RTO Insider
Your Eyes and Ears on the Organized Electric Markets
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FERC Investigation Shows PSEG Violated PJM Bidding Rules

By Rory D. Sweeney

FERC said Thursday that a preliminary investigation indicates that Public Service Enterprise Group committed multiple violations of PJM market-bidding rules and made "false and misleading statements" to RTO staff, stemming from issues PSEG says it self-reported in 2014 and has since set aside $35 million to address.

The Notice of Alleged Violations charged PSEG Energy Resources & Trade, which markets the output of PSEG Power's generation fleet, with violating both PJM's Tariff and FERC regulations. PSEG's trading arm submitted incorrect cost-based bids into PJM's daily energy market from as early as 2005 through 2014 and lied to PJM regarding costs associated with certain units, commission staff alleged.

The notice also said the determinations were preliminary and provided few additional details about the confidential investigation. It did not indicate when or whether any definitive action would be taken against PSEG.

PSEG Power reported in May 2014 through PSEG's first-quarter financial results that it had "discovered that it incorrectly calculated certain components of its cost-based bids for certain generating units in the PJM energy market, with resulting over-collection of revenues related to its fossil fleet." It said the issue had been reported to FERC, PJM and PJM's Independent Market Monitor, Monitoring Analytics, and record-

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Developers, Tx Providers Seek FERC Direction on 'Affected Systems'

By Michael Kuser and Jason Fordney

Generation developers and transmission providers on Wednesday called for more direction from FERC to improve coordination of "affected system" studies in the generation interconnection process.

Suggested improvements on the second day of a FERC technical conference included sharing study models earlier, clear timelines and cost estimates, and better definitions for identifying an affected system — one impacted by new generation

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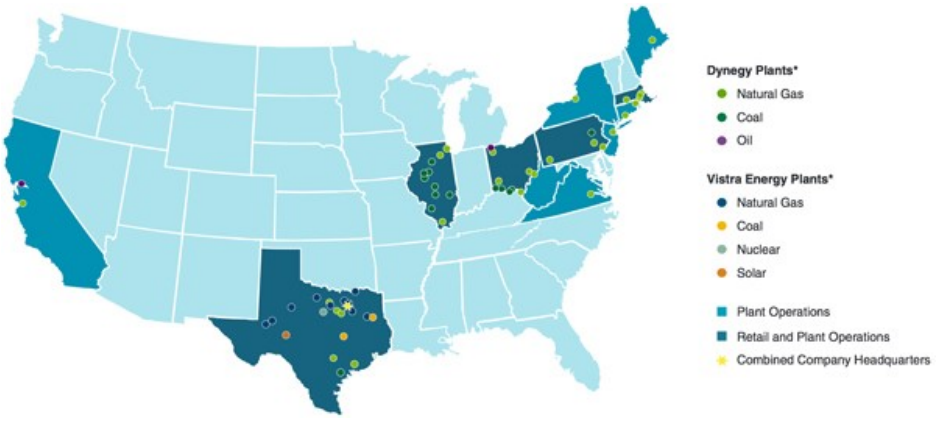
On Day 1 of the FERC technical conference, renewable developers sparred with transmission planners for MISO, SPP and PJM over the RTOs' "affected system" studies. (p.25)

Vistra-Dynegy Merger Closes After FERC Nod



| *Vistra Energy*

By Rich Heidorn Jr.

Vistra Energy said Monday it closed its acquisition of Dynegy following a FERC order concluding the $1.7 billion deal raised no competitive concerns (EC18-23).

The all-stock deal will create a power generation and retail giant owning 40 GW of capacity and serving nearly 3 million customers, mainly in ERCOT, PJM and ISO-NE. FERC's April 4 approval was the last regulatory step required to complete the deal, which had already been cleared by regulators in New York and Texas.

Dynegy's combined cycle gas turbine fleet and geographically diverse portfolio were a big attraction for Vistra, which owns 18,000 MW of generation capacity in ERCOT. Dynegy's 27,000 MW will give it the

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Perry Hints DOE Won't Grant FES 'Emergency' Request

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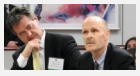

PJM Capacity Proposals to Duel at FERC

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CAISO News

CAISO RC Plan Undercuts Peak Rates

Comparison Impossible, Peak Says

By Jason Fordney

CAISO last week issued its proposal to offer reliability coordinator (RC) services in the West, including a plan to charge rates that appear to dramatically undercut rival Peak Reliability.

But when asked about the figures Monday, Peak told *RTO Insider* that "a true and accurate side-by-side comparison is not possible."

The ISO on Friday provided more details on the planned Tariff changes and rates it will charge after its planned departure from current RC service provider Peak Reliability in September 2019. It plans to become certified as its own RC provider. (See *CAISO to Depart Peak Reliability, Become RC*.)

CAISO will develop an RC funding requirement — which includes the operating budget and reserve, as well as an annual revenue adjustment — to determine what it will charge per megawatt-hour. The ISO estimates its annual funding requirement will range from $5 million for only the ISO area to $12 million for all potential balancing areas in the region. Dividing those amounts by projected volumes yields a rate of 2 to 3 cents/MWh. CAISO said the monthly service charge will be derived by multiplying the RC rate by the megawatt-hour volumes submitted, citing an example of $51,000 monthly and $614,000 annually based on a monthly customer with a volume of about 2 million MWh.

By comparison, Peak said it charged customers nearly $44.6 million for its RC function in both 2016 and 2017 and will maintain the same level of funding for 2018.

"Yes, we can do it that much cheaper," CAISO spokesman Steven Greenlee confirmed.

But Peak spokeswoman Rachel Sherrard said a comparison is not possible, "as the depth and breadth of the services Peak RC provides for its current rate of around 5 cents per retail customer per MWh is significantly more than we believe will be offered by CAISO." She said that price includes the core RC function and several enhanced tools and technologies such as the WECC Interchange Tool, the Enhanced Curtailment Calculator and the Peak Synchrophasor Project.

"These additional value-adding tools, requested by our funding parties over the past nine years, have been consistently modified and refined to meet the reliability challenges posed by the changing landscape," Sherrard said. "Our understanding is that CAISO is going to offer the basic NERC-compliant RC services, which doesn't directly correlate to what we provide.

"In addition to switching costs associated with a transfer from Peak to any other RC, there is risk in transitioning from an entity with a strong operational track record, exceptional talent with an immense knowledge of the Western Interconnection and skills to an entity that is not yet an established RC," Sherrard said.

Date	Milestone
Thursday, April 12, 2018	Initial stakeholder meeting on RC Rate Design, Terms, and Conditions straw proposal
Thursday, April 26, 2018	Stakeholder written comments due on straw proposal
Thursday, May 24, 2018	CAISO will post draft final proposal
Thursday, May 31, 2018	2nd stakeholder meeting on RC Rate Design, Terms, and Conditions draft final proposal
Thursday, June 14, 2018	Stakeholder comments due on draft final proposal
June — July	Present draft final proposal to Board of Governors
June — July	CAISO will post draft tariff language
June — July	Stakeholder written comments due on draft tariff language
June — July	Conduct stakeholder call to discuss tariff language and comments
August	CAISO will file tariff language with FERC
October	FERC ruling on RC Rate Design

CAISO's planned milestones for development of RC service. | *CAISO*

Next Steps

CAISO has scheduled an April 12 meeting at its headquarters to discuss its RC rate design straw proposal, which it will develop into a final plan submitted to the ISO Board of Governors and then FERC.

"All transmission operators within the CAISO balancing authority (BA) area will become reliability coordinator service customers of the CAISO at that time," the ISO said. The RC services will also be offered to balancing authority areas outside of CAISO area and to transmission operators in those BAAs.

The RC is the highest level of reliability authority under the NERC model and has the widest view of the bulk electric system, with authority to prevent or mitigate reliability problems in both next-day analysis and in real-time.

The ISO said it also will be working with transmission operators in CAISO and others that have provided a letter of intent for RC services and signed non-disclosure agreements to develop operating procedures, technical requirements and other facets of the RC proposal.

CAISO's model is based on seven ratemaking principles used to determine its other rates, including grid management charges and Energy Imbalance Market (EIM) administrative fees: cost causation, use of services, transparency, predictability, ability to forecast, flexibility and simplicity.

The ISO will require RC customers to initially commit to 18 months of services and will not penalize for withdrawals provided that six months of notice is given. The ISO estimates it will need 28 full-time employees that will work solely on the RC function.

CAISO in January initially announced its intent to depart Peak and offer its own RC services.

The ISO cited as the reasons for the move Peak's decision to partner with PJM to provide market services and Mountain West Transmission Group's likely departure from Peak after it joins SPP. (See *Peak/PJM Enter Western Market 'Commitment Phase'*.)

CAISO is also developing a plan to extend its day-ahead market across the EIM. (See *Multiple Entities, Markets Now Beckon in West*.)

CAISO News

CAISO Developing New CRR Proposal

By Jason Fordney

FOLSOM, Calif. — CAISO is advancing into the second phase of reforms to its congestion revenue rights auction, focusing on implementing a structure that provides only a partial congestion hedge rather than a full one.

The ISO is moving through auction reforms in stages after its Department of Market Monitoring called for disbanding the program; it found the transactions have led to losses in the hundreds of millions for ratepayers. (See *CAISO Monitor Proposes to End Revenue Rights Auction*.) Financial entities and traders have objected to the changes, leading to a complex debate over the current structure and whether it is fair for ratepayers. Similar discussions are going on in other organized markets over financial transmission rights.

The ISO has already completed "Track 1A" of its CRR auction changes, unanimously approved by the Board of Governors last month. (See *CAISO Moves Ahead With Market Changes*.) At the meeting, board members agreed with the Monitor's contention that the CRR market as currently devised it is not a real auction because it does not involve willing buyers and sellers.

Auction participants can currently purchase CRRs at generator locations, load locations, trading hubs, pricing nodes, and import and export scheduling points, but the changes proposed in Track 1A limit CRR sources and sinks to only the combinations needed to hedge congestion costs associated with delivering supply. The revisions also established a deadline for reporting transmission outages prior to the auctions to more accurately estimate transmission capacity available for CRR purchases.

Partially Funded CRRs

CAISO is now developing changes under "Track 1B," targeted for June approval by the board and implementation in time for settlement of the 2019 CRR auction. Under consideration for this track is a switch from fully funded CRRs — in which the auctioned rights provide a complete hedge and always receive a full difference in marginal congestion components — to a partial funding arrangement.

Perry Servedio | © *RTO Insider*

Other ISOs and RTOs only partially fund FTRs, relying on a system in which auctioned rights share in payment shortfalls and do not provide a complete hedge, CAISO Market Design Policy Developer Perry Servedio said Thursday in a presentation to the ISO's Market Surveillance Committee (MSC).

CAISO also plans to develop a "Track 2" set of rule changes consisting of more comprehensive changes to be implemented in time for the 2020 CRR auction.

The ISO is considering two approaches to partially funding CRRs. One is an *ex ante* approach in which the ISO derates CRRs prior to the day-ahead market. This would allow market participants to adjust their forward energy positions prior to the day-ahead market to hedge final supply delivery.

Another *ex post* approach would charge CRR holders for shortfalls after the day-ahead market, which could eliminate incentives by market participants to "game" modeling differences between the CRR market and day-ahead market, CAISO said.

Other approaches are also under consideration, including lowering the percentage of system capacity released in the CRR process, eliminating use of the whole transmission system in the auction or implementing reserve prices.

CAISO Considers MSC Viewpoints

At Thursday's meeting, MSC member Scott Harvey, of FTI Consulting, briefed Servedio and other CAISO staff with a presentation on what he said could be other factors contributing to CRR auction revenue inadequacy, including the fact that CRRs are allocated and auctioned based on auction shift factors but are settled based on day-ahead shift factors.

MSC members James Bushnell, of the University of California Davis, and Ben Hobbs, of Johns Hopkins University, also raised issues with one CRR proposal developed by Southern California Edison and the Monitor that would eliminate using the available transmission system in the CRR auction, saying the move would have technical, institutional and legal implications.

"Even if there is a large-scale willing participation by sellers, forming desired new CRRs out of offered counterflow CRRs may be difficult or unlikely," they said.

After the Track 1B process is complete, CAISO says it will embark on Track 2 in time for the 2020 auction with "potential comprehensive changes." The ongoing overhaul indicates the current CRR process is due to change significantly in coming years.

CAISO discussed several CRR overhaul proposals at last week's Market Surveillance Committee meeting. | © *RTO Insider*

CAISO News

Idaho Power, Powerex Begin Trading in Western EIM

By Robert Mullin

Idaho Power and Powerex began transacting in the Western Energy Imbalance Market (EIM) on Wednesday, bringing to eight the number of members participating in CAISO's regional real-time market.

The expansion equips the EIM to serve imbalances for about 55% of load in the Western Interconnection, according to the ISO. It and the market's seven other members serve more than 42 million customers in an area stretching from the U.S.-Canada border south to Arizona, and from the West Coast east to Wyoming.

"The Western Energy Imbalance Market continues to demonstrate that coordination of energy over a large area can lower costs for electric customers and reduce the cost of the transition to a more renewable-based grid," CAISO CEO Steve Berberich said in a statement. The market has yielded more than $288 million in benefits for its members since being launched in November 2014.

Idaho Power

Boise-based Idaho Power serves about 542,000 customers across a 24,000-square-mile territory in southern Idaho and eastern Oregon. The core of the utility's generating portfolio is 17 low-cost hydroelectric projects that serve most of its demand. The company also operates about 4,800 miles of transmission.

"We believe customers will see benefits from the EIM over time, and we expect those benefits to increase as more utilities join the market," Idaho Power Vice President of Power Supply Tess Park said in a statement.

The utility's service territory is adjacent to the balancing areas of EIM members NV Energy and PacifiCorp-East (PACE), providing increased transfer capability with the wind-rich area of western Wyoming in the remote northeastern corner of PACE.

Although wind developers see the region as a promising source of exports, transmission constraints — and California's restrictions on renewable imports not delivered directly into an in-state balancing area — have impeded development of large-scale projects to serve the state. Idaho's entry into the EIM could open the door for development, expanding renewable portfolio standard eligibility for a larger pool of resources.

Participation in the EIM will also allow Idaho Power to more easily unload the output of excess wind power the utility has been required to contract for under the 1978 Public Utility Regulatory Policies Act. In 2010 — before tightening PURPA eligibility rules — the Idaho PUC received applications for 500 MW of such projects. The minimum system load for Idaho Power, the state's largest utility, is about 1,100 MW. The utility is still contending with wind developers moving projects across the state line to its service territory in Oregon, where PURPA avoided-cost rates are higher. (See *FERC Conference Debates PURPA Costs, Purchase Obligations*.)

"Covering a broad territory with a wide variety of resources will help Idaho Power manage our operations and integrate the growing volume of renewable energy sources on our system," Park said.

Powerex

Vancouver-based Powerex, which markets the surplus generation of parent BC Hydro, becomes the first non-U.S. member of the EIM. (See *Power Slated to Become First Non-US EIM Member*.) While the company does not directly bring any generation assets into the market, its access to BC Hydro's ample hydroelectric resources positions the company to provide EIM participants with the flexible ramping capacity needed to firm up the growing number of variable renewable resources coming into the region's grid.

The company also holds transmission rights on lines throughout the West, including the California-Oregon Intertie, a key transfer point between the Pacific Northwest and California. Constraints on that line periodically isolate the PacifiCorp West and Puget Sound Energy balancing authority areas from the rest of the EIM, resulting in prices that diverge from the rest of the market.

Powerex has actively participated in CAISO's five-minute market since 2005 through a dynamic scheduling arrangement, but its membership in the EIM will allow it to engage in sub-hourly transactions across multiple balancing authority areas. The ISO worked with Powerex to develop an EIM participation framework addressing the company's unique situation as a Canadian entity, which FERC approved last year. (See *FERC Approves Powerex EIM Agreement*.)

| *CAISO*

Also slated to join the EIM are the Sacramento Municipal Utility District in April 2019 and Salt River Project, Seattle City Light and the Los Angeles Department of Water and Power in April 2020.

CAISO last year proposed to extend its day-ahead market across the EIM, a move that would fall short of creating a full RTO and require members to relinquish control of their transmission assets. (See *CAISO Day-ahead Could be Tailored for the West*.) That effort could face competition from a joint plan by Peak Reliability and PJM Connext to create a new Western market not dominated by California. Peak and PJM last month said they've entered the "commitment phase" of their initiative, consisting of confidential discussions of the market plan with potential members. (See *Peak/PJM Enter Western Market 'Commitment Phase'*.)

CAISO News

Calif. Bill Would Protect POU Gas Plants

By Jason Fordney

A California Senate committee on Tuesday approved a bill that would allow publicly owned utilities (POUs) that meet certain criteria to run their gas-fired plants at a minimal level to ensure related bond debt is paid off and not passed to taxpayers.

Bill sponsor Steven Bradford (D) said that SB 1110 "protects individual customers of a public utility from extraordinary cost shifts" stemming from POUs' outstanding debt for natural gas plants built in response to the Western Energy Crisis of 2000/01. Supported by the Northern California Power Agency, the bill was passed unanimously by the Energy, Utility and Communications Committee and now goes to the Appropriations Committee for consideration.

| *© RTO Insider*

Under existing law, POUs are subject to California's ambitious renewable portfolio standard that requires them to meet 50% of their electricity needs with renewable generation by 2030 (escalating from 33% by 2020, 40% by 2024 and 45% by 2027). But unlike the state's investor-owned utilities, POUs are authorized to adopt measures allowing for delay of timely compliance and set cost limitations for procuring renewables.

SB 1110 would expand those exceptions by allowing a POU to amend its renewable procurement plan to mitigate against the loss of public revenues if complying with the RPS would lead to decreased output from a power plant with outstanding public debt. The proposed rule change, which would not apply to peaker plants, applies only to plants planned and built after Jan. 1, 2000, with financing secured before 2017. To be eligible, a plant must be expected to operate below a 20% capacity factor for an upcoming year based on the POU's forecast, risking employment of a power plant employee who receives a prevailing wage.

The legislation does not apply to independently owned gas plants that are not financed by taxpayers.

POUs would notify the California Energy Commission by Jan. 31, 2019, that they might have power plants eligible for the provision. The measure is most likely to affect Silicon Valley Power's Donald Von Raesfeld Plant, Roseville Electric's Roseville Energy Park and Redding Electric's Redding gas plant Units 5 and 6, according to a bill analysis.

CAISO News

Calif. IOUs Propose New CCA Rules

By Jason Fordney

California's three large investor-owned utilities asked state officials last week to change the rules to protect bundled customers from being saddled with expensive long-term renewable contracts as others defect for increasingly popular community choice aggregators (CCAs).

Much has changed in the state since CCAs were created in the wake of the California energy crisis of the early 2000s, the utilities argued. The CCAs didn't start operating until 2010 but have pulled 40% of Northern California's bundled load from Pacific Gas and Electric, and 35% of Southern California Edison's retail load is in the process of CCA formation. The two utilities, along with San Diego Gas & Electric, filed a 363-page proposal with the California Public Utilities Commission. They noted that 85% of their load could move away by the mid-2020s.

"The combination of these two developments leaves high-cost, long-term renewable contracts in the IOUs' bundled service customer portfolios that are far in excess of their need," the utilities said. The situation has also brought the utilities' procurement of large-scale renewable projects to a halt.

The cost of renewable power has decreased significantly since the legacy contracts were signed, which the IOUs say "transformed the renewables market consistent with state policy and commission direction."

The more than 200 legacy contracts representing hundreds of millions in costs were the topic of a hearing at the Senate Energy Committee last summer, at which Chairman Ben Hueso expressed concern about creating an ungovernable system. (See *California CCAs Spur Worry of Regulatory Crisis*.)

The PUC got some pushback from CCAs in February when it fast-tracked new regulations for new and expanding CCAs over resource adequacy concerns. (See *CCAs Oppose CPUC Decision, Process*.)

The April 2 IOU proposal would restructure the power charge indifference adjustment (PCIA), which is meant to ensure that bundled customers are not affected financially by other customers deciding to join CCAs.

The IOUs had previously proposed that the benefits and costs of previous IOU procurement be allocated to customers for whom those assets had been procured or constructed, a process called the portfolio allocation methodology (PAM).

Despite their new proposal, the utilities "still support their original PAM proposal as being a viable and relatively straightforward methodology to implement to ensure an equitable and efficient allocation of benefits and costs among all customers should the commission wish to consider it," they said.

The new proposal uses two allocation mechanisms: the "green allocation mechanism" (GAM) for renewable portfolio standard-eligible resources and large hydro, and a "portfolio monetization mechanism" (PMM) including gas, nuclear, non-pumped hydro and energy storage.

"The joint utilities' proposal of combining the allocation of [renewable energy credits] and [resource adequacy] from RPS and large hydro-electric resources (GAM) with a cost-based allocation approach for other resources (PMM) balances the resource technology concerns of a number of CCA parties while ensuring compliance with state law and continued support of state policy objectives," they said.

The IOUs proposed that all contracted and utility-owned resources subject to the current methodology be considered eligible for GAM or PMM.

ISO-NE News

Connecticut Kicks off Grid Modernization Effort

By Michael Kuser

NEW BRITAIN, Conn. — Utility representatives and other stakeholders shared their views on evolving cost drivers, changing customer demand and new technologies at the Connecticut Public Utilities Regulatory Authority's first-ever technical conference on grid modernization on Tuesday (17-12-03).

Chuck Eves | *© RTO Insider*

"We need to have technologies in place that understand how the system is operating in real time, with power coming from any direction on the system," said Chuck Eves, director of engineering and strategic planning at Avangrid subsidiary United Illuminating (UIL).

Eversource Energy filed comments ahead of the conference calling for "foundational investments in sensing and monitoring communications, analytics, automation and control solutions."

Jennifer Schilling | *© RTO Insider*

Jennifer Schilling, Eversource's director of grid modernization, said her company breaks down its investments "into peak load, new customer growth, reliability and ageing infrastructure, and basic business, which includes capital repairs."

The new opportunities arising from the growth in distributed energy resources are "adding a new dimension in our planning process," which is why the company supported the timing of the technical conference, Schilling said.

"The nature of the changes in demand and the forecasting will be important in terms of thinking about what do we need to do differently to be able to say, 'OK, if I have these categories of investment, how are they likely to change in the future?'" Schilling said.

Katie Dykes and Michael Curran | *© RTO Insider*

Using Data

Connecticut Green Bank Associate Director Anthony Clark said his organization's current investments are following and helping to boost customer demand, "but they are not following grid demand much at all. We just don't have that insight."

Clark thanked PURA, the state's Department of Energy and Environmental Protection and UIL for helping the Green Bank start "really digging into this process on the grid side" through clean energy pilot programs.

"In much of the discussion here we've talked about the challenge of having solar PV or other resources where there isn't sufficient data or resolution into the resource or ability to control it," Clark said. "The technologies themselves are becoming smarter, so we're looking at deploying smart inverters that will actually sense grid conditions and respond to them."

Christian Bilcheck, vice president for smart grids innovation at Avangrid, said it's important to think of DER in the aggregate, not as individual elements.

The utility is not necessarily going to have the answers to a lot of questions in the early days, he said.

"I can picture a data request coming in and it will look like we're not sharing information, but we don't have DER adoption modeling forecasts for circuits and substations right now," Bilcheck said.

"It gets complicated, but I think if we keep approaching it from a practical perspective, we'll get there," he said. "Not just the data needs, but I think the goal of the data is to help inform the types of investments that we should be looking forward to, how DERs can play a role in that frame and even help shape policy."

Lauren Savidge, DEEP director of energy supply, said the agency is learning from what other states are doing with DER, citing a recent Michigan Public Service Commission solar program report "that was pretty thorough on compensation for solar, how different customers in their territory use solar."

Cost and Sustainability

PURA Chair Katie Dykes said, "The cost-effectiveness testing will help us learn a lot about — particularly from the utilities' perspective — what the grid currently can do and where the limitations are."

Eves said it's important to consider the long-term sustainability of solutions "as we evaluate the lifecycle costs of the choices we make, to sustain those into the future, five, 10, 20, 40 years down the road."

In its comments, the Acadia Center said that any calculation of cost-effectiveness should be aligned with the state's consumer, energy and environmental goals.

"Cost-benefit frameworks should be designed or expanded to fully reflect priorities such as reducing energy bills and reducing consumers' energy burden, addressing climate change, enhancing consumer control and choice, and systemwide efficiency," Acadia said.

PURA Commissioner Michael Caron returned the conversation to what Connecticut can learn from other jurisdictions.

"In California and Hawaii, they are blazing the trail ahead of us from the perspective of penetration and how they're dealing with those issues, so there's a lot to learn from what's occurred in those states ... learning from their mistakes as well as from their successes," Eves said.

PURA is seeking written follow-up comments on the technical conference by April 10 and will later this month issue a final notice of scope of procedure for its exploration into the issues of grid modernization. The agency plans to begin discovery in the coming months and form working groups by this summer before soliciting reports from them in the fall.

ISO-NE News

ISO-NE Moves to Keep Exelon's Mystic Running

By Michael Kuser

ISO-NE is moving to keep the 1,998-MW Mystic Generating Station running to ensure grid reliability following Exelon's March 29 filing with the RTO to retire the plant in 2022.

Chief Operating Officer Vamsi Chadalavada last Tuesday sent a memo to the New England Power Pool Participants Committee outlining the grid operator's "limited" options ahead of a discussion of the issue at the committee's April 6 meeting. That meeting was extended to today "in order to continue the discussion and consideration of the ISO's planned actions in response to Exelon's bid to retire the Mystic units for the 13th Forward Capacity Auction."

Exelon had said it "may reconsider" the decision to retire Mystic if the grid operator can reform its markets to properly value the plant's contributions to reliability and regional fuel security. (See *Mystic Closure Notice Leaves Room for Reversal*.) The Everett, Mass., facility includes a 576-MW dual-fuel unit (Unit 7); two gas-fired units capable of producing a combined 1,414 MW (Units 8 and 9); and Mystic Jet, an 8.6-MW oil-fired peaker.

On the same day it issued the retirement notice, the company also announced it will purchase the Everett Marine (Distrigas) Terminal — an LNG import facility — from ENGIE North America "to ensure the continued reliable supply of fuel to Mystic Units 8 and 9 while they remain operating."

"Since the ISO received Exelon's retirement bids, it has been analyzing the potential impacts of losing the Mystic and Distrigas facilities from a fuel security perspective," Chadalavada said in the April 3 memo.

He highlighted the reliability impacts identified in the RTO's recent Operational Fuel Security Analysis and the limited time to address the issue. (See *Report: Fuel Security Key Risk for New England Grid*.)

The RTO will ask FERC to waive its Tariff requirements to allow it to retain Mystic 8 and 9 to maintain fuel security on the system, he said.

ISO-NE CEO Gordon van Welie said in February that that the RTO might need to seek such authority for resources required for regional fuel security. (See *Van Welie: ISO-NE in 'Race' to Replace Retirements*.)

In addition to discussion at the NEPOOL Participants Committee, ISO-NE will meet with its stakeholders to explain its reliability analysis of the retirement bids immediately following the RTO's Markets Committee meeting today, Chadalavada said.

"We plan to commence discussions with stakeholders, beginning at the April 25 Reliability Committee meeting, on the necessary reliability criteria for retaining resources needed for fuel security in the Forward Capacity Market," he said.

Citing reliability issues focused on transmission security, the RTO rejected the dynamic delist bids for Mystic Units 7 and 8 in FCA 12, which covers 2021/22.

Oil supplies at plants in New England declined rapidly during a cold snap earlier this winter as gas prices spiked and dual-fuel plants switched to oil, but the RTO avoided serious reliability issues thanks to LNG shipments.

The Distrigas Terminal — which the RTO said is the only fuel supply source available to Mystic units 8 and 9 — is the oldest such LNG facility in the U.S. and has connections with two interstate pipeline systems, the Tennessee and Algonquin pipelines, as well as with the local distribution system owned by National Grid.

MISO News

Wisc. Tx Picks up Slack After Upper Peninsula Outage

By Amanda Durish Cook

Shaded boxes indicate ATC leak areas being monitored. | *U.S. Coast Guard*

MISO on Tuesday began using Wisconsin transmission to deliver electricity to Michigan's Upper Peninsula after the failure of two of American Transmission Co.'s submarine cables in the Straits of Mackinaw.

The situation is not disrupting the RTO's grid reliability, and there is adequate Wisconsin transmission capacity to offset the outage, according to MISO spokesperson Mark Adrian Brown.

"MISO continues to work closely with ATC to maintain electric reliability in the Upper Peninsula. Power to serve the Upper Peninsula of Michigan continues to be routed through Wisconsin, as is the normal flow of power into the Upper Peninsula, and there is ample transmission via the alternative route," Brown told *RTO Insider* in an email.

ATC has said it does not know how long the outage will last. MISO may seek to reschedule future planned outages to ensure continued reliability depending on the duration, Brown said.

The company on Tuesday said it took the "unprecedented step" of shutting down two damaged underwater transmission lines that connect lower Michigan with the Upper Peninsula. The pair of 4-mile circuits were leaking a toxic, petroleum-based fluid used for insulation into the lake, and that "extreme weather conditions, including icing in the channel and on shore" prevented an investigation of the damage, according to the company.

ATC said the cables initially tripped offline about 30 seconds apart on April 1, although aerial patrols showed no visible damage to the overhead parts of the system. One of the cables was constructed in 1975, the other in 1990. According to the U.S. Coast Guard, about 600 gallons of hazardous petrochemical fluid leaked into the water.

The company has not established the cause of the damage and said the lines "cannot be repaired and have been rendered permanently inoperable." The company said it will be checking on the condition of the other four cables it operates in the straits once weather permits. Upper Michigan this week experienced heavy snow and gusty winds.

ATC spokesperson Jackie Olson on Thursday said the company is testing the remaining cables to determine if they can be reconfigured to restore one of the circuits to operability.

"Our investigation as to the cause is ongoing; however, the weather conditions are such that we cannot get a remote submarine vehicle in to do an inspection any time soon," Olson said.

"It was an extraordinary set of circumstances, but ultimately, the decision to shut down the cables had to be made," said ATC Chief Operating Officer Mark Davis. "We will continue to investigate the cause of the incident, determine any necessary remediation efforts and continue communicating with the appropriate regulatory agencies."

ATC said it is coordinating with MISO and Midwest Reliability Organization "to determine short-term and long-term solutions." The company said it has notified multiple agencies of its decision to shut down the electrical cables, including EPA, the National Oceanic and Atmospheric Administration, the Coast Guard, U.S. Fish and Wildlife Service, Michigan Department of Environmental Quality, Michigan Department of Natural Resources and the Michigan Public Service Commission.

The Coast Guard on Wednesday said it established a unified command comprised of MDEQ members, county emergency managers, local native tribes, NOAA, FWS, EPA and ATC "to oversee the pollution response and mitigate any risks to the environment." The Coast Guard said the maximum potential for the spill is more than 4,000 gallons, though ATC took pressure off the lines and fluid was not leaking as of April 4. The toxic risk to wildlife and drinking water is low, the Coast Guard said.

MISO News

MISO Looks to Address Changing Resource Availability

By Amanda Durish Cook

CARMEL, Ind. — MISO is kicking off an effort to examine its changing resource availability in the face of increasing generation retirements, poor outage coordination, growing volumes of emergency-only capacity and rising use of intermittent resources.

"In the past, a [maximum generation event] occurred every year or two when MISO needed access to emergency-only resources. Now, there have been 12 since the start of the 2016/17 planning year, and they have occurred in all four seasons," the RTO wrote in a white paper laying out the issue.

To remedy the situation, MISO is broadly proposing to increase transparency of resource availability times and energy requirements, revamp availability requirements, and improve price signals to attract generator response.

But it needs stakeholder feedback to develop the specific rules and market improvements needed to meet those goals, RTO staff said at an April 5 Reliability Subcommittee meeting.

'Degrading Ability'

Executive Director of Market Design Jeff Bladen said MISO is experiencing a "degrading ability to convert committed capacity" in a reliable fashion because of "more volatile supply and demand conditions," forcing it to increasingly rely on resources not scheduled in the day-ahead market.

"There is less operational energy available through dispatch than the year before," Bladen said. "Each succeeding year we've had fewer megawatts offered."

MISO had 126 GW in average energy must-offers in the 2014/15 planning year, with about 17 GW of outages. In the 2015/16 and 2016/17 planning years, offers declined to 125 GW and 117 GW, respectively, while outages rose to 18 GW and roughly 23 GW.

Bladen said peaks are becoming less predictable and occur even in shoulder seasons: "It's becoming apparent that this is a challenge we will face year-round, and not just in the summertime." He said outages have played a role in most of MISO's maximum generation events since late 2016, with the majority occurring during off-peak months.

The RTO could once confidently group outages in the spring and fall because it had a greater margin of error.

"That seems to be a fleeting confidence. We have to plan for more volatile loads," Bladen said.

MISO's "resource availability and need" topic evolved from a 2015 proposal to create seasonal capacity procurement requirements, a generally unpopular move among stakeholders. RTO officials now say the proposal is no longer as simple as applying separate clearing requirements in a two- or four-season capacity auction.

"In some cases, we may have jumped to conclusions on some of these challenges — opportunities, but challenges nevertheless. This topic is an evolving one," Bladen said.

Staff have said solutions could include a capacity procurement requirement and an examination of whether current requirements and price signals must be revised in light of shifting availability, a product of tightening supply, more renewable energy participation, increasing instances of extreme weather events and an aging baseload fleet more susceptible to outages.

MISO is already considering whether to factor the effects of planned and maintenance outages on peak in its loss of load expectation study by the 2019/20 planning year, which could boost the RTO's planning reserve margin requirement. (See *MISO RASC Zeroes in on Priorities*.)

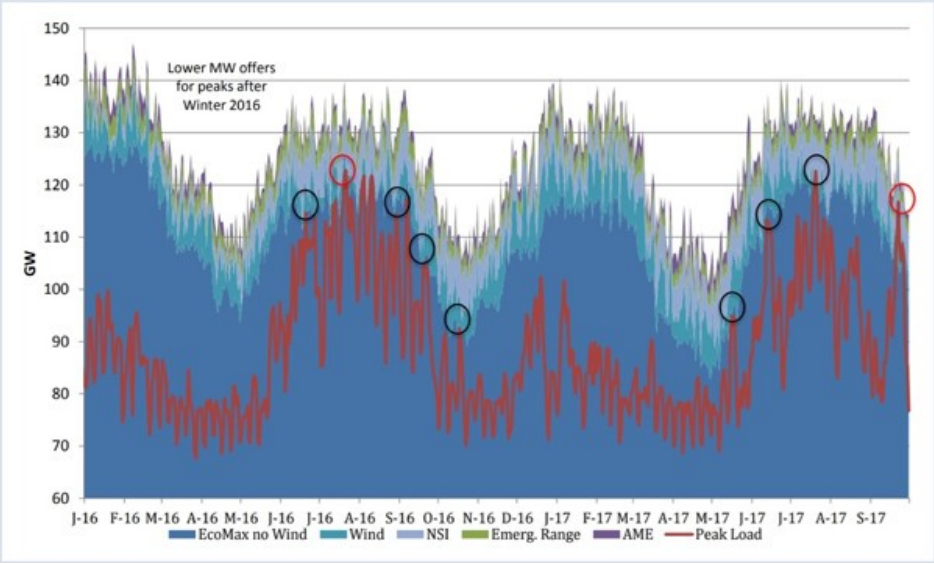
Customized Energy Solutions' Ted Kuhn asked why MISO is regarding retirements as out of the ordinary given that they've always existed.

"The fleet in general is getting older in aggregate," said Bladen, stressing that MISO's current retirement rate is amplified when compared to the historical rate.

He said MISO's expected renewable expansion combined with its aging baseload generation will only exacerbate reliance on emergency-only resources.

"The queue today gives us every indication that more intermittent resources are on the way," he said.

Bladen added that individual load-modifying resources often don't perform to the levels accredited to them in the annual capacity auction and can have long start-up times, up to 12 hours.



Peak loads (shown in red) versus supply over 2016 and 2017. | *MISO*

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MISO News

FERC Sides with MISO in Queue Design Dispute

By Amanda Durish Cook

| *AES*

FERC last week rejected EDF Renewable Energy's request that MISO be required to devise a special fast-track option in its interconnection queue for projects that can demonstrate readiness for development.

EDF filed the complaint early this year, asking FERC for a "workable" interconnection timeline to ensure that wind developers can secure federal production tax credits before they expire at the end of 2020. (See *Renewables Developer Escalates MISO Queue Design Dispute*.)

The company said MISO's year-old, three-phase interconnection queue process is only worsening the backlog of waiting generators and sought a one-time "fast track definitive planning phase mechanism" for generators with at least 80% of site control secured and 10-year power purchase agreements for at least 50% of their capacity.

EDF argued that MISO is now in a "position far from what it justified using the three-phase process for the 2016 and 2017 definitive planning phase cycles."

In its April 2 order, FERC said study delays in the interconnection queue are not reason enough for the commission to order MISO to create an accelerated queue option (EL18-55).

"We find that the delays experienced by interconnection customers do not make the existing queue process … unjust and unreasonable," FERC said.

The commission reminded EDF that MISO only has to make "reasonable efforts to meet its interconnection queue deadlines" and said that there are factors outside of the RTO's control affecting the queue.

"EDF has not shown that MISO is performing other than in accord with what the Tariff requires. While we understand that MISO's revised queue process is intended to minimize delays, interconnection customers are not guaranteed that MISO will

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MISO Looks to Address Changing Resource Availability

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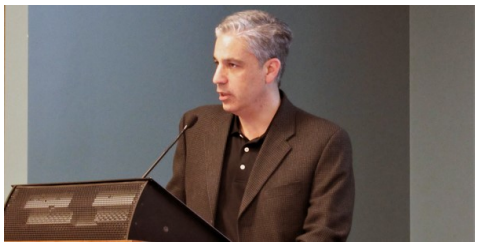


Jeff Bladen | © *RTO Insider*

Madison Gas and Electric's Megan Wisersky criticized some aspects of MISO's longstanding rules for load-modifying resources. She noted the RTO has always required load-modifying resources to be available for both capacity and transmission emergencies and restricted them to being price takers in the market.

"It's almost like this trend is self-fulfilling," Wisersky said.

Bladen said MISO would be looking for stakeholder input on any changes to the treatment of load-modifying resources.

"The idea is that we give tools to our resources so they have the ability to cure," he said. MISO's load-modifying resources currently do not have a must-offer obligation for any time periods outside summer, and they can only be called on five times each summer during emergency declarations.

We Energies Tony Jankowski asked why MISO was hinting at the need for such drastic measures and cautioned against overbuilding the system. Other stakeholders in attendance also worried aloud that the RTO would use the white paper as justification for big changes.

Bladen said MISO's 25% expectation that it will initiate emergency operating procedures sometime this spring belies the fact the RTO likely faces a nearly 100% chance of entering an emergency during the season.

"We've been in a max gen event 12 out of the last 11 quarters. We're not saying the sky is falling, but we're saying it's cloudy, and we're concerned," Bladen said.

"Despite the odd way of saying it, our goal is to be adequate," he added, smiling.

Last month, Reliability Subcommittee Chair Bill SeDoris said he expected the discussion on the topic to extend into 2020.

MISO News

FERC Sides with MISO in Queue Design Dispute

Continued from page 12

meet its projected deadlines," FERC said.

E.ON Climate and Renewables North America had filed in support of EDF's complaint and said delays in MISO's generator interconnection study process are leaving some developers in "serious jeopardy" over whether they would receive tax credits.

However, FERC agreed with MidAmerican Energy's contention that wind developers could use the RTO's provisional generator interconnection agreement to achieve commercial operation before the PTC expires.

Further, MISO has pledged that most transition plan interconnection customers will be eligible for generator interconnection agreements in time to qualify for the tax credit, FERC said.

"We are not persuaded that the existing queue process will result in the commercial harms claimed by EDF," the commission said.

FERC also agreed with MISO's argument that EDF had not demonstrated that any part of the current generator interconnection process was unreasonable or discriminatory. But it rejected the RTO's argument that EDF's proposed remedy and complaint would undermine the stakeholder process used to design the new queue.

No Ringing Endorsement

However, FERC made clear that its denial of EDF's complaint was not a show of support for MISO's current queue design.

"While we find that MISO's performance of interconnection studies and its [generator interconnection process] have not been shown to be unjust and unreasonable, the repeated and significant delays experienced by interconnection customers in MISO are nevertheless a cause of great concern, as they have resulted in considerable uncertainty for interconnection customers in MISO's queue," the commission said. "We understand that the achievement of a [generator interconnection agreement] in a timely and reasonably predictable manner is vital to the development of all new generation in MISO and that MISO's ongoing queue processing delays are a significant problem for generation developers."

FERC also noted that while MISO "is somewhat unique in terms of the sheer volume of interconnection requests it receives," it is not aware of any other RTO plagued with similar delays. It noted the technical conference it held this week focusing on affected systems-related interconnection issues hampering the construction of renewable projects. (See related stories, *Renewable Gens Face off with RTOs at Seams Tech Conference*, p.25, and *Developers, Tx Providers Seek FERC Direction on 'Affected Systems,'* p.1.)

FERC urged MISO to consider improvements to its queue, telling it should look to other RTOs for best practices and examine whether additional resources would alleviate queue delays.

"…the repeated and significant delays experienced by interconnection customers in MISO are nevertheless a cause of great concern…"

FERC

MISO Storage Ambitions Look Beyond Order 841

CARMEL, Ind. — MISO says it will likely go above and beyond complying with FERC Order 841, as it expands its market rules for storage after its initial filing with the commission later this year.

MISO Market Design Manager Kevin Vannoy said the RTO will soon begin presenting stakeholders with straw proposals for Order 841 compliance, but it intends to keep going after submitting a final proposal. MISO will continue to study the operational characteristics of energy storage to make a more comprehensive, but still unidentified, set of market rules in 2019 and 2020.

"We're not going to just stop at Order 841 compliance," Vannoy promised stakeholders during an April 4 Energy Storage Task Force meeting.

Kevin Vannoy | © *RTO Insider*

FERC last month granted MISO permission to create a Stored Energy Resource Type II to facilitate market participation, although it said the new definition needs more work that can be deferred into the RTO's Order 841 compliance filing due in early December. (See *FERC OKs MISO Plan to Expand Storage*.) Vannoy said revising the resource type definition will get MISO "part way, but not all the way there" to compliance.

He added that MISO's list of improvement projects, the Market Roadmap, includes a more comprehensive storage participation plan, although it didn't place in the top eight priorities this year despite stakeholders giving it top ranking. (See *8 Projects Set for 2018 MISO Market Roadmap*.)

MISO Director of Policy Studies J.T. Smith reported the RTO is meanwhile beginning to study how storage resources could be considered for economic transmission projects.

"There are still a lot of questions out there but not a lot of firm answers," Smith said.

— *Amanda Durish Cook*

PJM News

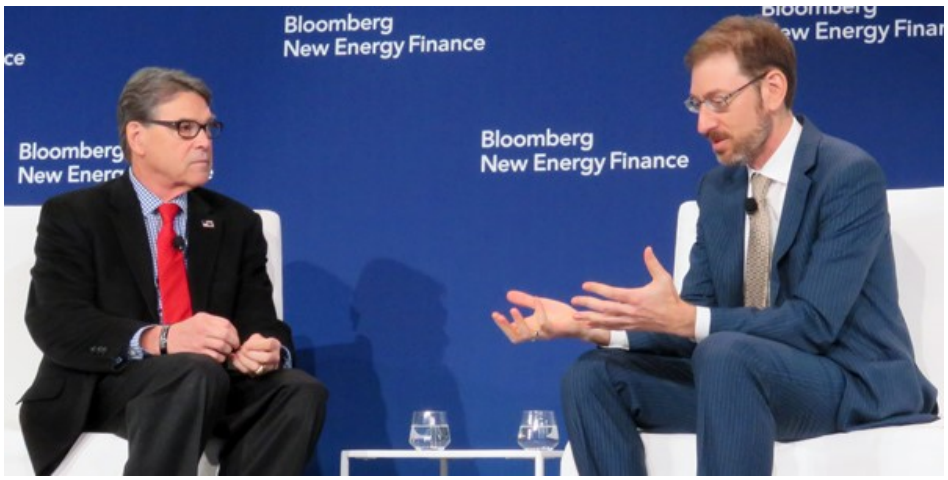
Perry Hints DOE Won't Grant FES 'Emergency' Request

By Rich Heidorn Jr.

NEW YORK — Energy Secretary Rick Perry insisted again Monday that coal and nuclear generation are essential to electric resilience but indicated he was not likely to declare an emergency to keep FirstEnergy Solutions' struggling power plants operating.

FES asked the Department of Energy last month to issue an emergency order directing PJM to compensate coal-fired and nuclear power plants that have 25 days of onsite fuel with "full recovery" of their costs and a "fair return on equity."

The company asked Perry to act under Section 202c of the Federal Power Act, which allows DOE to declare emergencies "during the continuance of any war in which the United States is engaged, or whenever [FERC] determines that an emergency exists by reason of a sudden increase in the demand for electric energy, or a shortage of electric energy."



Energy Secretary Rick Perry (left) and Bloomberg New Energy Finance's Ethan Zindler | © *RTO Insider*

FES said the closing of its nuclear and coal generation would undermine the reliability of PJM's grid, a contention the RTO dismissed, saying "there is no immediate emergency." (See *FES Seeks Bankruptcy, DOE Emergency Order*.)

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FERC Investigation Shows PSEG Violated PJM Bidding Rules

Continued from page 1

ed a $25 million charge to its income to account for potential financial repercussions.

In PSEG's 2014 second-quarter results, PSEG Power announced that a subsequent internal investigation performed by outside counsel found "additional pricing errors in the cost-based bids" and "that the quantity of energy that Power offered into the energy market for its fossil peaking units differed from the amounts for which Power was compensated in the capacity market for those units."

The company said it corrected the errors and revised processes "to ensure that the pricing errors identified in the calculations of the bids and differences in quantities offered into the energy market from those in the capacity market have been corrected and "to help mitigate the risk of similar issues occurring in the future." It said it doesn't have access to PJM data "to determine if the differences in quantity had any impact, and if so, the level of that impact."

FERC in September 2014 opened its investigation into PSEG's fossil-fuel fleet in New Jersey, which includes the 1,229-MW Bergen combined cycle gas turbine, 1,566-MW Linden CCGT, 81-MW Essex simple cycle gas combustion turbine, 168-MW Burlington CT and the Sewaren facility, which was a 445-MW gas-fired plant at the time but was damaged during Hurricane Sandy in 2012 and is being rebuilt as a 540-MW CCGT. It also includes the 456-MW Kearny CT, but that unit wasn't brought online until 2012.

In its 2017 10K report filed with the Securities and Exchange Commission, PSEG said it "believes the disgorgement and interest costs related to the cost-based bidding matter may range between approximately $35 million and $135 million, depending on the legal interpretation of the principles under the PJM Tariff, plus penalties." It has accounted for the low end of that estimate "since no point within this range is more likely than any other."

"Power continues to believe that it has legal defenses that it may assert in a judicial challenge, including the legal defense that its cost-based bidding in a substantial majority of the hours was below the allowed rate under the Tariff and therefore any errors in those hours did not violate the Tariff or were immaterial," PSEG said in the filing. "Furthermore, it is unclear whether the quantity of energy offered violated any legal requirement."

In an email to *RTO Insider*, PSEG spokesman Michael Jennings confirmed the company has set aside $35 million over the issue, adding that "we are not discussing the particulars." Representatives for PJM and Monitoring Analytics confirmed that they could not discuss details of the investigation.

PSEG says its trading arm, based at its corporate headquarters in Newark, N.J., is "among the nation's first and most successful energy trading organizations." In addition to marketing PSEG Power's output, it acquires and hedges fuel and power, dispatches plants, manages gas supply and trades energy-related products.

PJM News

OC Briefs

Storms Punctuate Dull March

VALLEY FORGE, Pa. — With the exception of three nor'easters, system operations in March were relatively uneventful, PJM's Chris Pilong told attendees at last week's Operating Committee meeting.

Pilong reviewed the monthly operations report, noting there were no spinning reserve events during the month. The load forecasting error was 1.53% overall. The error during off-peak hours was 1.48%, 0.1% above the same metric in March 2017, but the on-peak error was 1.58%, down 0.16% from a year ago.

There were 45 excursions for a total of 99 minutes outside PJM's frequency target range, down from 106 excursions for 257 minutes in March 2017. Unplanned outages, planned emergencies and the total outage average by percentage were all lower than the same period a year ago. The forced outage average by percentage, along with the forced and total outage averages by megawatts, were up slightly.

"We're starting to ratchet up the planned outages," Pilong said. In previous years, April and May have been the second- and third-highest months for outages, behind only October.

PJM estimates production-cost savings of more than $11 million in 2018, almost all of which occurred in March.

Gen Transfer Vote Postponed

PJM postponed a planned vote on approving stricter requirements for notifying the RTO about generation ownership transfers, but the RTO's Rebecca Stadelmeyer said ongoing discussions with owners remain productive. The two sides hope to have a mutually acceptable proposal prepared for a vote at May's OC.

Both sides recently engaged in a four-hour discussion, and a final call is scheduled for this month, Stadelmeyer said. Generation owners in February objected to rules proposed by PJM that they felt were too onerous, but at last week's meeting, they appeared to agree that the consensus was likely. (See "Generation Transfer," *PJM MRC/MC Briefs: March 22, 2018*.)

Storage

PJM's Scott Baker highlighted progress being made by the Distributed Energy Resources Subcommittee on determining how combined storage and generation resources should measure and account for the differences between wholesale and retail power sales. The subcommittee has developed potential definitions for wholesale-retail delineations during complicated transactions, such as when a storage resource is charging from both the grid and a co-located resource and discharging to the grid while the generation resource is also injecting directly to the grid.

Baker also outlined the non-wholesale information PJM believes it needs from DERs and the communication and data-validation channels that will likely be necessary to properly oversee storage resources.

Black Start Fuel Assurance

As part of the current black start procurement, PJM is looking to add rules that ensure plants have fuel when needed. The RTO's David Schweizer introduced a plan for "restoration fuel assurance," which it hopes to implement in the third quarter of this year and apply to any black start resource procured after 2018.

The changes would include a transition plan for existing units, including those picked up in the current procurement. The plan will also address fuel-assurance issues — including dual-fuel capability, onsite fuel storage and units having connections to multiple gas lines — and compensation mechanisms.

Schweizer said he received preliminary proposals from 90 different sites in its current procurement, which PJM undertakes every five years. Staff have sent notifications for detailed proposals to about 25 of the 90. PJM is planning to award contracts to any successful proposals by the end of May.

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Perry Hints DOE Won't Grant FES 'Emergency' Request

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Perry spoke Monday at Bloomberg New Energy Finance's (BNEF) Summit, where Ethan Zindler, head of Americas for BNEF, asked him to define "emergency."

"When you flip on the lights and nothing happens," Perry responded.

Would FES' request qualify as an emergency that deserved intervention? Zindler asked.

"That is an issue in front of DOE that is being looked at as we speak," Perry said. "My job is to find solutions to challenges that face us. The 202c may not be the way that we decide what is the most appropriate, most efficient way to address this. It's not the only way."

Perry did not elaborate on what path DOE might take, but he reiterated his longstanding position that an "all of the above" fuel strategy, including the retention of coal and nuclear, was essential to reliability. He also repeated his response to those who have complained that the emergency order — and the Notice of Proposed Rulemaking he sought from FERC last year to boost such generators — would undermine markets.

"Nobody was using the term 'free market' when we were talking about renewables and the subsidies that came from the government," he said. "The reality is government affects the market every day."

In an earlier session at the BNEF Summit, former FERC Commissioner Nora Brownell said granting FES' request would be a "tragedy" for capitalism, markets and ratepayers. Noting the FPA's reference to war or shortages, she predicted any emergency declaration would be overturned by the courts.

Nora Brownell | © *RTO Insider*

In January, FERC rejected Perry's NOPR, which would have directed RTOs and ISOs to compensate the full operating costs of generators with 90 days of onsite fuel. The commission instead opened a new docket to receive input on the resilience issue. (See *RTO Resilience Filings Seek Time, More Gas Coordination*.)

PJM News

MIC Briefs

PJM to Salvage Regulation Plan

VALLEY FORGE, Pa. — PJM's Eric Hsia told attendees at last week's Market Implementation Committee meeting that the RTO plans to salvage the non-compensation portions of its proposal to revise its regulation market that FERC rejected last month. (See *FERC Rejects PJM Regulation Plan, Calls Tech Conference*.)

PJM had filed for approval of revisions that included four interdependent components. The commission denied the proposal outright because it would have paid units a formula rate that didn't specifically compensate for the actual amount of regulation work they provided, but its order didn't address the other three components. Hsia said PJM plans to ask FERC to reconsider those components separately as the RTO determines how to address the commission's issues with its compensation plan. He confirmed that PJM wouldn't change the language describing the three components in its reconsideration request.

Direct Energy's Marji Philips asked if PJM plans to consolidate its regulation signals into a single signal as FERC pointed out in its order is the process that all other grid operators follow. Hsia said the RTO is considering that option.

VOM Proposal

Stakeholders endorsed proposed revisions for how operations and maintenance costs are recovered that would allow "major" maintenance to be included in variable operations and maintenance (VOM) calculations. Both PJM's and a default proposal received overwhelming support. The RTO's proposal received 169 votes in favor, or 75%, and 57 opposed. The default package received 178 votes in favor, or 81%, and 43 votes opposed.

A follow-up vote found that 71% of voters preferred one of the packages over the status quo. The revisions will impact how units calculate their cost-based offers and have implications for other market and operational issues, such as frequency response. (See *PJM SHs Debate Frequency Response Rules*.)

The Independent Market Monitor's Catherine Tyler provided context for the Monitor's proposal, which would have replaced "incremental" with "short-run marginal" in the Operating Agreement and assumed that all maintenance and labor costs are included in a unit's capacity offer. It fell well short of the votes needed, receiving 11% favorability, or 24 votes out of 224.

"The cost-based offer should be set at a competitive level, and that is short-run marginal cost," Tyler said.

She said that while every unit provides a

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OC Briefs

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There are currently about 150 black start units RTO-wide.

Schweizer said the new rules are in response to the fleet becoming significantly more gas-heavy. He noted that the current rules require that black start units be back online within three hours, and that gas travels in pipelines at 20 mph on average. Gas pipeline operators have assured the RTO that the lines are packed sufficiently to supply black start units if necessary, but "increased reliance on natural gas means increased need for black start ability," he said.

CIR Revisions

PJM's Jerry Bell presented additional analysis on summer performance of wind and solar units and how that relates to providing capacity injection rights (CIRs). The work is part of PJM's ongoing effort to revise Manual 21, which covers procedures for determining changes to generators' capability. (See "Limiting Meetings Causing Stakeholder Strain," *PJM PC/TEAC Briefs: March 8, 2018*.)

Bell said staff analysis found that the average peak hour, which is used for determining capability, is a good approximation of the median for solar units but not for wind. The study found that average wind performance during the peak hour of demand is likely to reflect the actual amount of production only 36% of the time. The median was about half as much, and wind production was zero in two of every seven peak summer hours, Bell said.

For the May OC meeting, PJM plans to provide more analysis on whether the current June-August testing period is appropriate, and if simultaneous testing would be more indicative of the true capability of plants that have common load spread across multiple units.

Stakeholders remained skeptical of the potential changes, noting concerns that ranged from how unit testing will be conducted, to whether there's an appeals process for PJM's determinations, to how the rights planned for units in the interconnection queue would be handled if they are not brought online before the rules change.

PMUs to Monitor IROLs

PJM is considering using its growing synchrophasor network to monitor interconnection reliability operating limits (IROLs).

The RTO's Shaun Murphy explained that phasor measurement units (PMUs) could offer redundant monitoring of the IROL interfaces. Past issues with PJM's emergency management system have required manual monitoring of IROLs. Implementing the plan would require installing 14 PMUs and modifying four.

The proposal is the most recent initiative in PJM's effort to exploit the opportunities created by its synchrophasor network. (See "Synchrophasors Backup," *PJM Operating Committee Briefs: Sept. 12, 2017*.)

University Park RAS Done

Commonwealth Edison's Alan Engelmann announced plans to end the company's remedial action scheme at its University Park North Energy Center. The RAS will be disabled by July 1 and physically removed by the end of the year.

The plan trips generators for certain delayed-clearing multi-phase and single-phase faults to prevent instability, Engelmann said. Incremental reinforcements, such as circuit breaker replacements and protection system redundancy, have made the plan unnecessary.

— Rory D. Sweeney

PJM News

MIC Briefs

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cost-based offer, which is only applied if the unit fails its market power test, it isn't used frequently because price-based offers are often lower than cost-based ones, which she said is a particular concern when cost-based offers are overstated. A unit has incentive to pad cost-based offers because it provides more room to adjust price-based offers when the unit fails its market power test.

PJM's Gary Helm said the quadrennial analysis of how unit-type net cost of new entry (CONE) is determined will evaluate both including and excluding major maintenance from the VOM calculation. PJM hired the Brattle Group to do the review, which will be presented later this month and is slated for filing for approval at FERC on Aug. 1.

The last review in 2014 became mired in infighting at FERC over details in the engineering portion of how costs could be determined.

FES Bankruptcy

PJM staff did not offer any specific comment on FirstEnergy Solutions' bankruptcy announcement and plans to shutter its three nuclear facilities, but they agreed to field stakeholder questions on the issue.

Stu Bresler, senior vice president of markets and operations, confirmed that the plants' "must-offer requirement is retained" absent an exemption. Because the period for seeking such an exemption has closed, it would require a FERC waiver granting it.

CFO Suzanne Daugherty said, "PJM is still ready for June 1," referring to the target date for Ohio Valley Electric Corp.'s integration into the RTO. But she said staff would accommodate a delay if requested. She said that all PJM members are in compliance with credit requirements but clarified that any without investment-grade ratings wouldn't be eligible for unsecured credit.

It remains unclear how the deactivations will impact prices.

"I can't imagine the analysis resulting in any other [locational deliverability area] model than what's already been modeled," Bresler said. But Monitor Joe Bowring said he can't tell if an additional LDA would clear the Base Residual Auction above the RTO-wide capacity price unless it's modeled in the auction.

SOM Revisions

Bowring announced that several calculations have been revised in the IMM's annual State of the Market Report that paint a less rosy picture for nuclear facilities than originally thought. (See *IMM Report Says PJM Prices Sufficient*.)

The Monitor revised its calculations on forward-looking profitability for nuclear plants, reducing the numbers by tens of millions of dollars. It now predicts a revenue shortfall of $11 million this year for the Perry generating station, which is one of the facilities FES plans to close, instead of the previous $500,000 profit. Perry also overtook Three Mile Island, which Exelon has threatened to close, for the grimmest long-term outlook, expected to hemorrhage $79.5 million in 2020 alone.

Exelon's Dresden facility in Illinois overtook the company's Limerick facility near Philadelphia as the plant with the best outlook, with about $58.8 million in profit expected for 2020.

Nodal Mapping

Stakeholders are working on several initiatives involving financial transmission rights.

Proposed revisions to address the nodal remapping issue are expected at the May MIC meeting to target a Sept. 1 effective date that coincides with the 2018 LMP bus modeling likely for mid-September, PJM's Brian Chmielewski said.

The revisions are in response to concerns highlighted by Direct Energy about replacing nodes where FTRs begin or end and are terminated based on changes in load, generation or system topology. When that happens, an "electrically equivalent" node must be identified to replace the terminated one, but stakeholders who have experienced that issue have been unsatisfied. The proposal would create a "dummy" pricing node at the same location as the terminated one where only "sell" bids would be allowed. After all connected FTRs are sold or expire, the node would be terminated. The same process would work for incremental auction revenue rights.

Long-term FTR

PJM also plans to bring a proposal to the May MIC meeting for addressing long-term FTRs, with a target effective date by June 1 in time for the 2020/23 auction, Chmielewski said. PJM's plan would eliminate the current "year all" offering, leaving only the one-year options that are one, two or three years in the future.

PJM said interest was low in the "year all" option that included all three years and eliminating it would improve FTR software performance. The proposal would also limit ARR modeling. Instead of including all planning period ARRs as fixed injections and withdrawals, it would only include those that cleared based on the annual model with all transmission outages removed. Chmielewski said the plan better represents the residual capability on the system and preserves capability for ARR holders in the subsequent annual allocation.

— Rory D. Sweeney

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PJM News

PC/TEAC Briefs

Cost Containment Process in Question

VALLEY FORGE, Pa. — PJM stakeholders are questioning the process for how a transmission development proposal will proceed following a debate at last week's Planning Committee meeting.

The issue arose during a discussion of the effort to incorporate cost containment into transmission project proposals. A series of events at January's Markets and Reliability Committee meeting culminated in the issue going back to the PC for additional consideration. A PJM proposal was voted down, and the RTO's Suzanne Daugherty, who chairs the MRC, then determined that an alternate proposal from LS Power, which didn't receive a vote, would be the main proposal the committee considers when the issue returns.

But a gas-fired generation representative who asked not to be named questioned whether Daugherty had the authority to make that determination. Stakeholders who supported his assessment pointed out that the MRC directed the PC to give the issue additional consideration. The PC could vote on any proposals that come out of that reconsideration to determine the order in which they're presented at the MRC, they argued.

Other stakeholders, including Calpine's David "Scarp" Scarpignato, were hesitant to accept that interpretation of the rules, arguing that they had acted at the MRC under the expectation that the appropriate outcome had occurred.

Stakeholders have been considering the issue through special sessions of the PC and working under the belief that LS has control of what the primary proposal will say. Under the MRC's rules, the committee doesn't consider alternate proposals if the primary proposal is endorsed. (See *PJM Stakeholders Explore Cost Containment Complexities*.)

PJM staff agreed to consider the process questions and make a determination, but they also questioned the usefulness of focusing on that rather than trying to find stakeholder consensus.

"This is largely academic," PJM's Steve Herling said.

"We can as a group figure out what's giving everybody the most heartburn and try to work on those" issues, PJM's Sue Glatz said.

Market Efficiency Charter

Stakeholders endorsed the charter for the Market Efficiency Process Enhancement Task Force (MEPETF), which has been stood up to consider ways to improve the process for developing market efficiency projects. It will analyze seven processes:

- How the benefit-to-cost ratio is calculated;
- How facility service agreements (FSAs) are modeled;
- The process for proposal windows;
- How interregional market efficiency projects (IMEPs) are selected;
- How projects are re-evaluated;
- The process for regional targeted market efficiency projects (TMEPs); and
- The process for updating assumptions about the system in the middle of the proposal cycle.

| © RTO Insider

The group has met three times, with the next meeting planned for April 20.

Reactive Transfer

The RTO plans to revise two of its reactive transfer interface definitions effective June 1, PJM's Yuri Smolanitsky said. Staff will add the 5059 Breinigsville-Alburtis No. 1 500-kV line to the eastern interface. The new line is expected to be in service by next spring.

Three 345-kV lines — Hanna-Chamberlin, Star-N. Medina and Monroe-Lallendorf — are being added to the Cleveland interface to extend it further south and east. Staff expects "minimal" operational impacts, Smolanitsky said.

"One of the reasons we're trying to expand the definition [is] so we have more options" to address operational contingencies, PJM's Aaron Berner explained.

Facility Rating Concerns

Ryan Dolan of American Municipal Power highlighted concerns his organization and the PJM Industrial Customer Coalition have with how transmission owners calculate facility ratings. Dolan said the methodologies used by TOs to file facility ratings in compliance with NERC reliability standard FAC-008-3 aren't made available to stakeholders, so it's impossible to independently verify them.

The same issue is at the heart of a ruling made in January by a FERC administrative law judge that PJM's system impact study (SIS) process is unjust and unreasonable because of a lack of transparency. In that case, merchant transmission developer TranSource brought a complaint that it wasn't able to accurately assess cost estimates prior to paying significant filing fees for line upgrades it proposed because PJM uses confidential information in the estimates. The RTO vowed to challenge the ruling, and parties in the case have submitted comments. (See *FERC Judge Faults PJM, TOs on Transmission Upgrade Process*.)

AMP says it wants to discuss better tracking of changes to facility ratings and development of a publicly available ratings database to help stakeholders determine factors that are limiting facilities' performance.

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PJM News

PJM Capacity Proposals to Duel at FERC

By Rory D. Sweeney

PJM's Independent Market Monitor scored a victory Monday after the RTO announced it filed with FERC to consider both its two-stage capacity repricing proposal and the Monitor's plan to expand the minimum offer price rule (MOPR) (ER18-1314).

As part of the filing, PJM requested that the commission choose one proposal — even if that requires more information for full approval — and to identify what aspects of it need to be revised, rather than send the issue to "trial-type proceedings." The RTO instead suggested establishing settlement judge procedures, if necessary.

"PJM anticipates that if the commission makes the outstanding issues more manageable by accepting one of the two tariff alternatives, a good faith consensual effort could be the most productive means of resolving those outstanding issues," the RTO said.

The RTO requested an effective date of Jan. 4, 2019, to be in place for the 2019 Base Residual Auction for delivery year 2022/2023. To that end, the RTO asked for an order be issued prior to July so that any necessary follow-up could be completed in time for January.

"Based on PJM's showings in this filing, the commission has substantial evidence on which it could fully accept either of the two alternatives in an order issued by June 29, 2018," the RTO said.

The filing is what former FERC Chairman Norman Bay called a "jump ball" on Twitter, as it asks the commission to settle a disagreement that divided the grid operator, its Monitor and stakeholders throughout 2017. PJM campaigned from the beginning for its plan to accept bids from subsidized resources in its capacity auctions, but then isolate them during a second stage and reset the price without them. The Monitor's MOPR-Ex proposal would extend the MOPR to all units indefinitely, but in alternative versions included carve-outs for states' renewable portfolios and public power self-supply. (See *PJM Board Punts Capacity Market Proposals to FERC*.)

Stakeholders, who saw the Monitor proposal as having the least impact on the current construct, backed it all the way to the Markets and Reliability Committee, but all its different versions stalled after PJM CEO Andy Ott announced he would be recommending the RTO's plan to the Board of Managers no matter the outcome of the committee vote. Still, subsequent pressure from stakeholders forced staff to offer both proposals to the board, which in the end punted the decision to FERC.

The Monitor had vowed to file his proposal if it wasn't recommended to the board, even though it would have meant meeting the tougher standards under Section 206 of the Federal Power Act of demonstrating not only that the proposed changes are just and reasonable, but that the existing rules are unjust and unreasonable. That's a higher hurdle than proposals that receive board approval, which only have to show the proposal is just and reasonable under the standards of Section 205.

"The question raised by PJM's filing in this case is not whether states have the right to [encourage development of preferred generation resources within their borders] but instead how the wholesale market should respond to such actions so that the goal of ensuring just and reasonable rates is not frustrated by an individual state's actions," PJM said in the filing.

However, some stakeholders remained unsatisfied with either option. Jennifer Chen, an attorney with the Natural Resources Defense Council's Sustainable FERC Project, said PJM's proposal "would funnel more money from consumers to power plants for no additional benefit" while the Monitor's proposal "would discriminate against offshore wind and force consumers' utilities to over-procure generation."

"Either of PJM's two competing pricing proposals will drive up the utility bills of 65 million electricity customers in 13 Mid-Atlantic and Midwestern states," she wrote. "The proposals also ignore the real issue — that PJM's capacity market commitment to supply electricity in the future forces utilities to purchase a specific amount today, but without the opportunity to choose the kind of energy customers want to power their homes and businesses tomorrow."

PC/TEAC Briefs

Continued from page 18

Order 1000 Filing Catches Up

Staff plan to file for FERC approval later this month process revisions related to Order 1000 that stakeholders endorsed in February 2016, PJM assistant general counsel Pauline Foley said. The revisions will require renewal every three years of transmission developers' prequalified status to be named the designated entity for a project. They also clarify that the deadline for designated entities to submit their agreement and credit paperwork is 60 days after PJM provides it to them.

The filing was postponed while FERC was without a quorum and ran into unforeseen staff delays subsequent to the quorum returning, Foley said. PJM will be contacting the prequalified entities to update their prequalification status.

Nuclear Deactivations

Staff have begun the analysis of whether the four nuclear plant closures announced by First Energy Solutions in March will create reliability concerns. Calpine's Scarp said the main question is whether PJM will be offering the units reliability-must-run contracts.

"Really, that's the only information out of this we're trying to get," he said.

Staff said that determination would be based on an analysis that hadn't been completed yet. FES has requested to deactivate Davis-Besse in the ATSI transmission zone in Ohio by June 1, 2020. Perry, which is also in ATSI, and Unit 1 of the Beaver Valley facility in Duquesne Power and Light's zone would be deactivated by June 1, 2021, and the second unit by Nov. 1, 2021.

PJM denied any reliability issues when FES announced the closures on March 29. (See *FES Seeks Bankruptcy, DOE Emergency Order*.)

— Rory D. Sweeney

SPP News

FERC Approves Change to Eliminate Gaming in SPP Markets

By Tom Kleckner

FERC last week overruled a stakeholder's objections in approving SPP's proposed Tariff revisions to eliminate a gaming opportunity related to regulation deployment adjustments (ER18-757).

The commission found that SPP's modifications to the regulation deployment adjustment charge and payment calculations to be just and reasonable, accepting them to become effective May 1.

FERC said that by allowing the use of mitigated energy offer curves or as-dispatched energy offer curves in regulation deployment adjustment calculations, the Tariff revisions "help ensure that the regulation deployment adjustment amount will compensate resources for their output associated with regulation deployment."

The RTO's Market Monitoring Unit had pushed for the change (MWG-RR243), saying manipulation of regulation-down offers has cost the SPP market more than $1 million in recent years.

FERC disagreed with Westar Energy's argument that the revisions represent a "fundamental change" in the incentives for market participants' selection between the energy or regulation markets. It also disagreed with Westar's complaint that incorporating resources' mitigated energy offer curves as a component of the regulation deployment adjustment's calculation is unjust and unreasonable — noting that market participants perceiving any inequity between the markets can modify their regulation offers accordingly.

The commission said it agreed with the MMU that closing the gaming opportunity outweighed concerns that the Tariff revisions would extend the use of the mitigated energy offer curve beyond local market power mitigation.

"We find that using the mitigated energy offer curve when calculating the regulation deployment adjustment amount should limit gaming opportunities and also helps ensure that the resources deployed to supply regulation recover their costs," FERC said.

Westar contended that the proposed revisions would automatically cause all regulation deployment adjustment payments to be based on the type of offer (mitigated or market-based) that causes credits to be minimized. It said SPP was proposing a solution that "inappropriately and unreasonably affects all resources, when SPP should instead narrowly address the few bad actors believed to be economically withholding."

The utility proposed that SPP be required to apply some type of economic withholding evaluation instead. SPP responded that Westar had confused gaming with economic withholding, and said that its market-clearing engine co-optimizes energy demand and regulation requirements with energy and regulation offers while ensuring resources are agnostic relative to selection for energy or regulation.

Commission Denies Golden Spread's Rehearing Request

The commission denied Golden Spread Electric Cooperative's rehearing request for its 2017 approval of SPP's Order 825 compliance filing (ER17-772).

FERC's September order accepted Tariff changes made to comply with Order 825, which requires RTOs to settle real-time energy, operating reserves and intertie transactions in the same time interval it dispatches, prices and schedules them, respectively. (See *FERC Approves SPP Shortage Pricing Changes*.)

Golden Spread argued that SPP's filing did

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SPP NEWS

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not comply with Order 825 because it did not address the RTO's practice of committing additional capacity through the reliability unit commitment (RUC) process or through manual operations that can prevent scarcity pricing events. The commission said the protests were outside the proceeding's scope and encouraged the cooperative to address its concerns through SPP's stakeholder process.

In its appeal, the cooperative argued that FERC's dismissal of its concerns as beyond the scope "effectively overlooks the fact that SPP's current, unchanged practices purposefully and fundamentally mask the presence of market scarcity and subvert the primary goals of Order No. 825."

The commission noted that its September ruling found that Order 825 did not require Golden Spread's suggested modifications to SPP's RUC or manual commitment processes. "The absence of such requirements places these SPP practices beyond the scope of a compliance filing," FERC said.

The commission has "stated on numerous occasions" that the sole relevant issue in reviewing compliance filings is whether they comply with the directions in the order requiring them, it said. It also pointed out that it will not consider arguments raised in a compliance proceeding "that are not responsive to the narrow issue of the filing utility's compliance."

FERC Accepts ITC Midwest's Interconnection Agreement

FERC accepted ITC Midwest's third restated interconnection agreement with Corn Belt Power Cooperative and Interstate Power and Light (IPL), effective April 7 (ER18-801).

The agreement adds a substation as an additional point of interconnection between IPL and Corn Belt. The interconnection was expected to be in service in the first quarter of 2018.

Corn Belt and IPL are parties to other dockets (consolidated under ER15-2028) before the commission involving Corn Belt's entry into SPP as a transmission owner and the resulting implications for existing agreements between the utilities.

The original agreement with ITC dates to 1956 but was designated as a grandfathered agreement (GFA) under MISO's Tariff. ITC said that because of its possible GFA status under SPP's and MISO's Tariffs, Corn Belt and IPL had declined to execute the agreement.

The commission dismissed concerns by Missouri River Energy Services (MRES) that the proceeding's outcome could affect cost allocations in its transmission zone, finding the proceeding "not to be relevant" to ITC's proposed addition of the substation.

"We therefore are not persuaded to consolidate this proceeding with [ER15-2028] or otherwise hold it in abeyance," FERC said. It said its acceptance of the agreement does not affect the ongoing proceeding in that docket.

East River Co-op Granted Waiver to Revise Tx Rates

The commission granted East River Electric Power Cooperative's request for a one-time waiver to revise its 2018 update and associated informational filing for its formula rate template and protocols under SPP's Tariff (ER18-860).

The waiver allows East River to reclassify the Groton-Ordway 115-kV transmission project, which it said it had initially understood should be classified as a base plan upgrade eligible for recovery through zonal and regionwide charges. The project will now be included in the cooperative's annual transmission revenue requirement as part of its zonal charges.

East River is a wholesale electric power supply cooperative serving 24 rural electric cooperatives and one municipally owned electric system in eastern South Dakota and western Minnesota. It became a TO member of SPP in 2015 as part of the Integrated System.

— Tom Kleckner

SPP News

Another Wind Penetration Record for SPP

By Tom Kleckner

Having cracked wind penetration levels of 50% and 60%, SPP has now set its sights on the once unimaginable 70% barrier.

The RTO's latest record came early on March 31, when wind energy accounted for almost 14.5 GW, or 62.13%, of its 23.3-GW total load at 1:54 a.m. SPP said it also set a new renewable penetration record of about 64.7% at the same time.

Spokesman Derek Wingfield told *RTO Insider* it's difficult to predict how high SPP's wind penetration levels can go, but staff have studied the effects of 70% levels. He said the RTO had forecast 70% penetration in late 2017, but transmission outages wound up limiting wind energy that day.

"It could be a possibility again this spring as load reaches minimum levels," Wingfield said.

SPP broke the 60% barrier on March 16, when wind energy met 60.56% of the system load. (See *SPP Hits 60% Penetration Level, as Promised*.)

It was one of five wind penetration records set during the month, and the sixth of the year.

In February 2017, SPP became the first North American RTO to exceed wind penetration levels of greater than 50%. Its all-time high for wind generation came in December, when the system generated almost 15.7 GW of power from wind farms.

"The records are an indicator of the evolution of our system, and wind continues to be added to it," Wingfield said. "Reliability and economics drive our market, and we're proud that we're able to reliably manage so much wind and provide some of the least-cost electricity in the country, based on the resources available to us."

The RTO has 17.75 GW of installed wind, much of it in Kansas, Nebraska, Oklahoma and West Texas. Another 5.3 GW of wind capacity has interconnection agreements but is not yet in service, and 35 GW of wind capacity is under various stages of review in the generator interconnection queue.

SPP's Wind Penetration Records

- March 31, 2018: 62.13%
- March 16, 2018: 60.56%
- March 11, 2018: 58.49%
- March 5, 2018: 58.07%
- March 3, 2018: 57.87%
- Feb. 19, 2018: 56.88%
- Dec. 4, 2017: 56.25%
- April 24, 2017: 54.47%
- March 19, 2017: 54.45%
- March 6, 2017: 52.65%
- March 5, 2017: 52.11%
- Feb. 12, 2017: 52.08%

Seams Steering Committee Briefs

SPP, AECI Agree on Joint Study Scope

SPP and Associated Electric Cooperative Inc. stakeholders last week approved a scope for a joint study to determine the existence of any mutually beneficial transmission projects, enabling them to continue with their agreement to conduct a biennial study.

The SPP-AECI Interregional Planning Stakeholder Advisory Committee meeting was held April 4 during the Seams Steering Committee meeting in Dallas.

A joint planning committee will determine the cost allocation of any potential projects on a case-by-case basis, with costs assigned equitably based on the constraint being resolved.

Should any projects be identified, SPP will solicit detailed proposals, similar to those used for its Order 1000 competitive projects.

The groups' 2016 joint study identified a pair of projects that is still awaiting final regulatory approval.

TSR Proposal

The seams committee also discussed a draft business practice for unreserved use of the transmission system. The draft envisions three days for entities to submit transmission service requests (TSRs) for unreserved use, allowing them to avoid usage charges. After three days of unreserved use, a TSR would be required.

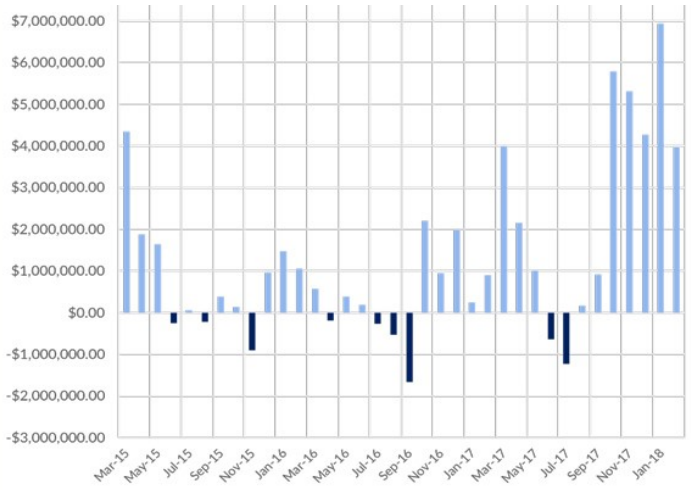
February M2M Results in $3.97M Charge to MISO

SPP and MISO's market-to-market (M2M) process resulted in a nearly $4 million payment to SPP for February, the seventh straight month, and the 15th of a total of 17 M2M months, that MISO has paid its seams partner.

SPP has now received almost $48 million in M2M payments since the two RTOs began the process in March 2015, staff told the SSC.

SPP's Nashua-Hawthorn and Riverton-Neosho-Blackberry flowgates accounted for most of the charges, binding for a combined 430 hours in January because of high winds and outages. That resulted in $3.4 million of the MISO payments to SPP.

— Tom Kleckner



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

M2M settlement since go-live | *SPP*

FERC & Federal News

Developers, Tx Providers Seek FERC Direction on 'Affected Systems'

Continued from page 1

in a neighboring region (EL18-26, AD18-8).

Day 2 focused largely on the commission's generator interconnection Notice of Proposed Rulemaking (RM17-8). The NOPR noted that because affected systems are not bound by the practices of the system processing an interconnection request, its process and schedule may differ from the host.

"The challenge with California is that we are like Swiss cheese, with no requirement that all the utilities had to join the CAISO," said Deborah Le Vine, CAISO director of infrastructure contracts and management. "We have a total of, believe it or not, [19 potentially] affected systems, and out of [them], two are [FERC] jurisdictional."

Seeking a FERC Fix

"We'd love for you to tell us a fix, because all the ideas we've come up with haven't worked so far," Le Vine said. "The challenge has been trying to put together any type of reciprocity agreement. That's why we don't have the 'teeth' to mandate compliance."

Brian Fritz, director of transmission development at PacifiCorp, said that since the inception of the company's interconnection queue, it has received more than 1,000 requests for interconnection totaling over 90 GW. "I heard the term 'Swiss cheese,' but ours is Swiss cheese on steroids," Fritz said. "We're interconnected with many, many different utilities because we have such a large footprint across the west."

Lisa Szot, head of transmission and interconnection for Enel Green Power North America, bemoaned the lack of a standardized process for affected-system studies. "It would be nice to have something that forces the affected systems to have to complete a study within the time frame of associated areas to meet the timelines of the interconnection process," she said.

Scott Seier, vice president of private equity firm and generation investor Tenaska Capital Management, said he preferred FERC direction to lengthy RTO stakeholder processes.

Rock Falls Wind | *EDF Renewable Energy*

"FERC leadership is vital and necessary to ensure problems plaguing processes are addressed to ensure the efficient processing of the interconnection queue and foster competitive and robust markets for electricity," Seier said. "Looking at the narrow issue of affected-system study coordination, fixes include limited scope of studies in the early stages, increased RTO study resources and allowing interconnection customers to fund affected-system or other interconnection study work to ensure interconnection agreements can be achieved by a certain date."

Cost Allocation

Commission staffer Tony Dobbins asked MISO Director of Resource Utilization Vikram Godbole if the RTO calculated cost responsibility on a case-by-case basis, "or has it been pretty much a standardized process or document that may have a couple of variations for each entity?"

Godbole said that MISO's documentation could be improved to provide more detail to customers at the front end of the process.

"We need to keep in mind how far RTOs have come from a coordination perspective," Godbole said. Older tariff versions lacked any coordination process, he said.

"About the geography of the upgrades, it doesn't matter whether it's 600 miles away or a thousand miles away, it comes down to electric impact that has to be mitigated," Godbole said. "Upgrades will be identified, and somebody's going to have to pay those. … We have to keep going with our process, the way we're doing, look for more feedback from stakeholders. And any guidance FERC wants to provide would be helpful."

EDF Renewable Energy Project Engineer Anton Ptak said the industry needed tariff provisions to detail how costs are allocated and how models are established between affected systems and host transmission providers.

"One thing we'd like to see is specific tariff requirements on affected systems to perform their affected-system studies and provide results when required under the host transmission provider," Ptak said. "We've experienced several delays with affected systems providing their results to MISO in the recent past, and so we'd really like to see some specific language improving the provision of the affected-system study results."

Szot agreed that cost estimates need to be provided early in the process.

"The affected systems need to provide base case models so an interconnection customer can try to assess potential costs," Szot said. "For an interconnection customer, the costs that can occur from an affected system could make the project no longer viable. This is a huge commercial risk to developers."

Small Utility Perspective

James McFall, manager of electric resources for the Modesto Irrigation District in the Central Valley of Northern California, gave the perspective of a smaller — 560 square miles and 114,000 customers — utility. MID is not a member of CAISO but is an affected system of other systems that are connected to the ISO. As such, it has no ability to control dispatch on generators connected to the host system to manage reliability events, McFall said.

The utility must spend significant staff time and resources on affected-system studies, he said. The utility mitigates costs by waiting until certain milestones are met to maximize potential that projects that are

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FERC & Federal News

Developers, Tx Providers Seek FERC Direction on 'Affected Systems'

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studied will be developed.

"Any cost impacts caused by generators interconnecting to third-party systems are borne by MID's ratepayers if MID is unable to recoup or avoid the costs created by those interconnections," he said.

McFall said MID is not in favor of standards for affected-system coordination, and he asked FERC to "consider collateral impacts on smaller entities such as ourselves" if it considers standards.

Interconnection-wide Models?

Tradewind Energy Transmission Manager Aaron Vander Vorst said that the industry has been left to navigate its way through affected-system studies because of the "unscripted process" of Order 2003, including managing departures from the *pro forma* interconnection procedures.

He proposed a concept of "One Model, One Queue, One Schedule," including jointly developed interconnection-wide transmission models to improve accuracy and efficiency between systems.

Affected systems should be able to do studies on their own queues and neighboring queues simultaneously to encourage cross-seam coordination, he said. And he said the study schedule should be aligned between neighboring providers to ensure developers have the information they need to make informed milestone decisions.

"Taken to the extreme, use of identical dispatches across seams would largely eliminate the need for affected-system studies," he said.

"The existing rules, procedures and coordination procedures are simply not adequate for the environment that we have found ourselves in today," he said, "but change is difficult." The industry needs clear directives from FERC, he said.

First Solar Development Interconnection Manager Madeleine Aldridge, whose company developed about one-third of utility-scale solar serving California, said CAISO has improved its processes by notifying affected systems at an earlier stage. But, she said, "more needs to be done to incent the host transmission owners to take on the coordination that will provide interconnecting generators certainty and best siting incentives relative to existing transmission."

Aldridge said her the company has waited for as long as two years for affected-system studies. Under current rules, "we are not really sure when we will get the studies report," she said.

"The concept of coordinated regional planning has not yet touched the generator interconnection process in an efficient manner," she said. "The Bulk Electric System is really one grid, except for a few exceptions, and really cannot, and should not, be planned for in discreet sections. With well-planned generation, interconnection study processes, regional coordination that includes utilities outside the boundary of the host transmission owner, can increase least-cost solutions, versus disjointed expensive transmission upgrades."

But Jay Caspary, director of research development and tariff studies for SPP, said an interconnection-wide transmission planning and interconnection process is impractical in the Eastern Interconnection.

"Our [generator interconnection] models — all the models we use for tariff services whether its transmission service or generator interconnections — are based upon our [integrated transmission plan] model," he said. "I can't imagine us trying to do that in one effort. Those are big efforts individually by themselves."

FERC & Federal News

Renewable Gens Face off with RTOs at Seams Tech Conference

By Amanda Durish Cook, Tom Kleckner and Rich Heidorn Jr.

WASHINGTON — Renewable developers and transmission planners for MISO, SPP and PJM sparred Tuesday over the effectiveness and fairness of "affected system" studies, with RTO staff urging FERC to leave study improvements up to stakeholders and developers asking the commission to order identical requirements for grid operators.

The disagreement came during the first day of FERC's two-day technical conference, ordered in response to EDF Renewable Energy's October complaint that the three RTOs do not have clearly defined processes to determine cost responsibility for network upgrades on an affected system stemming from an interconnection request made in a host RTO. EDF contends inconsistencies and a lack of clarity in the RTOs' rules for affected systems interferes with developers' ability to judge the commercial viability of proposed projects (EL18-26, AD18-8). (See *FERC Orders Review of PJM, MISO, SPP Generator Studies*.)

SPP, MISO Flooded with Interconnection Requests

Both MISO and SPP planners called attention to their expanding interconnection queues in opening remarks, saying they are coordinating affected-system studies while managing record volumes in planned generation.

Vikram Godbole | © RTO Insider

MISO's queue has grown to more than 95 GW this year, approximately 80% of the RTO's existing load, said Vikram Godbole, director of interconnection planning.

"Coordination of such a large chunk of projects takes time. It's challenging," Godbole said. "The affected system was not a big problem back [in 2005], but … when you're dealing with 95,000 MW in one queue, coordinating four subregions and different cycles with other RTOs, it takes time." MISO divides its interconnection entrants into the Central, East, South and West subregions.

Steve Purdy | © RTO Insider

SPP Manager of Generation Interconnections Steve Purdy said his RTO's interconnection queue has ballooned 600% in the past four years to 70 GW, an amount exceeding SPP's 55-GW predicted summer peak in 2021.

Even with expanding queues, Purdy insisted SPP and MISO are improving coordination of affected-system studies. Purdy said SPP's allocations of costs resulting from projects in neighboring regions "are appropriate and consistent with allocation of costs for generation interconnection in SPP."

What Role for Stakeholder Process?

PJM Senior Engineer Edmund Franks said his RTO already has a "fairly detailed set of procedures" to address network upgrades on the seam. He added that MISO and PJM already work together to coordinate affected-system studies and said that any improvements should be "decided and agreed upon in the context of the stakeholder process."

Franks noted PJM's interconnection process is linked with its annual Regional Transmission Expansion Plan. If FERC prescribes changes to affected-system studies, "that would cause a divergence in how we evaluate our system from a baseline perspective [for RTEP] compared to how we evaluate interconnection customers. We feel they should be evaluated with the same test and criteria," Franks said.

Godbole said the RTOs should be given "flexibility and latitude" to set their own regional planning processes, including cost allocation rules, which are "embedded" in planning.

New World 'Churn'

However, the two renewable developers on the panel said RTOs have already been granted that flexibility, and the result is a confusing and unreliable process.

Kris Zadlo (left) and Edmund Franks | © RTO Insider

"It's unrealistic to think that the stakeholder process is going to come up with a fair procedure to study affected systems when they have the opportunity to shift costs to their neighbor," said Kris Zadlo, Invenergy senior vice president.

Zadlo said he didn't doubt RTOs are currently applying their methodology correctly: "I think the debate here is: Is the current methodology that they are using still appropriate in today's day and age? That's what needs to get revisited.

"I feel for these guys. They have large queues, but this sort of churn is a product of the new world," Zadlo said, referring to newer low-cost generation technologies. "The days [when] you build something and forget about it for 50 years are gone. … You've got to man up. You've got to staff up accordingly."

Purdy said more staff is not the answer. "We've run into some very real physical constraints in SPP," he said. "We've got, in fact, more generation requests than we have load."

Costs 'Out of Control'

"We don't enter the queue on a whim, and it's not been easy lately," said Kate O'Hair, vice president of EDF's north region. O'Hair said EDF has been surprised by increasing affected-system cost assignments and a seeming lack of explicit rules about how RTOs determine impact cost. She urged the commission to require each RTO to detail

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the standards used in their Tariffs and joint operating agreements.

Zadlo said the cost associated with identified network upgrades has "spiraled out of control."

"Addressing affected systems has transformed into an unnecessarily complicated and time-consuming process," Zadlo said, claiming that remote projects are being forced to pay affected-system costs. Zadlo pointed to Invenergy's Deuel Harvest Wind Farm in South Dakota, which he said ended up responsible for affected-system costs "on the PJM system, 800 miles away in Michigan."

"Codifying the processes that exist today will not solve the problem. FERC needs to provide definitive guidance on what standards the ISOs need to apply [and] bind limitations to studies. RTOs can't perform a regionwide RTO analysis. It needs to be simple, realistic and focused on the boundaries," Zadlo said.

Today, network upgrades are solving "chronic seams issues," Zadlo said. "Why should generators be forced to solve these seams issues between the ISOs?" He added that he has seen network upgrades resulting from affected-system studies appear months later in RTOs' transmission expansion plans.

"If it's 'but for' the generator, why is it appearing in a transmission expansion plan six months later? I think what you're seeing here are upgrades that are really needed and folks trying to find a way to pay for these upgrades," Zadlo said.

"The RTOs will not work it out. There needs to be clear direction by FERC as to what needs to be applied … in these affected-system studies. We're at this juncture, in this situation, because the RTOs have been trying to work this out."

'Misunderstood Process'

"There's no mechanism to ensure costs are shared between appropriate customers and RTOs," O'Hair said. She said EDF had a project in the February 2015 definitive planning phase of MISO's queue with an executed interconnection agreement that "came back with tens of millions in upgrades that had not shown up in previous studies" after PJM completed an affected-system study. Eventually, O'Hair said, the costs were reassigned to another generator that dropped out of MISO's queue.

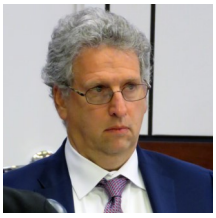
Kate O'Hair | © RTO Insider

"It's a perfect example of how it's a misunderstood process," O'Hair said.

What's the Right Model?

Zadlo said he didn't understand why 15 years after FERC Order 2003, it's still a struggle to get all RTOs to align their base cases and that different study methodologies produce different answers: "All of these RTOs are very proud of their study methodologies, and we've been in situations where we are mediators because one RTO is saying one thing, [and] the other RTO is saying another thing. Who is right?

"You have no way to challenge the impacted system study," he added. He suggested only projects "truly on the seams" should be evaluated for impacts on neighboring RTOs, saying it's "kind of inconceivable" that every project requesting interconnection in one RTO is going to impact potentially the reliability of an adjacent RTO.



FERC Commissioner Richard Glick was in listening mode during the morning session at last Tuesday's staff-led technical conference. | © RTO Insider

MISO, PJM and SPP representatives said not all incoming project requests are evaluated for impacts on other RTOs.

"We're not going to analyze a project in New Jersey or Delaware for impacts in Indiana," Godbole said.

When FERC staffer Kathleen Ratcliff questioned whether the RTOs have any written rules specifying when affected-system impacts should be evaluated, RTO staff agreed that pursuing a study is based on "engineering judgment."

Zadlo suggested using more targeted generation dispatch assumptions, relying on a subregion rather than a footprint-wide dispatch assumption.

Godbole said MISO's dispatch assumptions have been developed over years. "We can't create a special model just for affected systems and try to merge that with the overall planning models," he said.

Cooper South Constraint

FERC staff steered discussion toward a $311 million network upgrade to SPP's Cooper South constraint identified in MISO's February 2016 queue study group, asking MISO to explain its reasoning in assigning the upgrade cost to generators.

Godbole said, in that case, MISO relied on affected-system study results from SPP that indicated a need for the upgrade.

"MISO is not an expert on SPP transmission or SPP process, so we depend on the expertise of the transmission [operator]. So, when they identify network upgrades required to mitigate constraints on their system due to MISO interconnection projects, we take that information, include that in the reports and then we have a follow-up call with interconnection customers," Godbole said. He said although some MISO interconnection customers have said the RTO should take on more of the study responsibility of the affected system, "at the end of the day, SPP really is the regional operator for that transmission [and] in the best position to provide MISO with the most accurate analysis."

15-Day Deadline

O'Hair said the $311 million upgrade is still "not well understood." She also complained that interconnection customers have only 15 days to review the results of affected-system studies and decide whether to continue with a planned project.

"If we're coordinating, this doesn't feel coordinated," O'Hair said.

Zadlo said a new line on the Cooper South

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constraint will solve chronic congestion issues in SPP.

"So, is it fair and just to just fully allocate the cost of that line to the generators when there is going to be congestion relief to SPP customers?" Zadlo asked. He added that interconnection customers assigned the cost of the Cooper South upgrade all changed their network resource interconnection service requests to an energy resource interconnection service designation to avoid paying the costs of the new line.

Purdy pointed out that SPP's interconnection studies focus on reliability, not economics or congestion.

Ratcliff asked if affected-system studies frequently shift upgrade costs to interconnection customers. RTO staff said how dramatically cost allocation shifts is entirely situational.

Delays

During the afternoon session, O'Hair complained that study delays have impeded the ability of interconnection customers to assess their projects' commercial viability. EDF's complaint noted that MISO produced its February 2016 West cluster phase I system impact study after 250 days, despite a Tariff requirement to do so in 120 days. It said MISO was at least six months behind schedule in processing the cluster, causing delays to cascade through to successive clusters.

"It's difficult to manage, and extraordinary amounts of risk and capital are tied up wondering when studies will be delivered," O'Hair said. "It's feasible and doable to coordinate timely affected-system studies; it's simply a matter of the commission finding the current process is no longer just and reasonable and ordering the RTOs to hash out the details."

Jennifer Ayers-Brasher | © RTO Insider

Jennifer Ayers-Brasher, director of transmission and market analysis for E.ON Climate & Renewables North America, echoed O'Hair's complaint: "To my knowledge, [the RTOs] have no detailed procedures governing scope and timing for affected systems processing, and any provisions are vague and outdated. The lack of transparency contrasts with clear commission-approved procedures that each RTO has to process interconnection requests in their own footprint."

Chad Craven, manager of transmission for Tradewind Energy and a former MISO staffer, called for a "more cohesive process" through improved coordination of the study process.

"I don't think it's a secret to anyone here, or [anyone] who follows this issue, that every RTO has its own process and timelines. Even if they have the same basic time frame, they may start and stop at different points in time," Craven said. "So, the essential ask here is for the commission to come up with a ruling, preferably not even a recommendation, but some sort of mandate to better align these processes."

PJM's Aaron Berner said many study delays come from customers withdrawing or reducing the size of their projects, "which has a ripple effect."

FERC staff asked the RTO representatives whether it was feasible to use a consistent base-case model across their regions. Berner said while the RTOs do have consistent base-case models that are coordinated at different times, "changes must continue to occur."

"Those changes have to be just passed through to our affected systems, neighbors, and updated in models as is necessary," he said.

"If we do not maintain that link, if we change that interconnection customer model to be something that is some type of dispatch consistent across the entire Eastern Interconnection but disregards differences in the markets … I'm not sure I would understand how we could have a consistent set of assumptions," Berner said.

6 Immediate Changes

Judah Rose, chair of ICF's energy advisory practice, called for six changes that could be made "right away," starting with an adequate description of the base case being used by the host or affected system.

Rose also called for clear standards, the prompt availability of models, a comparison of the studies' inputs and outputs, documentation of missing data and causes of delays, and a clear description of the RTOs' responsibilities and requirements to ensure adequate staffing and other resources.

"These are things that can be done immediately and without prejudice to more complicated issues that may need to take longer to achieve," Rose said.

Given a chance to comment before the afternoon session concluded, Tradewind Vice President of Transmission Derek Sunderman said he had written down at least nine variables that differ among MISO, SPP and PJM. Multiply those nine variables across the three entities, and the number of permutations and outcomes is astronomical, he said.

"The only way to make a complex problem less complex is [to] remove some variables," he said. "The best way is for FERC to actually provide some orders on a lot of these issues. Over time, each RTO has developed its construct for reliability procedures, under their own stakeholder silo. What we need are orders that fix what variables mean because, right now, you have everybody making a different interpretation what the variable means."

Experts Predict EV Adoption, Charge Management in Illinois

By Amanda Durish Cook

Electric vehicle experts last week descended on the Illinois Commerce Commission to discuss the eventual adoption of EVs in the state and the need to manage customers' charging patterns to avoid stressing the grid.

The ICC held the policy session in Chicago to learn more about the relationship between EVs and the grid. Panelists agreed that widespread EV adoption is years away and said state policymakers will eventually devise ways to stagger charging.

Illinois now has 15,000 EVs, with 100,000 projected to be on the road in the coming years, said Katie Bell, Tesla's energy policy and business development manager. A recent study by the Illinois PIRG Education Fund and Frontier Group predicted Chicago will have 81,000 EVs by 2030. The ICC predicts that widespread EV adoption could bring Illinois up to $43 billion in benefits by 2050, "stemming from reduced utility bills, carbon pollution and fuel and vehicle expenses."

Bell said Tesla is working to make its cars more affordable and examining how to site new charging stations, as well as ways to encourage owners to charge during off-peak hours.

"We're trying to give customers a better option than what's available today," Bell said.

ChargePoint charging station | *ChargePoint*

EVs are expected to drive 54% of new car sales by 2040, according Bloomberg. The ICC says that Illinois currently ranks sixth in the nation in terms of numbers of plug-in EVs.

"Currently, Illinois' framework is light in that it doesn't heavily regulate electric vehicles," said energy attorney Elizabeth McErlean of law firm McGuireWoods.

McErlean said the question still remains whether EV charging station owners should be regulated as public utilities, though the Illinois General Assembly in 2012 exempted station owners from the definition of utilities. With Illinois keeping regulations light to encourage the development of private EV charging stations, McErlean said charging providers can grow unfettered and experiment to find best practices.

"Fossil fuels have enormous impact on our climate and health," said Christie Hicks, manager of clean energy implementation for the Environmental Defense Fund. "Electric vehicles offer the greatest emissions reduction in the transportation sector. … It's not a matter of when electric vehicles are coming, but how. … The future is electric."

But Hicks acknowledged that fears of low travel range, scarce inventory and high upfront costs remain a barrier to widespread adoption.

Citizens Utility Board Executive Director Dave Kolata said there's "a lot of momentum for transportation electrification." He noted that charging patterns must be optimized, and that if all EV owners charge at night when wind generation creates negative electricity prices, it will eventually create a new peak. Kolata said he supported using time-of-use rates for charging and predicted that EVs will ultimately be automated to respond to price signals while charging.

When Illinois Senior Assistant Attorney General Susan Satter asked the room who owned an EV, she was greeted by a show of four or five hands.

"I have an EV," Satter said. "Eighty percent of charging is done at home, in the garage. When we talk about charging stations, we're talking about filling in for the times when we're not at home."

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Experts Predict EV Adoption, Charge Management in Illinois

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Satter said consumers have a lot of options for the fill-in charges: employers, city-owned free or low-cost charging stations, and stations placed at shopping centers to attract customers. Satter said states must be careful of developing policies that only consider utilities' charging projects.

"We're at the beginning of the EV revolution," she said.

Satter said the growing number of EV owners will increasingly need to understand energy pricing and peak demand in order to select the lowest-price charging times. Panelists generally agreed EV owners will eventually need to be pushed to charge at off-peak times to avoid stressing the grid.

Satter pointed out that EV owners are still early adopters that earn well above the national median income and cautioned utilities about providing these owners incentives when they're already high earners.

Tesla Supercharger station | *Tesla*

"What is an incentive? It's giving people more money," Satter said. "When we get past the early adopters and into the mass market, it's going to be cheaper."

Other panelists urged policymakers to be cognizant that EV owners today tend to be wealthier and less in need of subsidies.

"Many of the communities that stand to benefit the most from electric vehicles don't have access to them," Hicks said. She urged policymakers to subsidize charging stations and develop more local pilot programs.

Kolata agreed that incentives for EV adopters should not come at the cost of other economic classes of customers.

But Ryan Schonhoff, Ameren supervisor of rates, said lack of a "holistic charging system" is hindering growth of EVs.

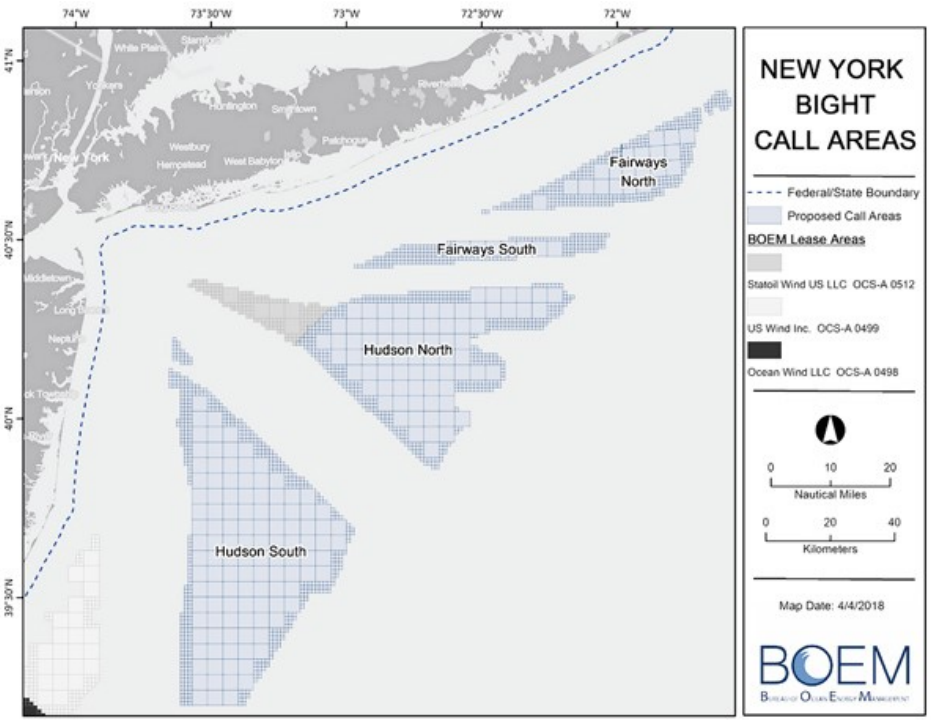
Chicago Transit Authority analyst Kate Tomford said a solar and storage combination could work well in the city's bus garages. She said that while the city owns two electric buses now, it plans to have a fleet of 20 in the "near future."

Commonwealth Edison Vice President of Regulatory Policy and Strategy Jane Park said EVs in the U.S. are set to reach cost parity with internal combustion engine vehicles in seven years and credited growing popularity with "a confluence of technology advancements and national and internationally policy." States with the highest EV adoption offer a "portfolio" of purchase incentives, dynamic pricing programs, infrastructure plans and a plan for access for low-income communities, she said.

Park said it's not quite the time to place strict regulations on EV ownership because policymakers don't yet understand how to strike the best balance of regulations.

Interior Plans Would Boost Mass., NY Offshore Wind

By Michael Kuser



Offshore wind got a boost on two fronts Friday when U.S. Interior Secretary Ryan Zinke announced two new proposed offshore wind leases for Massachusetts, while the Interior Department's Bureau of Ocean Energy Management issued a call for commercial interest in four wind energy areas in the New York Bight.

"The Trump administration supports an all-of-the-above energy policy and using every tool available to achieve American energy dominance," Zinke said.

BOEM on Apr. 11 will publish in the *Federal Register* a proposed sale notice for the Massachusetts leases and a call for information and nominations on the New York areas.

Massachusetts later this month will select one of three bids received in December for up to 800 MW of offshore wind energy projects, with contracts to be submitted at the end of July. The bidders include Bay State Wind, a joint venture between Orsted and Eversource Energy; Deepwater Wind; and Vineyard Wind, a joint venture of Avangrid Renewables and Copenhagen Infrastructure Partners.

All three developers have purchased renewable energy leases off Martha's Vineyard from BOEM. (See *Mass. Receives Three OSW Proposals, Including Storage, Tx*.)

NY: OSW, Yes; Offshore Drilling, No

The proposed lease areas offshore from Massachusetts total 460 square nautical miles.

Interior Counselor for Energy Policy Vincent DeVito said in a statement that the federal government had worked "with a broad community of engaged stakeholders, including fishing communities," to identify "areas that can support a large-scale commercial wind project, while minimizing the impacts to fishing habitats, marine species and other uses" of the outer continental shelf.

The proposed "call areas" being considered in the New York Bight — a region of the Atlantic Ocean between Long Island and the New Jersey coast — are named Fairways North, Fairways South, Hudson North and Hudson South, and comprise 2,047 square nautical miles.

BOEM Acting Director Walter Cruickshank said in a statement that the bureau and stakeholders will look at the potential impacts of offshore wind in New York.

"For example, commercial and recreational fishing are important cultural and economic activities that must be considered," Cruickshank said.

New York in January released its master plan for 2,400 MW of offshore wind development, which includes an initial phase of solicitations this year and next for at least 800 MW. (See *NY Offshore Wind Plan Faces Tx Challenge*.)

Gov. Andrew Cuomo released a statement Friday welcoming BOEM's support in advancing the state's offshore wind plan but added he remains "deeply concerned by the federal government's proposal to allow new offshore oil and gas drilling."

"New York has formally requested to be excluded from this offshore drilling plan, and we believe offshore wind is a better direction for our economy, for our environment and for our energy future," Cuomo said.

Company Briefs

Gas Pipeline Operators Shut Down Comms After Cyberattack

Four natural gas pipeline operators shut down their electronic systems for communicating with customers because of a cyberattack on a shared, third-party data network.

Energy Transfer Partners, Boardwalk Pipeline Partners and Eastern Shore Natural Gas on April 2 reported communications breakdowns, with Eastern Shore saying its outage occurred March 29. Oneok, which has pipelines in the Permian Basin in Texas and the Rocky Mountains region, said April 3 that it disabled its system as a precaution after the attack.

The cyberattack on Energy Services Group is also having ramifications in the electric power industry, even though the company said April 4 that its systems were back up.

Energy Services Group supplies electricity prices and demand models that retail power providers use to bill homes and businesses, as well as to determine how much power they need to secure for their customers in wholesale markets, said Michael Harris, CEO of Houston-based consulting firm Unified Energy Services. Without its demand models, retail power providers could buy too much, or not enough, power for their customers and have to use spot markets to correct the imbalances, Harris said.

Duke Energy said that after it learned of the attack, it abandoned the electronic system run by Energy Services Group that it uses to share consumer data with third-party electricity and gas providers in Ohio. Duke's customers in the state may get partial or late bills as a result, said a company spokeswoman.

More: *The New York Times; Bloomberg Technology*

NM PRC Schedules June Hearing On SunZia Transmission Project

A New Mexico Public Regulation Commission hearing examiner has set a June hearing date for the commission to consider approving transmission line locations and right-of-way widths for the $2 billion SunZia transmission project.

SunZia, which submitted an application for the approvals to the PRC in March, wants to build two 520-mile transmission lines and other infrastructure to bring renewable

| *SunZia*

power from rural areas of New Mexico and Arizona to large markets in the Southwest.

Arizona regulators approved the project in 2015.

More: *The Associated Press*

We Energies Closes Coal-fired Pleasant Prairie Plant Early

We Energies closed its coal-fired Pleasant Prairie power plant in Kenosha County, Wisc., on April 3, a week ahead of schedule.

"It all had to do with timing of removing all the coal that was left on the coal pile. So we did that last week," We Energies Vice President Pat Stiff said April 4. "Then, we had coal trains dedicated for Pleasant Prairie. When those three trains were consumed, then we shut the plant down because we didn't have any more coal on contract to come to the plant."

More: *Wisconsin Public Radio*

Eversource Issues RFP for EV Charging Station Deployment

Eversource Energy said April 3 it has issued a request for proposals for electric vehicle charging stations as part of its plan to spend $45 million in the next five years to speed EV adoption in Massachusetts.

The company is looking to install thousands of EV charging ports in places where vehicles are parked for several hours, such as businesses, shopping centers and medical offices. It also plans to install DC fast charger ports in strategic locations along heavily trafficked travel corridors.

More: *Eversource*

OG&E Completes Installing Gas Units with Fast Ramp Time

Oklahoma Gas & Electric said April 4 it has completed the installation of seven natural gas-fired units to replace the 1950s-era generation units at what it is now calling the Mustang Energy Center.

The OGE Energy subsidiary said the 462-MW power plant is the second of its kind in the country and can put energy onto the grid within 10 minutes of starting. The previous power plant took 10 to 20 hours, the company said.

More: *Oklahoma Gas & Electric*

ITC Holdings Reducing Rates To Reflect Tax Cut Savings

ITC Holdings said April 2 it will reduce its rates to reflect its savings from the Tax Cut and Jobs Act, which reduced the federal corporate tax rate to 21% from 35%.

The company said its MISO customers will see their transmission rates reduced 8 to 10%, retroactive to Jan. 1, starting with the bills for their March services. Its SPP customers will see a similar reduction, also retroactive to Jan. 1, for future periods.

More: *ITC Holdings*

National Grid Promotes NY President, Names Replacement

National Grid said April 2 it has named John Bruckner its New York president, replacing Ken Daly, whom it promoted to chief operating officer of its U.S. electricity business.

Bruckner had been National Grid's executive vice president of network operations. In his new role, he will oversee National Grid's regulated businesses that provide power to 1.6 million customers in upstate New York and natural gas to 2.3 million customers in upstate New York, Brooklyn, Staten Island, Queens and Long Island.

As chief operating officer, Daly will lead the delivery of electricity to 3.3 million customers in New York, Massachusetts and Rhode Island.

More: *National Grid*

Criticism, Controversy Mounting for EPA Admin Pruitt

EPA Administrator Scott Pruitt spoke to several friendly media outlets last week, such as Fox News, the Daily Signal and the *Washington Examiner*, maintaining that people attacking him for alleged ethical lapses are doing so to stop the Trump administration's agenda.

ABC News on March 29 reported that Pruitt paid $50 a night for a D.C. condominium owned by the wife of a lobbyist whose firm represented a pipeline company helped by an EPA decision. Since then, multiple media outlets — citing anonymous sources — have reported on other potentially unethical actions by the administrator:

- A source told *The Atlantic* that last month, Pruitt used a provision of the Safe Drinking Water Act to get raises for Millan Hupp, his director of scheduling, and Sarah Greenwalt, his senior counsel at EPA, after the White House declined to give them.
- In the past year, at least five EPA officials, four of whom were high-ranking, were reassigned or demoted, or asked for new jobs after they raised concerns about Pruitt's spending habits, *The New York Times* reported. These include flying first class, using private planes, having a 24/7 security detail and installing a soundproof "phone booth" in his office.
- CBS News reported that one of these officials was his security detail's lead agent, who was reassigned after he told Pruitt he couldn't use emergency lights and sirens in nonemergency drives in D.C.
- According to documents reviewed by the Associated Press, the detail has rung up millions of dollars in extra travel expenses, as it accompanied Pruitt on a family vacation to Disneyland and a trip to the Rose Bowl.
- *The Washington Post* reported that EPA had considered leasing a private jet for Pruitt, while the *Times* reported that his security had also considered purchasing a bulletproof desk.

President Trump and Republican members of Congress, however, are largely sticking by Pruitt. Trump reportedly called Pruitt the night of April 2 to offer support, telling him, "keep your head up, keep fighting" and "we have your back." But on April 4, Press Secretary Sarah Huckabee Sanders said the White House was "reviewing the situation."

The chairman of the Senate Environment and Public Works Committee, which oversees EPA, applauded his tenure. "Administrator Pruitt has accomplished key priorities as head of the EPA," Sen. John Barrasso (R-Wyo.) said in a statement Monday. "With the support of the president, he has been instrumental in returning the agency to its original mission."

Meanwhile, 64 House Democrats last week wrote to Trump, calling on him to fire Pruitt. At least two House Republicans have also asked the president to fire him.

Federal Briefs

Trump Says DOE Considering Emergency Order for FirstEnergy

President Trump said April 4 that the Department of Energy will consider FirstEnergy Solutions' request to have it issue an emergency order directing PJM to compensate coal-fired and nuclear power plants with 25 days of onsite fuel. (See *FES Seeks Bankruptcy, DOE Emergency Order*.)

"We'll be looking at that," Trump said during remarks in West Virginia's coal country. "We're trying. We'll be looking at that as soon as we get back."

More: *Bloomberg*

NRC Authorizes Staff to Issue New Reactor Licenses to FPL

The Nuclear Regulatory Commission said April 5 that it has authorized its staff to issue combined licenses for two proposed nuclear reactors at Florida Power & Light's Turkey Point power plant near Homestead, Fla.

FPL has sought licenses for the proposed 2,200-MW reactors, which could cost $21.8 billion to build, since 2009. If the company were to build the reactors, it would do so no sooner than 2031.

Turkey Point nuclear plant

More: *Palm Beach Post*

NRC Names New Perry Plant Senior Resident Inspector

The Nuclear Regulatory Commission said April 3 it has selected Jacob Steffes to be the new senior resident inspector at the Perry Nuclear Power Plant in Perry, Ohio. The plant is one of three Ohio nuclear plants operated by FirstEnergy Nuclear Operating Co., a subsidiary of FirstEnergy Solutions, which filed for bankruptcy protection on March 31. (See *FES Seeks Bankruptcy, DOE Emergency Order*.)

Steffes had been the resident inspector at the Duane Arnold nuclear plant in Iowa, whose majority owner is NextEra Energy Resources. He joined the commission in 2011 as a reactor engineer in Region III's nuclear safety professional development program.

More: *Nuclear Regulatory Commission*

BOEM Seeking Feedback for Assessment of OSW Lease Sites

The Bureau of Ocean Management is conducting a high-level assessment of waters off the Atlantic Coast for potential offshore wind lease locations and is seeking public input through a Request for Feedback published in the *Federal Register* on April 6.

BOEM said it is more likely to exclude from consideration areas used by the Defense Department or are on charted marine vessel traffic routes.

It is more likely to consider areas that are 10 nautical miles or less from shore, less than 60 meters deep, adjacent to states that have offshore wind incentives and/or an interest in identifying additional lease areas, or have had interest expressed in them by wind developers.

More: *Bureau of Ocean Management*

State Briefs

CALIFORNIA

Public-Private Partnership to Develop Floating Offshore Wind

The Redwood Coast Energy Authority (RCEA) has selected a consortium of five companies to enter into a public-private partnership with it to develop a floating wind farm off the northern coast.

The consortium, whose members are Principle Power, EDPR Offshore North America, Aker Solutions, H. T. Harvey & Associates and Herrera Environmental Consultants, was one of six respondents to a request for qualifications issued by the RCEA on Feb. 1. The consortium and the RCEA announced the selection on April 2.

The proposed wind farm would have 100 to 150 MW of capacity and be located more than 20 miles off the coast of Eureka.

More: *Redwood Coast Energy Authority*

CONNECTICUT

Renewable Solicitation Gets 27 Proposals, 3 for Offshore Wind

The Department of Energy and Environmental Protection received 27 proposals, three for offshore wind farms, in response to its request for proposals for renewable energy, which had an April 2 deadline.

Twenty of the proposals involved fuel cells and the remaining four were for anaerobic digestion, which processes plant materials into methane gas for heating and power, the department said.

One of the offshore wind proposals came from Deepwater Wind, which would supply power from its Revolution Wind project, to be located halfway between Montauk, N.Y., and Martha's Vineyard, Mass. Another came from Vineyard Wind, which is planning to build a wind farm 14 miles south of Martha's Vineyard. The third wind proposal wasn't identified.

More: *New Haven Register*

ILLINOIS

ICC OKs Renewable Resources Procurement Plan

The Commerce Commission on April 3 approved the state's Long-Term Renewable Resources Procurement Plan, which charts a course for electric utilities to get 25% of the power they sell in the state from renewable resources by 2025.

As part of the plan, the state will procure 666 MW of distributed and community solar. The plan lays out how much renewables each of the state's utilities will need to procure.

The 25% renewables goal was established by the Future Energy Jobs Act, which was passed late last year.

More: *Greentech Media*

MASSACHUSETTS

Offshore Wind Procurement Selection may be Delayed

The state may delay selecting a winning bid or winning bidders in its offshore wind power procurement, said an official in Gov. Charlie Baker's administration, speaking on background. It had expected to select a winner or winners on April 23.

The official said the team that selected a winner in the hydropower procurement is also handling the offshore wind procurement and winter storms forced it to cancel some of its scheduled meetings.

Bay State Wind, Deepwater Wind and Vineyard Wind are competing in the procurement.

More: *State House News Service*

NEW JERSEY

Nuclear Subsidy Legislation Advances in Both Houses

Assembly and Senate committees on April 5 advanced legislation to provide an annual subsidy of $300 million to the state's nuclear power plants.

The committees' hearings on the bill largely overlapped, which drew complaints from opponents of the legislation who wanted to testify at both.

The legislation has the backing of Senate President Steve Sweeney, whose district includes the two nuclear power plants operated by Public Service Enterprise Group, which says the facilities are two years away from being insolvent.

More: *The Associated Press*

State Sen. Bob Gordon Named to BPU

Gordon

Gov. Phil Murphy appointed state Sen. Bob Gordon to the Board of Public Utilities on Thursday.

Gordon was first elected to the Senate, which still needs to confirm his appointment, in 2007. Before that, he served in the General Assembly for four years.

"His years of leadership experience will make him a valuable asset at BPU as the agency works with utilities to ensure reliability and safety in our state," Murphy said.

More: *NorthJersey.com*

NEW YORK

LIPA Reaches Deal with Town Over Taxes on Power Plant

The town of Brookhaven has reached a tentative agreement with the Long Island Power Authority to reduce over nine years the $32.6 million in lieu of taxes the authority pays annually for the Port Jefferson Power Plant, Brookhaven Supervisor Edward P. Romaine said April 3.

The settlement, which is not final, includes "a guarantee by LIPA that savings from the lower assessment will be returned to the ratepayers in the form of lower electric bills," Romaine said.

The settlement would be the first in four challenges LIPA has filed over the $176 million in taxes or payments in lieu of taxes that it pays on four power plants owned by

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National Grid.

More: *Newsday*

PENNSYLVANIA

Court Rules Driller Trespassed by Fracking Gas Beneath Property

The Superior Court on April 2 issued an opinion saying Southwestern Energy trespassed on the Briggs family's property in Harford Township by using fracking to extract natural gas underneath it from a well on an adjacent property.

Southwestern had argued it wasn't trespassing due to the "rule of capture," which says the first person to capture a natural resource — in this case, the natural gas beneath the Briggs' land — owns it.

A lower court had issued a summary judgement in Southwestern's favor, but the Superior Court overturned that decision, saying that the rule of capture shouldn't apply to fracking because "natural gas, when trapped in a shale formation, is non-migratory in nature."

More: *The Daily Climate*

VIRGINIA

Gov. Northam Reappoints David Paylor to Head DEQ

Gov. Ralph Northam said April 2 he has reappointed David K. Paylor as director of the Department of Environmental Quality. The reappointment means Paylor will serve as DEQ's director under a fourth straight governor. He was appointed by Gov. Tim Kaine in 2006.

Paylor

Under Paylor, DEQ has been criticized by some environmental groups for issuing permits for two natural gas pipelines — the Atlantic Coast Pipeline and the Mountain Valley Pipeline. Paylor called the regulatory process for the pipelines "the most rigorous for any pipeline in Virginia history."

More: *Richmond Times-Dispatch*

Vistra-Dynegy Merger Closes After FERC Nod

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following market shares in these organized markets:

- CAISO: 2.96% (2.16% after accounting for capacity under long-term contracts).
- ISO-NE: 12.1% (Rest of Pool zone); 11% (Northern New England zone).
- MISO: 0.3%.
- NYISO: 4.6%.
- PJM: 6.9% (RTO-wide); 3% (MAAC locational deliverability area); 7% (PPL LDA).

FERC has no jurisdiction over the combined company's generation in ERCOT. The Public Utility Commission of Texas declined a staff recommendation that it require Luminant, Vistra's generation arm, to divest itself of at least 1,281 MW of capacity to keep the post-merger Vistra below the statutory cap of 20% of ERCOT installed capacity. (See *Texas PUC Conditionally Approves Vistra-Dynegy Merger*.)

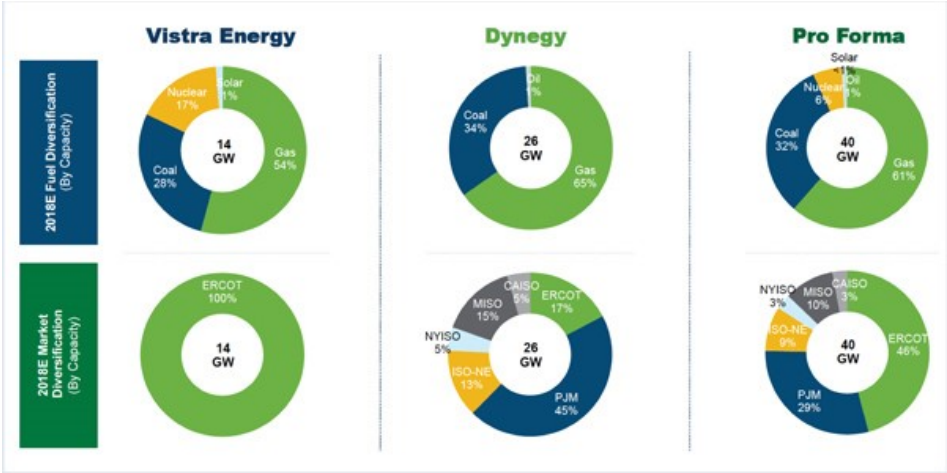
FERC rejected a protest by Public Citizen, which argued that the applicants' horizontal competitive analysis should have included generation owned by Dynegy's major shareholder, Energy Capital Partners. Public Citizen noted that ECP is seeking to acquire Calpine.

But the commission ruled ECP's generation did not have to be included in the analysis after its action in January to reduce its stake in Dynegy from 14.88% to 9.9%, below the 10% threshold that imputes control. ECP's post-transaction ownership of the combined Vistra entity will be 1.7%, FERC said. "As such, under the commission's regulations, Dynegy will not be affiliated with ECP, nor under its control," FERC said.

The commission also said the Dynegy acquisition would not have an impact on vertical competition, saying the only transmission facilities controlled by the applicants in commission-jurisdictional markets aside from generator interconnections are Smoky Mountain Transmission — 86 miles of transmission connected to the Duke Energy Carolinas and Tennessee Valley Authority systems — and Electric Energy, six 8-mile-long parallel generation tie lines. Both provide service under commission-approved open access tariffs.

In related orders Thursday, FERC also set hearing and settlement procedures to review the reasonableness of the reactive service rates for Dynegy's Illinois Power (ER16-233-001, EL18-133) and 15 other subsidiaries (ER15-1641, *et al.*).

Vistra CEO Curt Morgan's executive team, including Chief Operating Officer Jim Burke and Chief Financial Officer Bill Holden, will lead the combined company, based at Vistra's headquarters in Irving, Texas. The new board is expected to have 11 directors: the current eight members of the Vistra board and three members from Dynegy's board.



| *Vistra Energy*