RTO Insider

Your Eyes and Ears on the Organized Electric Markets

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

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Tx Incentives NOI Brings Calls for Broader Reforms

By RTO Insider Staff

FERC's request for comments on its transmission incentives produced predictable splits between transmission owners and load interests, as well as calls for new policies to increase the efficiency of existing lines and mandates on interregional planning.

Dozens of entities submitted comments in response to the Notices of Inquiry the commission opened in March. The commission asked whether it should change its method of calculating returns on equity for electric transmission and natural gas and oil pipelines (*PL19-4*). It also solicited input on whether transmission adders should continue to be granted based on a project's risks and challenges or the benefits that it provides (*PL19-3*). (See *FERC Opens Inquiries into Tx Incentives, ROE Policies*.)

Eversource Energy said removing any transmission incentives would be an unfair "bait and switch." | *Eversource Energy*

Below, based on RTO Insider's review of more than 50 of the comments, is a summary of the feedback FERC received.

TOs Support Incentives

Since it issued Order 679 in 2006, FERC has granted adders to base transmission ROEs for a variety of reasons, including the formation of a transmission-only company (transco) and joining an RTO or ISO. It also has permitted recovery of 100% of prudently incurred costs for projects canceled because of factors that are beyond the TO's control.

Continued on page 7

FirstEnergy Extends Clock on Ohio Nuke Plan

By Christen Smith

FirstEnergy Solutions said Monday it will extend the deadline for Ohio lawmakers to rescue its nuclear power plants along Lake Erie, after a late-stage concession to renewable supporters failed to win immediate support among state senators over the weekend.

Bankrupt FES said it was optimistic the state Senate will approve subsidies for the Davis-Besse and Perry nuclear facilities at its next session, scheduled for July 17.

The company *said* last August it needed a promise of state subsidies by "mid-2019, when FES must either purchase the fuel required for Davis-Besse's next refueling or proceed with the shutdown."

But FES spokesman Tom Becker said Monday that the company will bear the "financial burden" of missing a June 30 fuel purchasing deadline "given the expectation that the legislation will be passed in the coming weeks."

"The company appreciates the hard work, support and commitment of House Speaker [Larry] Householder, Senate President [Larry] Obhof and Governor [Mike] DeWine to work toward final passage of HB 6 on July 17," he said. "While FES is optimistic about the outcome for HB 6, the company remains unable to purchase the fuel required for Davis-Besse's

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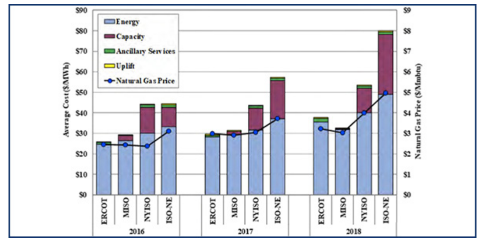
Also in this issue:

NEPOOL PC Summer Meeting



ISO-NE last year had the highest energy prices of all RTOs because of higher natural gas prices; it also had the highest net revenues because of higher capacity revenues. However, the EMM says this is not sustainable given falling capacity prices. (p.17) | *Potomac Economics*

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NERC Adjusting to Brighter Spotlight

Reliability Conference: Deterrence or Collaboration?

Public Power Seeks 'Actionable' Cyber Intel

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In this week's issue

Stakeholder Soapbox

Wholesale Electricity Market Design for Rapid Decarbonization

By Robbie Orvis

America's wholesale electricity markets are at a turning point.

Their rules, products and software were developed in the late 20th century around a fossil fuel-based resource mix in which large central station plants are dispatched to meet unalterable demand. Marginal cost dispatch, in large part determined by fuel costs, has been the principle factor supporting prices and revenues; helping introduce competition into a growing system composed of large baseload power plants with high fixed costs and low production costs; and more flexible power plants with lower fixed costs and higher production costs.

But the 21st century electricity mix is evolving in significantly different ways from the 20th century system. The share of non-fuel resources like wind and solar is growing thanks to falling costs and states like California, Nevada and New York setting 100% clean energy goals. These resources differ in several important ways:

- They typically have near-zero production costs, creating implications for market prices and plant revenue.
- Newer resources tend to have smaller minimum unit sizes and can *be deployed more quickly* and in smaller sizes.
- These resources have different production characteristics than many existing plants (e.g., output tied to sunlight). Operating the grid around resource availability is not a new concept, but doing so daily for many resources is pushing operators to *consider new rules and products*.
- These resources can provide services better or cheaper than older ones — such as creating (very) fast frequency response using power electronics as a replacement for inertia.

Meanwhile, technological barriers limiting demand-side flexibility are disappearing through smart thermostats, water heaters and the "Internet of things." Serious technological changes are upon us, but concomitant changes in market incentives and rules are lagging behind.

Given these changes, a *new series of research papers* by energy policy think tank Energy Innovation seeks to answer the question of whether and how wholesale electricity markets must evolve by asking: "Which market design provides the best framework for reliably integrating clean energy at least cost?"

A Vision of the Future for Wholesale Electricity Markets

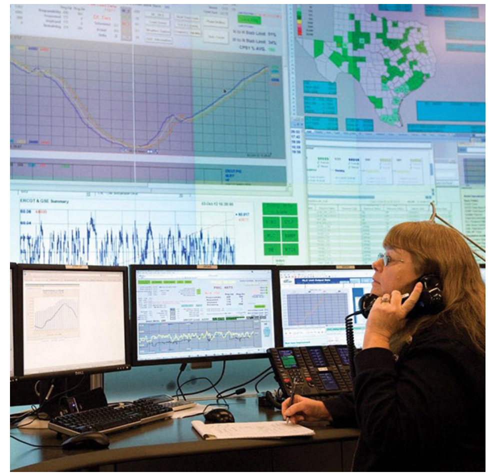
Future market designs must answer several important questions as the resource mix evolves; for example, how can sufficient investment signals be maintained, and how will new resources be efficiently financed? Similarly, how will markets expose the value of important system characteristics, such as flexibility, through this transition? Finally, given the trend in state policy, how can future market designs address carbon policy?

Two pathways have emerged in conversations that aim to answer these questions about future markets. The "*Robust Spot Market*" model emphasizes improving today's markets for energy and services, eschewing capacity markets, and relying on voluntary decentralized bilateral contracting. The "*Long-Term Plus Short-Term Markets*" model envisions complementing those improved energy and services markets with an advanced, centralized, forward market for needed resources and services.

Both pathways agree on important features for modern markets:

- Competitive wholesale electricity markets are a good thing: Trading over a diverse portfolio of resources augments reliability and decreases overall costs. The larger the market, the greater the benefits.
- Wholesale electricity markets need to work with external (state or federal) policies governing the electricity system, not work against (i.e., mitigate) them.
- Shorter dispatch intervals and multiperiod optimization can make markets more efficient.
- The capacity markets in use around the U.S. today, which largely trade capacity without much regard to the operational characteristics of the energy resources being traded, *should be fundamentally transformed* or eliminated.

But important differences exist between the pathways, driven in part by differing views on



ERCOT control room

key questions:

- How big of a risk is political interference in markets?
- How much do we expect the "real world" to behave as theory suggests?
- How strong are the counterparties in markets, and how strong do we expect them to be in the future; i.e., can we expect utilities or other load-serving entities to be able to buy flexible and well hedged smart energy resource portfolios to serve customers over the long term?
- What extent can factors other than strict production costs set LMPs; i.e., congestion in the transmission system, ancillary service needs or other opportunity costs? If those other factors do play a substantial role setting LMPs, what is the risk that real-world prices (which may be in part driven by uneven retirements) are too low to attract needed flexibility resources or too high to expose their value?
- Is keeping voluntary bilateral markets (which already underlie centralized wholesale electricity markets) decentralized the best approach, or would centralizing and organizing those bilateral contracts be more beneficial?

Wholesale electricity markets will evolve differently in various regions, but the macro issues facing markets are extremely important for grid managers to study and deliberately consider as the electricity system decarbonizes. ■

Robbie Orvis is the Director of Energy Policy Design at Energy Innovation, where he works on the firm's Energy Policy Solutions and Power Sector Transformation programs.

MACRUC 2019

Overheard at MACRUC 2019: The Carbon-free Future

By Christen Smith

The 24th annual Mid-Atlantic Conference of Regulatory Utilities Commissioners Education Conference convened at the historic Omni Homestead Resort in Hot Springs, Va. | © *RTO Insider*

HOT SPRINGS, Va. — Regulators from NYISO and PJM descended upon the historic Omni Homestead Resort last week for the 24th annual Mid-Atlantic Conference of Regulatory Utilities Commissioners (MACRUC) Education Conference to discuss how states and industry can work together to usher in new resource technologies and grid innovations.

Dallas Winslow | © *RTO Insider*

"We must embrace the future," Dallas Winslow, chairman of the Delaware Public Service Commission and outgoing MACRUC president, said during his opening remarks. "By being prepared and embracing the future, we will succeed in meeting the challenges of a changing utility landscape."

Green transformation in the utility sector dominated conversation — from how to align clean energy with customer demand, to ensuring equal access to electricity, to defining which generators belong in a net-zero-carbon grid. Most presenters agreed there's no reason to wait on the transportation or agriculture industries to reduce emissions and reverse climate change — the utility sector must forge ahead.

"These efforts will have a cost," Bruce Burcat, executive director of the Mid-Atlantic Renewable Energy Coalition, said while moderating a breakout panel about the Green New Deal. "But the possibility of not doing enough about climate change will have a higher cost."

The Green New Deal, a Democrat-backed proposal to address both income inequality and climate change, sets broad targets for clean energy investment, weatherization projects and infrastructure upgrades. But MACRUC panelists said its lofty ambitions don't translate into any sort of attainable plan.

"I think we have to act quickly," Burcat said. "I do think the problem is clear. We need to come up with a plan that really deals with this. We are facing a really serious problem in 20 years from now when climate gets really out of control. To sit on our hands and wait is really not a good solution."

MAREC's Bruce Burcat, Direct Energy's Marji Philips and American Municipal Power's Ed Tatum discuss a more reasonable application of the concepts described in the Green New Deal. | © *RTO Insider*

Burcat argued renewables hold the key to decarbonizing the electricity sector but admitted the "aggressive" goals of the Green New Deal seem "unrealistic, cost-prohibitive and unachievable." Instead, he called or a "rational" cost for carbon reduction.

"What is the goal? Is it to reduce carbon? Renewables is one way, but it's not the only way," said Marji Philips, director of RTO and federal services for Direct Energy. "We need to find a lot of ways to do it."

She said tax credits, cap-and-trade programs and carbon pricing appear to be the most efficient ways to encourage decarbonization, but she argued the influx of subsidies, limitations of storage technology and existing PJM market construct issues — such as the cost of interconnecting renewables and unreliable pricing models — will prove challenging.

"The reality of decarbonization is its expensive," she said. "It's achievable, but it depends on how flexible you want to make your system."

Philips said injecting more money into the market — instead of subsidies for struggling nuclear reactors, for example — would allow cleaner, more efficient resources to come in while still preserving profitable nuclear units.

"The markets have been really great at incenting entry and pretty lousy at exiting, and that's partly the regulators fault," she said.

Dana Horton, director of RTO regulatory affairs for American Electric Power, and Brooks McCabe, chairman of the West Virginia Public

MACRUC 2019

Dana Horton of AEP and West Virginia PSC Chair Brooks McCabe question the practicality of a state-specific carbon tax. | © *RTO Insider*

Service Commission and incoming MACRUC president, said states flush with fossil fuels in the western half of PJM don't see a way to protect their ratepayers from the effects of a carbon tax — despite optimism from stakeholders in the east who think avenues exist to prevent emissions and economic leakage.

"Without a regional or national adder approach, it's just not feasible," Horton said during a panel about PJM's new effort to explore carbon pricing mechanisms in the RTO. "The more adders you put into the equation, the more complicated it is [and] the more potential for unintended consequence. Forcing a solution before we are ready is a mistake." (See "PJM Offers Peek at Carbon Pricing Study," *PJM MIC Briefs: May 15, 2019*.)

"Maryland and West Virginia have very different views of the world," McCabe said. "When you put a piece of the equation on the side and try to make a decision based on that isolated aspect, that's getting into dangerous territory."

Chatterjee 'Bullish'

Neil Chatterjee | © *RTO Insider*

FERC Chairman Neil Chatterjee sounded far more optimistic about the proliferation of natural gas across the world and the rise of renewable resources.

"I'm very, very bullish about the future of renewables," he said. "There is a very strong business case to be made for renewables. … If you have a source that has no fuel cost, that source is going to prevail over time."

Stakeholders discuss PJM's new effort to consider carbon mechanisms across the RTO. | © *RTO Insider*

Chatterjee was criticized in June for tweeting the hashtag "freedom gas" after Energy Secretary Rick Perry coined the term to describe U.S. LNG displacing Russian gas in Europe. Some said his comment broke FERC's fuel-neutral policy.

The chairman was unfazed.

"You can't ignore the geopolitical impacts of the U.S. being a net exporter in this industry," he said. "That's a very, very exciting thing."

He also described Order 841-A, which denied rehearing of FERC's 2018 order removing barriers to energy storage, as one of the commission's most important rulings. the commission issued this year. "I think we may look back a decade from now and say that Order 841 was one of the most significant federal actions we took to reduce carbon emissions," he said. (See *FERC Upholds Electric Storage Order*.)

Bernard McNamee | © *RTO Insider*

FERC Commissioner Bernard McNamee told attendees he doesn't know what the future holds, but he assured regulators the commission is trying its best to translate federal policy into actionable regulations.

"When policy comes out from Congress, it's a broad statement," he said. "Very often we have to translate it to something very specific. You're [state regulators] the ones that have to make it work.

"We are trying to give orders that make a little bit more sense in your states," he continued. "Doesn't mean that it's perfect, but we try very hard to make the orders that come out FERC useful to you all." ■

FERC/Federal News

State Climate Policy Trumps Federal, Public Utilities Say

By Rich Heidorn Jr.

WASHINGTON — Senior executives of some the nation's largest public power utilities came to D.C. last week to lobby Congress on tax policy and talk to the executive branch about federal reviews of infrastructure projects. They also squeezed in meetings with FERC.

One issue that was not top of mind was the Trump administration's announcement two weeks ago that it was replacing the Clean Power Plan with less stringent emission rules for coal-fired generation.

So does the Affordable Clean Energy rule matter in the utilities' long-term plans?

Thomas Falcone | *© RTO Insider*

"No," said Thomas Falcone, CEO of the Long Island Power Authority, during a press briefing with other executives in the delegation from the 27-member *Large Public Power Council*. "New York passed its own climate *bill* in the absence of federal energy policy. That climate bill seeks to have a carbon-neutral economy by 2050 and carbon-free grid by 2040. In New York, we have one coal plant. … It's supposed to shut down by 2020."

Executives from public power companies in Texas, Washington, Nebraska and North Carolina agreed: Current federal policy is far less important to their decision-making than their states' rules.

Pat Pope | *© RTO Insider*

"I don't spend a lot of time worrying about the ACE rule," said Pat Pope, CEO of the Nebraska Public Power District.

No Lifeline for Coal

The ACE rule defines the best system of emissions reductions (BSER) as heat-rate efficiency improvements that can be achieved at individual coal plants, not the "beyond the fence line" generation-v shifting, fuel-switching and state emission caps required under the CPP. (See *EPA Finalizes CPP Replacement*.)

Although some praised the policy as a rejection of the Obama administration's "war on coal," the ACE rule won't be a lifeline for coal plants in North Carolina or Nebraska, officials said.

"We're certainly moving ahead with ways to mitigate our carbon footprint," said Pope, who noted NPPD is converting one of its smaller coal plants to burn hydrogen.

It's also planning to offset greenhouse gas emissions by capturing methane from the state's agriculture industry. "We're actively exploring ways we can stop those emissions from occurring and credit that toward our coal emissions, and [we're] still looking at carbon capture and sequestration," Pope said. "We're situated in an area where there's probably more opportunities for sequestration than in other areas of the country. We're going to take a hard look at that."

Heat Rate Improvements Elusive

Roy Jones | *© RTO Insider*

Roy Jones, CEO of *ElectriCities of North Carolina*, said his company is also phasing out coal. "When I look at the ACE plan, the heat rate improvements in the plan — if they were economical, they'd have already been done," Jones said.

Pope agreed. "The way we operate, we're always going after these efficiency improvements. We're all about lowering the cost to our consumers, running very efficient plants and operations. So the low-hanging fruit of those types of projects is long gone. … I think the incremental opportunities for others [are] going to be pretty small."

Steve Wright | *© RTO Insider*

Public power owns no coal in Washington state, said Steve Wright, general manager of the Chelan County PUD. In May, Gov. Jay Inslee, who has made climate change the centerpiece of his longshot presidential campaign, signed the *Clean Electricity Transformation Act*, which bans utilities' use of coal by 2025 and sets a 2045 target for emission-free power.

"The decision [away from fossil fuels] has already been made," Wright said. "Now we're trying to figure out how we're going to make it work."

Reinvesting in Hydropower

In Washington, that means a continued dependence on hydropower, which supplies 70% of the state's electricity.

"It's an aging hydropower system," Wright said. "The challenge is how are we going to maintain that capability because as you add variable energy — non-dispatchable resources — you need something to maintain reliability.

"It's going to take a very large reinvestment in the system in order for it to be maintained because most of it was built as late as the 1970s, so the youngest plants are 40 years old. There's a lot of work to do there, but with the right investments, we can make it work."

'Holistic' View

With no stockholders, "having [our] finger on the pulse of community is very important," ElectriCities' Jones said. "And as we talk to our community about climate change, without exception every one of them has individuals in the community that want to do more with renewables. Rooftop solar, community solar. Things they can do to make their homes more energy efficient and reduce their carbon footprint."

Jones said North Carolina is almost a quarter of the way toward its *goal* of a 40% reduction in carbon emissions from 2005 levels by 2040.

To close the gap, Jones said the company is discussing ways to electrify the transportation system. "When we step back and look at the carbon footprint, we're not just looking at the electric industry. We're looking holistically in our communities ... things we can do to reduce that carbon footprint."

Jackie Sargent | *© RTO Insider*

Austin Energy, which has been transitioning to renewable energy and emphasizing energy efficiency and demand-side management, will shut its last two large gas-fired steam units by 2021 and plans to exit from its coal position by 2022, General Manager Jackie Sargent said.

Because of ERCOT's "robust" market and great transmission access, Sargent said the utility has been able to add wind and solar resources with locational diversity. "So, I don't see the ACE rule impacting us in a significant way," she said. ■

FERC/Federal News

Tx Incentives NOI Brings Calls for Broader Reforms

Continued from page 1

TOs generally supported the current incentives, with some, such as Consolidated Edison and Eversource Energy, saying the abandoned plant incentive and including 100% construction work in progress (CWIP) in the rate base should become automatic and no longer discretionary on FERC's part. Eversource said removing any incentives would be an unfair "bait and switch."

Con Ed said recent transmission rate settlements for public policy transmission projects proposed by New York Transco and NextEra Energy Transmission New York illustrate that incentives can be a cost management tool. The two companies will receive incentives depending on how much they are able to reduce costs below project estimates. "The settlements also include disincentives should the projects' final costs exceed the project cost estimates," Con Ed said.

WIRES, whose members include TOs and transmission equipment makers, said the current incentives "are potentially not sufficient to support the level of infrastructure investment and development the nation is likely to need." It called for additional incentives for projects aiding resilience, energy storage and advanced technologies for existing facilities.

Load: Prune Incentives

Load interests generally opposed expanding the incentives, with some, such as the Oklahoma Corporate Commission's Public Utilities Division, urging the elimination of the risks-and-challenges and transco adders.

Massachusetts Municipal Wholesale Electric Co. (MMWEC) and New Hampshire Electric Cooperative filed joint comments calling for the end of the RTO membership adder, as it is "no longer just and reasonable."

The Organization of MISO States said adders should only be granted in "extraordinary circumstances and for specific projects." The organization said it worried that "overly incenting" transmission construction might lead to planners overlooking non-transmission alternatives. "The commission should reduce its reliance on ROE incentive adders because much of a company's transmission risk is already accounted for in the company's base ROE," it said.

Transmission-dependent utilities, including Golden Spread Electric Cooperative and North Carolina Electric Membership Corp., said the commission should eliminate or minimize the use of existing ROE adders. They said there has been no "systematic study" evaluating the incentives' effect on transmission investment, "and thus there is no evidence demonstrating that ROE-adder incentives are needed to get new transmission built."

They also said there is also no evidence that the RTO adder is needed to encourage participation in RTOs, nor that its elimination "would result in an exodus of transmission owners from RTOs."

Risks or Benefits?

The New England States Committee on Electricity (NESCOE) opposed proposals to change the incentives policy to focus on expected project benefits. It also opposed tailoring incentives for projects based on expected reliability benefits, targeting interregional transmission projects or geographic areas where projects would enhance reliability or have economic efficiency benefits.

"The possibility that a project can benefit consumers does not establish the need for consumers to fund incentivized investments through regulatory recovery beyond what is provided through the base ROE and cost-of-service ratemaking," NESCOE said.

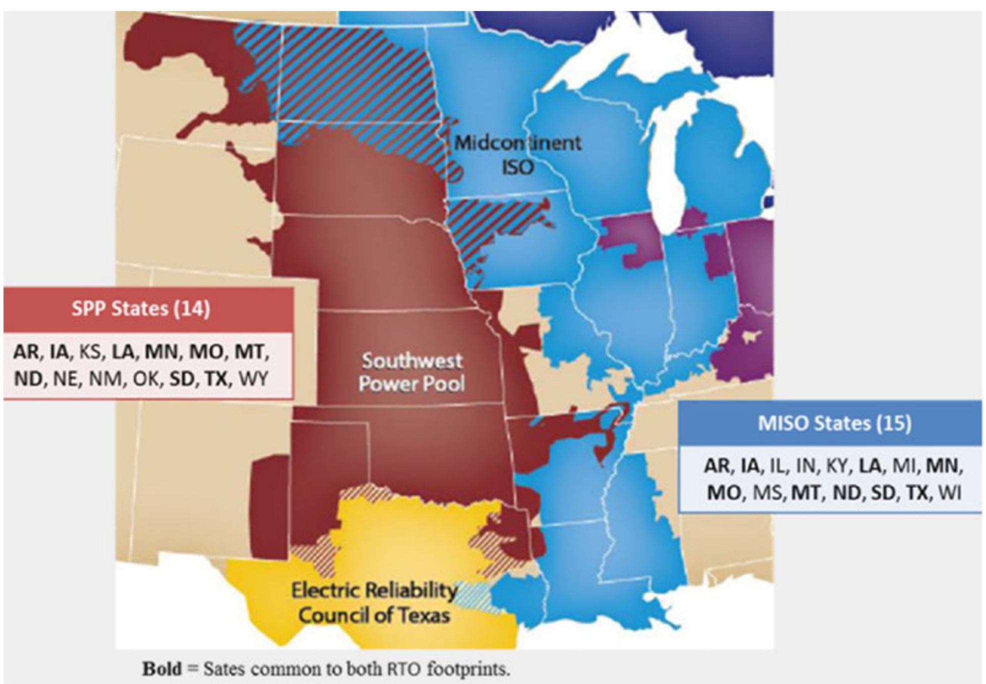
CAISO said FERC should continue to award ROE incentives based on the risks of a project rather than focusing on its benefits.

"The CAISO believes there is no direct correlation between the net benefits a project approved in a regional transmission planning process provides or the type of transmission need a project meets, and the ROE adder that is necessary to attract capital or encourage a developer to build the project," it said.

The California Public Utilities Commission questioned the continuing need for incentives. "In the [CAISO] control area there are no systemwide, chronic, long-term transmission reliability or congestion issues that warrant the continued award of electric transmission incentives," it said.

The National Rural Electric Cooperative Association also was skeptical, saying FERC's questions "raise concerns that the commission is contemplating going down a path of adding new incentives without having any concrete sense as to whether its existing incentives are achieving their desired goals."

But the Transmission Access Policy Study Group, an association of TDUs from more than 35 states, said the incentives under Order 679 "successfully reversed the long-term decline in transmission investment that spurred



FERC's policies have not produced interregional transmission projects between MISO and SPP. | *Organization of MISO States*

FERC/Federal News

Congress to enact Section 219" of the Federal Power Act — the legislation that led to Order 679. It said there was no need for a "fundamental reform" of the incentive policies.

It said there was no need for a "fundamental reform" of the incentive policies.

Americans for a Clean Energy Grid, a *coalition* of utilities, TOs and transmission equipment manufacturers, said FERC should expand the definition of transmission benefits "beyond economics and reliability to include resilience, ability to serve demand for sustainable energy, ability to meet public policy requirements and other benefits."

The commission should encourage "low-cost, high-benefit" new transmission technologies, it said. "Existing incentives to transmission providers do not help at all in getting a new project accepted for planning, sited, permitted or its costs allocated, because they do not motivate the decision-makers involved."

Performance-oriented Incentives

The Energy Storage Association called for a shift to a "performance-oriented" incentive policy to increase transmission capabilities and reduce costs. "ESA recommends that the commission create a specific incentive that rewards maximization of value, delivery of cost-savings or both, through investments that increase flexibility and other operational capabilities of transmission facilities."

It also said the commission should open a separate docket to address barriers to storage as transmission assets (SATA). "Energy storage is for the most part absent from consideration in transmission planning processes. As a result, even if a SATA resource might be cost-effective and viable to meet RTO/ISO transmission reliability needs, there is not an adequate means to identify it in the planning process," it said.

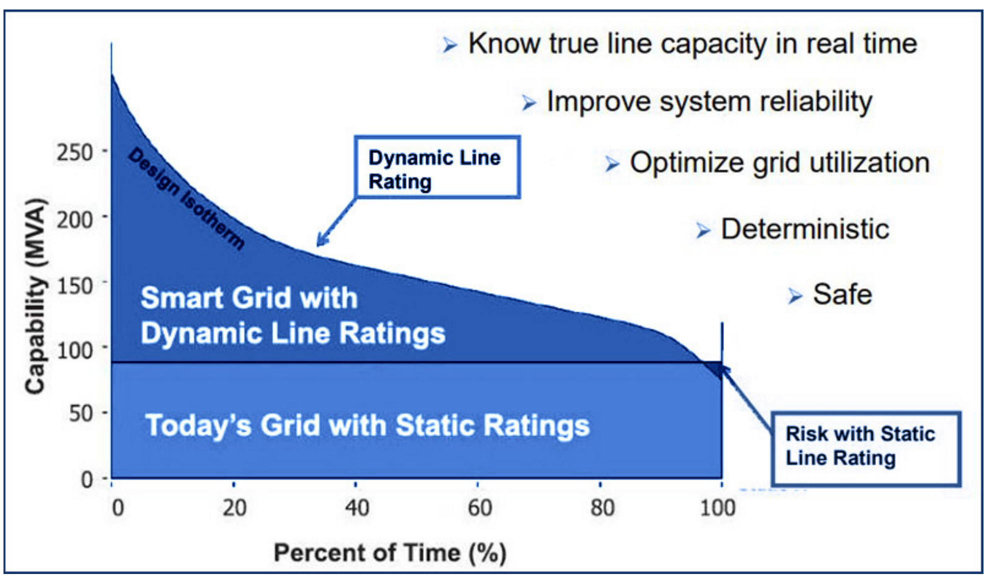
The National Electrical Manufacturers Association also supported performance-based ratemaking in considering incentives, noting the commission is required to do so under Section 219. "A performance-based approach would encourage transmission owners and operators to adopt the latest technologies to drive performance outcomes."

Advanced Technology

Several commenters recommended FERC take steps to incent TOs to employ dynamic line ratings and other advanced technologies to increase the capacity of existing infrastructure.

David Patton | © *RTO Insider*

Potomac Economics, which provides market monitoring services for MISO, ERCOT, NYISO and ISO-NE, said FERC should allocate to TOs the "congestion surplus" — the shadow price of the constraint ($/MW) multiplied by the difference between the dynamic line rating and the static seasonal rating. Potomac President David Patton also said the commission could improve outage scheduling by allocating outage costs to TOs



The Valley Group presented this illustration of dynamic line rating at a FERC technical conference — in 2010. | *The Valley Group*

"The commission should reduce its reliance on ROE incentive adders because much of a company's transmission risk is already accounted for in the company's base ROE."

— OMS

and that it should consider incenting topology optimization — reconfiguring the system based on line loadings and contingencies to reduce flows on highly congested facilities. It also should encourage investment in additional transmission by allocating rights related to the congestion benefits and capacity market benefits of the expanded capacity, he said.

Oklahoma regulators called for FERC to reinstate the advanced transmission technology adder, which the commission abolished in 2012. The current rules incentivize utilities to build more expensive projects and discourage "much cheaper" advanced transmission technologies, it said, recommending the commission direct utilities "to optimize the current [bulk electric system] before upgrading the current system or building new transmission lines."

The Natural Resources Defense Council said "utilities all too often ignore cost-effective advanced technology and other solutions to optimizing capacity and power flows of the existing system."

The American Council on Renewable Energy said FERC should shift from a "risks and challenges" to a "benefits" framework, which, it said, "can unlock private sector investment with minimal regulatory reform."

"Transmission incentive reform should be augmented with transmission planning reform to more effectively promote new transmission. The incorporation of grid optimization and advanced technologies in the planning process, more standard and broad cost allocation, and increased inter-RTO transfer capability will lead to a more robust and efficient electric grid. ...

FERC/Federal News

"Newly available grid operations technologies such as more advanced dynamic line ratings, power flow control systems and topology optimization can reduce this congestion and curtailment for less cost than new lines. Currently, utilities earn little to no money from the process of delivering more over existing wires."

Interregional Transmission

Where incentives are really needed is for interregional transmission projects, according to R Street Institute, a think tank that promotes "free markets and limited, effective government."

Travis Kavulla | © *RTO Insider*

"The commission should acknowledge that [the lack of interregional projects] is a political economy problem and induce cooperation across seams through financial incentives that face the transmission-owning members of ISOs," said R Street's Director of Energy Policy Travis Kavulla. "These transmission owners exercise significant stakeholder influence over ISOs. Providing incentives to obtain efficiency gains across ISOs' footprints could therefore reduce the insularity of the wholesale markets."

Kavulla said TOs should receive incentives for projects that cross an RTO/ISO seam and be "incentivized to dedicate their existing facilities to a co-optimized market between two ISOs."

NRDC said commission-approved transmission planning and cost allocation policies "are providing disincentives to meaningful investment that financial incentives alone cannot counteract."

"For that reason, we encourage the commission to examine more broadly the barriers to the continuing development and optimization of the bulk power system. Many of these barriers are well known, including, for example, limited accounting of transmission benefits, the 'triple hurdle' required for approval of interregional projects and the discriminatory status accorded to projects necessary to meet system needs driven by public policy requirements (i.e., planners must only 'consider' needs driven by public policy requirements)."

Expanding the Definition of Benefits

The Union of Concerned Scientists said FERC should clarify that operational constraints on congested interfaces should be used in congestion and economic studies rather than only the planning limits of such interfaces. It cited New England's challenge with unbottling Maine's wind resources.

An ISO-NE study that used the planning limits — modeling the system with the maximum transfers that can only be assumed if all the best conditions are met for all hours — concluded there would be minimal economic benefit from a proposed increase in the capability of the Orrington South interface. "However,

Michael Jacobs | © *RTO Insider*

the particular interface is limited to lower ... levels for most of the year," said UCS's Michael Jacobs. "In a study of the congestion that comes closer to approximating actual system congestion and potential benefits, the typical range of hourly operating limits must be used, rather than a fixed upper planning limit."

Joint Ownership Incentive

MMWEC and the New Hampshire co-op said they'd like a new incentive for companies that are jointly owned by jurisdictional utilities and nonpublic utilities "in recognition of the risk-reducing benefits of these arrangements."

GridLiance, whose business plan is built on that joint ownership model, also called for such an incentive for projects approved by a regional or local transmission planning process that are at least 15% owned by nonpublic utilities.

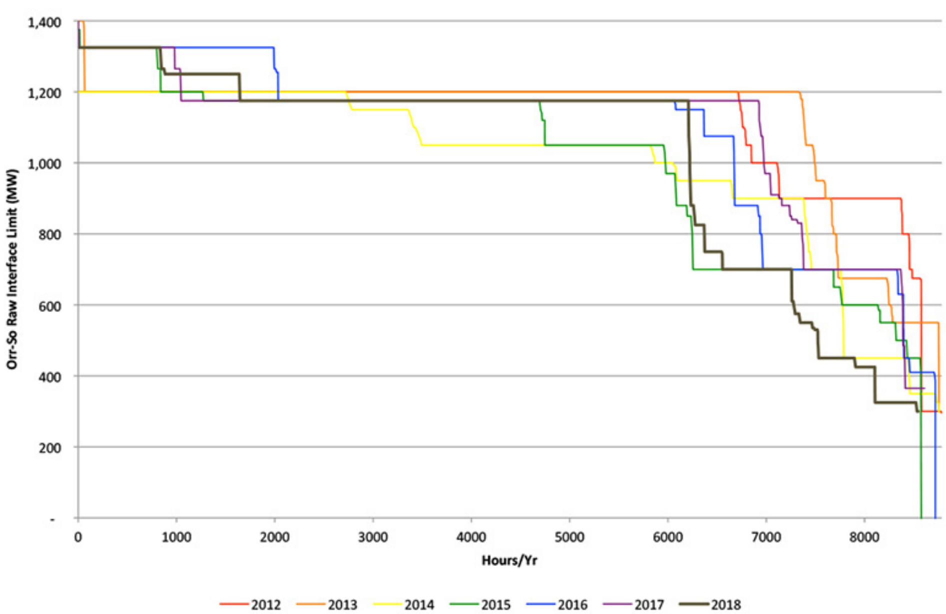
ROE Methodology

In docket PL19-4, the commission asked for comment on whether it should adopt as policy the new ROE formula it outlined in an October 2018 ruling regarding the New England Transmission Owners (NETOs). In that order — issued in response to the D.C. Circuit Court of Appeals' remand in *Emera Maine v. FERC* — the commission said it would no longer rely solely on the discounted cash flow (DCF) model it has used since the 1980s and would instead give equal weight to results from the DCF and three other techniques: the capital asset pricing model (CAPM), expected earnings model and risk premium model.(See *FERC Changing ROE Rules; Higher Rates Likely*.)

PJM TOs expressed support for the new methodology.

"It makes sense to use multiple models to establish ROEs because, as the commission has noted, investors use multiple models, in addition to the discounted cash flow model, to inform their investment decisions," they said. "Moreover, the use of multiple approaches provides a hedge against the shortcomings of any one approach in particular financial conditions."

The NETOs said they spent most of this decade litigating their ROE and want the commission to stand by the 2018 order, including the establishment of an evidentiary screen to dismiss some ROE complaints. The commission said it would dismiss ROE complaints if



Orrington South's limit of 1,325 MW was reached in only 11% of the hours in 2017. The interface limit was 1,175 MW for most of the year; at times it was as low as 700 MW or less. | *RENEW Northeast*

FERC/Federal News

the targeted utility's existing ROE falls within the range of presumptively just and reasonable ROEs for a utility of its risk profile unless the presumption is "sufficiently rebutted." The new threshold came in response to complaints by TOs over "pancaked" ROE complaints being filed while prior cases remained pending. (See *EEI White Paper Calls for End to 'Pancaked' Rate Cases*.)

But TDUs and state regulators said they opposed at least portions of the new methodology.

OMS said the four-model approach "broadens the scope of potentially contested issues in ROE proceedings, making it even more difficult for analysts to predict the outcome on any ROE litigation." It asked the commission to give the DCF model "substantial weight" over any other models.

"Should the commission choose to ignore the overall cost impact to customers, the just and reasonableness of the resulting ROE will be called into question and might lead to more complaints and less regulatory certainty," Alliant Energy warned.

TDUs said the two-step DCF analysis should remain the primary, "if not the exclusive, method" for ROE determinations.

"While the [CAPM] and risk premium models can, when properly applied, corroborate the results of the DCF analysis, they should not be relied upon as primary analyses and should not dilute the DCF results," they wrote. "Under no circumstances should the non-market-based expected earnings model be used."

The TDUs also said FERC shouldn't deviate "from its current policy by imposing additional burdens on complainants bringing an action against an existing ROE" under FPA Section 206.

The Maryland Office of People's Counsel opposed the idea of using a "vintage approach" that fixes ROEs for the life of the asset at the time that each asset is completed. "Such an approach could lead to erratic investments in that investors, if they believe returns will increase in the future, may delay making critical infrastructure improvements so they could lock in relatively high returns for the life of the asset," it said.

R Street said FERC's ROEs are unduly generous. In 1980, it noted, the average ROE in the U.S. was about 200 basis points above the 30-year U.S. Treasury bond yield. "Today, the gap has widened to approximately 600 basis points, even as many transmission owners enjoy regulatory devices such as formula rates that serve to diminish financial risk," it said. "There is little reason to believe that widely available incentives are necessary to promote necessary, but routine, capital investment in commission-jurisdictional infrastructure."

Pipeline ROEs

The Natural Gas Supply Association, which represents natural gas producers and marketers, said the commission should not abandon use of the DCF model in determining pipeline ROEs. "While the discounted cash flow methodology is not perfect, no capital market evaluation technique is. But the DCF methodology is the soundest, most robust, most accepted and most reasonable methodology the commission has for determining investor-expected ROEs for natural gas pipelines."

The American Gas Association, which represents more than 200 local distribution companies, said it did not favor a review of FERC's pipeline ROE policy.

"Matters related to pipeline ROEs are likely to raise issues that differ from those addressed by the court in *Emera Maine*. Therefore, the commission should not presuppose issues exist in the natural gas industry before fully examining the matter," it said.

The Interstate Natural Gas Association of America (INGAA), which represents most of the interstate pipeline companies in the U.S., said it "continues to believe that the DCF methodology should be used to determine gas pipeline ROEs but recognizes that the performance of the DCF model, like the other models discussed in the NOI, is not precise and may be distorted by unusual capital market conditions."

INGAA said it supports the consideration of some of the other models but that the commission should not adopt a formulaic averaging of the models and should "retain the flexibility to place appropriate weight on, or exclude, any of the models in light of prevailing financial conditions at that time and the facts and circumstances of each case."

It opposed use of the risk premium model, saying it "cannot be applied to determine sufficiently reliable interstate natural gas pipelines' ROEs due to the absence of data required by the model."

Public Citizen and environmental groups, including the NRDC and Sierra Club, said FERC's current policy provides incentives to overbuild capacity. "For many natural gas pipelines, applicants often involve self-dealing contracts between pipeline developers and their regulated utility affiliates. These utility affiliates can then pass costs onto its captive ratepayers. This affiliate abuse is then combined with FERC's high rates of return," Public Citizen said.

"The commission's allowance of a 14% ROE for gas pipeline investments is a much higher profit margin than regulated utilities receive for other capital-intensive investments such as electric transmission — up to 40% higher," the environmental groups said. "State public service commissions on average have granted utilities a 9.92% ROE in recent years. A review by the Edison Electric Institute shows that the average ROE granted to utilities in 56 new rate cases filed in 2017 was approximately 9.7%. Financial markets have changed since FERC began granting the 14% ROE to new pipelines over two decades ago, including declining corporate bond rates and lower interest rates." ■

Tom Kleckner, Christen Smith, Rich Heidorn Jr., Michael Kuser, Hudson Sangree and Amanda Durish Cook contributed to this article.

Benefits of Temperature-Adjusted and Emergency Ratings
2017-2018

		Savings ($ Millions)				
		Temp. Adj. Ratings	Emergency Ratings	Total	# of Facilities for 2/3 Savings	Share of Congestion
Total Estimated Benefits						
2018	Midwest	$70.9	$50.92	$121.8	22	12.4%
	South	$7.0	$16.86	$23.9	2	6.7%
	Total	**$77.9**	**$67.8**	**$145.7**	**24**	**10.9%**
2017	Midwest	$83.8	$38.83	$122.7	20	11.7%
	South	$10.0	$23.07	$33.1	3	8.9%
	Total	**$93.9**	**$61.9**	**$155.8**	**23**	**10.9%**

Potomac Economics says MISO transmission owners could save as much as $156 million by using more accurate temperature-adjusted ratings and short-term emergency ratings. | *Potomac Economics*

CAISO/West News

PG&E's Bondholders Push $30 Billion Investment Plan

By Hudson Sangree

A lawyer who filed a $30 billion plan by bondholders to bump PG&E Corp. out of bankruptcy urged the utility and the U.S. Bankruptcy Court on Wednesday to move the process along.

"We believe this case more than anything else needs a greater sense of urgency, a greater sense of transparency … and a greater sense of cooperation," attorney Michael Stamer told Judge Dennis Montali in San Francisco.

Stamer and other lawyers with the firm Akin Gump Strauss Hauer & Feld filed a *motion* June 25 to end PG&E's exclusivity period — the time the company has to file its Chapter 11 reorganization plan without competing proposals. They represent the ad hoc committee of senior unsecured noteholders in PG&E's massive *bankruptcy case*.

Stamer told the judge that the unsecured creditors hold $10 billion in PG&E notes. The bonds would take a backseat to secured debts in the bankruptcy proceeding, and the noteholders stand to lose if PG&E can't meet its obligations.

PG&E has until September to come up with its own reorganization plan. In May, Montali extended the 120-day statutory period under which PG&E and its utility subsidiary Pacific Gas and Electric had to file their proposal. (See *PG&E Gets More Time to File Bankruptcy Plan*.)

The companies sought bankruptcy protection Jan. 29, citing at least $30 billion in liabilities for a series of devastating wildfires sparked by their equipment. The blazes included November's Camp Fire, the deadliest in state history.

Wednesday's hearing was meant to establish a procedure for PG&E to set a "bar date," a deadline for victims to file claims with the court, and to issue public notices. After four hours of argument, Montali set Oct. 21 as the bar date, following PG&E's recommendation, and approved PG&E's plan for running notices online, in TV ads and in publications such as *People*.

Stamer appeared before the judge ostensibly to endorse PG&E's proposed deadline but quickly segued into talking about the motion to end exclusivity he'd filed the day before.

A term sheet attached to the motion lays out a plan for creditors to invest up to $30 billion in PG&E in exchange for common stock, repayment of $1.75 billion in short-term bonds and the payment of outstanding interest on long-term bonds. It would include $16 billion to compensate fire victims.

Phillip Burton Federal Building, San Francisco | *U.S. Bankruptcy Court, Northern District of California*

The lawyer said PG&E's bankruptcy has a "political element that's hard to wrap your head around." The investment plan is structured to appeal to elected officials and residents, he said, because it wouldn't raise rates and avoids a government bailout.

"We have made the investment attractive to politicians and the people who elected them" by letting investors bail out PG&E and not "putting it on the backs of ratepayers," Stamer said.

The plan does depend, however, on the California Public Utilities Commission significantly raising rates for PG&E's customers, as the utility requested in its 2020 general rate case and 2019 cost-of-capital proceeding.

The plan also proposes leaving alone the estimated $42 billion in renewable power purchase agreements that PG&E has indicated it might try to reject in bankruptcy. The situation has pitted PG&E against FERC, which declared it had concurrent jurisdiction with the bankruptcy court over the PPAs. (See *Judge Urges Appeals Court to Decide PG&E v. FERC*.)

The bondholder plan would additionally prevent the "municipalization" of any of PG&E's assets for five years, an attempt to head off the efforts of some critics who seek to convert the company into a publicly owned utility.

As Stamer continued talking, Montali reminded him the hearing was not about the motion to end exclusivity. That motion is scheduled to be heard July 23.

The judge also reminded PG&E's lead bankruptcy attorney, Stephen Karotkin, of the same point when Karotkin began to oppose Stamer's motion.

"In their plan, he complains about nothing being resolved," Karotkin said. "The only settlement in their so-called plan is the settlement we reached with the public entities." PG&E recently announced it had agreed to pay cities, counties and public agencies $1 billion to settle claims arising from wildfires in 2015, 2017 and 2018.

"We're not arguing the exclusivity motion," the judge said, cutting him off.

Newsom Plan

The bondholders plan could potentially conflict, or in some ways dovetail, with a plan put forward by California Gov. Gavin Newsom last week.

On Friday, lawmakers introduced a bill, *AB 1054*, containing Newsom's proposed $21 billion fund to cover future wildfire costs, with ratepayers and utilities each paying half. Newsom wants to extend a $2.50 service charge that utility customers have been paying since the early 2000s but that's set to expire next year.

The bill would require a two-thirds supermajority to pass. It calls for the creation of a new panel, the California Catastrophe Council, to oversee the insurance-like wildfire recovery fund.

The governor's plan also calls for the state's three large investor-owned utilities — PG&E, Southern California Edison and San Diego Gas & Electric — to spend $5 billion on safety measures and for PG&E to exit bankruptcy by June 2020 to access the wildfire recovery fund. Those costs could be spread to ratepayers, but they would be ineligible to earn profits as a return on investment.

PG&E and other IOUs would still be on the hook for the catastrophic fires of 2017 and 2018 — which the bondholders' proposal would cover. California imposes a strict liability standard, known as inverse condemnation, on utilities whose equipment starts fires.

Newsom called on lawmakers to pass his plan by July 12, the day before the legislature's summer recess starts. Whether lawmakers will pass a measure that may be unpopular with voters, especially with anger toward PG&E and other IOUs running high, remains uncertain. The two-thirds voting requirement sets the bar even higher. ■

CAISO/West News

CAISO OKs EIM Governance Review

EIM Names New Chair, Vice Chair

By Hudson Sangree

Leaders of CAISO and its Western Energy Imbalance Market established a panel last week to update the EIM's governance as the real-time market grows and likely adds day-ahead bidding in the next few years.

The mission of the new Governance Review Committee (GRC) is to go through a stakeholder process, draft proposals and offer the EIM Governing Body and the CAISO Board of Governors a set of recommendations in less than a year.

The committee members must still be selected. Once that happens, "we expect that the committee will get started right away, and we hope to have a work product completed within the next six to 12 months," CAISO Regional Affairs Manager Peter Colussy told Friday's *joint meeting* of the ISO and EIM boards in Salt Lake City.

The committee will disband once it completes its work, Colussy said.

The EIM began operations in 2014. It allows wholesale energy transfers across state lines to balance supply and demand in the Western Interconnection, saving its participants more than $650 million so far, according to CAISO.

The market's charter requires a governance review to be initiated by September 2020 "to account for accumulated experience and changed circumstances over time" in the relatively new market, Colussy said. "The committee's form and purpose will be similar to that of the transitional committee that formed the initial EIM governance structure just a few short years ago."

Candidates for the 11 to 13 positions on the GRC will be nominated and ranked by current EIM participants, entities that intend to join, transmission owners, public utilities, generators and consumer advocates. Then CAISO and EIM board officials will select those to serve. It's largely the same process used to select Governing Body members, Colussy said.

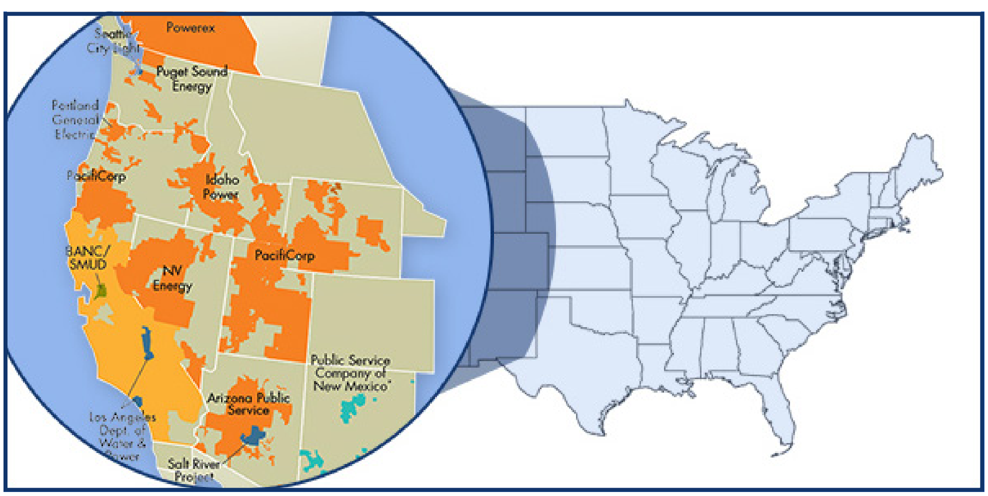
The committee will have one nonvoting member from the EIM body or the ISO board, and one voting member from the EIM Body of State Regulators (BOSR), each selected by their respective groups.

The GRC is expected to represent the geographic diversity of the EIM, Colussy said. The market currently includes eight entities from eight Western states, with more expected to join in the next three years.

"We're not asking the members of the committee to represent the interests of the stakeholder sectors that nominated them," he said. "Members are going to be asked to work collaboratively on this process to develop a proposal that will be widely accepted by stakeholders."

The EIM Governing Body began talking with stakeholders and figuring out the review process late last year. (See *Western EIM Looks to Expand its Authority*.)

Those addressing the CAISO-EIM meeting Friday generally expressed support for the governance review, with some concerns.



The Western Energy Imbalance Market currently includes eight entities in eight Western states, with more set to join. | *CAISO*

Matt Lecar, a principal with Pacific Gas and Electric, said the utility supports the GRC. He thanked staff members for clarifying that "the scope of the committee would not be unduly constrained to look at just the existing governance model."

"With the potential extension of the EIM from a real-time market to a day-ahead market, we believe that the both the volume of transactions and the scope of policy issues that will need to be addressed are considerably weightier, and that a degree of authority and oversight will be necessary that exceeds what we see in the EIM today," Lecar said.

"It's very important that participants across the region have trust in the institutions and the governance that we create," he said.

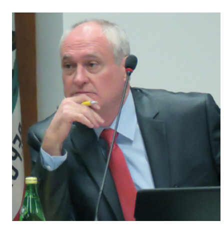
New EIM Chair and Vice Chair

Following the joint session, the EIM Governing Body met for its general session and elected a new chair and vice chair, as it does each year.

Valerie Fong | © *RTO Insider*

Carl Linvill | © *RTO Insider*

Valerie Fong's term as chair ended Sunday. Vice Chair Carl Linvill was named by his colleagues as the EIM's chair starting Monday, and John Prescott was named vice chair.



John Prescott | © *RTO Insider*

"It has been an honor to be the chair of this body. It's a great learning experience. It's a lot of fun. And we try not to blow anything," Fong said.

She nominated Linvill to take her place and nominated Prescott to fill Linvill's position.

The board currently only has four of its five allotted members. Former member Kristine Schmidt resigned in April to join embattled PG&E Corp.'s board of directors. (See *PG&E Departure Leaves EIM Vacancy*.) ■

Overheard at TREIA GridNEXT 2019

'Can You Operate Your Business Without Electricity, Cellphones?'

GridNEXT attendees listen to CPS Energy CEO Paula Gold-Williams. | *© RTO Insider*

SAN ANTONIO — Grid safety and security were the focus of the Texas Renewable Energy Industries Alliance's (TREIA) annual GridNEXT conference last week.

Speakers during the event Thursday addressed a variety of related topics, from protecting critical assets and safeguarding vital data, to the role renewables and microgrids will play in ensuring a more reliable and resilient grid.


Ingmar Sterzing | *© RTO Insider*

TREIA board member Ingmar Sterzing, a vice president with renewable developer OnPeak Power, put things into perspective when he asked his panel, "Are you prepared to operate your business without electricity and cellphones?"

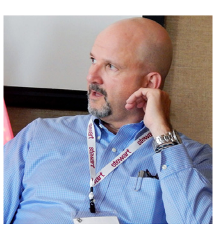

Mike Allgeier | *© RTO Insider*

"You need a responsible plan for cybersecurity. You plan to have that event actually happen. You don't plan for it not to happen," Mike Allgeier, ERCOT's director of critical infrastructure security, told attendees gathered at The International Center. "Prepare for the worst. If you don't prepare for the worst, when the worst happens, it'll be pretty bad. Plan for what you think is the worst, then double it."

Allgeier warned that the "bad actors," or hackers, operating online today are not to be underestimated.

"They've been around a while," he said. "Typically, they're dedicated and well-trained to do their job. It's not the 15-year-old kid in the basement. They have goals and they're measured. They have quotas.

"They're not only looking at the big guys. They understand that if they can control a wide swath of resources, that can be just as damaging as getting into one large resource," Allgeier said.


Trey Kirkpatrick | *© RTO Insider*

Speaking on the same panel, ABZ's Trey Kirkpatrick emphasized the importance of raising awareness of cybersecurity issues among employees. He used Berkshire Hathaway's three-strikes-and-you're-out approach to phishing emails as an example.

"Their policy is if someone clicks on a phishing email three times, they're gone. You don't see that in every organization," Kirkpatrick said.

Both Allgeier and Kirkpatrick bemoaned the difficulty of finding and retaining cybersecurity subject matter experts, with Kirkpatrick calling it "the biggest risk."

"The consultants are getting busy; they're highly paid, and they're moving around," Kirkpatrick said. "I know companies that can't even find a cybersecurity manager, even with the money they are offering."

Allgeier said he typically fills his cybersecurity staff with personnel that have financial and military backgrounds.

"From the financial side, because they've been doing this for a long time; and from the military sector, because they have been trained to fight our online enemies," he said. "I can't always compete with salaries the high-tech or financial firms can offer, so we try to keep them with competitive benefits and the collaborative nature of work, building the *esprit de corps*."

Place for Storage, New Technologies

Panelists discussing the ability of renewable energy and smart technology to make the grid more secure and reliable suggested looking away from California, where mid-day solar energy peaks reduce demand for other sources, resulting in a "duck curve." (See *Report: Calif. 'Duck Curve' Growing Faster than Expected*.)

"California has kind of become the sacrificial lamb," Energy Storage Consultants CEO Judy McElroy said. "Storage is a good answer to that, but just throwing storage on your grid

TREIA GridNEXT 2019

doesn't make it more reliable."


Judy McElroy | © RTO Insider

"As we integrate [battery storage and other technologies], we can make them more reliable, but there's a cost," said Dean Tuel, global vice president of microgrid and storage solutions sales for Aggreko. "We have a diverse portfolio of technologies we can provide at a cost the customer is willing to accept. We can accommodate this with today's technology and reach a level of renewable penetration that gets us to the … reliability the customer is looking for."

TREIA on Track for 50% by 2030 Goal

Buoyed by the large amount of wind and solar projects in ERCOT's interconnection queue, Sterzing said TREIA's goal of achieving 50% renewable energy in Texas by 2030 is coming into clearer focus.

Sterzing pointed to the 35.7 GW of wind projects and 58.6 GW of solar projects in the queue as of May as reason for hope. Only 14.3 GW and 7.6 GW of the respective wind and solar projects have signed connection agreements.

"Will it all be built? Hard to say, but that's a huge industry movement either way," he said. "There's a lot of development coming into Texas. There's certainly a lot more we can do as a state, with this kind of investment, to make Texas an energy center for the country."

Sterzing noted Texas that has seen a "steady trajectory" over the last five years in renewable energy's share of the fuel mix. Wind and solar energy accounted for almost 20% of ERCOT's production in 2018. At the current rate of growth in the state, Sterzing estimated an additional 18 GW of wind energy and 39 GW of solar would help "maintain a reasonable mix and achieve the 50% goal."

"That's a huge, huge target, and enough to keep us all busy," he said.

Energy Industry, Military Collaborate on Grid Security

A panel focused on defense and grid security stressed the importance of the energy industry working closely with the military.


Melissa Miller | © RTO Insider

Melissa Miller, Avangrid Renewables' regional development manager for the central U.S., said technological improvements have led to the construction of wind farms in areas they could not have previously been built. That has only increased the conflicts seen across the country between wind facilities — which are increasingly taller — and military flight paths.

"We're more successful with wind almost everywhere, but all of a sudden, that creates an impact with military operations," Miller said. "It's really important we learn about their missions and what their objectives are, especially in the lower air space. The need to collaborate is so important."


Shanna Ramirez | © RTO Insider

Shanna Ramirez, CPS Energy's chief integrated security officer, said the San Antonio utility has long enjoyed a collaborative relationship with the military, which has four major installations and 250,000 retirees in the city. *Ergo*, the city's trademarked nickname, "Military City USA."


Aggreko's Dean Tuel (left) and NADBank's Andres Rangel | © RTO Insider

"We've been really successful about keeping the military aware of how we secure our mutual facilities," Ramirez said. "We have more people at the table, we keep buying a bigger table."


Christian Delarosa | © RTO Insider

"There's an acknowledgement we will not solve problems alone," said Christian Delarosa, deputy base civil engineer for Joint Base San Antonio. JBSA is composed of the Army's Fort Sam Houston and the Lackland and Randolph Air Force bases.

"The Air Force wants to keep focus on resiliency and low costs," Delarosa said. "We're still interested in saving energy, but we're now focused on resiliency and grid operations. It's going to take industry experts and academia to look at this problem and develop solutions."

Renewables Enjoy Positive Legislative Session


Chris Reeder | © RTO Insider

Attorney Chris Reeder, a partner at Husch Blackwell, reviewed the recent 86th Texas Legislature, painting it as a success for the renewable energy industry despite the efforts of the conservative Texas Public Policy Foundation (TPPF).

Reeder said the TPPF was at the forefront of a "sustained and aggressive and hostile campaign" against renewable energy during the recent session, which ended in May.

"They've made it a centerpiece of their political strategy to oppose renewable energy," he said. "When they say, 'Level the playing field,' others would call that a rollback. They have been very vocal and aggressive in shooting down our success to the economy of Texas.

"Any legislation with renewable energy attached to it automatically draws some level of opposition in our state House and state Senate," Reeder said. "That tends to misread the true situation, in which there's much more support out there than makes its way into the chatter you see in The Dallas Morning News or the trades." ■

— Tom Kleckner

ERCOT News

ERCOT Working to Set Cyber Incident Processes

By Tom Kleckner

ERCOT is seeking more time to hash out the details around a Nodal Protocol revision request that would establish notification responsibilities for the grid operator and its market participants during cybersecurity incidents.

During a workshop June 25, ERCOT staff said they will ask stakeholders to table NPRR928 in order to allow more time for comments on the proposal, which outlines a process for market participants to notify the grid operator about cybersecurity incidents. ERCOT is seeking to increase its awareness about the vulnerabilities of third-party systems that interact with its own systems, with an eye toward preventing interruptions to the grid.

A second workshop on the rule change will be scheduled in August or September, staff said.

ERCOT defines a cybersecurity incident as a malicious or suspicious act that "compromises or disrupts" a computer network or system belonging to ERCOT, a market participant or its agent that transacts with the grid operator that "could foreseeably jeopardize the reliability or integrity of the ERCOT system or … market operations."

"Does an incident compromise or disrupt? Does it jeopardize the reliability or integrity of ERCOT systems or market operations?" Senior Corporate Counsel Brandon Gleason said. "We're interested in things that are going to have an impact on something. ERCOT's perspective is we want to know actual events that are occurring and have the potential to impact others."

"We're interested in anyone who has access into our system," General Counsel Chad Seeley said. "We've tried to capture every access point into the system."

Staff said that while ERCOT shares information with various government oversight groups "depending on the nature of the event," it has no legal requirement to report cyber incidents as they are occurring.

Under NPRR928, the grid operator would send market notices, if necessary, to alert the market to an incident and actions being taken, while also disclosing the identity of any law enforcement agency notified about the event.

The protocol change will help cover those market participants that are not NERC registered entities. ERCOT has 939 market participants, less than 25% of which (191) are registered with NERC and subject to its reliability standards, including CIP-008.

Non-registered entities "don't have reliability nexuses, but they do have market nexuses," Gleason said.

FERC on June 20 approved a new NERC cybersecurity rule that expands reporting requirements beyond just those incidents that actually compromise or disrupt reliability tasks on the bulk electric system.

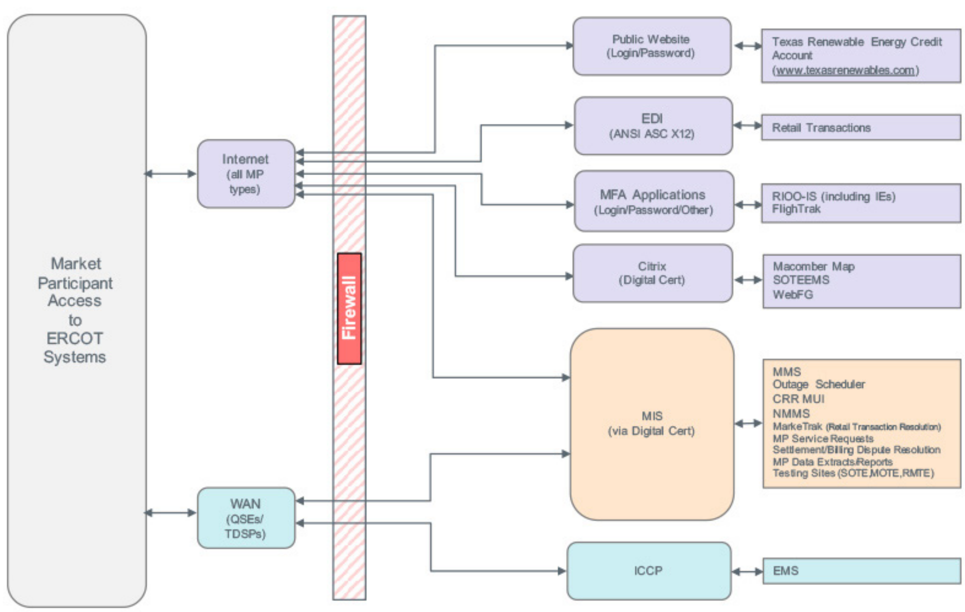
CIP-008-6 now requires NERC entities to report any incidents that compromise, or attempt to compromise, electronic security perimeters, electronic access control or monitoring systems, or physical security perimeters associated with high- and medium-impact BES cyber systems and attempts to disrupt operation of a BES cyber system. (See ***FERC OKs Cyber Reporting Rule***.)

In Texas, the state's Public Utility Commission, Department of Public Safety, Department of Information Resources and Cybersecurity Council all have cybersecurity oversight over ERCOT. At the federal level, oversight agencies include the departments of Homeland Security, Justice and Energy, the FBI, and FERC, in addition to NERC and others.

The Texas Legislature recently passed three cybersecurity-related bills, none of which affected NPRR928:

ERCOT's operations center | © *RTO Insider*

- *Senate Bill 64*, effective Sept. 1, directs the PUC to establish a program to monitor utilities' cybersecurity efforts that provide guidance on best practices and facilitate the sharing of information between utilities. It also requires ERCOT to conduct an internal cybersecurity risk assessment and submit an annual compliance report to the PUC.
- *SB 475*, effective immediately, establishes the Texas Electric Grid Security Council to facilitate the creation, aggregation, coordination and dissemination of best security practices. It is composed of the PUC chair, ERCOT CEO and Texas governor (or designated representative).
- *SB 936*, effective Sept. 1, requires the PUC to engage a cybersecurity monitor to manage outreach, research, develop and facilitate best practices and training, review voluntary self-assessments, and report back to the commission on preparedness. ■



ERCOT system access under NPRR928 | *ERCOT*

ERCOT News

ERCOT Real-time Co-optimization Falls into Place

By Tom Kleckner


IMM Director Beth Garza explains her concerns to the Texas PUC.

Real-time co-optimization (RTC) in ERCOT took another step toward become reality last week following a discussion between Texas regulators and grid operator staff.

Kenan Ögelman, ERCOT's vice president of commercial operations, told the Public Utility Commission on Thursday that he has his marching orders, thanks to a *memo* from PUC Chair DeAnn Walker.

"The memo allows us to get started on the key things. We do want a set of principles done by end of the year, if possible," Ögelman said during the PUC's regular open meeting.

RTC is a market tool that procures both energy and ancillary services every five minutes to find the most cost-effective solution for both requirements.

In her memo, Walker's suggested initial values for the RTC market's systemwide offer cap ($2,000/MWh) and the value of lost load ($9,000/MWh). She also agreed with staff recommendations to maintain the current market's low systemwide offer cap at $2,000/MWh and that the ancillary service (AS) demand curves replicate the operating reserve demand curve's pricing outcomes.

Walker suggested that further information be gathered for the PUC's July 18 meeting, noting that ERCOT stakeholders commenting in the docket (*48540*) have advocated for changes to the day-ahead market when RTC is implemented.

The only sticking point appears to be staff's recommendation that the current prohibition against withholding in the energy market be applied to the AS market.


PUC Commissioner Arthur D'Andrea

Walker said her understanding is that ERCOT plans to address stakeholder concerns by allowing resources to indicate whether they can provide AS "over the full range of their output." She said the commission did not need to address the issue because ERCOT stakeholders would fill in the details as they debate a requirement that resources provide a capacity offer curve that is qualified, online and capable of providing AS.

"I don't think we can sit here today and make those decisions," Walker said. "I was trying to set a basic framework. … We have to start building the system, but we don't have to paint it right now and decide what color to paint it."

ERCOT staffer Mark Bryant urged the commission to make clear that withholding resources "would constitute an anticompetitive behavior and would not be permitted." Beth Garza, director of the ERCOT Independent Market Monitor, sided with Bryant.

"As we tie ancillary services and energy together, the ability to withhold on AS becomes a much bigger lever that can be played out in energy prices," Garza said. She said exempting market participants with less than 5% of the market's resources "could give free rein to small parties to economically withhold ancillary services in a way that it has a great effect on energy prices."

"If your unit is available and capable of providing a service, there should be an offer," Garza said. "If you don't have an offer, one will be provided for you. There's still some work at the commission level to set that expectation and policy."

"The IMM's job is to make sure [anticompetitive behavior] doesn't happen, but we can't establish the rules so tight … that it chokes the market," Walker said.

In the end, staff promised to provide a proposal on how to address the smaller resources.

ERCOT has said it will take four or five years and at least $40 million to implement RTC, but that timeline could slip as the project's scope widens.

Commission OKs AEP Renewables' Investment

In other actions, the PUC cleared AEP Renewables' purchase of a 75% interest in Invenergy's Santa Rita East Wind project, a 302-MW facility currently under construction west of San Angelo. When the transaction closes, AEP will own and control 976 MW of the capacity that will be installed within the next 12 months in ERCOT (*49252*).

The commission also approved three settlement agreements that levied $170,000 in administrative penalties on ERCOT market participants:

- Stream SPE, a retail electric provider, was assessed $85,000 for improperly applied customer switch-holds (*49472*).
- NRG Texas Power (*49221*) and Golden Spread Electric Cooperative (*49476*) were assessed $60,000 and $25,000, respectively, for failing to adequately respond to non-spinning reserve service deployments. ■

ISO-NE News

NEPOOL Participants Committee Briefs

ISO-NE Board Age Limit on Ballot

NEWPORT, R.I. — A new effort by the New England Power Pool could give ISO-NE's most "senior" board members a longer shot at keeping their positions rather than aging out of eligibility.

The NEPOOL Participants Committee on June 25 approved a motion to ballot all members on a proposal to amend the Participants Agreement to allow people older than 70 to serve on the RTO's Board of Directors.

Members will specifically vote on authorizing the Joint Nominating Committee to waive the current 70-year-old age limit for candidates to stand for election or re-election, just as it now is authorized to waive the limit on three consecutive full terms.

According to a memo from PC Counsel Pat Gerity, RTO representatives told NEPOOL officers that the age limit reduces the pool of qualified candidates, risking the loss of "highly qualified and broadly supported board members" who turn 70. Without a waiver, Director Roberto Denis would age out next September after serving only two terms.

Janice Dickstein, ISO-NE vice president for human resources, said that while corporate boards increasingly rely on age limits rather than term limits, the RTO's age cap is more restrictive than 90% of organizations. She noted that most people serve on boards in their retirement, and that it takes time to get new board members up to speed on the issues specific to the region.

The PC approved the motion to issue the ballots with 76.88% of sectors in favor (Generation, 11.19%; Transmission, 16.79%; Supplier, 13.59%; Alternative Resources, 16.04%; Publicly Owned Entity, 16.46%; and End User, 2.81%).

For the PC to approve the amendment, the returned ballots need to represent at least half of fixed voting shares in each of a majority of NEPOOL sectors and achieve an overall 70% vote in favor.

The PC also approved balloting members on changing a sector definition, with Gas Industry proposed to become Fuels Industry. Subject to a positive vote and FERC acceptance, the American Petroleum Institute may apply to join NEPOOL as a Fuels Industry participant.

No Easing of Credit Requirements

The PC voted down a motion to change ISO-NE's Financial Assurance Policy (FAP) to allow market participants to use affiliate parent guarantees to obtain "an unsecured market credit limit or transmission credit limit" or use surety bonds "as an acceptable form of financial assurance."

The vote was 45.13% in favor (Generation, 16.79%; Transmission, 0%; Supplier, 11.55%; Alternative Resources, 9.44%; Publicly Owned Entity, 7.35%; and End User, 0%).

The proposal was sponsored by Calpine Energy Services, Direct Energy Business, Dominion Energy Generation Marketing, Exelon, Massachusetts Municipal Wholesale Electric Co., NextEra Energy Resources and PSEG Energy Resources & Trade.

The PC in 2004 voted to eliminate surety bonds from the FAP and in 2010 to eliminate parent guarantees.

ISO-NE opposed the proposal mainly as a threat to its ability to clear the markets because of reduced liquidity. It also feared that introducing weaker forms of financial assurance could result in substantial or even catastrophic losses to the RTO and its market participants.

Nested Capacity Tariff Changes Approved

The PC unanimously approved Tariff changes to accommodate the new modeling concept of nested export-constrained capacity zones in the Forward Capacity Market, starting with Forward Capacity Auction 14 to cover the one-year capacity commitment period beginning June 1, 2023.

The revisions address those cases where it's necessary to distinguish between a parent and nested zone (which represents a sub-zone within a parent zone), such as when capacity clearing price calculations differ slightly between the two.

Most of section III.13 of the Tariff already recognizes nested capacity zones, while other sections do not specify the type of zone when dealing with reconfiguration auctions or many settlement provisions.

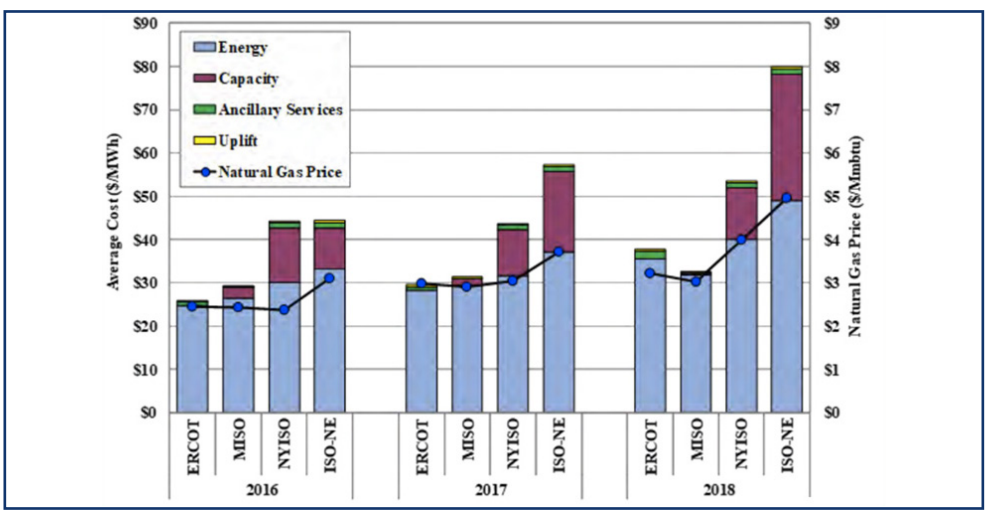
The first set of changes accommodate nested export-constrained capacity zones in the FCM, while the remainder clarify certain data submittals of costs and revenues for static delist and export bids in the FCM.

The RTO developed the changes, which were recommended by NEPOOL's Markets Committee.

ISO-NE CEO/COO Reports

ISO-NE CEO Gordon van Welie told the PC that the grid operator recognizes the market has to be adapted to the changing power system.

He said the region is rapidly catching up with California and Europe in the deployment of energy storage resources, but that there are few places as constrained as New England.



ISO-NE last year had the highest energy prices of all RTOs because of higher natural gas prices; it also had the highest net revenues because of higher capacity revenues. However, the EMM says this is not sustainable given falling capacity prices. | *Potomac Economics*

ISO-NE News

Nonetheless, the region has a good track record in solving problems, he said.

COO Vamsi Chadalavada *reported* that the RTO has so far received a record "show of interest" for FCA 14: more than 700 MW, compared to 250 MW for the last auction.

New capacity resource qualification is ongoing, and approximately 336 MW are available for the renewable technology resource exemption, he said.

The existing capacity resource qualification is complete, with about 258 MW of retirement delist bids and 21 MW of permanent delist bids received on March 15. Static delist bids were due June 13.

Chadalavada said the region has enough resources to replace the 690-MW Pilgrim nuclear plant, which retired at the end of May, largely with new resources coming into the market in southeastern Massachusetts.

FERC Update

FERC Commissioner Cheryl LaFleur, who is leaving the commission at the end of August, spoke of three broad themes facing the commission: resources for reliability, how to pay for them and needed infrastructure. She said the commission has the choice of regulating in a planned way by giving authority back to the states, or in an unplanned way by letting the market be cannibalized.

LaFleur said she looks forward to seeing NYISO's carbon pricing proposal when it is submitted and also suggested to the industry that now is not the time to submit filings containing open-ended legal questions, but rather agreements that parties have worked out among themselves.

She congratulated NEPOOL on being vital to the region, but she noted that the organization was not without controversy, mainly concerning its transparency, as evidenced by congressional hearings earlier in June, when Rep. Joe Kennedy III (D-Mass.) told her that "unless you are a member, you can't even observe any meetings or proceedings, let alone talk about it publicly." (See *FERC Probed on RTO Governance, Market Issues*.)

Jette Gebhart, deputy director of FERC's Office of Energy Market Regulation, told the PC that commission staff are busy now working through energy storage compliance filings.

EMM Report

ISO-NE last year had the highest energy prices of any RTO because of high natural gas costs, as well as the highest net revenues because of higher capacity revenues, External Market Monitor David Patton said, highlighting his still unpublished 2018 assessment of the ISO-NE markets.

The assessment shows ISO-NE had about 10% less congestion than other RTO markets because of substantial transmission investments over the past five years. However, transmission service costs were more than double the average rates in other RTO markets, Patton noted.

The first 13 FCAs reflect the retirement of nearly 5 GW of nuclear, coal and older steam turbine capacity, with increased reliance on gas-fired capacity. Fuel security concerns are heightened by the potential retirement of Exelon's Mystic Generating Station and the Distrigas LNG facility, Patton's report noted.

The EMM's baseline scenario fuel security evaluation for a two-week severe winter period shows very high utilization of oil inventory capacity and the need for LNG import capability, while load shedding would occur in a scenario with major reductions in natural gas availability.

The RTO's operational fuel security analysis (*OFSA*) last year also found tight fuel supply margins that could result in load shedding in the winters of 2022-2023 and 2023-2024, and in March ISO-NE filed an interim *proposal* with FERC to address winter energy security for those commitment periods. (See *NEPOOL MC Debates Energy Security Models*.)

Consent Agenda

The PC approved four rule changes on the consent agenda, following unanimous approvals at lower committees:

- OP-14 Appendix B (Reporting Requirements for Asset Related Demands and Dispatchable Asset Related Demands): Revisions to establish reporting requirements and cleanup changes to improve document flow. Recommended by the Reliability Committee.
- Tariff Section III.1.5.3: Revisions to include all dynamic resources in reactive capability audit requirements and specify criteria for such resources to perform such audits. Recommended by the Reliability Committee.
- Tariff Section I.2.2, OP-23 and OP-23G: Revisions related to reactive resources required to perform reactive capability auditing. The PC approved them with the understanding that two additional Tariff definitions would go back to the Reliability Committee, which recommended the measure.
- Revisions to Tariff Section II Schedule 2 to accommodate introduction of energy storage facilities and other administrative changes. Recommended by the Transmission Committee. ■

— Michael Kuser

MISO News

MISO Monitor Poses 6 New Market Recommendations

By Amanda Durish Cook

MISO Monitor David Patton delivers his 2018 State of the Market report to the board's Markets Committee. | © *RTO Insider*

Despite solid performance in 2018, MISO should adopt a new set of proposed changes to its markets to ensure they run more efficiently, the RTO's Independent Market Monitor has recommended.

In his 2018 State of the Market report, Monitor David Patton produced six new market *recommendations* on top of previous suggestions not yet adopted by MISO. They range from clarifying what constitutes an emergency declaration to reserving more transfer capability on the RTO's Midwest-South transmission constraint.

MISO's market was overall competitive in 2018, even when considering three emergency declarations, Patton told the Board of Directors' Markets Committee in a conference call Wednesday.

He *said* supplier offers were "highly competitive" last year and market power mitigation rare, though MISO experienced a "sharp increase in the frequency of generation emergencies partly due to changes in reserve margins and resource mix." The RTO handled about $29.9 billion in gross market charges in 2018.

MISO lost about 2 GW worth of unforced capacity in 2018, mostly from coal resources, a loss that was only partially offset by wind resources, Patton said.

"We are seeing a continuation of the trend of renewables replacing coal units. That's a trend we expect to continue," he said.

Patton said coal and nuclear generators still operated at the highest capacity factors last year, with coal still producing the greatest share of energy and setting systemwide prices in 46% of hours, down from 55% in 2017.

Improvements for Emergencies

Ever increasing emergency declarations have given the Monitor ample fodder to review MISO's emergency decision-making. In his report, Patton criticized the RTO for being inconsistent in how it issues warnings, declarations and calls for load-modifying resources (LMRs), saying he wants it to clarify the criteria for calling emergencies and "improve the logging" for taking emergency actions.

He said the inconsistency may have something to do with the fact that MISO is now experiencing region-specific — rather than systemwide — emergency conditions.

"These regional emergencies have only been occurring in the last few years. The risks are relatively unknown versus systemwide emergencies. The procedures around them are not as clear," Patton said.

The Monitor also recommended MISO implement fixed default floors to reduce the unpredictability of its emergency pricing. Emergency default floors are currently set by a supplier's offer, which can result in them being either too high or too low under different circumstances, he said.

Reserves on the Midwest-South Transfer Limit

To avoid exceeding the Midwest-to South regional transfer limit during emergencies, Patton recommended that MISO procure operating reserves on the line to "better allow it to respond to regional system contingencies."

He said MISO could come to an agreement that would pay the joint parties to the transfer settlement the clearing price for subregional reserves as well as for the deployment of the reserves, which would use capacity over the line's 3,000-MW contractual limit. Use of the reserved transmission would cost $500/MW multiplied by the quantity of reserves deployed, Patton suggested.

"We're going to come to an end with the joint parties on the regional directional transfer," Patton reminded the board. Starting Jan. 31, 2021, MISO and SPP's settlement may be terminated by any party with a year's notice. Without a replacement settlement in place, flows would be limited to MISO's original 1,000-MW contract path in either direction.

Unreported Outages

Patton also wants to prevent emergencies through a clearer picture of actual supply. He said MISO should take inventory of unforced and unreported outages and derates during tight supply periods, then reduce capacity accreditations accordingly.

"There are a lot of outages and derates that are not reported, so they're completely ignored," Patton said.

He recommended that MISO measure all derates and outages — planned or unplanned — under its tightest supply conditions and calculate how much generators are actually delivering to the system during the tightest hours.

MISO News

Patton said the change stands to affect peaking resources the most, which aren't called on very often, so forced outages don't affect their accreditation too much.

"We're giving them way too much credit," Patton said.

Assessing Capacity Needs

Patton also recommend three adjustments to help MISO improve the calculation of its capacity supply and demand, including: 1) working a realistic amount of unforced outages and derates during peak load conditions into planning assumptions; 2) accounting for planning resources' behind-the-meter process load; and 3) devising a method for validating capacity suppliers' submitted data.

"We have identified a number of areas where erroneous data has been submitted by suppliers, resulting in sizable capacity accreditation inaccuracies," he said.

Patton also noted that, unlike station service loads, planning resources' process — or industrial — loads "continue when the power generation equipment is out of service." He said because process load must be served alongside MISO's other firm load, it should be recognized in the RTO's capacity requirements.

Easing Tx Constraints

Finally, Patton recommended the RTO use a lower generator shift factor (GSF) cutoff for transmission constraints with limited relief. The RTO currently employs a 1.5% GSF cutoff to identify which generators to optimize in its dispatch when managing the flows on a constraint, but the Monitor said that policy eliminates most or all of the economic relief available for some constraints.

"The reality is that there are many, many generators. The problem is our software may not solve when 150 generators can relieve a constraint," Patton said.

Patton said MISO should introduce new software capabilities that allow for a 0.5% GSF cutoff.

"It's a relatively simple idea," Patton said, adding that it was a good time for the recommendation because the software capability could be worked into MISO's new market platform.

29 Outstanding Recommendations

The six new recommendations bring the running total of Monitor recommendations to 29. Patton said MISO addressed four of his recommendations in 2018 and early 2019.

The RTO last year implemented three recommendations from 2012, creating dynamic narrowly constrained areas for market power mitigation, tightening thresholds for uninstructed deviation and implementing five-minute settlements — a "very important accomplishment," according to Patton.

MISO also addressed a 2016 recommendation last year by getting FERC's permission to apply existing reserve procurement enhancement — first rolled out in 2011 in MISO Midwest — to the sub-regional constraint between Midwest and South. The enhancement models the effects of transmission constraints by accounting for the deliverability of reserves deployed from market-cleared resources and adding a marginal delivery cost to the zonal reserve market clearing price.

The RTO said it will review the Monitor's 2018 report and post a public response in October. Its Tariff provides it 120 days to respond to the State of the Market report. By December, it will have decided whether to incorporate any of the Monitor's suggestions into its ongoing Integrated Roadmap list of market improvements. ■

MISO News

MISO Allocation Plan Fails on Local Project Treatment

By Amanda Durish Cook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MISO's exhaustive proposal for overhauling the cost allocations for market efficiency projects (MEPs) came a hair's breadth from getting FERC approval last week — but for one key detail.

FERC on June 24 rejected the plan — years in the making — after finding MISO's cost allocation treatment for a new category of local economic transmission projects was at odds with the principle of cost causation (*ER19-1124*).

MISO filed the cost allocation scheme in February, part of a broader proposal to lower the voltage threshold for MEPs from 345 kV to 230 kV and eliminate a 20% footprint-wide postage-stamp cost allocation method for projects.

The plan also set out to create two new project benefit metrics in addition to the RTO's existing adjusted production costs metric. One metric would have recognized the value of deferred or avoided reliability transmission projects, while the other would have considered the value of reducing power flows on the contract path on shared transmission from MISO Midwest to South. (See *MISO MEP Cost Allocation Plan Goes to FERC*.)

The proposal also would have provided limited exceptions to the competitive bidding process if a transmission project were needed immediately for the sake of reliability.

'Inconsistent'

MISO's proposal also sought to create a new project type — the local economic project — meant for smaller, economically driven transmission projects between 100 and 230 kV, where 100% of costs would be allocated to the local transmission pricing zone containing the line. The smaller project type would have replaced the current "economic other" project category, the costs for which were also allocated to the specific pricing zone in which they are located.

But unlike an "economic other" project, a new "local" project would not only have to meet a local benefit-to-cost ratio of 1.25-to-1 or greater within its pricing zone, it would also be required to show the same minimum regional 1.25-to-1 ratio required of MEPs.

And therein lay the rub for FERC, which rejected the notion MISO could require a local project to demonstrate a solid regional benefit while still allocating 100% of its costs to the local pricing zone rather than across all zones standing to benefit.

"In this case, [MISO and its transmission owners] do not contend that they are unable to calculate the distribution of benefits for local economic projects with the same granularity as market efficiency projects," the commission wrote. "Instead, filing parties' proposal suggests the opposite conclusion — that, if MISO implements the proposed benefits metrics, it will be able to more precisely calculate the distribution of benefits. … Thus, every time MISO approves a local economic project in its [transmission expansion plan], it will first identify all benefiting zones in the same manner it does for market efficiency projects."

The commission went on to say MISO had proposed metrics to identify the regional benefits of local projects but "ignored the results of its regional benefit metrics analysis in order to allocate the costs only to the transmission pricing zone(s) where the project is located. This combination of elements within the proposal therefore is inconsistent with the cost-causation principle."

Multiple protesters, including MISO Industrial Customers, WEC Utilities and the Michigan Public Service Commission, filed with FERC to criticize the misalignment of benefits and costs. Others dubbed the regional and local 1.25-to-1 benefit-to-cost ratio requirement a "double hurdle."

Competitive transmission developer LS Power went a step further and said the project type has "no ascertainable regional purpose, directly harms ratepayers and benefits only incumbent transmission owners." LS Power also filed a separate MEP complaint in early June, asking FERC to compel MISO to lower the threshold for competitively bid transmission projects from 345 kV to 100 kV. (See *Complaint Seeks Bigger Role for Smaller MISO Projects*.)

But the ruling was not all bad news for MISO. FERC acknowledged the work the RTO and its stakeholders put into developing the cost allocation proposal, which "includes compromises resulting from a three-year discussion among diverse stakeholders with myriad competing interests." The commission said most of the plan appeared to be reasonable, and it urged MISO "to consider whether the proposal could be modified to address the cost-causation issue … while retaining the benefits of other aspects of the proposal."

MISO was counting on the new cost allocation for projects in its 2019 Transmission Expansion Plan.

Interregional Filings Rejected too

FERC last week also rejected two interregional cost allocation filings MISO made for PJM and SPP because they contained a cost allocation method like the one MISO proposed for local economic projects (*ER19-1156-000 and ER16-1959-005*). MISO had proposed that its share of interregional economic projects with voltages below 230 kV but at or above 100 kV be allocated 100% to the transmission pricing zones where the project is located.

With the rejections, a piece of MISO's allocation compliance over the longstanding complaint by Northern Indiana Public Service Co. remains unresolved. (See *FERC Signals Bulk of NIPSCO Order Work Complete*.) FERC said MISO now has 90 days to let the commission know if it plans to use the existing MEP cost allocation method for MISO-PJM interregional economic transmission projects above 100 kV but below 345 kV or propose revisions for a separate cost allocation process. FERC's 2013 NIPSCO order lowered the minimum voltage threshold for MISO-PJM interregional market efficiency projects from 345 kV to 100 kV. ■

MISO News

MISO Keeps Cards Close on Market Platform Details

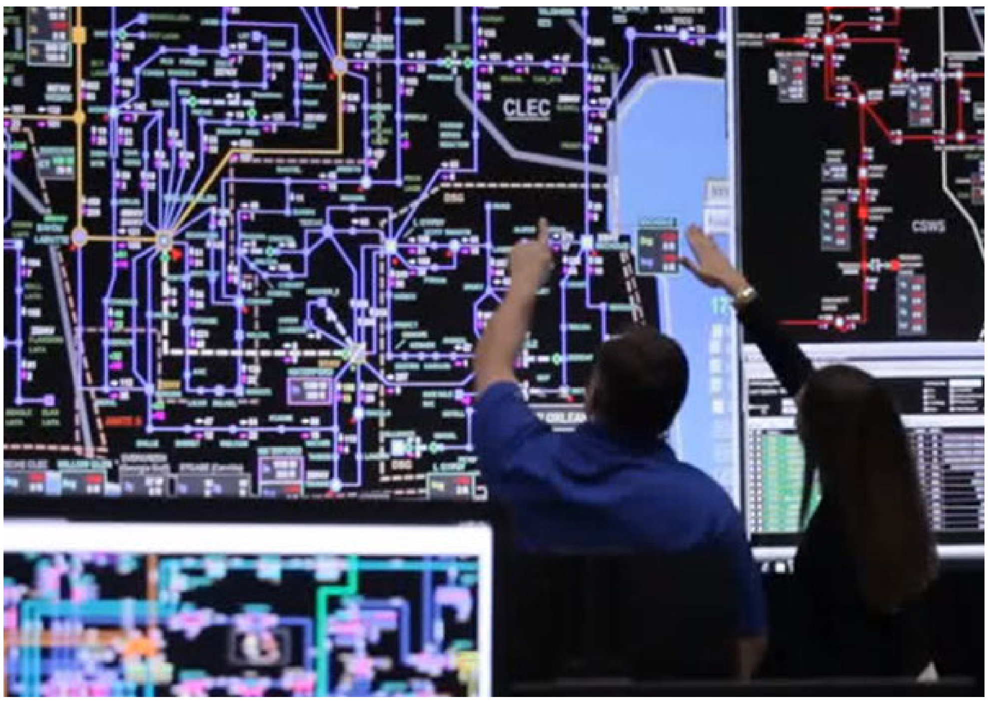
By Amanda Durish Cook

While MISO continues to acknowledge that General Electric is behind schedule on delivering a key piece of the RTO's new market platform, it is tight-lipped in disclosing other project particulars — including who will ultimately take on the bulk of the work.

Initial deliveries from GE are "lagging," MISO *reported* to the Board of Directors' Technology Committee on June 25. But executives are offering few public details on other vendors they might be considering, though they still target a 2024 implementation.

The RTO recently told the board that delivery of a new day-ahead market clearing engine is running behind schedule, with GE now expected to deliver at the end of the year instead of in August as originally planned. (See "Vendor Delay on Market Platform Replacement," *MISO Board of Director Briefs: June 20, 2019*.)

Last week, Executive Director of Digital Transformation Kevin Caringer said MISO would only discuss GE's performance in the Technology Committee's closed session because the RTO is negotiating contracts with multiple vendors and is committed to securing "the best value" for stakeholders.



MISO control room | *MISO*

He did note the RTO continues to hold monthly executive meetings with GE.

"Our goal is always to adapt and move quickly, either with our own performance or vendor performance," Caringer said.

MISO is exploring using different vendors for the platform's model manager and private cloud development, Caringer said. In spring, the RTO said it would divide the platform replacement into a series of smaller agreements with vendors rather than one large contract with an outside party as originally planned. The move will undo its earlier plan to reveal a single chosen vendor at the beginning of 2020 after finishing an evaluation of alternatives to GE. (See *MISO Seeking Multiple Vendors for Market Platform Redesign*.)

The RTO is expected to launch the market clearing engine in 2022 and have the full new market platform operational in 2024. It now expects to spend about $139.7 million on the project, up from the $133.7 million estimate last year. However, it has also made provision for a 20% — or $26.7 million — contingency fund, which it could later decide to include in the project budget.

Meanwhile, MISO reported that a communication system went down on April 20, forcing it to use a backup system for about 28 minutes. Chief Information Security Officer Keri Glitch said the malfunction was associated with a power strip failure. ■

MISO News

OMS Outlines Long-term Tx Planning Principles

By Amanda Durish Cook

The Organization of MISO States last week issued a set of *principles* intended to guide the RTO's approach to long-term transmission planning.

The release of the document comes as MISO and its stakeholders are debating whether the RTO should launch a second regional transmission package similar to 2011's multi-value project (MVP) portfolio. (See *MISO Stakeholders: New Blueprint Needed for Tx Planning*.)

"Considering the timeline associated with infrastructure planning and development, it's important to get started now to ensure the grid we need in the future will be there to maintain reliability and support the evolving resource mix," Minnesota Public Utilities Commissioner and OMS Vice President Matt Schuerger said in a statement.

OMS approved the eight basic principles in mid-June as part of a position statement, with support from 12 of its 17 regulator members.

Among the precepts laid out in the document, OMS states that MISO's long-term planning must account for the changing resource mix based on "robust input from the states." The group also wants the RTO to consider reliability requirements when planning transmission and to test transmission proposals "under a variety of system conditions and scenarios."

OMS also asked for an exhaustive and transparent stakeholder process should MISO develop a new cost allocation for a long-term plan. It also said the RTO should move quickly to assess system needs if it's planning on a new long-term transmission package "given the long time frames expected for infrastructure planning and development."

Other principles for MISO to follow include:

- Producing cost-effective solutions to "known physical and contractual system constraints." Here, OMS specifically called out the MISO Midwest-to-South regional transfer limit.
- Evaluating multiple transmission and non-transmission alternatives on a "level playing field."
- Publishing the cost impacts to subregions, including the costs of both moving ahead with or delaying transmission plans.
- Ensuring that any state in the MISO footprint is not negatively impacted by a long-term transmission plan.

| © RTO Insider

MISO executives at the Board Week meetings in June said the region must invest significantly in transmission investment to accommodate all the projects in the current 100-GW interconnection queue; however, RTO staff also expect several unprepared generation projects to drop out.

Opposition

Two MISO South states and the city of New Orleans came out in opposition to the principles, calling them "vague and overly broad" and lacking a "clear goal."

"No one has demonstrated that these changes are needed or that MISO's current long-range transmission planning process is unjust or unreasonable," the Louisiana Public Service Commission, the Mississippi Public Service Commission and the New Orleans City Council wrote in a minority dissent.

They also said the principles won't provide additional guidance because MISO already employs such principles in its long-term transmission planning.

"These principles are unnecessary and open to endless interpretation. To the extent MISO's existing long-range transmission planning processes are unable to address a specific planning goal or object, interested stakeholders should raise those concerns within the MISO stakeholder process," the opponents said.

The Illinois Commerce Commission chose not to take a stance on the document, and the Manitoba Public Utilities Board did not participate in crafting the principles.

At an Advisory Committee meeting June 19, Schuerger said the "common sense" principals were settled on after many months and the document represented "broad support" for "key positions and policies."

"It was not a unanimous vote; not everyone agreed," Schuerger said, but he noted that most states came together in agreement.

"We are working continually to bring all of our states together," he added.

Study Scoped for MISO-SPP Seams

In a separate development related to transmission planning, Independent Market Monitor David Patton last week revealed the *scope* of the joint analysis on seams issues requested by OMS and the SPP Regional State Committee. (See *RSC, OMS Approve Monitors' Seams Study*.) Patton called MISO-SPP market-to-market coordination was his "No. 1 priority."

The study scope focuses on eight areas for improvement: market-to-market coordination; possible creation of targeted market efficiency projects like those between MISO and PJM; more efficient interface pricing; optimization of interchange transactions across the RTOs' interface; better management of the regional directional transfer limit; outage scheduling and day-ahead coordination; elimination of rate pancaking; and possible joint dispatch.

"Some of these issues we've raised in our reports, and some the SPP Monitor has raised," Patton said during a call hosted by the Board of Directors' Markets Committee on Wednesday.

Patton said he thought analyses on rate pancaking and joint dispatch would be the least beneficial, the former because it would not reduce production costs, and the latter because it might require some merging of the RTOs.

"That one confuses me," he said of joint dispatch.

Patton said the RTOs could see more economic benefits from optimizing their interchanges and better coordinating their market-to-market process. But overall, he praised the work between the MISO and SPP states.

"I actually think there are some issues on here where the states can help the RTOs come to a consensus, an agreement," Patton said.

He said the goal is to complete the analyses before 2020. MISO executives said they may have to adjust their 2019 budget in order to compensate the Monitor and his staff for the extra work. Patton said he would come up with a statement of work soon.

The Markets Committee also addressed the study in closed session immediately following the meeting. ■

MISO News

Minnesota Approves Huntley-Wilmarth Line

By Amanda Durish Cook

The Minnesota Public Utilities Commission on Thursday approved a proposal by ITC Midwest and Xcel Energy to build the Huntley-Wilmarth transmission project in the state's south.

The *project* consists of a nearly 50-mile 345-kV line connecting Xcel's Wilmarth substation and ITC's Huntley substation in south-central Minnesota near the Iowa border (*17-184 and 17-185*).

Estimated costs for the project, which will include substation upgrades, range from $88 million to $108 million, more than MISO's original $81 million estimate.

Huntley-Wilmarth was part of MISO's 2016 Transmission Expansion Plan, meeting criteria to qualify as a market efficiency project. As such, it would have been open to competitive bidding if not for Minnesota's right-of-first-refusal law.

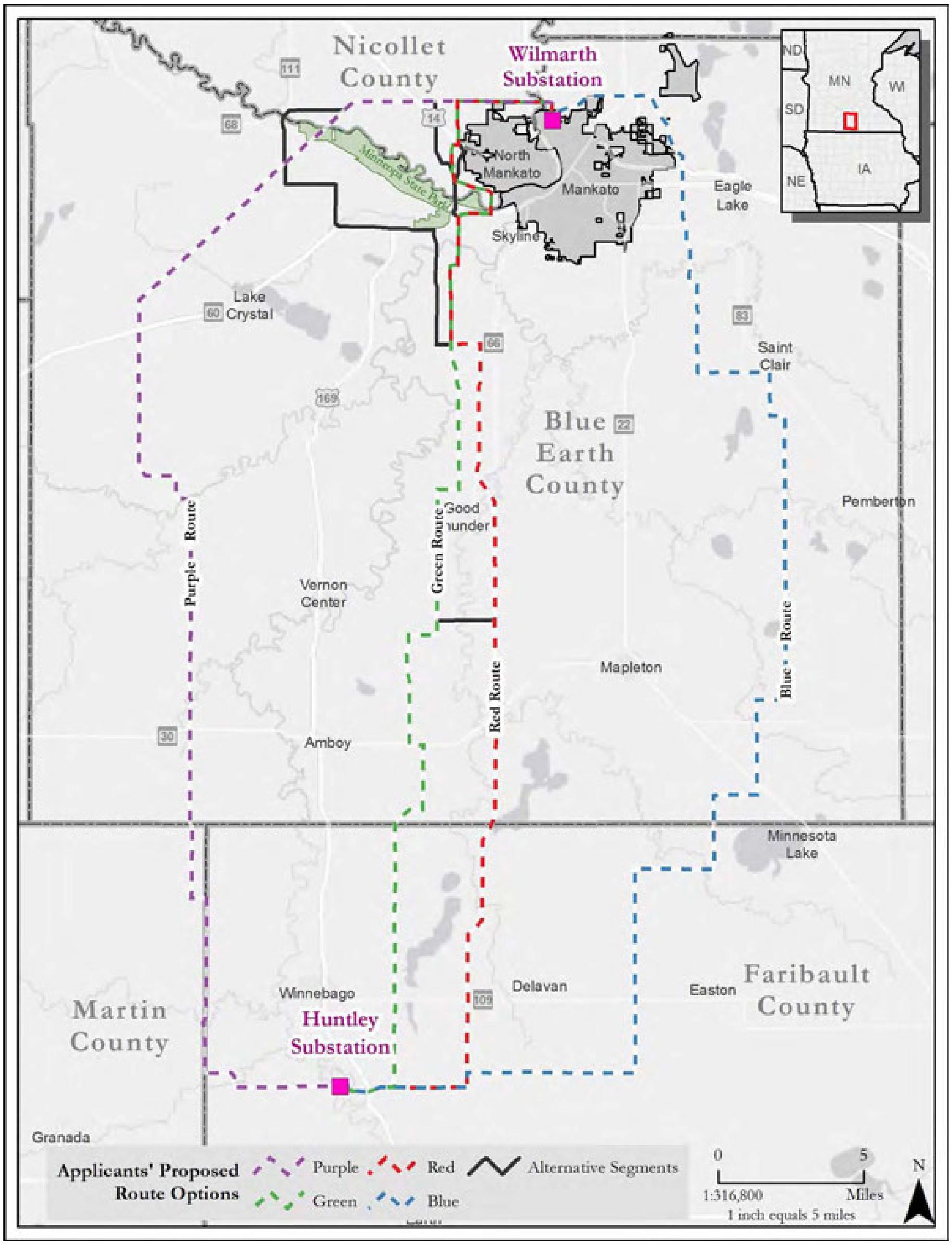
At the time, MISO respected the ROFR and declined to open the project to competitive bidding. (See *MISO Board Approves MTEP 16's $2.7B in Tx Projects*.) Last year, the U.S. District Court for Minnesota rejected competitive developer LS Power's challenge to the Minnesota law. (See *Courts Uphold Minn. ROFR, MISO Cost Allocation*.)

Xcel and ITC plan to start construction next year, with the line expected to be in service by the end of 2021. The utilities submitted applications for permitting to the Minnesota PUC in January 2018.

Xcel Energy-Minnesota President Chris Clark said the line will help facilitate Xcel's *goal* to reduce carbon emissions 80% by 2030 and produce only carbon-free energy by 2050.

"The Huntley-Wilmarth project will provide several local and regional benefits including relieving congestion on the transmission grid, delivering clean, affordable energy to customers and increasing property tax revenues to local governments," Xcel Senior Vice President of Transmission Michael Lamb said in a release.

In May, Administrative Law Judge Barbara Case found that "no more reasonable and prudent alternative has been identified to alleviate current and potential future transmission congestion in Southern Minnesota." Case *said* the project will strengthen the area's reliability, allow Minnesotans access to lower-cost energy and will lower emissions by tapping into renewable generation, allowing area coal plants to retire. ■



Huntley-Wilmarth project map | *Xcel Energy*

| *Xcel Energy*

NYISO News

Carbon Pricing Study Navigates Shifting NY Landscape

By Michael Kuser

RENSSELAER, N.Y. — If you've ever seen a circus performer riding two horses around the ring, one foot on each, you have a good idea of the balancing act Analysis Group's Sue Tierney had to execute in detailing the preliminary *results* of her firm's carbon pricing study for NYISO.

Tierney's performance came just days after the New York legislature passed the Climate Leadership and Community Protection Act (*A8429*), a development that could further complicate NYISO's carbon pricing effort as it moves to a conclusion. (See "New Energy Law Could Affect CO_2 Market Design," *NYISO Business Issues Committee Briefs: June 20, 2019*.)

"We are looking at the carbon proposal as proposed by NYISO last December, although we are now revising our work to take into account the implications of shifting public policies in New York," Tierney told NYISO's Installed Capacity/Market Issues Working Group (ICAP/MIWG) on June 24.

The third-party study examining the impacts of pricing carbon into NYISO's wholesale electricity markets is intended to augment the Brattle Group report process that concluded in December, and is underway just as the new bill makes statutory many of Gov. Andrew Cuomo's environmental targets, such as requiring 70% of the state's electricity to be generated by renewable resources by 2030.

"We are not going to advocate for one particular action or another, though our point of view may be obvious from our analysis," Tierney said. The final results are expected to be previewed with stakeholders ahead of the ISO posting the technical report and a separate summary for policy makers.

The new law would nearly quadruple the state's offshore wind energy goal to 9 GW by 2035 and target making the electric system carbon-neutral by 2040. The bill also doubles distributed solar generation to 6 GW by 2025 and targets deploying 3 GW of energy storage by 2030.

After presenting information about changes in NOx emissions that could be anticipated with a carbon price in the NYISO energy market, Tierney said such outcomes are important, "even with the peaker rule in New York City," referring to the state Department of Environmental Conservation's proposal to revise its Clean Air Act regulations. The changes to lower allowable NOx emissions from simple cycle and regenerative combustion turbines during the ozone season would go into effect May 1, 2023, with generator compliance plans due by March 2, 2020. (See *NY DEC Kicks off Peaker Emissions Limits Hearings*.)

In contrast, the new climate bill will take effect once it's signed by Cuomo, expected soon. The bill will assign the responsibility of adopting and enumerating the new standards to the DEC; establish an environmental justice advisory group; and create a 22-member "New York state climate action council" that "shall consult with the climate justice working group ... the Department of State Utility Intervention Unit and the federally designated electric bulk system operator."

> **"We are not going to advocate for one particular action or another, though our point of view may be obvious from our analysis."**
>
> — Sue Tierney, Analysis Group

Price Signals

"The 70% renewables target in the new bill is consistent with what the governor has been saying about the electric sector since January," Tierney said. "There's going to be more demand for electricity because of these goals now established in the act."

The power sector will play a key role, given the intent to convert transportation and building heating and cooling end uses to electricity, she said.

	% of NYISO Resources (Share of Business-as-Usual generation)		
	2009	2018	2030
Hydro	19% (4,236 MW)	21% (4,252 MW)	Will add the 2017, 2018, 2019 CES and 2018 offshore wind contracts (together totaling approximately 5,000 MW). GND Targets would double wind and solar, and ramp up offshore wind to 9,000 MW by 2035
Wind	1% (77 MW)	3% (1,739 MW)	
Other (incl. utility-scale solar)	2% (408 MW)	2% (382 MW)	
Total	22% (4,721 MW)	26% (6,373 MW)	70%

The 2030 renewables target will require substantially more incremental resources beyond those already under contract, or anticipated by upcoming solicitations.

A price on carbon in NYISO markets, based on the Social Cost of Carbon, could provide a relatively stable price signal for investors in clean energy resources, supporting an efficient transition, and reducing NYS's need to rely on out-of-market contracts to facilitate entry of renewables.

NYSERDA procurements of renewable attributes to date:

- **Over 11 RPS "Main Tier" solicitations, NYSERDA contracted with 2,241 MW of new renewable capacity (1/2005 - 5/2016).**
- **Over 2 CES solicitations in 2017 and 2018, NYSERDA contracted for an additional 2,748 MW of onshore wind (1,040 MW), utility-scale solar (1,687 MW), and hydro (3 MW), to be operational by 2023. A third CES solicitation (2019) is underway. A 2018 solicitation for 800 MW of offshore wind is awaiting final awards and contracts.**

New York's 2030 renewables target will require substantially more incremental resources beyond those already under contract or anticipated by upcoming solicitations. | *Analysis Group*

NYISO News

Adding that the bill will also include deeper energy efficiency measures, Tierney said the other forms of "beneficial electricity use" promoted in the statute would create pressure to increase electricity supply and demand.

"This is the yin and yang of more electricity use and better efficiency," Tierney said. "If you go meet all these renewables goals and growing demand with long-term contracts for [renewable energy credits], it would mean an increasingly large — and potentially unsustainable — share of the NYISO market under out-of-market, [policy-driven] contracts. By contrast, a carbon price could lessen the reliance of certain renewables on out-of-market contracts."

A carbon pricing mechanism could stimulate entry based on wholesale price signals and reduce risks associated with increasing quantities of supply under long-term contracts in FERC-regulated wholesale markets, the presentation said. It noted that by 2030, if all new renewables entered the market with long-term REC contracts, in addition to those already under contract, and if zero-emission credit contracts were extended for the FitzPatrick and Nine Mile Point 2 nuclear plants beyond 2029, roughly 50 to 60% of supply would be under contract.

Howard Fromer, director of market policy for PSEG Power New York, said, "The bill directs a significant portion of the state's clean energy and energy efficiency dollars to environmentally disadvantaged communities ... perhaps reducing the amount available for subsidizing renewable energy resources."

"The point here is that carbon pricing complement and reduce the role of long-term or out-of-market contracts," Tierney said. "Having as full a toolkit as possible will benefit policymakers. It could provide greater visibility in energy markets for the value of zero-carbon resources, and possibly even help the upstate nukes beyond 2029, when the ZEC program ends. I have no idea whether the nuke owners would act in response, but a price signal is better than nothing."

"People don't dismiss three years of pain so easily. If any report should be balanced, this is the one."

— Erin Hogan, UIU representative

The Brattle study and a separate *analysis* released in May by the ISO's Market Monitor, Potomac Economics, both point to power production efficiency improvements, lower emissions (in environmentally disadvantaged communities in particular), public health improvements and reduction in overall use of natural gas, Tierney said.

Public Benefits

Regarding public health benefits and other impacts, "Brattle and the Potomac Economics study could understate some impacts ... because of their underlying assumption that all of the renewables needed to meet the prior 50% target by 2030 would show up in any event in the base case at no apparent cost to consumers," Tierney said.

She added that that level of clean power is not free: "So the question that is still unanswered is whether a carbon price would help reduce the overall cost of entry of renewables?

"A carbon price would affect the dispatch of fossil units, and that will reduce local air emissions, as well as carbon emissions," Tierney said. "We wouldn't have protests about power plants if there were no benefit in removing them."

Mark Reeder, representing the Alliance for Clean Energy New York, said, "There are a number of benefits of carbon pricing that Brattle said will occur but which Brattle said were too hard to quantify, so [they] are set to zero ... like the benefits of increasing the likelihood of life extensions of existing hydro, the financial benefit to [the New York Power Authority], etc."

On the Market Monitoring Unit's analysis of the impacts of carbon pricing, which for consumer price impacts considered the two scenarios of base case and repowering, Reeder pointed out that the first three years of a carbon charge would cost consumers, but the following seven years would save them money, and he asked why not average the effect.

Erin Hogan, representing the UIU, said it would be better not to average, that "people don't dismiss three years of pain so easily. If any report should be balanced, this is the one." ■

PJM News

Exelon: PJM 'Buried the Lede' on Nuke Study

By Christen Smith

WILMINGTON, Del. — Exelon told PJM's Markets and Reliability Committee on Thursday that the RTO "buried the lede" in its analysis of nuclear plant retirements in Ohio and Pennsylvania, suggesting instead that results prove the reactors offer value worth saving.

"We think the results show it makes sense to preserve zero-carbon sources and replace retiring coal units with gas units," said Jason Barker, director of wholesale market development for Exelon. "The data shows better results than the response that PJM promoted. Frankly, it sort of buried the lede."

Exelon manages the largest nuclear portfolio in the country, including the decommissioned Three Mile Island near Harrisburg, Pa. (See *Exelon to Close Three Mile Island*.)

The PJM *study*, published June 7, concluded emissions will drop regardless of whether FirstEnergy's Perry and Davis-Besse facilities in Ohio and its Beaver Valley plant in Pennsylvania close or stay open — though the reduction would be significantly greater if the plants stay online. (See *PJM: Nukes Keep Energy Costs Down, in Theory*.)

Regulators in both states asked PJM to simulate the impact of losing the plants on the power grid and greenhouse gas emissions as subsidy plans pend in each legislature. Staff obliged the requests by creating five scenarios against which to compare what the RTO considers its base case: all three plants retire, and scheduled gas and renewable generators with an in-service date in 2023 come online, reducing net-load payments by $1.6 billion. Carbon dioxide emissions would likewise decrease by 4.3 million tons, while nitrogen oxide and sulfur dioxide emissions would fall by 37,900 tons and 18,200 tons, respectively, the analysis concluded.

Should all three nuclear plants stay operational and new generation enters the market as planned, net-load payments would decrease by an additional $474 million from the base case. In Pennsylvania, emissions of CO_2, NO_x and SO_2 would decrease from the base case by 4.7 million tons, 5,000 tons and 3,300 tons, respectively. In Ohio, the additional emission reductions total 3.7 million tons, 2,400 tons and 3,500 tons, respectively.

The results are similar — net-load savings increase and greenhouse gas emissions decrease — when either just Beaver Valley or the Ohio plants stay online, PJM found.

"The data really reveals here the benefits" of keeping the plants open, Barker said. "The base case demonstrates coal to gas switching, and we think that will occur regardless of the fates of the nuclear plants. Simulation 1 is the real story … which is what are the impacts of maintaining these units."

Critics have argued that PJM's other simulations that reduce the number of gas units scheduled to come online by 50% as "more realistic" than the first scenario — a result of nuclear subsidies that could come to fruition and discourage market entry.

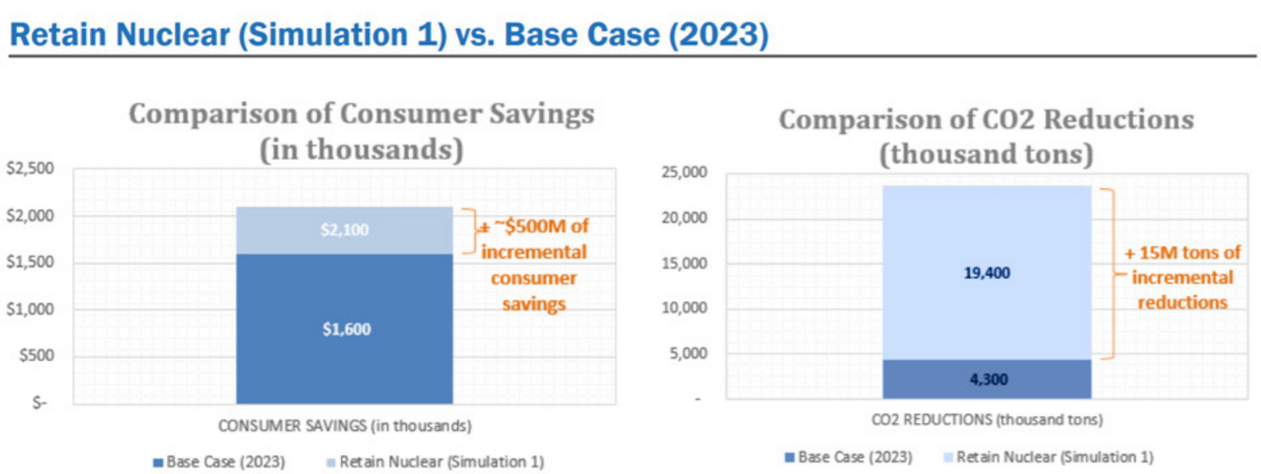
Barker argues that those scenarios "aren't very credible" because PJM made no consideration of how many projects already had interconnection study agreements, where these projects were located or how committed developers were to completing them.

Exelon's *analysis of PJM's data* purports that even if developers canceled 4.6 GW of scheduled gas units, the combined impact of coal retirements, preserved reactors and renewable penetration would still reduce carbon emissions by 16.8 million tons and reduce energy costs $1.7 billion.

"PJM answers the wrong question," Barker said. "The story is really in the difference between the base case and the simulation. We just unmasked the data."

Stu Bresler, PJM's senior vice president of operations and markets, said the RTO stands by its analysis.

"We think subsidization of significant generation of any type would lead to long-term reduction in entry," he said. "Our intent was to throw it all out there … to let stakeholders apply whichever subsidy level they think is most appropriate." ■



Comparison Case	Net Tons CO_2 Avoided	Additional Consumer Value at $5.27/ton (RGGI[2])	Additional Consumer Value at $44/ton (Social Cost of Carbon[3])
Retain Nuclear	19.4M	$102M	$776M

Comparison of cost savings and emissions reductions in PJM's first simulation, which preserves all three FirstEnergy nuclear plants | *Exelon*.

FirstEnergy Extends Clock on Ohio Nuke Plan

Continued from page 1

next refueling cycle without the certainty of critical legislative support. We remain on path for a safe deactivation and decommissioning. Should we receive the long-term certainty that comes with an affirmative vote within this time frame, we will immediately re-evaluate our options."

The Senate Energy and Public Utilities Committee on Wednesday unveiled a modified House Bill 6 that would subsidize both nuclear and renewable energy generation, walking back House-approved language that gutted Ohio's renewable portfolio standard and replaced it with fees for FirstEnergy's nuclear facilities and two Ohio Valley Electric Corp. coal plants. Committee Chairman Steve Wilson (R) arranged for testimony on the revised bill over the weekend, but senators never took a vote.

Wilson told *RTO Insider* last month he was working to give FES an answer by Sunday. According to tweets about Saturday's hearing, however, Wilson said he'd rather get the bill right than stick to the company's timeline.

Dan Lushcek, a Senate staffer, told *RTO Insider* on Monday that the committee will consider a slew of other amendments to the bill before taking a vote.

"I know it's Sen. Wilson's intention to work on the plan and meet before the scheduled session on July 17," he said. "Whether it's just more hearings or an actual vote, I can't say for sure."

Some opponents of the subsidies contend the reactors are profitable and in no danger of retiring early, despite the company's deadline for legislative action.

The amendment would direct 80 cents from each residential ratepayer's bill — down from $1 in the House version approved in May — toward keeping the generators profitable amid a flood of cheap natural gas that has dragged energy prices down.

Commercial customers would pay $11/month (down from $15), and industrial customers would pay $240/month (down from $250), while large-scale customers would pony up $2,400 (down from $2,500). (See *Ohio Plan Subs Nukes, Fossil Fuels for Renewables*.)

The amended bill would also preserve a scaled-back RPS, the state law that mandates how much power electric distribution utilities (EDUs) procure from renewable resources. The Senate-proposed RPS requirement dropped from 12.5% of renewables by 2027 to 8.5% until 2025, with no continuation of the mandate thereafter. Lawmakers anticipated the new formula would collect $150 million in 2020 for the nuclear plants, but then it would be up to the Public Utility Commission of Ohio to determine if FirstEnergy needed the subsidies over the following six years.

The plan also cut the $2.50 fee assessed for the continued operation of OVEC's coal plants to $1.50 and gave PUCO authority to reduce the rate even further, if necessary.

The changes did little to appease HB 6's biggest critics, including the Ohio chapter of the American Petroleum Institute (API) and the Ohio Environmental Council Action Fund, which characterized the plan as a corporate "bailout."

"While Senate leadership has started an important conversation about Ohio's energy future, they are now headed in the wrong direction," said Chris Zeigler, executive director of API Ohio. "This bill picks winners and losers at the expense of one of the most significant contributors to Ohio's economic growth over the past decade: natural gas."

He said 70% of residents oppose rescuing the plants and encouraged lawmakers to stick with the competitive electricity market framework, "which has brought cleaner air and more affordable electricity to Ohioans."

Trish Demeter, chief of staff for the Ohio Environmental Council, said other tweaks proposed in the bill — including a provision that would prevent EDUs from taking a cut of the savings customers achieve through existing energy efficiency programs — diminish EE incentives. PUCO Chairman Sam Randazzo testified earlier this month that EDUs collected more than $233 million between 2014 and 2017 via these "shared savings." (See *Ohio Nuke Bill: A Worthwhile Tradeoff?*)

"While on paper the renewable portfolio standard and energy efficiency resource standard are maintained … in practice these standards will effectively fade away," she said. "This is due to … the likelihood that utilities would no longer cut energy waste through energy efficiency rebate programs."

Demeter said the reduced OVEC fee is a step in the right direction but that the bill still lacks enough support for renewables.

"The new version of House Bill 6 is essentially a distinction without a difference and would drive the same conclusion if enacted — higher bills, dirtier air and Ohio jobs at risk," she said. "As a state, we should lean into clean energy, instead of significantly dialing back policies that attract more investment in Ohio, cut energy costs for Ohio families and reduce harmful air pollution."

Perry Nuclear Power Plant, located about 40 miles northwest of Cleveland

The Ohio Consumers' Counsel testified on Saturday that the new plan didn't go far enough; only stripping out the OVEC fees entirely could make it more palatable, it said.

"Given the bill's approach of subsidies instead of competitive markets, the Ohio Consumers' Counsel continues to oppose the bill and the utility subsidy culture that it reflects," said Michael Haugh, an OCC consultant. "I do appreciate the Senate's truth in ratemaking where the bill no longer describes the OVEC plants as a 'national security resource,' which they are not."

Haugh said a June 19 ruling by the Ohio Supreme Court underscores the risk of allowing FirstEnergy to collect fees disguised as funding for infrastructure support and investment. The court overturned a "distribution modernization rider" that PUCO assessed on customers in 2016 to upgrade infrastructure. Opponents, including the OCC, argued it was nothing more than a sham devised for "credit support." The company collected $168 million annually from the rider, and the court said that without legislative action to the contrary, ratepayers won't see any refund. (See *Ohio Supreme Court Overturns FirstEnergy Subsidy*.)

"The connection to HB 6 is that it was a subsidy, and the subsidy was for credit support that would relate in part to the troubled finances of the ultimately bankrupt FirstEnergy Solutions," Haugh said, urging the committee to include language in the bill that provides a refund mechanism for customers. "It should have been a good week for consumers with the end of the charge, but it was a bad week for consumers with the court's decision that FirstEnergy can keep the improper charges without a refund of nearly a half billion dollars to Ohio families and businesses." ■

PJM News

FERC Rejects PJM Rule Change on Price-responsive Demand

By Rich Heidorn Jr.

FERC on Thursday rejected a PJM proposal to reduce load-serving entities' savings from price-responsive demand (PRD) programs (*ER19-1012*).

PJM had proposed changing the calculation of the "nominal PRD value," used for determining the PRD credit, from the reduction in load during the RTO's annual peak to the lesser of summer and winter load reductions. The rule change was approved by stakeholders in December. (See "PRD Review for Capacity Performance Requirements," *PJM MRC/MC Briefs: Dec. 6, 2018*.)

The RTO said it was attempting to correct disparities between PRD and Capacity Performance resources. It said that although PRD is not required to perform annually, it can displace an annual CP resource in the capacity auction. It also said the trigger for nonperformance charges for PRD is a maximum generation emergency, a less frequent occurrence than an emergency action, the trigger for CP resources.

Exelon and the PJM Power Providers Group filed comments supporting the change.

But the commission sided with protests by the Independent Market Monitor and environmental organizations, who said the rules for PRD must be consistent with how LSEs are billed for capacity service — based on demand during PJM's annual peak — because PRD is not a supply resource. State and consumer representatives had earlier questioned the changes. (See *PJM Grilled on Price-Responsive Demand Rule Changes*.)

The commission noted that PRD is limited to customers using dynamic retail rates, advanced metering and supervisory control to ensure the committed demand reductions are achieved.

"LSEs participating in PRD receive no energy payment other than reduced energy bills," the commission said. "Similarly, LSEs receive a capacity service bill credit (the PRD credit) … based on nominal PRD value, which reflects the reduction in the LSE's demand during PJM's annual peak."

The environmental organizations — the Natural Resources Defense Council's Sustainable FERC Project, Earthjustice, Sierra Club and the Union of Concerned Scientists — offered an example to make their case: a PRD location with 100-MW peak summer load without PRD, a 75-MW summer load with PRD and an 85-MW peak winter load.

The location would get credit for reducing capacity needs by only 10 MW under PJM's proposal, based on the lower winter load (85-75 MW), rather than the full 25-MW reduction.

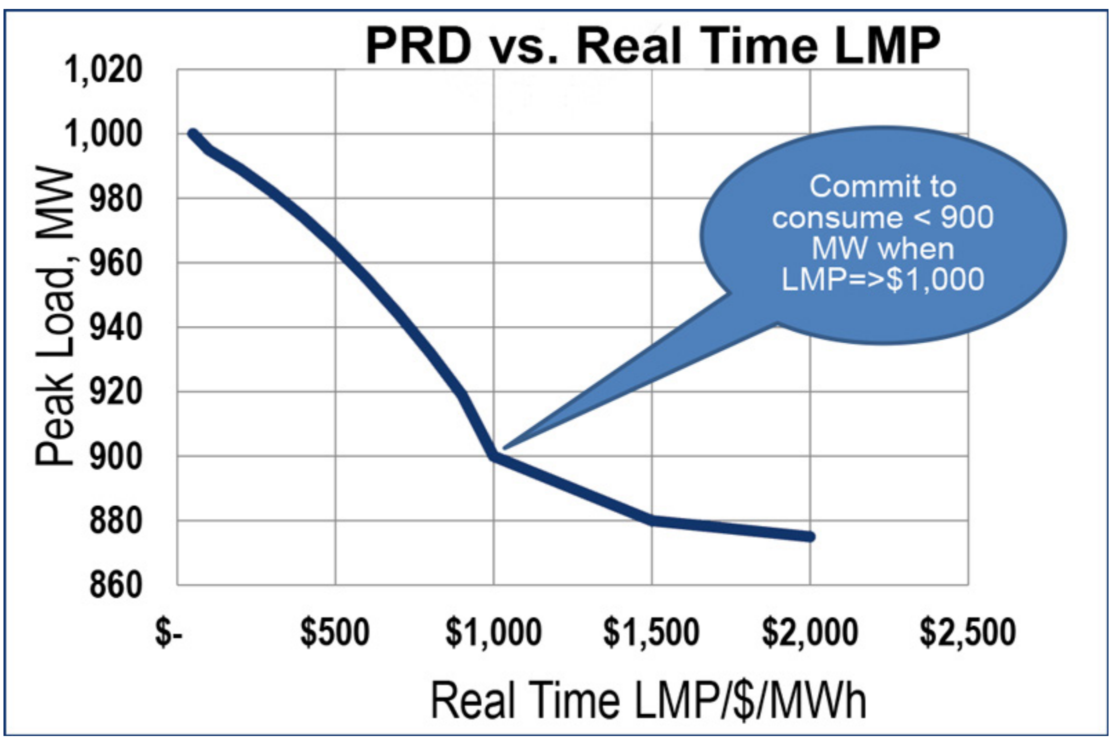
"We find that PJM has not shown that it is just and reasonable to calculate the nominal PRD value and associated PRD credit based on the lesser of summer and winter load reductions," the commission said. "We agree with the IMM and [environmental organizations] that PJM's proposed approach would limit the amount of megawatts that PRD can commit and thereby inaccurately reflect PRD's load-reduction capabilities.

"In light of our finding that it is unjust and unreasonable to calculate the nominal PRD value in a manner inconsistent with how an LSE's capacity obligation is determined, we do not find it necessary to address the need for consistency between the PRD requirements and the requirements for capacity resources," the commission added.

Tom Rutigliano, senior advocate for the Sustainable FERC Project, praised the ruling.

"A kilowatt of electricity saved is a kilowatt of dirty fossil-fuel energy not burned," he said. "PJM has been trying to deny that demand response is a substitute for power plants, and the FERC decision today puts that wrongheaded argument to rest. FERC's action keeps summer demand response in and removes the sword that's been hanging over the market for this zero-emissions product."

PJM spokesman Jeff Shields said the RTO is evaluating the order to determine its next steps. "PJM believes that consumers have benefited greatly from competition facilitated through its wholesale markets, and that all resources should compete on a level playing field," he said. "This means that all resources competing in the market must provide the desired product on a comparable basis. PJM's proposal would have leveled the playing field with respect to PRD as compared to demand response and generation resources." ■



Under price-responsive demand, load-serving entities automatically reduce consumption in response to high energy prices. | PJM

PJM MRC/MC Briefs

Ott's Last MRC

WILMINGTON, Del. — PJM CEO Andy Ott attended his last Markets and Reliability and Members committee meetings on Thursday, capping more than two decades with the organization.

Ott announced his retirement last month — the second top executive to leave PJM this year. (See *PJM CEO Andy Ott to Retire*.)

"He's been instrumental in the development of our markets," MC Vice Chairman Steve Lieberman said. "PJM has really been a leader in these markets, and we certainly appreciate that and his decades of service to PJM. You will leave a very good legacy."

Lieberman then presented Ott with an inscribed compass on behalf of the membership that read, "To Andy, with appreciation, for your service to PJM."

PJM's Markets and Reliability Committee met for the last time at the Chase Center in Wilmington, Del., on June 27, 2019. | © *RTO Insider*

Fuel Security Charter

Stakeholders unanimously endorsed the *charter* for PJM's Fuel Security Senior Task Force.

The MRC reluctantly endorsed a problem statement and issue charge in March after some doubted the necessity to discuss the fuel security issue and even contended that PJM already had a solution in mind. (*See PJM Stakeholders Reluctantly OK Fuel Security Initiative*.)

Tim Horger, PJM's director of energy market operations, said the task force remains on track to report its recommendations on the first four key work activities at the September MRC, including: providing education on the issue; quantifying the risk of selected scenarios that could risk fuel security; defining fuel/energy security; and determining whether there is a quantifiable and/or locational requirement for fuel/energy security.

RTEP Removal Language Deferred a 3rd Time

Voting on *language* that alters the way PJM manages supplemental projects in the Regional Transmission Expansion Plan was delayed a third time.

Both RTO staff and LS Power's Sharon Segner pushed for the 30-day deferral, telling the MRC that stakeholders at the special Planning Committee sessions have four more issues to resolve before seeking a vote. (See "RTEP Poll," *PJM PC/TEAC Briefs: June 13, 2019*.)

Segner gave a brief description of the four outstanding issues: conversion and how supplementals become baseline projects without undergoing the Order 1000 planning process; the displacement of supplemental projects through the regional planning process; ensuring that supplemental projects do not undermine the integrity of the Order 1000 process; and PJM's authority to remove supplementals from the RTEP once permits have been denied.

"Folks are trying to focus on principles here rather than just wordsmithing the manuals," she said. "At the heart of the issue is PJM's fundamental authority over its RTEP, especially as it relates to removing supplementals from the plan."

Capacity Interconnection Rights

Carl Johnson, on behalf of the PJM Public Power Coalition, presented a first read of a *problem statement* and *issue charge* that forms a task force to discuss the rights and responsibilities of stakeholders with capacity interconnection rights (CIRs).

"You may recall this issue got tangled up in the must-offer exception process," he said. "It became very clear that we didn't all agree what rights they convey or what they meant or what their value was." (See *Showdown Set on PJM Must-offer Exceptions*.)

The issue charge divides the work into two phases that will potentially culminate in revisions to section 230 of the Operating Agreement and Manual 14G.

Johnson said stakeholders will consider if CIRs should:

- Continue to be the proper mechanism for conveying the rights and responsibilities associated with them, or whether they should be modified or a new mechanism introduced.
- Should be returned to system capability due to being unutilized in the capacity market by a resource.
- Create an obligation for a resource to participate in the capacity market.

Manuals Endorsed

Manual 14G: *Clarifies* requirements for term of site control, NERC-accepted stability models and corrections to references and links.

Manual 6: Cover-to-cover *review* that aligns with parts of the OASIS refresh and removes financial transmission rights credit business rules from section 6.7 and refers readers to Tariff/credit overview and supplemental documents on PJM's website.

Stakeholders Bid Farewell to Wilmington

The MRC and MC will no longer meet at the Chase Center in Wilmington after voting to move all subsequent meetings to the PJM Conference and Training Center in Valley Forge, Pa. ■

— Christen Smith

Company Briefs

Huawei Shuts Down Solar Business in US

Huawei has closed down its fast-growing but controversial solar energy business in the U.S. as it continues to battle criticism from both the Trump administration and politicians in Congress.

People with knowledge of the situation told the Financial Times the company had shut its U.S. operation selling solar inverters. The company confirmed it had axed a number of functions and jobs in the U.S. but did not confirm which parts of the business were affected.

"Over the past several months, we have been compelled to make moves to more closely align our business strategy with the unwelcoming climate being fostered in the United States," a company spokesperson said in a statement.

More: *Financial Times*

El Paso Electric Names Adrian Rodriguez Interim CEO

El Paso Electric on Monday announced that the company's board of directors has appointed **Adrian Rodriguez** — senior vice president, general counsel and assistant secretary — as interim CEO.

The appointment is effective Aug. 1 and will follow current CEO and President Mary Kipp's decision to accept a position with Puget Sound Energy in Washington.

Rodriguez, a native of El Paso, joined EPE in 2013 and was appointed to his current roles in 2017.

More: *El Paso Electric*

Enel Inks Texas Solar Deal with Snack Company Mondelez

Mondelez International, whose brands include Oreo, Toblerone, Trident and Sour Patch Kids, has signed a 12-year solar power purchase agreement with Enel Green Power North America.

Mondelez will purchase 65 MW portion of Enel's Roadrunner solar project, which is under construction in Texas, and should be enough to produce more than 50% of all the Oreos consumed in the U.S. annually. The agreement is Mondelez's largest renewable energy partnership globally and its first PPA signed in the U.S.

The 497-MW Roadrunner project is Enel's largest solar project in the country. Once operational, the plant will generate approximately 1.2 TWh annually.

More: *Solar Industry Magazine*

Federal Briefs

Report: 100% Renewables Would Cost $4.5T

According to a new report released by Wood Mackenzie last week, shifting the U.S. power grid to 100% renewable energy over the next 10 years would cost $4.5 trillion.

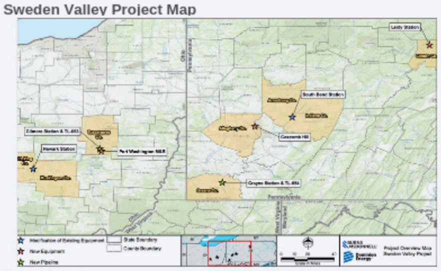
A huge rollout of wind and solar power generation, a reinforced transmission network and a vast deployment of energy storage will be required, according to the report. Of the $4.5 trillion, the majority would be for the estimated 900 GW of storage capacity required. In total, more than 1,600 GW of new solar and wind power would be required. There is currently 130 GW installed.

"Markets can reach 25% wind and solar market penetration with relative ease, assuming fundamental natural resource and grid infrastructure prerequisites. Beyond that point, operational and cost complexities progressively multiply, in large part due to the intermittent nature of renewables," the authors state. No large and complex power system in the world operates with an average annual penetration of greater than 30% wind and solar, the report says.

More: *Greentech Media*

Blaming FERC, Dominion Pulls Pipeline Project

Sweden Valley Project Map



Source: Dominion

Dominion Energy Transmission last week withdrew its application for the Sweden Valley pipeline expansion in Pennsylvania and Ohio, saying delay at FERC has harmed the project and the shipper has chosen to walk away.

The project received a positive environmental assessment from FERC on Aug. 31, 2018, finding approval would not constitute a major federal action significantly affecting the environment. Dominion said it had expected a certificate order from FERC no later than Nov. 10 in order to meet a planned in-service date for the fully contracted firm service Nov. 1, 2019.

Dominion told FERC in a filing Friday that as a result of its inaction, the project "has been adversely impacted" and that there was "no reasonable justification for the delay in approving this project."

More: *S&P Global Platts*

Wehrum Resigns from EPA

Bill Wehrum, EPA assistant administrator of air and radiation and the main architect of the agency's new Affordable Clean Energy rule, resigned from his position Sunday.

The House Energy and Commerce Committee has opened an inquiry into whether Wehrum, a former lobbyist and lawyer for the oil, gas and coal industries, improperly worked to reverse an enforcement action that would have aided a former client, DTE Energy.

"While I have known of Bill's desire to leave at the end of this month for quite some-time, the date has still come too soon," EPA Administrator Andrew Wheeler said in the statement last week. "I applaud Bill and his team for finalizing the Affordable Clean Energy regulation last week and for the tremendous progress he has made in so many other regulatory initiatives."

More: *The New York Times*

State Briefs

ARIZONA

Ajo Utility Asks Regulators to Reconsider Rejected Rate Hike

Ajo Improvement Co. has asked the Corporation Commission to reconsider its May 22 decision that rejected a modified rate plan for its 1,000 customers. The utility says it needs higher rates to recover about $48 million in system improvements completed since the last rate cases.

The proposal would have raised water rates for home customers with median usage by about 207%, while hiking sewer rates 337% and electric rates about 95%, over a seven-year phase-in period. In a recent petition for reconsideration, Ajo agreed to base its requirement for new revenues on a 10% operating profit margin (compared with 5%), but it would extend the rate phase-in period to 10 years.

The proposal would result in the same 207% increase in water rates but phase them in over 10 years instead of seven. However, the flat-rate sewer charge would increase 369% over 10 years, while electric rates would rise 113%. Overall, customers with median usage would pay nearly $193/month for all utilities by the rate deal's 10th year, compared with $63 now.

More: *Arizona Daily Star*

ILLINIOS

Vistra Energy to Close Coal Plants

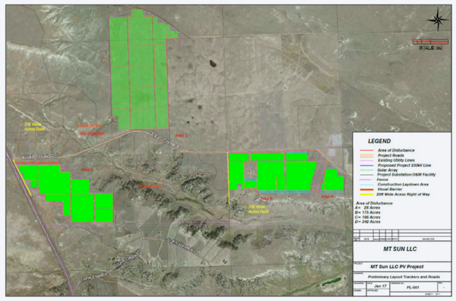
Vistra Energy has agreed to close 40% of its eight coal-fired plants in the central and southern parts of the state by the end of the year. The company will be allowed to choose which units it retires and may scrap cleaner power plants instead of the dirtiest.

A deal brokered by Gov. J.B. Pritzker replaces rate-based limits with annual caps on tons of sulfur dioxide and nitrogen oxide emitted by the Vistra fleet. However, the new limits are more stringent than the previous administration's.

More: *Chicago Tribune*

MONTANA

Judge Rules in Favor of 480-acre Solar Project in Billings



A state district court judge has concluded that the Public Service Commission violated the due process rights of a solar energy company, writing that newspaper guest columns published by commissioners as a rate case was pending constitute evidence of bias.

In a June 18 ruling in a suit over the MTSUN project, an 80-MW solar farm proposed near Billings, Judge James Manley of Polson agreed with solar advocates who complained they weren't getting fair treatment from the commission. The five commissioners, all Republicans, have made no secret of their affinity for coal power and routinely express skepticism about the viability of renewable energy sources in guest opinion columns published by newspapers in the state.

MTSUN will receive a 25-year contract to deliver power to NorthWestern Energy, with Manley setting the price at $38.33/MW.

More: *Montana Free Press*

NEW YORK

New York City Declares Climate Emergency

The New York City Council last week voted to declare a climate emergency, becoming the largest city in the country to commit to combat climate change.

The city's declaration comes days after the state legislature passed a climate bill aimed at net zero emissions by 2050, a figure recommended by the U.N. Intergovernmental Panel on Climate Change. More than 650 municipalities in 15 countries have declared climate emergencies, including 17 in the U.S.

More: *The Hill*

OREGON

Republicans End Carbon Bill Walkout

Republican lawmakers returned to the Senate on Saturday, ending an acrimonious nine-day walkout over a carbon emissions bill that would have been the second such legislation in the country.

The boycott had escalated when the Democratic governor ordered the state police to find and return the rogue Republicans to the Senate so the chamber could convene, and a counter-threat by one GOP senator to violently resist any such attempt. Senate Republicans fled the state to avoid being forcibly returned by the State Police, whose jurisdiction ends at the state line.

Democrats have an 18-12 majority in the Senate, but the house needs at least 20 members — and therefore at least two Republicans — present to vote on legislation.

More: *The Associated Press*

TEXAS

Gibbons Creek to be Permanently Retired

ERCOT on Friday said the Gibbons Creek Generating Station will be decommissioned and permanently retired, effective Oct. 23. The Dallas-area city of Garland notified ERCOT of the designation change for the 470-MW coal-fired facility, which began operations in 1983. The grid operator approved the plant's permanent mothballing earlier this year.

Gibbons Creek is operated by the Texas Municipal Power Agency for Garland Power & Light and the cities of Bryan, Denton and Greenville. It operated as a peaker plant the last two summers.

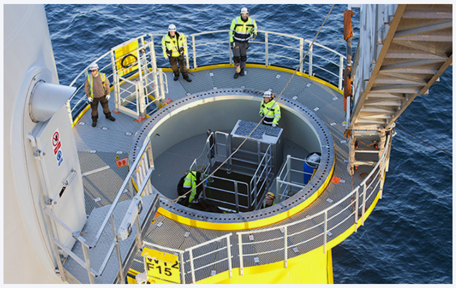
Gibbons Creeks capacity was not included in ERCOT's latest seasonal assessment of resource adequacy, which indicated the grid operator heads into the summer with an 8.6% reserve margin. (See *ERCOT: More Capacity, but Emergency Ops Still Expected*.)

VIRGINIA

Works Begins on Coastal Virginia Offshore Wind Project

Dominion Energy on Monday formally began construction on the Coastal Virginia Offshore Wind demonstration project.

The company has broken ground on installing a half-mile conduit, which will hold the final stretch of cables connecting two 6-MW turbines located 27 miles off the coast of



Virginia Beach to a company substation near Camp Pendleton.

Dominion is partnering with Ørsted to build the 12-MW project on 2,135 acres leased by the Department of Mines, Minerals and Energy. Ørsted has been contracted for the offshore portion of the project, and L.E. Myers Co. will perform onshore construction work.

More: *North American Windpower*

WISCONSIN

Public Hearings Start on Cardinal-Hickory Creek

The Public Service Commission last week held six public hearings in Lancaster, Madison and Dodgeville on the Cardinal-Hickory Creek transmission project, a joint venture between American Transmission Co., ITC Midwest and Dairyland Power Cooperative.

The $500 million line would run more than 100 miles between Dubuque and Middleton and would costs ratepayers about $67 million. Proponents say the line would deliver wind energy from Iowa, saving ratepayers money. Opponents question the public value, saying it would enable little new renewable energy, among other things.

The PSC must now determine if the project is in the public interest and which route it should follow. The commission has until Sept. 30 to approve or deny the application.

More: *Wisconsin State Journal*