments to shortage pricing values, add more "steps" for a more graduated demand curve and provide for procurement of additional reserves beyond minimum reliability requirements.

The specific details regarding the process for evaluating the need for supplemental reserves will be addressed in the manual, not in the Tariff, said Pallavi Jain, energy market design specialist. The Tariff includes an overview of the process, including the requirement for approval by the Operating Committee prior to implementing or adjusting any supplemental reserve requirements. The next step is to seek Management Committee approval on Wednesday and Board of Directors approval in December 2020 or January 2021.

Enhanced Fast-start Pricing

The BIC approved *modifications* to apply its enhanced fast-start pricing rules to dispatchable units.

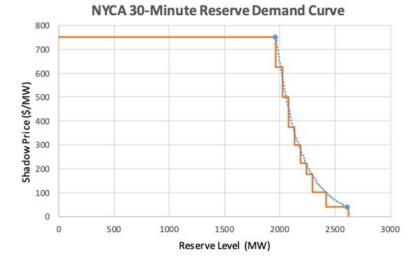
Current rules relax minimum generation constraints for fixed-block units. Under the new rules, fast-start pricing will apply to all resources that can start up and synchronize to the grid in 30 minutes or less; have a minimum run time of one hour or less; and submit economic offers for evaluation.

Locational-based marginal price calculations in the ideal dispatch will include the start-up and minimum generation costs of all fast-start resources. The revised pricing logic also will apply in the withdrawal state for fast-start resources eligible to submit commitment costs.

The effort is targeted for implementation prior to Dec. 31 to satisfy two FERC requirements issued in an April 2019 order (*ER18-33*). (See *FERC Orders Fast-start Rules for PJM*, NYISO.)

NYISO is proposing that a single start-up cost be used in real-time commitment and dispatch for all fast-start units.

The BIC also approved *related changes* to the Transmission & Dispatch Operations, Day-Ahead Scheduling and Accounting and Billing manuals.



Shortage Price (\$/MW)	Reserve Level (MW)	Demand Curve (MW)
750	\leq 1,965 to 0	1,965
625	1,965 to 2,020	55
500	2,020 to 2,075	55
375	2,075 to 2,130	55
300	2,130 to 2,185	55
225	2,185 to 2,240	55
175	2,240 to 2,295	55
100	2,295 to 2,420	125
40	2,420 to 2,620	200

Note:

Highlighted shortage price cells indicate the values from the costs of operator actions analysis

NYISO proposes to utilize a stepped approximation of an exponential curve to help smooth the NYCA 30-minute reserve demand curve. | NYISO

NYISO News

CSR Hybrid Storage Model

Stakeholders approved the market design *proposal* for co-located storage resources (CSR). (See NYISO Nearing Vote on Hybrid Rules.)

NYISO's proposal would allow each unit in a CSR to have its own single-point identifier — one for the energy storage resource (ESR), and one for the wind or solar generator. Each unit also would have separate energy resource interconnection service and capacity resource interconnection service values.

The CSR units would be settled at the LBMP at the point of interconnection. Only the ESR unit would be eligible to provide reserves or regulation.

If the Management Committee approves the proposal Wednesday, the ISO will file it with FERC in early February and request an effective date 60 days from filing, with full implementation proposed for the fourth quarter of 2021.

Other Approvals

The BIC also approved the following:

- A new section of the Ancillary Services Manual concerning *changes* to voltage support services (VSS). Section 3.6.4 will detail test procedures requiring ESRs providing VSS to demonstrate its leading and lagging capabilities while discharging and charging. The lower of the two demonstrated leading capabilities and the lower of the two demonstrated lagging capabilities, as verified by metering data, will be the basis of compensation for the following calendar year.
- An update of the Load Forecasting Manual to reflect the selection of the peak load hour for the capability year and the latest regional

load growth factor (RLGF) evaluation criteria.

- A revision of the Economic Planning Manual to address needs from the 2020 Reliability Needs Assessment. Planning will consider both transmission security and resource adequacy needs in the representative system buildout used in the economic planning process, instead of forecasting the system to be built out to meet an assumed resource margin under current manual language.
- Utilization of meter services entities (MSEs) for demand-side resources. NYISO's distributed energy resources participation model permit an MSE to provide meter services and meter data services to responsible interface parties (RIPs), curtailment service providers (CSPs) and aggregators. FERC has approved Tariff changes permitting RIPs and CSPs to utilize MSEs for demand-side resources. This change would also allow market participants representing day-ahead demand response program and demand-side ancillary services program resources to use MSEs until those programs are eliminated in 2022. If the MC approves this month, the ISO will seek to file with FERC in December.
- Transmission Expansion and Interconnection Manual *update* to reflect Tariff revisions accepted by FERC that revised aspects of the ISO's transmission expansion and interconnection procedures, including the class year redesign (ER20-638); Order 845 and 845-A compliance filings (ER19-1949); DER filing (ER19-2276); and Order 841 compliance filings (ER19-467). The Operating Committee approved the proposal Thursday.
- *Revisions* to Schedule A of the ISO-NE-NYISO Coordination Agreement to allow the grid

operators to make changes to the list of interties without requiring FERC filings by both of them. The list of interties and associated transmission equipment will be removed from Schedule A and instead updated via web postings. Schedule A will describe the three ISO-NE/NYISO interconnections as the NY/NE Northern AC Interconnection; the Northport-Norwalk Harbor Cable; and the Cross-Sound Cable. NYISO plans to file with FERC following MC and board approval.

• Removal from section 26.1.2 of the Services Tariff of the notarization requirement for the officer *certification*. The primary purpose of notarization is to confirm the identity of the signer, but it does not address the truthfulness of the signed statements, said Corporate Credit Manager Sheri Prevratil, who noted that CAISO, PJM and MISO do not require notarization of their officer certification forms. NYISO will require company officers to sign an acknowledgment that the information provided is true and correct to the best of their knowledge.

Marczewski Elected Vice Chair for 2021

The BIC elected John Marczewski, vice president of electric consulting at EN Energy Engineering, to serve as its vice chair for December 2020 through November 2021.

"My technical knowledge of power system planning, economics, projects and operations should help guide the BIC through some of the challenges it may encounter, especially given the many changes we will see coming in the New York electric power landscape, such as integration of significant amounts of renewable generation and storage systems, and the market rule changes that will accompany these trends," Marczewski said in a statement.

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Notice of Solicitation for Generation Suppliers of Renewable Energy and Renewable Energy Credits from PJM Deliverable to the City of New York

The NYClean Energy Link

Anbaric Development Partners, LLC ("Anbaric" or the "Company"), seeks generation suppliers of renewable energy produced from sources including but not limited to hydropower, solar, and wind generation projects, including generation projects paired with energy storage, wishing to offer energy and renewable energy credits deliverable into Load Zone J ("Zone J") of the New York Control Area via the proposed NYClean Energy Link, a high voltage, direct current ("HVDC") transmission link between the PJM Transmission System and Zone J, described further below.

On October 15, 2020, the State of New York Public Service Commission ("NYPSC" or "Commission") issued its Order Adopting Modifications to the Clean Energy Standard ("CES") in Case 15-E-0302 (the "CES Order") mandating a new Tier 4 Renewable Energy Certificate ("REC") program administered by the New York State Energy Research and Development Authority ("NYSERDA") for renewable energy either sited in or delivered to Zone J via a new transmission interconnection in Zone J. Anbaric is developing a HVDC transmission link from the PSEG or JCP&L Zone in PJM into Zone J and now seeks eligible renewable energy system projects located in PJM with whom it can respond to a request for proposals that the CES Order directed be issued by NYSERDA on or before December 15, 2020.

Through this Solicitation, the Company seeks suppliers capable of collaboration with the NYClean Energy Link to supply and deliver renewable energy from eligible renewable energy systems into Zone J in accordance with the requirements of the Tier 4 REC program. Under the Tier 4 Requirements in the CES Order, eligible renewable energy systems (including generation paired with storage) are renewable energy projects (except hydropower projects) that began commercial operation after October 15, 2020. Hydropower projects qualify as eligible renewable energy systems if their generation will come from impoundments that existed prior to or were under construction as of June 18, 2020 (these projects also will have to meet two additional requirements regarding hydropower supplier's energy and Greenhouse Gas baselines). The CES Order and the Tier 4 Requirements are available at the NYPSC's website, under the proceeding number: http://documents.dps.ny.gov/public/MatterCaseNo=15-E-0302&submit=Search+by+Case+Number

The Company seeks to work with one (or more) supplier(s) of generation from eligible renewable energy systems, in a legal and contracting structure to be negotiated, to submit at least one joint response to a request for proposals ("RFP") for Tier 4 RECs expected to be issued by NYSERDA on or before December 15, 2020.

NYClean Energy Link Specifications: The NYClean Energy Link will consist of a new, buried 600-1200 MW HVDC link from an AC-DC converter facility adjacent and connected to a selected substation in either PSEG's or JCP&L's local control area and injecting electricity into Zone J consistent with the provisions of the CES Order, terminating in New York City at a DC-AC converter facility which will deliver power into a Con Edison substation. The NYClean Energy Link line will be buried along its entire route, underground in New Jersey, underwater in the Raritan Bay, and underwater in New York Harbor. The right-of-way for the NYClean Energy Link will follow municipal, county, and state roads in New Jersey and New York.

Open Solicitation Process: Prior to receiving additional project information via a virtual data room, entities will be required to execute a non-disclosure agreement, which can be obtained by emailing jfuller@anbaric.com. Questions regarding the solicitation process or the NYClean Energy Link can also be addressed by emailing jfuller@anbaric.com or calling (732) 243-8701.

The Company will retain a consultant to assist it in objectively evaluating responses from potential suppliers of generation from eligible renewable energy systems based on the following information to be provided by respondents:

1. The respondent's credit rating as reported by a reputable credit rating agency or otherwise determined in a manner consistent with generally accepted credit rating principles and practices;

2. The respondent's ability to submit generation supply offers from one or more eligible renewable energy systems which alone or in the aggregate exceed 100 MW of nameplate generating capacity;

3. The respondent's willingness to commit to supply and delivery obligations with NYSERDA and associated obligations with the NYClean Energy Link for a term of 20 years, including the ability to provide firm pricing for a Tier 4 REC contract with an expected term of at least 20 years (but no more than 25 years); and

4. The respondent's ability to submit indicative pricing for the delivery of generation from eligible renewable energy systems to the New Jersey terminus of the NYClean Energy Link at the AC-DC converter facility.

Given the expected date of issuance of the RFP, this solicitation provides an expedited response time: **responses are required to be received by** 5:00pm December 2, 2020 and should be submitted via email to jfuller@anbaric.com with "Response to NYClean Energy Link Open Solicitation" in the subject line.



Chief Ethics, Legal Officers 'Separate' from FirstEnergy

Company Sets Goal for Carbon Neutrality

By Michael Yoder

FirstEnergy last week released its top lawyer and chief ethics officer in the aftermath of the alleged \$61 million bribery scheme resulting in the passage of Ohio House Bill 6.

Chief Legal Officer Robert Reffner and Chief Ethics Officer Ebony Yeboah-Amankwah "separated" from the company effective Nov. 8, according to a *filing* with the U.S. Securities and Exchange Commission.

The moves came before an announcement Nov. 9 in which FirstEnergy pledged to achieve carbon neutrality by 2050. The company issued a climate position and strategy *statement* to go along with the announcement.

Acting CEO Steven Strah — who received a pay raise to \$950,000 per year, according to the SEC filing — said FirstEnergy was dedicating itself to achieve ambitious environmental goals.

"We believe climate change is among the most important issues of our time," Strah said. "We will help address this challenge by building a more climate-resilient energy system and supporting the transition to a carbon-neutral economy."

Internal Moves

FirstEnergy did not provide a reason for the departures of Reffner and Yeboah-Amankwah. A company spokesperson said there would be no further comments on the leadership changes.

Reffner was appointed to his position in May when the company announced other major changes to its management, including Strah as president. Yeboah-Amankwah was also



FirstEnergy President Steven Strah | FirstEnergy

appointed to her position in the same round of changes, reporting to Reffner. (See Strah Named New President of FirstEnergy.)

In a press release issued Oct. 29, FirstEnergy announced the termination of CEO Charles Jones, along with two other executives: Dennis Chack, senior vice president of product development, marketing and branding; and Michael Dowling, senior vice president of external affairs. Officials said an internal review related to "government investigations" determined the executives "violated certain FirstEnergy policies and its code of conduct." (See FirstEnergy Fires Jones over Bribe Probe.)

FirstEnergy is alleged to have supported the election of former Ohio House Speaker Larry Householder (R) and his associates in a three-year scheme that resulted in the approval of zero-emission credits for the company's money-losing Perry and Davis-Besse nuclear plants.

More Compensation

Also included in the new SEC filing was a salary of \$75,000 a month for Director Christopher Pappas, who was named executive director of the board in the aftermath of the termination of Jones and the promotion of Strah. Pappas will receive three months advanced payment, the filing said.

Non-executive board Chairman Donald Misheff will be paid a cash stipend of \$62,500 a month, with three months advanced payment.

And Leslie Turner, a former executive with The Hershey Co. who was named chair of a new subcommittee set to review FirstEnergy's compliance programs, will receive \$3,750 a quarter in her new role and a pro-rated amount of \$2,500 for November and December, according to the filing.

In a second filing Nov. 9, FirstEnergy told the SEC it cannot file its latest 10-Q on time because of the ongoing criminal investigations. The utility released financial results for the third quarter on Nov. 2. (See FirstEnergy Earnings Call Overshadowed by Probes.)

"In connection with the ongoing government investigations, the company's re-evaluation of its controls framework, which could include identifying one or more material weaknesses, the company requires additional time to complete its quarterly review and closing proce-



Robert Reffner, chief legal officer (left), and Ebony Yeboah-Amankwah, chief ethics officer, "separated" from FirstEnergy on Nov. 8. | *FirstEnergy*

dures and to provide appropriate disclosure in the Form 10-Q," FirstEnergy said.

Environmental Goals

Besides the management moves, FirstEnergy said it was busy moving forward with its carbon-neutrality plan. The company set an interim goal of a 30% reduction in greenhouse gas emissions within its direct operational control by 2030, based on 2019 levels, and full carbon neutrality by 2050.

FirstEnergy's strategy calls for several environmental initiatives to reach the goals, including:

- hardening transmission and distribution systems to reduce physical risks of climate change;
- replacing conventional utility trucks with electric and hybrid vehicles;
- preparing for a transition away from coalfired power in West Virginia by 2050;
- seeking approval next year to construct a solar generation source of at least 50 MW in West Virginia;
- utilizing advanced technology to allow customers to manage their energy use; and
- integrating carbon pricing into financial forecasting.

The company also plans on creating an executive steering committee partnering with the board and leadership for "oversight, accountability and risk mitigation for the climate policy."

"Our ambitious new carbon goal and comprehensive climate strategy are fully aligned with our regulated business strategy and support our commitments to our customers, communities and investors, as well as environmental stewardship," Strah said. ■



PJM IMM Warns Against Another Capacity Market Overhaul

By Michael Yoder

PJM's Independent Market Monitor urged the RTO not to rush into making changes to its capacity market before the recently approved design is given a chance to succeed.

The IMM made the plea in its latest quarterly report, issued Thursday, which noted that PJM energy prices were the lowest in the first nine months of this year compared to any year since the creation of the RTO's markets in 1999.

According to Monitoring Analytics' third-quarter *State of the Market Report for PJM*, the load-weighted average real-time LMP was 23.1% lower in the first nine months of 2020 than the same period last year, coming in at \$21.22/MWh versus \$27.60/MWh. Of the \$6.38/MWh decrease, 57.7% was a result of lower fuel costs, while mild winter weather and the COVID-19 pandemic caused a significant drop in demand.

The Monitor used these data to extol competitive electricity markets, noting that "changes in input prices and changes in the balance of supply and demand are reflected immediately in energy prices."

"The value of markets is under attack, from those who assert that energy prices are too low and from those who assert that markets are incompatible with decarbonization of the power sector," the Monitor said. "Organized, competitive wholesale power markets are the best way to facilitate the least-cost path to decarbonization. Markets provide incentives for innovation and efficiency. Renewables can compete. Innovation will occur in renewable technologies in unpredictable and beneficial ways."

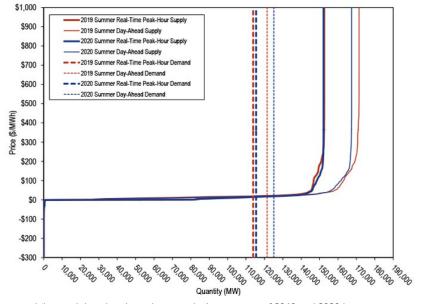
The Monitor said fears over the impacts of the expanded minimum offer price rule (MOPR) have led stakeholders to discuss overhauling the PJM capacity market and states to consider opting out of the market using a fixed resource requirement. It acknowledged there are "clear issues" with the market's design, including an overstated offer cap, the shape of the demand curve and the application of penalties for nonperformance.

But the Monitor also said there is no evidence that the new MOPR will make the market less competitive or that nuclear and renewable resources won't clear it. The IMM noted that PJM has not run its annual Base Residual Auction since 2018 and that capacity prices have not been set for beyond June 1, 2021. "PJM should not rush to overhaul its capacity market again."

New Recommendations

The Monitor included 10 new recommendations for changes and enhancements to existing market rules and implementation of new rules.

It made seven new recommendations in the *Energy Market* section of the report, including that:



The average real-time and day-ahead supply curves in the summers of 2019 and 2020 | Monitoring Analytics

- the temporary cost method and penalty exemption provision be removed;
- all units that submit non-zero cost-based offers be required to have an approved fuel-cost policy;
- market participants be required to document the amount and cost of consumables used when operating to verify that the total operating cost is consistent with the total quantity used and the unit characteristics;
- market participants be permitted to include only variable maintenance costs, linked to verifiable operational events and that can be supported by clear and unambiguous documentation of the operational data, including run hours and megawatt-hours, that support the maintenance cycle of the equipment being serviced or replaced;
- offer capping be applied to units that fail the three-pivotal-supplier (TPS) test in the real-time market that were not offer capped at the time of commitment in the day-ahead market or at a prior time in the real-time market to ensure effective market power mitigation when the TPS test is failed;
- eliminating up-to-congestion (UTC) bidding at pricing nodes that aggregate only small sections of transmission zones with few physical assets; and
- eliminating increment offers, decrement bids and UTC bidding at pricing nodes that allow market participants to profit from modeling issues.

In the *Energy Uplift* section of the report, the Monitor recommended that PJM designate units whose offers are flagged for fixed generation in Markets Gateway as not eligible for uplift. It said units that are flagged for fixed generation are not dispatchable, and following dispatch is an eligibility requirement for uplift compensation.

The Generation and Transmission Planning section of the report included a recommendation that storage resources not be included as transmission assets for any reason. Monitor Joe Bowring brought the issue up in the Planning Committee on Nov. 4. (See PJM Moves Closer to Endorsing SATA.)

Finally, in the *Financial Transmission Rights and Auction Revenue Rights* section, the Monitor recommended that PJM enforce the FTR auction bid limits at the parent company level beginning immediately.



PJM MRC/MC Preview: Nov. 19, 2020

Below is a summary of the issues scheduled to be brought to a vote at the PJM Markets and Reliability and Members committees on Thursday. Each item is listed by agenda number, description and projected time of discussion, followed by a summary of the issue and links to prior coverage in *RTO Insider*.

RTO Insider will be covering the discussions and votes. See next Tuesday's newsletter for a full report.

Markets and Reliability Committee

Consent Agenda (9:05-9:10)

B. The MRC will be asked to *endorse* updates to *Manual 3: Transmission Operations* incorporating clarifying changes resulting from its periodic review. (See "Manual Endorsements," *PJM Operating Committee Briefs: Nov. 6, 2020.*)

C. The committee will be asked to *endorse* proposed revisions to *Manual 3A: Energy Management System Model Updates and Quality Assurance* resulting from its periodic review. PJM said the changes include correcting grammatical mistakes and updating references to the behind-the-meter generation rules that took effect in September 2019. (See "*Manual First Reads*," *PJM OC Briefs: Oct. 8, 2020.*)

D. Members will be asked to *endorse* proposed revisions to *Manual 10: Pre-Scheduling Operations* to incorporate clarifying changes resulting from its periodic review.

E. The MRC will be asked to *endorse* proposed revisions to *Manual 11: Energy & Ancillary Services Market Operations* and *Manual 12: Balancing Operations* to address changes related to five-minute dispatch and pricing. The revisions are designed to increase transparency and conform to the current PJM process for calculating LMPs. (See "Manual 11 Revisions Endorsed," PJM MIC Briefs: Nov. 5, 2020.)

F. Members will be asked to *endorse* proposed revisions to *Manual 14D*: *Generator Operational Requirements* to incorporate changes resulting from its periodic review. (See "Manual Changes Endorsed," *PJM OC Briefs*: *Oct. 8, 2020*.)

G. The committee will be asked to *endorse* a minor correction to *Manual 18: PJM Capacity Market* regarding an effective date for notifying pseudo-tied resource owners of their assigned locational deliverability area prior to each delivery year. The revision was endorsed as a "quick fix" at last month's Market Implementation Committee meeting following a discussion in which some members objected to the process and suggested further talks on lingering pseudo-tie issues. (See "Manual 18 Update," *PJM MIC Briefs: Oct. 7, 2020.*)

Endorsements/Approvals (9:10-9:20)

1. Day-Ahead Schedule Reserve (DASR) Update (9:10-9:20)

Stakeholders will be asked to endorse the

final proposed changes to the 2021 day-ahead scheduling reserve (DASR) requirement. PJM said the final 2021 DASR requirement is 4.74%, slightly lower than the 2020 requirement of 5.07%. (See "Day-ahead Scheduling Reserve Endorsed," PJM Operating Committee Briefs: Nov. 6, 2020.)

Members Committee

Consent Agenda (10:30-10:35)

B. The MC will be asked to *endorse* revisions to *Manual 15: Cost Development Guidelines* resulting from its biennial periodic review process.

B. Stakeholders will be asked to *endorse* the installed reserve margin (IRM) and forecast pool requirement (FPR) values included in the 2020 *Reserve Requirement Study* results. PJM is recommending an IRM of 14.4%, down from 14.8% in 2019. The FPR is essentially the same as 2019, at 1.0865 (8.65%) instead of 1.086 from the previous year. The study determines the IRM and FPR for 2021/22 through 2023/24 and establishes the initial values for 2024/25. The results are based on the 2020 capacity model, load model and capacity benefit of ties. (See "IRM Study Results Endorsed," *PJM MRC/MC Briefs: Oct. 29, 2020.*) ■

– Michael Yoder



FERC Approves PJM Key Capacity Market Variable

By Michael Yoder

PJM moved a step closer to restarting its capacity auctions with FERC's approval on Thursday of the RTO's new energy and ancillary services (E&AS) offset calculation (*EL19-58-002*).

FERC approved most of PJM's revisions, filed in August to comply with the commission's approval of major changes to its reserve market in May. The commission had acknowledged that the changes would increase the amount of reserves the RTO procures and, thus, the revenue resources receive, affecting the capacity market's E&AS offset. (See FERC Approves PJM Reserve Market Overhaul.)

The offset is a key variable in calculating the net cost of new entry (CONE) for resources in the capacity market. It is calculated using energy market results from the three calendar years prior to the Base Residual Auction.

PJM's revisions change the offset to be forward-looking and included in its filing indicative E&AS and net CONE values for various resource types. These values are "based on the latest published and publicly available forward prices at that time," FERC said, and would be revised using updated forward prices prior to the upcoming Base Residual Auction for the 2022/23 delivery year. PJM has yet to set an exact date to run the BRA. It has been paused since June 2018, when FERC determined that the RTO needed to revamp its minimum offer price rule to address price suppression by state-subsidized resources.

FERC agreed with PJM using "publicly available" forward energy prices at liquid trading hubs and mapping the hubs to specific zones, "due to the high correlations in historic prices between each hub."

"Prices from liquid futures markets (i.e., those with many buyers and sellers, as determined by open interest) produce forward prices that reflect expectations about future conditions," the commission said.

But it ordered PJM to make a compliance filing within 15 days to use the average equivalent ability factor of all the nuclear resources in the RTO to represent a projected refueling outage. Several stakeholders had argued that using individual anticipated refueling schedules when determining nuclear resources' availability was inadequate.

"Using an average equivalent availability factor instead of a resource-specific anticipated refueling schedule not only may avoid yearly variations in expected E&AS revenues but also may result in more accurate refueling outage projections," the commission said.



Richard Glick | © RTO Insider

Commissioner Richard Glick dissented in part, saying he agreed with the commission's decision to require PJM to move to a forward-looking E&AS offset because it helps to ensure the RTO's various markets "work in concert" and that

expected increases in E&AS revenues are reflected in the capacity market.

"While PJM's E&AS offset is by no means perfect, I believe that it is good enough to remove this issue from the list of roadblocks standing between PJM and, finally, running its auction," Glick said.

But he scolded his colleagues for forcing PJM to complete an "unprecedented, highly technical exercise in an impossibly short period of time."

"The reason for that rush is readily apparent: Implementing the forward-looking E&AS offset is a necessary prerequisite to running PJM's much delayed capacity auction for the 2022/23 delivery year," Glick said. "The responsibility for that delay lies squarely at the feet of this commission, and we owe it to all stakeholders to proceed with running that auction as soon as reasonably possible."



PJM would seek to eliminate the first and second Incremental Auctions for delivery year 2022/23 if the Base Residual Auction is not held until December 2020. | PJM

SPP News



Evergy Disputes NextEra Purchase Offer

Utility Continues its Focus on Standalone Plan

By Tom Kleckner

Evergy has pushed back against a media report that it recently rebuffed a \$15 billion acquisition offer from NextEra Energy, issuing a *statement* Nov. 10 that "there is currently no offer or bid from any third party for a potential transaction."

Reuters had quoted anonymous sources the previous day saying that Evergy, which serves 1.6 million customers in Kansas and Missouri, turned down the offer. (See *Report: Evergy Rebuffs NextEra Energy Bid.*)

Evergy had explored potential purchases earlier this year but said this summer that it would remain independent. The utility said it will remain focused on a *sustainable transformation* plan (STP) that guided its decision. (See Evergy Releases Standalone Plan Details.)

"Since announcing the STP, there has been no change in circumstance that alters the basis for this decision," Evergy said in its statement.

The plan follows a "comprehensive, independent review" that began earlier this year as part of an agreement with activist investor Elliott Management. The STP calls for \$8.9 billion of capital investments in facility upgrades, grid modernization technologies and clean energy initiatives through 2024 in the company's Kansas and Missouri service territory.

"We remain confident that the STP, which Elliott publicly endorsed when it was announced, is the best risk-adjusted path forward and that all appropriate steps are being and have been taken to maximize shareholder value. We will continue to act accordingly," the company said.

Kansas and Missouri regulators have both opened dockets on the STP. Evergy said during

its quarterly earnings call Nov. 5 that it expects to shortly file a jointly developed procedural schedule with the Kansas Corporation Commission that extends into 2021.

Missouri Public Service Commission staff face a



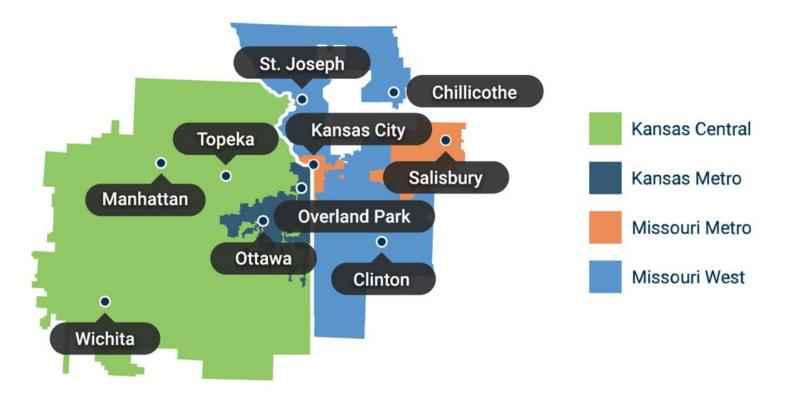
Evergy CEO Terry Bassham | *Evergy*

Jan. 29 deadline to file a report on the STP.

"We don't expect the commissions to take specific action regarding STP in either of those dockets," Evergy CEO Terry Bassham said during the call. "The main purpose is to gather other information on and review our STP and ensure our continued resolve in meeting previous merger commitments while providing a forum and repository for stakeholder feedback."

NextEra, armed with a three-figure stock price in recent years, has been on the hunt for regulated utilities. It has come up short in bids for Hawaiian Electric, Texas' Oncor and national powerhouse Duke Energy. The company did pick up Gulf Power and Florida City Gas in a \$6.4 billion deal in 2018 with Southern Co. and shelled out \$660 million for independent transmission company GridLiance in September. (See NextEra Buying GridLiance for \$660M.)

The company's share price opened at \$76.56 on Nov. 10. NextEra's common stock went through a four-to-one split in October to make its ownership "more accessible." ■



Evergy's service territory spreads across Kansas and Missouri. | Evergy

SPP News



Western Utilities Eye RTO Membership in SPP

Continued from page 1

regions and offer an opportunity for greater solar resource development.

"The next step for us is to help develop an RTO in the West," Highley said. "In order to [meet our emission-reduction targets], we know we have to coordinate regionally. We want to do everything we can to accelerate this transition to a regional grid. This doesn't eliminate any of the other options. ... We know we have to improve transmission access."

Noting SPP has seen renewable energy account for nearly 80% of its fuel mix at times, Highley said "we're going to need that same coordination as we build and integrate renewables into a broad region."

"Enhancing regional markets will lead to additional efficiencies, reliability and more cost savings," Polis said, echoing Highley. "[RTOs] are really important to support the integrity of a higher level of renewables across a broader geographic area."

"We've enhanced electric reliability while integrating more renewable generation than many in our industry ever thought possible; modernized the grid; built and operated a dependable and economic market; and equitably allocated the costs and revenues associated with these and other services," SPP CEO Barbara Sugg said in a statement. "What's more, we've done it all while staying true to our collaborative and member-driven business model, and now we're excited for the opportunity to bring the value of RTO membership to new customers in the West."

'Substantial Benefits'

SPP said a Brattle Group study conducted for the RTO found the move would be mutually beneficial and produce \$49 million in annual savings for current and new members. Western utilities would receive \$25 million a year in adjusted production cost savings and revenue from off-system sales. Members in the Eastern Interconnection would benefit from \$24 million in savings because of the market's expansion, transmission network and generation fleet.

An SPP spokesman said the report would be shared publicly once it has been reviewed by the membership in December.

"We anticipate the benefits of these entities joining our RTO to exceed those quantified in the study," SPP's Derek Wingfield said. The study's scope was limited only to adjusted production cost savings and the value of off-system sales.

"But there are numerous other, substantial benefits of RTO membership as we've demonstrated for years in the Eastern Interconnection," he said. "We at SPP hope the evaluation of full RTO membership leads to even more chances to help Western stakeholders lower energy costs, integrate more renewable energy and modernize the grid."

Tri-State, Basin Electric, MEAN and WAPA's

UGP-East joined SPP in 2015, along with the rest of the Integrated System. (See Integrated System to Join SPP Market Oct. 1.)

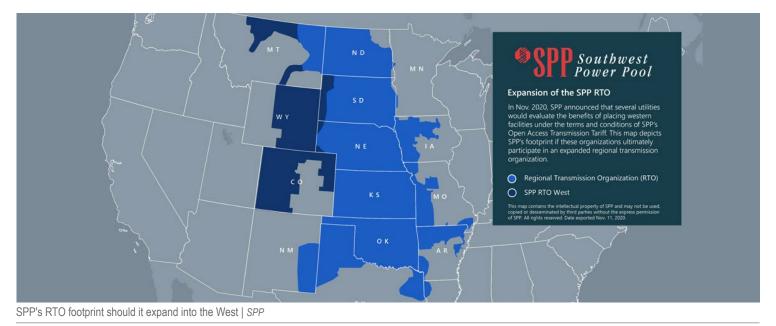
The utilities and Deseret are also customers of at least one of SPP's contract-based *Western Energy Services*, which includes reliability coordination and its Western Energy Imbalance Service real-time market scheduled to launch in February 2021. SPP's Western RC service will celebrate its one-year anniversary in December.

Tri-State was part of the Mountain West Transmission Group, a coalition of 10 Western utilities that briefly pursued SPP membership in 2017 and 2018. The effort fell apart when Xcel Energy left the group and later committed to join CAISO's Energy Imbalance Market. (See *Xcel Leaving Mountain West; SPP Integration at Risk.*)

Tri-State spokesman Mark Stutz said Mountain West's failure did not end the utility's "longterm interest in and goal to ultimately participate in a regional transmission organization for our region."

"Tri-State's participation in a Western Interconnect RTO is essential to advance our members' reliability, affordability and clean energy goals," Stutz said. "While the issues are complex, we remain optimistic that together we are on a path that can capture the full benefits of an organized market in the West."

SPP's expansion would add Colorado and Wyoming to the RTO footprint, which would then encompass all or part of 15 states. ■



RTO Insider: Your Eyes & Ears on the Organized Electric Markets

SPP News

SPP Seams Steering Committee Briefs

SCRIPT Calls for Improvement to **Transmission Planning Processes**

SPP's seven different transmission planning processes "makes for an interesting mix of different ways to solve difficult transmission challenges," staff said of the stakeholder team re-engineering the processes during last week's Seams Steering Committee.

"None [of the seven] are perfect, and [they] will benefit from continual improvement," communications strategist Russell Carey said.

Enter then, the Strategic and Creative Reengineering of Integrated Planning Team (SCRIPT), which will analyze the interconnected processes and applicable cost-allocation methods. The team will also consider and evaluate options to strategically re-engineer those pro-



Russell Carey, SPP | SPP

SPP'S PLANNING STUDIES & COST ALLOCATION

Stakeholder-driven, member-funded

- Integrated Transmission Planning (ITP)
- High Priority
- Balanced Portfolio
- Interregional Projects

Customer-Initiated, customer-funded

- Transmission Service (TS)
- Generation Interconnection (GI) Service
- Sponsored Upgrades

SPP's transmission planning processes and their cost allocations | SPP

cesses, delivering a final report with high-level recommendations to the Board of Directors and Members Committee next October. (See "SPC Takes Look at Tx Planning," SPP Briefs: Week of Aug. 31, 2020.)

The recommendations are expected to consolidate the processes, improve responsiveness and certainty, reduce dependence on interconnection queue-driven analyses, improve decision quality, facilitate beneficial exports and improve cost-sharing.

SPP's planning processes are either stakeholder-driven and member-funded (Integrated Transmission Planning, high priority, balanced portfolio and interregional projects) or customer-initiated and funded (transmission services, generation interconnection

service and sponsored upgrades). Costs can be allocated through the RTO's highway/byway methodology, sometimes subject to a safe-harbor limit, or directly assigned.

"A lot has changed since those processes were implemented," Carey said, noting wind energy's growth and the need to export its excess as one example. "We might need to see some efficient structures developed for exports."

As if to add emphasis to Carey's comments, SPP upped its record for wind energy with a new peak of 18,442 MW Nov. 14 at 6:20 p.m. The previous mark of 18,343 MW was set in July.

"We have all these studies running in parallel. Sometimes, they're looking at similar solutions

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SPP News

to accomplish different goals. That has created uncertainty around the long-term viability of some of those projects," he said.

The SCRIPT will add sub-teams in early 2021 to begin digging into the different proposals.

One of stakeholders' chief concerns is the backlog of interconnection requests. Staff said the queue might not be cleared of old requests until 2023 or 2024.

"More needs to be done to address our current backlog," Carey said.

David Kelley, SPP's director of seams and Tariff services, said staff are working on a separate strategy to reduce and "eventually eliminate" the queue's backlog.

"We're doing that in parallel with what the SCRIPT is already working on," he said. "We're hoping to bring something to the January round of meetings."

Tx Study Briefing for SPP, MISO Stakeholders

SPP staff said they have been meeting with

MISO staff as they draft a scope document for their joint transmission study of potential projects along the seam. (See MISO, SPP to Conduct Targeted Transmission Study.)

The effort, which has been described as a "vehicle" offering a different approach than previous joint transmission studies, will begin in earnest with a joint stakeholder briefing on *Dec.* 11. The RTOs have conducted four joint studies in six years but have yet to agree on a single interregional project.

"It's fully intended to be a project that results in meaningful [transmission] projects," Kelley said.

The RTOs' state regulators are also working on seams issues, but they're "kind of in a waiting pattern right now," said Adam McKinnie, an economist with the Missouri Public Service Commission.

The Seams Liaison Committee – comprising regulators from SPP's Regional State Committee and the Organization of MISO States – met Nov. 9. OMS members came with a prioritized list of recommendations, but the

M2M Settlements since Go-Live

RSC was "not quite there with their list," McKinnie said.

The committee canceled a scheduled December meeting and will get together again in January.

M2M Settlements Crack \$100M Barrier

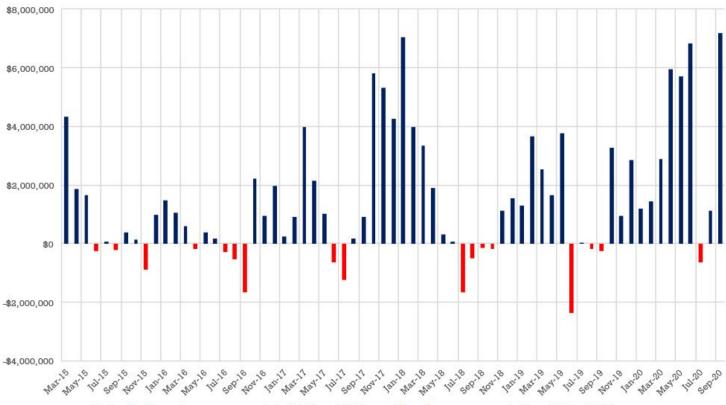
A monthly record of \$7.19 million in marketto-market (M2M) settlements with MISO in September pushed the accrued amount due to SPP to \$102.57 million.

More than three dozen temporary flowgates were binding for 951 hours during the month, accounting for \$6.16 million of the settlements. Permanent flowgates bound for 216 hours.

Staff attributed the record settlements to increased loading caused by outages, high winds and a lack of cheap fast-ramping generation, resulting in high shadow prices.

It was the 11th month in the last 12 and the 50th overall in 67 months since the RTOs began the M2M process in March 2015.

Tom Kleckner



Note: Positive values are payments to SPP from MISO; negative values are payments from SPP to MISO.

SPP's accrued market-to-market settlements passed the \$100 million barrier in September. | SPP

Company Briefs

BP, Ørsted Launch Green Hydrogen Partnership



BP and Ørsted last week announced they will collaborate on a 50-MW green hydrogen electrolyzer in Germany. The companies plan to use electricity from an Ørsted offshore wind

farm to power the project at BP's Lingen oil refinery.

The initial phase will produce 9,000 tons of green hydrogen per year, which would be enough to displace 20% of the refinery's existing fossil-fuel-derived hydrogen. The companies plan to have the site operational by 2024, with a final investment decision in 2022. Longer-term plans could potentially see the project scaled up to 500 MW.

The companies have applied for funding from the EU Innovation Fund, which will distribute \$11.8 billion between this year and 2030 on technology to decarbonize the fossil fuel industry.

More: Greentech Media

ENGIE, EDP Launch NA Offshore Wind Company

ENGIE and EDP Renewables last week announced their offshore wind joint venture, Ocean Winds, is launching its U.S. arm, OW North America.

The new company is a 50% owner in the planned 804-MW Mayflower Wind off Massachusetts and a partner in the Redwood Coast floating offshore wind project off Humboldt County, Calif. The original company formed in 2019.

"OW has a strategic advantage and is well positioned to play a leading role in the offshore market," it said. EDP and ENGIE's combined OSW assets and project pipeline in OW include 1.5 GW under construction and 4 GW under development. OW has a target of reaching 5 to 7 GW of projects in operation or under construction and 5 to 10 GW under advanced development by 2025.

More: Ocean Winds

Ford EV Investments to Add Hundreds of Jobs



Ford Motor Co. last week announced it will invest hundreds of millions of dollars

and add hundreds of jobs in southeast Michigan and Missouri as it takes steps in electrifying its most popular and iconic nameplates.

The automaker said it will build the E-Transit – a fully electric version of its Transit cargo van – at its Kansas City Assembly plant, bringing a \$100 million investment and 150 full-time jobs to its facility in Claycomo, Mo. Additionally, the company said it will add or retain a total of 425 jobs in Dearborn and Sterling Heights, Mich., to support assembly of EVs and parts.

Overall, the automaker has \$3.2 billion in EV-related investments slated for manufacturing facilities in North America and has said its EV lineup is key to helping it meet its goal of achieving carbon neutrality by 2050.

More: The Detroit News

GM to Add 3,000 Jobs Focused on EVs

General Motors last week said it plans to hire 3,000 new employees focused on software development as the company accelerates its plans for electric vehicles.

GM said the jobs will be focused on engineering, design and information technology "to increase diversity and inclusion and contribute to GM's EV and customer experience priorities." The hiring is expected through the first quarter of 2021.

The move comes as GM expects to increase its focus on EVs, including offering at least 20 new vehicles by 2023. The company said it planned to invest \$20 billion in electric and autonomous vehicles by 2025 earlier this year.

More: CNBC

Sunrun Starts to Grow After Pandemic Slowdown

sunrun

Leading U.S. rooftop solar installer Sunrun bounced

back from the slump it experienced at the height of the pandemic-related shutdowns, as it installed 109.5 MW in the third quarter. That amount is up 40% from the 78.1 MW it installed in the second quarter, as well as a 2% increase over the same period in 2019.

Company leadership has predicted deployments will rise 10% in the fourth quarter to 121.5 MW, which would beat its previous record of 117 MW in the fourth quarter of 2019.

More: Greentech Media

TVA, Origis to Power Google Data Centers with Renewables



The Tennessee Valley Authority last week said its new 100-MW solar facility in Obion County, Tenn., will supply carbon-free energy to Google's data centers in

Clarksville, Tenn., and Hollywood, Al. Developer Origis Energy is using TVA's Green Invest program to develop the solar farm.

Google had already purchased a total of 266 MW from multiple solar farms linked into the TVA grid to power its data centers.

More: The Chattanoogan

Federal Briefs

Bill Aims to Help Solar Producers Take Advantage of ITC

Legislation introduced by the House of Representatives last week would temporarily make the solar investment tax credit refundable, meaning the amount of money solar producers receive from the credit may exceed the amount they owe in taxes. It would also slow the credit's phasedown by a year.

The legislation does not have a Senate companion bill, but some Republicans have shown support for giving companies more time to take advantage of the credit.

More: The Hill

BOEM Again Delays Key Permit for Vineyard Wind Project

The Bureau of Ocean Energy Management announced last week it has again delayed the environmental study for the Vineyard Wind offshore wind project. However, final approval is expected by mid-January.

The study of the 800-MW project planned for the waters off Massachusetts is expected to be released by Dec. 11, according to a government timeline. It was expected to be released last week. The study has been repeatedly pushed back since April 2019 because of concerns that the turbines will harm fisheries and navigation.

More: Reuters

Idaho National Lab, Xcel Partnering to Produce Hydrogen



The Department of Energy awarded just under \$14

million to the Idaho National Laboratory and Xcel Energy to build a hydrogen-energy production facility at a nuclear power plant in Minnesota, most likely Xcel's Prairie Island Nuclear Generating Station.

The effort will use a process called high-temperature steam electrolysis, which uses steam and electricity to split water and separate the hydrogen. The department hopes the result will be a functioning hydrogen plant capable of operating as a hybrid system that can also test electrolysis technologies.

More: The Associated Press

LS Power Petitions Supreme Court to Overturn Minn. ROFR Law

LS Power last week asked the Supreme

Court to strike down a Minnesota law as unconstitutional, arguing that it protects instate transmission owners from competition for the development and construction of certain projects.

The law grants incumbent TOs in the state a right of first refusal for new electric transmission projects that connect to their existing facilities, which LS Power argues is a violation of the Constitution's Commerce Clause. "States may not erect discriminatory barriers to competition for interstate markets, and the interstate electric transmission grid is by definition an interstate market," it said.

The 8th Circuit Court of Appeals in March upheld a district court ruling rejecting the company's challenge of the law.

More: LS Power

Trump Removes Scientist in Charge of Assessing Climate Change

The Trump administration last week removed the executive director of the U.S. Global Change Research Program, scientist Michael Kuperberg, who was responsible for the National Climate Assessment. He will return to his previous job at the Department of Energy.

Later in the week, the administration tapped David Legates, a meteorologist who claims that excess carbon dioxide in the atmosphere is good for plants and that global warming is harmless, to run the program. Legates joined the National Oceanic and Atmospheric Administration in September.

A former NOAA official, who spoke on the condition of anonymity, said Legates' appointment made little sense. "Sometimes these moves are made at the end of an administration. It's like tilting at a windmill: It's a nice move to your base, but there's no substance to it," the former agency official said.

More: The Washington Post; The New York Times

Fed Says Climate Change Poses Stability Risks

For the first time, the U.S. Federal Reserve named climate change among the risks enumerated in its biannual financial stability report and warned about the potential for abrupt changes in asset values in response global warming.



"Acute hazards, such as storms, floods or wildfires, may cause investors to update their perceptions of the value of real or financial assets suddenly," Fed Governor Lael Brainard said.

Abrupt price changes from climate-related disasters could also create difficult-topredict knock-on effects through financial markets, the report said, particularly because not enough is understood, or disclosed, about the true extent of exposures to climate risks.

More: Reuters

State Briefs

ARIZONA

Carbon-free Energy Rules Move Ahead



The Corporation Commission last week approved new clean-energy rules that will require companies to provide 100% carbon-free energy

by 2050. However, because of last-minute deal-making to ensure the rules became effective next year, they do not include requirements for a particular amount of renewable energy use to reach the goals.

The new rules update the Renewable Energy Standard and Tariff that was passed in 2006 and requires utilities to get 15% of their power from renewables by 2025, as well as the 2010 requirement to use energyefficiency measures to meet 22% of their energy demand by this year. Utilities must now phase out coal and natural gas-burning power plants, as the plan has interim requirements for utilities to cut carbon emissions in half by 2032 and 75% by 2040.

More: The Arizona Republic

CALIFORNIA

No Natural Gas in New San Fran Buildings Starting in 2021

The San Francisco Board of Supervisors last week voted unanimously to ban natural gas in new buildings beginning next year. The legislation will apply to more than 54,000 homes and 32 million square feet of commercial space currently in the city's development pipeline.

The measure will extend to buildings that apply for a permit after June 30. Planned buildings with retail spaces are exempt from the all-electric transition until Jan. 1, 2022, and after that may apply for a waiver to construct a mixed-fuel building to allow flexibility for restaurants. Existing restaurants will not be required to turn off their gas burners.

Natural gas accounts for roughly 40% of San Francisco's overall greenhouse gas emissions and 80% of building emissions. The city has already banned natural gas for any new city-owned building.

More: San Francisco Chronicle

CONNECTICUT

DEEP Official Advises Against Proposed Solar Project



Dawn McKay, an environmental analyst from the Department of Energy and Environmental Protection (DEEP), last week determined that

the proposed 20-MW Candlewood Solar project in New Milford should not continue development and would "result in the destruction and adverse modification of essential habitat" for a specific species of what is believed to be a salamander.

Still, the recommendation does not mean the project can't move forward. The response "is a biological opinion in one area of consideration in advance of submission of a stormwater permit application," DEEP Media Relations Manager Will Healey said.

To move forward, project officials would need approval from DEEP on a stormwater management plan. The department currently does not have a stormwater permit application under review.

More: The News-Times

IDAHO

Hailey to Transition to 100% Clean Energy by 2035

The Hailey City Council last week passed a resolution to put the city on track to achieve 100% clean energy by 2035.

The resolution sets two sub-goals for the city: ensuring municipal facilities are powered by clean, renewable energy sources by 2030 while upgrading the city's municipal fleet and equipment to be completely electric by 2030.

The resolution was initially developed by the Hailey Climate Action Coalition, Idaho Sierra Club and Conservation Voters of Idaho after more than 200 residents signed a petition asking for a 100% clean energy commitment from county and city leaders.

More: Idaho Mountain Express

INDIANA

Madison Planning Commission Extends County Solar Moratorium

The Madison County Planning Commission last week voted unanimously to extend the county's moratorium on large-scale solar developments an additional six months to July 7, 2021. The county Board of Commissioners must approve the extension.

The moratorium was put in place in 2019 after the Board of Zoning Appeals approved the proposed Lone Oak Solar Energy facility and was implemented to allow time for Planning Department Director Brad Newman to develop a new solar energy ordinance. Newman said he has completed about 20% of the work on a new ordinance and that it should be completed before July 7, 2021.

More: The Herald Bulletin

MAINE

Climate Plan Leans on Existing Initiatives

The Maine Climate Council — tasked a year ago with drafting a roadmap for the state to get 100% of its electricity from renewable sources and reduce its emissions by 80% by 2050 — finalized its plan last week.

Among its recommendations is increasing the share of electric vehicles in new passenger car sales to 28% in 2025 and 100% by 2050. It also suggests reducing driving by hitting a goal to connect 95% of the state to high-speed internet by 2025, allowing more people to work from home.

Additionally, the plan recommends doubling the pace of weatherization programs to cover 17,500 additional homes and businesses within the next five years, with an end goal of 105,000 by 2050. It also calls for the state to install 100,000 upgraded heat pumps by 2025.

More: Bangor Daily News

MARYLAND

Carmody to Retire as People's Counsel



Paula Carmody, who has represented residential utility customers as the people's counsel for the last 14 years, announced she plans to retire on Jan. 1.

Carmody was appointed

to the Office of People's Counsel in January 2007. She has advocated for protections for consumers at the Public Service Commission, the legislature, federal agencies and PJM. Carmody said she is especially proud of co-founding the Critical Medical Needs Program, a voluntary partnership to help and protect seniors and limited-income customers. The program is now part of the state's Office of Home Energy Programs. Attorney General Brian Frosh has appointed David Lapp, deputy counsel for the Department of Health, to succeed Carmody.

More: The Baltimore Sun

Skipjack Wind Farm May be Delayed Again

Orsted

Ørsted last week said its Skipjack Wind Farm off the

coast of Ocean City may be delayed for the second time this year.

CEO Henrik Poulsen said that, "assuming the permitting process starts moving within the first quarter of next year, it appears highly likely that Revolution Wind, Ocean Wind, Skipjack and Sunrise Wind will be delayed beyond the previously expected 2023 and 2024 construction years."

The farm is a proposed offshore wind project currently in the planning and regulatory review process. The project is slated to be about 19 miles off the coast and was originally expected to be completed in 2022. It was then announced in April that its completion would be delayed until the end of 2023 because of regulatory process issues.

More: Salisbury Daily Times

NEW YORK

Rochester Launches Renewable CCA Program

The city of Rochester last week announced it will launch a renewable energy community choice aggregation program intended to provide residents and small businesses with locally sourced 100% renewable energy.

The program will leverage the buying power of the city's more than 80,000 Rochester Gas & Electric account holders to solicit bids from energy suppliers.

More: Solar Power World

OHIO

FBI Conducts Search at House of PUCO Chairman



FBI agents removed boxes of materials from the Columbus home of Public Utilities Commission Chairman Sam Randazzo on Monday morning.

The bureau was tight-lipped about its activity. "FBI agents are conducting court-authorized law enforcement activity in that area in relation to a sealed federal search warrant," spokesman Todd Lindgren said. "Due to this matter being sealed, no further details can be released at this time."

Randazzo's company, Sustainability Funding Alliance of Ohio, was listed as a company used by FirstEnergy Solutions on the company's December 2018 bankruptcy report. PUCO is currently auditing FirstEnergy, which is at the center of a \$61 million bribery scheme to pass a \$1 billion bailout for two nuclear plants then owned by FES.

More: Cincinnati Enquirer

SOUTH CAROLINA

Central Electric Power Co-op to Add Solar to Resource Portfolio



The Central Electric Power Cooperative Board of Trustees last week decided to

add as much as 363 MW of new renewable solar energy to the company's resource portfolio. The capacity will be obtained through power purchase agreements with independent developers.

The pursuit of PPAs independent of Santee Cooper comes through Central's contract with the state-owned utility, which allows the cooperative to opt out of its new generating sources. The agreements should be completed in a few months, with the generation coming online in 2023.

More: WBTW

TEXAS

Bill Would Tax Wind, Solar but not Natural Gas



A bill proposed by Rep. **Ken King** would add a 1-cent tax to every kilowatt-hour produced by wind, solar, coal and nuclear generation. Natural gas would be exempt from the tax.

Generators who fail to pay the tax could face a fine of up to \$500. The tax, which would take effect Sept. 1, would go to the state's school fund.

More: Houston Chronicle

State Plan Targets EV Owners with Higher Fees

A state bill proposed last week would hit electric vehicle owners with an additional

\$200 registration and annual renewal fee to help shore up the state's road fund, which relies on a decreasing amount of gas taxes.

Hybrid vehicles would also be taxed an additional \$100 for registration and renewal. Revenue from the fees would go to the state highway fund, which had \$14.2 billion in revenue during 2019 and expects revenue of \$14.6 billion in 2020.

The bill would take effect Sept. 1, if passed.

More: Houston Chronicle

Xcel's Harrington Station to Switch to Natural Gas by 2025

Xcel Energy last week said it has reached an agreement with the Commission on Environmental Quality to convert its Harrington coal-fired plant to natural gas by 2025 to meet national air standards. All the units at the Harrington plant were designed to burn natural gas, meaning the switch will have a minimal cost impact.

The commission said the conversion will help reduce the chemical sulfur dioxide in Potter County's air. The rate of SO2 is currently higher than national standards allow.

More: KFDA

UTAH

PSC Reaches Solar Compromise with Rocky Mountain Power

The Public Service Commission last week agreed to lower the price Rocky Mountain Power pays solar customers for export credits to 5.969 cents/kWh in the summer and 5.639 cents/kWh in the winter. The company had been paying 9.2 cents since 2017 and asked the PSC to lower it to between 1.3 and 2.6 cents.

"We appreciate the work done by the commission to study this issue and arrive at a decision that is fair for all customers," RMP said in a statement.

The PSC also rejected a metering fee and application fee that the utility requested. The order immediately goes into effect, although the Solar Energy Association filed a motion to change the implementation date to Jan. 2.

More: Daily Energy Insider

VIRGINIA

Fredericksburg PD Eyeing Use of EVs

The Fredericksburg Police Department last week announced it has partnered with

Virginia Clean Cities for guidance on converting some of its fleet to electric vehicles or the use of alternative fuels. The pact is in response to the City Council's adoption of a 100% renewable energy resolution last December.

The pilot project aims to convert a portion of the department's fleet, which includes 39 patrol vehicles and 22 administrative vehicles, to alternative fuels. The plan is to purchase the vehicles in July 2021.

More: The Free Lance-Star

WEST VIRGINIA

Raleigh Board Approves Solar Farm



The Raleigh County Board of Zoning Appeals last week approved a conditional use permit for a new solar farm in the Grand View area.

The farm will be operated by Raleigh Solar and be used in addition to other power sources.

The next steps for the project include submitting a storm water application, finalizing the design of the site, and then starting construction.

More: WOAY

WYOMING

Committee Advances Bill Repealing Wind Tax Exemptions

The Joint Corporations, Elections and Political Subdivisions Interim Committee last week voted 7-6 to advance a bill that would remove a tax exemption on electricity generation that applies to new wind projects in their first three years of existence.

With the state facing a budget deficit of roughly \$225 million, lawmakers saw the exemption repeal as a way to generate additional revenue.

The bill will be up for consideration during the Legislature's general session next year.

More: Wyoming Tribune Eagle

Gordon Launches Stimulus Program to Bring Oil, Gas Workforce Back

Gov. Mark Gordon last week launched a \$15 million economic stimulus program to help the state's oil and gas industry recover from the economic collapse fueled by the COVID-19 pandemic. The program, with funds coming from the federal CARES Act, aims to pump resources into well cleanup and finishing uncompleted oil and gas wells.

"These funds will have a direct impact on Wyoming's employment rate and put people back to work in our oil and gas sector, which was impacted by COVID-19," Gordon said. "The oil and gas industry is a huge contributor to Wyoming revenues, employment and its overall economy. These dollars will assist in our state's economic rebound."

More: Casper Star-Tribune

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