RTO Insider

Your Eyes and Ears on the Organized Electric Markets

CAISO ■ ERCOT ■ ISO-NE ■ MISO ■ NYISO ■ PJM ■ SPP

ISSN 2377-8016 : Volume 2017/Issue 38 September 26, 2017

Trade Panel Rules PV Imports Hurting Domestic Manufacturers

By Michael Kuser

The U.S. International Trade Commission (ITC) ruled unanimously Friday that increased imports of solar cells and components are harming domestic manufacturers, opening the way for tariffs that critics say could slow solar growth in the U.S.

The vote supporting Suniva and SolarWorld's claim under Section 201 of the 1974 Trade Act moves the investigation to the remedy phase, which could give President Trump the foundation for implementing his "America First" agenda with tariffs and price floors on some imports.

The ITC said that all four commissioners found that imports of crystalline silicon photovoltaic cells from Mexico account for "a substantial share of total imports and contribute importantly to the serious injury caused by imports."

Suniva solar panels on the roof of an Hewlitt-Packard data center in Georgia | *Suniva*

The commission also ruled unanimously that imports from South Korea "are a substantial cause of serious injury or threat thereof" and that no significant harm resulted from imports from Australia, Colombia, Jordan, Panama, Peru, Singapore or countries under the U.S.-Dominican Republic-Central America Free Trade Agreement (CAFTA-DR). Three commissioners found no harm from imports from Canada, while Chairman Rhonda K. Schmidtlein did.

A flood of cheap imports has helped create a boom in U.S. solar installations, as total installation costs have fallen almost 70%. For example, in the past two years, National Grid has interconnected more solar than gas-fired generation in New York. (See *Renewables Reshaping NY Grid, Policy*.)

SolarWorld Americas CEO Juergen Stein welcomed the ruling as an "important step toward securing relief from a surge of imports that has idled and shuttered dozens of factories, leaving thousands of workers without jobs. ... We will continue to invite

Continued on page 35

PJM Grid 20/20 Defends Resilience Focus as Pre-emptive, not Excessive

By Rory D. Sweeney

BALTIMORE — PJM continued its effort to convince stakeholders of the wisdom of investing in system resilience at last week's Grid 20/20 conference.

CEO Andy Ott set the tone from the outset, promising stakeholders that the initiative would not result in unbridled spending.

"Some worry when we say the word 'resilience,' we need to gold-plate the system. And that's not really anybody's intention," Ott said. "Does that mean we need to spend infinite amount of dollars? Of course not."

Grid 20/20 Debates Meaning of Resilience (p.26)

PJM CEO Andy Ott | *© RTO Insider*

He said staff will focus on three issues: deducing the criticality of grid assets, fuel security and quicker recovery from system failures.

"Twenty years ago, we didn't talk about people attacking the grid.

Continued on page 25

Mountain West to Step up Negotiations with SPP on Joining RTO

By Tom Kleckner

Mountain West Transmission Group said Friday it has completed initial discussions about RTO membership with SPP's management team and will begin public negotiations through its stakeholder process.

The conversations began shortly after Mountain West, a coalition of 10 utilities primarily serving Colorado, Wyoming and Nebraska, announced its intentions in January to join SPP. In a press release, Mountain West said it had determined that membership in the RTO could reduce customer costs and make more efficient use of its members' transmission and generation assets.

Continued on page 30

Also in this issue:

10837 Deborah Drive ◽ Potomac, MD 20854 ◽ (301) 299-0375 ◽ info@rtoinsider.com ◽ www.rtoinsider.com ◽

RTO Insider

CAISO ERCOT ISO-NE MISO NYISO PJM SPP

Editorial

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

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

Production Editor
Michael Brooks 301-922-7687

Contributing Editors
Julie Gromer 215-869-6969
Peter Key

CAISO/West Correspondent
Jason Fordney 571-224-8960

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

MISO Correspondent
Amanda Durish Cook 810-288-1847

PJM Correspondent
Rory D. Sweeney 717-679-1638

SPP/ERCOT Correspondent
Tom Kleckner 501-590-4077

Subscriptions and Advertising

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

Account Executive
Marge Gold 240-750-9423

Marketing Assistant
Ben Gardner

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

Subscription Rates:

Payment Frequency	PDF-Only	PDF & Web
Annually:	$1,350.00	$1,650.00
Quarterly:	380.00	475.00
Monthly:	150.00	175.00

See details and Subscriber Agreement at rtoinsider.com.

In This Week's Issue

STAKEHOLDER SOAPBOX

REVing up our Wholesale Power Markets

By Glen Thomas

Thomas

As I walk the halls of National Association of Utility Regulatory Commissioners meetings, I hear a lot about the "grid of the future" or "grid modernization."

According to the North Carolina Clean Energy Technology Center's "The 50 States of Grid Modernization" report, more than 30 states are exploring "grid modernization" to various degrees. New York is knee-deep in Reforming the Energy Vision, Ohio is doing Power Forward and Illinois is pursuing NextGrid. These are all terrific initiatives, and these state's utility commissions should be applauded for their efforts to proactively realize that the traditional electric utility service business model is changing and unless utilities and regulators get in front of certain issues, consumers will ultimately pay the price later.

These grid modernization efforts are driven by several factors that stem from technological innovations changing consumer needs for electricity in the face of aging infrastructure. While different states have different dynamics and different solutions, they are fundamentally addressing the same challenge. Fortunately, these challenging circumstances are leading to creative thinking and solutions that are more than just throwing money at the problem.

Changing Dynamics

Similar to these state-led efforts that focus on the retail electric delivery system, a parallel reexamination of our wholesale energy markets is long overdue. For a variety of reasons, the dynamics in our wholesale markets are changing. Flat peak consumer demand year over year, low-cost natural gas-fired generation, the proliferation of subsidized intermittent resources (with no fuel costs) and an increasingly flat supply stack, combined with market rules that have not kept pace, have all contributed to a wholesale power market in which units that produce relatively inexpensive power and are needed for reliability are in significant financial stress and at risk for closure.

Just last month, Energy Secretary Rick Perry recognized that the power industry "has experienced massive change in recent years, and government has failed to keep pace." The much anticipated Department of Energy "Staff Report to the Secretary on Electricity Markets and Reliability" called for FERC and RTOs to reform market rules in order to promote grid resilience and proper energy price formation. In many respects, the DOE report recognizes that if certain low-cost plants do not receive proper price support in the current market, those plants will likely retire, leading to higher costs to consumers over the long term.

Energy price formation is not a new issue, and FERC has taken positive steps to improve it over the last several years. FERC, through Order 825, has made significant changes to the settlement of energy transactions and the triggers for scarcity pricing. PJM and the other RTOs are in the middle of implementing these reforms. While their impacts have yet to be realized, they nonetheless offer great promise.

Energy Price Formation 2.0

While the reforms to date have been important, it is time for the next step — Energy Price Formation 2.0, if you will. As a result of technological advances and current market conditions, PJM has a glut of units that participate in the market at roughly the same low price. LMP was developed based on a supply stack and a sloped supply curve, but today's supply "stack" looks more like a flat piece of glass. In today's market, new natural gas combined cycle plants, baseload coal plants and most nuclear plants can produce power at prices that by historical standards would be considered a bargain.

The fact that there is a bounty of low-cost resources available to meet demand means that prices will be less volatile and costs to consumers of electricity will be lower over time. The last two summers in PJM bear witness to the fact that high temperatures and higher-than-normal demand did not lead to significant upward pressure on electricity prices in PJM (see chart below).

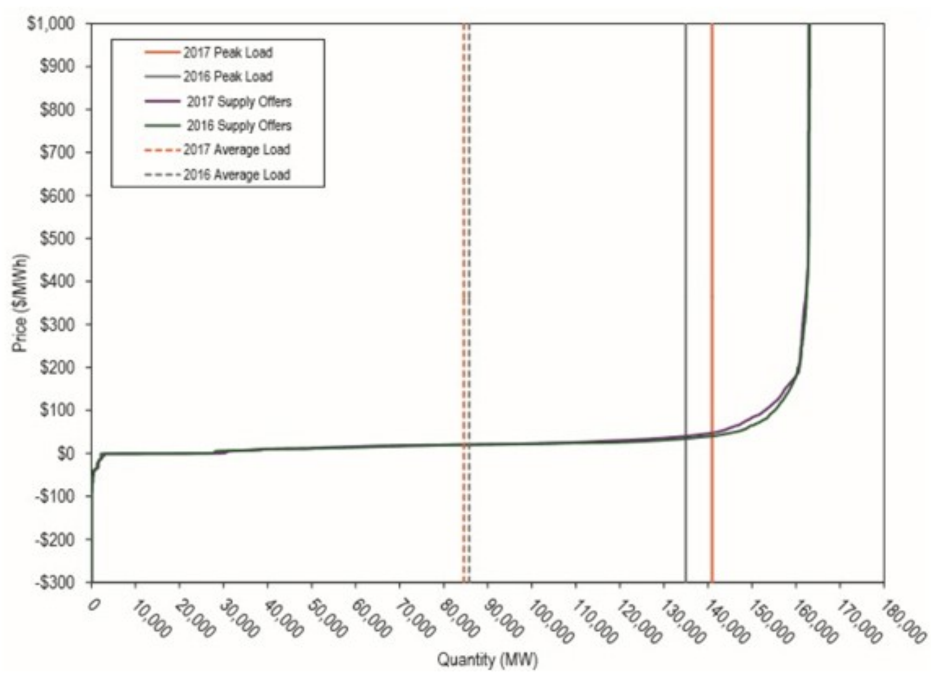
As a result of these current market conditions, it takes longer for those higher-cost peaking plants to be dispatched and set the energy price. While good for consumers at the present moment, if market rules are not altered, consumers will lose the benefits associated with the plethora of low-cost resources, as those resources will be forced out of the market because of insufficient revenues. In such a scenario, higher-cost resources will move closer to the front of the supply stack, run more often, set the clearing price at a higher level and cost consumers more over time.

Clock is Ticking

PJM has suggested a series of energy market reforms to allow consumers to continue to benefit from this abundance of low-cost resources. PJM has proposed that energy prices should be set by the units that are running to serve consumer needs and unit flexibility should be rewarded, not punished. The current rules do not do this and instead rely on out-of-market payments to specific operationally constrained, low-cost units that must run for reliability purposes. Ultimately, such a regulatory paradigm does not send the appropriate price signal to either the flexible or inflexible unit. While such a market design may have worked against an actual supply stack with material differences in price among resources, it falls short in the current "flat" market.

The wholesale power market of today is not that same as the wholesale power market of 10 years ago. To date, wholesale markets have delivered enormous value to consumers. In order for the value to continue for the next 10 years, regulators, consumers and other stakeholders need to recognize and respond to the changes that are already here. The clock is ticking. We all need to get to work.

Glen Thomas is president of PJM Power Providers Group (P3), which represents independent power producers.



PJM supply stack: 2016 & 2017 | *PJM*

CAISO NEWS

FERC Upholds PG&E ISO Incentive Adder, Rebuffs Calif. PUC

By Robert Mullin

FERC on Wednesday rejected an argument by the California Public Utilities Commission that it erred last year in allowing Pacific Gas and Electric to include a 50-basis-point ISO participation adder in the utility's 2017 transmission rates proposal.

The PUC filed its protest last November after FERC conditionally accepted PG&E's proposed rate increase while at the same time denying the PUC's request to throw out the adder, calling it a $30 million "unjustified windfall" at the expense of California ratepayers. (See *CPUC Contest ISO Incentive for PG&E*.) The Sacramento Municipal Utility District joined the protest.

The PUC at the time contended that the ruling ignored "the need to demonstrate that an incentive must be 'justified' pursuant to [FERC] Order 679," which allows transmission owners to collect the adder as motivation to join an RTO or ISO. Because the PUC requires California's investor-owned utilities to be members of CAISO, PG&E did not warrant incentive treatment, the PUC said.

The commission's Sept. 20 order rebuffed that argument, saying that the PUC had raised the same argument more than 10 years ago in its rehearing request of Order 679, which was rejected in a follow-up order (ER16-2320).

"If the CPUC disagreed with the commission's determination in Order No. 679-A, the appropriate course of action was to seek judicial review of Order Nos. 679 and 679-A under Section 313 of the" Federal Power Act, FERC said. "The commission has also already held that arguments opposing the granting of an incentive adder for RTO membership to existing RTO members constitute a collateral attack on Order No. 679-A, and we find that the CPUC's assertion here is in the same vein and warrants the same response."

The commission also rejected the PUC's contention that FERC erred by granting the 50-basis-point adder without weighing the specific facts of the case and considering whether a different incentive might be more appropriate. The PUC noted that FERC's September 2016 order had subjected PG&E's final return on equity to a hearing by a settlement judge. (See *FERC Sets PG&E Rate Increase Proposal for Talks*.)

FERC said it approved the adder subject to it being it being applied to a base ROE that left the full ROE within the "zone of reasonableness" determined by the settlement judge.

"Thus, the commission's duty to ensure just and reasonable rates for consumers will be fulfilled via the trial-type evidentiary hearing process we have ordered, which will result in an ROE, including the proposed adder, that must fall within the zone of reasonableness, and that trial-type evidentiary hearing process is one in which the CPUC may participate," FERC said.

FERC also said it was "not persuaded" by the PUC's contention that PG&E's continued membership in CAISO is not voluntary. It noted that FERC Order 2000 spelled out that voluntary membership was the "most appropriate" approach for creating and expanding RTOs and ISOs.

"This longstanding commission policy of voluntary RTO/ISO formation and membership remains unchanged," FERC said. "This longstanding commission policy is also reflected in CAISO's currently effective Transmission Control Agreement, which is on file with the commission."

FERC Relieves CAISO of Statewide Plan

FERC on Wednesday approved CAISO's request to be relieved of its requirement to develop a conceptual statewide plan as part of its regional transmission planning process. The commission at its meeting also ruled on two disputes regarding the Western Energy Crisis of 2000/01.

The commission approved CAISO's request, made in June, to eliminate the need for the statewide conceptual plan, which the ISO says is obsolete because of federal planning processes. (See *CAISO Seeks to Drop Outdated Planning Role*.) CAISO has developed the plan each year since 2010 as part of its lead role in the California Transmission Planning Group (CTPG). But the implementation of FERC Order 1000 superseded the CTPG, which is no longer operating.

"We agree with CAISO that the implementation of Order No. 1000's regional transmission planning and interregional transmission coordination requirements have supplanted the benefits of developing a conceptual statewide plan, and that the tariff provisions to develop a conceptual statewide plan are now redundant and therefore unnecessary," FERC said in its order.

The commission last week also approved an uncontested settlement filed last December between certain California parties and MPS Merchant Services, the successor to Aquila Merchant Services and Aquila Power. "The settlement resolves claims arising from events and transactions in the Western energy markets during the period of Jan. 1, 2000, through June 20, 2001, as they relate to MPS," FERC said in the order.

Separately, FERC approved another energy crisis settlement between San Diego Gas & Electric and sellers of energy and ancillary services in CAISO and the now-defunct California Power Exchange.

— Jason Fordney

CAISO NEWS

Metcalf Reliability-Must-Run Designation Draws Scrutiny

By Jason Fordney

CAISO this week will gather feedback on its proposal for reliability payments to keep Calpine's Metcalf gas-fired plant from retiring, a decision drawing scrutiny amid a larger conversation about local resource adequacy (RA) planning.

Metcalf Energy Center | *Calpine*

The ISO relies on reliability-must-run (RMR) contracts to keep resources online that are slated for retirement but are still needed for reliability. It has a stakeholder call scheduled for today to gather feedback on its recent proposal to designate Metcalf as an RMR resource.

The contract is slated for a vote by the CAISO Board of Governors in early November, leading some to complain about a quick decision timeline. The board also faced some scrutiny in March when it designated Calpine's Yuba City and Feather River gas-fired plants as RMR contractual facilities. (See *CAISO RMRs Win Board OK, Stakeholders Critical*.)

Calpine in June told CAISO that it intends to take the Metcalf plant offline at the end of this year. The company's request that the ISO study the reliability impact came back in the plant's favor. "Analysis has indicated that Metcalf Energy Center is in fact required in order to meet the relevant criteria for reliable system operation," the ISO said in a notice for the call.

At its most recent meeting Sept. 19, the board voted unanimously to extend the current reliability RMR contract for three 55-MW oil-fired units at Dynegy's Oakland facility. CAISO says it will not renew a contract with AES for the synchronous condensers at its Huntington Beach plant, and those units are expected to shut down.

At the board meeting, Pacific Gas and Electric Director of ISO Relations Eric Eisenman said "these continuing RMR designations show that the market is changing," pointing to new solar and other resources. He added that "the RA process, especially the local process, needs improvement."

The RMR contract for Metcalf will put tens of millions of dollars of costs onto ratepayers, he said, asking the board to work with regulators "to improve the local RA paradigm sooner, not later." He expects more RMR designations for 2019, which will almost certainly raise customer costs.

Noting that CAISO informed stakeholders of the possible RMR designation for Metcalf in early September ahead of the Nov. 1 vote, he said: "We are feeling kind of jammed when it's tens of millions of dollars."

Local RA Adjustments Planned

Part of the problem is the way the RA for load-serving entities' is measured, CAISO Vice President of Market and Infrastructure Development Keith Casey said at the meeting. RA is currently measured across a broad area, but individual capacity areas within that territory might have inadequate resources.

"We cannot operate being short in a specific area, and I think Metcalf is probably indicative of that deficiency in design," Casey said. The ISO is working with the California Public Utilities Commission on the problem, and "I am optimistic we will have a proceeding soon to take on some of the deficiencies around the local RA design." In a Sept. 12 memorandum to the board, Casey said "reliability-must-run contracts remain an important backstop instrument to ensure reliability when other alternatives are not viable."

RMR contracts are pursued when an LSE does not purchase sufficient capacity to meet local reliability criteria, or when CAISO needs reliability service such as voltage support, black start or dual-fuel capability. RMR can also be used to address local market power or protect availability of a given resource that could retire in the absence of a contract. LSEs are required to provide the RA showing by Sept. 15 of each year and have until Oct. 31 to submit their final year-ahead RA showings. CAISO must notify a potential RMR unit by Oct. 1 of each year whether it will extend an RMR contract.

The number of facilities under RMR contracts has dropped significantly since the implementation of the RA program and the addition of other types of resources. In 2006, CAISO had 9,963 MW under RMR, which dropped steeply to 3,995 MW in 2007. Today, in addition to the Oakland units under RMR, CAISO has about 1,500 MW under black start contracts and about 160 MW under dual-fuel extension status.

Resource	Description	Estimated Cost (Millions)
Scenario 1	Incremental distributed resources plus grid connected battery storage.	$805
Scenario 2	Incremental distributed resources plus reactive device.	$309 - $359
Scenario 3	Incremental distributed resources plus grid connected battery storage (if the Ellwood Generating Station is retired.)	$1,116
Puente Power Project	262 MW combustion turbine generator	$299

Capital cost estimates of resource portfolios | *CAISO*

CAISO Says Puente Plant Needed

Reliability needs have also led CAISO to conclude that a new gas-fired plant on the California coast cannot affordably be replaced with other alternatives. CAISO on Aug. 16 released its study on the 260-MW Puente Power Project, but NRG Energy has run into heavy opposition to its proposal to

Continued on page 6

CAISO NEWS

Metcalf Reliability-Must-Run Designation Draws Scrutiny

Continued from page 5

build the plant on an existing site in Oxnard to replace its retiring Mandalay and Ormond Beach plants.

The California Energy Commission authorized Southern California Edison to enter into a long-term RA contract with NRG for the plant's capacity, and the agency is reviewing the construction and operating permit for the facility. The project was approved because 2,000 MW of generation in the area is due to retire by 2020 because of once-through-cooling regulations.

As part of its review process, the CEC accepted CAISO's offer to study whether demand response, energy efficiency, renewable generation and combined heat and power could offset the need for the Puente project. CAISO last month issued its findings in the Moorpark Sub-Area Local Capacity Alternative Study, after gathering comments from market participants.

After examining the three other options, the ISO concluded that Puente would be the cheapest alternative at a cost of $299 million. The most expensive scenario was "incremental distributed resources plus grid-connected battery storage (if the Ellwood Generating Station is retired)" at $1.1 billion, more than triple the cost of Puente.

RMR revenue helps keep natural gas a player in the CAISO market as environmental opposition toward fossil fuels is on the uptick. Gas remains the largest component of CAISO's fuel mix, making up about 54% of its installed capacity of 71,400 MW, followed by renewables at 29%, large hydro at 12% and nuclear at 3%. Oil, coal and "other" compose about 2%.

However, conventional generation such as natural gas makes up only 9% of CAISO's interconnection queue of 325 projects totaling 58,000 MW, while 68% are renewable projects and 20% are energy storage devices.

Aside from RMR, CAISO also has a risk-of-retirement program called the Capacity Procurement Mechanism Risk-of-Retirement Enhancements (CPM ROR) initiative, which is generally regarded as a better alternative to RMR. (See *CAISO Finalizes Risk-of-Retirement Program Changes*.) That package of market rules is also due for a vote from the board at its November meeting.

CAISO Board Approves RAS Modeling Proposal

By Jason Fordney

CAISO's Board of Governors last week unanimously approved rule changes that would allow market participants to partake in a program that models generator outages and the impact of remedial action schemes (RAS) on market operations.

Greg Cook | © RTO Insider

During a presentation to the board, CAISO Director of Market and Infrastructure Policy Greg Cook said "stakeholders are generally supportive of the proposal" — but some still worry about unintended consequences.

The board's vote greenlights modeling of generator contingencies and RAS in the day-ahead and real-time markets, as well as the congestion revenue rights allocation process, but the package still requires approval by FERC.

CAISO's current modeling only addresses situations in which a transmission line goes down, potentially causing overflow on other lines. The new generator modeling reflects how the system will react to the loss of generation and is meant to ensure that transmission lines are not overwhelmed as the system picks up to address the unexpected shutdown of a generator.

RAS are protective processes that automatically disconnect generators or load to prevent transmission line overload in the event that another line goes out. The new method will update the ISO's security constrained economic dispatch by modeling the loss of generation within the dispatch, as well as modeling the loss of transmission and generation because of RAS operations. The ISO currently uses manual, out-of-market dispatches to manage generator contingencies.

The changes will alter the congestion component of LMPs so that they consider the cost of positioning the system to account for generator contingencies and RAS operations. A RAS-connected generator does not increase congestion and will potentially receive higher energy prices than other generators at the same bus.

The EIM Governing Body on Sept. 6 approved the rule changes for generators that are within the EIM but outside the ISO. (See *EIM Body Approves Generator Loss Modeling Plan*.) Body Chairman Doug Howe last week urged the CAISO board to carefully implement the proposal.

Howe said the change will increase the efficiency of the real-time market across the EIM, improve dispatch and lead to more accurate market prices. But he also urged the ISO to ensure the new rule doesn't create market abuse or too much complexity.

Southern California Edison raised concerns that the program would create a new value stream that could incentivize participants to pursue RAS rather than building new transmission. A company representative questioned whether generators on RAS should not be rewarded with higher locational prices.

Trying to value RAS resources "gives us pause," and the implementation should be carefully monitored, said SCE Director of State Legislative Policy Catherine Hackney. SCE has thousands of megawatts of generation under RAS.

"We need to be vigilant about watching and being wary and being able to respond if things don't go exactly how we like," Hackney said.

When it unveiled the proposal in May 2016, CAISO said it had more than 20 RAS modeled within its own system, with more throughout the Western Interconnection. (See *Stakeholders Wary of CAISO Contingency Modeling*.) The ISO currently factors RAS into its market operations through adjustments to its market software but views that approach as inadequate.

CAISO NEWS

CAISO Load-Shifting Product to Target Energy Storage

By Jason Fordney

FOLSOM, Calif. — CAISO has launched what will be a years-long initiative to develop a program to pay storage resources to absorb excess renewable generation from the grid and make the energy available later, creating a new profit stream strongly desired by energy storage companies.

Storage companies such as Tesla have been urging CAISO to develop the new product as a way to incentivize clean energy and reduce solar curtailments. During certain times of day, large solar surpluses on the ISO's system can sometimes produce negative wholesale electricity prices and require curtailing output that could be stored and used at other times.

The load-shifting product will be the focus of the third phase of the ISO's Energy Storage and Distributed Energy Resources (ESDER) program. CAISO changed the focus of the initiative to a behind-the-meter load-shifting product rather than the excess load-consumption product that had previously been discussed.

CAISO Manager of Infrastructure and Regulatory Policy John Goodin warned about a potential inherent flaw in developing an excess load consumption product.

"You can set up an incentive to where it is profitable just to waste energy," Goodin said during a briefing of the ISO's Board of Governors.

A load-consumption product could incentivize buyers to waste energy when a wholesale negative payment is higher than the retail payment. The purpose of the load-shifting product, however, is to incentivize productive use of excess renewable generation, Goodin said.

"That is good for the economy, it is good for the environment and seems like sound public policy," he said, adding that the storage community supports the load-shifting concept. Load-shifting resources — such as a battery — could consume load when prices are negative, and the stored energy could be released behind the meter for demand management or sent to the ISO system, among other possibilities, he said.

The board last month approved a set of market rule changes that comprised phase two of the ESDER initiative, developed during a year-long process. (See *New CAISO Rules Spell Increased DER Role*.) That package will be sent to FERC for approval.

During the ESDER 2 initiative, Tesla and other storage companies urged CAISO to develop a new distributed energy resource product that would pay storage for absorbing excess solar generation, but the ISO declined at the time, saying more information was needed. (See *Storage Advocates Urge CAISO on DR Product*.)

To consider the specifics of the new product, the ISO has held four meetings with storage stakeholders, including the California Energy Storage Alliance (CESA), Stem, Tesla and Green Charge. Stakeholders are finalizing the desired features of the product, and the ISO will establish working groups to fill in the details. CAISO is identifying gaps in its Tariff and current resource modeling capabilities to aid in the effort. Implementation is targeted for 2019.

CESA Director of Policy and Regulatory Affairs Alex Morris told the board that CAISO staff have over the past month worked diligently with the storage community on the proposal. "From our point of view, this is going to provide very helpful service to the CAISO, while also beneficially shifting loads," Morris said, adding that he is hoping for rapid implementation.

"There really should be a special urgency to this product because there currently isn't a market participation pathway for that type of behind-the-meter resource," Morris said.

The board asked a few questions about the new product, such as how pricing would work, but did not take any votes as the proposal is in its early stages. The initiative would also require a round of comment and approval by FERC after an extensive stakeholder process that will include participation by the California Public Utilities Commission.

Infocast Texas Renewable Energy Summit

Analysts Debate Potential Vistra Coal Retirements

By Tom Kleckner

AUSTIN, Texas — Vistra Energy's acknowledgment last month that it may retire some of its coal fleet sparked a lively debate among speakers at Infocast's Texas Renewable Energy Summit last week.

Like other coal and nuclear units in ERCOT, the plants operated by Luminant, Vistra's generating division, are often priced out of a market in which cheap gas has sent energy prices to record lows.

Luminant's three 1970s-era coal-fired plants — Big Brown, Martin Lake and Monticello, which total almost 5.3 GW of capacity — have capacity factors ranging from 44 to 59%, leading to speculation that some or all the plants may be retired. During the company's second-quarter call in early August, CEO Curt Morgan told analysts, "Any decisions related to optimization of Luminant's generation fleet will likely be made in the fourth quarter."

Neel Mitra, director of utilities and power research for Tudor, Pickering, Holt & Co., a Houston-based investment and merchant bank focused on the energy industry, told the conference Monday he expects Vistra will retire two of the three plants.

Others weren't as bearish on ERCOT's coal fleet.

"We've been hearing rumors about coal plant retirements for several years now," said Morgan Stanley Capital's Clayton Greer, who sits on ERCOT's Technical Advisory Committee.

Tim Wang, a director with Filsinger Energy Partners, said the outlook has changed for fossil plants with the Clean Power Plan's future in doubt.

Neel Mitra | © *RTO Insider*

"Prior to the 2016 elections, I thought it was definite we would see retirements fairly soon, but that's gone away," Wang said. "Really now, it's just about economics. If you look at [Vistra's] portfolio, you say, 'If they retire those plants, what will they be left with?'

"If I were them, and a rational player, I'd say, 'We need to acquire gas plants. We need to acquire gas before their valuations go up.' Otherwise, you're helping your competitors."

Indeed. In recent months, Vistra has completed the purchase of a 1,054-MW combined cycle combustion turbine in Odessa and acquired two other combined cycle plants representing another 3 GW of capacity. Luminant now has almost as much gas capacity (7.5 GW) as it does coal (8 GW). All told, Luminant has about 18 GW of capacity.

Healthy Reserve Margins

Mitra's comments came while he discussed ERCOT's healthy reserve margins. The ISO currently has an 18.9% reserve margin, which it expects to drop to 16.8% in 2022, based on new builds and potential retirements. In its most recent Seasonal Assessment of Resource Adequacy, the ISO said it has nearly 86 GW of capacity available this winter, more than enough to meet a predicted peak demand of just more than 56 GW. (See "Seasonal Forecasts: Sufficient Generation for Fall, Winter," *ERCOT Briefs*.)

ERCOT has more than 68.7 GW of thermal capacity, but wind energy now accounts for almost 20 GW of capacity and solar for another 944 MW. The continued influx of renewable resources has helped push inefficient fossil plants into seasonal or mothball status, as they are unable to compete with zero-marginal-cost wind during off-peak hours.

Only two coal plants in the ERCOT market are covering their fixed costs on an around-the-clock open-price basis, Mitra said, pointing to Luminant's Sandow 5 unit east of Austin and its twin 800-MW units at Oak Grove, north of Houston. The units came online in 2009 and 2010.

Beth Garza of Potomac Economics, ERCOT's Independent Market Monitor, said there is a lot of existing generation that is not recovering its costs.

"We're in a sweet spot right now with lots of reserve and very low prices," she said. "At some point, that has to change. We will see retirements and mothballs. The fear is, we'll see lots of that happening at once and upsetting that balance."

Mitra said he believes Vistra has been discussing an "orderly retirement plan" with ERCOT. However, an ISO spokesperson would only say the retirement process "officially begins" when a generation owner sends a notice of suspension of operations to ERCOT. Luminant declined to comment beyond Morgan's statement.

Reliability Impact

"The regulators will have to start worrying about [retirements] relatively soon," Mitra warned. He suggested improvements could be made to ERCOT's operating reserve demand curve, which creates a real-time price adder reflecting the value of available reserves.

"In concept, it works pretty great. But in reality, you want to have increases to scarcity pricing in the summer, and we haven't had that yet," Mitra said. "[The ORDC] has to be a little bit more aggressive to incent new generation or coal plants to stay online. There has to be some sort of a reliability scare, but we haven't really had one since 2011."

Even if all three Vistra plants are retired, Mitra noted, it will only drop ERCOT's reserve margin to 9.5%. He expects the market to tighten soon, given his belief that Vistra will retire coal generation, but only for on-peak hours. Wind generation will "continue to flood the ERCOT market during off-peak hours," Mitra said.

Vistra emerged from Energy Future Holdings' Chapter 11 bankruptcy in November as a tax-free spinoff. Long known as Texas Utilities and then TXU, the company was acquired in 2007 by EFH and its consortium of private-equity investors through a leveraged buyout. The deal went sour when energy prices collapsed, and EFH filed for bankruptcy in April 2014.

Infocast Texas Renewable Energy Summit

AUSTIN, Texas — Renewable energy developers, energy providers, end users, renewable manufacturers and others gathered last week for the Infocast Texas Renewable Energy Summit, where attendees heard discussions on the challenges ERCOT faces in building transmission, adding renewable resources and ensuring grid reliability. Here's some of the highlights.

No CREZ in Sight for Permian Basin's Energy Production

A rebound in oil and gas production in West Texas' Permian Basin has prompted a call for more transmission, but Texas is unlikely to repeat the $7 billion Competitive Renewable Energy Zone (CREZ) transmission investment, speakers said.

Midstream load has "come alive again" in the Permian, said Brad Schwarz, Hunt Power's director of system planning. He said that has led to producers wanting to access the grid with "a significant amount of load" — 15 to 20 MW — within about a year.

"In an area that is typically not meant to serve that amount of load, just getting through ERCOT's approval process will take that 12 to 18 months," Schwarz said.

"Let's say it does take 18 months [to plan a transmission line]. Those … companies can't wait, so they'll self-generate just to" be able to process and ship their output, said GridLiance's Brian Gedrich, vice president for the independent transmission company's South Central Region. "Once they're self-sufficient, what's the justification for building transmission? Building transmission may be the best answer, but is it the best answer for consumers when they're already generating?"

Cratylus Advisors' Mark Bruce, who is working with Pattern Development on its Southern Cross Transmission Project, noted the inconsistency between the legislative push behind the CREZ initiative and a similar effort to address the Permian Basin. The years-long CREZ effort resulted in the construction of 3,600 miles of transmission with capacity to deliver 18.5 GW of wind power across the state.


ERCOT's Jeff Billo (left) and Hunt Power's Brad Schwarz | © RTO Insider

"The thing about CREZ that made it so special is the government said, 'We will build it, and you will come.' It provided a mechanism for parties that all had risk but couldn't solve for that risk," Bruce said.

"I find it interesting in Texas, where policymakers are allowed to make market judgements, the [Public Utility Commission] is tying its own hands to say we're done with this CREZ stuff. There are mechanisms in place to address those timeline issues. If there were to be a planning process to serve this future generation in an economically viable way, to maximize [solar] generation and also benefit the oil and gas industry in the process, why wouldn't you build it all?"

Bruce and Jeff Billo, ERCOT's senior manager of transmission planning, agreed that with or without another CREZ-like development, ERCOT will continue to see growth in its solar power. The ISO currently has almost 1 GW of solar capacity, and the interconnection queue has more than 1,800 MW of interconnection agreements for solar projects through 2020.

"The economics [for] solar transmission additions are much better than for wind," Billo said. "There are a couple of reasons for that. Every day the sun is shining, it'll be at its nameplate capacity. The dollars for congestion … add up quickly [for solar]. If you have a solar plant that's constrained, it's constrained every single day during peak demand. From a planning perspective, it's easier to justify transmission for solar than wind."

"Solar is going to start finding its way, as the economics are there," Bruce said. "The real challenge is the market fundamentals aren't moving, unless the gas price moves. If the fundamentals of the [generation] stack doesn't shift, you're going to see policymakers putting their thumbs on the market over the next six to eight months."

Bruce said he was referring to efforts by NRG Energy and Calpine to persuade Texas regulators to "ratchet up" the effect of the operating reserve demand curve to push prices higher. Regulators could also adjust marginal loss calculations to harm remote wind and solar generation and help generation in load pockets, such as gas plants in the Houston area, he said.


Hudson Gilmer | © RTO Insider

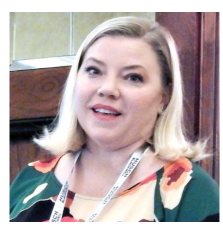
Genscape's Hudson Gilmer said RTOs are making a mistake by continuing to address new intermittent generation with traditional transmission solutions.

"It's not an accident we continue to build transmission the way we have for the last 75 years. The planning process and the stakeholder process are designed to build more transmission," he said. "The transmission planning hasn't evolved [along with generation]. We've got to get smarter in planning for system growth. Other solutions, like dynamic line rates or convertors, are so much more effective than building CREZ like we did years ago."

Billo said things are better than 2011 and 2012, when the fracking boom "sort of took everyone by surprise."

"There are fundamental differences now in the time frame it takes to build transmission," Billo said. "I give a lot of credit to the [transmission and distribution providers] out there. What we see today that we didn't see five years ago is they have a lot better relationship with their customers that fosters communications that helps the planners and utilities … we're a lot better off than we were."

Texas Outgrows its 'Adorable' Wind Goals


Brandy Marty Marquez | © RTO Insider

Texas PUC Commissioner Brandy Marty Marquez recalled when wind generation was limited to barren West Texas and the state legislature set a wind capacity goal of 2 GW.

"Looking back at the original goal ... you might call it adorable," Marquez said in her keynote address.

However, thanks to the CREZ and Texas' insatiable demand for energy, ERCOT has almost 20 GW of wind energy at its disposal, some of which can now be found along the Gulf Coast.

"We've exceeded the capacity found in any

Continued on page 10

Infocast Texas Renewable Energy Summit

Continued from page 9

other state, and almost every other country," Marquez said. "It was a labor of love for our state."

Marquez noted the transmission buildout has led to other benefits as well, pointing to more than 24,000 jobs the Department of Energy says the wind industry has created and $85 million in annual revenue to ranchers and farmers for turbine leases.

She said the PUC, like ERCOT, will remain fuel-neutral, however. "The market will drive the agenda and be the ultimate arbiter of fuel use," Marquez said.

Garza: No 'Price Collapse' in ERCOT's Market

Although ERCOT averaged real-time prices of only $24.62/MWh in 2016 — an 8% drop from the year before and the lowest since the nodal market's implementation in 2010 — it's incorrect to call it a "price collapse," said Potomac Economics' Beth Garza, who leads the ISO's Independent Market Monitor. (See "IMM Offers Additional Suggestions to Improve Markets," ERCOT Briefs.)

"I don't believe [price collapse] is a fair and accurate assessment," Garza said. "Prices are lower, but price collapse says they were unsupported at high levels somehow. It's more a reflection of the conditions we have, [with] very low natural gas prices and the changing composition of the energy being produced."

Garza noted wind energy accounted for 15% of ERCOT's generation mix last year, a number that has jumped to 21% in the first half of 2017. The extra capacity and low prices masked the fact that ERCOT set a record for peak demand last summer. That was unlike 2011, when record heat led to large price spikes.

"Since 2011, we've seen over 17 GW [of new energy] come into the market, and with very few [fossil fuel] retirements," said Filsinger Energy Partners' Tim Wang said. "Last year, we had record heat and record peak demand, but prices stayed flat. That's the state of the market right now. There's plenty of capacity."

That has caused problems for owners of uneconomic units, such as Dynegy. Though Tudor, Pickering, Holt & Co. analyst Neel Mitra has told investors he regards the

From left to right: Dynegy's Bob Helton, Potomac Economics' Beth Garza and Filsinger Energy Partners' Tim Wang. | © RTO Insider

company as one of the country's top independent power producers, Dynegy has had problems selling its assets.

"Everything in ERCOT is up for sale right now," Dynegy's Bob Helton said.

"What's your price, Bob?" Garza asked Helton.

"Apparently, it's pretty high," he responded with a laugh.

Helton said those economics are pushing owners of some aging plants to save money by reducing maintenance expenses. "You're going to run it until it fails," he said. "Do you announce a retirement before that happens, or do you have a major tube leak or something that requires a high-dollar investment?"

"A large amount of that [recent plant] construction took place at the turn of the century," Garza said. "A lot of those units are about 15 years old. That's half their expected life."

"How do you get more money to the market?" Wang asked. "After 2011, there was a lot of conversation around resource adequacy and a capacity market. As the new capacity has come on, the market has responded with those low prices, and all that conversation has died down. To a certain extent, you have to be proactive. If it gets to the point where you have retirements, demand spikes and prices go up again, will the market respond to a one-year price cycle? Or will it return to its senses and say, 'We did this before. We're not going to do it again.'"

Chad Blevins, The Butler Firm (left), and Clayton Greer, Citigroup. | © RTO Insider

Conventional Generation Playing 'Chicken,' Trying to Hang on

With economic headwinds making it difficult to build conventional generation, Chad Blevins, a senior consultant for The Butler Firm, said owners of existing plants are holding on as long as they can. He pointed out that unless one works for the generation owners, it's difficult to determine what their cash positions are.

"There's a lot of games of chicken going on here between these utilities," he said. "'As long as we lose money while the other guys lose money, we're good. If he goes under first, that will help lift up the market just enough so I'll be good.' They want to hang on as long as they can, so they have that physical option until the other guy pulls out of the market and they're clearing at a better price."

Mark Walker | © RTO Insider

NRG's Mark Walker, speaking on the same panel discussing investments in traditional generation, said there's still a need in ERCOT for flexible resources that can supplement intermittent renewables. "Several projects are being delayed, but if we're going to make some [market design] changes, now is a good time before we get to a crisis situation," he said.

Walker also said that if ERCOT had a local reserve product, expensive efforts like the $590 million Houston Import Project might be avoidable.

"Right now, ERCOT only has one tool in its toolbox [to address local reliability], and that is building transmission," he said. "Had we had a local reserve requirement in the Houston area, we might have had enough to avoid a project the size of that one."

Tech Improvements Leading to more Efficient Renewables

A panel of wind energy developers discussing the forces driving their market agreed that the recent influx of wind has been driven by larger and more efficient turbines.

Continued on page 11

Infocast Texas Renewable Energy Summit

Continued from page 10

Technological advances will continue their influence going forward, they said.

"Technology has definitely played a big role, and it's going to play a larger role in opening up new areas," said Phil Moore, vice president of development for Lincoln Clean Energy. "We've had a huge amount of transmission buildout in the last decade, but it's going to be tougher going forward. Technology is going to have to bridge that gap in opening up less-than optimal areas."

Ward Marshall | © *RTO Insider*

"The projects I'm seeing starting construction are in areas I never would have dreamed as being economical in ERCOT," said Ward Marshall, Pattern Development's senior director of business development. "Texas has been an unbelievable dumping ground of [federal tax credits]. A lot of projects have been built from that standpoint, but now we're flooded with immense amounts of low-cost, cheap power."

Marshall took the opportunity to plug Pattern's Southern Cross project, saying it "will have some effect on draining the swamp."

Will DER Help with Slow Load Growth?

Paul Wattles | © *RTO Insider*

ERCOT's Paul Wattles and the Sierra Club's Cyrus Reed looked at demand growth in Texas through different lens colors during a discussion on behind-the-meter energy resources.

"Per capita load growth is flat, like it is everywhere," said Wattles, the ISO's senior analyst of market design. "Our growth is coming from the industrial sector and oil and gas growth in West Texas and the Gulf Coast. We're going to continue to see load growth in ERCOT, but not necessarily [per capita growth] because — like the rest of world — we're becoming more efficient."

"We continue to get people moving in here, we continue to have housing starts of 100,000/year," Reed said. "Sierra Club is pushing that building codes be solar friendly at the local level, so even if rate cases go the wrong way, there will be opportunity for growth."

Of course, distributed energy resources present their own challenges. Wattles reminded attendees that ERCOT is continuing to map DER on the distribution system, so it can gain a better understanding of where they are.

"When you start seeing solar and storage together, you're seeing a DER that can be dispatched," he said. "We're still a way away from that. The critical mass just isn't there yet, but I think we have to be ready for it."

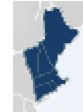
"We're in the early stages in Texas … of allowing distributed resources to get on the grid and grow, so we can have them available and start using them," Sunrun's Amy Heart said. "We've certainly seen Texas is not out of the ordinary. Let's not stop a market in its tracks just when it's getting its feet under it."

Look no further than Ontario's Independent Electricity System Operator (IESO), which has about 35 MW of DER connected to its grid. The ISO's manager of generation procurement operations, Rob Sinclair, said because much of those DER are the result of power purchase agreements, it gives the Canadian grid operator more insight than its brethren.

"The advantage we have, because we contracted with a vast majority of these facilities, we know where they are and how they're operating," Sinclair said. "That gives us a bunch of insight, but there are still things we're not fully aware of. We're trying to understand how to modernize our tools to integrate those resources. We're moving from a PPA framework to a net metering framework, so we're just about to learn how net metering will work in our market."

— Tom Kleckner

ISO-NE News



FERC Approves Cost Recovery for Exelon's Mystic Plant

FERC on Wednesday approved Exelon's request for recovery of more than $1.5 million in fuel costs for its natural gas-fired Mystic Generation Station in Everett, Mass. (ER17-933).

The commission order granted Exelon $1,554,854 for Mystic Units 8 and 9 fuel costs that were not recovered because of market power mitigation measures applied last October and November.

ISO-NE's Internal Market Monitor challenged Exelon's request for cost recovery for mitigated hours on three days in October 2016, arguing that the company did not adequately provide data in its initial request, and that further supplemental information was submitted past the due date under the RTO's Tariff.

"We disagree with the IMM's position that Exelon's alleged failure to timely submit information to the IMM for operating days Oct. 1, 3 and 4, 2016, precludes Exelon from seeking additional cost recovery for those days," the commission said in response. "We do not find that failure to meet that deadline alone necessarily operates as a procedural bar to submitting a [Federal Power Act] Section 205 filing for additional cost recovery or renders such a filing unjust and unreasonable." It noted that Exelon's initial filing was submitted on time and that the Monitor did not dispute that certain required information was unavailable to the company at the time.

Exelon also asked to recover nearly $57,000 in regulatory costs in connection with its filing, as well as additional regulatory costs it might incur in connection with the proceeding after the date of its filing. The commission granted this request subject to a compliance filing due in 60 days that details the total regulatory costs.

— Michael Kuser

MISO NEWS

FERC Rejects MISO Interregional Cost Allocation Plan

By Rich Heidorn Jr.

FERC on Wednesday rejected MISO's proposed cost allocation plan for interregional projects outside the RTO, saying it had not demonstrated the reasonableness of the methods detailed in the proposal (ER17-387).

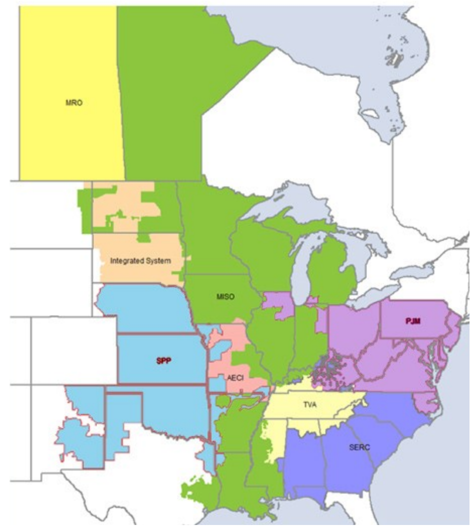
Under MISO's joint operating agreements with PJM and SPP, a transmission project can qualify as interregional even if it is in only one of the two neighboring RTOs, as long as it provides benefits to the other. MISO said that although no such projects are part of its Transmission Expansion Plan, interregional studies currently underway could result in such projects.

Proposal

In its filing last November, MISO proposed that its portion of costs from an:

- Interregional reliability transmission project terminating wholly within SPP or PJM — that is, with no interconnection to any MISO transmission facility — be allocated to those entities who would have paid for the MISO regional transmission projects that the interregional project avoids;
- Interregional economic transmission project terminating wholly outside MISO be allocated 100% to the benefiting local resource zones based on adjusted production cost savings (interregional reliability projects terminating wholly within SPP that provide economic benefits to MISO would be allocated in the same manner); and
- Interregional public policy transmission projects terminating wholly outside MISO be allocated to parties who would have paid for the MISO regional projects

Continued on page 14



FERC rejected MISO's proposed cost allocation plan for interregional projects outside the RTO, sending the issue back to a divided stakeholder body. | *MISO*

MISO Confident in Tx Process with SPP Despite Lack of Projects

By Amanda Durish Cook

Officials remain optimistic about MISO's interregional transmission planning process with SPP despite its failure to produce a single project even after producing two coordinated studies since 2014.

MISO recently declined to approve a South Dakota transmission project that would have traversed both RTOs, the only potential feasible project to come out of the latest coordinated study that wrapped up this year.

Staff last month told MISO's Planning Advisory Committee in mid-August that it no longer recommended the $5.2 million, 115-kV Split Rock-Lawrence circuit project in South Dakota, which would have been the RTOs' first-ever interregional project. Staff instead recommended following an updated operating guide from line owner Xcel Energy and operating the Lawrence–Sioux Falls line in an open circuit to shift some congestion to the nearby Sioux Falls–Split Rock 230-kV line. (See *SPP Glum as MISO Axes Last Interregional Project*.)

During MISO Board Week in September, Vice President of System Planning Jennifer Curran said she thought the RTOs' interregional process worked as intended because MISO's regional review identified a "cheaper option" than a costly interregional project.

MISO has vowed to continue interregional communication and planning with SPP.

"MISO continues to work aggressively to try to identify cost-effective interregional projects to help ensure a robust transmission network that can mutually benefit our members," MISO Manager of Interregional Planning Eric Thoms told *RTO Insider*. "In this recent case, the interregional process was successful in finding an appropriate solution to meet the need. In this case, a superior regional solution was identified after additional analysis."

Communication Breakdown?

MISO shared its decision with SPP "in advance of the Aug. 16 Planning Advisory Committee," Thoms said, adding that planning staff from both RTOs participated in a joint conference call in early August to discuss the information.

"We are committed to communicating study results with our partners as soon as appropriate," Thoms said.

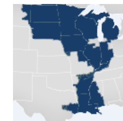
SPP COO Carl Monroe last month told *RTO Insider* that his RTO only discovered MISO's decision through posted meeting materials and news coverage. Monroe has since walked back the comments.

"I regret misstating that SPP was unaware of MISO's intent not to recommend the project for construction and have spoken with Mr. Thoms directly to acknowledge the error," Monroe said. "We're pleased with MISO's expressed commitment to improving coordination between our organizations, and SPP likewise will do everything in our power to support interregional coordination in the interest of greater reliability and affordability across our industry."

Thoms said the RTOs' latest coordinated study was not conducted in vain, as MISO discovered "differences in operations and

Continued on page 30

MISO NEWS



FERC Rejects MISO Interregional Cost Allocation Plan

Continued from page 13

that the interregional project supplants.

MISO intended to use the method only until the end of its five-year Entergy integration transition period, which ends in December 2018.

In approving Entergy joining MISO, the commission accepted a revised planning and cost allocation framework with two planning areas, one covering the pre-existing MISO members and a new second planning area (MISO South) including Entergy. MISO said the transition was necessary because transmission planning for the existing MISO footprint and MISO South had not been done under a common process using the same criteria.

The transition cost allocation rules, which eliminated MISO's footprint-wide postage-stamp method, are spelled out in Attachment FF-6 of the MISO Tariff.

The RTO said that without the changes it proposed in November, interregional transmission projects wholly outside the MISO footprint would be allocated under Attachment FF. The costs of an interregional economic transmission project that terminates wholly outside of MISO would use the non-transition market efficiency project cost allocation: 80% to the benefiting zone, 20% postage stamp across the entire MISO footprint. The RTO said that would violate the intent of Attachment FF-6.

FERC Misgivings

FERC first indicated its misgivings with the proposal in a deficiency letter in January, which asked MISO to explain why it was just and reasonable to apply different cost allocation methods based solely on the location of the interregional project.

But the commission ruled that MISO failed to demonstrate that its proposal would allocate costs in a way "that is at least roughly commensurate with the benefits received."

"Notwithstanding the fact that the commission has determined that both [multi-value projects (MVPs) and market efficiency projects (MEPs)] provide regional benefits and are appropriately cost-allocated regionally, at least in part, MISO proposes to eliminate the regional cost allocation component for its share of market efficiency projects and multi-value projects that terminate wholly outside MISO," the commission said. "However, MISO provides no evidence or analysis to demonstrate that the benefits of interregional transmission projects that terminate wholly outside MISO … accrue to a more narrow range of customers than the benefits of any other multi-value project or market efficiency project, including those that physically cross the seam between MISO and another transmission planning region."

FERC rejected MISO's contention that it had previously approved similar cost allocation methods, saying that most of the proceedings cited by the RTO addressed interregional cost allocation methods. "Here, however, MISO is not proposing an *interregional* cost allocation method; it is proposing *regional* cost allocation methods that it will use to allocate within MISO the portion of the costs of interregional transmission projects."

FERC said that although it has approved avoided-cost-only interregional cost allocation methods and an avoided-cost-only regional cost allocation method for reliability projects, "the commission has not previously addressed whether a transmission planning region may use an avoided-cost-only *regional* cost allocation method for public policy-related transmission projects."

"This is consistent with the commission's previous explanation that because Order No. 1000 has different requirements for regional transmission planning and interregional transmission coordination, a just and reasonable interregional cost allocation method may nevertheless be an unjust and unreasonable regional cost allocation method."

Stakeholders Split

FERC's rejection means that the issue will return to MISO, where it has divided stakeholders. FERC said the RTO told the commission that if its proposal was rejected, it would not apply the non-transition period cost allocation methods under Attachment FF to interregional projects outside the RTO, "and therefore will have to revisit this issue with its stakeholders."

MISO told FERC that about half its stakeholders supported the revised Attachment FF-6 while the other half wanted to retain the non-transition period MEP cost allocation in Attachment FF for interregional economic projects entirely outside of MISO.

Because it rejected MISO's filing, the commission said it did not have to address protests by the New Orleans City Council, E.ON Climate & Renewables N.A. and EDF Renewable Energy.

The two renewable companies complained about MISO's criteria requiring MEPs be rated at 345 kV or higher and meet a 1.25:1 benefit-cost ratio, saying they were impeding the development of MEPs. They asked the commission to reject MISO's proposal or condition its acceptance on removing the 345-kV threshold and lowering the benefit-cost ratio to 1:1.

New Orleans contended that a MISO analysis had shown that individual transmission owners in benefiting local resource zones may not always receive production cost savings from sub-345-kV economic transmission projects.

The commission also declined to respond to regulators from Arkansas, Louisiana and Mississippi, who sought clarification about which cost allocation methods would apply if the commission rejected MISO's proposal.

"MISO states that it will revisit the issue with stakeholders if its proposed cost allocation methods are rejected, and we will afford MISO the opportunity to do so," the commission said.

"MISO states that it will revisit the issue with stakeholders if its proposed cost allocation methods are rejected, and we will afford MISO the opportunity to do so."

FERC

MISO NEWS

MISO Board Announces Candidates, Hears Budget Review

By Amanda Durish Cook

| © RTO Insider

ST. PAUL, Minn. — MISO revealed three new candidates for its Board of Directors and reported on an expected budget overrun during the quarterly board meeting on Thursday.

Board Chairman Michael Curran opened the meeting with a moment of silence for the victims of Hurricane Maria in the Caribbean and Puerto Rico. "It underscores the importance of what we do," Curran said.

Curran announced incumbents Baljit Dail and Thomas Rainwater and newcomer Theresa Wise, former chief information officer for Delta Air Lines, are the candidates for three new terms beginning in January.

If any of the three fails to receive a majority vote, stakeholders will consider alternates John "Jeb" Bachman, former partner at PricewaterhouseCoopers, and Wolfgang Richter, former chief information officer at PricewaterhouseCoopers. In MISO board voting, alternates would only rotate into the election for a second membership vote if any of the candidates in the first vote did not receive a majority of the vote.

The slate was prepared with help from search firm Russell Reynolds. In June, Dail — who by the end of the year will reach MISO's three, three-year term limit — was granted a one-time waiver to stand for this year's election. (See "Committee Permits Consideration of Extra Term for Dail," MISO BoD Briefs: June 22, 2017.)

Senior Vice President of Compliance Services Stephen Kozey said electronic voting will be open for 39 days — "not a short amount of time" — and 25% of MISO's 138 voting members will need to cast ballots to reach an election quorum.

"We've been lucky in the past to have voting participation over 60%," Kozey said.

Noticeably absent from the roster was current Director Paul Bonavia, who had been seeking re-election as of the last board meeting.

Bonavia said that when he announced in summer that he would stand for re-election, he fully intended to do so, but since that time, unforeseen "personal and family matters totally unrelated" to MISO have arisen.

"It's been a pleasure to be part of the MISO board, and we still have a lot of work to do this year, and I promise to stay fully engaged. I also would like to congratulate MISO on a wonderful roster of candidates," Bonavia said.

Small Budget Overrun

To date, MISO is $1.8 million under its annual budget, but Chief Financial Officer Melissa Brown said the RTO will likely spend $240.4 million by year-end, exceeding its $239.1 million budget by $1.3 million (0.5%).

As of the end of July, MISO was under budget by 1.3%, having spent $138.7 million of the $140.5 million allotted for the first six months.

In June, Brown prepared the board for a possible 1.2% budget overrun, due in part to MISO's lower-than-expected employee vacancy rate. (See "MISO Reports Likely Year-End Overage; Board Urges Staff Stick to Budget," MISO BoD Briefs: June 22, 2017.) The low rate persists, Brown said, but MISO has since shifted some project spending around.

Brown said that while employee retention and spending on employee medical benefits is the biggest cause of the overrun, it's a sign that MISO's recent programs aimed at retaining talent are working.

MISO's capital spending in 2017 is similarly expected to go over budget. Brown said MISO will probably spend $30.2 million instead of its assigned $29.9 million on capital projects (1%).

So far this year, capital spending is $20.1 million, under budget by $600,000 (2.9%).

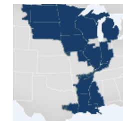
Dail said stakeholders can expect MISO's other capital spending to shrink over the next few years to make room for MISO's multiyear, $130 million project to replace its market system computer platform.

The replacement took more of a share of this year's overall budget than originally anticipated. The program began with a $1.7 million spend in 2017, but MISO won board approval to increase it to $5.2 million so that staff could start early on vendor evaluation and gathering bids. (See MISO Makes Case for $130M Market Platform Upgrade.)

"It was never easier for me to vote for a budget increase," Director Barbara Krumsiek said. "It means you're moving at such a pace" that early spending is needed. "I'd like to thank you for asking for the increase."

Brown said MISO offset some of the extra platform spending by not having to spend money developing a separate, three-year forward capacity auction for competitive retail areas — a proposal that FERC rejected.

MISO News



FERC OKs Rule Changes on MISO-Manitoba Hydro Trades

By Rich Heidorn Jr. and Amanda Durish Cook

FERC issued seven orders Wednesday revising how MISO deals with its neighbors when incorporating power flows between the RTO and Manitoba Hydro.

The changes affect bidirectional external asynchronous resources (EARs). FERC defines an EAR as "a resource representing an asynchronous DC tie between the synchronous Eastern Interconnection grid and an asynchronous grid that is supported … through dynamic interchange schedules." Only Manitoba Hydro's generation currently meets the EAR definition in MISO.

Until 2015, the utility's hydropower was a dispatchable import into the MISO footprint. In March 2015, however, MISO and Manitoba began a bidirectional service that allowed the RTO to also export to its northern neighbor.

MISO said the revisions to the baseline congestion management process align the treatment of export EARs with the treatment of import EARs in the market flow calculations under its congestion management process.

FERC on Wednesday approved revisions, effective June 1, 2017, to:

- Attachment LL of the MISO Tariff (ER17-1302);
- Rate Schedule 8, the Seams Operating Agreement between MISO and Manitoba Hydro (ER17-1303);
- Rate Schedule 46, the Coordination and Operating Agreement between MISO and Minnkota Power Cooperative (ER17-1304);
- The joint operating agreement between MISO and PJM (ER17-1305), including PJM's revisions (ER17-1306); and
- The JOA between MISO and SPP (ER17-1332), including SPP's revisions (ER17-1333).

MISO's proposed changes followed an August 2015 memorandum of understanding among MISO, PJM and SPP that addressed EARS and other seams coordination issues. MISO and Manitoba subsequently agreed to amend their Seams Operating Agreement, and MISO received guidance

Slave Falls Generating Station | *Manitoba Hydro*

from NERC that resulted in additional proposed changes to the congestion management process.

The revised MISO-SPP JOA creates a process under which MISO will, on request, conduct studies to determine the flowgates impacted by an EAR.

MISO's revised JOAs with SPP and PJM add an additional notification requirement when an RTO permanently adds or removes a point of interconnection.

The changes to the MISO-PJM JOA also detail other information sharing obligations and align day-ahead energy market coordination and the auction revenue rights/financial transmission rights with market-to-market settlement practices, MISO said.

FERC Accepts Entergy Revision on 'Moot' Settlement

By Amanda Durish Cook

FERC has accepted a compliance filing from Entergy on a settlement meant to resolve a more than 20-year-old dispute between the utility and the Louisiana Public Service Commission — a settlement that may or may not be moot.

On Wednesday, FERC accepted Entergy's revision to make the settlement's "just and reasonable" standard of review provision applicable to third parties, a change FERC ordered last September (EL00-66-021).

The issue dates to 1995, when the Louisiana PSC and New Orleans City Council filed a successful complaint with FERC, arguing that Entergy's formula for determining peak load responsibility in its multistate-wide system agreement was unfair because it included interruptible load, in addition to firm load.

The Entergy System used to be more integrated, with Entergy's operating companies' transmission and generation facilities operated as a single electric system, and its system agreement consisting of several service schedules that allocated costs among the operating companies according to a responsibility ratio.

After a volley of appeals and remands involving the D.C. Circuit Court of Appeals, FERC ultimately required Entergy to remove all interruptible load from its cost allocation. However, after a series of conflicting rulings, FERC ultimately declined to order refunds, concluding that while the utility failed to have an equitable cost allocation, it did not over-collect. FERC explained that "in a case where the company collected the proper level of revenues, but it is later determined that those revenues should have been allocated differently, the commission traditionally has declined to order refunds." It also found that "refunds would impose potentially unrecoverable costs" on the Entergy companies.

Entergy said that because the commission's ruling not to order refunds "render[s] the performance of the settlement agreement moot," FERC recounted. "Entergy states that the September rehearing order resolved those pending matters and while it is making the requisite compliance filing, the refunds for the 15-month refund period will not be paid."

But the Louisiana PSC argued that FERC's decision against refunds is "not a final, non-appealable" order and it's still possible that refunds could be granted on an appeal the utility filed with the D.C. Circuit last year.

FERC said, however, that the Louisiana appeal was not the issue.

"While the parties hold differing views on the finality of the orders in this proceeding … the issue now before us for decision is whether Entergy's compliance filing complies with the requirements" of its September order, FERC said.

MISO News

MISO in Harmony with IMM State of the Market Report

By Amanda Durish Cook

ST. PAUL, Minn. — While MISO "generally" agrees with all nine market improvement recommendations raised by its Independent Market Monitor in its 2016 State of the Market report, the RTO says it must first consult with stakeholders on any proposed market changes.

"There are a number of them where we agree, both on the notion behind them and the recommended approach," MISO Executive Director of Market Design Jeff Bladen said during a Sept. 19 meeting of the Markets Committee of the Board of Directors.

That committee in July said Monitor David Patton had raised worthwhile issues in his latest report. (See *MISO Board Hears State of the Market Recommendations*.)

Higher Value of Lost Load

The RTO said it agrees with the Monitor's idea of representing the value of lost load with a more sloped contingency reserve demand curve. Patton recommended a curve capped at almost $12,000/MWh, rather than MISO's proposed $3,500/MWh cap, which the RTO filed in May to comply with FERC Order 831 (ER17-1571).

MISO's flatter proposed curve generally hovers at $2,100/MWh, unless the market clears less than 8% or more than 96% of its requirement. The current curve is largely priced at $1,100/MWh.

"It seems like a fairly simple question: Why don't we do this?" Director Paul Bonavia asked regarding the Monitor's proposed curve.

Executive Vice President of Operations Richard Doying said that while MISO agrees with the more steeply sloped curve, the process for changing "isn't as simple as filing" a new curve. The RTO must first put the change before its stakeholder community and gather consensus before turning to FERC with a proposal.

"We'll get to a change. We're not sure what the shape of the curve will look like, but [a change] is beneficial," Doying said.

Market-to-Market Coordination

MISO officials are in the midst of developing a plan to transfer control of market-to-market (M2M) flowgates to neighboring RTOs. Bladen said MISO and SPP plan to begin swapping flowgate control soon — a goal first outlined in a June memorandum of understanding between the two RTOs — while MISO will look improve its control transfer process with PJM. (See *MISO Interregional Plans with SPP Echo PJM Efforts*.) The Monitor wants the three RTOs to become more active in transferring monitoring of constraints when the non-monitoring RTO has all of the transmission loading relief on a flowgate.

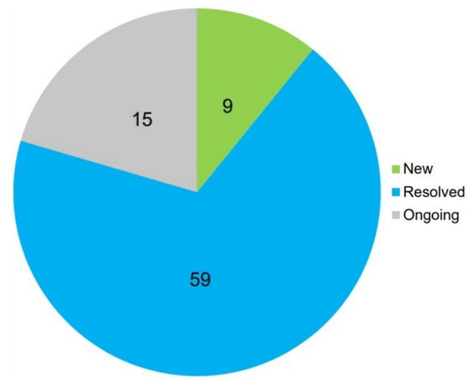
Generation Outages

MISO is also aware that it needs a greater say in the scheduling of planned generation outages, Bladen said. In his report, Patton asked the RTO to file changes with FERC to give itself increased authority to approve generation and transmission outages and the ability to coordinate outage schedules in order to lower costs.

"We think that generation outages will somehow be changed. That, I think, is not a question," Bladen said. "How it's going to be implemented, that's an area where stakeholders, the Market Monitor and MISO will have to work together."

About 16,000 MW of generation was offline for planned outages despite unseasonably warm forecasted temperatures during emergency conditions in MISO on April 4, and the Monitor maintains that the planned outages exacerbated the situation.

During a Sept. 20 Advisory Committee meeting, Citigroup Energy's Barry Trayers said generators planning the outages should possibly bear some of the related congestion costs.



State of the Market recommendations status, 2005-2016 | *MISO*

Directors Barbara Krumsiek and Michael Curran | *© RTO Insider*

"By nature of our names, we are transmission-dependent utilities," Wisconsin Public Service's Chris Plante said. "What we found out real quickly when working with our transmission providers is that we have to coordinate heavily to align outages."

"The consumers are bearing the burden of these costs. I still carry the concern of the ratepayer," NRG Energy's Tia Elliott said. "We have to consider the economics of these outages — and not the economics of filling our own pockets, but the economics of who bears these costs — because we can't get the planning and the coordination down right. And maybe we can't get it perfect, but there needs to be some coordination here."

Entergy's Matt Brown said he personally opposes scheduling wintertime outages for the sake of staggering planned outages in the interest of community safety.

"It's one thing not to have air conditioning in April when it's 70 degrees. It's another thing not to have heat in December," Brown explained.

Reliability Subcommittee Chair Tony Jankowski pointed out that MISO is not charged with evaluating outages based on cost. "If you want MISO to put a price on that outage, that's a whole different thing. That's not in the MISO Tariff," he said.

Two Separate Reserves?

Like the generation outage issue, Bladen

Continued on page 18

MISO NEWS

Nomination Redux for MISO Energy Storage Task Force

By Amanda Durish Cook

ST. PAUL, Minn. — MISO's Steering Committee will reopen nominations for vice chair of its newly formed Energy Storage Task Force after initiating what stakeholders are calling a confusing elections process.

The move has opened discussions that could have implications for how the RTO nominates and elects individuals to fill stakeholder group leadership positions in the future.

In selecting leaders for the task force, MISO's Steering Committee deviated from standard practice by administering separate elections for the positions of chair and vice chair. While votes for the chair are already in (with results still unannounced), the election of the vice chair is still pending.

Steering Committee Chair Tia Elliott said that both candidates for chair expressed an interest in running for vice chair if they weren't picked for the top position. As a result, a nomination for vice chair was submitted after the deadline, leaving the Steering Committee to decide whether to include the late submission for voting.

During a Sept. 20 Steering Committee meeting, Vice Chair Audrey Penner suggested reopening the nomination process but including all previous nominations, a motion committee members backed by consent.

"That's the only way I see getting around this confusion," Penner said.

Audrey Penner | © RTO Insider

Tia Elliott | © RTO Insider

In explaining the reason for the split elections, Elliott said the Steering Committee is under pressure to produce stakeholder leadership for the task force so the group can begin work on pressing energy storage issues. MISO has already assigned Chief Compliance Officer Joseph Gardner to serve as liaison to the group, and stakeholder input is needed as the RTO begins to craft market rules and definitions to manage storage participation in the market. (See Progress Builds for MISO Energy Storage Effort.)

"There's a push to get this off the ground," Elliott said.

Some Steering Committee members asked who had the authority to separate the voting in the first place. Others said moving deadlines for late nominations could result in increased confusion during elections for other stakeholder committees.

Elliott said MISO staff and Steering Committee leaders decided to split the election, as the RTO's Stakeholder Governance Guide is silent on the issue of moving election dates.

"That's stepping way outside the governance guide. I'm concerned a decision like that has been made," said Northern Indiana Public Service Co.'s Bill SeDoris.

"I made the decision. I will not apologize for that," Elliott said, pointing to the scarcity of volunteers within the MISO stakeholder community to take on leadership positions.

"If we have a deadline, in fairness to the process, we need to stick by that date," Penner said of the possibility of allowing a late nomination.

In response to a question by Ameren's Ray McCausland about why the Steering Committee didn't simultaneously solicit nominations for chair and vice chair, Elliott said nominations were held in conjunction, but elections were held separately.

"The way this ended up is a bit cumbersome," McCausland said.

Elections for chair and vice chair for all MISO stakeholder committees and groups are held via electronic ballot among MISO members with voting rights.

The Steering Committee will next month explore possibly amending elections provisions in the Stakeholder Governance Guide, Elliott said. She asked stakeholders to email MISO's stakeholder relations team with opinions on the subject. The committee will consider revising elections rules after reviewing responses and holding a discussion on the topic.

MISO in Harmony with IMM State of the Market Report

Continued from page 17

said MISO faces a similar stakeholder process to create separate regional reserve requirements and cost allocation for its North and South regions, another Monitor recommendation. He pointed out that MISO is currently conducting a multiyear regional transmission overlay study that could identify a transmission solution for the RTO's constrained interface between the two regions. Neither the Market Congestion Planning Study nor footprint diversity study, both conducted this year, have been successful in identifying a project that could meet cost-benefit requirements.

Other Recommendations Get a Look

The Monitor's remaining recommendations also must undergo more review, according to Bladen.

A recommendation to improve the accuracy of MISO's look-ahead commitment tool by modeling system conditions for a three-hour time frame could be folded into the RTO's market platform replacement if the Monitor has provided compelling enough evidence for doing so, he said.

Officials also agree with the Monitor that the RTO could tighten qualification guidelines for day-ahead margin assurance and real-time offer revenue sufficiency guarantee payments in order to improve performance incentives and reduce gaming opportunities. Bladen said MISO plans to begin stakeholder discussions about the issue next month.

Continued on page 19

MISO News

MISO, IMM Report Efficient Summer Months

By Amanda Durish Cook

ST. PAUL, Minn. — Three days shy of summer's end, MISO's staff and Independent Market Monitor convened to commend RTO operations personnel for a successful season.

David Patton | © RTO Insider

Monitor David Patton said MISO's real-time operations did a fine job of navigating summer's Hurricane Harvey, Tropical Storm Cindy, the Aug. 21 solar eclipse and short bursts of high temperatures.

"We haven't had any meteorites, but almost everything else under the sun," Director Paul Bonavia joked during the summer operations presentation at the Sept. 19 meeting of the Markets Committee of the Board of Directors.

Vice President of System Operations Todd Ramey said MISO used its new hurricane action plan for the first time, maintaining communication and receiving updates from local operators near the storm. MISO held realistic hurricane simulations with MISO South operators during May and June, a first for the RTO, which ordinarily holds less-

| © RTO Insider

detailed hurricane drills.

"Hurricane Harvey proved to be mostly a rain and major flooding event. It did have some impact on transmission in the Eastern Texas area … but we maintained reliability throughout," Ramey said.

Patton said despite occasional weather outbursts, the summer was "a little bit less eventful than past summers." He called the 120.6-GW summer peak load on July 20 "very manageable" and "well below" the 125-GW forecast. A 6% rise in natural gas prices from last summer was offset by a 5% decrease in real-time energy prices due to mild temperatures and lower-than-expected average load.

The Monitor commended MISO's ability to not declare any maximum generation events during the summer despite multiple operating reserve shortages from contingencies. He also praised MISO for producing more accurate day-ahead forecasts and more complete resource commitments when compared to last year. He told the board that while severe weather during June led to islanding in MISO, the RTO "was able to model the units in the islands and send appropriate prices during the events."

Patton also said MISO managed real-time congestion costs effectively during the summer, as they fell from $463.5 million last summer to $334.5 million this summer, in part because of moderate load.

Divergence on ELMP

But the Monitor differed with MISO on the efficacy of the RTO's extended locational marginal price (ELMP) program, which this spring was expanded to include resources with one-hour start-up times. The program was previously available only to 10-minute fast-start resources.

The ELMP effort is not fulfilling its potential, resulting in only a 29-cents/MWh price increase in the real-time energy market since its expansion in spring, Patton said. The Monitor has long called on the RTO to expand ELMP to allow all generators with two-hour minimum run times to set prices.

MISO said the Monitor's price-setting expansion would not be worth the expensive software change, but Patton said his change would have increased LMPs by $7/MWh, reflecting the true cost of using peaking units.

MISO in Harmony with IMM State of the Market Report

Continued from page 18

MISO may be willing to improve forecasting incentives for its wind operators by changing dispatch deviation thresholds and settlement rules, but it must first evaluate how other RTOs have handled wind forecasting, Bladen said.

"There's a quote by Pablo Picasso: 'Good artists copy and great artists steal.' The concept of stealing as he was describing is building on what others have done. That's what we want to do here; we want to build on and improve," he said. (Whether Picasso actually said this is disputed.)

Bladen also said MISO still faces a full technical review if it undertakes a recommendation to disqualify from the Planning Resource Auction any resources expected to be unavailable during peak conditions. "We'll be working through with our stakeholders to figure out how to do this," he said.

Now What?

The Monitor's recommendations are included for consideration in the current and upcoming Market Roadmap project lists. Patton's recommendation to create regional reserve requirements was the only one to earn a "top 10" stakeholder ranking among 34 market modification proposals in the RTO's annual Market Roadmap process. MISO has yet to provide its own staff weightings alongside the stakeholder scoring results to determine what market projects the RTO will eventually undertake. (See "Stakeholders Give Energy Storage Top Spot in Roadmap," *MISO Market Subcommittee Briefs: Aug. 10, 2017*.) MISO will unveil a final project prioritization by December.

MISO said it plans to spend about $53 million in Market Roadmap market revisions over the next five years.

Director Michael Curran said that roadmap efforts are a sizeable endeavor when combined with the RTO's day-to-day operations and multiyear effort to entirely replace its market platform.

"This is a big lift," agreed Director Baljit Dail.

MISO News

Stakeholders Envision Gigawatts of DER in MISO Footprint

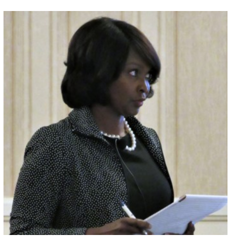
By Amanda Durish Cook

ST. PAUL, Minn. — Representatives of MISO sectors gathered Wednesday to discuss how a greater number of distributed energy resources could interact with the grid. Topics ranged from the gig economy to state jurisdiction to the socioeconomic barriers preventing some from obtaining those resources.

Vice President of System Operations Todd Ramey said DER "such as rooftop solar systems and microturbines" are not as widely used in MISO as in other RTOs.

"However, the MISO region could see a substantially higher penetration of distributed energy going forward as the costs of the resources continue to decline and if cities, states and the federal government continue to adopt policies that encourage their use," Ramey said.

By 2030, installed photovoltaic resources could top 17 GW, while demand response and energy efficiency deployments could exceed 6 GW and 8 GW, respectively.



Julia Johnson | © *RTO Insider*

Discussion facilitator Julia Johnson, president of regulatory advising firm Net Communications, kicked off the discussion by engaging stakeholders, MISO staff and board members in a sing-along of Fleetwood Mac's "Don't Stop."

"'Don't stop thinking about tomorrow.' That's the trend. There hasn't been much DER activity so far, but we plan for it," Johnson said.

Defining DER

MISO presented a draft definition describing DER as power generation, storage or load-modifying resources connected either through a utility's distribution system or behind the meter. DER can include photovoltaics, combined heat and power, cogeneration systems, reciprocating engines, combustion turbines, microturbines, wind turbines, back-up generators, energy storage and even DR and energy efficiency, according to the definition.

Most sectors, including the Organization of MISO States, agreed with MISO's take. OMS organized an early August workshop in which state regulators and industry officials similarly explored DER topics, and has since formed a temporary work group to consider how to incorporate the resources into the grid. (See *Stakeholders Hash out Future of DER at OMS Workshop*.)

John Moore | © *RTO Insider*

"Consumers [are] moving to being customers of the grid," said John Moore, attorney for the Natural Resources Defense Council, who likened the energy customer transition to that of licensed drivers and the rise of Uber's ride-share program.

Director Baljit Dail seized on the Uber analogy. "There may be a whole new player that comes into the mix and provides a platform for people with DER to sell," Dail said.

Entergy's Matt Brown said there will probably be a future need to designate a minimum megawatt participation limit on DER to include them in whatever market definition the RTO eventually settles on. "MISO might not be the appropriated entity to draw those lines," Brown added.

"The advantage that we have here is that we really have some time to make some really elegant solutions," Northern Indiana Public Service Co.'s Paul Kelley said.

"Let's not lose sight of [the fact] that getting paid within MISO is not a trivial matter," Dynegy's Mark Volpe said. He said suppliers must go through the process of creating commercial pricing notes, signing agreements with MISO and posting collateral to get set up on the wholesale distribution level — none of which is an easy task.

State Jurisdiction

Minnesota Public Utilities Commissioner Matt Schuerger said that while DER rules will fall under state jurisdiction for resource adequacy, MISO, industry leaders and generation and transmission operators will play a vital role in coordinating and planning. "I think state regulators will need information from MISO to help make decisions," he said.

Arkansas Public Service Commission Chairman Ted Thomas reiterated a warning issued by former FERC Commissioner Tony Clark at the OMS DER workshop, saying states will get rules mandated to them by FERC if they fail to write their own.

"States can [wait to] act and wait for FERC to act, and what we'll get is a velvet glove around an iron fist — one size fits all," he said.

Beth Soholt | © *RTO Insider*

Wind on the Wires' Beth Soholt pointed out that many Midwest manufacturing plants are already beginning to alter their energy supply mix to meet renewable goals. "You're going to continue to see this trend ripple through large energy customers," she said. Soholt said MISO planning might need to look past demand, including at customer preference. She said as long as demand growth remains the single most important factor in transmission planning, MISO will not have a complete picture of the future.

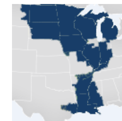
"I think people think, 'demand is going down, so we don't need to plan as much transmission or generation. Customers want a particular kind of mix. … I worry about that if we just look at demand in and of itself, that's not capturing all the value that these resources have to offer," she said.

At a Sept. 21 Board of Directors meeting, Executive Vice President of Operations Clair Moeller told board members that MISO is overall moving to a "less peak, more load served" model with the contributing factor of electric vehicles.

Missouri Public Service Commission economist Adam McKinnie agreed that the "haircut of load growth" has been an obstacle in recent transmission planning

Continued on page 21

MISO NEWS



MTEP 17 Proposal: 343 New Transmission Projects at $2.6B

By Amanda Durish Cook

ST. PAUL, Minn. — MISO plans to recommend that its Board of Directors approve 343 new projects estimated at $2.6 billion as part of the RTO's annual transmission plan.

This year's draft project round-up comes in 40 projects short of MTEP 16 but costs about the same, directors and stakeholders learned at a Sept. 19 meeting of the board's System Planning Committee.

MISO Vice President of System Planning Jennifer Curran said the top 10 priciest projects in MTEP 17, ranging from $26 million to $149 million, are spread "fairly evenly" across the footprint, with three in Michigan, two each in Louisiana and Wisconsin, and one each in Iowa, Arkansas and eastern Texas.

MISO executives Jennifer Curran and Clair Moeller | *© RTO Insider*

While the RTO included only half of those projects for baseline reliability reasons, the Iowa and Wisconsin projects both originated from generator interconnection requests, showing that interconnections are increasingly becoming major transmission projects themselves, Curran said. MTEP 17's most expensive project, a new $149 million 500-kV line from Hot Springs to Happy Valley in Arkansas, is meant to relieve reoccurring thermal overloads.

Curran said just one MTEP 17 contender may qualify as a market efficiency project. The $129.7 million project involves construction of a new substation in eastern Texas equipped with a 500/230-kV transformer. The facility would accommodate a new 500-kV line running from Hartburg, Texas, as well as a reconfiguration of the existing Sabine-McFadden and Sabine-Nederland 230-kV lines to fully relieve area congestion and reduce the amount of voltage and local reliability make-whole payments needed in the West of the Atchafalaya Basin load pocket. Some MISO stakeholders this month complained about what they perceived as late-stage modeling changes to the project. (See *Late Changes to Texas Project Frustrate MISO Participants*.)

Curran said the project will undergo additional stakeholder review before coming back for board approval in early December.

No Tx Coming for North-South Constraint

MISO's collection of MTEP 17 studies this year included a footprint diversity study, an extra analysis specifically designed to identify viable transmission projects to connect the RTO's Midwest region with MISO South. However, Curran said not one of the study's 35 potential projects could pass the 1.25-to-1 benefit-cost criteria based on adjusted production cost benefits.

"The physical congestion, while it exists, isn't enough to justify a fairly expensive transmission project. I think there are other benefits that aren't being considered, but that's the nature of this process," Curran said.

Curran said that over the course of the study, MISO "learned a lot about the nature of the flows" near the North-South transfer constraint.

Stakeholders Envision Gigawatts of DER in MISO Footprint

Continued from page 20

studies by consulting firm Applied Energy Group.

McKinnie said some states, including his own, collect rooftop solar data, and those numbers could be passed on to MISO planners.

"This could be an example of how the states could gather and provide MISO with information, so MISO doesn't have to guess," he said.

Dail urged stakeholders to give MISO guidance on DER market rules. "You didn't want a MISO that picked winners and loser in regards to technology," he reminded them.

Moore said MISO must avoid "siloing," referring to the tendency for DER information to remain in just one database.

"Is there siloing occurring at the distribution level that prevents a complete picture of how much distributed energy is bubbling up?" he asked.

Socioeconomic Differences

Brown said MISO and industry leaders must also pay attention to distributed energy trends in wealthy communities versus poverty-stricken areas, contrasting the incomes in the toney Twin Cities suburb of Maple Grove with those of Flint, Mich., both in the MISO footprint.

"It's easy to lose sight of how large our footprint is. It's easy to make sweeping statements like 'customers want this' or 'customers want that,' but we have to remember the range of customers we have," Brown said.

Thomas Rainwater | *© RTO Insider*

Director Thomas Rainwater thanked Brown for bringing up the socioeconomic disparity across the footprint.

"I happen to live within 40 minutes from Flint," Rainwater said. "One of the great inventions of the last 100 years is the electrification of households and the health and economic benefits that it brings … but there are those that have been left behind. I think that we can all agree that while solar is great and wind is great, the early [residential] adopters are in the upper strata. We need to not lose sight of that."

Director Todd Raba said regulators and industry officials have an "ethical" obligation to pay attention to keeping costs low for their poorest customers.

NYISO NEWS

Environmentalists Denounce FERC Millennium Pipeline Ruling

By Michael Kuser

Environmental advocates criticized FERC for ruling that New York state failed to act in a timely manner on water quality permits sought by Millennium Pipeline.

In its Sept. 15 order, the commission ruled that the New York State Department of Environmental Conservation (DEC) had waived its authority to issue or deny a water quality certification for the project by failing to act within the one-year time frame required by the Clean Water Act (CP16-17).

In a statement, the department said it is reviewing FERC's decision and would "consider all legal options to protect public health and the environment." It would have to file any appeal with the D.C. Circuit Court of Appeals.

But opponents of the natural gas pipeline extension — the 7.8-mile Valley Lateral spur to the Valley Energy Center in Wawayanda, N.Y. — were not as circumspect.

"This is just another warping of the law by FERC," Maya van Rossum, director of the Delaware Riverkeeper Network, told *RTO Insider*. "It's not the first time, and it probably won't be the last, that FERC acts only to help its friends in the pipeline industry."

Sierra Club Atlantic Chapter Director Roger Downs said in a statement that "nowhere is FERC granted the right to override" a state's authority to regulate its water quality.

Timeliness of the Essence

Millennium Pipeline in July filed with the commission a request for notice to proceed with construction, asserting that the DEC had failed to act before the statutorily imposed deadline. The department responded days later that it had not waived its authority, which it exercised on Aug. 30 when it denied Millennium's application for certification.

Millennium and the department differed on when the one-year review process began, with the company contending that the clock started ticking when it submitted its application to DEC in November 2015. The DEC countered that the one-year period did not begin until it received a "complete" application on Aug. 31, 2016. (See *Pipeline Sues to Force NY to Issue Permit for CPV Plant*.)

FERC said in its order that the "starting point for interpreting a statute is the language of the statute itself," and that "Section 401 [of the Clean Water Act] provides that water quality certification is waived when the certifying agency 'fails or refuses to act on a request for certification, within a reasonable period of time (which shall not exceed one year) after receipt of such request.' Thus the term 'receipt' specifies the triggering event."

The commission ruled that "giving effect to the plain text of a statute, the one-year review period began November 23, 2015" — when the DEC received the application.

New Pattern

Gavin Donahue, CEO of the Independent Power Producers of New York, earlier this month told participants at the group's fall conference that "the siting of natural gas pipelines is FERC's jurisdiction, but the DEC has developed a pattern of denying water quality certificates for projects, most recently evidenced by the decision on the Millennium Pipeline." (See *NYPSC Chair Promises 'Continuity' on State Energy Policies*.)

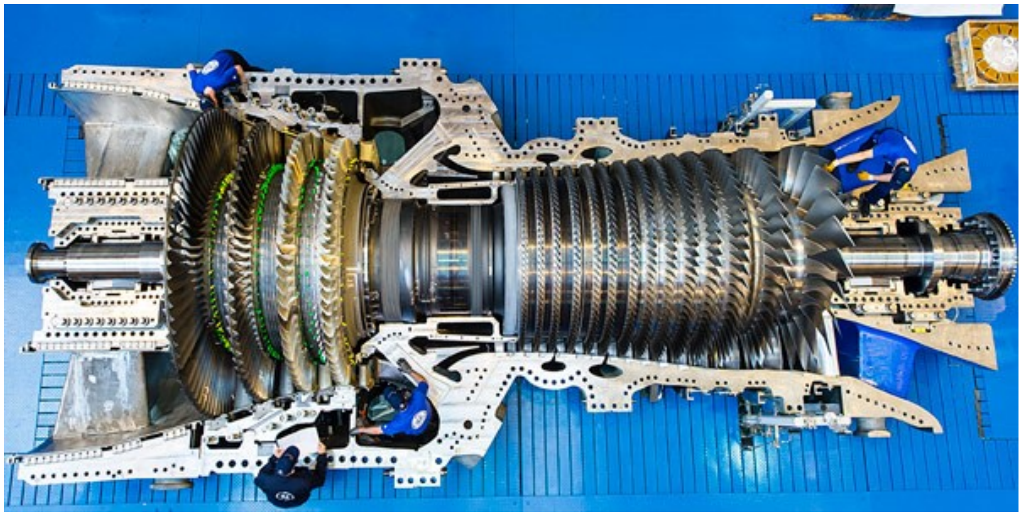
New York environmentalists might have thought they were succeeding in stopping pipelines after the 2nd U.S. Circuit Court of Appeals last month ruled that the department acted within its authority to deny water quality permits sought by Williams Co. for its Constitution Pipeline.

Now the natural gas industry sees hope. Following the Millennium order, Reuters reported that Williams now plans to seek a similar permit ruling from FERC.

NYISO NEWS

GE Power Pitches its Global Perspective to IPPNY

By Michael Kuser



GE workers build a 9HA.01 gas turbine. | GE Power

SARATOGA SPRINGS, N.Y. — Refurbishing an existing combined-cycle plant can squeeze an extra 12 to 15 MW of generating capacity from each gas turbine — and the compelling economics of equipment upgrades provide New York generators a choice beyond building new plants.

That was the view of Bob Prantil, executive director of sales and strategic accounts for GE Power North America, who spoke Sept. 14 at the fall conference of the Independent Power Producers of New York.

"After all the debates and discussions, eventually electrons need to be placed on a grid at the lowest LCOE [levelized cost of electricity] to make sure that whoever is providing those electrons can break even," Prantil said. "We recently combined our power business with our grid business because that's what the market wanted. When you're going to speak to a utility, it's not just necessarily about generation. You have to figure out how to get those electrons around."

Existing Versus New Generation

While New York has a goal of getting 50% of its electricity from renewable resources by 2030, Prantil pointed out that other states are looking at more. Iowa, for example, aims to reach 100% renewable energy over the next five years.

"You all know the complexity of new generation from the standpoint of permitting and do people want it in their backyards — and the construction, where it makes sense," Prantil said. "I would just challenge you to understand the existing generation that you have in-state already and what [original equipment manufacturers] can do to reduce overall CO_2 emissions, gain more efficiency and get more output from those plants at a quarter of the price of a new plant being built."

Energy conferences these days focus more on renewables and efficiency than on gas, which strikes Prantil as odd.

"Especially in the northeast United States, if you see what's going on in PJM, there has been an uptick in the installation of combined cycle plants," he said. "If you think about the sizes of gas turbines now and the efficiencies of those turbines compared to just 10 years ago, it makes the decision to go with gas, as some people call it, a bridge fuel before 100% renewables, a very smart decision."

GE Power just set a world record with the company's first plant in France. Prantil said the combined cycle unit is 99.95% available and achieved a record-setting 62.6% thermal efficiency, 5 percentage points higher than the best combined cycle plants could have achieved just five years ago.

"If you take that efficiency over the life cycle of a plant and then you look at the LCOE for that, and you think about the saved BTUs and CO_2, it's a pretty compelling story," Prantil said.

Energy Storage and Hybrids

GE built one of the first battery plants in the U.S. in Schenectady, N.Y. "So we know how to do all this," Prantil said. "We believe that energy storage prices are going to come down."

He said California has been doing generation-storage hybrids longer than New York, but instead of trying to figure out how to create new markets — which is what New York is doing — GE is looking at how to take an existing market and apply battery technology to it. He cited a case in California where GE applied storage technology to the famed "duck curve."

"That power needs to be instantaneous, almost like spinning reserve," Prantil said. "So if you take a 50-MW gas turbine that takes eight or nine minutes to ramp up to speed ... you put in a four-hour battery that's being charged by the grid. We can have the battery take over for the seven minutes of ramping."

GE sees energy storage as a very cost-effective way to meet some of the ancillary requirements of RTOs and ISOs — and there has to be an ancillary service for any developer to do it and get paid.

"We always want to get the EEI [Edison Electric Institute] award for a 1,200-MW combined cycle plant or some offshore wind farm, but we got the EEI award for a 15-MW battery hybrid system," Prantil said.

Energy efficiency is also driving changes to the dispatch stack, which will also occur in NYISO, he said.

"A developer will look at what zone they're in, and if there's a combined cycle plant in that zone, they want to know the efficiency

Continued on page 24

GE Power Pitches its Global Perspective to IPPNY

Continued from page 23

of that plant. And if a generator can build a more efficient plant in that zone, or increase the efficiency of an existing plant, their capacity is more likely to get dispatched."

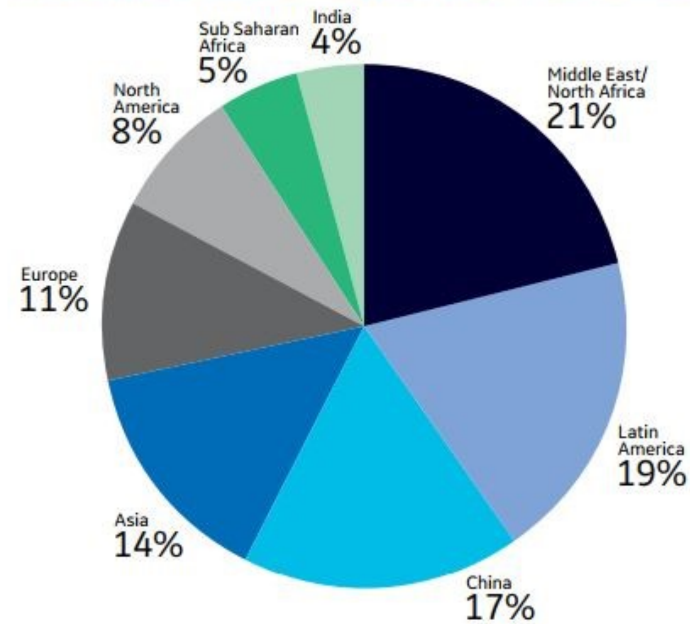
New York Native

A native New Yorker schooled in Brooklyn, Queens and the Bronx, Prantil said GE is also a native of the state. "The headquarters of our GE Power business from the very beginning, from the Thomas Edison years, is located 20 miles from here in Schenectady," he said.

Prantil noted that GE technology has outfitted about half the state's nuclear fleet and wind farms, as well as providing 152 gas turbine units and 116 steam and hydro turbine units.

"We like to say that New York is powered by GE, as 60% of the megawatts generated in New York comes from GE equipment," Prantil said. "We have 152 gas turbine units, we have 116 turbine units, half of the nuclear fleet is with GE technology and about 50% of the installed blades in wind is with GE technology."

If New York decides to go heavily into offshore wind, GE's not going to debate if that's right or wrong, he said, but will instead figure out how to develop the resources at the lowest cost.



Forecast demand for gas power over the next decade | *IEA, IHS, EIA, EPRI, GE Marketing*

PJM NEWS

PJM Grid 20/20 Defends Resilience Focus as Pre-emptive, not Excessive

Continued from page 1

Today it's a common discussion," he said.

Paul Stockton, managing director at consulting firm Sonecon and former assistant secretary of defense, used his keynote address to warn that cyberattacks are coming and that the government will be involved in the response.

"Attackers are preparing the battlefield today. … They are trying to establish a persistent presence so they can attack you at a time of their own choosing," he said. "We need to be prepared to raise the cyber walls."

Stockton said triggers should be developed now to establish when and how conservative operations are implemented, praising PJM for having "by far the most detailed" plan among RTOs and ISOs.

He said the industry also should plan for external reactions, such as a potential "panic in the financial markets" when media reports reveal that conservative operations have been implemented. Inaccurate news reports could spread fear and chaos, he warned.

"It doesn't matter if it's true. If it gets out on media enough, you've got a serious challenge," he said. "Get ready for information warfare."

He agreed with a point Ott had made earlier to "make critical facilities less critical" by building redundancies.

Attendees acknowledged the issues but challenged PJM to let its actions do the talking.

"What is your plan to engage critical stakeholders to get from where we are today to where we need to be?" Exelon's Gloria Godson asked.

Ott responded that PJM staff will work through the stakeholder processes and engage states through existing channels, such as the Organization of PJM States Inc. "There's no specific one item that's going to cover anything," he said.

"In terms of accountability, it's great if PJM is going to say they're going to do everything, but that kind of takes the states off

Ralph LaRossa, PSEG, second from left, speaks as moderator Chantal Hendrzak, PJM; Richard Kruse, Enbridge; John Norden, ISO-NE; and Stefanie Brand, N.J. Rate Counsel, listen. | *© RTO Insider*

the hook," Stockton said. "The states have to know if there are areas in cybersecurity or addressing critical facilities within their localities, that there are things that they should be doing to make sure that their utilities are in a proper state of resilience."

Other panelists agreed with Stockton that a major hurdle is defining the cost-benefit payback of resilience upgrades.

"We don't know the probability of the storm coming and we don't know the probability of what kind of damage is going to result," said Stefanie Brand, director of New Jersey's Division of the Rate Counsel. "It is very difficult to figure out what are the measures that will bring the most bang for the buck."

Ralph LaRossa, the president and CEO of PSEG Power, recalled his years running Public Service Electric and Gas. Customers never wanted the lights to go out, and if they did, they had to be back on within 20 minutes, he said.

Brand questioned that characterization, saying customers are more informed and understanding than that.

"There will always be some people who are just going to be complainers, but I don't agree that the average consumer expects their lights never to go out and expects it to be back up in 20 minutes. I think they understand that it's difficult," she said.

LaRossa held up his cell phone and said customers are concerned with recharging mobile devices.

"It's not an easy balance to make here, but if we don't succeed at this, we'll lose the industry. We have to figure this out together. We can't be fighting among ourselves."

John Norden, director of operations for ISO-NE, questioned the usefulness of RTO wholesale markets during catastrophic "black sky" events, such as an electromagnetic pulse attack.

"I think markets can play a role, possibly, but a limited role. I mean, there's really got to be a will to do it," he said. "Markets work extremely well for the things that we handle on a day-to-day basis or maybe a one-in-10-year type of basis. It's the things that have never occurred before that the markets I don't think are going to be [able to] answer."

He pointed instead to the industry-regulatory partnerships. American Electric Power, Berkshire Hathaway Energy, Duke Energy, Edison Transmission, Eversource Energy, Exelon and Southern Company Services formed a company, Grid Assurance, to reduce the cost of stockpiling transformers and other critical assets through combined buying power and inventory pooling. The purchases require state regulators' approval.

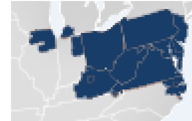
"That was not done in a market regime," he said. "It was done through strong collaboration between the asset owners and the regulatory community."

LaRossa also questioned how markets will cope with resilience levels that are mandated by states.

"If it's going to be a basic service, I'm not sure how the markets play at that," he said. "What's going to be considered the regulated service and what's going to be considered the market?"

PJM's Craig Glazer wrapped up the conference promising that staff will digest the conversation and return with an updated resilience roadmap that adheres to what stakeholders want to address.

PJM NEWS



PJM Grid 20/20 Debates Meaning of Resilience

By Rory D. Sweeney

Craig Glazer | *© RTO Insider*

BALTIMORE — PJM's Craig Glazer wrapped up last week's Grid 20/20 conference by joking that the National Council of Teachers of English had tweeted an objection to the forum using "resilience" and "resiliency" interchangeably.

"They didn't tell me what the right answer was," he said, but that Dave Anders, who leads PJM's stakeholder engagement process, promised a sector-weighted vote on which term stakeholders preferred.

The quip provided some insight into the challenges of addressing grid resilience. If getting the term right is hard, agreeing on a definition is harder. Harder still is determining what actions should be taken, who will take them and how all the disparate responsibilities and demands are integrated into an improved system.

Many of the gray areas and friction points were on display at the conference. Government representatives promised they could be trusted with sensitive corporate information while company representatives hesitated to offer too much. Gas-fired generators cited the importance of fuel security, while gas pipelines said generators have declined to sign the firm contracts that would guarantee fuel delivery. Everyone seemed to agree that more redundancy should be built into the system, but that it can't be too complex or too costly.

Stefanie Brand | *© RTO Insider*

"The fact is we're not going to be able to be 100% secure, so we're going to have to make choices," said Stefanie Brand, director of New Jersey's Division of the Rate Counsel. "I think those questions need to be answered at the beginning or else we'll be throwing solutions at a problem that hasn't been defined."

Transparency

Several panelists representing government interests urged companies to share information and procedures to see if there are ways to help each other.

Tim Blute | *© RTO Insider*

State governments "are all very eager to hear from the private sector in their various states about what they're doing and how they can work together," said Tim Blute, director of the National Governors Association's Homeland Security & Public Safety Division.

Bill Lawrence, who runs NERC's Electricity Information Sharing and Analysis Center, assured attendees that his group maintains separation from the corporation's compliance monitoring enforcement program to ensure that any information volunteered by companies "will not get them audited."

"We're trying to build that trust," he said.

"At the end of the day, this is all going to come down to trust," said Col. Victor Macias of the National Guard Bureau. He said the nation's 3,300 National Guard facilities are prepared to help but need to know ahead of time what they'll be expected to do.

Part of that may be led through the Department of Energy, which was given "far-reaching authority" through the 2015 Fixing America's Surface Transportation (FAST) Act to issue emergency orders "to do whatever [the secretary of energy] thinks is necessary to restore the reliability of the bulk power system," said Paul Stockton, managing director at consulting firm Sonecon and a former assistant secretary of defense.

"A cyberattack will attract much more direct U.S. government attention" than any prior blackout, he said.

The industry needs to help DOE figure out what those emergency orders should be "so they're actually helpful to you in protecting and restoring grid reliability instead of being in the way or worse," he said.

Companies expressed reservations that too much transparency can be a hindrance.

"Once you identify a cascading risk, how in an open stakeholder process do we get this risk mitigated without giving an adversary a blueprint of how to take down the network?" asked David Roop, director of electric transmission operations and reliability for Dominion Energy.

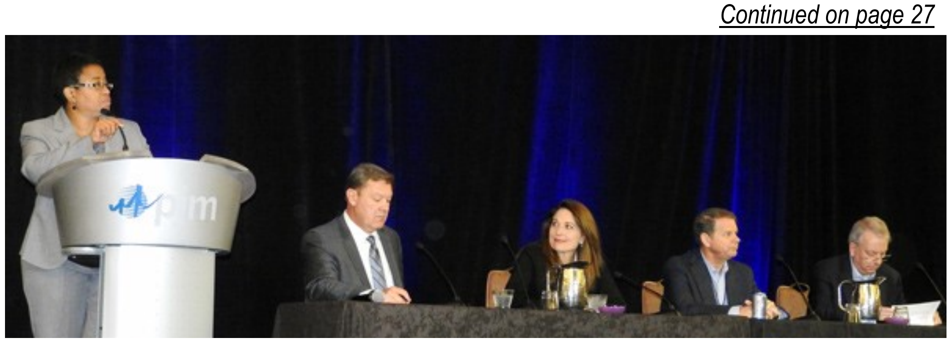
"There are so many things now that we're at risk with that many of us don't understand. It's hard because too much transparency can create more vulnerability for us, more risk," Southern Co. Vice President of Transmission Katherine Prewitt said. "I think we just have to talk about it and decide. We're going to get it wrong sometimes, but we're going to get it right sometimes too."

"As far as anything that is public, we work very closely on what are the appropriate questions to ask, what we're willing to put out publicly," said Laura Ritter, lead security policy adviser for Exelon. "It's not that utilities don't want to share, but there is a limit at the point of you're just giving information now to the adversary."

Gas-Electric Coordination

With PJM's generation fleet quickly transitioning to flexible, more responsive gas-

Continued on page 27



Risa Holland, PJM, introduces moderator Ken Seiler, PJM; Katherine Prewitt, Southern Co.; Rob Manning, EPRI and David Roop, Dominion Energy. | *© RTO Insider*

PJM NEWS

MRC/MC Preview

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

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

Markets and Reliability Committee

2. PJM Manuals (9:10-10:00)

Members will be asked to endorse the following proposed manual changes:

A. Manual 3A: EMS Model Updates and Quality Assurance. Revisions developed in response to a periodic review of the manual.

B. Manual 6: Financial Transmission Rights. Revisions developed to comply with the FERC order on financial transmission rights forfeitures. (See "FTR Forfeiture Rebilling to Start," *PJM Market Implementation Committee Briefs: Sept. 13, 2017*.)

C. Manual 11: Energy & Ancillary Services. Updates language to implement intra-day generation offers. (See "PJM, IMM Agreement on Intra-Day Offers Seen as 'Massive Change,'" *PJM Market Implementation Committee Briefs: Sept. 13, 2017*.)

D. Manual 14A: Generation and Transmission Interconnection Process. Revisions developed in response to a periodic review of the manual.

E. Manual 14B: Regional Transmission Planning Process. Revisions developed in response to changes for calculating capacity export transfer limits. (See *Post-'Wheel' Changes Spark PJM Member Concerns*.)

F. Manual 28: Operating Agreement Accounting. Eliminates redundant language and clarifies procedures associated with the implementation of intra-day offers.

3. Primary Frequency Response Senior Task Force (PFRSTF) (10:00-10:10)

Members will be asked to approve the charter for the PFRSTF. (See "Primary FR Task Force Begins July 25," *PJM OC Briefs: July 11, 2017*.)

4. Governing Documents Enhancement & Clarification Subcommittee (GDECS) (10:10-10:20)

Members will be asked to endorse proposed Tariff and Operating Agreement revisions to clarify definitions.

5. Balancing Ratio (10:20-10:45)

Members will be asked to endorse a problem statement and issue charge regarding calculation of the balancing ratio used in determination of the market seller offer cap.

Members Committee

Consent Agenda (1:20-1:25)

Members will be asked to endorse:

B. Proposed Tariff and Operating Agreement revisions associated with the Dynamic Schedule Pro Forma Agreement. (See *Critics Protest PJM Dynamic Transfers Plan*.)

1. Governing Document Revisions regarding Limitation on Claims (1:25-1:35)

Members will be asked to endorse proposed Tariff and Operating Agreement revisions related to the limitation on claims.

2. TEAC Redesign (1:35-1:50)

Members will be asked to approve proposed Operating Agreement revisions regarding redesign of the Transmission Expansion Advisory Committee and expanding the short-term proposal window from 30 days to 60 days.

3. Nominating Committee (1:50-2:00)

Members will be asked to elect members of the 2017-2018 Nominating Committee.

— Rory D. Sweeney

PJM Grid 20/20 Debates Meaning of Resilience

Continued from page 26

fired units, fuel security has been a persistent issue. Gas is plentiful and relatively cheap, but it must be transported through pipelines that can't always deliver enough fuel for generators when heating demand is high.

"When we're in a heavy winter-weather event, and we have a lot of operational flow orders on the gas system, that's a critical time. Should we be operating differently? Should we look at conservative operations in certain circumstances?" PJM CEO Andy Ott asked in his opening remarks.

"We need to look at ... what happens when a compressor station goes out on a pipeline, what happens [when] a pipeline itself goes out, how quickly do we lose the fuel source, how quickly do we lose a generator from an operational perspective," he said. "Do we look at operating reserves? Do we need to deploy spinning reserves differently to make up for those types of events?"

Richard Kruse | © *RTO Insider*

Richard Kruse, vice president of gas pipeline company Enbridge, said the issue is more basic than that.

"Currently, electricity to a significant degree is using capacity that is released from primary customers and, as such, until it's scheduled, it's interruptible," he said, adding that generation units can account for up to a third of Enbridge's pipeline capacity during nonpeak periods.

"What keeps me up at night is those days when it gets cold and our traditional firm customers are using their capacity as they're entitled to and [generating units are] forced off. That can happen ... from weather conditions very quickly," he said. "In terms of giving PJM any assurance that tomorrow — before the [capacity-use] nominations

Continued on page 28

Grid 20/20 Debates Meaning of Resilience

Continued from page 27

come in — we can guarantee that this power generation will be able to run is beyond our knowledge base. It will depend on how that generator contracts. It will depend on where he's sourcing his gas. And it will depend into how he fits into a queue that's deemed very complicated."

Fixing the issue "will require infrastructure, and that's a big challenge," he said, because the industry requires firm contracts to build new pipelines. He noted the difficulties his company faced in its efforts to build in New England.

"We have been unable to navigate the state policies about who can and who cannot contract for pipeline capacity," he said. "If you have [firm] customers, we have proven with time you can navigate those waters. Without customers, you don't get to first base."

The inability to expand New England's pipelines has left the region in a "precarious situation," ISO-NE Director of Operations John Norden acknowledged.

"In the winter, it's very difficult for generators to rely on gas that they don't hold firm capacity rights to on the pipeline infrastructure, so New England is highly dependent upon liquified natural gas that comes from the Middle East — [which is] not exactly the best place to be relying upon for fuel supply — and from South America."

Cost-Effective Construction

Transmission planners have long had to balance the desire to enhance reliability while limiting the impact of additional infrastructure on the public.

Utilities all have unique situations and demands to address, so "one of the things we got to make sure we don't do is over-engineer our solutions," Prewitt said. "If we over-engineer our solutions, we won't get the result that we're hoping that we'll get in the end."

Rob Manning with the Electric Power Research Institute touted the value of technology to solve problems.

"There are ways to increase our throughput. There are ways to reduce our footprint. There are options that we have for how we build and where we build and if we build that are technological solutions that we've got to explore," he said.

Ott and Stockton called for "making critical facilities less critical" by building redundancies such as alternative transmission paths, but transmission representatives noted the tension that creates with the public.

"I don't know that the general public always understands what it is that they're getting" when a line is built in a new location, Prewitt said. "When we utilize a right of way that's already there, we increase our risk. We have one circuit today, and we put two in tomorrow. A tornado comes through, and that creates a challenge."

Ralph LaRossa, who heads Public Service Enterprise Group's merchant generation arm, said the crews Public Service Electric and Gas sent to Florida to help with Hurricane Irma recovery have reported that concrete transmission poles were a "big winner." He praised Florida Power & Light's response but acknowledged "a lot of money was spent" because much of FPL's transmission system is underground.

"How do you do that in a cost-effective manner and not burden the customer with all of that?" he asked.

Overlap Exists, but Implementation Key

Despite the concerns, most panelists acknowledged the value of the regional perspective provided by RTOs and ISOs.

"As we've been in PJM, it's been very important to us because it's given us more surety of supply in extreme events at a lower cost by being in a broader footprint," Dominion's Roop said. "As a vertically integrated utility that didn't have to deal with it, you could just do your thing a whole lot easier, so [RTO membership] does have some constraints. But I think those constraints are minimal compared to the benefits you get out."

LaRossa said the issue is knowing where to draw the line.

"There are some things that are naturally market-driven and there are other things that are naturally regulated. I think as we have matured as an industry, we've mixed that a little bit. And we just need to figure out where the right balance is for everybody," he said.

"Although the methodology is different from organization to organization or government to private sector, I think there's a lot more overlap in how we approach these things than there are differences. The hard part is trying to identify where those overlaps are and how they could be extrapolated and used on a wider scale," said Jonathon Monken, PJM's senior director of system resiliency and strategic coordination.

SPP NEWS

FERC Approves SPP Shortage Pricing Changes

By Tom Kleckner

FERC on Wednesday accepted SPP's proposed Tariff revisions related to shortage pricing, rebuffing the protest of one key stakeholder.

Submitted in response to FERC Order 825, SPP's changes removed ramp-sharing obligations and other Tariff provisions that prevent shortages caused by insufficient ramp capability from triggering shortage pricing. The RTO also removed certain constraints and their associated violation relaxation limits (ER17-772).

But the commission also rejected SPP's proposed provisions creating a demand curve designed to set scarcity prices for energy shortages, ruling that the changes fell outside the scope of Order 825. FERC said the order did not require SPP to change its shortage pricing levels, only that it initiate procedures when a shortage is indicated.

The commission provided SPP 30 days to submit a compliance filing that either removes the demand curve provisions or explains how they comply with Order 825. It also directed removal of SPP's suggested definition of "scarcity pricing," allowing the RTO to propose a change or modify shortage-pricing levels in a separate Section 205 filing.

Order 825 requires RTOs to settle real-time energy, operating reserves and intertie transactions in the same time interval it dispatches, prices and schedules them, respectively. SPP was one of several RTOs that already settles those transactions in five-minute intervals. (See *FERC Issues 1st RTO Price Formation Reforms*.)

Golden Spread Electric Cooperative protested SPP's changes, contending that the filing did not fully 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 potential scarcity pricing events. The co-op said this practice is not transparent, creating uplift charges and a disincentive to make efficient operations and investment decisions.

Golden Spread argued that SPP should procure fewer resources through the RUC and manual processes, and instead rely on the submission of competitive offer curves in the day-ahead and real-time markets. It asked FERC to require that SPP eliminate RUC and manual commitment practices that mask scarcity pricing conditions and address any commitment outside of the normal markets.

The commission disagreed, dismissing Golden Spread's concerns as being outside the proceeding's scope. FERC noted Order 825 did not require the co-op's suggested modifications to RUC or manual commitment processes, but it agreed Golden Spread "has raised an important issue that SPP should consider exploring through its stakeholder process."

Zero Uplift Charges for Resources Dispatched to Zero

The commission also approved SPP's proposal to exempt generating resources dispatched to zero from paying uplift charges, ruling the plan is consistent with the RTO's existing provisions that ensure de-committed resources are not charged for uplift (ER17-520).

FERC found that resources dispatched to zero at SPP's instruction make identical energy contributions to the real-time market as de-committed resources. "Thus, it is reasonable that both be treated the same with regard to uplift charges," the commission said.

SPP member Golden Spread supported the Tariff revisions but asked the commission to require further changes to allow quick-start resources to voluntarily de-commit and buy back their day-ahead position from the real-time market without being assessed uplift charges, or adapt the security constrained economic dispatch software to accommodate those resources' unique nature.

FERC rejected that request, saying it was beyond the scope of the Section 205 proceeding.

SPP NEWS

Mountain West to Step up Negotiations with SPP on Joining RTO

Continued from page 1

Negotiations have reached the point where "[we] believe it is now appropriate to take our potential membership proposal to all SPP stakeholders," Steve Beuning, Xcel Energy's director of market operations, said in a statement on behalf of Mountain West.

SPP COO Carl Monroe said he was pleased Mountain West's members had decided to proceed into the RTO's stakeholder process. The next steps will include stakeholder, board and regulatory approvals, and revisions to SPP's governing documents and processes, he said.

This will "ensure the people, technology and procedures are in place to ensure a smooth transition to [SPP] and our wholesale electricity market," Monroe said. "We look forward to continuing our work with [Mountain West] … and providing them and their customers the value our members in the east have received for many years."

A 2016 Brattle Group study found Mountain West could save $53 million to $71 million annually through 2024 by participating in a day-ahead market and replacing its nine tariffs with one. The utilities' desire to eliminate pancaked transmission and participate in a modern market design started the group's dialogue about RTO membership.

Representatives from the two organizations will review their work and next steps with SPP's 95 members. They expect a months-long process for stakeholders to approve changes necessary to add new members. SPP took the same steps when it added the Integrated System in 2015 and Nebraska utilities in 2009.

The meetings will be held Oct. 13 in Denver and Oct. 16 in Little Rock, Ark. Registration will be available on SPP's website by Sept. 29.

Mountain West has said it hopes to present a recommendation to SPP's Board of Directors in January. The organizations could file with FERC in mid-2018, with full integration as soon as late 2019.

The Colorado Public Utilities Commission, which has regulatory jurisdiction over some Mountain West participants, has held two public information sessions on the proposal. (See *SPP, Peak Reliability Pitch RC Services for Mountain West*.) A third meeting scheduled for Oct. 20 in Denver will focus on governance, transmission planning, cost allocation and regulatory filings.

Mountain West's 10 utilities — Basin Electric Power Cooperative, based in Bismarck, N.D.; Black Hills Energy's utilities in Colorado, South Dakota and Wyoming; Colorado Springs Utilities; Platte River Power Authority in Fort Collins, Colo.; Public Service Company of Colorado, an Xcel operating company based in Denver; Tri-State Generation and Transmission Association, in Westminster, Colo.; and the Western Area Power Administration's Loveland Area Projects and Colorado River Storage (CRSP) Project — serve about 6.4 million customers and own 16,000 miles of transmission.

"While Mountain West remains optimistic that an RTO would benefit its entire membership, each Mountain West participant will ultimately need to individually evaluate whether potential membership benefits its customers," the group said. "Each will pursue regulatory or governing body approval, as applicable."

MISO Confident in Tx Process with SPP Despite Lack of Projects

Continued from page 13

transmission service treatment that [may] arise as a potential barrier to future interregional projects." He said MISO and SPP plan to work to better align the unnamed differences and added that they ultimately did not affect the chances of the South Dakota project proposal.

According to Thoms, MISO reached out to SPP during the coordinated study process more frequently than is required by their joint operating agreement, which outlines the procedures for interregional coordination. The JOA stipulates that the Joint Planning Committee, comprising staff of both RTOs, must meet no less than twice per year.

In addition, MISO and SPP corresponded "numerous" times during the year to discuss interregional stakeholder meetings and study data, modeling and results, Thoms said. He added that the coordinated system plan itself requires supplementary meetings to update and finalize the study.

'Work in Progress'

MISO may still have ideas about how to improve communication with SPP regarding interregional planning, although Thoms is holding those cards close to his chest. In 2016, rather than embark on another coordinated system study, MISO suggested that the RTOs spend the year improving the study process, advice that it eventually abandoned.

"MISO and SPP continue discussions around a long-term coordination effort. At this time, those details are still being developed," Thoms said.

He added that MISO staff are committed to "working with SPP and other stakeholders to foster effective communication and mutual understanding around these projects."

Missouri Public Service Commission economist Adam McKinnie hails from a seams-heavy state and is often a vocal critic of the RTOs' inability to produce interregional projects. While he declined to comment on how communication procedures between MISO and SPP could be improved, he did say there is benefit to the RTOs working together and identifying interregional projects.

"We've been trying to do this for years," MISO Board of Directors Chairman Michael Curran said of interregional projects at a Sept. 21 meeting. "It has been a long struggle, and you can only do so much when your neighbor isn't willing to coordinate, but that coordination is starting.

"Only good things can happen from here," he told MISO stakeholders. "We're on our way to an intermarket system, but don't get too excited just yet — it's a work in progress."

FERC NEWS

Quorum Restored, FERC Holds First Open Meeting Since January

By Michael Brooks

WASHINGTON — With two new members, FERC commissioners spent much of the commission's first open meeting since January introducing their teams and new staff members.

They also took the time to thank and praise staff members for their work between Feb. 4, the day after former Chairman Norman Bay resigned, to Aug. 9, when new Chairman Neil Chatterjee and Commissioner Robert Powelson joined to restore the commission's quorum. During the so-called 'no quorum period,' the Office of Energy Market Regulation issued 200 orders under a limited delegated authority. Under the direction of then-acting Chairman Cheryl LaFleur, staff also worked to prepare filings on which they could not act for when a three-member quorum was restored.

Since regaining its quorum, the commission has issued more than 90 orders and rulemakings, including 32 at Wednesday's meeting. Throughout the meeting, however, Chatterjee and Powelson repeatedly alluded to the massive backlog of filings the commission still needs to act on, which Chatterjee told reporters is his "primary focus" during his tenure.

"As Rob and I were going through the Senate confirmation process, what we heard repeatedly was, 'We need to get you guys through so we can get FERC working again,'" Chatterjee said. "What has been made clear to me from the moment I walked in the door … is that FERC *has* been working. It's been doing tremendous work under acting Chairman LaFleur's leadership and with the talented efforts of the staff here."

Powelson said he was "thoroughly impressed with the professionalism and the institutional knowledge and the welcoming spirit" of FERC staff. "You all have been wonderful, and you are what makes this organization tick."

"Almost makes me feel like we don't need commissioners when you really see who does the work around here," LaFleur joked.

LaFleur emphasized the amount of work staff did during the no-quorum period, highlighting the May technical conference on the effects of state policies on wholesale

| © RTO Insider

electricity markets; the investigation of potential violations by Energy Transfer Partners regarding its Rover natural gas pipeline in Ohio; and the response to damage at the Oroville Dam in California. (See *Power Markets at Risk from State Actions, Speakers Tell FERC*; *Local Officials Appeal to FERC as Oroville Water Levels Recede*.)

"To say that the first part of this year until my friends arrived was an odd and unusual time at FERC would be an understatement," LaFleur said. "I always knew our staff had a [strong] work ethic, but it takes tremendous dedication to keep reading things, and writing comments, and writing convoluted memos, and drafting orders when there's nobody to act on them."

She also compared FERC's work on "the big things" during the period — Order 1000, returns on equity, the Public Utility Regulatory Policies Act and hydro licensing — to a duck's feet underwater: "It moves furiously, but you can't see it."

Asked after the meeting whether the commission was waiting on the confirmations of Kevin McIntyre and Richard Glick to tackle these issues, Chatterjee said he would indeed prefer to do that.

"That said, having been through the Senate confirmation process myself, and knowing the uncertainties of that process, certainly we're prepared to move on some of these major issues if in fact the arrival of our colleagues is delayed in some way," Chatterjee said. The Senate Energy and Natural Resources Committee forwarded McIntyre's and Glick's nominations to the full Senate last Tuesday. (See *Senate Panel Clears McIntyre, Glick for FERC*.)

But Chatterjee declined to comment on any specific issues or decisions. "I think we tend to go forward on items as they're ready," he said. "If they're ready to go, and we have the votes to approve them … we can move forward.

"I'm optimistic that our colleagues will join us sooner rather than later, but we can't suspend the commission's work waiting on the Senate to act."

Morenoff Feted

Commissioners called out many individual staff members during the meeting, but one name that came up among all three commissioners' accolades was David Morenoff, FERC's deputy general counsel.

Morenoff, who has been with the commission since 2006, served as general counsel during the no-quorum period, as well as during the interim period that LaFleur served as chairman after Bay was confirmed.

"Neither of the periods that he was my general counsel were normal," LaFleur said. "And his superb judgment and support were critical to me personally during both of those times."

After introducing Morenoff's replacement, James Danly, Chatterjee said, "I'd be remiss if I didn't recognize the good work of former General Counsel David Morenoff. I'm grateful for his leadership and willingness to take on this important challenge, and I look forward to continuing to work with him as he returns to his duties as deputy general counsel. David has also been an invaluable resource to me from the moment I walked in the door."

Toward the end of the meeting, LaFleur — already somewhat emotional from thanking her team for their work during the period — became choked up as she praised Morenoff for leading the Office of General Counsel and the respect he has garnered among its staff.

LaFleur — "with Chairman Chatterjee's courtesy," she said — awarded Morenoff the Chairman's Executive Leadership Award.

FERC NEWS

FERC Approves SunZia Rate Authority

By Jason Fordney

FERC on Wednesday approved negotiated rate authority for a proposed 515-mile transmission project intended to carry renewable output from Arizona and New Mexico to "key interconnections" capable of serving markets farther west.

In its decision, the commission reissued and revised the rate authority it had initially granted the SunZia transmission project in 2011 (ER17-522).

As proposed, the SunZia project consists of up to two 500-kV lines in Arizona and New Mexico, running more than 500 miles to high-voltage interconnections within those states. The first phase would include an AC line with 1,500 MW of capacity, and a second phase consisting of another AC circuit with the same rating or a 3,000-MW DC line. The project's current owners are SouthWestern Power Group, ECP SunZia, Shell WindEnergy and Tuscon Electric.

After originally obtaining rate authority in 2011, SunZia Transmission entered talks to sign on First Wind Energy as an anchor customer for up to 1,500 MW of capacity on the line. First Wind was subsequently acquired by SunEdison, which last year declared bankruptcy.

That prompted SunZia to apply for revised negotiated rate authority as a transmission provider on behalf of its merchant owners. The company also sought permission to enter into an agreement with an anchor customer for up to 100% of the project's merchant capacity. Half of the capacity of the line was to be allocated to one or more anchor customers, and the remainder made available through open season auctions. Anticipated development costs up to the beginning of construction are estimated to be as high as $75 million.

SunZia had to demonstrate that service on the project would not show preference to any particular bidder. The company held an open solicitation for the first phase of the project, selecting wind developer Pattern Energy Group as the preferred customer. SunZia said it expects Pattern will become a co-owner of the line, and majority merchant owners would become co-owners of the Pattern project.

"We find here that SunZia Transmission's selection process was transparent and not preferential neither toward Pattern Development nor unduly discriminatory against other potential customers," FERC said. "Notably, SunZia Transmission has demonstrated that all interested parties were treated comparably, provided with the same information and given opportunities to discuss the Project with SunZia Transmission."

FERC in 2013 changed its approach to evaluating applications for rate authority, retaining its current "four factor" analysis, but said that anchor customers could be allocated 100% of the capacity and could be an affiliate of the transmission developer.

SunZia said the line is "likely to serve renewable resources predominantly. At all times, the merchant capacity and interconnections have been available without preference for any particular kind of resource."

The company is targeting the first quarter of 2018 to commence construction on the first line, which is expected to go into service in 2020. The U.S. Bureau of Land Management last year granted a right of way for the project.

FERC OKs Rules on Balancing, Interconnection, Remedial Actions

By Rich Heidorn Jr.

FERC on Wednesday approved revised NERC reliability standards on Balancing Authority Control (BAL-005-1) and Facility Interconnection Requirements (FAC-001-3) (RM16-13) and Remedial Action Schemes (PRC-012-2) (RM16-20).

The first order clarifies and consolidates existing frequency control requirements and will result in "more accurate and comprehensive" calculations of reporting area control error (ACE), FERC said. It will require balancing authorities (BAs) to maintain a minimum annual availability of 99.5% for calculating ACE. A BA unable to calculate ACE for more than 30 consecutive minutes must notify its reliability coordinator within 45 minutes of the failure.

The second order ensures that remedial action schemes (RAS) do not introduce "unintentional or unacceptable" reliability risks. An RAS is a plan to respond to predetermined system conditions with corrective actions such as adjusting or tripping generation, tripping load or reconfiguring a system to maintain voltages or power flows and avoid cascading system failures.

The new rule requires reliability coordinators to complete reviews of new or modified remedial action schemes before they are placed into service. It also requires planning coordinators to evaluate each scheme within its planning area at least once every five years and mandates an area-wide database of RAS that must be updated annually.

Emergency Preparedness NOPR

The commission also issued a Notice of Proposed Rulemaking (NOPR) that would revise emergency preparedness and operations reliability standards on Event Reporting (EOP-004-4), System Restoration from Blackstart Resources (EOP-005-3), System Restoration Coordination (EOP-006-3) and Loss of Control Center Functionality (EOP-008-2).

The NOPR (RM17-12) is intended to ensure accurate reporting of events to the NERC event analysis group; delineate the roles and responsibilities of entities involved in system restoration processes; and identify the elements required in plans for continuing operations when primary control functionality is lost.

NERC said the revised standards will streamline the current rules and make them more results-based while also addressing concerns the commission expressed in Order 749 regarding system restoration training.

Comments on the NOPR are due 60 days after publication in the *Federal Register*.

FEDERAL NEWS

Federal Officials Side with Utilities on Tree-Clearing Bills

By Rich Heidorn Jr.

The Trump administration sided with utility witnesses last week on legislation to streamline approvals for managing vegetation near power lines on federal land, an effort to reduce wildfire risks.

Witnesses from the Bureau of Land Management, the National Forest Service and two utilities endorsed separate House and Senate bills to amend the Federal Land Policy and Management Act (FLPMA) and provide authority to exempt existing rights of way (ROWs) from reviews under the National Environmental Policy Act (NEPA).

The Wilderness Society, however, said it opposed the House bill, the Electricity Reliability and Forest Protection Act (H.R. 1873), because it would impose "counterproductive limitations and obligations on both utilities and federal land managers, inappropriately shift costs from utilities to taxpayers and agencies, and undermine the public interest in the management of their public lands."

The group told a Senate Energy and Natural Resources Committee hearing last week that it prefers Section 2310 of the Energy and Natural Resources Act of 2017 (S. 1460), a comprehensive energy bill cosponsored by committee Chair Lisa Murkowski (R-Alaska) and ranking member Maria Cantwell (D-Wash.).

Blackout Prompted Standards

It was the August 2003 Northeast blackout — triggered by contact between a power line and a tree — that led Congress to enact mandatory reliability standards as part of the 2005 Energy Policy Act. FERC, which deputized NERC to develop the standards, approved the corporation's vegetation standards in 2013.

Both bills pending before Congress would provide authority to exempt existing ROWs from reviews under NEPA. They also would allow utilities to trim vegetation within ROWs or "hazard" trees adjacent to ROWs that have contacted or are in imminent danger of contacting transmission lines as long as they notify the appropriate agency within 24 hours, according to summary attached to BLM's testimony.

> *"Ironically, the Forest Service conducted a timber sale on the same tract later in the year using the exact mechanical forestry techniques that we were prohibited from employing."*
>
> **Michael Hayden, Missoula Electric Cooperative**

Testifying for the Edison Electric Institute, Andrew Rable, manager of forestry and special programs for Arizona Public Service, laid out utilities' difficulties in employing integrated vegetation management (IVM), which combines the planting of low-growth vegetation in ROWs with pruning and use of herbicides to ensure sufficient distance between plants and electric facilities.

"Transmission line ROWs crossing federal lands face multiple layers of jurisdiction and decision-making, which can hamper electric companies' ability to manage vegetation and reduce wildfire risk in a timely manner," he said.

Rable said that although the two bills are largely similar, the House's is preferable because it sets shorter deadline for approval of vegetation management plans (90 days versus 180 days) and provides "more flexible and less burdensome" rules.

The two bills both provide limited liability protections. According to the BLM summary, the House version protects a utility from wildfire liability to the U.S. when federal agencies block it from addressing hazard trees or vegetation in imminent danger of contact with power facilities. The Senate's would protect utilities from strict liability following a land agency's "unreasonable delay or failure to approve or adhere to a vegetation management plan or an MOU," BLM said.

Mark Hayden, general manager of the Missoula Electric Cooperative, which has about 15,000 customers in western Montana and eastern Idaho and 300 miles of distribution lines crossing federal land, told the committee the 2017 wildfire season has devastated his region's economy.

"I fully recognize that the fires burning in Montana today were all lightning sparked. But for me, these fires serve as a vivid reminder and warning of what could occur as a result of long delays in permit approvals and inconsistent application of policies by federal land managers," said Hayden, who said the ability of utilities to develop relationships with federal officials is hampered by frequent turnover at Forest Service district offices.

Examples Cited

Hayden cited a New Mexico cooperative that received a $38.2 million bill from the Forest Service — almost twice the co-op's $20 million in liability insurance — for the costs of fighting a 152,000-acre fire caused when a tree fell onto a power line.

The Benton Rural Electric Association in Prosser, Wash., applied to renew its ROW permit in August 2015, four months before it was due to expire. "After waiting 15 months, Forest Service officials have now proposed nothing short of a full blown environmental assessment for which costs could exceed $100,000 for facilities that have been in place for more than 70 years," Hayden said.

In 2009, when the Missoula co-op felled trees killed and weakened by an insect infestation, the Forest Service required it to remove the timber "using an expensive, labor-intensive method to minimize impact to 'flora and fauna' from mechanical equipment," Hayden said. "Ironically, the Forest Service conducted a timber sale on the same tract later in the year using the exact mechanical forestry techniques that we were prohibited from employing. In essence, we were held to a higher standard than they held themselves."

When the co-op requested permission to bury about 6 miles of overhead lines on Forest Service land, approval took 18 months — granted just days before Hayden was to testify before Congress regarding the delay.

BLM Committed to Streamlining Process

John Ruhs, acting deputy director of operations for BLM, said his agency supports both bills and "is committed to improving and

Continued on page 34

FERC NEWS

Federal Officials Side with Utilities on Tree-Clearing Bills

Continued from page 33

streamlining its permitting processes."

The agency, which administers almost 16,000 authorizations for electricity transmission and distribution facilities, allows utilities to conduct "minor trimming, pruning and weed management" after notifying the agency, Ruhs explained. Trees that present an imminent hazard can be removed without BLM preapproval. "For actions that fall outside the scope of the ROW grant and do not present an imminent threat, BLM approval is needed, and additional analysis may be required."

Ruhs said the legislation "would expand the BLM's toolbox to help reduce the threat of catastrophic wildfires like those we are currently experiencing."

Glenn Casamassa, associate deputy chief of the Department of Agriculture's National Forest System, said his agency supports most of the language of both bills. But Casamassa said some provisions duplicate existing requirements in Forest Service policies.

"USDA is aware of the frustrations some utilities experience as a result of delayed responses for maintenance approvals and inconsistency across agency field offices and has been actively taking steps to address these concerns under existing authorities," he said. The Forest Service has 2,700 authorizations for 18,000 linear miles of power lines.

Climate Change Impact

Scott Miller, senior director for The Wilderness Society's Southwest region, said utility vegetation management (UVM) practices have improved substantially since 2005. "At the same time, the importance of strong UVM practices continues to grow as climate change is causing longer wildfire seasons, larger and more severe wildfires, longer growing seasons, changing plant species distributions, increased insect and disease activity, and more intense, more frequent and longer-lasting drought, wetness and weather events," he said.

Miller said the society, which claims more than 1 million members, opposes H.R. 1873 because it "fails to appropriately recognize the federal land management agencies' obligations or the public's interest in federal land management and because it fails to provide for the necessary cooperation that will improve effective and sustainable UVM on federal lands."

The Senate bill, in contrast, provides "a thoughtful framework for legislation to advance UVM on public lands" and "corrects the many flaws" of the House bill.

"H.R. 1873 would prevent utilities and land managers from including activities in vegetation management plans that would require anything beyond annual notice, description and certification by the utility for its planned activities. It also would give utilities (including those without approved plans) blanket approval to conduct vegetation management activities to meet clearance requirements, leaving the agencies with no authority but to allow such activities, and leaving the utilities with little incentive to cooperate or even prepare a vegetation management plan."

Granting a blanket exemption for vegetation management from NEPA "would undermine sound stewardship of our public lands," he continued. "We note that both the Forest Service and BLM have already established a number of categorical exclusions that apply to many routine UVM activities, and those authorities are routinely utilized by the agencies in the context of UVM."

The Senate bill, in contrast, would encourage cooperation between utilities and federal land managers, he said.

The group said the House bill's provisions on liability are "overbroad and unclear."

"Nothing in the bill states that the release of liability is limited to situations where the secretaries' decisions are an actual and proximate cause of the damages, potentially leaving the agencies (and ultimately, taxpayers) to cover the damages caused by the utilities' negligence (or even gross negligence)."

FEDERAL NEWS

Trade Panel Rules PV Imports Hurting Domestic Manufacturers

Continued from page 1

the Solar Energy Industries Association (SEIA) and our industry partners to work on good solutions for the entire industry."

Suniva said it filed the complaint "because the U.S. solar manufacturing industry finds itself at the precipice of extinction at the hands of foreign market overcapacity. It will be in President Trump's hands to decide whether America will continue to have the capability to manufacture this energy source."

The companies say trade protection would aid domestic manufacturers and compel international makers to move production to the U.S., resulting in more than 100,000 new jobs.

But Friday's ruling drew condemnation from SEIA and others, who say it will harm the burgeoning industry.

SEIA CEO Abigail Ross Hopper said the ITC's decision disappoints nearly 9,000 U.S. solar companies and the 260,000 Americans they employ. "Analysts say Suniva's remedy proposal will double the price of solar, destroy two-thirds of demand, erode billions of dollars in investment and unnecessarily force 88,000 Americans to lose their jobs in 2018," she said. SEIA represents both companies that manufacture and those that install solar panels.

"The ITC decision to find injury is disappointing because the facts presented made it clear that the two companies who brought this trade case were injured by their own history of poor business decisions rather than global competition," said Paul Nathanson, spokesman for the Energy Trade Action Coalition, a group that says it supports "access to freely and fairly traded products" that support American energy industry competitiveness. "The petition is an attempt to recover lost funds for their own financial gain at the expense of the rest of the solar industry."

Potential Remedy Costs

The commission scheduled a remedy hearing for Oct. 3 and a vote on recommendations to the White House on Oct. 31, with the recommendations to be delivered to the administration by mid-November. The president has 60 days from delivery to decide on what, if any, measures he will take.

A SolarWorld worker inspects a panel at the company's Hillsboro, Ore., factory. | *SolarWorld*

The commission could recommend an increase in a duty, imposition of a quota, imposition of a tariff-rate quota (a two-level tariff, under which goods enter at a higher duty after the quota is filled), trade adjustment assistance or a combination of such actions. It could also recommend that the president initiate negotiations with the exporting countries.

The White House said in a statement that Trump's decision would be based on "the best interests of the United States." It added that the "U.S. solar manufacturing sector contributes to our energy security and economic prosperity."

A report by Timothy Fox of ClearView Energy Partners in August said that a commission ruling in favor of the two solar manufacturers could represent an escalation in green trade disputes. "President Donald Trump would likely impose some degree of trade remedies that could undermine the value proposition of new solar projects and may likely reduce solar deployment over the next four years," Fox said.

The ClearView report calculated that the petition's proposed 40 cents/W tariff and the proposed price floor of 78 cents/W would raise costs by 60 to 160%.

"President Trump's general indifference towards renewable power could encourage him to pursue strong trade action," the report said. "Politically speaking, he may be able to get away with raising the cost of solar products without risking losing many within his base."

Safeguard Escape Clause

The ITC estimated that nearly 30 U.S. solar panel producers went out of business between 2012 and 2016, the period investigated. During the same period, global imports grew nearly five-fold, a surge led by China, whose imports increased by more than 700%, according to commission figures.

Suniva and SolarWorld filed their petition under Section 201 of the 1974 Trade Act, a rarely invoked article also known as the "safeguard" or "escape" clause.

Global safeguard investigations do not require a finding of an unfair trade practice such as foreign subsidies or dumping. Although safeguard investigations are not country-specific, commissioners who find injury are required to make separate findings for countries with which the U.S. has free-trade agreements, including North American Free Trade Agreement signatories Canada and Mexico and the CAFTA-DR countries (Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and the Dominican Republic).

SolarWorld said in May that although anti-dumping and anti-subsidy duties have reduced Chinese and Taiwanese imports, global imports have continued to grow. "This surge mainly stems from substantial overcapacity added by Chinese-owned companies that located outside of China to avoid duties," the company said.

Fox said the most significant distinction of the safeguard petition "is that it moves the final decision-making from agency economic bureaucrats at the [ITC] to White House political staff and President Trump."

The safeguard authority was last used by President George W. Bush in 2002 to impose a tariff on imported steel. The levy was withdrawn 15 months later after the World Trade Organization ruled that it violated global trading rules.

COMPANY BRIEFS

Kimberly-Clark Expects to Beat GHG Reduction Goal

Kimberly-Clark officials expect the company to reach its greenhouse gas reduction goal four years ahead of schedule after making long-term power purchase agreements for electricity from two new wind projects.

The company, which owns brands such as Kleenex, Scott, Huggies, Kotex and Depend, struck deals to purchase 1 million MWh annually from projects in Texas and Oklahoma. That amounts to about one-third of the electricity needs of its North American manufacturing operations.

The wind-generated electricity will allow Kimberly-Clark to achieve more than a 25% reduction in greenhouse gas emissions by 2018, which is four years ahead of its 2022 target date.

More: *NewsTimes*

Level Solar Apparently Goes out of Business

Level Solar has apparently gone out of business.

The privately held residential, commercial and industrial solar installer's website is offline, and its phone has an out-of-hours message. Posts on LinkedIn and other employment-related websites indicate the company's staff has been laid off.

The company, which in 2015 reached a deal to borrow $25 million from New York's Green Bank, let go its CEO Richard Keiser in June.

More: *pv magazine*

Alcoa Granted PUCHA Exemption

FERC on Wednesday granted Alcoa's request to exempt the aluminum manufacturer's power generating assets from the Public Utility Holding Company Act of 2005.

Alcoa asked for a declaratory order because of a corporate restructuring last November that split the company into two independent, publicly traded companies: Arconic and Alcoa. The latter company includes Alcoa Power Generating Inc. (APGI), which generates and purchases electricity for the company's refining and smelting operations but which had been granted a PUCHA exemption in 2006 because it did not serve as a traditional public utility role and has no retail customers other than its own operations.

PUCHA gives the commission access to the books and other records of holding companies and associate companies to protect utility customers. "Based on the representations made by Alcoa, we find … that Alcoa's books, accounts, memoranda and other records are not relevant to the jurisdictional rates of APGI and thus it is appropriate to exempt Alcoa from the [PUCHA] requirements," the commission said.

More: *EL17-34*

Basin Electric Granted PURPA Waiver

FERC approved Basin Electric Power Cooperative's request to take on the must-purchase obligations of its 72 cooperative member-owners under the Public Utility Regulatory Policies Act while transferring to them its obligation to sell to qualifying facilities of 150 kW or more.

The cooperative said QFs will suffer no harm from the change because Basin Electric's avoided costs are equal to those of its participating members. Basin said having it conduct retail sales would result in significant administrative costs, which would be passed on to QFs, and would duplicate services already available from the participating members.

FERC approved the request Wednesday, saying it was nearly identical to those the commission has previously granted to generation and transmission cooperatives.

More: *EL17-46*

GM to Power Manufacturing Plants with 100% Renewables

General Motors will power all its Ohio and Indiana manufacturing facilities with 100% renewable energy by the end of 2018, the automaker announced last week.

GM is buying a total of 200 MW of wind energy from farms in both states. When the turbines come online, renewables will power 20% of GM's global electricity use.

More: *General Motors*

Pitesa Joining NEI as Chief Nuclear Officer

John Pitesa | *Duke Energy*

John W. Pitesa is joining the Nuclear Energy Institute as chief nuclear officer effective Dec. 1. He will replace NEI Vice President Joe Pollock, who has served as interim chief nuclear officer since January and will return to his position as vice president of nuclear generation, which he has held since 2013.

Pitesa, who has 37 years of experience at Duke Energy, will be responsible for executive oversight of all aspects of NEI's nuclear operations, including emergency planning, risk assessment, used fuel programs, radiation safety, environmental protection, and fuel and materials safety.

He is leaving his post as senior vice president and CNO at Duke and joins NEI as a loaned executive.

More: *Nuclear Energy Institute*

Makani Plans to Test Wind Kite in Hawaii in 2018

| *Makani*

Makani, the airborne wind energy developer owned by Google's parent, Alphabet, plans to test its fly-gen turbine-bearing plane concept in Hawaii in 2018.

The tests will be Makani's first experience operating its M600 airborne wind energy prototype away from a desert environment and over inhabited space near towns and an airport.

The 2018 plans come after Bloomberg reported that the energy kite had waning support from Alphabet, which Fort Felker, Makani's head, denies.

More: *Greentech Media*

Continued on page 37

COMPANY BRIEFS

Continued from page 36

Todd Snitchler Joining API as Head of Market Development

Todd Snitchler, the former chairman of the Public Utilities Commission of Ohio, will be joining the American Petroleum Institute as head of its market development department.

For the last several years, Snitchler has headed an alliance of independent power producers opposing state-mandated extra funding for FirstEnergy and the state's other traditional utilities whose old nuclear and coal plants can't compete with IPPs. API has opposed FirstEnergy's efforts to convince state lawmakers to subsidize its nuclear power plant fleet by creating special customer charges.

Snitchler served three years as PUCO chairman after Gov. John Kasich appointed him in 2011 to complete the last three years of former Chairman Alan Schriber's last term in office. He did not seek a full five-year term.

More: *The Plain Dealer*

Michigan WtE Plant on Track to Generate Power in Early Fall

Fremont Regional Digester

The first large waste-to-energy power plant in Michigan has reopened under new management and expects to generate power in early fall.

The Fremont Regional Digester in Newaygo County cost $22 million to build and was placed into receivership in September 2015 after NOVI Energy failed to cover its upfront costs.

Generate Capital purchased the 2.8-MW facility for $4.4 million in January and hired Dynamic Systems Management to manage it. The plant began taking waste products on Aug. 1.

More: *MiBiz*

FEDERAL BRIEFS

Court Dismisses Suit over Obama's Fracking Rule

The 10th U.S. Circuit Court of Appeals on Thursday dismissed a lawsuit over the validity of an Obama-era fracking regulation, finding it unnecessary because the Trump administration is working to repeal the rule.

The court also vacated a 2016 ruling by the U.S. District Court of Wyoming, which found the Bureau of Land Management exceeded its authority by trying to regulate fracking on federal lands.

More: *The Hill*

Trump Names Picks for TVA Board of Directors

President Trump has announced his picks to fill out the Tennessee Valley Authority board of directors, which will lose its quorum after the start of next year if the appointments are not confirmed.

The nominees are Jeff Smith, Oak Ridge National Laboratory's deputy for operations; Kenny Allen, who was most recently an executive at Armstrong Coal; James Thompson, a banker from Alabama; and A.D. Frazier, who runs a private equity firm.

Smith's and Frazier's terms would run through May 2022. Allen and Thompson would serve through May 2018.

More: *Nashville Public Radio*; *Tennessean*

Macron to Trump: No Renegotiation of Paris Agreement

Macron

French President Emmanuel Macron said during his speech to the U.N. General Assembly last week that the Paris Agreement on climate change will not be renegotiated.

His comments came following recent suggestions from the Trump administration that the U.S. would remain a signatory if new terms were reached.

Following his speech, Macron said the wording of the agreement could be enriched with new contributions, "but we won't go back."

More: *Independent*

Joint Fed-Industry Effort to Develop Standards for Offshore Wind

The government and offshore organizations have launched a three-year project to develop a set of standards for the offshore wind sector.

The project is a collaboration between the Department of Energy, National Renewable Energy Laboratory, Bureau of Ocean Energy Management, Bureau of Safety and Environmental Enforcement, Business Network for Offshore Wind and American Wind Energy Association.

Sub-working groups will address issues including updating AWEA's 2012 offshore compliance recommended practices, floating offshore turbines, geotechnical data requirements and met-ocean requirements for U.S. waters.

More: *Windpower Engineering & Development*

Report: Renewables Crush Nuclear in 2016

Global nuclear power generation increased by 1.4% in 2016, compared with 30% for solar and 16% for wind, according to the 2017 World Nuclear Industry Status Report.

The report found the global increase was driven by a 23% increase in China.

The number of new nuclear projects dropped to a decade low, with only three new plants with a total 3 GW of capacity breaking ground in 2016. Two of the plants were in China, and one was in Pakistan but was built by a Chinese company.

More: *pv magazine*

STATE BRIEFS

CALIFORNIA

San Francisco, Oakland Sue Oil Companies over Climate Change

The cities of San Francisco and Oakland announced Wednesday that they each filed a lawsuit against five major oil companies blaming them for the effects of climate change.

The lawsuits, in the cities' respective county courts, are against Chevron, ConocoPhillips, ExxonMobil, Royal Dutch Shell and BP. They are similar to suits filed two months ago by Marin and San Mateo counties in state court.

"These fossil fuel companies profited handsomely for decades while knowing they were putting the fate of our cities at risk," San Francisco City Attorney Dennis Herrera said in a statement.

More: *The Hill*

DELAWARE

FERC Rejects DEMEC Challenge of Delmarva Rates

FERC on Wednesday rejected the Delaware Municipal Electric Corp.'s (DEMEC) challenge of Delmarva Power & Light's 2016 formula transmission rates.

DEMEC, which represents about 500 MW of load from nine cities and towns in the state, argued that Delmarva's 2016 formula rates incorrectly handled three issues, including discretionary prepaid pension assets in rate base; assigning rental revenue credits to transmission instead of using the net plant allocation factor it had previously; and using the commission-approved return on equity in calculating its allowance for funds used during construction (AFUDC).

DEMEC said Delmarva's changes weren't justified, but Delmarva said it was implementing existing provisions in the formula rate or adhering to commission precedent. The commission agreed.

More: *ER09-1158*

INDIANA

FERC OKs AES-Indianapolis Power Accounting

FERC approved AES' allocation of the costs of non-power goods and services to its Indianapolis Power & Light subsidiary. AES made the request at the direction of the Utility Regulatory Commission.

In a 2016 rate case, the IURC asked AES to seek FERC review of costs assessed on IPL by AES Services, which provides centralized services to IPL and other AES units. In an order Wednesday, FERC said its review found that AES Services had properly billed IPL for the costs in accordance with the methodology spelled out in the company's cost allocation manual.

More: *ER16-1564*

MASSACHUSETTS

Bills Seek to Power State With 100% Renewables

The Telecommunications, Utilities and Energy Committee heard testimony last week on two bills calling for the state to get 100% of its electricity from renewable sources by 2035.

The bills, filed by Sen. Jamie Eldridge (D) and Reps. Sean Garballey (D) and Marjorie Decker (D), also call for the state to get all its energy — including for electricity, heating and transportation — from renewable sources by 2050.

Presently, nearly two-thirds of the state's electricity comes from natural gas.

More: *The Herald News*; *WGBH*

MISSOURI

PSC Refuses to Reconsider Grain Belt Express Decision

The Public Service Commission last week refused to rehear its disapproval of Clean Line Energy Partners' Grain Belt Express, a proposed 400-MW transmission line that would ferry new wind energy from the Midwest to the eastern U.S. through the state.

Although four of the five commissioners said they believe the project would serve the public interest, they said they had to reject it because of legal precedent that required a developer of a transmission project to obtain assent from the county commissions all along the route.

Clean Line is now free to appeal the commission's decision in court and has hired former Gov. Jay Nixon as a legal adviser.

More: *Midwest Energy News*

NEW JERSEY

Report: State Lacks Strategy to Reach GHG Goal by 2050

A decade after the state enacted the Global Warming Response Act, it is not on track to meet its goal of lowering carbon pollution to 1990 levels by 2050, according to a new report by Rutgers Climate Institute.

The report, which says the state lacks a coherent, comprehensive strategy, examines a range of policies other states are trying to reduce their carbon footprints as well as strategies frequently debated among state policymakers.

Possible actions include developing offshore wind capacity along the coast, mandates to achieve targeted reductions in energy use and rejoining the Regional Greenhouse Gas Initiative.

More: *NJ Spotlight*

Voters Reject Nuclear Plant Subsidies in New Poll

Most state voters oppose giving financial subsidies to nuclear power plants, according to a new poll released last week by the New Jersey Petroleum Council, a division of the American Petroleum Institute.

According to the poll, 69% of voters oppose the Legislature giving a financial subsidy to a nuclear power company that would be in addition to the revenue the company already receives from state customers. The opposition was bipartisan, with 66% of Democrats, 75% of Republicans and 72% of independents opposing such a measure.

The poll also found that 74% of voters agree the state's electricity market should be based on a free marketplace, rather than the government granting money to particular corporations; 62% believe consumers get a lower price if electricity generators compete, rather than the state government choosing what types of generators can provide electricity.

More: *American Petroleum Institute*

Continued on page 39

STATE BRIEFS

Continued from page 38

NEW YORK

NYC Developing Fast-Charging Hubs for EVs in All 5 Boroughs

New York City Mayor Bill de Blasio announced last week that the city will invest $10 million to develop electric vehicle fast-charging hubs in all five boroughs by the end of 2018.

Each hub will include up to 20 chargers per site, and the five hubs will have the capacity to charge more than 12,000 electric vehicles per week.

The city has committed to developing 50 fast-charging hubs citywide by 2020 and wants 20% of its motor vehicle registrations to be electric by 2025.

More: New York City

NORTH CAROLINA

Court Upholds $60K Fine Imposed for Church Solar Project

In a decision that upholds a $60,000 fine imposed by the Utilities Commission in 2016, the Court of Appeals has ruled that advocacy group NC WARN acted as a public utility by installing solar panels on the roof of a church and selling the electricity to it.

The ruling was made by a divided three-judge panel, and the case will be heard by the state Supreme Court if NC WARN chooses to appeal it.

NC WARN built the 5.2-kW solar installation on the church roof in 2015. The group said it wanted to provide a financing mechanism for the church, but that it did not intend to get into the business of selling power routinely.

More: Triad Business Journal

OHIO

State EPA Wants AG's Help Collecting $2.3M from Rover Pipeline

The state Environmental Protection Agency on Wednesday asked the state's chief law enforcement officer to hold Rover Pipeline officials financially responsible for $2.3 million in fines for environmental violations that occurred during construction of its natural gas pipeline.

An analysis last month found the 710-mile project, which crosses Ashland, Wayne and Stark counties, racked up 104 noncompliance incidents, which surpasses any other interstate natural gas pipeline in the past two years.

EPA Director Craig Butler said the agency asked for the attorney general's assistance after negotiations with Rover reached an impasse.

More: GateHouse Media Ohio

FirstEnergy Filing Might Delay Court's Ruling on $200M DMR

FirstEnergy's request for further review of a ruling by state regulators could delay the state Supreme Court from deciding on a $200 million per year distribution modernization rider that regulators previously awarded to bolster the utility's credit rating.

In an application filed last week, FirstEnergy takes issues with language from a ruling last month by the Public Utilities Commission, which directed staff to work with a consultant to review how the company uses the $200 million. Dan Doron of the Office of the Ohio Consumers' Counsel said the office will most likely appeal the rider, which consumers have been paying since last winter, but that they may not see their money back because of a 1950s precedent against refunds.

If PUCO denies FirstEnergy's request from its filings last week and the utility appeals, it's possible the two cases could be joined together for decision, which could add more delay.

More: Midwest Energy News