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Your Eyes and Ears on the Organized Electric Markets

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High Failure Rate for Western Ballot Measures

By Hudson Sangree and Robert Mullin

Backers of energy-related ballot measures faced defeat on nearly every front in the West on Election Day as voters in Arizona, Nevada and Washington rejected a series of proposals that became the subject of costly campaigns.

The lone exception: Nevadans overwhelmingly approved an ambitious clean energy standard that still faces a second hurdle two years from now.

Arizona

In Arizona, voters overwhelmingly rejected *Proposition 127*, a measure that would have required the state's power providers to generate at least half their annual sales of electricity from renewable resources by 2030.

The measure was defeated roughly 69% to 31%, according to results posted on the Arizona secretary of state's *website*.

The race became a high-priced battle between competing interests. California billionaire Tom Steyer, whose environmental advocacy group NextGen America backed the proposal, and Arizona utilities, including Arizona Public Service, spent more than $50 million in the fight.

Proponents argued Arizona should rely more on solar. "Arizona is America's sunniest state, but only 6% of our energy comes from solar power. Prop. 127 takes advantage of our state's unique potential to generate nearly unlimited, cheap, clean energy," Alejandra Gomez, co-chair of Clean Energy for Healthy Arizona wrote in support of the measure.

The measure's supporters said APS, the state's largest utility, had wielded money and political influence for too long to maintain the status quo. In response to the measure's failure, Proposition 127 campaign chairman Eric Hyers said that "the biggest thing we wanted in the cycle we already got, which is doing significant damage to APS' stranglehold on our politics," *The Arizona Republic* reported.

Opponents said Steyer was trying to impose California's energy standards on Arizonans, with the potential to greatly increase their utility bills. California recently adopted legislation,

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Laura Nelson, energy adviser to Utah's governor. | © *RTO Insider*

ACORE Forum Ponders 'Energy Revolution'
(p.12)

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NERC to Try Again on Inverter Rules

By Rich Heidorn Jr.

ATLANTA — NERC stakeholders are expected to consider a new standard authorization request (SAR) to address inverter-based resources after the Standards Committee rejected two SARs proposed by CAISO in September, officials said last week.

CAISO submitted the SARs in May, saying it had recorded at least 14 occasions since August 2016 when inverter-based solar generation incorrectly tripped or ceased to operate during the routine high-speed clearing of short circuits on bulk electric system (BES) transmission. NERC has issued several reports and alerts following the two most serious incidents: the August 2016 Blue Cut wildfire, when 1,200 MW of solar disconnected; and the October

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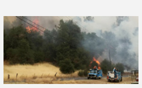

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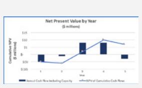

Split FERC OKs New 'Economic Life' Rules for ISO-NE
(p.17)

LaFleur, Stakeholders Anxious over NERC Retirement Study (p. 4)

PJM Stakeholders Hold Their Lines in Capacity Battle

By Michael Brooks

PJM stakeholders last week dug in further on the RTO's proposed revamp to its capacity market, reiterating comments made last month in FERC's paper hearing on the proposal (EL16-49, ER18-1314, EL18-178).

In *reply comments* Nov. 6, PJM rebutted "anticipated" criticisms of its Extended Resource Carve-out (RCO) proposal, which would allow specific, state-subsidized resources to opt out of the capacity market and the RTO to adjust market clearing prices as if the resources were still in.

PJM's proposal is a response to the Fixed Resource Requirement (FRR) Alternative FERC recommended when it found the RTO's minimum offer price rule (MOPR) unjust in June. PJM's current FRR only allows utilities to opt out of the market if they can serve

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Editorial

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

Deputy Editor / Senior Correspondent
Robert Mullin 503-715-6901

Art Director
Mitchell Parizer 718-613-9388

Associate Editor / D.C. Correspondent
Michael Brooks 301-922-7687

Associate Editor
Shawn McFarland 570-856-6738

CAISO/West Correspondent
Hudson Sangree 916-747-3595

ISO-NE/NYISO Correspondent
Michael Kuser 802-681-5581

MISO Correspondent
Amanda Durish Cook 810-288-1847

PJM Correspondent
Rory D. Sweeney 717-679-1638

SPP/ERCOT Correspondent
Tom Kleckner 501-590-4077

Subscriptions

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

Account Executive
Marge Gold 240-750-9423

Technical Director
Ben Gardner

RTO Insider LLC
10837 Deborah Drive
Potomac, MD 20854
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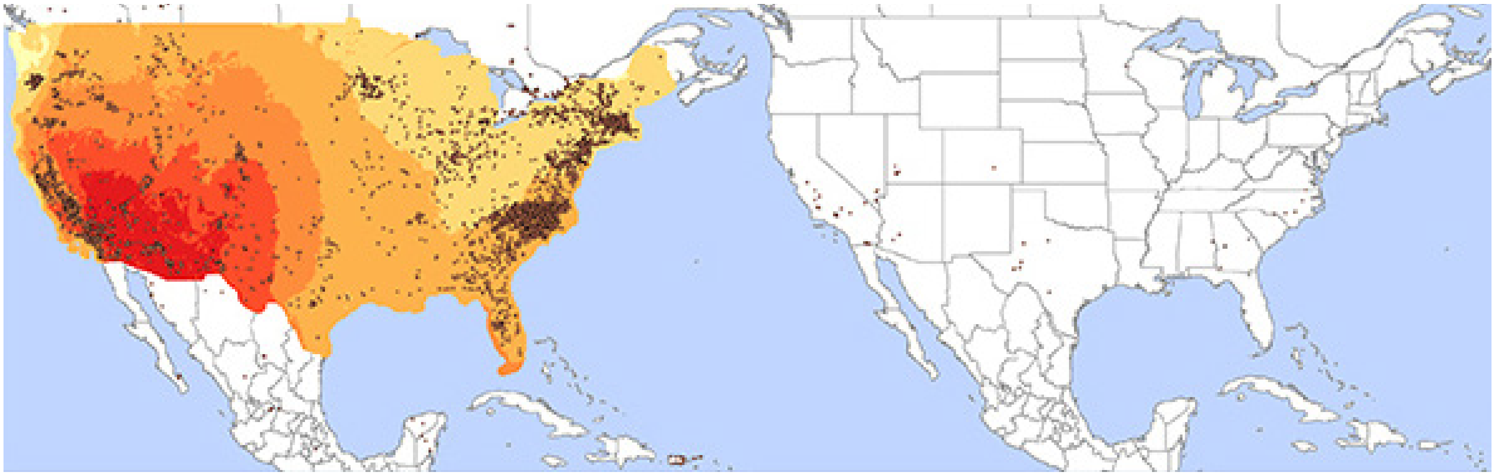
NERC to Try Again on Inverter Rules



Most solar PV generation is below the 75-MW threshold requiring registration with NERC. | © *RTO Insider*

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2017 Canyon 2 fire, which resulted in the loss of more than 900 MW. (See ***NERC Chief: Inverter, Fuel Assurance Standards Needed***.)

The ISO proposed incorporating performance requirements for inverter-based resources connected to the BES in a revised NERC standard PRC-024, or developing a new standard for such resources and clarifying that PRC-024 applies only to synchronous generation.

James Merlo, NERC | © *RTO Insider*

At its Sept. 13 meeting, however, the Standards Committee rejected both SARs by a 12-5 vote on a motion by Dominion Energy's Sean Bodkin, who noted the Institute of Electrical and Electronics Engineers (IEEE) is addressing the issues in Standard 1547-2018.

NERC is working with IEEE on the standards for inverter settings and developing instructions on compliance monitoring and enforcement activities related to the issue, James Merlo, NERC vice president of reliability risk management, told the Member Representatives Committee (MRC) at its quarterly meeting Nov. 6.

FERC Commissioner Cheryl LaFleur, who attended the MRC and Board of Trustees meetings, said she was concerned about the rejection of the SARs, saying "nothing clarifies the mind like an enforceable standard." She said it was better for NERC and its stakeholders to design standards rather than respond to directives from FERC.

NERC CEO Jim Robb said he was disappointed that the two SARs "met with such headwinds at the Standards Committee."

"I think we need to get over the notion that any standard creates peril and get to the point where standards create certainty," he said. "And I think, particularly, in the case of these inverter resources, that's a very, very important thing for us to do. … These resources are not going away. They're already at scale in the West, and they will [soon] be at scale … in many parts of the country."

Merlo said the Operating and Planning committees and the Inverter-Based Resource Performance Task Force will seek a new SAR to modify PRC-024 that will build on a white paper to be released in about two weeks identifying gaps between current standards and what's needed by grid operators. "The expectation is the Standards Committee would take that up in December," Merlo said.

"I'm optimistic that that will accomplish much of what we wanted to accomplish through the original two SARs," Robb said.

The work may not stop with revisions to PRC-024, said Howard Gugel, NERC senior director of engineering and standards. "Then that task force is also going to go forward to say, 'given that this is a brave new world and we have these resources, is there another standard that we should write that says how they should actually operate?'" he said in an interview. "And it's not just limited to solar. … [idle EVs injecting energy into the grid are] an inverter resource also."

NERC has already asked solar generators to modify their inverter settings to ensure voltage excursions don't result in momentary cessation (MC) — when they stop injecting current into the grid. For inverters that cannot use another ride-through mode, NERC asked that MC settings be reduced to the lowest voltage value possible and that the recovery delay be reduced to one to three electrical cycles.

In arguing for the SARs, CAISO's Keith E. Casey, vice president of market and infrastructure development, noted that NERC guidelines are not enforceable.

"Due to a lack of any standard addressing the minimum performance of inverter-based generation connected to the BES, original equipment manufacturers often apply standards for resources connected to the distribution system to BES resources," Casey wrote.

NERC reported that most of the lost solar generation in the Blue Cut fire resulted when inverters incorrectly perceived a low frequency condition and tripped, not returning to service for five minutes or longer. "Five minutes may make sense on a rooftop, but five minutes is an eternity on the bulk electric system," Merlo said.

NERC, which originally surveyed 13,543 MW of solar PV as potentially using momentary cessation, now believes all but about 1,952 MW do not use it or can overcome it with modified settings. (The survey covered only utility-scale solar generators at or above 75 MW, the threshold for generators that must register with NERC.)

"We understand a lot more than we did when we first saw the event just 18 months" ago, Merlo said. ■

NERC TRUSTEES/MRC QUARTERLY MEETING

LaFleur, Stakeholders Anxious over NERC Retirement Study

By Rich Heidorn Jr.

FERC Commissioner Cheryl LaFleur | © *RTO Insider*

ATLANTA — FERC Commissioner Cheryl LaFleur and several stakeholders expressed concern last week that "fuel war" partisans could weaponize NERC's coming analysis on the impact of a dramatic increase in coal and nuclear plant retirements.

The comments came at the quarterly meeting of NERC's Member Representatives Committee (MRC), which received a *briefing* on the draft report from John Moura, the organization's director of reliability assessment and system analysis. Moura said NERC plans to circulate embargoed copies of the report to the MRC shortly, with the final report submitted to the MRC and Board of Trustees on Nov. 27 and a public release in mid-December.

But based on the comments at the Nov. 6 meeting, the analysis' release may be delayed as stakeholders debate ways to prevent its findings from being taken out of context.

NERC Board Chair Roy Thilly | © *RTO Insider*

NERC Board Chair Roy Thilly said the assessment is "the most sensitive" the organization has performed in his seven-plus years on the board and promised the board won't release it "until we're comfortable" with it. We have to be "very, very careful about enabling quotes out of context," he said.

Moura emphasized the analysis was a "stress test" intended to push the system to its breaking point, not a projection of what is likely to happen. It found that retiring *30*% of coal generation remaining after the 46 GW of announced retirements and *45*% of nuclear after the shutdown of the 10 GW announced would result in seven of 10 regions falling below their reserve margins, including PJM, MISO and SPP.

'Scare Tactic-ish'

But LaFleur said the scenarios — based on an Energy Information Administration identification of units facing financial stress — were "scare tactic-ish."

"The primary thing that makes generation retire is new generation … that's what's pushing this to happen," she said.

"If there's a specific issue, like frequency response or inverter issues or lack of black start or something else, let's jump right on it, but I want to be sure that we don't make an issue by the way we model it."

The study is "so macro and worst-case it almost overwhelms the specific solutions."

John P. Hughes, CEO of the Electric Consumers Resource Council (ELCON, which represents industrial customers, was even more blunt, calling the scenarios "fiction."

"Should NERC be issuing fiction, especially at this time, with the conspiracy within the industry to try to do a second round of stranded-costs recovery of generation that should have been retired years ago?" he asked. "So, this is the battle that NERC is falling into. Any caveat or nuance it puts in the study will be missed by politicians and newspapers. They will take this study and run with it and make a fool out of this organization."

Thilly lamented that S&P Global Market Intelligence published a story Oct. 31 based on a leaked "very early" draft of the analysis, dated Sept. 5, saying the disclosure "really undercuts our process."

The story was headlined "Draft NERC report: Power outages possible if coal, nuclear plants close rapidly."

NERC officials said the draft included even more extreme scenarios — increasing coal retirements to 60% and nuclear to 75% — that have since been eliminated because they did not materially impact the results.

Two Challenges

Moura agreed the results should not be sensationalized.

"I can certainly … understand the difficulties of telling this stress test scenario story without getting the general public and industry and policymakers thinking that the sky is falling. It's certainly not. There's a lot of processes and backstops available both at the state level, at the market level and even at the federal level to ensure reliability."

He said the analysis identified two challenges, including ensuring new transmission where needed to address voltage stability and thermal violations resulting from shifts in generation locations.

John Moura, NERC | © *RTO Insider*

The second challenge is managing the "end state" after the transition — the ability to respond to extreme conditions such as the polar vortex and fuel disruptions. The latter could mandate new gas pipelines, he said.

He noted Texas got through last summer without reliability problems despite losing 4,000 MW of coal-fired generation in spring with only a few months' notice.

Moura defended the use of EIA's expanded retirement scenarios, saying such rapid shutdowns could result from new federal environmental policies or plant owner bankruptcies. "It helps us understand the worst-case scenario," he said.

"We certainly don't see this as the future," Moura added. "It's an engineering study to understand … what the bookends are."

Steve Naumann, Exelon | © *RTO Insider*

Steve Naumann, vice president of transmission and NERC policy for Exelon, the nation's largest nuclear generator, said the organization should not take any action to block dissemination of the analysis. "Why wouldn't you want that information?" he asked.

Oncor Vice President of Regulatory Affairs Liz Jones, representing the Texas Reliability Entity, said the report should stick to "independently observable fact" and avoid opinions and projections, which she said "have the potential to be much more problematic."

"The core recommendation here is 'manage

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it,'" said NERC CEO Jim Robb, adding the industry needs to ensure capacity markets and reliability-must-run generators are performing as intended to ensure reliability. NERC's role should be the "conscience of the industry" and avoid the politics, he added at Wednesday's quarterly board meeting.

"While it is possible for coal and nuclear retirements to exceed the current announcements and long-term industry outlooks, any such acceleration would also have feedback effects on power and natural gas prices that would tend to slow down any further retirements," Brattle Group analyst Metin Celebi said in an email Wednesday. "With additional retirements, wholesale energy prices would increase due to lower expected reserve margins and more expensive resources setting the power prices, and natural gas prices would also increase due to an increase in the dispatch of natural gas plants. … The increase in power and gas prices would improve the economic viability of the remaining coal and nuclear plants at risk for retirement, hence acting as a brake on further retirements."

'Resilience' is Part of the Job

In a related matter, the board accepted a *report* it requested from the Reliability Issues Steering Committee (RISC) in response to the Department of Energy's August 2017 recommendation that NERC consider adding resilience to its mission. (See *Perry Grid Study Seeks to Aid Coal, Nuclear Generation*.)

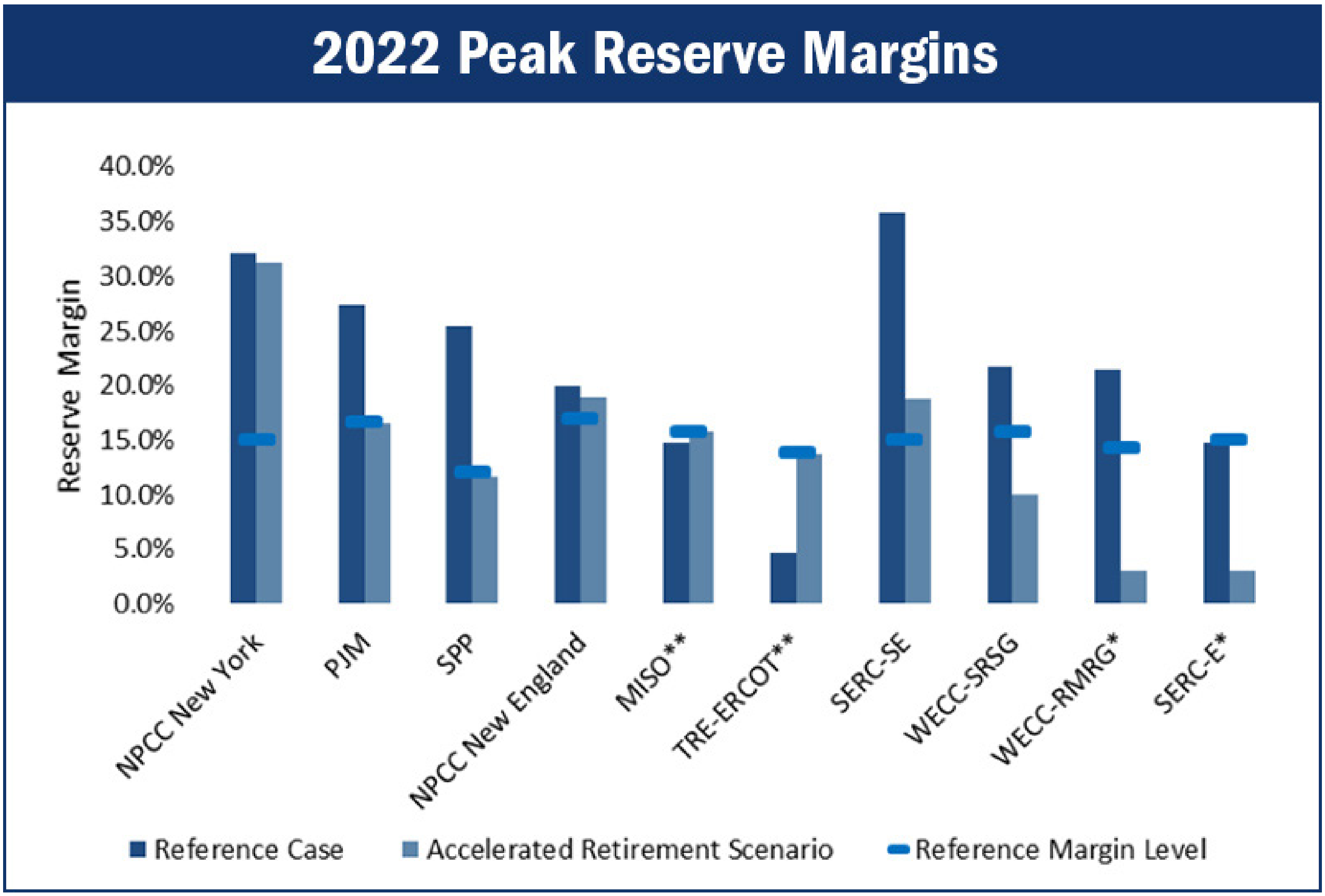
The committee's conclusion: "Resilience has consistently been, and should continue to be, a central component of NERC's mission," the report said.

The committee said the National Infrastructure Advisory Council's guide for establishing critical infrastructure goals is "an appropriate framework for resilience as refined by the RISC and further informed by NERC's FERC-filed definition of what constitutes the [adequate level of resilience]."

The report mapped how NERC's current activities and standards support resilience and said no major changes were required. It did recommend that the organization expand reliability assessments to develop a model or metrics to measure resilience and energy security.

Groups that *responded* to NERC's request for comment on the report generally agreed that resilience has been central to the organization's work.

"There is ample evidence that the concern regarding 'resilience' is politically motivated, and we urge NERC to be sensible and stay the course," ELCON said. "There is no compelling need for NERC to take any further action related to the bulk electric system. NERC should consider helping to elevate the discussion related to distribution system resilience." ■



Seven of 10 regions in the analysis, including PJM, MISO and SPP could fall below target reserve margins under the "worst-case" retirement scenarios, NERC said. | *NERC*

NERC TRUSTEES/MRC QUARTERLY MEETING

NERC MRC/Board Briefs

ATLANTA — NERC's Board of Trustees and Member Representatives Committee (MRC) held their quarterly meetings last week at the Grand Hyatt Atlanta. Here are some of the highlights. (See related stories, *LaFleur, Stakeholders Anxious over NERC Retirement Study* and *NERC to Try Again on Inverter Rules*.)

NERC's Board of Trustees and Member Representatives Committee held their quarterly meetings last week in Atlanta, with discussions on potential governance changes, metrics and the transition to new reliability coordinators in the West. | *© RTO Insider*

New ERO Enterprise Dashboard

NERC is proposing a new approach to how it collects and presents metrics, advancing a "dashboard" that separates measures of industry performance from those indicating how well the organization is meeting its goals.

NERC CEO Jim Robb wore a sling to the NERC meetings following surgery to repair a rotator cuff injury. "Hopefully in four weeks it'll come off and I'll be back shanking [golf] balls to the right side of the fairway," he joked. | *© RTO Insider*

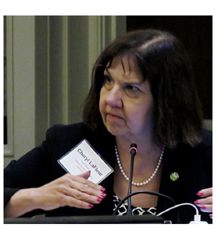
CEO Jim Robb said the dashboard represents a "very different approach to performance management than what we've done in the past" and that executives will use it to allocate resources.

The dashboard shows green for risk indicators that are improving, yellow for stable metrics and red for metrics getting worse.

For 2018, the indicators showed improvements in the number of bulk power system events; forced outages because of cold weather or lack of fuel; outages resulting from operator or other human performance issues; and unauthorized physical or electronic access.

Vegetation encroachment metrics were unchanged from 2017, while protection system misoperation rates and failures of substation and circuit equipment got worse.

NERC's three-year operating plan lists six goals: developing risk-responsive reliability standards; objective, risk-compliance monitoring, mitigation and enforcement; reducing known reliability risks; identifying and assessing emerging risks; reducing cyber and physical security; and improving its efficiency and effectiveness.



FERC Commissioner Cheryl LaFleur | *© RTO Insider*

FERC Commissioner Cheryl LaFleur, who attended the meetings, said she supports separating the metrics into two categories but questioned the cybersecurity metric. "Losing load from a cyber incident is a pretty gross standard [for measuring cybersecurity]. There must be leading indicators, [numbers of] incursions or whatever. That's something that [FERC has] been focused on: … trying to get more data."

Robb acknowledged that the metric was "anemic" and said NERC is seeking ways to capture other indicative data.

In written comments, the ISO/RTO Council (IRC) supported the bifurcation of the metrics but said tools other than standards and enforcement "needs to be a higher priority" for NERC.

"With steady state standards, efficiency reviews and compliance program enhancements to reduce the compliance burden, NERC must develop alternative methods to effectively address new and evolving reliability concerns without having to undo or jeopardize these past improvements and effective compliance behaviors," the IRC said, adding that some existing metrics "do not have a direct correlation with NERC programs."

The IRC also expressed concern over the proposed color choices, saying yellow should be replaced with a "neutral" color to illustrate metrics that are unchanged and satisfactory. "A yellow color is associated with caution or imminent threat and can be misinterpreted," it said.

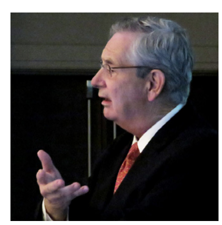
The North American Generator Forum, the Northeast Power Coordinating Council, the Cooperative Utility sector, the Canadian Electricity Association (CEA) and the Edison Electric Institute all generally supported the revised metrics.

The CEA called for additional metrics to define an "adequate level of reliability."

EEI questioned a goal focused on enhancing or proposing new standards. "NERC should consider the use of other tools (e.g., Reliability Guidelines, lessons learned, best practices), in addition to reliability standards, similar to the [electric reliability organization's] compliance and enforcement philosophy, to efficiently and effectively address reliability and security risk," EEI said.

Robb said the feedback will be incorporated in the final dashboard model.

Addressing Overlap of CIP, Planning and Operating Committees



Mark Lauby, NERC | *© RTO Insider*

Mark Lauby, NERC senior vice president and chief reliability officer, briefed the MRC on a proposal to rethink its committee structure to respond to what he called the "increasing convergence" of subjects overseen by the Critical Infrastructure Protection, Planning and Operating committees.

Lauby said the MRC should consider eliminating those committees and using "mission-driven" task forces that would study an issue, make recommendations and disband when their missions are complete.

Lauby said the current committee structure, in place for more than a decade, is "expensive

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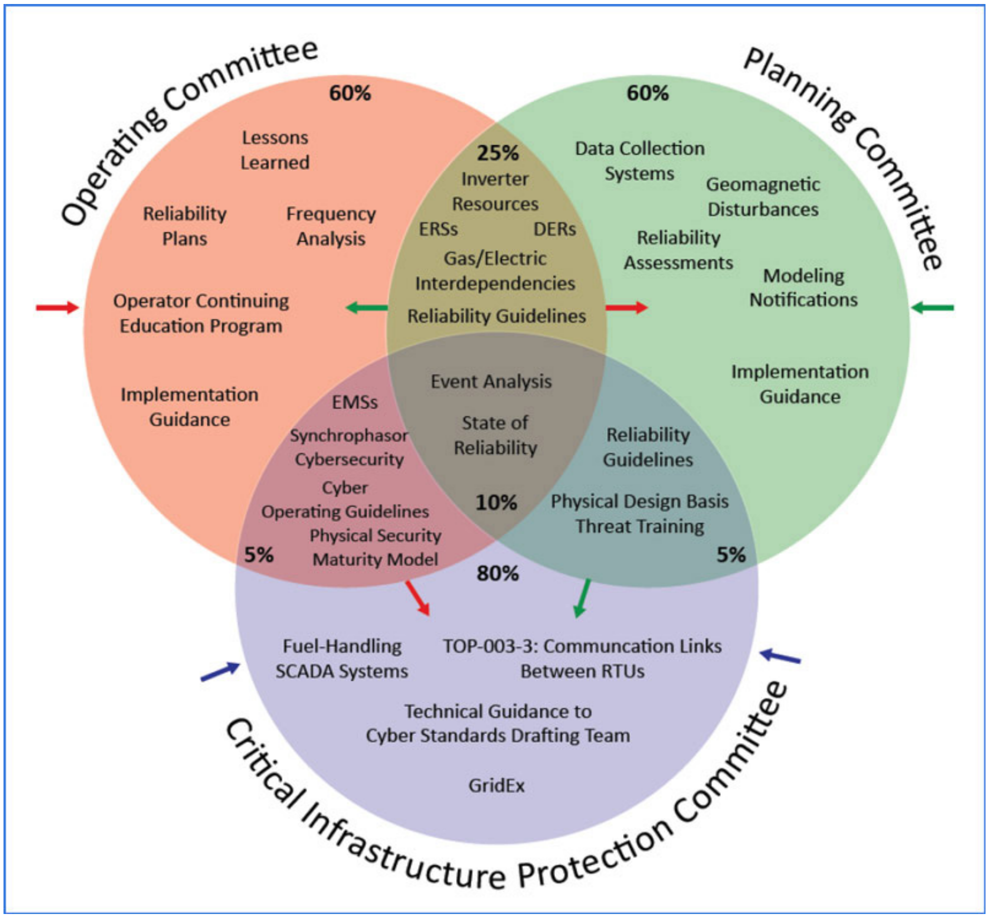


NERC briefed stakeholders on a proposal to rethink its committee structure to respond to the increasing convergence of the subjects overseen by the Critical Infrastructure Protection, Planning and Operating committees. | *NERC*

and time consuming" for NERC members and that the committee "silos" are blurring in part because of new technologies and changing industry models.

Task forces, he said, could ensure the stakeholders have the right subject matter expertise.

Consultant Herb Schrayshuen, representing the Small End-Use Electricity Customer sector, and Oncor Vice President of Regulatory Affairs Liz Jones, representing the Regional Entity sector, said the committees are necessary for some recurring tasks such as annual reliability assessments. Jones said the PC and OC don't need to meet quarterly or separately, but "there is value in retaining" them.

NERC said that in addition to Midwest Reliability Organization, the Florida Reliability Coordinating Council, SERC Reliability and Western Electricity Coordinating Council also have reorganized their committee structures.

The Western Area Power Administration's Lloyd Linke, a member of the MRO board, said he generally supported the change, calling it "somewhat similar to the process that the MRO" has adopted. "When the MRO did this, they did keep some committees … to provide some of that continuity on some of the year-long type things," he said.

Carol Chinn, representing the State/Municipal Utilities sector, said the proposal was a good start but "there needs to be much more dialogue" with MRC members before changes are made.

MRC Vice Chair Greg Ford agreed "it is time to look at our committee structure."

"The right answer may be: Keep the three committees but streamline them," he said.

NERC plans to create a staff/stakeholder working group reporting to the board to explore the issue further and develop a restructuring proposal.

"Let's set some sort of a time frame," NERC Trustee Dave Goulding said, "because this is a project that could go on and on and on and you'll never get everybody on board."

Long-Term Reliability Assessment Sees Shortfalls in CAISO, MISO, Ontario.

John Moura, NERC's director of reliability assessments and technical committees, gave a presentation on the draft 2018 Long-Term Reliability Assessment through 2028, noting it is the first such report to include metrics on "essential reliability services" such as frequency response and ramping capability.

Moura said the projected 10-year compound annual growth rate for North America of 0.57% (summer) and 0.59% (winter) is the lowest on record. None of the regions projects annual load growth of more than 2%.

"For the first time, we've seen five areas — New York, New England, Maritimes, Manitoba Hydro and the WECC California-Mexico area — actually reducing [their] peak demand over the 10-year period," he said. "That's kind of unheard of."

The report projects MISO and Ontario will see planning reserve margin shortfalls beginning in 2023. In addition, probabilistic evaluations indicate resource adequacy risks in the California and Mexico region of WECC in off-peak hours after the sun sets and during spring and fall maintenance outages. The loss-of-load expectation for the WECC-CAMX region — most of California and a small northern portion of Baja California — is projected to rise from nine hours in 2020 to 95 in 2022.

Although the grid is losing inertia as renewables replace synchronous generation, all interconnections should have adequate frequency response through 2022, the report says.

The report projects the addition of more than 30 GW of distributed solar PV by the end of 2023, when it said California will have 18 GW and Massachusetts and New Jersey will have 4 GW each.

But Moura said the report should be viewed with humility, saying stakeholders should remember that the only certainty about its projections is that they will be wrong. In 2008, he noted, NERC projected a 30 GW increase in coal generation by 2018. Instead, coal capacity dropped by 50 GW. "That was an 80-GW miss," he said.

It also vastly underestimated the 200-GW increase in natural gas generation, having predicted an increase of only 50 GW.

Update on Western Reliability Coordinators

WECC CEO Melanie Frye provided the board with an update on efforts by CAISO and SPP to replace Peak Reliability as the reliability coordinators (RCs) in the Western Interconnection. (See *Western RC Transition 'Hot Topic' at WECC Meeting*.)

She said officials have identified tie lines that begin in one RC footprint and end in another,

NERC TRUSTEES/MRC QUARTERLY MEETING

WECC CEO Melanie Frye | © *RTO Insider*

including 114 such lines between CAISO and SPP. "So we're doing some additional technical analysis to try to understand what could be the change in flows in the system if there were to be elements out of service," she said. "What that's really highlighted is the need for both RCs in that example to model the broader footprint."

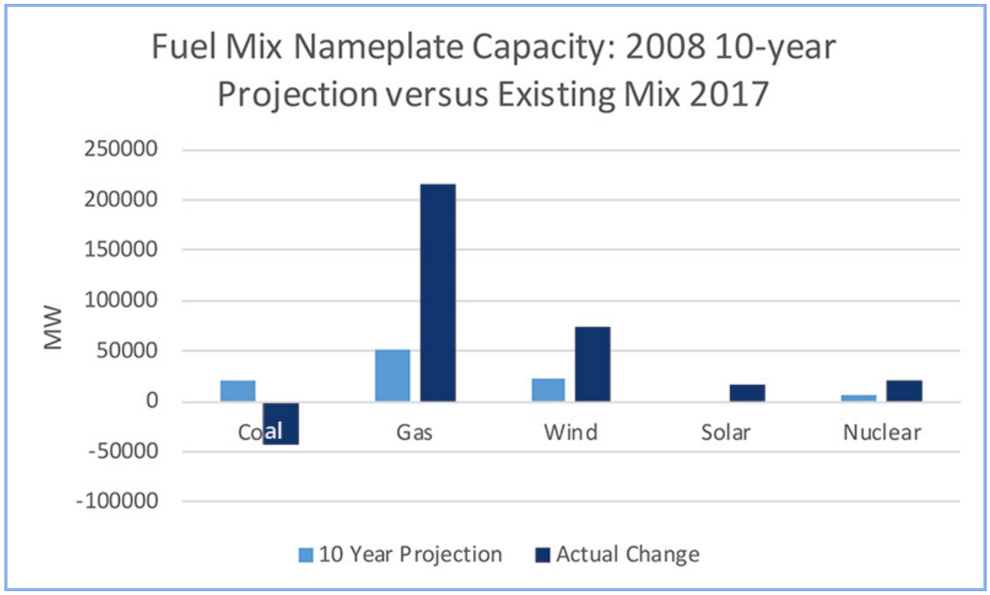
Robb said he was "very pleased" with NERC's collaboration with WECC, CAISO, SPP and others to address the transition, but he acknowledged concerns over seams in the desert Southwest.

"There's the potential for a couple seams to be developed between Phoenix and San Diego. That's a very important path and has been a very vulnerable path in the West. So, there's a lot going on to understand issues that that topology creates and how to manage through it," Robb said.

NERC Chair Roy Thilly said "it appears that everything is being looked at very, very thoroughly."

FERC-NERC Study on Southern Cold Weather Event

NERC officials did not offer any new details on their collaboration with FERC on a report on the Southern cold weather event in January.

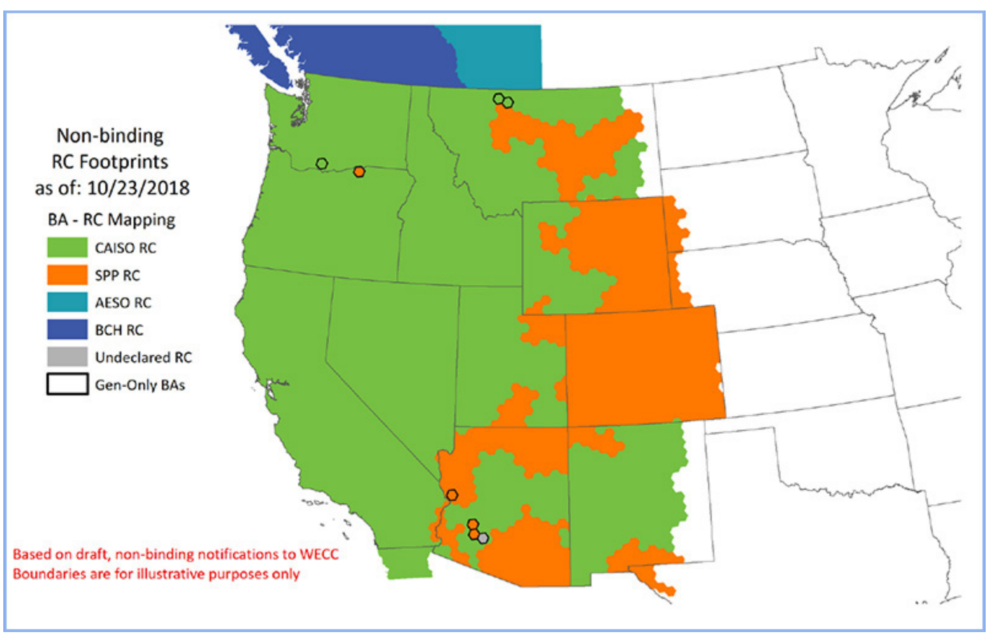


In 2008, NERC projected a 30-GW increase in coal generation by 2018. Instead, coal capacity dropped by 50 GW. It also vastly underestimated the increase in natural gas generation, having predicted an increase of only 50 GW. | *NERC*

(See *FERC, NERC to Probe January Outages in MISO South*.)

But Robb acknowledged concerns heading into winter 2018/19. "We haven't completed the inquiry … but there was an awful lot of generation offline during that event, which at least raises the question about whether or not cold-weather preparation is adequate for the circumstances.

"This is the third [winter] in a row that we've had some large amounts of generation offline."



The departure of Peak Reliability as the reliability coordinator in the West will create new seams between the RC footprints of CAISO, SPP, the Alberta Electric System Operator (AESO) and BC Hydro. | *WECC*

Trustee Approvals

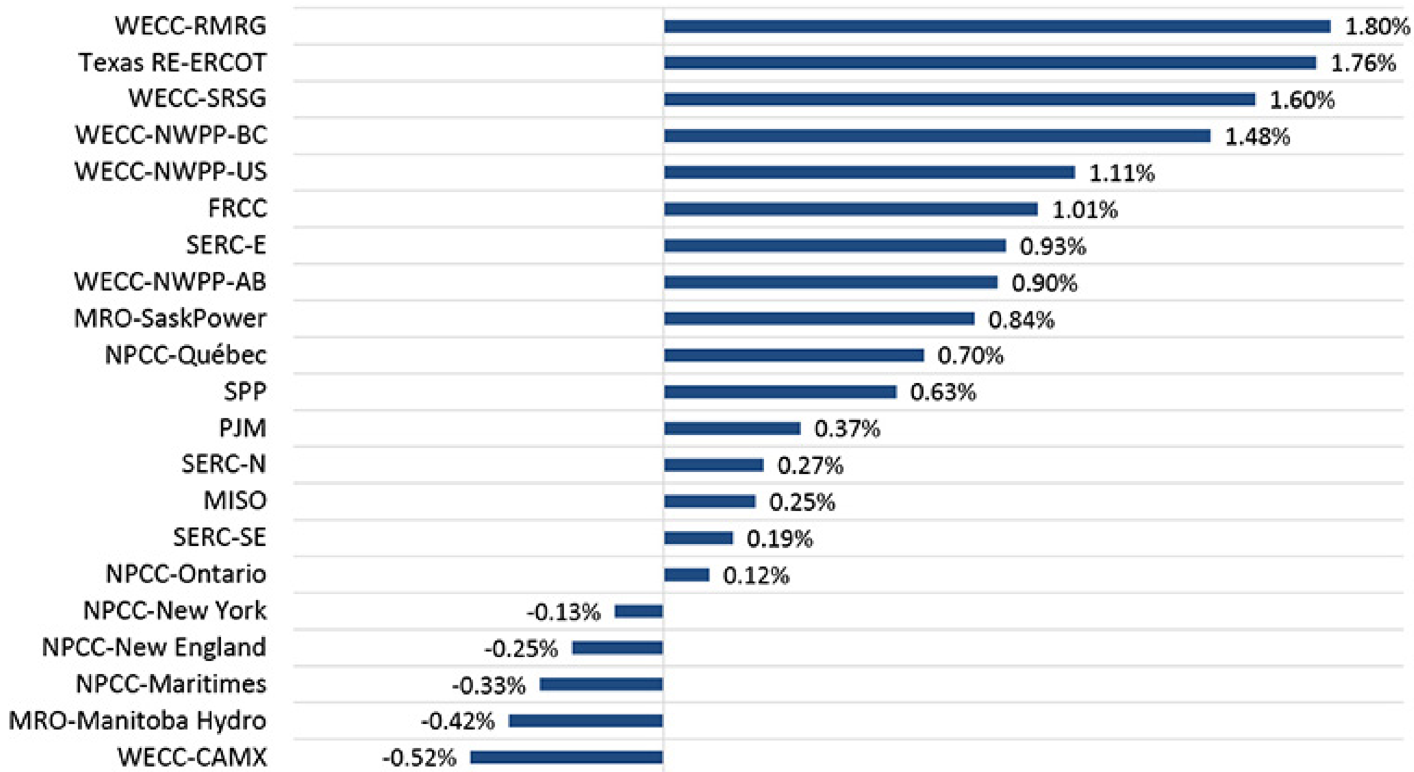
Howard Gugel, NERC | © *RTO Insider*

The Trustees unanimously approved:

- TPL-001-5, a response to FERC's 2013 *Order 786*, which will require assessments of single points of failure and inclusion of them in future transmission studies. Based on a cost-benefit analysis and industry feedback, NERC decided not to require eliminating single points of failure, said Howard Gugel, senior director of engineering and standards. "The response that most of industry and NERC staff [agreed on] is no … there is some risk that — as long as you know what that risk is — it's a risk that's acceptable to have and at least know how that risk can be mitigated." Gugel said that out of 12,000 misoperation events in NERC's database since 2011, less than 30 involved three-phase faults, and "we only had 10 instances where a three-phase fault was also associated with a relay failure. We also [asked], of all the events that we've seen on the system, do any of those correlate with any of those 10? … We cannot find an instance in the data we have."

  The standard specifies the types of events and nonredundant protection system components that should be studied. It also eliminates the minimum six-month threshold for including outages in planning studies, which FERC said "could exclude planned maintenance outages of significant facilities

NERC TRUSTEES/MRC QUARTERLY MEETING



Five regions, including New York and New England are projecting a drop in their peak demand over the next 10 years. | *NERC*

from future planning assessments."

- The retirement of IRO-006-TRE, which is redundant to other reliability standards. The Texas Reliability Entity board approved its retirement in September.
- The Reliability Standards Development *Plan* for 2019-2021, which focuses on periodic reviews, FERC directives, the Standards Efficiency Review and the standards grading initiative.
- Revisions to sections 600 (Personnel Certification) and 900 (Training and Education) of NERC's Rules of Procedure. The revisions are in response to a July 19 FERC order (*RR17-6*) that changes regarding NERC's training and continuing education programs but rejected deletion of its personnel certification rules. (See "Split Ruling on NERC Rules of Procedure," *FERC Orders Expanded Cybersecurity Reporting*.)
- The execution of a memorandum of understanding outlining MRO's compliance monitoring of Manitoba Hydro.

New MRC Officers, Seeking Canadian Trustee

Trustee Fred Gorbet, head of the board's Nominating Committee, said a five-person interview team has met with candidates to replace him as the Canadian representative on the board. The team will share its recommendation with the committee Dec. 10 with hopes to install the winner in February 2019, said Gorbet, who is leaving because of NERC's term limits.

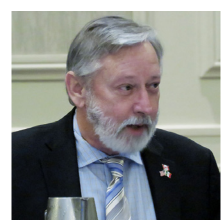
The MRC elected Greg Ford as chair and Jennifer Sterling vice chair for 2019. Ford is CEO of Georgia System Operations Corp., which manages 38 distribution cooperatives and Oglethorpe Power. Sterling is vice president of NERC compliance and security for Exelon.

Retirements for ELCON's Hughes, NERC's Roxey

John P. Hughes, Electricity Consumers Resource Council | © *RTO Insider*

The quarterly Trustee meeting was the last for retiring John P. Hughes, president of the Electricity Consumers Resource Council (ELCON) and NERC's Tim Roxey, chief operations officer for the Electricity Information Sharing and Analysis Center (E-ISAC).

"I will miss [Hughes'] voice," LaFleur said. ELCON, which represents industrial customers, has tapped Devin Hartman, formerly of the free-market think tank R Street Institute, as its new chief executive effective Jan. 1. Hughes, who has degrees in engineering and economics, joined ELCON in 1987 and became its CEO in 2015.



Tim Roxey, NERC | © *RTO Insider*

Roxey, a former nuclear engineer who began working at the E-ISAC in 2009, received a commemorative resolution and a standing ovation from the approximately 200 stakeholders.

"It has indeed been a long strange trip," Roxey said. "You cannot have a bulk power system or a distribution system [be] reliable without the support and functioning of all of this," he said, looking at the dozens of stakeholders in the large hotel ballroom. "I've come to understand and appreciate [reliability] standards and compliance — which I used to object to, but I now embrace as a necessary part of the [Compliance Monitoring Enforcement Program]. It is critical … that we be proactive in creating standards because that's what we do. We don't have to be told." ■

— Rich Heidorn Jr.

CAISO/WECC NEWS

NorthWestern Energy to Join Western EIM

By Robert Mullin

Northwestern Energy generating facilities | *Northwestern Energy*

NorthWestern Energy said Thursday that it will join the Western Energy Imbalance Market in spring 2021, making it the 14th utility to announce plans to sign on.

The Butte, Mont.-based company said joining CAISO's real-time balancing market will result in more efficient use of renewables, increased grid reliability and lower costs to customers.

"The EIM will allow NorthWestern to make better use of our transmission and electric generation resources," CEO Bob Rowe said in a statement. "Expanding our use of the regional electric grid through the EIM will help integrate variable renewable energy. We have seen significant growth in wind generation in Montana, which highlights the need to have access to other generation resources that are available on demand, 24/7."

NorthWestern serves about 718,000 electric and gas customers in Montana, Nebraska and South Dakota. But only its facilities in Montana — and Yellowstone National Park in Wyoming, where it has transmission — would participate in the EIM. The company's Nebraska and South Dakota operations already trade in organized markets in the Eastern Interconnection.

NorthWestern's Montana service territory covers about 73% of the state's land area. It will bring an additional 6,700 miles of transmission into the EIM and increase the market's access to a potentially wind-rich region that could serve West Coast load centers subject to increasingly ambitious renewable energy standards and tightened carbon-emission rules.

The utility owns about 442 MW of hydroelectric generation, nearly 50 MW of wind, a 222-MW share of the coal-fired Colstrip plant and 150 MW from the gas-fired Dave Gates Generating Station. It has power purchase agreements for an additional 135 MW of wind and will next year integrate another 80 MW of wind capacity from a Public Utility Regulatory Policies Act qualifying facility in south-central Montana.

"Participating in the EIM will help ensure that NorthWestern's electric generating resources are used in the most economic manner possible," said John Hines, the company's vice president of supply.

"We welcome NorthWestern participating in our market and hope they will see the same benefits as the other participants," CAISO CEO Steve Berberich said. "NorthWestern's participation will only add to the market's efficiency and resource diversity."

CAISO said last month the EIM has produced more than $500 million in benefits for participants since its founding five years ago, including more than $100 million in the third quarter of 2018. (See *Western EIM Reports Record Benefits*.)

The EIM is steadily filling out the map of the Western Interconnection, with current participants APS, Idaho Power, NV Energy, PacifiCorp, Portland General Electric, Puget Sound Energy and Powerex. The Balancing Authority of Northern California and the Sacramento Municipal Utility District plan to begin participating in April 2019, while the Los Angeles Department of Water and Power, Arizona's Salt River Project and Seattle City Light are scheduled to begin participating in April 2020.

Public Service Company of New Mexico is seeking permission from its regulators to join the EIM by 2021, officials announced in August. (See *PNM Seeks to Join Energy Imbalance Market*.) ■

High Failure Rate for Western Ballot Measures

Continued from page 1

SB 100, that requires the state to get 60% of its energy from renewables by 2030 and to use 100% zero-carbon electricity by 2045.

APS' parent company Pinnacle West Capital fought Proposition 127, saying it could lead to the shutdown of the nation's largest nuclear power plant, the Palo Verde Nuclear Generating Station, which sits in the desert about 45 miles west of downtown Phoenix.

"Nuclear power plants are designed to run at 100% every day of the year," Donald Brandt, Pinnacle's CEO, wrote in *an open letter* to Arizonans in September. "Maintaining the nation's largest nuclear plant to the highest standards of safety and reliability while running only part-time makes for extreme operational and economic challenges.

"Lest anyone think I exaggerate, a similar situation in California energy markets contributed to the recently announced closing of California's Diablo Canyon nuclear plant," the state's last nuclear generating facility, Brandt wrote.

Southern California draws a significant portion of its energy from the Palo Verde plant in Arizona.

In *a statement* after Proposition 127's defeat, Brandt said: "We've said throughout this campaign there is a better way to create a clean-energy future for Arizona that is also affordable and reliable. The campaign is over, but we want to continue the conversation with Arizonans about clean energy and identify specific opportunities for APS to build energy infrastructure that will position Arizona for the future.

"As the nation's largest producer of reliable emission-free energy, Palo Verde is the anchor of Arizona's clean-energy future," Brandt said. "Any serious plan to reduce carbon emissions has to include nuclear energy and Palo Verde."

Nevada

Nevada voters went the opposite direction from their Arizona neighbors by approving new renewable energy mandates in the form of *Question 6* by a vote of about 59% to 41%, the *Nevada secretary of state's office* reported.

The measure, also backed by Steyer and NextGen, amends the state constitution to require utilities that sell electricity to retail customers in Nevada to source at least 50% of their energy from renewables by 2030.

Opponents insisted it would raise rates.

Constitutional amendments in Nevada must be voted on in two consecutive elections, so the ballot measure will be taken up again in 2020.

With regard to another ballot measure, *Question 3*, voters allowed NV Energy to keep its electricity monopoly in the state by 67% to 33%.

The measure would have required the legislature to provide for the "establishment of an open, competitive retail electric energy market that prohibits the granting of monopolies and exclusive franchises for the generation of electricity." It would have allowed customers to exit NV Energy and obtain electricity from others without paying an exit fee.

Las Vegas casinos, which have had to pay hefty exit fees, helped finance the measure.

Question 3 was approved by 72% of voters in 2016, when NV Energy didn't contribute. But this time around, the utility, owned by billionaire Warren Buffett, reportedly *spent $63 million* to defeat the measure, while supporters doled out $21 million. That made it the most expensive ballot measure in state history, with a combined $100 million in contributions over two election cycles.

Supporters vowed to continue their efforts to let Nevadans choose their energy provider.

Washington

Washington state voters solidly defeated a ballot initiative that would have placed a fee on the state's carbon emissions, with collected revenues used to fund environmental programs. Initiative 1631 went down with 56% voting "no," despite polls leading up to the election showing about 50% of potential voters favoring the measure and about 36% opposed.

Unlike a proposed "revenue-neutral" carbon tax (I-732) that failed to win passage in 2016, I-1631 was not designed to return its revenues back to residents. Instead, the monies raised by the fee would've been allocated to state-directed investments in "clean air and clean energy" (70%), "clean water and healthy forests" (25%) and rural communities heavily affected by climate change (5%).

The measure sought to charge energy producers and suppliers a $15/ton fee on CO_2 emissions starting in 2020, rising $2/ton each year (plus inflation) until 2035, when the price

APS contended that passage of Arizona's failed Proposition 127 would have threatened the economic viability of its massive Palo Verde nuclear generating station west of Phoenix. | *Arizona Public Service*

would have hit an estimated $55/ton. While manufacturers were not to be directly subject to the fee, they would have paid indirectly through higher fuel costs.

The bill was broadly supported by groups and companies as diverse as the Sierra Club, Microsoft, Union of Concerned Scientists, the American Federation of State, County and Municipal Employees, the Service Employees International Union and several tribes in the state. Gov. Jay Inslee also backed the bill.

But opponents spent a state record of $31 million to defeat the measure. The "NO on 1631" campaign was spearheaded by the Western States Petroleum Association and its top five contributors, including BP America, Phillips 66, Marathon Oil, American Fuel and Petrochemical Manufacturers, and Valero Energy. The editorial boards of most of the state's newspapers also urged readers to vote against the measure. Investor-owned utilities in Washington largely stayed on the sidelines, only expressing opposition on grounds that the carbon fee would raise electricity rates.

"Our coalition is tremendously grateful that an overwhelming majority of Washington voters looked at the facts about Initiative 1631 and overwhelmingly rejected this poorly written, costly and unfair measure," said a message on the "No on 1631" group's website.

In a blog *post* Wednesday, UCS President Ken Kimmell called the measure's defeat a "major disappointment."

"Unfortunately, the big oil companies, many of whom claim they support carbon pricing as a climate solution, spent about $30 million to defeat this initiative, arguing cynically that the initiative did not go far enough. This hypocrisy needs to be strongly called out," Kimmell said. ■

CAISO/WECC News

ACORE Forum Ponders 'Energy Revolution'

By Hudson Sangree

SAN FRANCISCO — This year's ACORE Renewable Energy Grid Forum took place in a high-rise hotel within blocks of the headquarters of tech revolutionaries Twitter, Uber and Airbnb, among many others. So it was fitting that the forum's speakers, including Google's head of global energy policy, grappled with what keynote speaker and FERC Commissioner Richard Glick called the "energy revolution."

Coming advances in electricity generation and distribution — such as mass storage, distributed renewables and computer algorithms that can monitor a vastly complicated grid — will make older modes seem like the horse and buggy at the dawn of the automobile era, Glick said. Back then, those invested in buggies would try to dissuade people from buying automobiles, he said.

"Every time a car would drive by someone would yell, 'Get a horse,'" Glick told the audience at the Grand Hyatt San Francisco, near Union Square. "We're kind of in that situation now" with fossil fuels and renewables, he said.

Another keynote speaker, CAISO CEO Steve Berberich, said the traditional model of centralized generation using fossil fuels is already "fraying around the edges" as the price of solar and wind power continues to plummet. The cost of storage is also falling, he said, and every state except Idaho has a renewable energy goal.

"Even conservative states such as Utah are pursuing [renewable energy]," Berberich noted.

ACORE President Gregory Wetstone poses questions to CAISO CEO Steve Berberich. | © *RTO Insider*

FERC Commissioner Richard Glick | © *RTO Insider*

Laura Nelson, energy adviser to Utah's governor. | © *RTO Insider*

The third keynote speaker, Laura Nelson, energy adviser to the Utah governor's office, told the audience that the price of renewables has dropped 50% in the last five years, and Utah has increased its reliance from 1% to 8%, with big investments in utility-scale solar and geothermal power.

In a panel titled "Evolving Models for Electricity Markets," Ralph Cavanagh, senior attorney with the Natural Resources Defense Council, said the biggest impediment to renewable integration is the fragmented Western grid.

Efforts to expand CAISO to an RTO for Western states had sputtered, he said, because other states were not willing to accept a board appointed by the California governor and confirmed by the State Senate, and California politicians weren't willing to share control of the RTO. (See *Can Calif. Go All Green Without a Western RTO?*)

CAISO's governance structure would need to change for California and neighboring states to participate in an organized wholesale market, he said. Gov. Jerry Brown supported the failed efforts at regionalization, partly as a means of achieving the clean energy goals of SB 100, which he signed in September. (See *Calif. Gov. Signs Clean Energy Act Before Climate Summit*.)

Mars Hanna, Google's head of global energy policy and markets, said his company, like

From left to right: Ralph Cavanagh, NRDC; Mars Hanna, Google; Rose McKinney-James, Energy Works; Andrew Murphy, Edison International. | © *RTO Insider*

California, is trying to reach a goal of relying on 100% carbon-free energy. To get there, he said, "We need to be able to blend Wyoming wind with Nevada solar."

Addressing the recent election, Rose McKinney-James, managing partner of Nevada-based Energy Works, said state voters had rejected Question 3, a ballot proposal to allow customers to choose their energy providers, largely because they were concerned about rates going up. (See related story, *High Failure Rate for Western Ballot Measures*.) Nevada's electricity rates are 45% less than California's, she said.

Another big factor, she said, was that NV Energy, the state's monopoly electric provider, had announced plans before the election to develop 1,300 MW of solar generation. But that would only happen if the company remained a monopoly, she said.

Cavanagh agreed. "[NV] Energy reinvented itself" as green and clean, he said. "It gave us something to vote for." Now "you're going to

CAISO/WECC News

From left to right: Chris Carr, Baker Botts; Neil Gerber, IBM; Jamie Link, EDF Renewable Energy; Aram Shumavon, Kevala Analytics; and John Westerman, Dynamic Energy Networks | © *RTO Insider*

have a revitalized [NV] Energy as a player in the West."

Pat Reiten, senior vice president of government relations for Berkshire Hathaway Energy, also was on the panel. NV Energy is a subsidiary of Berkshire Hathaway, billionaire Warren Buffett's company.

Reiten said the falling cost of solar had persuaded the company to invest in it. NV Energy once uselessly bid solar into California's market at $100/MWh, far more than fossil fuels, he said, but the price now is $20 or $30/MWh and competitive with other energy sources. "That's rather remarkable," Reiten said.

On the stage at the Grand Hyatt near Union Square, McKinney-James turned to Reiten and said she and many others expect NV Energy to keep its commitments.

"We do have expectations, and there will be feet held to the fire," she said, eliciting laughs from the audience.

After lunch, conference attendees were invited to submit questions via an app to panelists Angelina Galiteva, a member of CAISO's Board of Governors and founder and chairwoman of the Renewables 100 Policy Institute, and Dan Reicher, executive director of Stanford University's Steyer-Taylor Center for Energy Policy and Finance.

The first question was, "What is the biggest issue facing the grid as renewables proliferate?"

Intermittency, both speakers said, but they argued it isn't as big a problem as many critics have contended.

Galiteva said she grew up in Tanzania, where local solar proved far more reliable than the spotty power supplied by a central generating station. "That's where I fell in love with renewables," she said.

Many criticize renewables such as wind and solar as being intermittent and unreliable, but Galiteva said she believes "renewables are more reliable than centralized power," especially as renewable power sources proliferate.

The fact that renewable energy sources are distributed provides an inherent safety backup compared with centralized power, Galiteva said. "Look at the San Onofre power plant," she said. The San Onofre Nuclear Generating Station, on the Southern California coast, shut down suddenly in 2012 after problems arose, and the grid lost the plant's 2,350 MW.

Galiteva also pointed to the Aliso Canyon gas storage facility, a major resource for the Los Angeles area, which shut down after a massive leak was discovered in October 2015. Constraints on natural gas supply have resulted ever since. (See *CAISO Seeks to Extend Aliso Canyon Rules*.)

Reicher said intermittency was generally considered the main problem with renewables, but not all renewables are intermittent, he said. Hydropower, geothermal and biomass are regular, dependable sources, he said.

Storage, including pumped hydro, will make solar and wind more readily available during peak demand times, he said.

Floating wind farms off the coast of California, if ever approved by federal authorities, would be a reliable source of wind power. California's coast has some of the most regular winds in the nation, and those winds pick up just as the state's solar energy tapers off for the day, Reicher said.

"When you go to the beach in California," he said, "the sun goes down and the wind comes up." ■

ERCOT News

Texas PUC's Botkin Applies Life Lessons to Work

By Tom Kleckner

Shelly Botkin | © *RTO Insider*

AUSTIN, Texas — Shelly Botkin, the Texas Public Utility Commission's newest member, has hardly followed a conventional path to becoming a utility regulator.

An avid reader, the Lubbock native chose comparative literature as her college major before finding her way into cultural anthropology. That led to several years as an English teacher in Mexico City, where Botkin honed her Spanish and toured the country. Eventually, she returned to the U.S. and enrolled in The University of Texas' Institute of Latin American Studies, where she wound up bogged down in academic jargon.

"I found it difficult to communicate with ordinary people," Botkin said. "It wasn't for me."

So what does one do with an anthropology degree? In 2000, Botkin's only career choices were an entry-level job at the Texas State Capitol or a position with the advertising company behind the Southwest Airlines and "Don't Mess With Texas" campaigns.

Botkin chose wisely and found herself answering phones and processing data in then-state Sen. David Sibley's office. Sibley was one of the key architects behind Senate Bill 7, which had just deregulated the electric utility business in Texas.

After her first day on the job, she said, "I had to ask, 'Somebody please tell me what Senate Bill 7 is about.'"

Sibley retired soon afterward, and Botkin spent the rest of the 2000s bouncing from one state political office to another. She worked for the lieutenant governor and in both the House of Representatives and the Senate, tackling air quality and electric utility issues, water policies and environmental regulations. Botkin was present for both the Competitive Renewable Energy Zone debates and the private-equity leveraged buyout of TXU, Texas' largest utility.

She found the work fascinating, though it involved 750 bills in the House and 350 in the Senate each five-month session, depending on where she was.

"I spent 10 years learning how to pass or kill a bill. … I learned some important lessons," Botkin said. "Do your homework and read the documents in front of you. Listen to people; talk to people; look for options. If you don't know something, say you don't know, then educate yourself. If you want people to understand your issues, you have to talk to them in a way that they understand you."

Botkin visits with a market participant representative following a recent GCPA luncheon. | © *RTO Insider*

Hitting Refresh

Botkin's work attracted the attention of Theresa Gage, then ERCOT's corporate communications director. Gage called Botkin in 2010 and asked if she would join the grid operator to run its governmental relations group.

"It was one of the best phone calls I've ever made," said Gage, now ERCOT's vice president of external affairs and corporate communications. "We promptly paid her back by putting her through one of the most incredibly stressful years known to the ERCOT market."

At the time, the grid operator was focused on meeting a December deadline to go live with its delayed nodal market. ERCOT and the PUC were both facing sunset reviews to decide the agencies' continued life, while the state was in the midst of a severe drought that would only be exacerbated in 2011 by a late-summer heat wave that pushed the Texas grid to the limit.

Botkin calls it a "meaningful exercise in crisis communications."

"That was punishing," she said. "I learned to hit refresh on the computer and [monitor] the prices and reserve levels."

Although out of her comfort zone, Botkin said she gained a much better understanding of corporate governance and a business enterprise's inner workings.

"She was a huge asset and helped us in immeasurable ways every single day," Gage said.

When the Texas governor's office reached out to Botkin earlier this year regarding a vacancy on the PUC, she hesitated. Noting the term is "a yearish" — it expires in September 2019 — and reflecting on her own job security at ERCOT, Botkin said her first reaction was, "I don't know." (See *ERCOT's Botkin Named to Texas PUC*.)

But then she recalled her days at Girls State, a program designed to educate high school children on the duties, privileges and responsibilities of U.S. citizenship. As a teenager in the flat lands of West Texas, where, she said, "You feel like you're in the middle of nowhere, but you feel like you're the center of the universe." Girls State helped Botkin escape the long shadow of her older brother and carve out her own place in the world.

ERCOT News

"It gives you a sense of, 'Why not you?'" she explained. "It's not just 'girl power.' It gives you the impression that it's going to be your turn to serve someday, so get in there and help the state move forward.

"The Girls State words started working on me. 'I do know something about this. I can help.' So far, it's been great."

'A Spacious Place'

Botkin is a woman of few words on the bench, yielding to the more vocal DeAnn Walker and Arthur D'Andrea during the commission's open sessions. Just don't mistake that for a fear of public speaking.

"I'm not averse to speaking, but there's so much talking behind the scenes that by the time we come out, there's really not much to say," Botkin said during a recent Gulf Coast Power Association luncheon address.

She may not be a lawyer like the other two commissioners, but "because of my legislative experience, I'm very aware words have meaning, and I understand why they do," she told *RTO Insider*.

Botkin has quickly adapted to the pace of the regulatory world, where much of her time is spent reading legal filings and documents. She said she enjoys the certainty of making a dental appointment and keeping it. It's a luxury she didn't have at ERCOT.

"All the truisms about it are, in fact, true. 'You'll be spending a lot of time reading'; that's 100% true," Botkin said. "My role at ERCOT was up-to-the-minute, responding to things, getting back to people as soon as possible. In this role, there's a lot more room to reach out into the future."

And it's a busy future for the PUC. Texas' next legislative session begins in January, which means budgets and reports will be coming due. Commission staff have spent time at the Capitol reviewing the recent federal tax cut legislation and its effects on utilities. The PUC's dockets include investor-owned utility rate proceedings, recovery of Hurricane Harvey's costs, ERCOT market changes and the use of non-traditional technologies, such as battery storage, in electric delivery service.

Comments on the last issue are due Nov. 16, and Botkin is looking forward to reviewing them.

"It's kind of hard to get their arms around it," she said. "It's like trying to pick up an octopus."

Asked about the concept of wires companies owning storage assets, a concept opposed by many generators, Botkin said she has "no grand prognostication."

"One of the reasons I find this industry so interesting is that things change. That's interesting to me," she said. "Given the schedule we have in the fall, I don't think I'll develop any Commissioner Botkin initiatives, because there's plenty of work to do."

Country crooner Mac Davis writes in his song, "Texas in My Rear View Mirror," that he once thought "happiness was Lubbock, Texas, in my rear-view mirror." It's a common joke in Texas, one Botkin alludes to when she refers to the Lubbock area as "a spacious place."

Botkin once felt the same way, but that was before she left Lubbock for Washington University in St. Louis and her anthropology degree.

"It's the study of why people do what they do, why they think what they think and the institutions they create to organize their world," she said.

And so, having studied the people and the institutions around her, Botkin has found her place in the world. For the time being. ■

ERCOT News

Texas PUC Briefs

Walker Pushes for Improved RC-to-RC Agreements with SPP, MISO

Texas Public Utility Chair DeAnn Walker said last week she has asked ERCOT, SPP and MISO to work together to improve the reliability coordination (RC) agreements among the grid operators.

Walker told her fellow commissioners she wants to ensure the grid operators' RC operators understand their responsibilities and "can act on those responsibilities."

"I believe all three regional coordinators would agree the documents we have now could have more clarity," Walker said during the PUC's Nov. 8 open meeting. "My intent is for them to work through those agreements, so there's more clarity … for reliability purposes."

Walker said she last month discussed her intentions with SPP leaders, who assured her their staff would work with ERCOT staff "to get something done by the end of the year." She said she is also working on setting up a meeting with MISO CEO John Bear.

Separately, SPP and MISO are working to improve coordination across their seam following January and September events this year. (See "SPP-MISO Operating Procedures not yet Documented," *SPP Board of Directors/Member Committee Briefs: Oct. 30, 2018*.)

Walker's concern is over the use of switchable generating units, interconnected to other regions but available to ERCOT. Its most recent *seasonal assessment* of resource adequacy listed 3.7 GW of installed capacity as being available to the Texas grid operator in an emergency situation.

"We're not trumping [SPP and MISO] on a reliability need to their system," Walker said. "If they say they're not willing to release [switchable units], we have options here in ERCOT we can use for reliability purposes."


Commissioner Shelly Botkin discusses matters with DeAnn Walker and Arthur D'Andrea.

Walker said she was also driven to share her work with Commissioners Arthur D'Andrea and Shelly Botkin because of "a lot of discussion out there misrepresenting what I'm trying to do." As an example, she pointed to opposition to an ERCOT *revision request* that would add a new resource status code for switchable units.

"There's so much pushback on very reasonable things," Walker said. "To me, it's all about reliability. Ratepayers in ERCOT have been paying for the transmission to interconnect these units. They should have some reason to be here for reliability."

PUC to Discuss Market Changes

The commission agreed to reserve time during its Dec. 7 open meeting for a broader discussion of potential changes to ERCOT's market, including real-time co-optimization and incorporating marginal losses into dispatch decisions (Project *48551*).

Both proposals have varying degrees of stakeholder support. Staff have been asked to provide additional information and offer recommendations on the proposed changes, which were the subject of two workshops last year. (See *ERCOT, Regulators Discuss Need for Pricing Rule Changes*.)

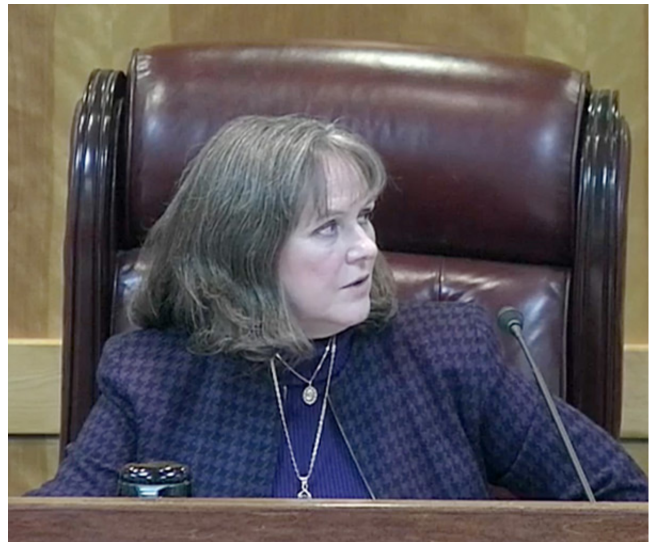
Walker said she is hopeful about "getting those things behind us," despite apparent stakeholder concerns that the PUC is moving too quickly.

"I've been astonished in the past week by people saying we're rushing to a decision on this," Walker said, noting potential market reforms were before the commission when she joined last year. "It doesn't feel like much of a rush to me. I guess people judge rushes differently."

Enforcement Actions Result in $2.83M in Penalties

The PUC released a *report* detailing its enforcement actions for the 2018 fiscal year.

According to the "2018 Summary of Customer Complaints and Enforcement Activities," commission staff concluded 114 investigations, with results ranging from fines and license revocations to findings of no violation. The PUC approved orders imposing $2.83 million in administrative penalties and returning more than $108,000 in refunds to Texas ratepayers.


Chair DeAnn Walker shares her thoughts on switchable units.

"The Texas Legislature created a level playing field for the companies competing to serve utility customers, and it's our job to throw penalty flags for infractions," Walker said in a *release*.

Electric retail and wholesale issues accounted for 40% and 24%, respectively, of the investigations. Water (25%), electric service quality (9%) and telecommunications (2%) made up the rest.

Non-IOUs Get Rate-Review Schedules

In other actions, the PUC *approved* a rate-review schedule for non-investor-owned transmission service providers (Project *48377*) and modified a previous order granting Oncor a certificate of convenience and necessity for its Far West Texas Project (Project *48095*). (See *PUCT Grants Oncor CCN for Far West Texas Project*.)

During their executive session, the commissioners agreed to intervene in two Entergy dockets before FERC:

- Entergy Services' request to transfer its ownership interests in two transmission control centers to Entergy's operating companies (*EC19-18*). The centers are in Jackson, Miss., and Little Rock, Ark.
- Entergy Services' filing of an unexecuted joint ownership and operating agreement that identifies the terms and conditions of the operating companies' ownership of the control centers (*ER19-211*). ■

— Tom Kleckner

ISO-NE NEWS

Split FERC OKs New 'Economic Life' Rules for ISO-NE

Change Could Mean Lower Capacity Prices

By Rich Heidorn Jr.

FERC on Friday approved ISO-NE's plan to correct a key calculation in evaluating delist bids, a change that could reduce capacity prices.

The 2-1 ruling, supported by Commissioners Cheryl LaFleur and Richard Glick, prompted a dissent by Chairman Neil Chatterjee, who said that making the change effective for Forward Capacity Auction 13 violated the commission's rule against retroactive ratemaking (*ER18-1770*). Commissioner Kevin McIntyre, who is battling a brain tumor, did not participate.

At issue was how ISO-NE's Internal Market Monitor calculates the "economic life" of resources that want to retire or permanently leave the capacity market. Such a resource must provide at least five years of cash flow estimates to justify their delist bids, which specify the price at or below which it would retire.

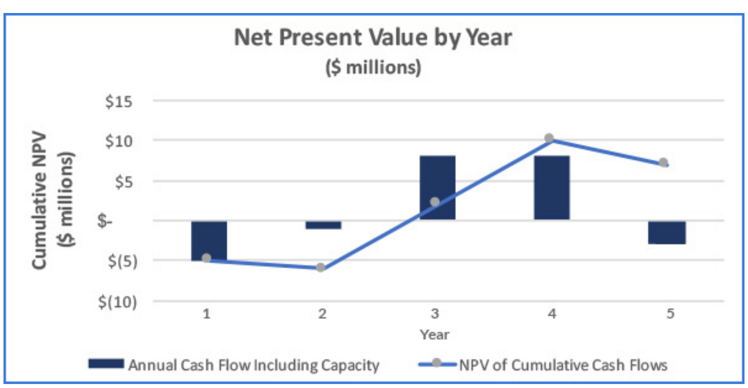
To determine whether the bid price is competitive, the Monitor calculates the expected remaining economic life of the resource — the number of capacity commitment periods in which the resource could continue operating profitably. The Monitor calculates the competitive delist price as the lowest capacity payment at which the resource would be no worse off by retaining its capacity obligation rather than retiring immediately.

ISO-NE said the Monitor recently determined that its calculations — which defined the economic life as the period for which the resource's cumulative net present value (NPV) is positive — were overstating the true economics of some resources and could result in improperly high delist bids.

The calculation assumed that a resource that earned positive cash flows in the earlier years would continue to operate while suffering losses as long as the cumulative cash flows remained positive — an assumption that ignored that a resource would choose to retire as soon as its cash flows turned negative.

Under the new rules, the economic life of a resource will be the period that maximizes the NPV. The rules are effective Aug. 10, 2018, and will apply for FCA 13 in February 2019.

In ISO-NE's filing, Hemant Patil, an economist with the Monitor, gave an example of a resource that expects positive cash flows of $5 million in year one and negative cash flows of $3 million in year two and each subsequent year. "The current Tariff calculation would yield an economic life of two years because the resource could operate for two years with resulting cumulative cash flows of $2 million — positive $5 million in year one plus negative $3 million in year two. This assumption is inconsistent with how a competitive supplier would operate a resource. In this example, the supplier would not choose to operate its resource beyond year one and incur the negative cash flows of $3 million in year two. Instead, it would choose to exit the [Forward Capacity Market] after year one in order to maximize its cumulative cash flows at $5 million."



Under ISO-NE's old rules, the economic life for this example generating resource would be five years because the cumulative net present value remained positive even though the plant lost $3 million in the last year. Under the new rules, the economic life would be four years, when its NPV peaked at $10 million, recognizing that the owner would not want to absorb losses in year five. | © *RTO Insider*

ISO-NE and the New England Power Pool's Participants Committee said they sought the change after an unidentified supplier submitted delist bids for four resources totaling 2,000 MW for FCA 13, which they said could harm the competitiveness of the auction.

The RTO gave another example in which its prior rules estimated a resource would need $11 million in revenue to break even, inflating the delist price by $2.5/kW-month over the $8 million revenue requirement under the revised rules. If the supplier has market power, it could also inflate the prices for the remainder of its portfolio. If that unit was the marginal bid affecting 30,000 MW of cleared capacity, the incorrect calculation would raise consumer costs by about $900 million ($2.5/kW-month x 12 months x 30,000 MW), the RTO said.

LaFleur and Glick rejected a protest by the New England Power Generators Association, which complained that the Aug. 10 effective date requested by ISO-NE and NEPOOL disrupted market expectations and violated the commission's rule against retroactive ratemaking. NEPGA asked the commission to reject the proposal and order the RTO to bring it before stakeholders, with no changes effective before FCA 14 in 2020.

The proposal was approved by NEPOOL's Markets and Participants committees, both with about 69% in support. The commission said that although the stakeholder review was "expedited, the record reflects that ISO-NE met its burden for stakeholder review … under its Participants Agreement."

"A rational resource, in exercising competitive bidding behavior, would seek to exit the market, or retire, before it starts incurring consecutive losses," the commission said in approving the change. "The benefits of the proposed economic life revisions outweigh potential disruptions to market participants' settled expectations and harm caused by reliance on the existing [capacity market] rules."

Chatterjee disagreed, saying that making the rules effective for FCA 13 harmed "market participants who relied on the existing Tariff in calculating prices and entering into contracts" in preparation for the auction.

Chatterjee said it was "troubling" that the RTO submitted the proposal after calculating the economic impact of the existing rules. "This change would achieve a specific price-oriented outcome based on information ISO-NE possesses due to its unique role as both system operator and auction administrator," he said. "This case raises very serious questions about when and how the rule against retroactive ratemaking applies." ■

ISO-NE News

New England Talks Energy Security, Public Policy

By Michael Kuser

The Northeast Energy and Commerce Association held its 17th annual Power Markets Conference on Nov. 8. | *© RTO Insider*

MARLBOUROUGH, Mass. — Can New England balance reliability, economics and public policy in a fast-changing energy world? How will the region better prepare itself to handle winter cold snaps than in the past?

These and other questions arose at the Northeast Energy and Commerce Association's 17th Power Markets Conference on Nov. 8. Here are highlights of what we heard.

Internalize, Don't Politicize

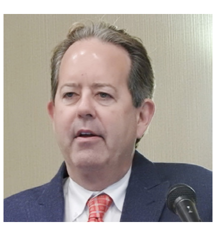
Ashley Brown | *© RTO Insider*

Ashley Brown, executive director of Harvard University's Electricity Policy Group, said, "My fear today is that we're moving back to a battle between various special interest groups and further politicizing the sector."

Resource selection based on economics, reliability and social benefits has given way to state subsidies and mandates that often work against public policy environmental goals, with uneconomic resources chasing bailouts instead of focusing on how to become more efficient, he said.

"Part of the problem ... is that we have simply failed to internalize social considerations in economics," Brown said. "The lack of a carbon policy in the U.S. is not only intellectually bankrupt, but it does in fact penalize emissions-free resources."

Energy Security Banking



Mark Karl | *© RTO Insider*

Mark Karl, ISO-NE vice president for market development, said the region is moving into an era in which more resources have less fuel security. The grid operator is concerned the situation will get worse.

Fuel logistics become an issue in winter, whether because of natural gas pipeline constraints, limited dual-fuel storage or reduced ability to deliver oil by truck, he said. The significant retirement of large non-gas-fired generation is an important factor, as is the type of oil used.

"For example, some generators are burning No. 6 oil, which is basically almost asphalt, so in the wintertime, when that stuff gets cold, it gets pretty difficult to pump and move," Karl said.

The retirement of two nuclear plants and the Brayton Point coal plant in recent years might be good for the environment, but collectively it presents a challenge for reliability, he said.

Karl said ISO-NE is looking to create a new reserve service referred to as "the energy inventory reserve constraint."

"We're proposing to incorporate into the real-time market an additional constraint that looks at the ability to provide energy storage or an energy bank," he said. "I want to be careful here because it's easy to think about this from the standpoint of conventional generator fuel, but this will apply to any sort of resource that has the ability to maintain essentially a reserve bank of energy that can be converted into electricity when needed."

The idea is to optimize the use of limited energy over more extended periods compared with how markets are currently designed to optimize energy over the course of an operating day, he said.

Outside the marketplace, operators also worry about the next day and the days that follow, and sometimes order an oil-burning unit offline for a weekend anticipating the need to provide reserves come Monday, "so that's an out-of-market action that does cause distortions in the marketplace," Karl said.

Market Reaction

Brett Kruse, vice president of market design

ISO-NE News

NECA energy security panel (left to right): Abigail Krich, Boreas Renewables; David Cavanaugh, Energy New England; Brett Kruse, Calpine; and Matthew Picardi, Shell Energy. | © *RTO Insider*

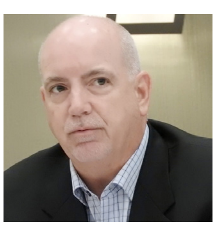
Brett Kruse | © *RTO Insider*

at Calpine, said ISO-NE could use a six- or seven-day-ahead market to effectively manage storage in a way that avoids having to take out-of-the-market actions.

The proposal could help the RTO manage how it deploys plants day to day and provide an insurance policy to keep a certain amount of storage in the system, he said.

"There are a lot of questions about that and how it would be priced, but it's conceptually a pretty good idea," Kruse said.

But he also had some reservations about the plan. "Looking at the way they're presenting it now, where it's a voluntary forward market, and won't have any mitigation, which is a key aspect to go with that, we think it has some potential, although it's hard to see how a lot of load will come into that," he said.



David Cavanaugh | © *RTO Insider*

David Cavanaugh, vice president of regulatory and market affairs for Energy New England, an energy services firm, said the RTO's thinking at first glance seems robust, as its design extends beyond the winter period into a period where the bulk power system has more renewables and, perhaps, storage resources.

"I'm not sure the sophistication of this model gets us there ... but we can be informed by other interim efforts such as the opportunity cost model set for use this winter," Cavanaugh said.

"I think the design is well thought out ... just have some concerns when I look at the multi-day-ahead market, its voluntary participation," in terms of maintaining adequate fuel stocks.

Abigail Krich | © *RTO Insider*

Abigail Krich, president of Boreas Renewables, said she sees a market design that, "even though it was triggered by fossil fuel issues, could work with that transition to a clean energy system that relies on intermittent generation. It looks like something that makes sure we have a dispatchable store of available energy in reserve."

"I question whether we need all of these pieces in the proposal or whether we might just use some of them," Krich said.

Public Policies

Peter Fuller | © *RTO Insider*

Discussing the race for renewables at the state level, Peter Fuller of Autumn Lane Energy Consulting said the tension in these markets is understandable. While consumers have benefited greatly from the markets, and investors and market participants have an expectation that everyone in the market will play by the same set of rules, states pursuing policy objectives don't necessarily feel bound by those rules. In addition, the states have not been able, individually or collectively, to identify exactly what they want in a way that an RTO can create a market for it, he said.

Rather, states want to maintain control of resource decisions as policy objectives continue to evolve over time. "As much as anything they want to control that," Fuller said. "If I'm a governor or legislator thinking how I want to transform the energy system in my state, my first instinct is not to send somebody to [the New England Power Pool] or to PJM to offer proposals, to come up with a matrix or a set of market rules and see how that plays out." States are more likely to take direct action that then can cause dislocations in the markets.

Sebastian Lombardi | © *RTO Insider*

Day Pitney attorney Sebastian Lombardi, who serves as counsel to NEPOOL, said that overlaying all the fuel security and grid resilience efforts is the need for regions to continue to engage in efforts to help bridge the divide between evolving state and federal policies and the market.

"From a state policy perspective, the competitive markets are not always achieving what they'd like the markets to achieve," Lombardi said.

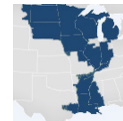
Darlene Phillips | © *RTO Insider*

Darlene Phillips, senior director for strategic policy and external affairs at PJM, explained the RTO's proposed revamp of its capacity market.

The Extended Resource Carve-out proposal would allow specific, state-subsidized resources to opt out of the capacity market and PJM to adjust market clearing prices as if the resources were still in it. (See related story, *PJM Stakeholders Hold Their Lines in Capacity Battle*.)

"If you don't want your subsidized resources to get a minimum offer for price and go into the market, we will allow you to take those resources out of the market," she said. "One of the things that FERC did not like about our original approach is that we actually paid those resources a payment."

When it comes to existing renewable resources, PJM's minimum offer price rule would have very little impact because the price would be zero, she said. The RTO applies a 20-MW threshold to renewables for the MOPR, which most of them don't meet, though that situation might change with large-scale offshore wind coming along. ■



MISO News

MISO Concurs with Monitor Ideas, Pledges More Study

By Amanda Durish Cook

MISO officials say they will follow through on most recommendations in its Independent Market Monitor's 2017 State of the Market report, although a few suggestions will require more investigation before the RTO can commit to solutions.

"At the highest level, MISO generally agrees with the issues laid out in the report ... but we do believe there's additional evaluation required on three of the recommendations," Executive Director of Market Development Jeff Bladen told the Market Subcommittee during its Nov. 8 meeting.

Issued in June, Monitor David Patton's report called for MISO to make seven improvements to its markets. (See *7 New Recommendations from MISO IMM*.)

MISO will provide a more detailed presentation of its response to its Board of Directors on Dec. 4.

"I don't anticipate addressing individual recommendations today," Bladen told stakeholders.

In an October *memo* to the board's Markets Committee, MISO said it plans to work with the Monitor to include the impact of negative prices in its market power mitigation rules next year. The RTO also noted that it agrees that it should design clearer commitment classifications for operators and create a process to correct classification errors in determining make-whole payments, though it said that project is low-priority and might get a budget line in 2020.

Two recommendations — a 15-minute day-ahead market and better operator logging tools to describe decisions and actions — could possibly be added to the scope of MISO's market platform replacement.

"MISO agrees that a more granular day-ahead market would likely deliver some reliability and efficiency benefits through improved unit commitment and scheduling, reduced uplift, and more effective procurement of required system capabilities including ramping," MISO said, noting that the evaluation of intra-hour day-ahead market is included in a draft of business requirements for the new platform.

Bladen said that some of this year's State of the Market recommendations are "intrinsically tied" to the new platform.

Jeff Bladen | © *RTO Insider*

MISO-PJM CTS

The Monitor also recommended that MISO remove transmission charges from coordinated transaction scheduling (CTS) transfers with PJM, but MISO thinks a more comprehensive reworking of CTS might yield better results.

Dustin Grethen of MISO's market design team said the RTO is currently *investigating* its own price forecasting and other fees before simply adopting the Monitor's solution.

MISO and PJM launched CTS last October to allow market participants to schedule economic transmission transactions based on forecasted energy prices. While CTS had the potential to lower the cost of serving load in both regions, it has rarely been used since mid-February because MISO has been applying transmission reservation fees to the transactions both when they are offered and scheduled — a double charge.

On Thursday, MISO acknowledged that "CTS isn't producing material benefits and is unlikely to do so without significant changes."

Grethen said CTS activity peaked last November, averaging 5 MW per 15-minute interval.

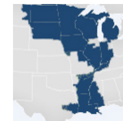
"It's trailed off to basically zero," Grethen said. "There really aren't benefits being realized from the CTS process because the offers have dried up. I think in the last couple of months we've only had three unique bidders."

MISO charges about 90 cents/MWh for reservations to the PJM seam, while PJM charges about 83 cents/MWh. MISO also charges cleared CTS exports an extra $1.70/MWh in a multi-value project transmission fee, and PJM allocates uplift charges to CTS.

Grethen called the fees a "pretty significant disincentive."

"Any of these fees can affect traders' revenue

MISO News



and profitability," he said.

Grethen also said the fees CTS traders incur when their offers don't clear lead to subsequent higher offers so traders can recoup lost revenue from unsuccessful offers. He also pointed out that both RTOs offer "essentially free" hourly spot-in transmission service.

MISO could also improve its LMP forecasting in the CTS engine for the MISO-PJM common interface, Grethen said. Since June, the CTS engine has forecast prices about 30% below the actual LMP and it remains unclear why.

Capacity Auction Recommendations

MISO is receptive to *two* recommendations related to its annual Planning Resource Auction, though it said one needs further work.

The Monitor has advised MISO to require the installed capacity of planning resources to be deliverable over the transmission network. While the Tariff already requires all resources to be deliverable to load to qualify as capacity resources, the Monitor says MISO's deliverability requirements are too relaxed because resources with energy resource interconnection service (ERIS) must only secure firm transmission for its unforced capacity values, which tend to be about 5 to 10% below full installed capacity levels.

IMM staffer Michael Chiasson said it's problematic that MISO's loss-of-load expectation (LOLE) study assumes that all installed capacity megawatts are deliverable when they're not.

"That's really a disconnect between the LOLE and the deliverability," Chiasson said during a Nov. 7 Resource Adequacy Subcommittee meeting.

Laura Rauch, MISO director of resource adequacy coordination, said the RTO will likely adopt the Monitor's suggestion, but it must first address additional details that would allow it to apply the rule to intermittent resources.

"We're going to have some discussions with stakeholders and see what we can do for the 2020/21 PRA," Rauch said.

MISO does not yet have a timeline for the Monitor's other recommendation to create unique capacity credits in the PRA for emergency-only resources, though Rauch said the RTO will likely address that as part of its bigger initiative on resource availability and need (RAN).

"We are looking for solutions in the RAN process," Rauch told stakeholders. She said MISO will finalize a timeline later this year and suggest changes on capacity accreditation in 2019.

Market Improvements Wait on New Platform

The Monitor's report also emphasized a three-year-old recommendation to allow day-ahead committed peaking resources to set prices in MISO's extended locational marginal pricing (ELMP).

Bladen said that while MISO agrees with the 2015 recommendation to expand ELMP, it must research the impact of the change on its outgoing market platform.

"The Market Monitor believes this could be done by changing a few lines of code, but our platform is of a vintage where changing a few lines of code impacts the entirety of the system," Bladen said.

Dustin Grethen | © *RTO Insider*

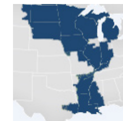
Bladen said MISO has arrived at "the raw judgment" that it should move ahead with the new platform while some market improvements wait in the wings, including plans to create a 30-minute capacity reserve product. (See "Limited Improvements for Old Platform," *MISO Platform Replacement Risks Delay, Budget Overrun*.)

"At this stage, the potential of a new platform delay is too great," Bladen said. "There are meaningful performance issues, and cyber risks are increasing every day."

MISO expects the first components of the new platform to be operational in 2021, with complete swap-out by 2023.

"It's not a forklift replacement. It's a component-by-component replacement," Bladen said. ■

MISO News



MISO to Explore Restoration Compensation

By Amanda Durish Cook

MISO's Market Subcommittee last week agreed to explore the possibility of creating a new market mechanism to compensate resources for delivering system restoration energy when the real-time market has ceased to function.

The committee decided by consent at a Nov. 8 meeting to both discuss the issue at future meetings and allow a five-year-old white paper on the topic to be the starting point of the discussions, although the paper leaves many details open-ended. (See *Old Analysis Could Guide MISO Restoration Pricing Effort*.)

The white paper proposes a framework to allow MISO to adjust real-time prices for islanded areas to facilitate market settlements while giving generators the ability to make further revenue adjustments to ensure adequate compensation for providing energy.

MISO Director of Market Services John Weissenborn said the plan *requires* further evaluation and several specifics. He said the RTO's current settlement rules still need to be researched for their applicability during restoration events.

"We would like to leverage existing settlement rules when appropriate," Weissenborn said.

He also said MISO would have to consider that its Inter-Control Center Communications Protocol may be unavailable or performing poorly following a blackout, and that market concepts such as following dispatch instructions may not be relevant in such an event.

MISO must also develop a process to verify and review generators' costs and a timeline for doing so, Weissenborn said. He said stakeholders may have to examine any resulting compensation rules for their compliance with state regulations.

Weissenborn said MISO will begin scheduling working sessions with stakeholders in January to develop a framework for a possible Tariff filing.

Though a restoration pricing structure is currently on "parking lot" — or hold — status in MISO's Market Roadmap list of potential market improvements, RTO staff said the project could be called up for reconsideration in light of the Steering Committee's July directive to the MSC to re-examine the issue after five years of inactivity. (See *MISO Stakeholders to Reconsider Restoration Pricing*.)

John Weissenborn | © *RTO Insider*

MSC Chair Megan Wisersky said the project should not affect MISO's yearslong, phased replacement of its market platform. The RTO has put multiple market improvements on hold while it dedicates manpower to the goal of having a partially operational modular platform in place by 2021. ■

OMS Executive Director to Exit

Tanya Paslawski at the OMS Annual Meeting in October | © *RTO Insider*

The Organization of MISO States said Friday that Executive Director Tanya Paslawski will depart the organization at the end of the year.

Paslawski has accepted a position as president of the Michigan Gas and Electric Association starting Jan. 1, 2019, and will resign her OMS post effective Dec. 31.

Paslawski joined OMS in 2014 as the organization's deputy executive director, becoming executive director in 2015. Prior to OMS, she worked for ITC Holdings and was a staffer at the Michigan Public Service Commission.

OMS leaders said Paslawski navigated the organization through a transitional stage as the electric industry itself experiences change.

"Tanya has brought leadership, knowledge of the industry and an ability to forge consensus among regulators in the MISO footprint. She has served with distinction, and I wish her well in her new position," OMS President Ted Thomas, chairman of the Arkansas Public Service Commission, said in a statement.

"Tanya did an incredible job as OMS executive director, providing astute legal and policy analysis on complex and critical issues … and her ability to facilitate consensus on those issues will be deeply missed," OMS Vice President and Missouri Public Service Commissioner Daniel Hall said.

Paslawski had lauded the organization's perseverance and collaborative nature during the OMS Annual Meeting and 15-year anniversary celebration last month. (See *Overheard at OMS 2018 Annual Meeting*.)

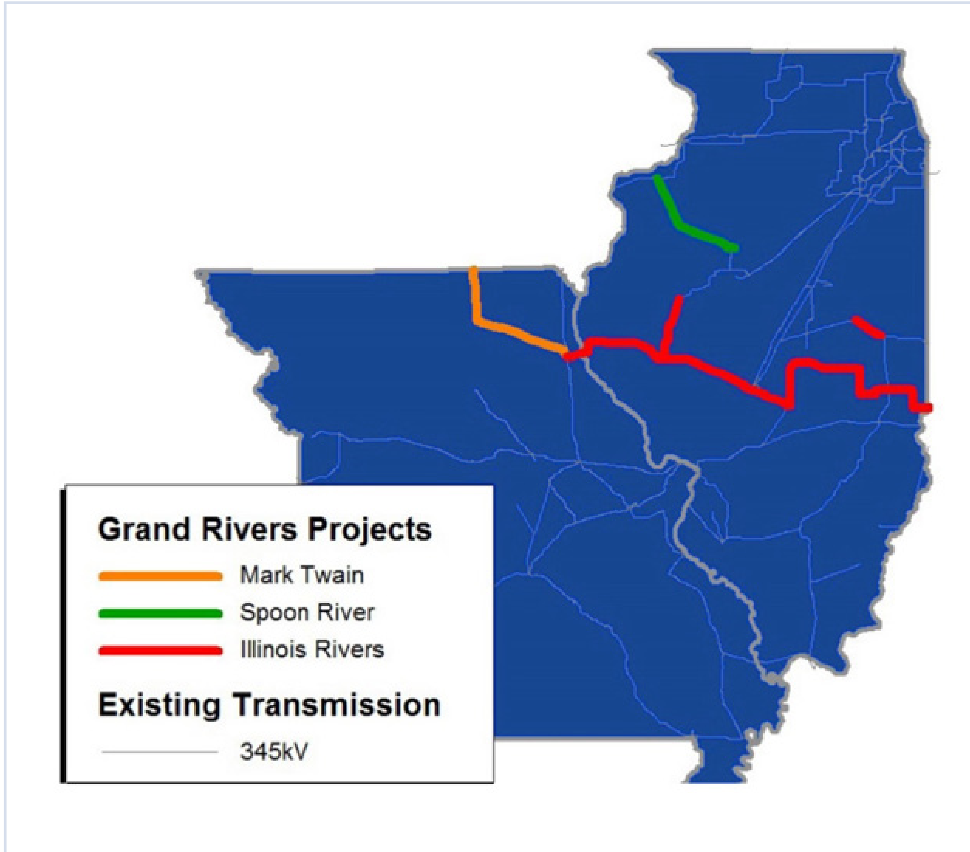
OMS' executive committee will open a search to select a new executive director, who will be subject to confirmation by the organization's board of directors. Staff said the search for a replacement will be opened next week, with any next steps, including the potential need for an interim director, determined thereafter. ■

— Amanda Durish Cook

MISO NEWS

Mixed Decision on Rehearing for Grand Rivers Adders

By Robert Mullin



Grand Rivers Project | *Ameren*

FERC last week granted Ameren a rehearing on an incentive rate treatment for one portion of the company's Grand Rivers transmission project while rejecting a simultaneous request for another segment.

The 500-mile project, which is currently under development, will span Illinois and extend into Missouri, creating a continuous 345-kV path from Iowa to Indiana.

The commission denied a rehearing for the Illinois Rivers component of the project, affirming part of its February ruling that found Ameren had failed to demonstrate why the "remaining risks and challenges" associated with both the Illinois Rivers and Mark Twain segments warranted a 100-basis-point incentive adder given the late stage of project construction. (See *Ameren Rate Incentive Rejected by FERC*.)

In its Nov. 5 order, the commission dismissed Ameren's contention that its February ruling failed to recognize its own precedent in Pepco Holdings, Inc., which distinguished between incentives requested after a project is already completed and those requested when a project is nearly complete (*ER18-463*).

The commission said its February order made clear that projects being nearly completed does not necessarily preclude them from receiving incentive adders, but that such projects also face fewer challenges, a condition the commission found applied to Grand Rivers.

"Pepco does not stand for the proposition that all incomplete projects will receive [a return on equity] incentive based on the risks and challenges of a project, as Ameren Transmission appears to suggest. Rather, Pepco stands for the proposition that an applicant may not seek incentives for a project that is already complete; a project that is not yet complete is eligible for incentives," the commission wrote.

The commission acknowledged that Pepco granted incentives to a project that was nearly complete, but that it no long believes that it is "appropriate" to provide incentives to such projects.

"Thus, while a project being under construction does not preclude it from incentives, the commission will consider how close the project is to completion when evaluating the risks and challenges of the project — with less risk typically attendant to projects that are further along in the construction process. We note that consideration of construction progress as part of the nexus test is consistent with commission precedent," FERC said.

In this case, the commission found the Illinois Rivers component "failed to meet the nexus test," given that it was 90% complete at the time of its December 2017 application for the adders, with four of its nine line segments already energized and all 10 of its substations in service.

But in granting a rehearing for the Twain component of the project, FERC agreed with Ameren's argument that it should be evaluated on its own merits — separately from Illinois Rivers — as the project had not yet broken ground by the time of last December's application.

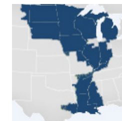
The commission also determined the Twain segment qualifies for the risk-reducing incentives spelled out in FERC's 2012 *policy statement* on promoting transmission investment in that it will unlock constrained wind generation and relieve chronic and severe congestion, resulting in $2 billion in production cost savings across MISO.

"We also note that the Mark Twain component was reviewed and approved as part of the MISO Transmission Expansion Plan 2011 portfolio of [multi value projects], such that alternatives to the project have been considered in a relevant transmission planning process," the commission said.

The commission reduced Twain's potential ROE adder to 50 basis points, citing FERC precedent in its 2015 NYISO ruling on the Edic-to-Pleasant Valley line and its 2018 ruling on NextEra Energy's Empire line in New York, both of which are 345-kV projects similar to Twain.

"We find that the Mark Twain component unlocks location-constrained generation and provides congestion relief in a range comparable to that of the projects awarded a 50-basis-point ROE incentive in NYISO and NextEra," the commission said. ■

MISO News



MISO, SPP to Ease Interregional Project Criteria

By Amanda Durish Cook

MISO and SPP last week agreed to file changes to their joint operating agreement that they say will smooth the approval of interregional projects.

The changes, to be filed at FERC early next year, will eliminate the $5 million cost threshold for the projects, add avoided costs and adjusted production cost benefits to project evaluation, and remove the joint modeling requirement in favor of individual RTO regional analyses. The RTOs will also increase the regularity with which they produce a coordinated system plan (CSP), the joint study used to identify interregional transmission needs. (See ***MISO, SPP Loosen Interregional Project Requirements***.)

The JOA revisions will not lower a 345-kV voltage requirement mandated by MISO, though the RTOs last month said they might create a category of smaller interregional transmission projects without voltage requirements. (See ***MISO, SPP Mulling Small Interregional Project Type***.)

The RTOs earlier this year said the criteria currently spelled out in JOA might be preventing beneficial interregional projects from gaining approval.

"I think SPP and MISO are on the same page on these JOA changes," SPP Interregional Coordinator Adam Bell said during a Nov. 9 Interregional Stakeholder Planning Advisory Committee conference call.

However, Bell said the revisions won't be considered final until they're reviewed by both RTO legal teams. He said the RTOs hope to file the changes in February and will likely hold another conference call with stakeholders before then.

But Entergy's Jennifer Amerkhail said the JOA revisions lack the FERC Order 1000 safeguards requiring transmission developers to first propose projects to RTOs jointly before they are evaluated in each individual regional process. She said it was important for interested parties to review projects, especially because relaxed cost requirements will result in a higher number of proposed interregional

Adam Bell | © *RTO Insider*

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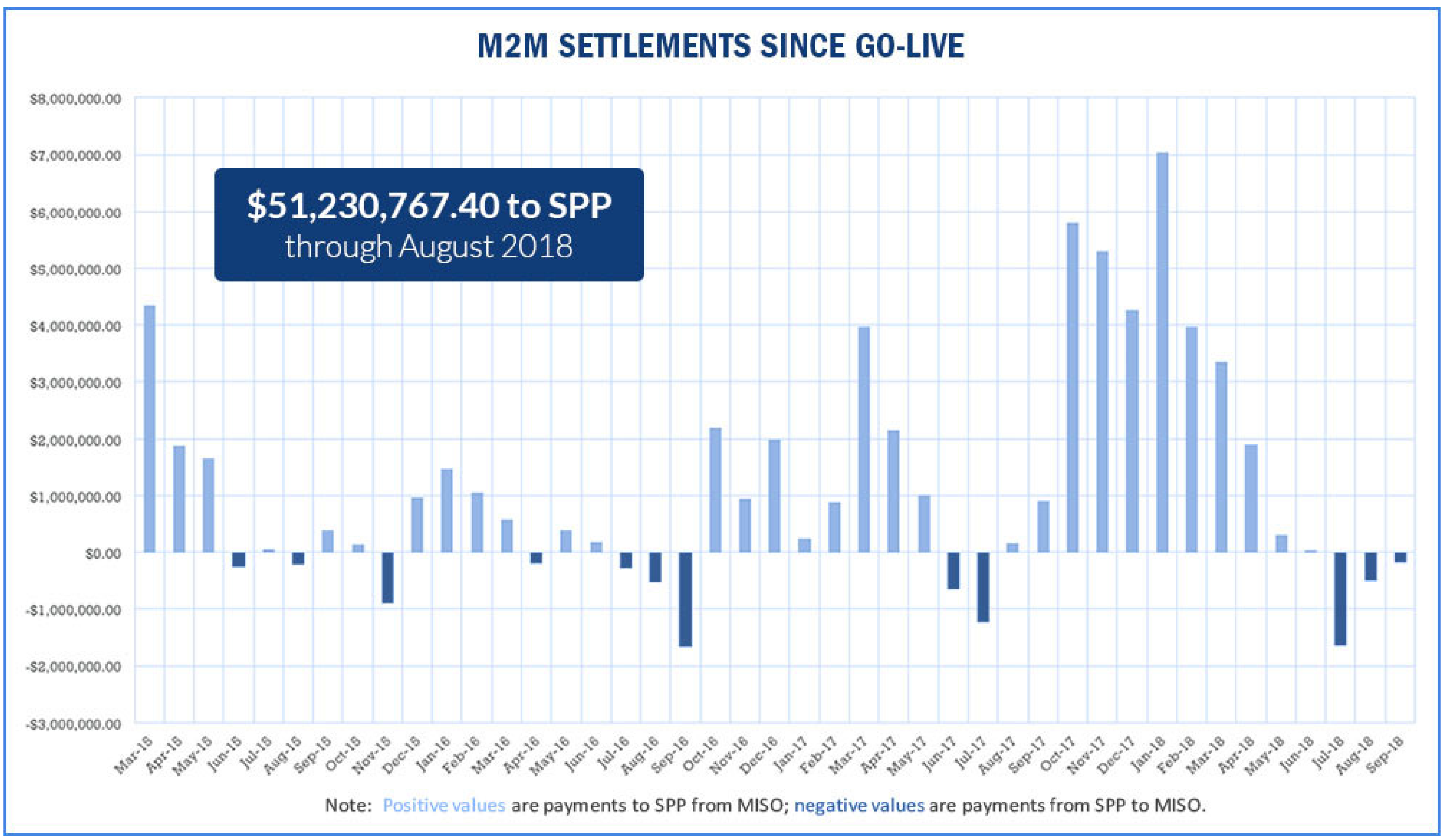
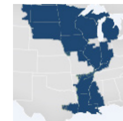


| *SPP*

MISO News



MISO Quick Capacity Reserves Wait Until 2021

By Amanda Durish Cook

MISO is working to create market rules for capacity reserves that can be supplied within 30 minutes, though the RTO won't have a sophisticated enough technology platform to support the new product for more than two years.

RTO staff told the Market Subcommittee on Nov. 8 that the earliest the new product could be rolled out is the first half of 2021 because it will require the new market platform.

MISO Director of Market Design Kevin Vannoy *said* the short-term reserve product will address issues that are "more severe" than can be solved by either the ramp product and regulation reserve, which is supplied within seconds, or issues that are "less severe" than the Disturbance Control Standard events requiring the RTO's 10-minute contingency reserves.

"The idea is to get the 30-minute reserves reflecting actual needs [of the system] rather than trying to have the 10-minute reserves covering it," Vannoy said.

Bill Peters | © *RTO Insider*

"We have needs that we make out-of-market commitments for, but they're not modeled in the market," said Bill Peters of MISO's market design team.

The short-term reserves would be furnished by either online generators dispatched according to opportunity costs or offline generators, which would be dispatched based on an offer price.

Peters said short-term reserves would help manage flows on SPP transmission between MISO Midwest and MISO South and aid areas hemmed in by transmission constraints or short on nimble reserves. They also will help meet load and avoid volatility as the RTO adds more intermittent resources.

MISO's final *ranking* of Market Roadmap improvements placed the creation of short-term reserves at the highest priority, beating out projects to better model combined cycle generators, and respond to shifting resource availability and need.

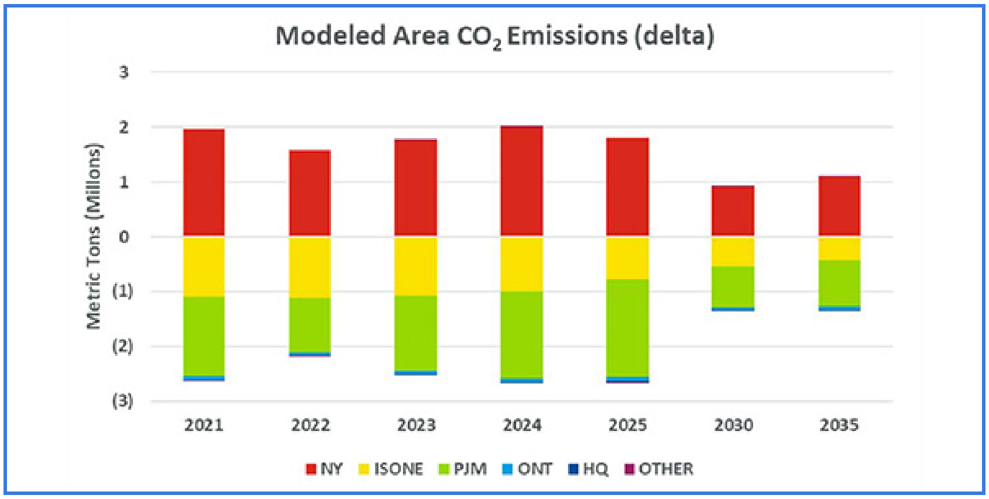
Peters said the reserves could have market-wide, regional and local response requirements. He said MISO would dynamically schedule the reserves to a load pocket or region, assessing the state of the system, capacity needs, amount of cleared energy and amount of cleared short-term reserves before dispatch. He also said the RTO is considering applying a demand curve to pricing. Peters said the generators that sign up to provide the service will be tested to demonstrate they're able to provide capacity within 30 minutes.

MISO has scheduled a Jan. 15 workshop to further discuss the conceptual design of a short-term reserve product. ■

NYISO NEWS

Analyses Show Flat Emissions Under NY Carbon Price

By Michael Kuser



Daymark Energy Advisors' projected carbon emissions under a New York carbon pricing policy. | *Daymark*

RENSSELAER, N.Y. — New York electricity market stakeholders on Friday reviewed three separate studies to evaluate the implications of a carbon charge in NYISO's energy markets.

The reports by the Brattle Group, Daymark Energy Advisors and Resources for the Future (RFF) find similar reductions in systemwide carbon emissions from a carbon charge: less than 1 million metric tons, according to the ISO's *synthesis* of the studies

Michael DeSocio, the ISO's senior manager for market design, told the Integrating Public Policy Task Force (IPPTF) Nov. 9 that "all the analyses were generally supportive of each other."

All three studies isolate the effects of a carbon charge by modeling both a "base case" without carbon pricing and a "change case" with carbon pricing, but they each differ in the years evaluated. The Brattle *study* evaluates effects in 2020, 2025 and 2030, while Daymark's *analysis* evaluates 2021-2025, 2030 and 2035. The RFF *analysis* focuses solely on 2025. (See *NY Details Carbon Charge on Wholesale Suppliers*.)

Analytical Results

Daymark's Marc Montalvo said that his group's study found that "carbon emissions in New York are about flat. There's not really a material change as a consequence of the introduction of the carbon charge."

RFF's Dan Shawhan said his group's updated results show "a CO2 emissions reduction of 0.2 million tons in the simulated year, which is 2025, and that's about 0.65%, so about two-thirds of a percentage point reduction in New York emissions. And I don't disagree with the characterization that you could describe that as not a big change in emissions."

Brattle's Sam Newell agreed and said "a lot of what's happening here is we're comparing to a base case that already has in place the Clean Energy Standard and other mechanisms to reduce emissions."

But both the RFF and Brattle studies say that a carbon pricing policy can also be expected to reduce emissions in ways not captured in the modeling.

The carbon charge is another way of accomplishing decarbonization with more dollars put toward a market-oriented approach, and less money relying on targeted programs, Newell said.

"In both cases there's decarbonization, so it's not a surprise that there's not some major change in carbon with the introduction of this policy," Newell said. "Directionally it's going to be an improvement because it finances some low-cost forms of carbon abatement, and there are probably some long-term investment effects."

All studies find higher statewide locational-based marginal prices resulting from a carbon charge, with increases most significant downstate. The Brattle analysis finds LBMPs would rise by less than the Daymark and RFF studies.

Differences in LBMP changes can be at least partly explained by differences in each study's modeling of the market heat rate, and also in part by assumptions regarding the net social cost of carbon in each study, the ISO's summary said.

The studies assume similar carbon charges through 2025, but the Daymark study finds LBMP impacts would increase from 2025 to 2035. In contrast, Brattle finds lower carbon charges in 2030 than 2025 because of assumed increases in the Regional Greenhous Gas Initiative price, resulting in carbon charges of $45.40/ton in 2030, compared with $57/ton in 2030 assumed by Daymark.

Brattle and RFF both find collected carbon revenues on the order of $1.5 billion per year; Daymark finds declining carbon revenues, falling from $1.4 billion in 2021 to $1 billion in 2035.

Stakeholder Requests

DeSocio presented an *update* on NYISO's progress in meeting stakeholder requests for further analysis on certain points.

Analysis is under way on augmenting the Brattle analysis with 2022 results and considering the effects of carbon pricing on repowering and retention, and should be ready for discussion at the Nov. 26 task force meeting, he said.

The ISO also said it does not recommend following a stakeholder suggestion to lower the 2030 RGGI price estimate because such a move is not supported by analysis based on results provided to date, DeSocio said. As RGGI is adjusted downward both with and without carbon pricing, the other parts of the analysis approximately scale. Because the overall impact is near zero, the scaled impact is near zero.

To consider the consequences of no carbon pricing, including estimates of the costs of various buyer-side mitigation scenarios, and the consequences of NYISO's AC transmission project in western New York, the ISO is still considering how it might structure such analyses and will update the IPPTF at its next meeting, he said.

Regarding the effects of a carbon charge on existing renewable energy credit contracts and future REC contracts, DeSocio said, "In our analysis to date, we are not suggesting that REC contracts go away. Certainly the price of a REC contract may go down because the

Continued on page 38

PJM Market Implementation Committee Briefs

GreenHat Default Update

VALLEY FORGE, Pa. — PJM's Brian Chmielewski told attendees at last week's Market Implementation Committee meeting that the Board of Managers' investigation of the GreenHat Energy financial transmission rights default will run through the new year, with a report and recommendations to follow.

There will updates on a roughly weekly basis, CFO Suzanne Daugherty said, suggesting Thursday as the best day for stakeholders to look for them.

The default is expected to become the largest ever in PJM's FTR market and has spurred RTO policy changes to limit the risks that allowed it to occur. The RTO recently filed a lawsuit in Texas in an attempt to recoup some payments the defaulting company promised but never delivered. (See *GreenHat: (Some of) the Rest of the Story*.)

Stakeholders at the November meeting of the Market Implementation Committee | © *RTO Insider*

Day-ahead Market Timeline Manual Changes

Stakeholders approved by unanimous acclamation *changes* to the day-ahead deadlines described in Manual 11, made possible by improved computing ability. PJM's Keyur Patel explained that market participants will have until 11 a.m. to submit day-ahead bids and offers, and the clearing window will be reduced to 2.5 hours. The deadline for posting day-ahead results will remain at 1:30 p.m. or as soon as practicable thereafter.

While the overall proposal has already been approved by PJM's Markets and Reliability Committee, the manual changes have not yet been addressed. (See "Day-ahead Market Timeline," *PJM MRC/MC Briefs: Oct. 25, 2018*.)

PJM's Tim Horger said implementation will likely occur in mid-December to make sure all market participants are aware of the changes. Staff confirmed that they planned to file the changes at FERC on Nov. 8.

Must-offer Exception Changes

Stakeholders chose PJM's proposal over a proposal from the Independent Market Monitor for changing the rules describing how capacity resources secure exceptions to their requirement to offer into capacity auctions. (See "Must-offer Exception," *PJM Market Implementation Committee Briefs: Oct. 10, 2018*.)

The PJM proposal received 0.79 in favor in a vote that had a 0.5 threshold, while the Monitor's package received 0.22 in favor. PJM's proposal was also preferred 0.78 over the status quo.

PJM's Susan McGill explained the RTO's *rules* for how capacity interconnection rights (CIRs) can be transferred and the impact on projects in the interconnection queue. PJM's Pat Bruno reviewed the RTO's *proposal*, which allows a resource that is becoming an energy-only resource to request that it retain its capacity resource status as late as 135 days prior to an impending status change to becoming an energy-only resource.

Monitoring Analytics' Alexandra Salaneck. | © *RTO Insider*

Monitoring Analytics' Alexandra Salaneck summarized the Monitor's alternative *proposal*, which would allow resources to get an exception from just one Base Residual Auction, require a request to change capacity resource status after one must-offer exemption — compared to after three in the PJM proposal — and wouldn't allow the 135-day request deadline, Salaneck explained.

"What we're trying to prevent is flip-flopping in and out of [the Reliability Pricing Model]," she said.

Gary Greiner of Public Service Enterprise Group questioned the need for removing that provision.

"I understand the process to be quite rigorous when someone asks for a must-offer exception," Greiner said. "We're in a dynamic business environment. There are a lot of reasons" why the provision might be necessary.

The Monitor's idea struck a chord with Dave Mabry, who represents the PJM Industrial Customer Coalition. He said the "jumping in and out" of BRAs might cause approved transmission projects to become unnecessary.

"I think we're leaning toward the IMM proposal," he said.

FTR Forfeiture Proposal Endorsed

Stakeholders endorsed a proposal developed by Exelon, NextEra Energy and VECO Power Trading over an *alternative* proposed by PJM to revise the RTO's rule on when FTR profits should be forfeited. (See "FTR Forfeiture," *PJM Market Implementation Committee Briefs: Oct. 10, 2018*.)

The joint proposal received 0.85 in favor in a vote that had a 0.5 threshold and 0.74 in favor compared to the status quo. PJM's proposal originally received 146 votes in favor, or 0.53, and would have exceeded the 0.5 threshold, but staff announced after the vote had been recorded that a participant informed staff in a timely fashion that it had submitted its 14 votes incorrectly. They were changed to oppositional votes, leaving the proposal with 132 votes in favor, or 0.48, and just below the threshold.

Monitoring Analytics' Seth Hayik presented *concerns* the Monitor has with changing the

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Monitoring Analytics' Seth Hayik | © *RTO Insider*

rule and reiterated its preference for the existing penny test, which focuses on the actual impact of virtual trades on FTR profits rather than the traders' intentions.

"We can't prove intent; we can't measure intent," Hayik said. The existing rule is "meant to deter [manipulative behavior] and to catch it," he said.

The joint proposal's impact test would have a threshold of FTR flows greater than or equal to 10% across a constraint.

Gabel Associates' Mike Borgatti, who represents NextEra, agreed that such behavior needs to be eliminated, but that the current rule is too strict for market participants to risk using virtual trading for fear of triggering forfeitures. He said PJM and the Monitor should be able to monitor and take actions against bad behavior, and that being unable to determine intent is "not a sufficient basis to justify a rule" that impedes use of the products.

Stakeholders and the Monitor also battled over the implications of a graph that showed reduced forfeitures since the rule has been in place.

"The only thing we can conclude is that hopefully the feedback is working," Hayik said.

"That graph is just showing that we have stopped virtual trading," Exelon's Sharon Midgley said.

Greiner concurred that PSEG's use of virtual products has also "dropped precipitously."

"We have virtually stopped using this as a hedging tool that we used pretty consistently prior to recent changes," he said.

PJM's Chmielewski said it's unclear yet whether the RTO will pursue rebilling if the proposed changes are implemented.

Gas Pipeline Contingencies

Stakeholders endorsed a Calpine *proposal* over several alternatives on compensating generators who are switched from their preferred gas pipeline because of pipeline contingencies identified by PJM.

Calpine's proposal received 0.75 in favor on a vote with a 0.5 threshold and 0.99 in favor over the status quo. PJM's alternative received 0.42. Direct Energy's *proposal* received 0.42, and a proposal developed at the meeting to merge elements of the Calpine and Direct Energy proposals received 0.4 in favor.

The Calpine proposal would provide a broader scope of factors and time for which a unit can recover costs during and after a PJM fuel-switch directive and was amended during the meeting into what was determined to be a formula-rate-type approach that didn't require review by PJM or its Monitor. Direct Energy's proposal would have allowed generators to receive "a just and reasonable rate" that would be treated as balancing operating reserves, and the recovery amount being sought would have been filed at FERC.

Joel Romero Luna of Monitoring Analytics stated that the costs do not lend themselves to the formulaic approach devised in Calpine's amended proposal and require review to distinguish between routine gas procurement costs and costs incurred as a result of the PJM directive, and that the proposal is not a formula rate as a result.

Direct Energy's Marji Philips said she was frustrated that PJM had decided to direct generators on what fuel sources they must use, but because the policy exists, there "should be some compensation."

"I don't believe PJM should be directing an entity to switch fuels," Philips said.

She argued that the new policy would create more payments for issues that are supposed to be paid for by PJM's Capacity Performance rules. ■

— Rory D. Sweeney

PJM Operating Committee Briefs

Winter Weekly Reserve Target Recommendations

VALLEY FORGE, Pa. — Stakeholders at last week's Operating Committee meeting endorsed PJM's recommended winter weekly reserve *targets*, which consist of monthly values based on weekly peak load and will be used to schedule outages over the winter.

The analysis calculated maximum available reserves of 22% for December (compared to 23% last December), 28% for January (27%) and 24% for February (25%). The values are incorporated into PJM's annual Reserve Requirement Study, which also calculates the installed reserve margin and the forecast pool requirement.

PJM's Patricio Rocha Garrido noted that the majority of the winter reliability risk is in January, which is reflected in the higher target value in that month.

Day-ahead Scheduling Reserve Recommendation

Stakeholders also endorsed by acclamation PJM's *calculation* for the 2019 day-ahead scheduling reserve (DASR) requirement of 5.29%. It will be incorporated into Manual 13 and implemented on Jan. 1.

The 2019 DASR requirement is a 0.01-point increase from the 2018 requirement of 5.28%.

The DASR requirement is composed of the load forecast error (LFE) and forced outage rate (FOR), which are determined on a seasonal basis first and then annualized to express average LFE and FOR rates for the year. The LFE and FOR components for 2019 are 2.18% and 3.11% respectively.

PJM's Patricio Rocha Garrido | © *RTO Insider*

Generator Voltage Schedule

The committee endorsed revisions to both *Manual 3* and *Manual 14D*, including an update to the generator voltage schedule with new processes that require TOs to verify and submit voltage schedules via eDART, generation owners to review the schedules and the eDART contact to acknowledge the schedule. This will all need to be done annually.

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PJM's Rebecca Stadelmeyer | © RTO Insider

Resource Tracker

PJM's Rebecca Stadelmeyer presented the *results* of a stakeholder survey and a first read for revisions to Manual 14D that would create a new Section 5.3.7 outlining the timeline for confirming generator data in Resource Tracker each year. The survey found that the "overwhelming desire" was for a four-week window from Oct. 1 to Nov. 1, Stadelmeyer said.

Resource Tracker was created in 2013 to provide a single mechanism for resource owners to submit generator information, namely information regarding ownership, ownership changes, the bidding company and dispatching company.

Additionally, PJM is planning to update Resource Tracker by the first quarter next year with improved formatting, additional data and updates to the user guide. Updates on these initiatives will be provided to the Tech Change Forum and the System Restoration Coordinators Subcommittee.

Uneventful Month Operationally

There was one spinning event and one high system voltage action in October, fairly routine *operations* for the month, according to PJM's operations report.

"The month was uneventful," PJM's Mike Zhang said.

The average RTO LFE in October was 1.93%, which was within the 3% goal, and other metrics were "pretty on par" with the same month a year ago.

GT Power Group's Dave Pratzon noted that the quarterly average peak LFE for the ComEd zone has followed a pattern during the past three years of meeting or exceeding PJM's 3% target goal in the third quarter. RTO staff could not explain the pattern, but took an action item to analyze it and report back at a subsequent meeting.

Order 841 Compliance

PJM's Andrew Levitt | © RTO Insider

PJM's Andrew Levitt provided a status report on the RTO's proposal to comply with FERC Order 841, which is due by Dec. 3 and will define electric storage resources (ESRs) and alter some market rules to accommodate ESR participation.

Levitt explained PJM's *understanding* of FERC's descriptions of different types of setups and charging energy. The order defines an ESR as "a resource capable of receiving electric energy from the grid and storing it for later injection of electric energy back to the grid." An ESR can be connected at the transmission level, distribution level or behind the meter.

The filing will also distinguish between charging energy purchased by ESRs that is intended for resale as wholesale or retail. Currently, all charging for any ESR capable of serving end-use load is purchased at retail. Energy for retail resale would need to be purchased through a load-serving entity (LSE) and would not be PJM-jurisdictional, while energy intended for wholesale resale could be purchased from and sold back to PJM and would be under FERC's jurisdiction.

Implementation will occur in 2019 and include methods for resource categorization and coordination with utilities.

Primary Frequency Response Moving Forward

PJM's Glen Boyle explained that, in light of FERC's *clarification* on Order 842 issued on Aug. 24, the Primary Frequency Response Senior Task Force has moved forward. (See *PJM Gens Pitch Order 842 Compliance Plans*.)

"We've been on kind of a mini-hiatus while we waited for some FERC clarification. We have received that," Boyle said.

Final *proposals* are due on Nov. 21, with final review at the task force's next meeting on Nov. 27. A subsequent poll on the options will be open until Dec. 3, with staff targeting the task force's Dec. 5 meeting to review results.

Preliminary data at the task force's last meeting showed about 50% of resources not meeting performance criteria, though some did provide very good response. Boyle said the cause of the poor performance is still unknown, but that staff are working with owners to figure out how to fix it.

Dominion Gone Until May

PJM's Lagy Matthew said there is only one significant extended transmission *outage* expected this winter. The Dooms-Cunningham 500-kV line in Dominion's zone will remain on outage for all but three days until May 3. It is related to an end-of-life rebuild expected to be complete in June 2019.

The outage may cause low voltages and minor thermal overloads in the area but no reduction to generation capacity because of stability issues.

Dispatch Signal Survey

PJM is planning to distribute a *survey* to dispatchable resources on Nov. 26 to determine units' ability to follow electronic dispatch signals, Zhang said. Deviations from the signal can cause financial penalties and dispatch issues, he said. PJM hopes to determine whether units can follow dispatch verbally or electronically and understand other signal-following limitations.

The goals are to improve the security-constrained economic dispatch (SCED) solution with more accurate expectations, enhance synchronized reserve allocation and deployment, and potentially overhaul tools to better reflect generation fleet characteristics.

PJM is gathering the responses because it doesn't have a centralized mechanism for updating existing information.

"Understanding that there are some changes coming, it's definitely good to get ahead of the situation," Zhang said. ■

— Rory D. Sweeney

PJM News

PJM Stakeholders Hold Their Lines in Capacity Battle

Continued from page 1

all of their load through other means, such as bilateral contracts.

"Despite the hundreds of pages of initial comments, barely a handful provided the commission with detailed proposals supported by pro forma tariff changes," PJM said. "Of those that did, only PJM's proposal meets both key objectives, i.e., preserving competitive markets while accommodating state policies." (See *Little Common Ground in PJM Capacity Revamp Filings*.)

Critics generally fell into two camps. One argued for a rejection of any carve-out, calling instead for a "clean," MOPR-only construct that extended to all resources. The other generally supported the concept of the FRR Alternative but argued that because of the repricing mechanism, Extended RCO would lead to inflated capacity prices.

Exelon *said* the FRR Alternative "strikes a just and reasonable balance among equally important policy goals. It makes room for states to pursue energy policy initiatives favoring particular types of generation resources, by allowing states to provide for the procurement of their capacity outside the PJM auction market — but credits load for that capacity, thus avoiding unnecessary costs for customers."

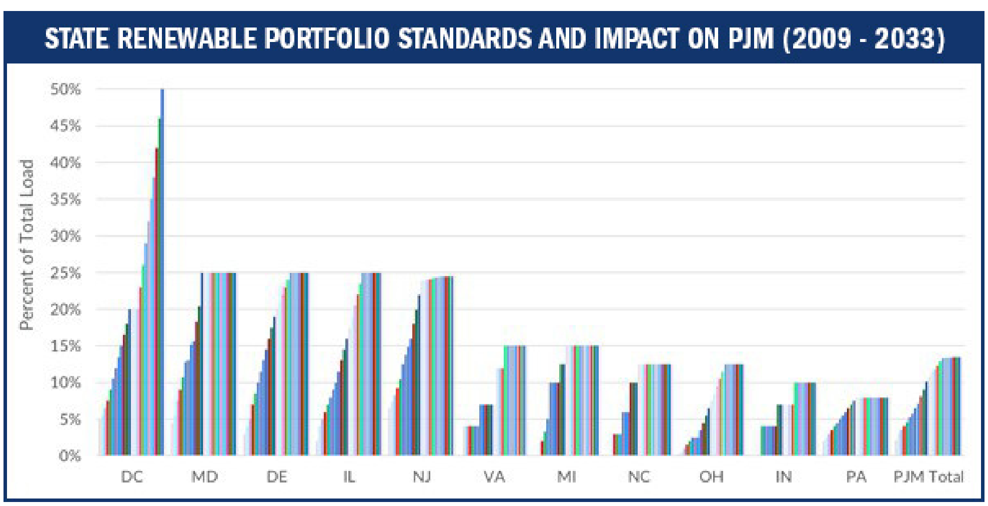
Exelon said "the Extended RCO results in … massively inflated customer costs because of a fatal design flaw: PJM proposes to set the stage 2 price — which cleared resources would be paid — by removing RCO resources from the supply curve entirely. In other words, rather than resetting the bids of RCO resources to 'competitive' levels at stage 2, as the MOPR purports to do, the Extended RCO simply acts as though the RCO resources do not exist. That makes no sense."

The Maryland Public Service Commission, which also argued that Extended RCO would lead to inflated clearing prices, proposed a separate auction for state-subsidized resources.

"Resources that do not clear the auction but serve to set a higher clearing price would be paid what PJM terms as 'infra-marginal rent payments,'" the PSC said. "These potentially perpetual payments, in the form of uplift, are characterized as rents those resources would have 'earned' had they cleared the auction at the elevated artificial clearing price."

FirstEnergy Solutions *called* Extended RCO "a reasonable means of accomplishing the objectives articulated by the commission." But it also criticized PJM's proposal to continue applying the MOPR to previously subsidized resources seeking to re-enter the capacity market. "The commission should consider the reality of this proposal: Most resources that elect the [resource-specific FRR] for some period of time would effectively be precluded from ever re-entering" the capacity market, FES said.

Exelon also joined in a *reply brief* in support of the FRR Alternative filed by a diverse group of stakeholders: the Nuclear Energy Institute, the Illinois Citizens Utility Board, the Natural Resources Defense Council, Talen Energy, the Sierra Club, PSEG Energy Resources & Trade and the D.C. Office of the People's Counsel.



State renewable portfolio standards and impact on PJM (2009-2033) | *PJM*

Noting that they frequently disagree on other issues, the groups said, "We are unified, however, in our belief that the commission and PJM must reasonably accommodate states taking actions to achieve their clean energy policies. …

"The only parties arguing against the concept of balancing an expanded MOPR with adoption of a resource-specific FRR mechanism are the companies that have brought — and lost — legal challenges to the states' authority to implement clean energy programs."

Clean MOPR

The Electric Power Supply Association, the *PJM Power Providers Group* and NRG Power Marketing continued to insist on a clean MOPR, in which all resources, with limited exceptions, are subject to the rule. They also criticized FERC's FRR Alternative proposal.

"As acknowledged by PJM and others advocating such an approach, the FRR Alternative will negate the remedial benefits of an expanded MOPR and thus perpetuate the price suppression problem that the commission properly found to be unjust and unreasonable in the June 29 order," EPSA *said*. "Adopting such a replacement rate would be irrational and unacceptable as a policy matter and unlawful as a statutory and constitutional matter."

"Let's call FRR-A what it is: a proposal to reregulate a substantial portion of the competitive wholesale market," NRG *said*. "Adopting FRR-A would signal a retreat from the competitive markets that the commission has espoused since its landmark Order No. 888. Like all massive government interventions in the market, FRR-A would stifle the efficient allocation of private capital, shift costs and risks to consumers, and replace private, at-risk investment with ratepayer-backed investment."

EPSA criticized Exelon, whose nuclear plants in Illinois are the beneficiaries of zero-emission credits, for calling for a blanket waiver of FERC's affiliate transaction rules in espousing the right of states to choose how they procure energy. In its *initial brief*, Exelon had said, "At the very least, the commission should treat state involvement in the procurement of capacity by a load-serving entity from an affiliated generation company as strong evidence pointing against any affiliate abuse."

"Leaving aside the fact that it is a bit rich for Exelon to imply that the Illinois legislature spontaneously decided to award Exelon bil-

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lions of dollars in subsidies, there is simply no basis for the contention that the commission's concerns about rates negotiated between affiliates are a function of the level of 'state involvement,'" EPSA replied. "The commission has a statutory duty to ensure that rates for wholesale sales are just and reasonable and … that duty may not be delegated to the states."

'Moral Obligation'

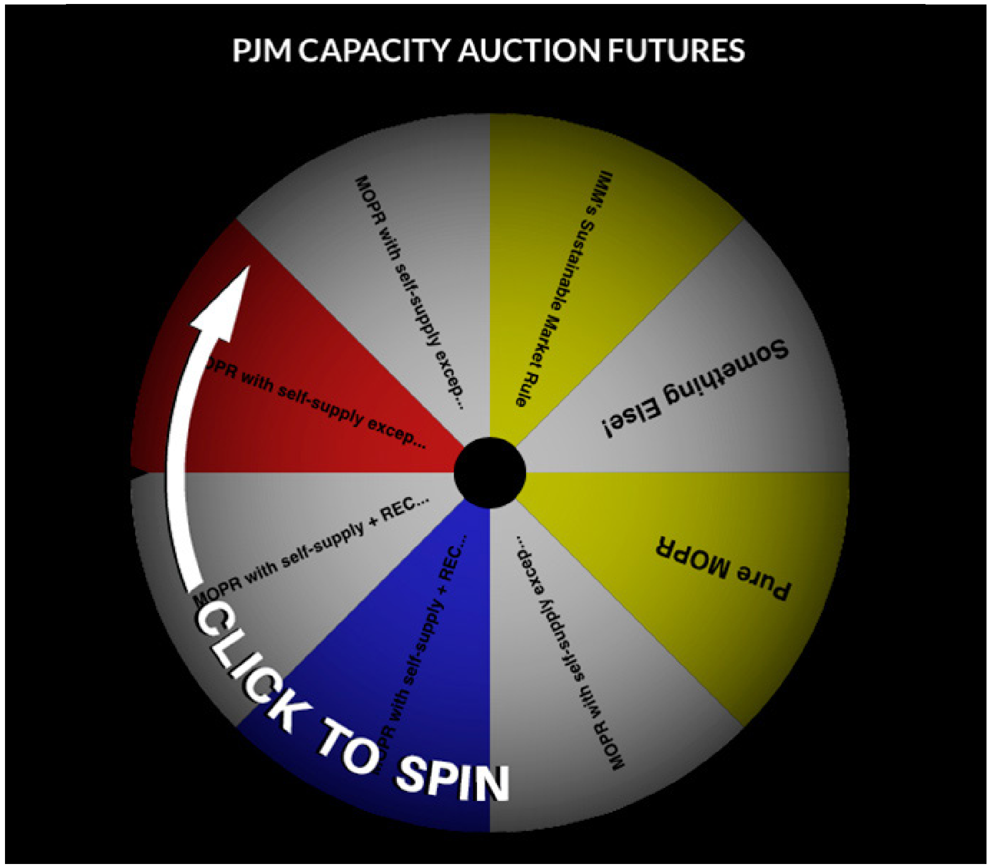
Calpine, which had led a challenge to PJM's MOPR in 2016, argued that Extended RCO was FERC's best option, and that it had a duty to it and other generating companies to implement the proposal.

"The commission cannot turn its back on existing generators," Calpine said. "Not only does the commission have a statutory obligation to ensure that capacity market prices are just and reasonable, the commission also has a moral obligation to implement rules that allow competitive generators the opportunity to recover their investments in the market. ...

"Competitive generators have flocked to the PJM market, investing tens of billions of dollars of private money with the understanding that they will have a fair opportunity to recover their investment. There was no guarantee that their investment would be recovered, but there was a regulatory compact that PJM and the commission would protect and defend competitive markets, so investors have the opportunity to compete on a level playing field. ... If the commission fails to take the necessary action in this proceeding to shore up the structure of PJM's capacity market, then the commission must be prepared to develop mechanisms to provide stranded cost recovery for these investors who were otherwise tricked into investing capital in a market with no meaningful opportunity to recover that capital, and a fair return with it."

Calpine's claim was rebutted by the Harvard Electricity Law Initiative in the opening lines of its comments. "As the commission considers how to avoid raising wholesale capacity rates, it should discount generators' warnings that they may demand 'stranded cost' recovery if the commission does not approve their preferred approach to the PJM Tariff," it said.

"Generators' actual expectations about market rules and prices are premised on a mistaken view of the commission's ratemaking authority and have no equitable force," Harvard said. "Generators assert that the commission must approve a 'clean' market, untouched by direct and certain indirect government interventions, to ensure that the PJM capacity auction is



Ari Peskoe of the Harvard Electricity Law Initiative created this wheel to illustrate the range of opinions on PJM's capacity market. "How will FERC decide? Lots of options. Here's a handy tool FERC can use to pick the design of the next PJM capacity auction," he tweeted.

'competitive.'" The judiciary has held that the "just and reasonable" standard in the Federal Power Act does not necessarily mean "structurally competitive," Harvard noted.

Consumer Responses

A group of industrial customers *said* the Extended RCO should be rejected because it is essentially identical to the capacity repricing proposal the commission rejected in June as an unjust cost shift. "In addition to discriminating against customers that are captive to states that are subsidizing resources, the Extended RCO is likely to produce pricing outcomes that cannot be defended as being just and reasonable."

State consumer advocates for Illinois, West Virginia, Delaware, Maryland and D.C. *said* there is no evidence that state resources are suppressing capacity prices, noting that "PJM has two-thirds more capacity than necessary to meet its reliability requirement, the largest excess of any RTO in North America."

They also said PJM's proposed resource-specific criteria for the carve-out are too restrictive. "States should be allowed to count carved-out resources toward resource adequacy requirements according to actual grid needs, which are portfolio-wide and seasonal," they said.

PJM's Independent Market Monitor *lobbied* for its proposed "Sustainable Market Rule," which would allow all nonmarket resources to participate in the energy market but use the capacity market as a "balancing mechanism" to provide incentives for entry and exit.

"If resources offer at competitive levels and clear the capacity market, the resources are paid the market clearing price. If resources do not clear the capacity market, the resources are not paid for capacity," the Monitor said. "Any nonmarket revenues required to meet the public policy goals associated with these resources would be provided outside the market in whatever manner the supporters of those resources choose." ■

Rich Heidorn Jr. contributed to this report.

PJM News

PJM PC/TEAC Briefs

Renewables' Capacity Analysis Extended

VALLEY FORGE, Pa. — PJM is planning to hold a special session of the Planning Committee to further discuss the RTO's effective load carrying capability (ELCC) analysis for wind and solar resources, staff told attendees at last week's Planning Committee meeting.

Stakeholders at the November meeting of the Planning Committee | © *RTO Insider*

The *analysis* was originally developed to justify PJM's plan to calculate wind resources' capacity credits using the median — instead of mean — performance of wind units over peak summer hours. However, substantial stakeholder examination spurred PJM to schedule a separate meeting on the issue. It is tentatively scheduled for 9 to 11:30 a.m. on Nov. 26.

"These are great options to have on the table, but until we know what we're going to do with them ... these probably should just remain as options," said Carl Johnson, who represents the PJM Public Power Coalition.

He noted the volatility of the analyses.

"I'm still trying to figure out what they mean," said John Brodbeck, who represents EDP Renewables. "I don't know what we're going to do with this."

PJM's Patricio Rocha Garrido explained that the analysis is a measure of the additional load that the system can supply with the analyzed generators without a change in reliability. The results are driven by the output of the generators during hours with potentially high reliability risk.

PJM's Tom Falin noted that the ELCC addresses saturation, so as wind penetration increases, the ELCC value incrementally goes down in percentage.

DER Ride-through

Stakeholders approved a *problem statement and issue charge* to implement a new Institute of Electrical and Electronics Engineers standard on how distributed energy resources should react to system voltage fluctuations.

PJM's Emanuel Bernabeu explained that the *scope* of the investigation won't include voltage regulation or communications, won't go beyond discussions of the distribution system and won't be retroactive.

Dynamic Models

PJM wants to eliminate use of dynamic models that NERC finds unacceptable and reduce the use of user-defined models (UDM) by promoting generic *models*, PJM's Tao Yang and Kyle Clifford said.

PJM's Tao Yang and Kyle Clifford | © *RTO Insider*

The RTO also wants to improve the quality and usability of remaining UDMs, so generators will have to provide evidence to support use of their preferred UDMs if the applicable generic model's accuracy and performance is not satisfactory to represent the dynamics of the device. Generic models have advantages of reducing conflicts and debugging time but also might not capture state-of-the-art technology.

For existing generators, the unacceptable UDMs will be phased out via improved requirements to three NERC specifications, which will be presented at the PC in the spring.

The change will take effect for planned units in the AF1 interconnection queue, where impact studies must use generic models with minimal exceptions.

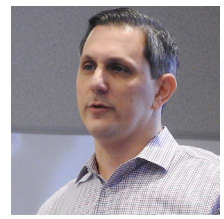
The plan concerned some stakeholders. It's "already a traumatic event to get turbine models" approved, Brodbeck said.

"We're not opposed to all user-defined turbine models," PJM's Susan McGill said, but staff want to see them ahead of time.

The changes are not a manual change but instead mean better enforcement of using the dynamic model agreement in Manual 14G, she said.

Generation Deactivation

PJM's Jason Connell announced during the Transmission Expansion Advisory Committee meeting that FirstEnergy Solutions has asked to accelerate deactivation of the three units of its 2,490-MW Bruce Mansfield coal-fired plant from June 2021 to February 2019.



PJM's Jason Connell | © *RTO Insider*

Additionally, two other facilities in the ATSI zone have requested deactivation on June 1, 2021: the 24-MW Eastlake 6 and 2,160 MW at Sammis' Units 1 through 6, as well as its 13-MW diesel unit.

The 9.4-MW Kimberly Clark plant in the PECO zone has requested deactivation on Aug. 1, 2019.

The deactivations precipitate several baseline transmission *projects* to ensure reliability, but the accelerated deactivation requires accelerating only one transmission project. One project is in both Duquesne Light and Allegheny Power Systems, five are in Duquesne alone, three are in ATSI, one crosses ATSI and APS, 10 are in APS, four are in Penelec and one is in AEP.

Dominion Solutions

Dominion Energy presented planned *solutions* for another eight of the supplemental projects it has brought to the TEAC as part of the transmission owners' new FERC-ordered process for developing supplemental projects. Dominion has presented 19 needs assessments since the process was implemented in September.

The new solutions are projected to cost roughly $13.1 million.

The company presented two solutions at October's meeting. (See "Dominion Supplementals," *PJM PC/TEAC Briefs: Oct. 11, 2018*.) ■

— Rory D. Sweeney

PJM News

PJM Monitor Reiterates Concerns in Quarterly SOM Report

By Rory D. Sweeney

PJM's Independent Market Monitor remains unconvinced that performance metrics during localized load sheds should be used to calculate capacity market default offer caps.

Among the new recommendations in the Monitor's quarterly State of the Market ***report*** released last week was that PJM's capacity market default offer cap not include balancing ratios calculated for localized performance assessment intervals (PAIs) but only use PAIs triggered on at least a sub-zonal or zonal level.

The recommendation could signal the re-emergence of a fight to revise how PJM calculates balancing ratios, which went on throughout the year. At the October Members Committee meeting, stakeholders declined by the slimmest of margins endorsement of proposed Tariff revisions that would change how the RTO estimates the expected future balancing ratio used in the default market seller offer cap. That leaves PJM using its current method, which requires PAIs to perform the calculation, but the RTO hadn't experienced any such events until this year. Though both events were very localized, PJM staff assured stakeholders they could be used for calculating the balancing ratio.

The Monitor wasn't so sure and warned at the time that it would revisit the issue. (See "Market Seller Offer Cap Balancing Ratio," *PJM MRC/MC Briefs: Oct. 25, 2018*.)

The other new recommendations included:

- PJM should better define its rules for unit-specific parameter adjustments "to ensure market sellers know the requirements."
- Generators should have to request use of inflexible sell-offer segments, which should only be permitted for defined physical reasons.
- The $7.50 margin in the definition of the cost of Tier 2 synchronized reserves should be removed because it's "a markup and not a cost."
- In the calculation of the penalty for a Tier 2 resource failing to meet its scheduled obligation during a spinning event, the actual number of days since the last event greater than 10 minutes should be used instead of the average number of days between events.
- Aggregation should not be permitted to offset unit-specific penalties for failing to respond to a synchronized reserve event.
- Offers in the day-ahead scheduling reserve (DASR) market should be based on opportunity cost only to eliminate market power, and payments for reactive capability should be based on the 0.9 power factor that PJM has determined is necessary.
- PJM should re-evaluate the rules governing cost-benefit analysis and cost-allocation for economic projects in its planning for generation and transmission.

PJM Independent Market Monitor Joe Bowring | © *RTO Insider*

The Monitor also reiterated its concern with PJM's capacity market, giving all of the RTO's other markets a passing grade — with caveats — for the nine months from January through September.

Resilient Grid, Resilient Market

The Monitor noted that the structure of the capacity market is not competitive because, for almost all auctions held since 2007, the results have failed the Monitor's three-pivotal-supplier (TPS) test both within all load delivery areas and PJM-wide. The TPS test measures the degree to which the supply from three suppliers is required in order to meet the demand in a specified market.

"The outcome of the 2021/2022 [Reliability Pricing Model] Base Residual Auction was not competitive as a result of participant behavior which was not competitive, specifically offers which exceeded the competitive level," the report said, noting that several aspects of the RPM "still threaten competitive outcomes."

The Monitor listed replacement capacity, unit offer parameters, allowing imports to substitute for internal resources, the default offer cap and allowing demand response to substitute for capacity as ways to improve competitiveness across PJM markets.

The Monitor said energy market results were competitive, though the RTO-wide market structure was not competitive every day, and the local market structure wasn't competitive because of "highly concentrated ownership of supply in local markets created by transmission constraints and local reliability issues."

The synchronized reserve, DASR and regulation market results were competitive, though the Monitor criticized all three markets for also having high ownership concentrations. "A significant portion" of day-ahead scheduling offers also "reflected economic withholding," the Monitor concluded. The regulation market design is flawed, the Monitor said, because it continues to use an incorrect definition of opportunity cost.

The financial transmission rights auction market results were competitive, though its design is also flawed, the Monitor said, because auction revenue rights are not defined clearly enough and therefore "holders cannot determine the price at which they are willing to sell rights to congestion revenue."

The Monitor also used the report to advocate for its proposed revision of the capacity market. The issue is currently in a paper hearing before FERC. (See ***PJM Stakeholders Hold Their Lines in Capacity Battle***.)

Continued on page 38

SPP

Wind Groups Challenge SPP Exit Fee

By Tom Kleckner

The American Wind Energy Association and The Wind Coalition have asked FERC to eliminate SPP's "exorbitant" exit fee, saying it is a barrier to membership for independent power producers and others that do not own transmission or serve load (*EL19-11*).

The two wind energy advocacy groups filed a Section 206 complaint on Nov. 2 asking FERC to find the "Financial Obligations of Withdrawing Members" section of SPP's bylaws and membership agreement unjust and unreasonable.

AWEA and The Wind Coalition said that, based on conversations with SPP staff, the exit fee charged to any non-TO or non-load-serving entity seeking to terminate its membership "could range from $700,000 to $1 million." They noted that the exact amount is not known prior to termination, making it impossible for potential members to gauge their exit fee when considering membership in the RTO.

SPP said it is reviewing the complaint and will file a response at FERC, but it also told *RTO Insider* that the exit fee's calculation is based on factors that include debt and financial obligations at the time of exit. A spokesman said the obligations "trend downward over time" and that the RTO frequently provides withdrawal estimates "to the dollar" for members.

The wind groups said the exit fee is "almost entirely intended to cover SPP's existing and future obligations, which are unrelated to the exiting member." They alleged exiting members are subsidizing future members' business in the RTO, paying for costs for which they will receive no further benefit once they withdraw and for those they did not cause.

The Wind Coalition's Steve Gaw shares his opinion at an SPP stakeholder meeting, as SPP's David Kelley listens. | © *RTO Insider*

Wind farms and other independent power producers oppose SPP's hefty exit fee.

The groups also said SPP's exit fee is unique among all other RTOs and ISOs, saying "no other organized market imposes general RTO/ISO costs on non-TO/non-LSE members through membership fees." They said other grid operators only consider the withdrawing member's open positions in the markets.

"Other markets merely charge exiting members a nominal amount related to their obligations," AWEA spokesman Evan Vaughan said. By discouraging participation from non-TOs and non-LSEs, Vaughan said, "consumer advocates, independent power producers, power marketers, energy storage, demand response and environmental groups are all, in effect, excluded from the decision-making process in SPP."

"Membership in SPP is a meaningful designation," the wind groups said in their complaint, referring to membership votes for SPP's Board of Directors and initiatives, serving on stakeholder groups, and filing revision requests to change the Tariff.

"Simply put, without the ability to vote on SPP or provide leadership on SPP committees, non-members typically are unable to influence policy in a direction that considers or reflects their interests," they argued. Noting SPP's frequent claims to being a member-driven organization, they said "membership and the rights that it entails are critical."

"We recognize the value of the diverse perspectives of our members and non-members, which is why we welcome them into our transparent stakeholder process," SPP General Counsel Paul Suskie said in a statement.

Suskie noted SPP's governance structure and the exit fee provision have been approved by FERC.

The Wind Coalition's Steve Gaw speaks up.| © *RTO Insider*

The wind groups agreed that SPP allows non-members to comment on initiatives and participate in the stakeholder processes, but they said, "Such participation is not the same as having membership rights."

The Wind Coalition's Steve Gaw, a founding member of SPP's Regional State Committee as a Missouri regulator, is a regular attendee and frequent contributor to the discussion at stakeholder meetings. Gaw has long been open about his dissatisfaction with the exit fee, which has earned him playful ribbing from some members.

"We have been asking for changes to the exit fee in the SPP stakeholder process for several years, however, no changes have moved forward," Gaw told *RTO Insider* via email. ■

SPP

Two SPP RSC Representatives Win Re-election

Kristie Fiegen | *S.D. Public Utilities Commission*

Two members of SPP's Regional State Committee, Republican utility commissioners Randy Christmann of North Dakota and Kristie Fiegen of South Dakota, won re-election to their seats last week.

Christmann won against Democratic challenger Jeannie Brandt with 61.63% of the vote. Fiegen nearly doubled Democrat Wayne Frederick's vote total, with 65.46% of the vote.

New Mexico's Patrick Lyons, who is cycling off the RSC, was less fortunate. The Republican lost his bid to return to the State Land Office against *Democratic newcomer* Stephanie Garcia Richard, 51.02% to 43.21%. Libertarian candidate Michael G. Lucero won 5.77% of the vote.

Lyons was term-limited as a Public Regulation Commissioner. He served two previous terms as the public lands commissioner, considered to be one of the most powerful elected positions in New Mexico.

Patrick Lyons attends his last RSC meeting Oct. 29, with North Dakota's Randy Christmann to his left. | © *RTO Insider*

Elsewhere, Bob Anthony was elected to a sixth and final term on the Oklahoma Corporation Commission. The Republican garnered 60.03% of the vote against Democratic challenger Ashley Nicole McCray to hold on to a seat he has held since 1989.

OCC Chair Dana Murphy, who earlier this year lost her own bid for lieutenant governor, is the commission's representative on the RSC. ■

— Tom Kleckner

MISO, SPP to Ease Interregional Project Criteria

Continued from page 24

projects. Amerkhail promised to provide SPP and MISO with proposed redlines so that a joint review is clearly stated as a first step before projects are put to regional review.

RTO staff said the regional analysis design will be a more efficient process than building a joint model, and other stakeholders pointed out that MISO and SPP have never approved an interregional transmission project.

"It's not like the world is running amuck and there's thousands of interregional projects getting proposed," LS Power's Pat Hayes said.

The revisions also prescribe that the CSP will take place annually automatically unless staff from either RTO vote to skip a year. The new rules require the CSP be developed no less than once every three years. The JOA currently stipulates that CSPs are produced only when either MISO or SPP staff raise the issue and then both agree to a plan.

"It moves the default from not doing a study to doing a study," Bell said.

SPP and MISO still have at least one JOA revision to iron out: whether to include negative adjusted production costs (APC) in the evaluation of reliability interregional projects as well as economic projects.

The JOA currently requires that negative APC not be considered in the cost allocation of interregional reliability projects. Each RTO calculates APC using its own regional models.

MISO Planning Adviser Davey Lopez said MISO believes the most equitable cost allocation would include the impacts of negative APC. SPP, however, only commits to supporting "continued stakeholder discussion on whether or not negative APC values should be considered." Bell said by including negative APC, the RTOs might find themselves in a situation where the JOA won't allow them to pursue an otherwise beneficial reliability project for both regions.

Bell asked stakeholders to submit their opinions on negative APC to SPP. Some stakeholders at the meeting said excluding negative APC from an interregional reliability project assessment results in a biased and less transparent project evaluation.

M2M Payments Again in MISO's Favor

MISO recorded its third straight month of market-to-market (M2M) payments from SPP in September, with the latter sending the former slightly more than $165,000.

The total, less than a quarter of what SPP sent MISO the month before, reduced the amount of M2M payments SPP has accumulated to $51.2 million since the two RTOs began the M2M process in March 2015.

Temporary flowgates were binding for 519 hours in September, resulting in $1.2 million in M2M payments to MISO. That was almost entirely negated by $1.1 million for permanent flowgates binding for 110 hours in SPP's favor. ■

Tom Kleckner contributed to this report.

Destructive Fire Drives Down PG&E Stock

By Hudson Sangree

Pacific Gas and Electric is already falling under suspicion for starting the Camp Fire — California's most destructive wildfire and likely its deadliest — after one of the utility's transmission lines was reported downed at the time and location of the fire's ignition.

The news sent PG&E Corp.'s stock tumbling by roughly 38% between late Thursday afternoon and Monday morning, though it recovered somewhat Monday after trading was briefly halted.

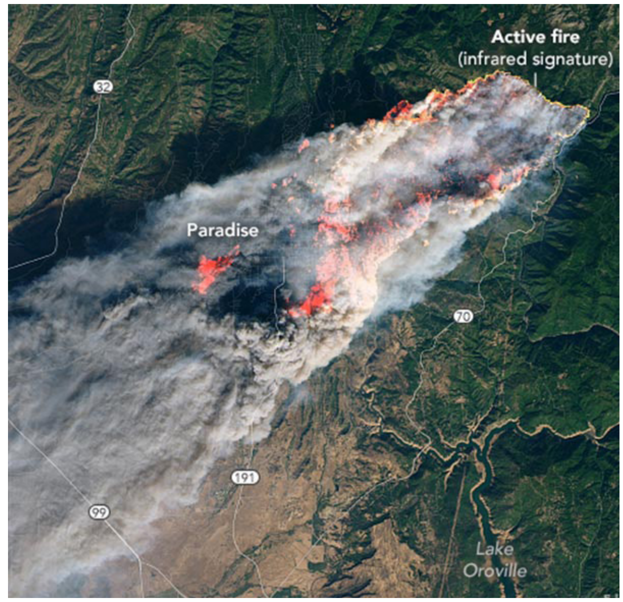
Similarly, Southern California Edison's stock fell sharply as the Woolsey Fire raged in Los Angeles and Ventura counties, killing two and destroying 370 structures so far.

On Thursday, PG&E filed a ***report*** with the California Public Utilities Commission, saying it had experienced an outage on a 115-kV line near where the Camp Fire started and shortly before it was first reported. The company later wrote in a ***news release*** that the "information provided in this report is preliminary, and PG&E will fully cooperate with any investigations. There has been no determination on the causes of the Camp Fire."

Early Thursday morning, firefighters responded to reports of a vegetation fire under transmission lines near Poe Dam, part of PG&E's Feather River Canyon Power Project in rural Butte County. The California Department of Forestry and Fire Protection (Cal Fire) has identified the area as the approximate location where the fire started.

Fanned by 35-mph winds, the fire quickly grew and destroyed most of the town of Paradise (population 27,000). As of Monday, it had killed 29 civilians, destroyed about 6,500 homes and burned 113,000 acres, ***Cal Fire reported***. More than 200 people were still reported missing Monday morning, and a greater death toll is expected as emergency crews search burned homes and vehicles.

Previously ***the deadliest fire*** in state history was the Griffith Park Fire in Los Angeles in 1933, which also killed 29 people, according to Cal Fire. The ***most damaging*** in terms of homes and other structures destroyed was the Tubbs Fire in Napa and Sonoma counties in October 2017, the cause of which is still under investigation.



NASA's Earth Observatory photographed the Camp Fire as it exploded late last week. | *NASA*

The largest wildfire in modern state history, the Mendocino Complex of fires, occurred earlier this summer, burning 459,000 acres in the rugged mountains north of San Francisco from July to September 2018.

The Camp Fire is likely to revive talk of PG&E's possible bankruptcy, which became the subject of concern following a series of devastating wildfires in 2017. Those fires could subject the company to billions of dollars in liability under California's unique system of holding utilities strictly liable for damage caused by power lines and equipment, regardless of negligence.

Earlier this year Gov. Jerry Brown proposed doing away with that system, known as inverse condemnation, arguing it threatened electric reliability and the state's efforts to completely exclude carbon emissions from its power grid by the middle of the century.

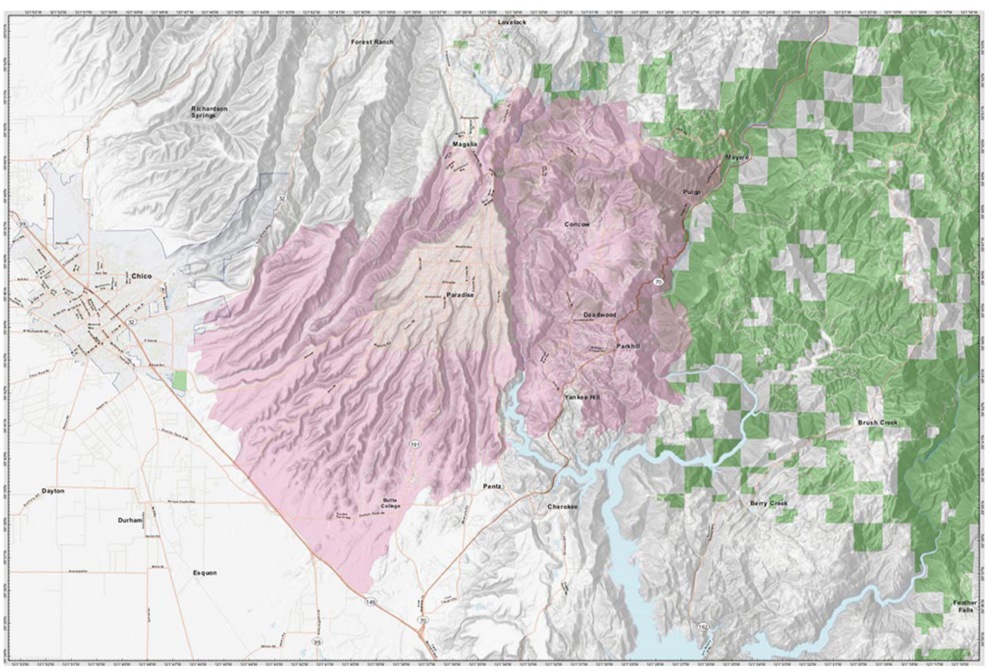
Lawmakers tasked with formulating a major wildfire bill, SB 901, ultimately left inverse condemnation intact while creating a method by which utilities could issue long-term bonds to pay for fire damage. (See ***California Wildfire Bill Goes to Governor***.) Critics called the bill a bailout for the utilities, but Brown signed the legislation in September.

PG&E executives recently said in an earnings call that the new law was insufficient, and they intend to seek an end to inverse condemnation through the courts and legislature. (See ***PG&E Outlines Fire Strategy in Earnings Call***.)

Company CEO Geisha Williams also discussed the company's new practice of proactively shutting down sections of its grid during conditions that made wildfires especially dangerous. The company warned last week that it might have to shut down power to areas, including Butte County, but then decided conditions there did not warrant it.

In its recent third-quarter earnings call, SCE said its equipment was likely a partial cause of the hugely destructive and deadly Thomas Fire last year. That fire was the largest in state history until this year's Mendocino Complex far surpassed it. (See ***Edison Takes Partial Blame for Wildfire in Earnings Call***.)

SCE's stock price fell roughly 22% between Thursday afternoon and Monday afternoon. ■



The Camp Fire decimated the town of Paradise in the Sierra Nevada foothills. | *Cal Fire*

OGE Beats Expectations with Q3 Earnings

OGE Energy beat expectations last week, *reporting* third-quarter earnings of $205 million ($1.02/share), up from a year ago, when it earned $183 million ($0.92/share).

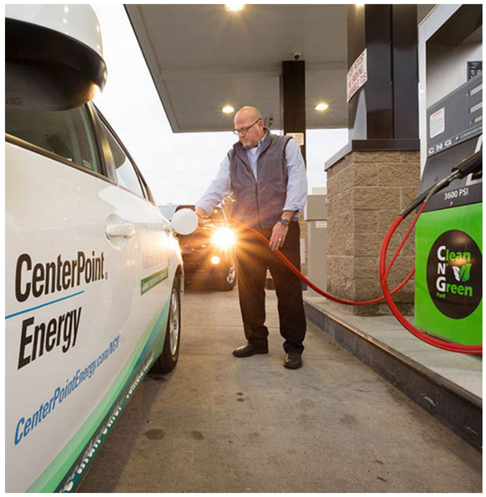
A Zacks Investment Research survey of analysts had projected earnings of 96 cents/share.

"Good companies grow, and that is clearly what we are doing," CEO Sean Trauschke said during a Nov. 8 conference call with analysts.

OGE's regulated utility, Oklahoma Gas & Electric, contributed 92 cents/share during the quarter, thanks to new rates in Oklahoma, favorable weather and increased customer demand.

The Oklahoma City company also received earnings of 14 cents/share from Enable Midstream Partners, a gas-gathering and processing joint venture with Texas utility CenterPoint Energy.

Enable *said* Nov. 7 that it processed record amounts of natural gas during the third quarter. OGE holds a 25.7% limited-partnership interest and a 50% management interest in Enable, while CenterPoint owns a 54.1% share.



CenterPoint Energy EV | *CenterPoint Energy*

OGE increased and narrowed its year-end guidance to $1.59 to $1.61/share, up from $1.43 to 1.53/share.

OGE shares finished the week at $38.08/share, up almost 16% since the beginning of the year.

CenterPoint Earnings Drop 4 Cents

CenterPoint *reported* third-quarter earnings on Nov. 7 of $153 million ($0.35/share), a drop from a year earlier, when it earned $169 million ($0.39/share).

Revenues totaled $2.2 billion, up from $2.1 billion a year ago, thanks to increased rates and a growing customer base.

CEO Scott Prochazka told analysts during a conference call that the Houston-based company in October completed the equity and fixed rate debt components of the financing for its $6 billion acquisition of Indiana utility Vectren. Prochazka said the acquisition is still expected to close in the first quarter of 2019 and has targets in place "that are in line" with an $50 million to $100 million in pretax earnings by 2020.

CenterPoint's share price lost 51 cents following the earnings announcement, finishing the week at $28.16. ■

— Tom Kleckner

Generation Lifts NRG Energy Q3 Earnings

By Michael Kuser

NRG Energy earned $306 million last quarter, up 65% from the same period a year ago on strong returns for the company's generation business.

The generating arm pulled in $595 million, compared with $272 million a year earlier, but fluctuating prices in Texas and California squeezed the company's retail business, which posted a loss of $127 million for the quarter.

CEO Mauricio Gutierrez said during a Nov. 8 earnings call that he was "pleased with the operational and financial performance of our integrated platform during a period of extreme price volatility. ... During periods of high prices, our generation business benefits while our retail business experiences some margin compression."

The company *presentation* highlighted the closing on the sale of NRG Yield and its

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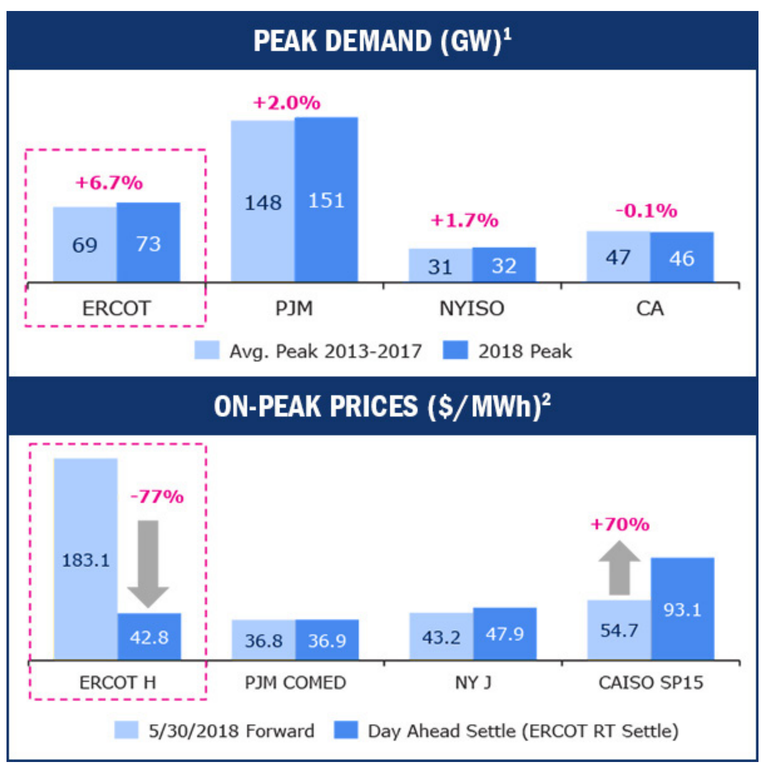


Peak load growth remains strong in ERCOT (top). ERCOT prices power came in lower than forwards due to near-perfect generator performance (bottom). | *NRG*

Analyses Show Flat Emissions Under NY Carbon Price

Continued from page 26

carbon price is being realized and therefore the delta payment that a renewable resource is getting is less, but in the analysis so far, we haven't shown that to go to zero." (See *NY Carbon Task Force Looks at REC, EAS Impacts*.)

The Daymark study does not evaluate changes in REC and zero-emission credit prices stemming from a carbon charge, but it finds the following gross profit margin (revenue minus fuel costs) average increases: upstate nuclear plants 70%; upstate solar 48%; upstate wind 46%; downstate offshore wind 47%; and downstate solar 51%, according to the ISO synthesis.

The RFF analysis finds the carbon charge would reduce REC prices from $43/MWh to $24/MWh and would reduce ZEC prices from $14/MWh to $0/MWh in 2025.

The Brattle analysis finds the carbon charge would reduce ZEC prices from $25/MWh to $12/MWh in 2025, while REC prices would fall from $22/MWh to $3/MWh in 2020, $25/MWh to $7/MWh in 2025 and $28/MWh to $12/MWh in 2030.

The task force next meets on Nov. 26. It plans to announce a proposal to incorporate carbon pricing into the state's wholesale market next month. ■

PJM Monitor Reiterates Concerns in Quarterly SOM Report

Continued from page 33

"The wholesale power grid is clearly resilient. The focus should be on ensuring that ongoing challenges to resilience are analyzed and addressed within a market framework. The real resilience question is whether the market construct itself is resilient. Can markets, and the market-based regulatory construct, coexist with efforts to increase the role of renewable resources through nonmarket revenue?" the Monitor wrote. "The solution must recognize that states have authority over generation and can choose to reregulate at any time."

However, state policies are also harming markets, the Monitor said.

"Subsidies to specific resources that are uneconomic as a result of competition are an effort to reverse market outcomes with no commitment to a regulatory model and no attempt to mitigate negative impacts on competition. The unit-specific subsidy model is inconsistent with the PJM market design and inconsistent with the market paradigm and constitutes a significant threat to both," the Monitor wrote.

The Monitor said the Sustainable Market Rule (SMR) it has proposed will "harmonize" the "three salient structural elements: state nonmarket revenues for renewable energy; a significant level of generation resources subject to cost of service regulation; and the structure and performance of the existing market-based generation fleet."

"Harmonizing means that the integrity of each paradigm is maintained and respected. Harmonizing permits nonmarket resources to have an unlimited impact on energy markets and energy prices. Harmonizing means designing a capacity market to account for these energy market impacts, clearly limiting the impact of nonmarket revenues on the capacity market and ensuring competitive outcomes in the capacity market and thus in the entire market," the Monitor wrote. "The expected impact of the SMR design on the offers and clearing of renewable resources and nuclear plants would be from zero to insignificant. The competitive offers of renewables, based on the net ACR [avoidable cost rate] of current technologies, are likely to clear in the capacity market. The competitive offers of nuclear plants, based on net ACR, are likely to clear in the capacity market." ■

Generation Lifts NRG Energy Q3 Earnings

Continued from page 37

Renewables platform as a milestone. It also announced an incremental $500 million stock repurchase in addition to the $1 billion announced earlier in the year, bringing total share repurchases to $1.5 billion.

Gutierrez said NRG expects to close on the sale of its 3,555-MW South Central portfolio of generation assets in Texas by year-end and the sale of its 500-MW Carlsbad Energy Center in California in the first quarter of next year.

Price Volatility and MOPR

Warmer-than-normal weather across the company's core markets led to higher demand last quarter, particularly in Texas, which set a new record peak load of 73 GW. Despite robust loads, actual prices were mixed across markets compared with expectations, with real-time prices in ERCOT coming in significantly lower than projected.

A combination of near perfect performance by generators during the July heat wave and milder temperatures in August resulted in prices 77% lower than expected at the beginning of the summer, Gutierrez said.

He noted that most of the current reserve margin in Texas is made up of capacity from renewable generation — non-dispatchable capacity that could potentially lead to fluctuations in the actual amount of generation available to serve load.

The California market was a different story, with prices settling well above expectations, mainly because of restricted gas deliverability, he said. The combination of once-through cooling unit retirements and the emergence of community choice aggregators have resulted in recent increases to Western capacity prices.

In the East, energy prices were pretty much in line with expectations, and the company's focus is on both capacity and energy market reforms, Gutierrez said.

"As you know, FERC has stated that the existing capacity market in PJM is unjust and unreasonable, due to the negative impact of subsidized units," Gutierrez said. "Let me reiterate that we believe a strong MOPR [minimum offer price rule] is the simplest and most effective way to reduce the harmful impact of subsidies on the capacity market."

PJM and ISO-NE also are working on fuel security, which should lead to additional revenues for generators that have on-site fuel capabilities, he said.

"This is very much at play, but all these regulatory changes are designed to improve the current status quo and are positive for our portfolio," Gutierrez said.

Call transcript courtesy of *Seeking Alpha*. ■

Company Briefs

Orsted Completes Acquisition of Deepwater Wind

Orsted last week announced it had officially completed its $510 million acquisition of offshore wind developer Deepwater Wind.

Announced last month, the deal brings with it a rebranding: Orsted US Offshore Wind. Orsted North America President Thomas Brostrom will serve as co-CEO with Deepwater CEO Jeffrey Grybowski. Deepwater's David Hang will serve as president and chief commercial officer; Orsted's Claus Bojle Moller will be COO.

"Our teams will now begin to merge together to advance our existing projects and to prepare for our next round of projects for the East Coast," Grybowski said. "We have very big plans for the U.S."

More: *North American Windpower*

GE Selling Current Subsidiary

General Electric last week announced its energy management systems subsidiary, Current powered by GE, to private equity firm American Industrial Partners.

The company did not disclose the sale price for Current, which has generated just $900 million in sales as of the end of the third quarter. As part of the agreement, Current will be able to continue to use the GE brand.

The deal follows last year's announcement that GE was looking to sell its core lighting business, which has still not found a buyer.

More: *CNN Business*

NuScale, Ontario Power Sign MOU for Design Review

NuScale Power last week announced it had signed a memorandum of understanding with Ontario Power Generation that the province's publicly owned utility will support the company's vendor design review application with the Canadian Nuclear Safety Commission.

NuScale is aiming to have its small modular reactor design reviewed by the commission. The U.S. Nuclear Regulatory Commission is scheduled to complete its own review of the design by September 2020, according to the company.

"Through the new agreement, OPG will offer expertise to support not only NuScale's vendor design review application currently under development with the CNSC, but also the further evaluation of development, licensing and deployment of the first NuScale power plant in Canada," the company said.

More: *NuScale Power*

FuelCell Energy Acquiring Conn. Plant from Dominion

FuelCell Energy will purchase Dominion Energy's 14.9-MW fuel cell plant in Bridgeport, Conn., for $36.6 million after winning a competitive solicitation issued by Dominion.

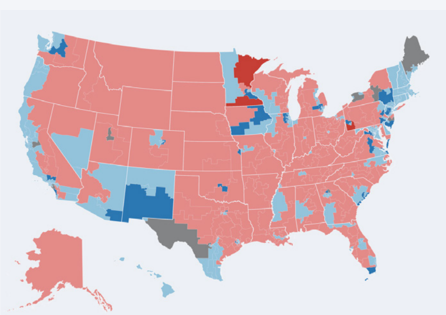
FuelCell built the plant for Dominion in 2013 and already operates and maintains it. The company is purchasing the plant partly through financing from Connecticut's Green Bank.

The deal is expected to close by the end of the year.

More: *Microgrid Knowledge*

Federal Briefs

Continued Fed Stagnation, Governors Move Toward Renewables After Elections



Democrats won majority rule of the House of Representatives on Election Day last week, but Republicans retained control of the Senate, after a mid-term election season that saw little discussion of energy or environmental policies.

Democratic leaders have promised to refocus on climate change, including reviving the House Select Committee on Energy Independence and Global Warming, which was disbanded by Republicans in 2011. The committee, however, was not authorized to advance bills to the floor, and any major legislation on climate change would likely be dead on arrival in the Senate, analysts said last week. The bipartisan House Climate Solutions Caucus also suffered heavy losses on Election Day, with 13 GOP members losing their re-election bids, including the caucus' co-founder, Rep. Carlos Curbelo (Fla.).

Instead of legislation, Democrats will likely begin ethics investigations into EPA and the Interior Department, analysts said.

Those looking for more favorable policies for renewable energy saw better success at the state level. At least five Democratic governors-elect ran on campaigns of going 100% renewable: Ned Lamont (Conn.), Jared Polis (Colo.), J.B. Pritzker (Ill.), Janet Mills (Maine) and Steve Sisolak (Nev.). Mills has also vowed to overturn current Gov. Paul LePage's (R) moratorium on wind energy development and promote offshore wind. New Mexico Governor-elect Michelle Lujan Grisham (D) has pledged to push her state to 80% renewables by 2040.

(For more Election Day coverage, see related stories, *High Failure Rate for Western Ballot Measures* and *Two RSC Representatives win Re-election*.)

More: *Bloomberg*; *The Atlantic*; *Greentech Media*; *pv magazine*; *Bloomberg Environment*; *The New York Times*

Judge Blocks Construction of Keystone XL

Judge Brian Morris of the District Court for Montana last week ordered a halt to construction of TransCanada's Keystone XL oil pipeline, saying President Trump failed to present a "reasoned explanation" when issuing a presidential permit for the project and "simply discarded" the effect the project would have on climate change.

Speaking to reporters at the White House on Friday, Trump said, "It was a political decision made by a judge. I think it's a disgrace."

More: *The New York Times*

Jury Finds TVA Contractor Liable for Workers' Deaths

A jury in District Court for the Eastern District of Tennessee last week found Jacobs Engineering liable for the deaths of more than 30 workers and the illnesses of another 250, ruling that it failed to adhere to its contract with the Tennessee Valley Authority and "exercise reasonable care" in keeping workers safe.

TVA hired Jacobs to clean up the coal ash spill at its Kingston Fossil Fuel Power Plant, the largest such spill in the country. Over three weeks, jurors heard testimony of deplorable working conditions — including refusing to provide basic safety gear for workers — and manipulations of water samples to downplay risks to regulators.

The ruling means workers and their families will be able to seek compensation to pay for medical bills.

More: *Knoxville News Sentinel*

Zinke Exploring Other Career Opportunities

Interior Secretary **Ryan Zinke** is preparing to leave his post and exploring other job opportunities, according to sources who spoke to Politico.

Zinke has reached out to Fox News to inquire about working as a commentator, sources said, as well as positions on the boards of several energy companies and private equity firms.

Sources close to Zinke said he is preparing to resign by the end of the year, before the new Congress is sworn in.

More: *Politico*

Children's Climate Lawsuit on Hold Again

The 9th Circuit Court of Appeals last week placed a temporary stay on a lawsuit brought by a group of children against the federal government for neglecting to prevent climate change.

The Trump administration has requested that the 9th Circuit throw the case out before it is heard in the District Court of Oregon. The move follows the Supreme Court's rejection of the request after staying it. The case, Juliana v. United States, had been scheduled to go to trial late last month.

The 9th Circuit gave the plaintiffs 15 days to respond to the administration's request.

More: *The Associated Press*

State Briefs

CALIFORNIA

PUC Approves 4 PG&E Storage Contracts

The Public Utilities Commission last week approved four energy storage contracts that PG&E Corp. submitted as part of the commission's order to replace the power its gets from three natural gas-fired plants owned by Calpine.

The four battery projects include a 183-MW facility south of San Jose that will be designed and built by Tesla; a 300-MW project by Vistra Energy; a 75-MW project by Hummingbird Energy Storage; and 10 MW worth of capacity from Micronoc.

Calpine's Metcalf, Yuba City and Feather River power plants are under reliability-must-run agreements with CAISO, which the PUC opposed. (See *CPUC Retires Diablo Canyon, Replaces Calpine RMRs*.)

More: *Bloomberg*

CONNECTICUT

Muni Co-op Officials Indicted in Federal Court over Misuse of Funds


CMEEC CEO Drew Rankin

A federal grand jury in New Haven last week handed down indictments of five Connecticut Municipal Electric Energy Cooperative officials, charging them with conspiracy and theft.

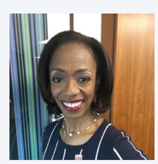
The officials include the cooperative's CEO, CFO and three members of its board of directors. The charges stem from the use of more than $9 million the co-op received in grants from the U.S. Department of Energy for extravagant trips outside the state.

The co-op's member agreement calls for any excess revenues to be returned to ratepayers. "Instead of protecting these funds ... these defendants are alleged to have used the CMEEC Margin Account as a secret slush fund to pay for lavish junkets for themselves and their family and friends, as well as for other inappropriate expenses," U.S. Attorney John Durham said.

More: *New Haven Register*

DISTRICT OF COLUMBIA

Bowser Nominates Gillis to PSC



As part of an administration shuffle after her successful re-election bid, Mayor Muriel Bowser last week nominated **Greer Gillis**, director of the district's Department of General Services, to the Public Service Commission.

Bowser also appointed Commissioner Willie Phillips as chair to replace Betty Ann Kane, whose term ends at the end of the year.

Gillis has been head of DGS for two years. Prior to that, she served as deputy director of the District Department of Transportation.

More: *Washington City Paper*

IDAHO

Court Stays Idaho Power Lawsuit Against EPA

A U.S. District Court judge last week agreed to stay a lawsuit brought by Idaho Power against EPA for neglecting to review water temperature standards submitted by the Department of Environmental Quality for the Snake River below Idaho Power's Hells Canyon Complex hydropower facility.

The state's request to EPA to act on the standards dates back to 2012. The judge gave EPA until March 11 and must submit status reports on its work every 30 days.

"Essentially, this is what we wanted for six years," an Idaho Power spokesman said. "We're optimistic things are moving in the right direction. This is definitely a good step forward."

More: *The Associated Press*

MAINE

DEP: New England Clean Energy Connect App Incomplete

The Department of Environmental Protection last week told Central Maine Power that its application to build the New England Clean Energy Connect transmission project is incomplete.

CMP must respond by Nov. 19 with a schedule for how it plans to submit the department's requested information. The move by the DEP follows similar action by the Public Utilities Commission late last month. (See *Maine PUC Move Poses Hurdle for NECEC*.)

More: *Portland Press Herald*

MISSISSIPPI

Trial for State's Suit Against Entergy Delayed

A U.S. District Court judge last week postponed the start of the trial in the state's lawsuit against Entergy Mississippi for allegedly selling overpriced power to customers from 1998 to 2009.

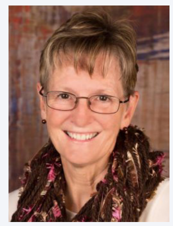
Judge Carlton Reeves delayed the trial to April, saying that by law he needs to attend to criminal cases first.

Attorney General **Jim Hood** says Entergy owes $1 billion in overcharges to ratepayers.

More: *The Associated Press*

NEBRASKA

Clean Energy Advocates Oust 2 OPPD Board Incumbents



Voters last week elected two new members to Omaha Public Power District's board of directors, defeating incumbents Tom Barrett and former State Sen. Mick Mines.

Eric Williams and **Janece Mollhoff** campaigned on supporting clean energy policies and were elected to six-year terms. A third election is still too close to call and is undergoing a recount as of press time.

More: *Energy News Network*

NEW YORK

States Issues Offshore Wind Solicitation

The state last week issued a solicitation for at least 800 MW of new offshore wind projects, part of its goal to procure 2,400 MW by 2030.

Bids are due in February, and winners will be announced the following spring, the state said. Each bidder must submit at least one project that is at least 400 MW, but the state will award 25-year contracts for projects as low as 200 MW.

"This action is a watershed moment in New York's renewable energy development efforts as we work to establish a secure, reliable and cost-effective clean energy future," Gov. Andrew Cuomo said.

More: *Gov. Andrew Cuomo*

OHIO

FirstEnergy Agrees to Rate Cut — if it Can Raise Rates

FirstEnergy last week filed a settlement with the Public Utilities Commission in which it agreed to cut rates to reflect the new federal corporate tax rate under the Tax Cuts and Jobs Act — as long as the commission approves a massive upgrade to its distribution system.

Under the settlement, signed by PUCO staff, FirstEnergy customers would see an average decrease of $3.90 on their bills. But approval of the reconstruction project would inevitably raise rates; by how much is unknown.

FirstEnergy has been refusing to lower its rates to reflect the federal legislation, signed by President Trump on Dec. 22, 2017. The company wants approval of the settlement by Dec. 31.

More: *The Plain Dealer*

PENNSYLVANIA

PUC Clarifies EVs not Subject to Regulation

The Public Utility Commission last week unanimously approved a policy statement clarifying that electric vehicle charging is a service to drivers and not considered a resale or redistribution of electricity.

"As it relates to electric vehicles, it would not be considered — in terms of a charging station — as resale or redistribution of electricity," PUC Chair Gladys Brown said at a conference in Hershey. "We wanted to remove that barrier, if someone interpreted it another way."

More: *WHYY*

VERMONT

Brewery Building Solar Canopies in Parking Lot

The Alchemist, a brewery in Stowe, has partnered with SunCommon and Community National Bank to build two solar panel canopies over 31 parking spaces in its lot.

The canopies, which cost nearly $500,000, will be made up of nearly 400 panels.

"I think this is a really great example of how we can produce clean energy without negatively affecting the natural beauty of our state," The Alchemist co-owner Jen Kimmich said. "I mean, it's a parking lot."

More: *WPTZ*

RTO Insider

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