# RTO Insider

Your Eyes and Ears on the Organized Electric Markets

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NARUC WINTER POLICY SUMMIT

## PJM Seeks to Quell 'Inflammatory' Exit Talk

*By Rich Heidorn Jr. and Michael Brooks*

Among the state regulators listening to the standing-room-only panel on FERC's MOPR order were, from left, Ted Thomas (Ark.); Jeremy H. Oden (Ala.); Dallas Winslow (Del.); and Gladys Brown Dutrieuille and John Coleman (Pa.). | © *RTO Insider*

WASHINGTON — A top PJM official last week sought to quell talk of an exodus from the RTO in response to FERC's controversial order expanding the minimum offer price rule (MOPR), telling state regulators they shouldn't lose sight of the RTO's overall "value proposition."

During a panel discussion at the National Association of Regulatory Utility Commissioners (NARUC) Winter Policy Summit on Feb. 10, PJM Executive Director Asim Haque said the RTO hasn't done an analysis on the rate impacts of FERC's Dec. 19 order (EL16-49, EL17-178). Dissenting Commissioner Richard Glick said the MOPR expansion could add $2.4 billion in annual capacity costs.

But Haque said PJM is heartened by the Independent Market Monitor's conclusion that the MOPR exemptions allowed for existing resources means that the order "may not have as deleterious an impact for state policy endeavors as at least initially perceived" in the short term.

Haque, a former Ohio regulator, said the order is not workable in the long term because it "needlessly frustrates state policy initiatives." He said the RTO wants to work with stakeholders to "find that sweet spot between balancing those state policy priorities and wholesale market mechanisms."

*Continued on page 31*

**PJM Names Lisa Drauschak as CFO** (p.30)

**Dominion: 'No Near-Term Impact' from PJM MOPR** (p.33)

## Spotty EV Growth, TOU Enrollment Challenges States

Tim Echols, Georgia PSC (p.3) | © *RTO Insider*

**Gas Going Way of Coal? Not So Fast, Panelists Say** (p.5)

## Energy Storage: All Grown Up?

### *'IRPs are the New RPS'*

*By Rich Heidorn Jr.*

WASHINGTON — Jason Burwen, vice president of policy for the Energy Storage Association, took his audience down memory lane Wednesday, recalling the industry's growth since he joined the organization in 2015.

At the time, he told an audience of 200 at ESA's annual Energy Storage Policy Forum, there was only 200 MW of non-hydro storage on the grid, virtually all in front of the meter and less than one hour in duration. The market was almost entirely frequency regulation.

Just five years later, there is more than 1,500 MW of storage online, one-third of it behind the meter, with some batteries capable of injecting energy for up to eight hours. In addition to providing ancillary services, it is also seeking roles as capacity and transmission. It is increasingly being paired with solar and wind generation.

*Continued on page 7*

### Also in this issue:





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# In this week's issue

# Spotty EV Growth, TOU Enrollment Challenges States

*By Rich Heidorn Jr.*

WASHINGTON — If they build it, will you drive?

Electric vehicle makers are now offering 90 models for sale in the U.S., and the nation's charging infrastructure grew by 17% last year, according to data released last week by BloombergNEF.

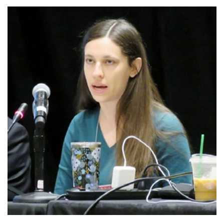
Yet U.S. EV sales dropped 11% in 2019, accounting for just 1.8% of total vehicle sales, Bloomberg reported.

Nevertheless, state regulators said during a panel discussion at the National Association of Regulatory Utility Commissioners' Winter Policy Summit last week they remain upbeat about the potential for vehicle electrification to help decarbonization efforts — and maybe reduce system costs.

"This is a really exciting time to talk about EVs," said Al Freeman, an adviser for the Michigan Public Service Commission, who keeps a very busy Google alert to keep track of industry developments.

Michigan's utilities have made "some really neat [pilot] proposals" to the commission, he said, including $13 million, three-year pilots by both Consumers Energy and DTE Energy, which were approved by the commission last year.

"There's a lot of challenges, but they're responding to it very well and being aggressive in the marketing and the education of it," he said of Consumers. DTE has been similarly aggressive, he said. "A lot of their costs have come in below what they estimated, which will allow them to have a little bit more money for additional rebates."



Hanna Terwilliger, Minnesota PUC | *© RTO Insider*

### 2 Questions

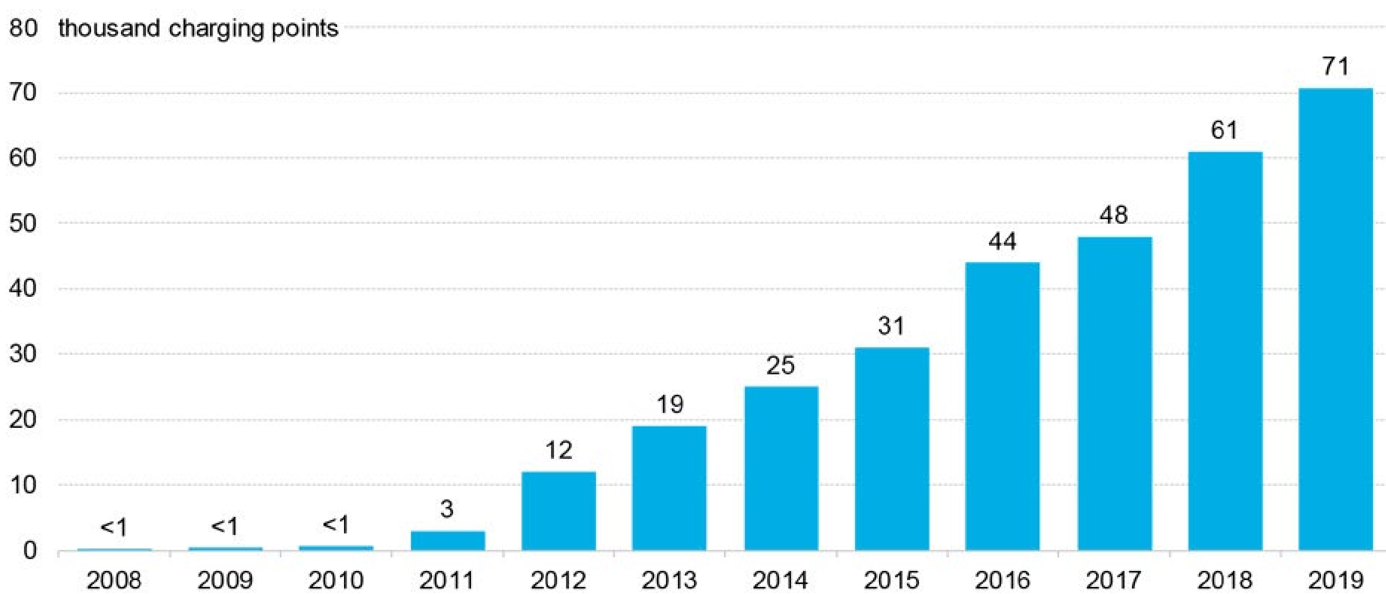
Hanna Terwilliger, economic analyst for the Minnesota Public Utilities Commission, said EV growth is outpacing rooftop solar in her state, although enrolling owners in time-of-use rates remains a key challenge.

Terwilliger said Minnesota is seeking to integrate EVs in a way that benefits all customers and avoids adverse system impacts. It's also considering whether it should encourage widespread adoption of EVs to meet policy goals, such as carbon reductions.

"Each state will have different answers to these questions, but we all need to … make sure we're prepared because … even just one EV charging at a house can double their electric consumption, and they're coming faster than other types of [distributed energy resources] like rooftop solar," she said.

Americans have purchased or leased 1.4 million battery-electric and plug-in hybrid electric vehicles since 2010, according to BloombergNEF. Minnesota has about 10,000 EVs, most in its metro areas but with some penetration in rural areas as well.

But while the Dakota Electric Association has almost half of their EVs enrolled in TOU or




- As of year-end 2019 there were approximately 71,000 public and workplace EV charging points in the U.S., an increase of nearly 17% over 2018. About 81% of these EV charging outlets are Level 2. Another 17% are fast or ultra-fast and the remaining 2% are Level 1.
- As in 2018, about one third of the EV charging outlets are in California. The number of EV charging outlets is much lower in other states.
- Consumers still regularly cite range anxiety as a barrier to purchasing electric vehicles. However, the majority of EV charging in the U.S. continues to take place at home, usually with Level 1 or Level 2 chargers.

| *BloombergNEF*

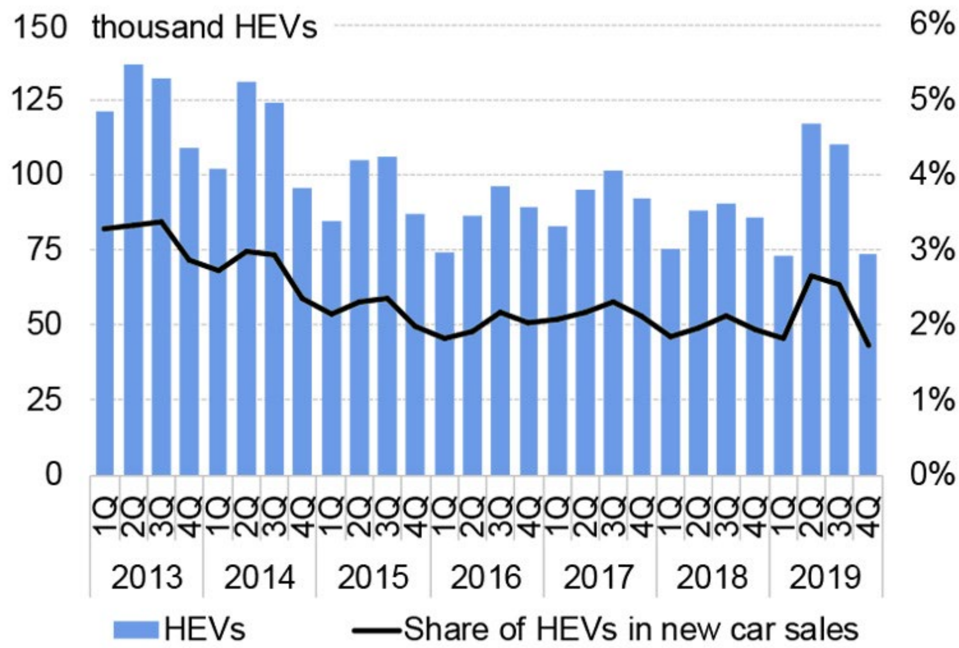
# NARUC Winter Policy Summit

off-peak rates, Minnesota Power, Otter Tail Power and Xcel Energy have struggled to get participation above 10%. Terwilliger said a big challenge is the expense of installing a second TOU meter.

Asked to explain the disparity, Terwilliger noted that Dakota is an electric cooperative. "Anecdotally, from other co-ops that have similar rates, they're also around 50%," she said.

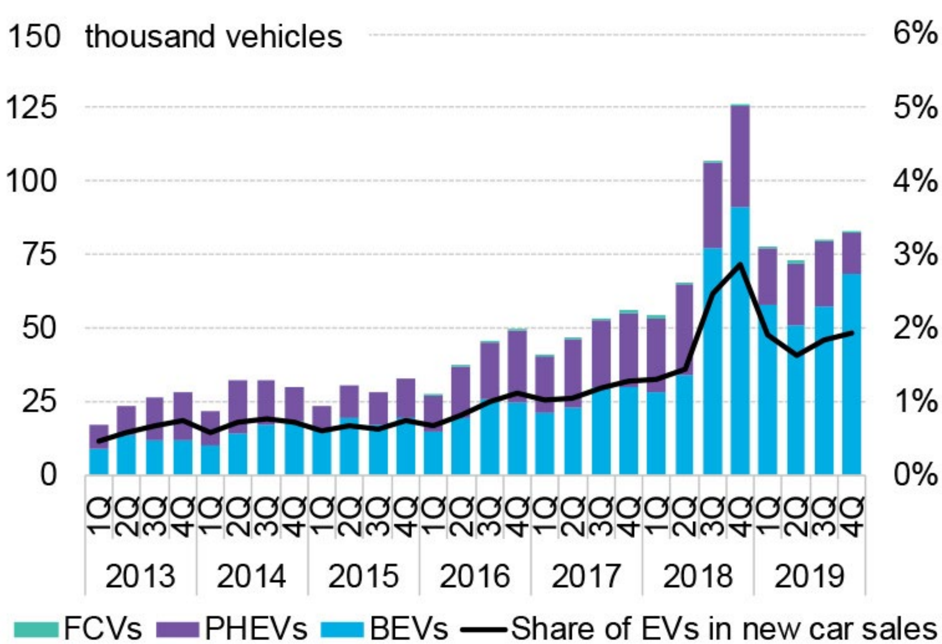
"There's a number of reasons why co-ops have been more successful. They historically have had a lot more demand-response programs, and they've been able to expand those programs to include EVs. So, a lot of the infrastructure is already there. It's less expensive to enroll customers in the rate. I think that co-ops also have a lot more direct communication with their members. Members want to read the newsletters that come out, versus if you're trying to [communicate] something on a bill insert, there's a lot of times people just throw it away." Some customers get electronic bills and don't receive bill inserts, she added.

She said utilities must enroll EV drivers in some type of managed charging rate when they purchase their cars. "Even if it's not perfect, it's much easier to switch a customer to more sophisticated program than it is to try and go and find them" after the sale.



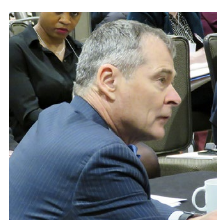

U.S. sales of conventional hybrid electric vehicles (HEVs) such as the Toyota Prius rose 10% to 373,000 units in 2019. Conventional hybrids can only recharge their battery through regenerative braking. | *BloombergNEF*

It's also important to have the rate structure ready to accommodate and encourage fleets switching to EVs, she said, noting Amazon's *plan* to purchase 100,000 EV delivery vans, reportedly the largest EV order ever. "When they start coming into your service territory, Amazon does not want to wait for you to go through a regulatory process. They want a good solution there right now that's going to save them money."




U.S. sales of electric vehicles dropped 11% in 2019, with battery electric vehicle (BEV) sales up 2% to 235,000 units while plug-in hybrid electric vehicle (PHEV) sales fell 36% to 76,000. Fuel cell vehicle (FCV) sales dropped 12% to 2,090 (too small to be visible on the chart). | *BloombergNEF*

### Red State Message



Georgia PSC Vice Chair Tim Echols | *© RTO Insider*

Tim Echols, vice chair of the Georgia Public Service Commission, lamented that his state in 2015 *abolished* the $5,000 tax credit that had made it one of the early leaders in EV growth. He said the credit died because messaging about EVs' environmental benefits took "all the oxygen in the … room."

"I'm on my fourth EV. I'm a big proponent. But we're making a switch [in messaging]. We have five Republican commissioners. Every constitutional officer in Georgia is a Republican. And we're beginning to talk about how EVs charged at home overnight put downward pressure on rates. That's the new red state message. Nothing else about the environment, because our left-leaning friends are going to come with us no matter what. … It's the Republicans that are holding us up on this." ■

# Gas Going Way of Coal? Not So Fast, NARUC Panelists Say

*By Michael Brooks*

WASHINGTON — In the context of decarbonization and climate change, natural gas has often been talked about as a "transition" or "bridge" fuel: a temporary, imperfect (and cheap) way to wean the power sector off carbon-intensive coal while renewables and storage catch up to scale.

But panelists at the National Association of Regulatory Utility Commissioners' Winter Policy Summit last week instead spoke about how soon the industry, along with other sectors, will wean off gas.

Extra chairs were needed for the standing-room-only audience listening to former FERC Commissioner Cheryl LaFleur moderate the panel about the future of natural gas "in a carbon-constrained world" on Feb. 10. It was one of the first panels of the summit, and it was difficult to say whether there was an intense interest in the subject or, as fellow moderator and New York Public Service Commissioner Diane Burman joked, everyone was there just to see LaFleur.

Panelists seemed to generally agree that while demand for gas worldwide would remain steady, its use as a power and heating source will decline in the U.S. as renewables continue to penetrate the grid faster than anticipated, more states look to electrify buildings and the cost of alternative fuels comes down. Gas is here to stay, but its usage will change.

"Natural gas has a really complicated relationship with climate change," LaFleur said. "On the one hand, natural gas has been lauded as an environmental hero," not only because of lower emissions but also lower waste and particulate matter than coal. "On the other hand — increasingly, I think — gas is being characterized by many as an environmental villain. ...

"I used to say ... over the last 10 years, the zeitgeist has changed, where it went from gas as a hero to hearing more about the negatives of gas. But ... both views of gas are very much alive and well today."

## Neither Villain nor Savior

Unsurprisingly, representatives of Shell Oil and Southern California Gas cautioned against the villain narrative.

Jason Klein, Shell's vice president of U.S. energy transition strategy, pointed out that while coal is on its way out as a power source in the U.S., coal-fired power plants are still being built in many developing countries. Klein, also vice president of his company's LNG team, said the U.S. needs "to help the rest of the world with our LNG exports to reduce their coal consumption." LNG is also a cleaner fuel for shipping than fuel oil, he said.

"I find it increasingly not useful to talk about gas as a 'transition fuel' if you're not talking very specifically about where you need it," said Sarah Ladislaw, senior vice president for the Center for Strategic and International Studies' Energy Security and Climate Change Program. "Where in the world are we talking about gas having a greater role in the energy mix going forward? Because every country around the world uses gas differently." She pointed to a *report* written by her colleague, Nikos Tsafos, that discussed the complexity of global gas usage, concluding that it's only environmentally useful in certain markets, mainly those in Asia.

"Gas is not a climate savior, but it also is not going anywhere any time soon," Tsafos concluded. "This is not the golden age for gas, but it is not the dark age either."

"Right now, the United States in the Permian Basin is flaring as much gas as the country of Libya," Ladislaw said. "Now, we're probably producing four times as much oil as Libya on a good day, but that's probably not the environmental track record that we want for gas that we're exporting from the United States." She questioned the wisdom of long-term investments in gas infrastructure when the generation mix in 10 years is unknown.

"In my view, we're moving in one direction only, which is the momentum is spinning away from natural gas," said Humayun Tai, senior partner at management consulting firm McKinsey & Company. He said the discussion about gas' future feels like the discussion in the late 2000s about whether wind power would be viable. "The question is, more fundamentally, what is going to replace gas and in what time frame?"

Whether local distribution companies and non-power sectors will transition off of gas to electrification is a question of when, not if, he said. "Is this to a 10- to 20-year transition, or is it a 30- to 40-year transition? And that makes a big difference: in the investments that you make; in the policies you think about; in the programs you want to enact."

## A Role for RNG?

Companies in Europe and Japan are increasing their funding into research and development of renewable natural gas (RNG) and hydrogen fuel as alternative fuels, Tai said. "We are looking at a breakneck speed of cost reductions and technology innovation that's going to happen."

Andy Carrasco, director of regional public affairs for SoCalGas, said RNG already plays a key role in his company meeting California's many stringent environmental targets.

Extra chairs were needed for the standing-room-only audience listening to former FERC Commissioner Cheryl LaFleur moderate a panel about the future of natural gas "in a carbon-constrained world" at NARUC's Winter Policy Summit. | © *RTO Insider*

# NARUC Winter Policy Summit

The "renewable" in RNG is a bit of a misnomer: It refers to methane recycled from other processes, such as waste disposal and agriculture, rather than that extracted from the ground. It and other alternative fuels became more of a focus when LaFleur asked the panelists what questions state regulators should be asking when considering gas infrastructure proposals. "Because [regulators are] mostly dependent on the people who come before them saying, 'This is a great project,' and then the people saying, 'This is horrible; you should never do this.' And that's the record most of the time."

It depends on the state's stance on climate change, Tai responded. "What is your state's view [and] the political view on what you will do about [greenhouse gas] emissions ... related to gas," especially carbon? "Until you have a defined view of that, it's very hard to shift anywhere else."

Tai also urged regulators to remember that the costs of RNG and other alternative fuels will come down, eventually making them more affordable than traditional gas. "That factors into the investment decisions you decide as regulators and staff on whether you allow pipelines to be approved and allow upgrades to happen."


From left to right: New York PSC Commissioner Diane Burman; ISO-NE Director Cheryl LaFleur; Jason Klein, Shell Oil; Sarah Ladislaw, CSIS; and Andy Carrasco, SoCalGas | © *RTO Insider*

Given the abundance of fracked gas, LaFleur asked "what are going to be the drivers that make somebody invest in renewable natural gas?"

Klein said almost all of Shell's RNG production is sold in California because of the state's low-carbon fuel standard. Carrasco suggested that states should consider RNG standards similar to those for renewable generation resources.

Tai suggested that states analyze what it would take — the policies needed and the cost — for them to take gas out of the system in 15 years versus 35 years. "Of course, 15 will be trickier. But laying that out and having that discussion, rather than just focusing on the fact that there are emission reductions ... could inform a lot of views [and] change a lot of views," he said. ■

Energy Storage Policy Forum

# Energy Storage: All Grown Up?

## 'IRPs are the New RPS'

*Continued from page 1*

"We are a *mature* industry," Burwen said, slowing for emphasis.

It's not all rosy, however. Burwen decried the Trump administration's tariffs on storage technology imports.

"We have a global supply chain in the energy storage industry and certainly just as we are getting our legs underneath us, it is [an] incredible setback to have that uncertainty when folks are contracting years down the line," he said. "So, that's something that we're trying to make sure that the administration is aware of — recognizing how much effort is going into promoting resilience and [how] storage can be key part of that."

Storage remains dwarfed by wind (108 GW) and solar (75 GW) generation in installed capacity. And although ESA formed a *political action committee* last April, it *raised* less than $5,000 and disbursed only $2,000 in 2019. The American Wind Energy Association's PAC disbursed more than $78,000 *last year* and more than $300,000 in the *2018 cycle*. The Solar Energy Industries Association PAC *spent* almost $179,000 in the 2018 campaigns and more than $63,000 in *2019*.

But there's no doubt storage has gained some clout in D.C. As ESA was having its forum, CEO Kelly Speakes-Backman was *testifying* before a House Energy and Commerce subcommittee. She spoke in support of *HR 4447*, which would provide technical assistance to rural electric cooperatives for storage and microgrid projects, and *HR 1744*, a bipartisan bill that would amend the Public Utility Regulatory Policies Act to require utilities to consider storage in their supply-side resource planning processes.

Burwen said the industry "accelerated dramatically" last year. Congress saw the introduction of more than a dozen bills promoting storage, some calling for an investment tax credit. FERC conditionally approved RTOs' compliance plans with Order 841, the commission's 2018 rulemaking requiring the RTOs to allow energy storage resources full access to their markets. (See *Storage Plans Clear FERC with Conditions*.) New York and California expanded their storage incentives, with Nevada finalizing a storage target and Maine and Virginia recommending them. (Last week, Virginia lawmakers *approved* a 3,100-MW energy storage target by 2035.)

About 200 people attended the Energy Storage Association's annual Policy Forum at the National Press Club in D.C. | © *RTO Insider*

Battery storage costs have dropped dramatically, along with the cost of solar and wind generation, opening new opportunities.

"In the last two years, projects that pair renewables technologies with large-scale batteries have for the first time become economically viable," BloombergNEF reported in its 2020 Sustainable Energy in America Factbook, *released* last week. "In particular, 'PV-plus-storage' projects have under-bid natural gas-fired plants to win power-delivery contracts in certain states thanks to a 77% drop in the price of a typical PV module and an 87% decline in battery pack prices."

ESA says its "vision" is to reach *35 GW of storage by 2025*, a 23-fold increase from current levels. "This is undoubtedly ambitious and will require fundamental changes in how the grid is planned and engineered, including a reform of U.S. energy markets and regulations," ESA said.

It projects that electrifying transportation and buildings will add more than 3,500 TWh of annual demand in addition to current U.S. consumption of 4,200 TWh, with annual additions of storage reaching 7 GW in 2024. Wood Mackenzie Power & Renewables projects a more modest deployment of *4.4 GW* in 2024.

To reach its goal, ESA is focusing its policy efforts on three goals: ensuring the ability to interconnect to the grid, which FERC supported with Order 845; including storage in all planning processes and procurements as an alternative to other resources; and winning compensation for the resource's flexibility and other attributes.

The association has called for updating utility integrated resource planning to consider storage as an option for system capacity. IRPs, Burwen said, will be "the new RPS" (renewable portfolio standard). In the next five years, storage will become a "fully integrated part of" discussions on reaching 100% clean energy targets, Burwen said.

"In some respects, the last five years have been about mainstreaming energy storage as supply. And the next five years, we're probably talking about mainstreaming energy storage as infrastructure, both in the grid and in the built environment," he said.

### RTOs Discuss Opening Doors for Storage

Panel discussions earlier in Wednesday's conference included state regulators and officials from CAISO, MISO, PJM, ERCOT and NYISO.

Burwen asked one panel about RTOs' role in

# Energy Storage Policy Forum

resource adequacy, citing FERC's controversial Dec. 19 order requiring an expansion of PJM's minimum offer price rule (MOPR) to cover new state-subsidized resources. State officials have criticized the ruling as an attack on their jurisdiction over resource adequacy; some are considering withdrawing from the capacity market as a result. (See *PJM MOPR Rehearing Requests Pour into FERC*.)

Michael DeSocio, NYISO's director of market design, said the issue is the subject of "conversations" in the ISO's stakeholder processes and proceedings of the New York Public Service Commission.

"What we're really looking for is a little bit of time. … These are complicated issues," he said. "The markets have offered a level of transparency that you didn't have before the markets existed, [which] is really important so you get a fair shake at making a go out of it. … I'd really hate to see that go away. So, we're working hard to see if we can come up with solutions to those concerns."

In a second RTO/ISO panel, ERCOT's Kenneth Ragsdale said that although the Texas grid operator is not under FERC jurisdiction, Order 841 "helped us rationalize why we need to spend more time on storage."

"We're looking at how we can integrate [storage] with the system we have. … We've looked at allowing bid offer curves to be updated intra-hour instead of once at the hour. … We are trying to find the proper way to represent what this asset can provide to us [for resource adequacy]. We are really trying to get away from, 'No you can't interconnect that,' to 'Yes.'"

Stacey Crowley, CAISO's vice president of external and customer affairs, said the ISO and storage providers are in the middle of a "trust-building exercise."

"The operators are going to need to trust that those resources are there when the resource says they're going to be there," she said. "One of our really smart attorneys said, 'Stacy. This is a marathon. And we are literally just tying our shoes right now.'"

Burwen noted that MISO generated controversy in December when it became the first RTO to file a proposal with FERC for treating storage as transmission.

The RTO's storage-as-transmission-only assets (SATOA) proposal drew complaints that it would provide transmission owners a monopoly (ER20-588). The RTO said it was an initial step designed to avoid complexities over cost recovery, such as how non-TOs would be compensated for providing transmission services. SATOA resources would be barred from simultaneous participation in MISO's energy market, at least initially. (See *MISO SATOA Proposal Faces Opposition*.)

Laura Rauch, MISO's director of settlements, acknowledged the proposal is "imperfect."

"If you read our filing, you saw that we acknowledge that this is … only a first step," she said.

## Glick Seeks Tech Conference on Hybrid Resources

In a keynote speech, FERC Commissioner Richard Glick acknowledged his two years on the commission have been "maybe a little more contentious than previous FERCs have been. We've had, certainly, quite vivid and interesting debates among the different commissioners and advisers.

"One of the reasons is that the transition to a clean energy future … creates a lot of conflicts," he continued. "People that were in the business before that see their technologies are maybe on the way out are going to fight very hard. … There are winners and losers. Not everything is a win-win situation."

"Chairman [Neil] Chatterjee has stated a number of times … he wants to make FERC boring again," he continued, sparking laughter from the audience. "I have to say, he just hasn't succeeded quite yet."

But Glick credited Chatterjee for supporting Order 841 — one of the few times that the chairman voted differently than his fellow Republican, Commissioner Bernard McNamee.

He expressed hope that the commission will return to the issue of aggregated distributed energy resources, which it declined to act on in Order 841. "In my view, we should be ready to go. I don't think there's any additional information we need," he said, noting the commission held a technical conference and received comments on the issue. (See *Commenters Divided on DER Aggregation, State, LDC Roles*.)

He also expressed confidence that the commission will prevail in a legal challenge over its jurisdiction over storage, noting the Federal Power Act gives it authority over all sales for resale, "even behind the meter." State regulators, utilities and public power groups asked the D.C. Circuit Court of Appeals in July to overturn FERC's decision not to allow states to opt out of Order 841. (See *States, Public Power Challenge FERC Storage Rule*.)

Glick said he wants to learn more about reports that storage providers have been reluctant to enter the energy markets in some regions, saying their involvement will be necessary to accommodate a big increase in intermittent renewables. "Especially if we don't build as much transmission as we need to build, the only way to deal with this extra intermittency is through storage. A lot more storage."

He also said FERC should hold a technical conference on hybrid storage. Among the questions the commission needs to answer, he said, is how the addition of storage to an existing solar or wind project affects its position in the interconnection queue and whether it is treated as a dispatchable or intermittent resource. "We need to learn what some of these issues are — what some of the barriers are — for hybrid technologies," he said. ■

From left: Jason Burwen, ESA; Christopher Parent, Exeter Associates (and formerly of ISO-NE); Michael DeSocio, NYISO; and Jennifer Tribulski, PJM | © *RTO Insider*

# Report Marks a Decade of Energy Transition

BloombergNEF's annual Sustainable Energy in America Factbook is a smorgasbord of data that energy policy nerds have hungrily consumed since the company started publishing it eight years ago.

For its 2020 edition, *released* last week, BNEF combined last year's data with a look back over the last decade, "10 extraordinary years [in which] the U.S. fundamentally overhauled how it produces, delivers and consumes hydrocarbons, electrons and heat."

Here are some of the highlights of the report, which BNEF produced with the *Business Council for Sustainable Energy* (BCSE).

## Natural Gas & Coal

Domestic natural gas production rose more than 50% during the decade and 8% in 2019, pushing the U.S. from a net importer to a net exporter. The gas distribution pipeline network grew from 2.09 million miles in 2009 to 2.24 million through 2018 (the last year for which there is complete data).

Gas prices dropped to 2016 levels last year, with Henry Hub natural gas trading below $3/MMBtu every month except January.

Power sector demand for natural gas rose 60% as gas-fired generation's share jumped from 24% to 38% over the decade. Coal's share declined by almost half, from 45% to 23%. About 12 GW of coal-fired generation shuttered in 2019 and another 14 GW of retirements have been announced for the next three years.

## Renewables & Storage

Generation from renewables spiked 77% during the decade, fed by new utility-scale wind and solar projects and rooftop solar. Renewable capacity doubled over the same period, with installed wind tripling to 108 GW and solar increasing 80-fold to 75 GW. The U.S. is second only to China in renewable capacity.

Last year was the second biggest ever for new non-hydro renewable energy capacity, with 20 GW commissioned, most of it wind and solar. Wind generation rose to 302 TWh in 2019 from 273 TWh the year before, surpassing hydro generation, which dropped from 293 TWh to 276 TWh. Renewables powered 18% of electric consumption in 2019.

"In a potential harbinger, U.S. hydro, wind, solar, biomass, geothermal and waste-to-energy produced more than the country's fleet of coal-fired power facilities in April 2019," surpassing coal for the first time, BNEF said.

Corporations — including oil companies looking to reduce extraction-related emissions — signed a record 14 GW of bilateral renewable energy power purchase agreements last year.

In the last two years, projects that pair renewable technologies with large-scale batteries have become economically viable. (See related story, *Energy Storage: All Grown Up?*)

From 2010 through 2018 (the last year for which complete data are available), investor-owned utilities invested an average of $18.9 billion a year (2018 dollars) in transmission, nearly double their inflation-adjusted spending for the previous decade. Renewable developers, however, say they need far more transmission to move power to load centers from wind- and solar-rich regions.

## Efficiency, Economy, Emissions

U.S. energy demand increased little over the decade despite 10 consecutive years of economic growth since 2009. While U.S. gross domestic product rose 25%, total energy use was up only 6.6%.

In 2019, energy productivity — the ratio of GDP growth vs. energy consumption growth — rose 3.3% as GDP grew by 2.3%, while energy consumption declined 1%.

Lower energy costs have contributed to low inflation, with U.S. households now spending less than 4% of their average monthly income on energy spending, down from 5.1% 10 years ago.

Meanwhile, as of 2018, 3.5 million people were working in the energy efficiency, energy storage, renewables, nuclear and natural gas industries.

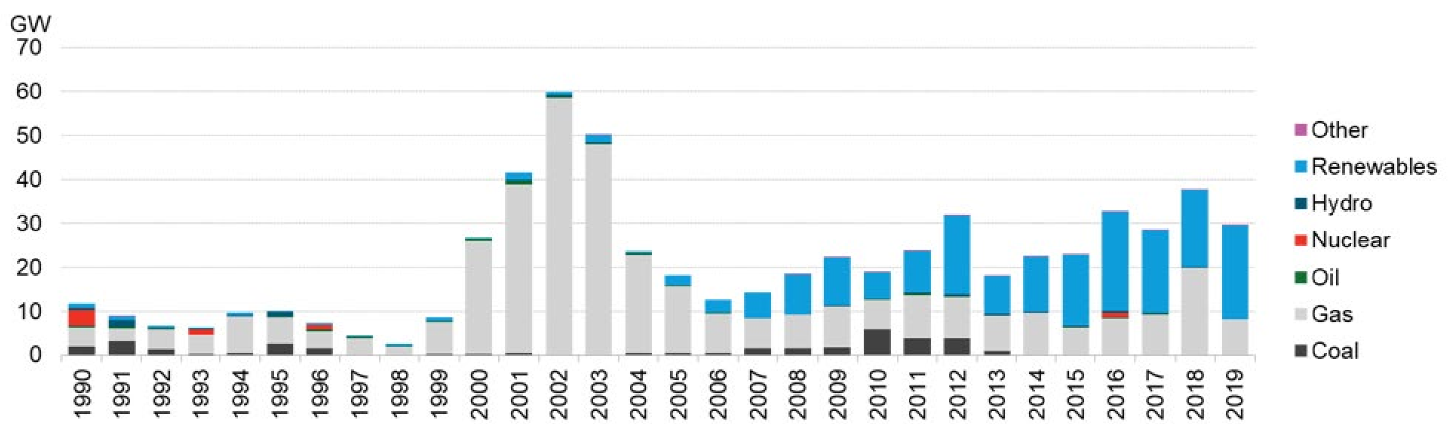
Greenhouse gas emissions from power plants dropped by nearly 25% for the decade, making the sector the second largest emitter, behind transportation. Less extreme weather contributed to a 2.8% drop in power consumption in 2019. "Lower top-line demand coupled with the general move toward a cleaner power matrix caused power sector-related emissions to crater by a rather incredible 7.8%," BNEF said.

However, it said climate change is causing higher high and lower low temperatures, increasing air conditioning and heating demand. "If these trends persist, increased energy consumption can make efforts to reduce energy sector emissions more difficult," it said.

Transportation sector emissions rose 5% during the decade despite the growth in electric vehicles. U.S. consumers now have a choice of 44 pure battery electric models and 35 plug-in hybrid electrics. EV sales totaled 1.4 million for the decade but dropped 11% in 2019 versus 2018. EVs represented only 1.8% of U.S. vehicle sales for the year. (See related story, *Spotty EV Growth, TOU Enrollment Challenges States.*)

Nine states increased their renewable portfolio standards in 2019, and states such as Washington, Nevada and New Mexico set zero-carbon, energy efficiency and fuel efficiency targets. ■

*— Rich Heidorn Jr.*




U.S. electric generating capacity build by fuel type | *BloombergNEF*

# What Spring Could Bring for PG&E

## *Smooth Path to Restructuring, or Morass of Legal Woes?*

*By Hudson Sangree*

Smoke from the Camp Fire in Paradise, Calif., filled the sky above the nearby town of Chico on Nov. 8, 2018, when 86 people died in a matter of hours.

The countdown is on for Pacific Gas and Electric's exit from bankruptcy, which all parties agree needs to happen by the end of June so the utility can participate in a state insurance fund to protect it from future wildfire liabilities, a key to its financial stability.

Lawyers for PG&E and its creditors, together with U.S. Bankruptcy Judge Dennis Montali in San Francisco, are trying to keep things moving toward that goal. Yet significant hurdles remain before PG&E — which the *U.S. Energy Information Administration* calls the nation's largest electric utility, with nearly 5.5 million customer accounts — can free itself from legal entanglements and political threats.

The repeated insistence by Gov. Gavin Newsom that PG&E must undergo a fundamental shift in its leadership and safety culture or face a state takeover recently was joined by a *legislative proposal* that would create a mechanism to seize the company from its shareholders. (See *PG&E Tries to Appease Governor with New Plan*.)

Another threat has arisen recently from wildfire victims who don't want the federal and state governments taking nearly $4 billion from a $13.5 billion fire victims' trust promised by PG&E. The 70,000-plus victims of utility-sparked wildfires in 2015, 2017 and 2018 must ultimately vote on PG&E's proposed reorganization plan.

And the California Public Utilities Commission, led by Newsom appointee Marybel Batjer, must approve any restructuring plan, including under the auspices of Assembly Bill 1054, the measure that created the wildfire insurance fund last year.

PG&E has to overcome those hurdles and more in the next four-and-a-half months. Here's a look at this spring's agenda and possible hurdles.

### Fire Victims Object

PG&E filed its proposed *disclosure* statement Feb. 7, an important step in its Chapter 11 reorganization. The document is intended to lay out in relatively plain language the terms of the utility's restructuring so that fire victims and others can weigh the plan and eventually vote on it.

In particular, the document describes the creation of the $13.5 billion trust, funded half in cash and half in PG&E common stock. The expectation is that the stock will be liquidated over time to provide money to pay claims.

Some victims don't like the stock component. They've told their lawyers and Montali they worry the stock could decline in value if PG&E experiences financial setbacks after bankruptcy. Some fire victims wrongly believe they will be given stock directly in lieu of a check, the judge and lawyers said at PG&E's latest bankruptcy hearing Feb. 11.

That's why the disclosure statement says in bold letters, "No Fire Victim will receive stock of Reorganized PG&E Corp. directly."

A more serious problem, however, is that federal and state agencies, including the Federal Emergency Management Agency and the California Office of Emergency Services, say they will seek recovery of their wildfire claims, totaling as much as $3.9 billion, from the victims' trust.

The case's official Tort Claimants Committee, PG&E and others have objected to that outcome, which could unravel the reorganization plan. They say the government agencies must pursue other means of compensation under the law.

Montali tried to reassure fire victims that highly experienced lawyers were addressing the matter.

"They are issues that are being dealt with by principal players," Montali said at last week's hearing, in response to objections from one fire victim, Will Abrams, who has appeared in person at the bankruptcy court to voice his criticisms of PG&E's restructuring plan.

A hearing on the government agency claims is scheduled for Feb. 26, and a hearing on the proposed disclosure statement is planned for March 10.

Montali noted that other individual victims have been writing to him, expressing their concerns.

"Please hold PG&E fully accountable," Tina Rezler, a survivor of the November 2018 Camp Fire, wrote to the judge earlier this month. "The current amount set aside isn't enough. Please do not allow FEMA, insurance companies or any other organization to take funds set aside for survivors that the funds are intended for."

Rezler said she lost her home and dog in the fire, which tore through the town of Paradise in a few hours early on a Thursday morning, killing 86 residents and destroying more than 18,800 homes and businesses.

The other large, deadly fires that PG&E plans to pay victims for are the Butte Fire in September 2015 and the North Bay fires of October 2017. The latter fires in Napa and Sonoma counties included the Tubbs Fire, which killed 22 residents and burned down a residential neighborhood in Santa Rosa.

In all, more than 70,000 fire victims have filed claims, attorneys said. Once the court adopts PG&E's disclosure statement, the victims will have the opportunity to comment and vote on the plan. PG&E has to mail out the disclosure statements and ballots by March 31, and ballots have to be returned to the court by May 15.

"We are weeks away from my being asked to approve a disclosure statement and supporting documents that will be designed to explain to them — every one of them, if they are inclined to read it — what should influence their decision," Montali told Abrams. "You and all 70,000 fire survivors have the right to vote the plan down if you choose to. That's the way the system was designed."

## Governor Objects Too

Another major obstacle to PG&E's hopes of exiting bankruptcy by June lies with Newsom, who has said on a number of occasions that he will seek a state takeover of PG&E if the utility doesn't meet his list of demands, such as an entirely new board of directors and a mechanism for the state to quickly assume control of the company if circumstances warrant.

Recently, State Sen. Scott Wiener (D) introduced a bill, SB 917, that would allow a state-created public-benefit corporation to acquire a utility through eminent domain, moving its assets to a proposed new entity called the Northern California Energy Utility District.

The bill doesn't specifically mention PG&E, but Wiener made clear his intentions at a Feb. 3 news conference, saying his bill would "put an end to the dangerous roller-coaster ride that we have been on with PG&E over the past decade," the *San Francisco Chronicle* reported.

Another of the governor's primary concerns is the tens of billions of dollars in new shares and bonds PG&E would issue to pay for its restructuring plan. Newsom has said an overleveraged PG&E would be unable to pay for the estimated $40 billion to $50 billion it needs to upgrade and harden its aging infrastructure, the source of catastrophic wildfires and the San Bruno gas pipeline explosion of 2010.

On Feb. 11, Newsom's lawyers told Montali they wanted to question witnesses about PG&E's plan, which could happen on Feb. 19 or 26 or in sworn depositions, attorneys said.

While Newsom has no authority over Montali, the judge is taking the governor's objections seriously because he could have significant influence on the proceedings.

The CPUC, whose members the governor appoints, has responsibility for approving PG&E's Chapter 11 plan under the commission's *order instituting investigation* (OII) and under AB 1054. The measure, championed by Newsom and quickly passed in July, would give PG&E access to a $21 billion wildfire insurance fund, paid for equally by ratepayers and the state's big three investor-owned utilities.

The bill requires PG&E to exit bankruptcy by June 30 to participate in the fund. The utility also must compensate victims of past fires ignited by its equipment and demonstrate that its post-bankruptcy governance structure is acceptable "in light of the utility's safety history, criminal probation, recent financial condition and other factors deemed relevant by the CPUC."

PG&E was convicted in 2016 of six felonies related to the San Bruno pipeline explosion.

Without the AB 1054 funds to protect it from future liabilities, PG&E's financial future could be in jeopardy and its bankruptcy plan could fall to pieces.

The CPUC is scheduled to gather evidence in its PG&E investigation during hearings from Feb. 25 to March 4 at its San Francisco headquarters. ■

# California Bills Target PG&E, IOUs

By Hudson Sangree

SACRAMENTO, Calif. — State lawmakers have drafted a spate of bills since early January aimed at correcting perceived wrongs by Pacific Gas and Electric and other investor-owned utilities, and they still have a few days left to offer more.

Friday marks the deadline for introducing legislative proposals in 2020, the second year of a two-year session in the State Capitol.

Many of this year's bills address the public safety power shutoffs (PSPS) that blacked out much of Northern and Central California last fall. One measure lays the groundwork for the state to take over PG&E and turn it into a public utility.

Another bill would let the California Public Utilities Commission place a public administrator inside an investor-owned utility for at least six months to oversee operations and make safety decisions.

That bill, *Assembly Bill 1847*, "will help all utilities refocus their priorities on safety and increase needed public confidence in essential electrical utility services," its author, State Assemblyman Marc Levine (D), said upon its introduction. "California's economy cannot afford to spend another decade in the dark."

Some lawmakers had speculated this year could see a legislative free-for-all against PG&E, but the reality has been more restrained. About three dozen bills, of the 753 measures introduced so far this year, have focused on the electric sector, with about half of those geared toward reforming the state's three big IOUs.

PG&E, the largest and most politically unpopular of the three, is in bankruptcy after two years of catastrophic wildfires ignited by its equipment, including the state's deadliest blaze, the November 2018 Camp Fire.

State Sen. Scott Wiener | *California State Senate*

California State Capitol

The utility came under heavy fire for blacking out hundreds of thousands of customers to prevent more fires in October and November. (See *California Officials Hammer PG&E Over Power Shutoffs*.)

## Taking PG&E Public

The most sweeping of the new bills aimed at PG&E is by State Sen. Scott Wiener (D). *Senate Bill 917* outlines a structure for the state to buy PG&E and turn it into a huge public utility, with cities allowed to peel off pieces to create municipal utilities. (See *What Spring Could Bring for PG&E*.)

"The legislation will fundamentally and structurally reform PG&E, whose faulty power lines have caused deadly wildfires, killing hundreds, incinerating thousands of homes, and destroying an entire community [the town of Paradise in the Camp Fire]," Wiener said in a statement.

The bill doesn't mention PG&E by name. Instead, it would allow state officials to acquire by eminent domain the assets of an IOU that has been convicted of a felony in the past 10 years preceding its seizure.

Jurors convicted PG&E of six felonies in 2016 related to the San Bruno gas pipeline explosion six years earlier. The explosion killed eight people, injured 58 others and destroyed dozens of homes in a suburban San Francisco neighborhood.

Wiener's measure would let local governments join in the eminent domain action to acquire

## CAISO/West News

portions of PG&E's territory. Cities including San Francisco and San Jose have expressed interest in taking over PG&E's local assets and creating municipal utilities. (See *PG&E Ends Bond Bid as SF Makes Wires Offer*.)

A newly formed public-benefit corporation, the Northern California Energy Utility District, would oversee the process of running and dividing PG&E. Billions of dollars in bonds could be issued to buy the IOU, and elected utility officials, not the CPUC, would set rates and adopt policies.

In recent months, Gov. Gavin Newsom has repeatedly said the state will take over PG&E if it doesn't comply with his demands for major changes, but he hasn't indicated whether or not he backs Wiener's bill. (See *Newsom Budget Reiterates PG&E Takeover Threat*.)

### Installing a Public Administrator

Levine's proposal could increase state control of an IOU without a takeover. Under his bill, the CPUC could embed a public administrator inside any IOU it finds isn't complying with state laws or regulations.

Intentional blackouts are singled out in the measure.

"The public administrator shall have oversight authority over an electrical corporation's activities that impact public safety, including the electrical corporation's decision to de-energize all or part of its distribution or transmission system to reduce the risk of wildfire ignition," the bill says.

The administrator could stay for up to 180 days, or longer if the "commission adopts a decision in a proceeding making further findings supporting the continued need for the public administrator," the bill says.

### Limiting Harm from Power Shutoffs

A handful of bills seek to minimize the impacts of the public safety power shutoffs.

One bill requires utilities to compensate business owners for food spoilage during blackouts. Another, *AB 1915*, establishes new rules for the payment of damage claims from PSPS events.

Lawmakers have been especially concerned about the safety, during blackouts, of low-income rural residents who have limited mobility or rely on medical devices. *SB 862*, a measure by Sen. Bill Dodd (D), whose Northern California district has been plagued by wildfires and safety blackouts, would require utilities to provide backup power or financial


State Assemblyman Rob Bonta announces his proposed Green New Deal. | *Rob Bonta*

assistance in such cases.

Dodd also co-authored a bill that would prevent schools from losing attendance-based funding during power shutoffs. And he introduced a measure, *SB 947*, that would require the CPUC to base utility revenues on meeting safety and reliability goals.

"A performance-based model will discourage the type of reckless behavior responsible for devastating wildfires and power outages, while promoting responsible practices that have been sorely lacking," Dodd said. "We need to be innovative to force accountability and achieve acceptable performance."

### Meeting Climate Goals

Measures focused on climate change and greenhouse gas emissions also will occupy this year's legislative proceedings.

A proposal by Republican lawmakers would revise the definition of a renewable energy resource under the state's renewable portfolio standard program to include large hydroelectric facilities and nuclear power plants.

In prior legislation — notably SB 100 passed in 2018 — California established ambitious goals of eliminating fossil fuels and carbon emissions by midcentury. (See *Calif. Gov. Signs Clean Energy Act Before Climate Summit*.)

A "green new deal" bill was introduced earlier this year by Assemblyman Rob Bonta (D). The measure lays out broad aims of fighting climate change and income inequality while offering few specific proposals for achieving those goals.

When he introduced *AB 1839* in January, Bonta said it would get fleshed out over time, which will likely be true of other bills as well.

After the introduction deadline passes, policy committees — including the Senate Energy, Utilities and Communications Committee and the Assembly Utilities and Energy Committee — will begin weighing and helping to shape the proposals.

That process runs through mid-May. The deadline for bills to be passed by the State Legislature is Aug. 31, and the governor has until Sept. 30 to sign or veto the measures. ■

State Sen. Bill Dodd | *California State Senate*

# ERCOT Board of Directors Briefs

## Texas Grid Operator Finishes 2019 with $35.4M Positive Variance

ERCOT CEO Bill Magness last week told the Board of Directors that the grid operator finished 2019 with a net positive variance of $35.4 million, boosting the pool of funds to implement real-time co-optimization (RTC).

Magness *said* during the board's Feb. 11 meeting that a preliminary budget review indicated a 13.3% increase in revenues and a 3.4% decrease in expenditures. He credited a $19.2 million increase in interest income and a $6.5 million increase in system administrative fees for much of the positive variance.

Interest income was coming in over budget as a result of higher balances and rates, Magness told the board in April. The unexpected revenue has been set aside to fund an RTC development pool, now at $52.5 million. ERCOT has estimated it will cost at least $40 million to add RTC to the market.

Magness said the administrative fee variance benefited from warmer-than-normal weather from August into October. September provided $2.4 million and August $1.3 million in actual revenue above budget. October and November accounted for $800,000 and $700,000, respectively, in overages.

ERCOT's Matt Mereness briefs the board on real-time co-optimization. | *ERCOT*

October "is kind of what you would expect," Magness said. "September was the really unusual thing."

ERCOT's load continues to grow, with a 2% increase in annual energy usage between 2018 and 2019, after a 5% increase between 2017 and 2018. Over the past decade, energy use is up 20.4%, from 319,097 TWh to 384,040 TWh. The decade before, energy use was up 7.7%.

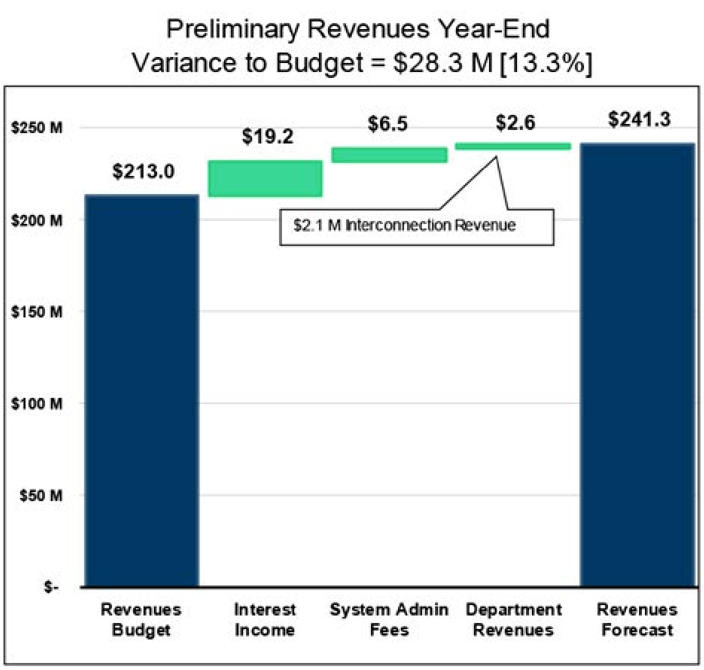
"[Growth] was as substantial as it felt like, and we continue to see growth," Magness said.

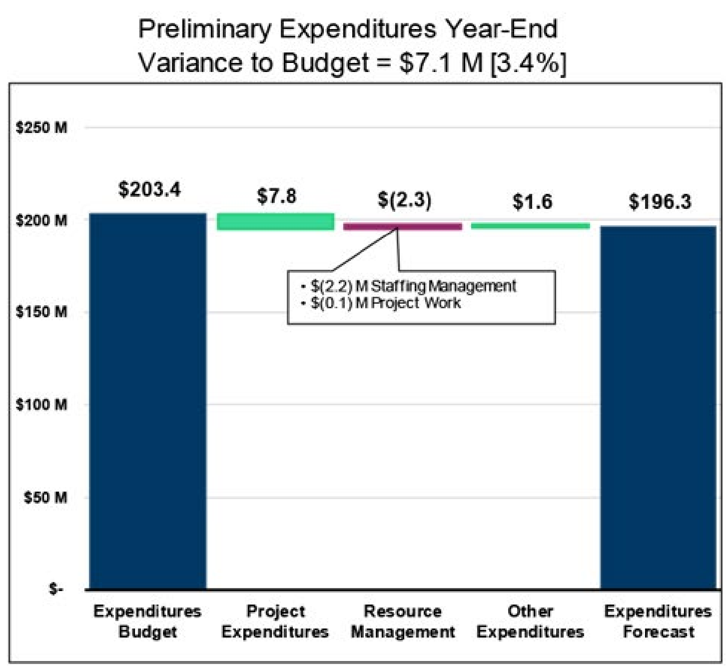
ERCOT CEO Bill Magness | *ERCOT*

## Real-Time Co-optimization Team Finalizes Scope

ERCOT's Matt Mereness thanked "all y'all" as he secured the board's approval of the final batch of RTC *key principles* that will guide the grid operator's addition of the market tool into its energy market.

RTC procures both energy and ancillary services every five minutes to find the most cost-effective solution for both requirements. (See "Committee Endorses Final Real-time Co-optimization Principles," *ERCOT Technical*




ERCOT's 2019 financial summary, variance to budget | *ERCOT*

# ERCOT News

*Advisory Committee Briefs: Jan. 29, 2020*.)

Mereness chaired the *Real-Time Co-optimization Task Force*, which wrapped up nine months of work by producing a 44-page document that defines the principles, or boundaries, that staff and stakeholders are working toward.

"It's been painful but focused," Mereness said of the group's 16 meetings. "Collaborative, not always perfectly unanimous, but working together to find solutions. One secret that made it work is we had a single forum. All the smart people were in the room working on it."

Congratulated by board Chair Craven Crowell, Mereness responded, "It takes a village."

Staff plan to file a set of Nodal Protocol revision requests (NPRRs) implementing RTC in March. The task force will serve as a clearinghouse to address language changes and comments, with a goal of submitting all NPRRs to the Protocol Revision Subcommittee for its consideration in November. If everything stays on schedule, the Technical Advisory Committee and the board will see the final NPRRs in November and December.

According to its schedule, RTC will be added to the market by mid-2024 before a planned update to ERCOT's Energy Management System.

## Helton, Lange Re-elected to TAC Leadership

The board approved staff's determination that developing systems to enable economic dispatch over DC ties between the grid operator and other systems would be "prohibitively complicated and expensive" and is not "presently feasible." Staff said existing systems and processes are sufficient enough to manage congestion caused by DC ties.

"A five-minute dispatch would be technically and jurisdictionally a challenge," Mereness said.

ERCOT had been directed by Texas' Public Utility Commission to study and determine whether some or all DC ties should be economically dispatched or whether implementing a congestion management plan or special protection scheme would more reliably and cost-effectively manage congestion caused by DC tie flows.

The *directive* was one of 14 related to Pattern Development's *Southern Cross Transmission*, a proposed HVDC line in East Texas that would ship more than 2 GW of energy between the Texas grid and Southeastern markets (*46304*). (See "Members Debate Southern Cross' Bid to be Merchant DC Tie Operator," *ERCOT Technical Advisory Committee Briefs: Feb. 22, 2018*.)

Nick Fehrenbach, city of Dallas | *ERCOT*

Nick Fehrenbach, manager of regulatory affairs and utility franchising for the city of Dallas, pointed out the Southern Cross project is a "commercial venture for economic benefits" and raised concerns about the import and export of power outside economic dispatch.

"This troubles me," Fehrenbach said. "I don't know the next project of this nature, but this is something we need to resolve in the long run."

Mereness said that ERCOT has changed its scheduling of DC ties. As their ramp comes in, it is offset by the grid operator's economic dispatch.

## Leadership Re-elected

In other action, the directors re-elected Crowell as chair, former PUC Commissioner Judy Walsh as vice chair and Magness as CEO, and ratified ERCOT's *officers*.

The board's consent agenda, which passed unanimously, included 16 NPRRs, single revisions to the Nodal Operating Guide (NOGRR) and Verifiable Cost Manual (VCMRR) and a system change request (SCR):

- *NPRR826*: creates a new process for determining the mitigated offer cap for reliability-must-run (RMR) resources.
- *NPRR838*: revises the RMR process by removing the requirements for units to submit operations and maintenance estimates and for RMR resources to submit quarterly O&M updates.
- *NPRR955*: defines a limited-impact RAS to accommodate NERC Reliability Standard *PRC-012-2*.
- *NPRR963*: allows an energy storage resource's (ESR) components to be considered in aggregate for generation resource energy deployment performance scoring, controllable load resource energy deployment performance scoring and settlement of base point deviation charges.
- *NPRR964*: removes from the RMR process the term "synchronous condenser unit" and its related agreement.
- *NPRR967*: removes the 10-MW limit for limited-duration resources.
- *NPRR970*: clarifies the fuel-dispute process for reliability unit commitment (RUC) make-whole payments.
- *NPRR971*: updates the energy offer curve's cost cap value.
- *NPRR974*: requires ERCOT to include additional data about the amount of projected capacity available in the short-term system adequacy report.
- *NPRR977*: requires ERCOT to post a report of canceled RUCs to the market information system.
- *NPRR978*: incorporates revisions to address recent changes on the PUC's resource adequacy reporting rules.
- *NPRR980*: changes how forced outages longer than 180 days are treated in ERCOT's Capacity, Demand and Reserves report.
- *NPRR982*: clarifies that a deployed block-load transfer will be appropriately compensated.
- *NPRR985*: modifies the time period used to compute the forward adjustment factor components of the total potential exposure calculation and clarifies that the three forward weeks commence on the applicable operating day, rather than following the operating day.
- *NPRR986*: gives ESRs more flexibility in updating real-time energy offer curves and bids.
- *NPRR988*: corrects *NPRR929*'s intended implementation by clarifying that conditions in its language are necessary for determining whether a point-to-point obligation with links to an option bid is eligible to be awarded.
- *NOGRR183*: aligns the Nodal Operating Guides with NERC's remedial action scheme reliability standard.
- *SCR806*: adds resource-specific offer information to all individual disclosure reports on ERCOT's website.
- *VCMRR026*: removes an appendix to align the manual with *NPRR970*'s proposed protocol language and *NPRR617*'s revisions. ■

*— Tom Kleckner*

## ERCOT News

# PUCT Approves Reduced CenterPoint Rate Request

Texas regulators last week approved a stipulated settlement of a CenterPoint Energy rate case that was a little more than 8% of the utility's original request (*49421*).

The Public Utility Commission showed CenterPoint little love during its open meeting Friday, signing off on a $13 million settlement. The Houston utility had requested a $161 million recovery in April 2019, saying it had increased its customer base by 20%, installed 2.5 million smart meters and invested $6 billion in facilities since January 2010.

The agreement also reduces CenterPoint's return on equity from 10% to 9.4%. It had asked for 10.4%.

CenterPoint *filed* the proposed settlement agreement in January. Parties included PUC staff; the Office of Public Utility Counsel; the city of Houston and other city coalitions; Texas Industrial Energy Consumers; Alliance for Retail Markets; Texas Energy Association for Marketers; and Texas Competitive Power Advocates.

Left to right: Texas PUC Commissioners Shelly Botkin, Chair DeAnn Walker and Arthur D'Andrea discuss CenterPoint Energy's rate case.

The PUC also approved a rate-case-expense rider for Entergy Texas, allowing the utility to recover $6.4 million (*48439*).

The commission approved two settlement agreements resulting in $775,000 in administrative penalties:

- EDF Energy Services was docked $475,000 for failing to reserve sufficient capacity to meet its responsive reserve service obligations (*50304*).
- Oncor was penalized $300,000 over annual service quality (*50350*). ■

*— Tom Kleckner*

# ERCOT Approves Oklaunion's Retirement

ERCOT said Friday it has approved the retirement of Public Service Company of Oklahoma's coal-fired Oklaunion Power Station in the Texas Panhandle.

The Texas grid operator said staff have completed a reliability analysis and determined that the plant is not required to support transmission system reliability. The ruling clears the way for Oklaunion to be decommissioned and permanently retired as of Oct. 1.

The 34-year-old, 650-MW plant's ownership is split among utilities in both the ERCOT and SPP grids. AEP Texas owns a 54.69% interest in the plant. The other owners are the Brownsville Public Utilities Board (17.97%) in South Texas, PSO (15.62%) and the Oklahoma Municipal Power Authority (11.72%).

PSO notified ERCOT of its plans on Jan. 21. (See *PSO Officially Retires Oklaunion Coal Plant*.) ■

*— Tom Kleckner*


Oklaunion Power Station | *AEP*

# ISO-NE News

# Offshore Wind Slogs Forward in Massachusetts

## *Lengthy Federal Permitting Process Delays Vineyard Wind Construction*

*By Michael Kuser*

Michelle Morin of BOEM addresses members of the Environmental Business Council of New England in Boston on Feb. 14. | *© RTO Insider*

BOSTON — A New England offshore wind conference held last week couldn't have been timelier: It came just a week after the U.S. Bureau of Ocean Energy Management *announced* when it plans to rule on the permit for Vineyard Wind.

BOEM pegged Dec. 18 for its final decision on the project off Massachusetts — a timeline the company *said* makes its plan to start commercial operation of the facility in 2022 impossible.

The agency, which had been expected to give its thumbs-up last year, surprised the industry in August by delaying its decision in order to expand its study of cumulative environmental impacts. (See *Renewable Backers Decry Vineyard Wind Delay*.)

But the tone was upbeat Friday when 130 people gathered at an Environmental Business Council of New England (EBCNE) conference to hear the latest from more than a dozen offshore wind officials and industry representatives. Here is some of what we heard.

### What to Expect from BOEM

Michelle Morin, BOEM | *© RTO Insider*

Michelle Morin of BOEM's Office of Renewable Energy described what the industry can expect from the agency this year as it moves toward the common goal of getting "the first steel in federal waters."

"We're really looking forward to taking advantage of the Coastal Virginia Offshore Wind project, just like we did with the Block Island wind farm, to study and get real-time data as the facility's being constructed ... instead of just relying on modeled or predictive data," Morin said, referring to a 12-MW test *project* managed by Dominion Energy and expected to be operational at the end of this year.

Morin said BOEM's mission is to make the offshore wind energy lease areas available for "expeditious and orderly development" and hailed the half-billion dollars earned from auctions so far and the 15 lease areas under development.

The agency has heard industry calls for predictable schedules, "and we're taking an ever more regional approach to that," Morin said. She noted that "everyone is eagerly awaiting our announcement of wind energy areas in the [New York] Bight. ... We're still very hopeful that will occur this year."

BOEM is now reviewing six construction and operations plans (COPs) representing 5 GW of total capacity, with each calling for a separate environmental impact statement (EIS). The agency this summer expects to publish the draft EIS for the South Fork project off Long Island and to kick off EIS development for the other projects, Morin said.

BOEM expects to receive an additional six COPs in the next 12 months, she said.

### Regional Approach

Morin noted that in December, the agency launched its Gulf of Maine Intergovernmental Renewable Energy Task Force with the participation of Maine, Massachusetts and New Hampshire "to facilitate information gathering among federal, state and tribal governments to inform the wind energy leasing process."

She said BOEM will keep pursuing that process and "also look to take advantage of other events in the area, such as the upcoming Maine Fishermen's *Forum*." The agency is also processing applications for regional transmission in both the Mid- and North Atlantic.

Vineyard Wind will be the first big project for the agency. If approved, it will represent a joint decision by BOEM, the National Marine Fisheries Service (NMFS) and the Army Corps of Engineers, Morin said.

Asked whether BOEM has the resources to manage all its work, Morin said "yes."

"We actually brought on five new employees last year, and we plan to advertise for at least double that this year. We're also pulling in resources from other federal agencies. The Bureau of Land Management has a lot of experience with onshore wind, [as does] our sister agency, the Bureau of Safety and Environmental Enforcement. And for all those third-party EIS contractors, we're increasingly relying on those contracts."

BOEM is currently holding issues-based workshops, such as a recent one to establish a regional science entity for offshore wind, and is also working with NMFS and the Responsible Offshore Development Alliance (RODA) to organize a "state-of-the-science" workshop later this year, she said. It will additionally hold a second offshore wind and maritime industry knowledge exchange in northern New Jersey early this summer.

The agency is trying to streamline rulemaking, incorporating suggestions from stakeholders, and also learning from international partners, who "have a lot to teach us," Morin said. "We have a very active international affairs office very entrenched within our offshore wind office and do have one-on-one contacts on whatever the high-priority topics are at the time.

# ISO-NE News

This year we expect to have these knowledge exchanges with Denmark, the Netherlands, Scotland, Germany and the European Commission's directorate general for energy."

## Bay State Sets the Pace

Patrick Woodcock, Mass. DOER | © *RTO Insider*

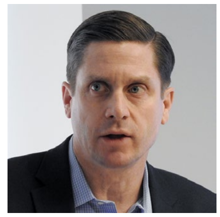
Massachusetts Department of Energy Resources (DOER) Commissioner Patrick Woodcock emphasized his state's leadership in adopting technologies to fight climate change.

"Think about that in the context of offshore wind and what we have done over the last four years since the passage and Gov. [Charlie] Baker signing in 2016 the act to establish the procurements that have become the template across the Eastern seaboard," Woodcock said. "It's not just about emission reductions, but about creating that disruption that swells across the country."

DOER in October awarded a contract to Mayflower Wind Energy, a joint venture between Shell and EDP Renewables, to develop 804 MW of offshore wind 20 nautical miles south of Nantucket Island.

Feb. 10 was the deadline for filing contracts with Mayflower, whose record-low price of $58.47/MWh "really continued to challenge all of our preconceived notions of what pricing means," Woodcock said.

Bruce Carlisle, managing director of offshore wind at the Massachusetts Clean Energy Center, added that the state's 29-acre New Bedford Marine Commerce Terminal is the only special-purpose port facility for offshore wind in the U.S. He noted his agency is also testing world's largest turbine blade, General Electric's 107-meter Haliade-X.



Bruce Carlisle, Mass. CEC | © *RTO Insider*

## Developer Perspective

Nathaniel Mayo, Vineyard Wind | © *RTO Insider*

Nathaniel Mayo, manager of development and policy for Vineyard Wind, said that while "federal permitting is top of mind," the company's massive project has "moved almost completely through the state permitting process."

The joint venture between Avangrid Renewables and Copenhagen Infrastructure Partners last August bid for the second Massachusetts solicitation by offering several options on up to 800 MW of additional offshore wind.

Connecticut in December *awarded* the 804-MW Park City project to Vineyard Wind, Mayo noted.

Mayo also mentioned that New England offshore wind developers have jointly proposed spacing the turbines 1 nautical mile apart in a uniform grid layout.

Scott Lundin, head of permitting in New England for Equinor Wind US, said a U.S. Coast Guard draft *study* released last month on port access in Massachusetts and Rhode Island supports the developers' proposal.

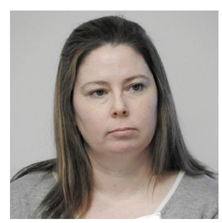
The study recommends that if "turbine layout is developed along a standard and uniform grid pattern, standard vessel routing measures would not be required," and that such a grid layout would also help minimize the risk to search-and-rescue operations within a wind farm.

Stephanie Wilson, permit manager for Ørsted Energy, said her company is developing about 3,000 MW of offshore wind in partnership with Eversource Energy off New England and with Public Service Enterprise Group and Dominion in the Mid-Atlantic region.

Wilson emphasized Ørsted's "investment in ports, with each of the contracts we've been awarded containing a significant commitment to invest in port infrastructure."

## Do Better

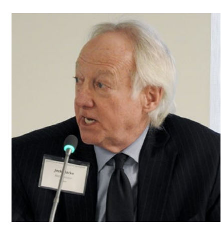
"I think we're seeing momentum," said Laura Smith Morton, senior director of policy and regulatory affairs at the American Wind Energy Association. "The [BOEM] decision to have the supplemental [analysis] was unexpected, and of course it was a hiccup ... but then again, I don't see that as being ultimately a problem because we are again moving forward."



Fiona Hogan, RODA | © *RTO Insider*

"We have a memorandum of understanding with NMFS and BOEM, which puts us in a unique position where we can work directly with both organizations while we're representing the fishing industry," said Fiona Hogan, research director for RODA.

Jack Clarke, Mass Audubon's director of public policy and government relations, challenged Baker "to change the way we do offshore wind" to help the state meet his commitment to move to net zero emissions by 2050.



Jack Clarke, Mass Audubon | © *RTO Insider*

"New York has a goal of 9,000 MW, New Jersey has a goal of 7,500 MW and here we are in Massachusetts with a goal of 3,200 MW," Clark said. "We can do better." ■

(Left to right): Raya Treiser, WilmerHale; Laura Smith Morton, AWEA; and Jason Folsom, MHI Vestas | © *RTO Insider*

## ISO-NE News

# FERC Rejects ISO-NE Fuel Security Sunset Rollback

By Michael Kuser

Everett, Mass., with Exelon's Mystic Generating Station in the background

FERC on Friday rejected a request by ISO-NE and the New England Power Pool to roll back the sunset date for a Tariff provision that allows the RTO to retain a resource for fuel security reasons.

ISO-NE and NEPOOL sought permission to sunset the Forward Capacity Market mechanism one year earlier than the May 31, 2025, expiration currently specified in the Tariff (*ER20-645*).

The RTO's Fuel Security Reliability Retention Mechanism allows it to retain resources needed for fuel security but are seeking to retire in Forward Capacity Auctions 13, 14 or 15.

The commission found the rollback request "unjust and unreasonable because it would prematurely terminate" the mechanism prior to the submission of ISO-NE's energy security improvements (ESI) initiative, which has been taking longer than anticipated. FERC last August granted the RTO a second extension to file the plan, to April 15.

"While the commission aims to limit the unnecessary use of out-of-market actions, the permanent market solution is not yet before us ... [and] therefore, we cannot ensure that [it] will be implemented on or before the sunset date proposed," the commission said.

Exelon *argued* against the request, saying an early sunset would be premature and unnecessarily limit the RTO's options for addressing fuel security needs when it's unclear that the permanent market solution will be in place by FCA 15.

NEPOOL *disputed* Exelon's argument and pointed to initial *analysis* supporting ISO-NE's request to retain Mystic 8 and 9, which found that the units were only needed through May 2024 (covered by FCA 14), and not May 2025 (covered by FCA 15). The organization said that its members showed an "overwhelming" preference to procure reliability services through competitive solutions and limit non-market mechanisms where feasible.

"We disagree with NEPOOL's argument. ... On the contrary, the [operational fuel-security analysis] demonstrated that there would be load shedding and depletion of operating reserves during the winter 2024-2025 if Mystic 8 and 9 ... retired," the commission said.

The commission additionally found that "ISO-NE fails to acknowledge that the settlement agreement specified the Forward Capacity Market design, its implementation date, and the transition period preceding its implementation in great detail." ■

# NEPOOL Markets Committee Briefs

## Redesigning Forward Reserve Market

ISO-NE intends to design a forward ancillary services market to complement the day-ahead one proposed under its energy security improvements (ESI) initiative, stakeholders learned last week.

It will formally signal that intent in its April 15 filing with FERC of the long-term fuel security mechanism (*EL18-182*).

"Based on this *analysis* to date, we expect that the forward sale of ancillary services could support the efficient energy inventory arrangements and therefore could improve energy security and market efficiency," Christopher Geissler, ISO-NE economist, told the New England Power Pool Markets Committee during a three-day meeting.

The new market would allow RTO participants to sell ancillary services "seasonally forward, perhaps for longer time periods," Geissler said. "One piece of the puzzle, as discussed at previous meetings, is that the forward reserve market as it currently exists cannot continue under ESI, being incompatible."

The RTO sees the new effort as a replacement or, at least, a substantial redesign of the forward reserve market, which is unlikely to be completed this year, he said. It hopes to implement the forward market construct along with the spot market built into the ESI because such procurements work well when they settle against a transparent, spot price for the underlying service, he noted.

The Participants Committee plans to vote on the overall energy security plan at its April 2 meeting, ahead of FERC's April 15 filing deadline.

The forward market presentation followed a high-level *summary* of ESI, the problems it attempts to address and the specific solutions the RTO is proposing.

[Note: Although NEPOOL rules prohibit quoting speakers at meetings, those quoted in this article approved their remarks afterward to clarify their presentations.]

Geissler emphasized that the RTO was in the early stages of planning and design on the forward ancillary services market.

Brett Kruse of Calpine asked the RTO to clarify what season-ahead products it foresees selling among general contingency reserves (GCR), energy imbalance reserves (EIR) and replacement energy reserves (RER).

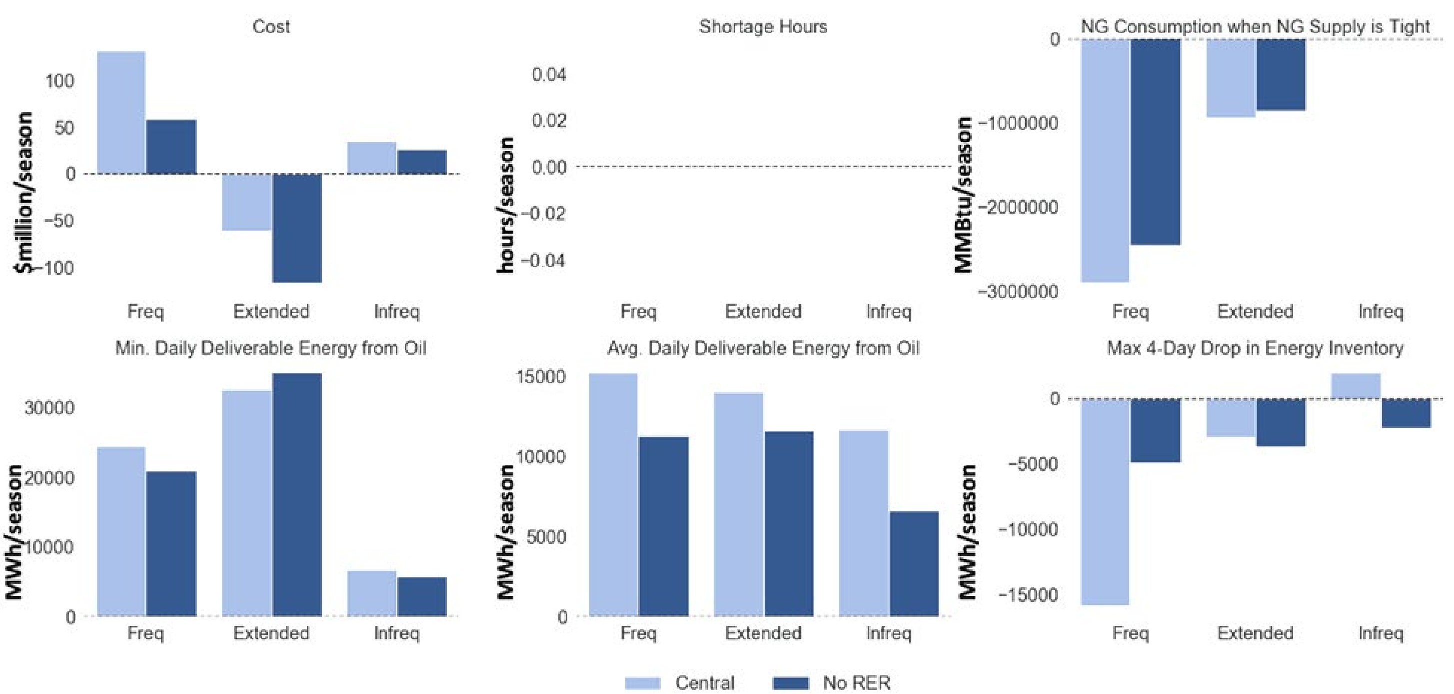
"We're thinking about whether we would procure all three of those products or, instead of separately, having some sort of blended average of them that was procured forward, or whether we would buy only a subset of them," Geissler said. "We might think of the GCR and RER products as having a relatively predictable, stable quantity looking ahead, on average, whereas with the EIR product, a lot of hours may be zero, or some hours it will be positive, so trying to procure that forward may present different challenges."

## Strike Price Adder Impact

Geissler also addressed the New England States Committee on Electricity's presentation last month advocating a fixed \$10/MWh adder on the strike price for all energy call options under the ESI plan. His *analysis* suggested that the adder — called a "bias" by the RTO — would reduce the incentive for option sellers to procure fuel. (See "Fixed Strike Price Adder," *NEPOOL Markets Committee Briefs: Jan. 14-15, 2020*.)

The RTO's current proposal does not include the adder; it has instead proposed the strike price be set at the expected real-time LMP but is also open to stakeholder feedback on the pros and cons of an adder, Geissler said.

He said the RTO assumes that a resource that




Full ESI vs No-RER impact analysis results | *Analysis Group*

# ISO-NE News

sells day-ahead energy or ancillary services under ESI will be incentivized to spend on fuel to make itself available in real time, but it will see those incentives decrease as the strike price increases above its marginal costs.

"This means that if we add a bias that makes the strike price much higher, the likelihood that the strike price exceeds the resource's marginal costs are greater, and as a result, the resource's incentives to procure the fuel or take the actions necessary to be available in real time may therefore be diminished."

The incentive depends on the resource believing that its operation or failure to operate will have some impact on real-time prices, said James Wilson, a consultant with NESCOE.

"The point is that if you raise the strike price, it reduces the settlement, but if the reduction in the settlement from the resource's perspective is the same, whether or not it acquires fuel and is able to run ... then the higher strike price doesn't really affect its incentive to acquire fuel," Wilson said.

Geissler agreed but also noted that if the resource's real-time availability doesn't affect real-time prices, one has "assumed away the misalignment problem" — between the cost of acquiring extra fuel and benefit of being available for power — that prompted the region's concerns about fuel security.

Preliminary analysis suggests that a modest adder would reduce the incentive to procure fuel for a portion of resources that sell day-ahead options in the ESI winter central cases. For example, a $10 adder would reduce the incentive between 2 and 9% across all hours in those cases.

However, the impact is more significant during periods of system stress, as a bias impacts the incentives of approximately 20% of all option megawatt-hours sold, he said.

"Once the strike price is at or above [a generator's] marginal cost, that incentive to actually go out and buy the fuel starts to diminish because the delta between its net revenues from buying the fuel versus not buying the fuel starts to decrease," Geissler said.

## ESI Increases Generator Margins

Todd Schatzki of Analysis Group presented a *draft* impact analysis that shows ESI increasing margins for selling power through forward energy requirement (FER) payments and additional returns earned through the sale of day-ahead energy options.

He recommended the report's overview section as a good three-page summary for stakeholders who are not as interested in the technical details of ESI as others.

The analysis is both quantitative and qualitative, assessing impacts on economic and reliability outcomes, as well as market participants' behavior, such as spurring generators to acquire sufficient fuel to power them through an extended period of stressed conditions, he said.

"To assess the magnitude of these incentives, we start by comparing these new ESI revenues to the change in inventory costs, given the quantity of incremental fuel ESI is assumed to incent," the report says. "New revenue streams that are large relative to the change in inventory costs is an important indicator of the proposal's strong incentives."

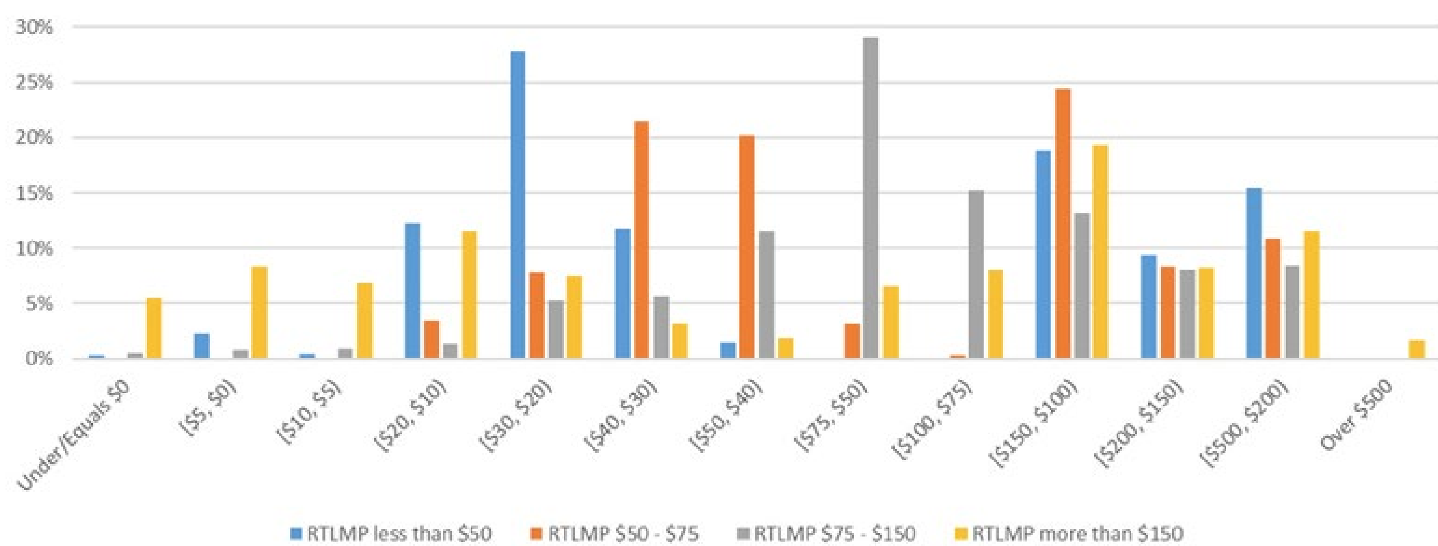
The report shows the change in economic costs of incremental energy inventory, measured by the financial — or holding — costs of having more fuel in inventory at the end of the winter because of decisions to increase inventory for the season.

The study of winter months demonstrates "that the average incremental payments to resources under ESI generally far outweigh the additional holding costs. In the 'frequent' or 'extended' cases, these ESI revenues far exceed the change in holding costs for all fuel oil resource categories," the report says.

For example, for dual-fuel, combined cycle units in the "frequent" case, the incremental cost of holding a larger quantity of fuel at the end of the winter because of more aggressive refueling is $14/MW. By contrast, the additional revenues earned because of ESI compared to current market rules are $5,591/MW ($5,452 and $139 for FER payments and day-ahead energy options, respectively), for a net increase in revenue of $5,577/MW.

The results show the additional market revenues from ESI far exceed the change in costs of holding additional fuel, illustrating the initiative's strong incentives for oil resources to increase the quantity of fuel held during winter. This incremental oil will help maintain system reliability during periods of system stress, he said. ■

*— Michael Kuser*




Under frequent stressed conditions, a strike price bias of $10 reduces the incentive for 21% of all day-ahead options sold during periods where the real-time LMP exceeds $150/MWh. | *ISO-NE*

# MISO Planning Subcommittee Briefs

## Cost Estimate Guide Features HVDC

The cost estimation guide for MISO's 2020 transmission planning cycle will for the first time include upfront and long-term cost estimates for HVDC lines.

MISO circulated the draft *guide* for the 2020 MISO Transmission Expansion Plan (MTEP 20) at the Planning Subcommittee's meeting Feb. 11. The guide is used to evaluate alternatives to some of the proposed projects in the plan.

The RTO is proposing that the new guide increase the costs of lines, substation equipment, breakers and transformers across all voltage classes. Costs of land clearing are similarly set to rise, and costs for the land itself will go up almost across the board.

This year, MISO is also adding cost estimates for HVDC lines and their converter stations, Principal Transmission Design Engineer Devang Joshi said.

All project cost estimates include a 20% contingency cost adder and an additional 7.5% allowance for funds used during construction.

MISO is requesting stakeholder reactions to the cost estimation guide by March 13. It plans to post a final version to its website by June 23.

## Extreme Event Results in

MISO's recently completed an extreme events *analysis* for MTEP 19 finds the West planning region — Minnesota, Iowa, parts of the Dakotas and western Wisconsin — contains the highest potential for cascading failures on the transmission system.

However, reliability planners said only a few events show cascading failures out of the thousands of extreme events tested.

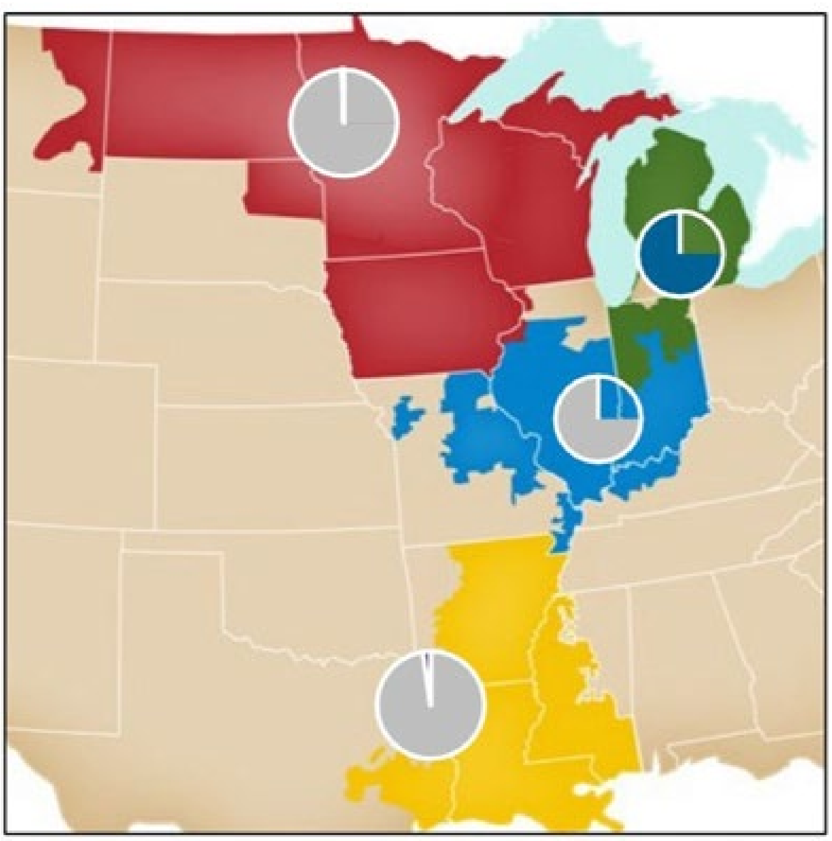
The annual analysis was performed with two-, five- and 10-year models using contingencies submitted by transmission owners and developed by MISO. Simulated events included single instances and combinations of substation, generation and transmission losses and natural gas pipeline outages.

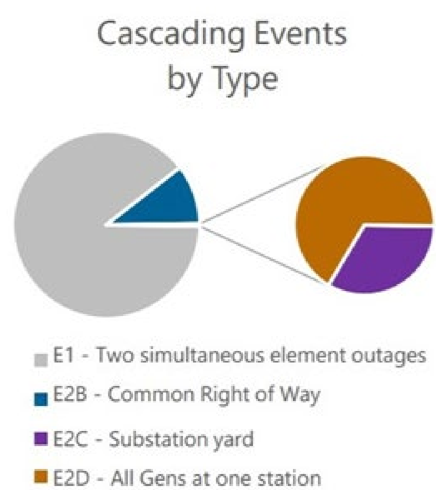
MISO expansion planner Fatou Thiam said paired element outages on the system present the most common cause of hypothetical cascading in nearly the entire RTO. However, common right-of-way circuit outages are the most prevalent cause in lower Michigan.

After completing the analysis, MISO works with its TOs to pinpoint actions that would minimize the risk or severity of cascading failures. The extreme events study is meant to give TOs a better understanding of the effects of various low-frequency, high-impact events.

MISO is now in the process of compiling extreme event contingencies as part of its MTEP 20 reliability assessment. Additionally, the RTO is asking stakeholders how it might improve its process of developing and evaluating extreme events. Stakeholders are asked to respond in writing by Feb. 28. ■

*— Amanda Durish Cook*







Events which cause Cascading, by MISO Planning Region

MTEP 19 extreme event study results | *MISO*

## MISO News

# MISO to Debut Online Queue Requests

*By Amanda Durish Cook*

MISO is taking measures to speed up the initial step in its generator interconnection process through a more efficient application process.

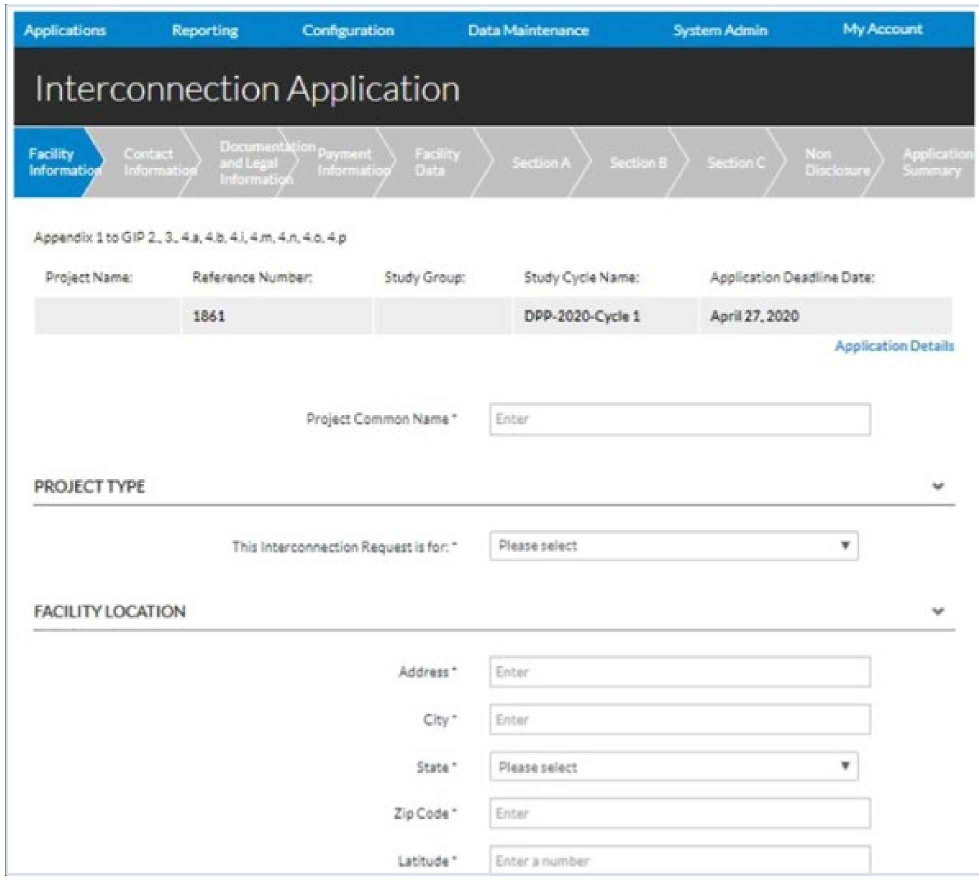
Speaking during a conference call Feb. 11, Jesse Phillips, MISO manager of resource utilization project management, said the RTO will seek to revise its Tariff to convert its generator interconnection queue application from a print-and-send form to an instant, online submission. The new procedure would go live in April.

Prospective interconnection customers would also be able to upload documents and models with their application. MISO plans to hold a March 9 training session with stakeholders on the new tool. In the meantime, MISO is *asking* for stakeholders' written reactions on the new process through Feb. 26.

The RTO has pledged to confirm receipt of online applications within five business days and notify customers of incomplete applications within 15 days. For complete applications, the new process would take about 30 business days.

The online interconnection request is aimed at streamlining the queue process to save time.

MISO's interconnection queue peaked at a proposed 101 GW worth of projects in 2019, but the volume has since declined to about 80 GW. Solar projects have become the dominant resource type in the queue, at slightly more than 46 GW, more than double the proposed wind projects at 19 GW.




MISO online GIP application | *MISO*

"The bottom line is that we're catching up on the queue," MISO Executive Director of Resource Planning Patrick Brown said at an Entergy Regional State Committee *meeting* Feb. 10. He added that MISO plans to introduce more improvements to accelerate project processing and study.

MISO last year began building models in-house for studies required for the queue's definitive planning phase. Staff at the time said ending the outsourcing of queue modeling work to third parties cut months of delay from the queue timeline. (See *MISO Makes Second Attempt at More Rigorous Queue*.) ■

# Northern Focus for MTEP 20

By Amanda Durish Cook

MISO will sharpen its focus on the northern portion of its footprint with two supplemental studies to be included in its 2020 Transmission Expansion Plan (MTEP 20) cycle.

The RTO has planned special transmission studies for both Michigan and the Minnesota-Wisconsin border, both of which it discussed at the Planning Advisory Committee's meeting Wednesday.

MTEP 20 will contain a special *study* into the increasingly tight capacity import and export limits (CILs/CELs) in lower Michigan's Zone 7. The study is being performed at the request of the Michigan Public Service Commission and will help the state "better understand the effects" of increasing either the CIL or CEL for Zone 7, according to MISO.

Tony Rowan, MISO senior manager of seasonal and generator deliverability, said decisions to move ahead with any projects to increase Zone 7's CIL and CEL values would be up to transmission owners and the state, not RTO staff. He said the study "will help Michigan to meet it reliability goals and evaluate the potential costs and benefits of increased CILs and CELs."

Zone 7 has a preliminary 3,200-MW CIL for the 2020/21 planning year, a five-year low.

Last year, the zone had a 1,358-MW CEL, *down* from 2,578 MW in 2018/19. For the 2020/21 planning year, MISO's analysis could not identify a CEL, officially listing it as "no limit found."

As requested by the Michigan PSC, MISO will examine 500-, 1,500- and 3,000-MW incremental increases to the Zone 7 CIL. The RTO expects to have results by November.

PSC Commissioner Dan Scripps said that while the commission only requested MISO investigate lower Michigan, Zone 2 (Wisconsin and the Upper Peninsula) and Mississippi's Zone 10 also have narrow limits that could be ripe for study.

MISO staff late last year said Zones 2 and 7 are the closest to being unable to meet their local clearing requirements based on *results* from the RTO's 2019 resource adequacy survey with the Organization of MISO States (OMS). (See *MISO Planning Reserve Margin to Climb in 2020*.)

WEC Energy Group's Chris Plante asked whether the PSC's study request could strain MISO planners, wondering what would happen if several other stakeholders requested one-off studies.

"At what point does this become a burden on MISO's resources?" he asked.

"We'll let you know," MISO Director of Planning Jeff Webb joked, then adding more seriously that the RTO will monitor its ability to accommodate targeted study requests. He said MISO might one day institute "a global import study of all zones."

"We have a special place in our hearts for state regulators, and when they ask, we try to do our best to accommodate them," Webb said.

Indiana Utility Regulatory Commission staffer David Johnston also pointed out that OMS rarely exercises its right to request studies from MISO.

Meanwhile, MISO will hold a special meeting at the end of the month on its special analysis of the Minnesota-Wisconsin export (MWEX) interface limitation.

The MWEX transfer limit is the subject of another special MTEP 20 study, dubbed the North Region Economic Transfer Study. MISO *said* it's expecting "bottlenecks" especially in its North Region, which already contains high wind penetration. (See *MWEX Study Could Elicit New Tx Planning for MISO*.)

MISO has scheduled a Feb. 28 workshop for a technical discussion of the study's assumptions and scope.

"Our focus here is to really study how this constraint limits economic dispatch," MISO Resource Interconnection Planning Manager Neil Shah said.

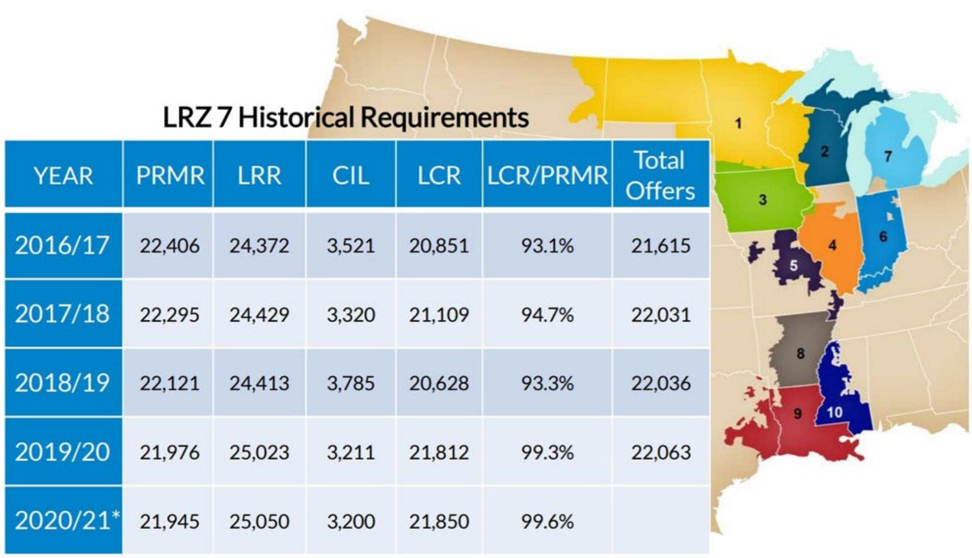
### MTEP 20 Schedule Change

The approval of MTEP 20 will also be held to a different timeline than in previous years.

MISO Project Manager Sandy Boegeman said the RTO will this year revise the schedule to allow the Board of Directors' System Planning Committee more time to review the MTEP package prior to the full board vote in early December.

That means the PAC will also review, then vote on, whether to recommend the draft MTEP 20 report about a month earlier than usual. MISO plans to post the report on Aug. 19 instead of the usual mid-September. The PAC vote will move up to the committee's Sept. 23 meeting instead of mid- to late-October.

Finally, the System Planning Committee will decide whether to advance the MTEP 20 report to the full board on Oct. 26 instead of late November. ■




LRZ 7 Historical Requirements

| YEAR | PRMR | LRR | CIL | LCR | LCR/PRMR | Total Offers |
|---|---|---|---|---|---|---|
| 2016/17 | 22,406 | 24,372 | 3,521 | 20,851 | 93.1% | 21,615 |
| 2017/18 | 22,295 | 24,429 | 3,320 | 21,109 | 94.7% | 22,031 |
| 2018/19 | 22,121 | 24,413 | 3,785 | 20,628 | 93.3% | 22,036 |
| 2019/20 | 21,976 | 25,023 | 3,211 | 21,812 | 99.3% | 22,063 |
| 2020/21* | 21,945 | 25,050 | 3,200 | 21,850 | 99.6% | |

Zone 7 requirements 2016-2021 | *MISO*

## MISO News

# MISO Outlines Electrifying Tx Planning Futures

By Amanda Durish Cook

MISO last week released a set of draft future scenarios that would reflect in its transmission planning process the increasingly dominant role clean energy resources will likely play within the footprint as Midwest states push to decarbonize and electrify vital parts of their economies.

The RTO will use more aggressive renewable generation projections beginning with its 2021 transmission planning cycle (MTEP 21). Late last year, it released three draft 20-year futures — Announced Plans, Accelerated Fleet Change and Advanced Electrification — that take into account utilities' decarbonization plans, the push toward renewable generation and increasing electrification in the footprint, respectively.

In December, some stakeholders questioned whether the proposed futures went far enough in terms of renewable projections. (See *Stakeholders Debate MISO Planning Futures*.)

At a special workshop Thursday, MISO revealed an updated strawman *proposal*, assigning the futures more neutral Roman numerals instead of titles.

Future I — formerly Announced Plans — assumes an 85% probability that companies' renewable growth and carbon-cutting goals will materialize and full certainty that states' clean energy plans will come to pass. It also includes a nearly 35% renewable generation penetration and a 40% reduction in carbon emissions from 2005 levels by 2040.

"This is hedging the possibility that some of these plans are vague and may not come to fruition," MISO Planning Manager Tony Hunziker said.

Future II — previously Accelerated Fleet Change — assumes MISO members meet or exceed decarbonization plans while carbon emissions drop 60% from 2005 levels. Electric vehicle adoption stimulates demand, while residential and commercial electrification reaches 39% of its technical potential.

Future III — Advanced Electrification — also assumes members fulfill their renewable plans and consumers adopt EVs. It foresees a sharp increase in demand because of electrification and residential and commercial electrification hitting 77% of its technical potential. MISO also experiences a minimum 50% renewable penetration level as carbon emissions dip 80% below 2005 levels.

MISO said the proposed MTEP 21 futures show "significant evolution" from those of MTEP 19, where renewable penetration topped out at about 35% of the resource mix by 2035 in the most aggressive future.

The RTO wants to have the new futures finalized by July.

Hunziker said MISO's Board of Directors is "very interested" in moving ahead on the futures redesign in light of the RTO's rapidly changing resource mix and recently filed integrated resource plans at state commissions.

"It's still very much a draft," Hunziker told stakeholders. "We're pouring the concrete, but it hasn't set yet, so we can still form it, push it around before it is set in stone."

The futures will go before the Planning Advisory Committee at its March 11 meeting, where stakeholders will have another opportunity to suggest alterations.

### 'Choking Point'

Some stakeholders asked how flexible the concrete will be when dried, asking if MISO was leaving room in its planning scenarios to include even more fleet transition. They said the RTO seems to be at an inflection point of utilities and states announcing stepped-up carbon-cutting measures.

Hunziker said MISO is introducing a survey tool as part of the futures' analysis to continue to solicit companies' announced plans along with state mandates and goals.

He also said the RTO is partnering with the Organization of MISO States to get commissions' most up-to-date decisions on their utilities' resource additions and retirements. The idea is to get a single repository of commissions' decisions instead of MISO "minding the vast, expansive infowebs," he said.

Mississippi Public Service Commission consultant Nick Puga asked if MISO has vetted the futures' electrification predictions with outside consultants.

Hunziker said MISO's electrification projections are based on internal research and data from outside consultants, including Applied Energy Group.

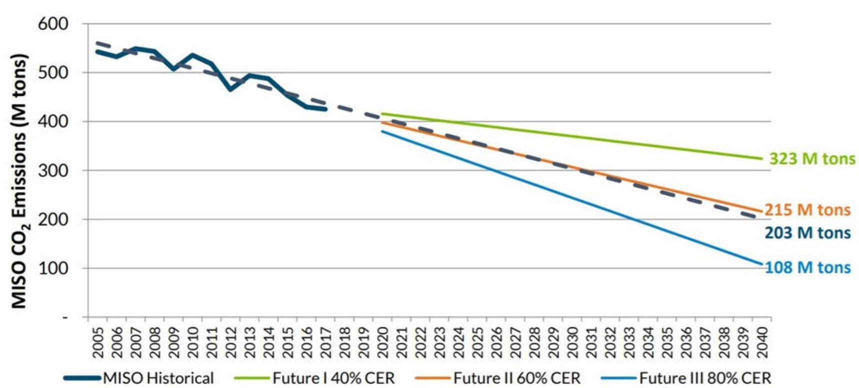
"If the Super Bowl ads were any indication, it looks like there will be a lot of electric vehicles … potentially in the next year," Hunziker said.

Multiple stakeholders asked MISO to schedule a special workshop with stakeholders to describe the RTO's approach to its electrification projections. Hunziker said MISO will consider the request.

Veriquest Group's David Harlan asked that MISO provide stakeholders with each future's projected subregional energy mix, capacity supply broken down by fuel type and load shapes. He argued that if the futures are intended to drive transmission investment decisions, members should have a better idea of which generation sources will be matched up with load on the subregional level.

Minnesota Public Utilities Commission staff member Hwikwom Ham reminded stakeholders that MISO is planning for new transmission, not trying to pinpoint exact locations of future generation.

"We don't need to project where resources will be precisely available," Ham said, adding that the system has recently become a "choking point" in getting new resources built and interconnected. ■




Carbon emission modeling assumptions by future | *MISO*

## MISO News

# MISO Estimates up to $4B in 2019 Benefits

By Amanda Durish Cook

MISO saved members between $3.2 billion and $4 billion over the course of 2019, the RTO said last week.

The *savings* could be attributed to "enhanced reliability, more efficient use of the region's existing assets and a reduced need for new assets," MISO said in its annual Value Proposition study, which compares benefits of RTO membership against going it alone on the grid.

The estimated value to members was partially offset by $296 million in MISO administrative costs.

The savings are nearly identical to 2018, when MISO estimated it delivered between $3.2 billion and $3.9 billion in benefits to members. (See *MISO Claims up to $3.9B in 2018 Benefits*.) The RTO said it has documented nearly $27 billion in member benefits since 2009.

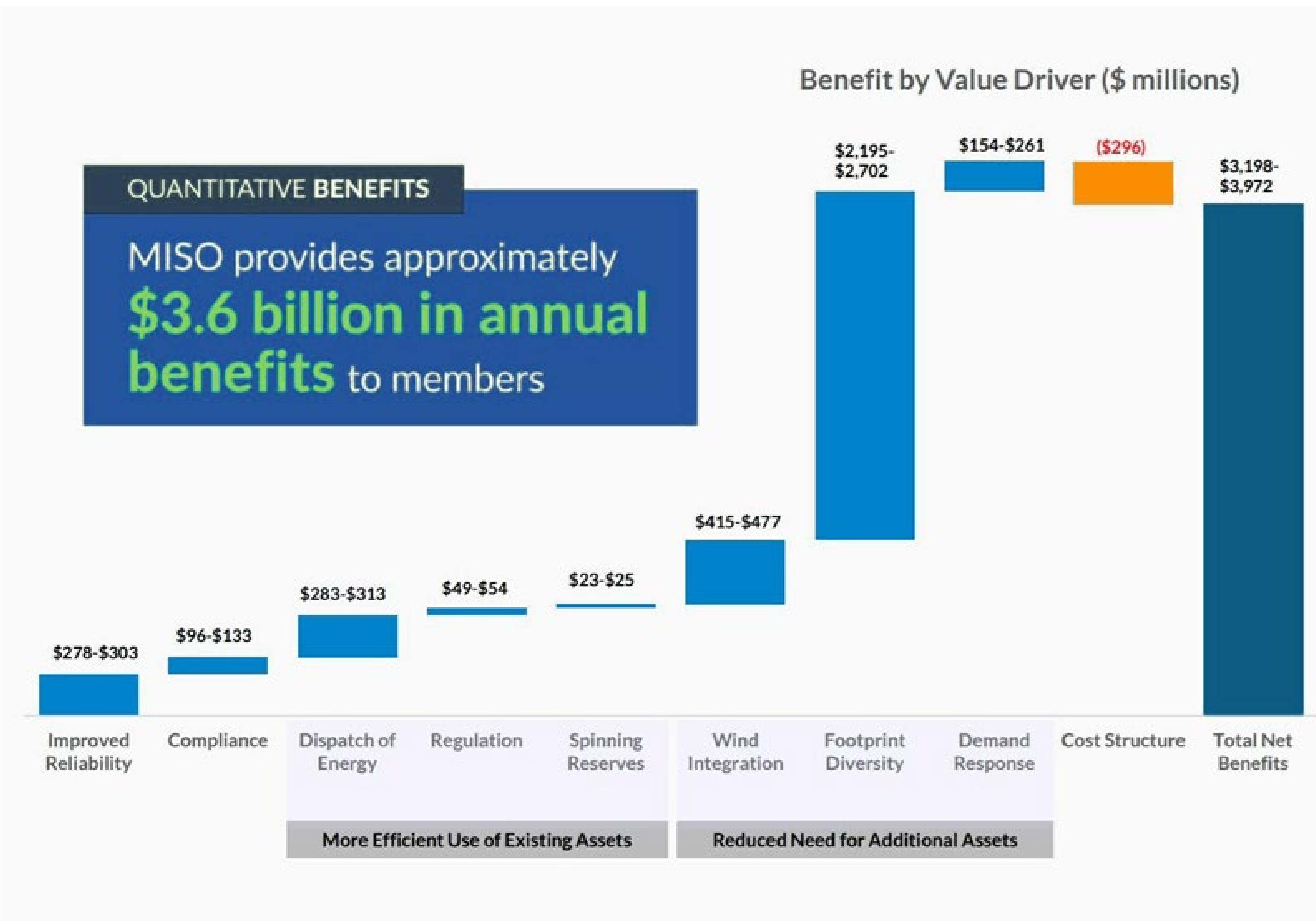
MISO executives discussed the most recent customer savings estimates during a special conference call Friday.

"Value Proposition on Valentine's Day. Nothing could be more appropriate," Executive Director of Market Operations Shawn McFarlane had joked at the Market Subcommittee meeting Feb. 6.

MISO said the lion's share of last year's value — $3.1 billion — could be chalked up to a diminished need for more grid assets. Those savings were further broken down to $415 million to $477 million from MISO's wind generation integration, $154 million to $261 million from its demand response program and $2.2 billion to $2.7 billion from its vast geographic footprint.

Improved reliability accounted for a $405 million in savings, while a more efficient use of the footprint's existing assets accounted for another $374 million, consisting of savings from more efficient dispatch ($283 million to $313 million), regulation reserves ($49 million to $54 million) and spinning reserves ($23 million to $25 million).

"The benefit of our large footprint is peaks occur at different times," said Leonard Ashley, MISO senior business adviser of strategy and business development, adding that hot weather doesn't often occur simultaneously in Indiana and the Dakotas, allowing t he RTO to more easily distribute supply. ■




Breakdown of 2019 Value Proposition study | *MISO*

## MISO News

# Overheard at GCPA's MISO South Conference

## *MISO's Bear: Incremental Change is in the Past*

NEW ORLEANS — The Gulf Coast Power Association's seventh annual MISO South Regional Conference drew 175 attendees to the Crescent City last week for panel discussions on resource needs, transmission cost allocation and planning and other key initiatives.

MISO CEO John Bear keynoted the event Wednesday, addressing the "significant challenges" the RTO and its members face.

The bottom line? RTOs and ISOs can no longer incrementally move themselves forward.

"We have too much coming too fast," Bear said.

He pointed to a slide that showed coal's portion of the generation mix falling from 76% in 2005 to 47% in 2018. The same period saw gas grow from 7% to 27% of the generation mix and renewables from very little to 8%. Retirements have been a major factor, with MISO approving 24.3 GW of retirements — 95% of that fossil-fueled — since 2005.

"[Coal-fired] retirements have caused us to step back and look at things," Bear said. "These big machines have been online for a long time, providing attributes that we took for granted. They were just there. We didn't know we needed them or where we needed them."

MISO, like almost everyone else, continues to add more renewable energy. Wind, solar and other renewables account for 75 GW of the 89 GW in MISO's interconnection queue, Bear said. Solar interconnection requests increased from 34 GW in 2018 to 51 GW last year.

The RTO's proposed future planning scenarios reflect the expectation that considerably more wind and solar energy will be added. (See related story, *MISO Outlines Electrifying Tx Planning Futures*.) The three futures range from a scenario where the footprint develops in line with utility announcements and plans, state mandates and goals, to one of sharply increasing demand because of heavy electric vehicle adoption and residential and commercial electrification driven by policies supporting substantial reductions in carbon emissions.

"If we're going from where we are today, with what's been announced, we're going to have to add twice as much intermittent generation twice as fast. Can we increment our way there?" Bear asked.

Complicating the equation, he said, is that MISO's most recent stressful system situa-

Attendees listen to a presentation during GCPA's annual MISO South regional conference. | © *RTO Insider*

tions did not take place during the summer, but during January and September of 2018 and January 2019. No longer can the RTO use Aug. 1 as the benchmark for determining the need and value for capacity.

"It's an interesting exercise, but we're going to have to change that," Bear said. "How do we accredit this capacity? Is it seasonal? Is it monthly? Our goal is to have those discussions with the stakeholder community over the next few months and move those forward."

Bear said the questions need to be answered to inform the policy and resource investment decisions being made by member utilities, but the answers must also be flexible as MISO learns more about changing generation fleets and technologies.

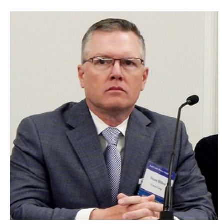
"If we sit still, it's not going to work very well," he said. "It won't be a journey where we take one step and look back and say, 'That was easy.'"

### Transmission Needed to Unlock South's Solar Energy

A panel of MISO's southern members stressed the importance of solving the north-to-south constraint between the RTO's legacy footprint and its South region. The constraint has been blamed for energy shortages and hampering the flow of renewable energy.

While not wind-rich, the Gulf Coast is a hotbed of solar power. About 80% of the 13.4 GW of interconnection requests in the region are for solar-powered resources.

"We believe there'll be an increase in intermittency," said Cooperative Energy COO Nathan Brown, whose Mississippi co-op runs a 52-MW solar facility that can ramp up to 96% capacity in two hours. "We see resources somewhere will have to respond to this. Fifty-two megawatts is not that big, but with 9,200 MW in the queue, you're going to have to have operational flexibility to handle those resources."



Shane Hilton, Cleco | © *RTO Insider*

"Resource availability [and] resource needs are not a new problem. We've dealt with this well before MISO came along," Cleco Power President Shane Hilton said. "We're seeing an aging fleet across Louisiana and across MISO in general. We have several older units, 40 to 50 years old, and we're seeing increased outages. Cleco and others are having to make decisions around retirements.

"Louisiana is not advancing fast with renewable technology, but it's coming and it's coming fast," he continued. "There's going to be an increased reliance on solar, wind and battery technology in Louisiana. We're going to have to figure out that right mix of resources, and the market signals to incent those resources to respond. Technology is advancing faster than I've seen in my 30 years with Cleco. We have to be thinking about this soon, and we have to be developing plans soon."

EDP Renewables' David Mindham, a self-described recovering transmission planning

# MISO News

engineer, offered an answer: "Spoiler: Transmission will be part of the solution.

"MISO has a significant footprint with a lot of geographic diversity. The north could really benefit from solar energy, and the south could really benefit from wind energy in the north," Mindham said. "Transmission has to be part of the consideration. With higher renewable penetrations across the footprint, geographical diversity is going to matter even more. We need proactive transmission build."

## MISO, Stakeholders Chart Path Forward


Scott Wright, MISO | *© RTO Insider*

Scott Wright, MISO's executive director of market strategy and design, explained how the RTO is leveraging its system design to address the megatrends reshaping the industry's landscape.

"MISO has to be all about availability, flexibility and visibility," he said. "The availability of the transmission system and energy resources to get their attributes where they're needed. Flexibility … not just adapt when we see things change, but let's anticipate. Let's look ahead. MISO wants to be able to enable those sorts of things."

Wright is currently updating MISO's Forward *report*, which uses stakeholder input to address what he called the "three Ds" — demarginalization, decentralization and digitalization — that are changing the industry. Forward 2020 is due to be released in March, with a focus on high wind penetration and distributed generation, among other topics.


Gregg Dixon, Voltus | *© RTO Insider*

Gregg Dixon, CEO of demand response consulting firm Voltus, said he fully expects distributed energy resources to play a major role.

"We think the growth of DERs will surprise you. Solar, EVs … five years hence, you'll see that today's estimates were too low," he said. "Whether EVs or data centers, these are massive customers that dwarf the stakeholders in our industry. They're making billions of dollars' worth of investments every year. They see issues with the changing environment, with record hurricanes and California wildfires, and they will have a great voice in these arenas. I think they will shock us all."

Daniel Hall (left), AWEA, and David Carr, Mississippi PSC, wait on their panel discussion to begin. | *© RTO Insider*

## Transmission, Costs Pose Sticky Issues

A diverse stakeholder panel debated two key subjects dominating the discussion in MISO: transmission planning and development, and the applicable cost allocation and rate-recovery design.

GridLiance CEO Calvin Crowder set the stage by asking, "Why is consensus on regional transmission so hard?

"You would think the regionality of RTOs and the independence of ISOs would follow along with cost allocation, but it didn't, because it tends to get messy when you have winners and losers," he said, responding to his own question. "Because we've had disparities in pricing, looking at things in a regional sense and the impact to players is a big deal. A lot of transmission is integrated with generation and retail services, so there are competing interests."

Charles Long, vice president of transmission planning and strategy for Entergy Services, echoed Crowder's comments on competing interests.

"It's really hard because uncertainty is broader than it's ever been in the industry," Long said, pointing to "widely divergent" futures. "Still, there are some strong business cases out there for transmission. We've built a lot of transmission over the last 15 years, and it's getting to the point where we have diminishing returns. These are long-term investments. Customers pay for them over a long time. We want those benefits to be robust, and we want robust business cases."

Former Missouri Public Service Commissioner Daniel Hall, *now with* the American Wind Energy Association, said MISO's most recent significant transmission buildout in 2011 has been recognized as a success to ratepayers. Unfortunately, he said, that additional capacity is pretty much spoken for.

"That congestion is preventing cheaper electricity from flowing to certain parts of the footprint, including MISO South," Hall said. "It's widely understood that renewable energy is about the cheapest energy around … and most people understand that new transmission needs to be built. Where this consensus breaks down is the extent and timing of this increase in demand for renewable energy. There's not a consensus on which benefit metrics to use or how to determine which regions benefit from new lines. The MISO footprint has changed. It's larger and its membership is more diverse than 2011."

David Carr, special counsel to the Mississippi Public Service Commission, put the cost-allocation challenge into starker terms: "It's going to be difficult to go into the Mississippi Delta and convince someone their light bill needs to go up so Minnesota or Google can meet their corporate environmental goals."

Saying he was no "fan of socialism" — "except when you socialize transmission rates" — Crowder said the most efficient model would be a national, FERC-mandated postage stamp rate, where costs are allocated equally across the system, regardless of the geographical region. However, he's not optimistic.

"Politically, that's never going to happen, because you would have huge winners and losers," Crowder said, noting the elimination of arbitrary barriers such as voltage levels or cost thresholds as incremental steps that could be taken now.

"The status quo is unacceptable," Hall said. "Our ratepayers are being harmed by the current situation. Cheaper energy is not flowing and new generation is not interconnecting. It's a problem that's not sustainable. We don't know exactly what the future holds, but we know damn well it will include a lot more demand for renewables." ■

*— Tom Kleckner*

# NYISO Business Issues Committee Briefs

## External ICAP Rights

NYISO can import 505 MW above grandfathered rights from its neighboring control areas for capability year 2020/21, with 332 MW available from ISO-NE and 152 MW from PJM, under the revised installed capacity (ICAP) *values* approved by the Business Issues Committee on Wednesday. Quebec and Ontario can add another 21 MW.

Including existing transmission capacity for native load, and other grandfathered rights, the ISO's biggest import sources are PJM (1,232 MW) and Quebec (1,116 MW).

The individual limits allowed under the ISO's MARS simulations were prorated to ensure they do not violate the loss-of-load expectation criterion. All of the resulting imports were deemed deliverable, said Frank Ciani of NYISO's capacity market operations unit.

The analysis excluded interface facilities with unforced capacity deliverability rights, controllable lines from PJM into the New York Control Area and the Northeast Utilities Service Co. 1385 line.

| | PJM | ISO-NE | Quebec | Ontario | Row Totals |
|---|---|---|---|---|---|
| Initial Values (TTC Summer Ratings) | 1,450 | 1,400 | 1,690 | 1,850 | 6,390 |
| Grandfathered Rights | 1,080 | 0 | 1,110 | 0 | 2,190 |
| Individual Limits (above GF) | 285 | 620 | 12 | 28 | 945 |
| Simultaneous Limits (above GF) | 152 | 332 | 6 | 15 | 505 |
| Final Values | 1,232 | 332 | 1,116 | 15 | 2,695 |

NYISO can import 505 MW above grandfathered rights from its neighboring control areas for capability year 2020/21, with 332 MW available from ISO-NE and 152 MW from PJM. The grandfathered rights include existing transmission capacity for native load. | *NYISO*

The BIC approved a motion to update Section 4.9.6 of the Installed Capacity Manual to reflect the results without opposition or discussion during the brief meeting.

The revised limits represent an increase of 62 MW over 2019/20, with PJM's limit increased by 120 MW and Ontario's reduced by 113 MW. The summer capability period strip auction opens March 30.

## Transmission Congestion Contracts

In its only other action, the BIC approved *revisions* to the Transmission Congestion Contracts Manual, which was last updated in 2017.

The revisions add the historic fixed-price transmission congestion contracts extension product and incorporate technical bulletins on the PJM-NYISO interconnection scheduling protocol and modeling of the Rainey and Blissville phase-angle regulators. ■

*— Rich Heidorn Jr.*

# PJM MRC/MC Preview

Below is a summary of the issues scheduled to be brought to a vote at the PJM Markets and Reliability Committee meeting on Thursday. Each item is listed by agenda number, description and projected time of discussion, followed by a summary of the issue and links to prior coverage in *RTO Insider*. (The Members Committee will also be *meeting* but has no voting items scheduled.)

*RTO Insider* will be in Valley Forge, Pa., covering the discussions and votes. See next Tuesday's newsletter for a full report.

## Markets and Reliability Committee

### Consent Agenda (9:10-9:15)

B. *Manual 14F: Competitive Planning Process*: Modification in response to a September FERC order that said transmission projects solely needed to address Form 715 planning criteria violations should not be exempt from competition. (See *FERC Opens Local Tx Projects to Competition, Cost Sharing*.)

C. *Manual 40: Training and Certification Requirements*: Revisions resulting from cover-to-cover periodic review; includes updated temporary waiver language to allow more flexibility in addressing compliance with training and certification requirements.

### 1. Fuel Cost Policy (9:15-9:35)

The MRC will consider two different fuel-cost policy packages endorsed by the Market Implementation Committee in December. (See "Fuel-cost Policies," *PJM MIC Briefs: Dec. 11, 2019*.)

The first *package*, compiled by a group of stakeholders, won 87% support and will be voted on as the main motion. The plan reduces penalties when a market seller self-identifies violations of its FCP and provides a "safe harbor" for force majeure scenarios and other situations of noncompliance that weren't contemplated by the policy. The plan would also expand the use of temporary FCPs.

The PJM Industrial Customer Coalition and Calpine offered *revisions* to the first package that they said would address the RTO's concerns about language applying penalties and duplicating benefits. The revisions clarify that the full penalty would be imposed if a unit is marginal in the day-ahead or real-time markets with a cost-based offer. A unit committed on its price-based schedule that later fails the three-pivotal-supplier test during its minimum run time or hours of its day-ahead commitment would also not incur the full impact factor unless the other conditions for market impact were met. About 81% of the committee endorsed this proposal. ■

*— Christen Smith*

# PJM Names Lisa Drauschak as CFO

## *Asim Haque Promoted to VP of State and Members Services*

PJM filled in key members of its executive team Wednesday with the appointment of Lisa Drauschak as chief financial officer and Asim Haque as vice president of the state and members services division.

The two were promoted internally and will fill the roles left vacant last year by Suzanne Daughtery and Denise Foster. (See *States, Stakeholders in the Dark over PJM Personnel Moves* and *PJM CFO Retiring in Wake of GreenHat Default*.)

"I'm delighted to have Lisa join PJM's executive team," CEO Manu Asthana said. "With her wealth of experience in financial management, Lisa brings strategic oversight, financial discipline and long-range strategies that will help PJM achieve its business objectives."

Drauschak joined PJM in 1999 as a controller and most recently served as executive director of corporate finance. She graduated from Villanova University in 1991 with a bachelor's degree in accounting.

Haque joined PJM last year as its executive director of strategic policy and government affairs after serving as chairman of the Public Utilities Commission of Ohio. He will oversee state government and electricity infrastructure policy and members services.

Lisa Drauschak and Asim Haque | *PJM*

He graduated from Case Western Reserve University with a bachelor's degree in chemistry and political science in 2002, followed by a J.D. from The Ohio State University Moritz College of Law in 2006.

"Asim's insights, leadership and ability to develop relationships are an asset to PJM as we continue to navigate the complexities that come with dynamic changes in the energy industry," Asthana said. "I'm delighted he's also joining the executive team."

Drauschak and Haque will assume their new roles Feb. 26. ■

*— Christen Smith*

# PJM Seeks to Quell ‘Inflammatory’ Exit Talk

*Continued from page 1*

Haque downplayed PJM’s role as a policymaker, referring to it repeatedly as a “market administrator” and noted that FERC rejected both of its proposed options for addressing the concerns that state-subsidized resources were depressing capacity market prices.

He said discussions over whether states will leave PJM are “unnecessarily inflammatory,” noting that capacity represents less than 20% of generators’ revenues and that the RTO’s “value proposition” includes its energy and ancillary services markets, transmission planning and reliable grid operations.

“So, when you look at the … chunk that the capacity market takes up within that overall value proposition, we are talking about a portion of a portion of a portion of the overall PJM value proposition,” Haque said.

Christine Tezak, managing director of ClearView Energy Partners, agreed that states are unlikely to exit PJM altogether because of the energy market and the requirement to pay off regional transmission spending obligations. “But we think that the potential to opt out of [the capacity market] is on the table.”

She recalled FERC’s 2017 technical conference on capacity markets, where there was much discussion of “blending” state priorities with competitive market rules. (See *RTO Markets at Crossroads, Hobbled FERC Ponders Options*.)

“When you look at this order, there’s no blending. It is just a decision that the market comes first; everything else comes later,” Tezak continued. “If you look at this order, you start to wonder if joining PJM means that you have abdicated all resource adequacy authority.”

### MOPR Contagion?

Mason Emnett, vice president of competitive market policy for Exelon, said the MOPR will push subsidized resources from the capacity market, leaving fossil fuel-fired generation as the marginal resources and threatening the future of the capacity market construct. If the expanded MOPR survives as is, he said, FERC will also apply it to ISO-NE and NYISO.

He cited the Electric Power Supply Association’s filings in *January 2017* and *April 2018* seeking expedited action on a complaint by the Independent Power Producers of New York over state subsidies (EL13-62). (The commission has *listed* the docket for action at its open meeting this Thursday.)

Although there is no open docket in ISO-NE, Emnett said, state commissions have asked to re-engage with the RTO on a market design accommodating state policies, with Connecticut seeking an analysis on alternatives like PJM’s FRR. (See *Connecticut Weighs Pros, Cons of ISO-NE Markets*.)

“If there’s a misalignment between what the states on behalf of their consumers are demanding and what the market is providing, that market does not survive,” Emnett said.

But Travis Kavulla, vice president of regulatory affairs for NRG Energy, an independent power producer (IPP), said the expanded MOPR will have little impact on renewables because of their falling costs. He noted his company’s business in ERCOT, where he said “the people who are placing bets are placing them on solar and demand response and not on combined cycle” plants. “If you were for some reason … to impose a capacity market on the state of Texas and establish some type of minimum offer price rule that will exist in PJM, those renewable resources will clear. They will be in the money.

“I think, ultimately, it’s much ado about nothing for renewables,” he said.

Tezak said the Base Residual Auction may need to shrink to its originally intended “residual” role.

“The problem is that the capacity market is mathematically perfect and politically problematic. And it has been from the beginning. It solves for too much capacity, as we’ve observed. The arguments we’re having are political in terms of: ‘What is the value of the things that aren’t included in the market?’” she said, referring to carbon emissions.

“If the capacity markets survive, I would expect them to change. And I think that we may have to come back to the conversations that we set aside [more than] a decade ago ... which is, should you have varied tenors for capacity; should you have varied types of capacity?” Tezak said.


Asim Haque, PJM; Travis Kavulla, NRG Energy; Maryland PSC Chair Jason Stanek; Christine Tezak, ClearView Energy Partners; and Mason Emnett, Exelon, discussed FERC’s controversial order on PJM’s capacity market at NARUC’s Winter Policy Summit. | *© RTO Insider*

### Change in Position for PJM?

Maryland Public Service Commission Chair Jason Stanek, who moderated the panel, asked Haque whether PJM’s “pretty pointed” Jan. 21 rehearing request represented a change in position by the RTO, which welcomed a new CEO, Manu Asthana, at the beginning of the year. (See *PJM MOPR Rehearing Requests Pour into FERC*.)

“I think it does reflect a change in the tenor of where PJM is situated,” Haque responded. “You have to understand that energy policy in the footprint is happening in the states. And it’s a trend that cannot be ignored.”

Maryland PSC Commissioner Anthony J. O’Donnell said later he wasn’t convinced that PJM has changed. “To now say, ‘We’re just the market administrator,’ I think, is a little rich, though I appreciate the change,” he said prompting laughter from other regulators. “You created this mess.”

### Carbon Pricing

Most of the panelists were pessimistic at the prospects for the adoption of carbon pricing,

# PJM News

which PJM officials have said could address state environmental concerns within a market construct. (See *PJM: Carbon Pricing the Answer to Subsidy Dispute*.)

"It sounds pretty straightforward in theory, until you figure that there are 14 different opinions about how it might be applied and the value each particular state ... may choose to assign to it," said Tezak, referring to PJM's 13 states and D.C. She noted that the states in ISO-NE, which she said are more "homogeneous" on environmental policy than those in PJM, were unable to agree on a way to increase the role of carbon emissions in its markets.

A more realistic approach might be greater reliance on bilateral contracts tailored to individual states' priorities, Tezak said.

Kavulla acknowledged the difficulty of achieving consensus on carbon pricing, saying that informed NRG's proposal for FERC-approved, state-run clean energy procurements, "not unlike what the Southwest Power Pool has for resource adequacy, or what exists in the Western Energy Imbalance Market."

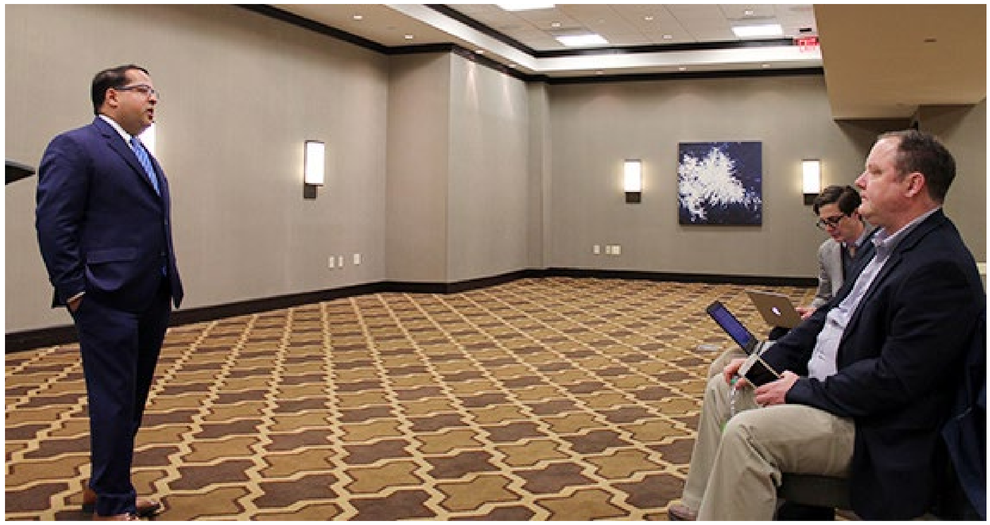
He said a return to bilateral contracts could lead to higher prices because default energy suppliers in restructured states "are not appropriately incentivized to get the best deals. Either they're affiliates of the people who are generation, No. 1, or 2, they're complete pass-through entities who don't earn any margin or loss whatsoever on the power they procure."

Emnett said Exelon, whose nuclear units receive subsidies subject to the MOPR, would support technology-neutral payments for carbon-free generation but that NRG's proposal is unrealistic. "Instead, we're trying to work with the states to use the tools that they do have available and avoid the harsh customer impacts of the MOPR," he said.

## Auction Timing

Emnett said Exelon agrees with the Maryland PSC that the capacity auctions should be delayed until 2021 to allow more time for the states to react to the ruling. PJM's effective reserve margin is above 30%, he said, "so there isn't a need for new generation at this point."

Haque said the earliest PJM could run the next capacity auction is December 2020, after receiving an order on its compliance filing, which is due to FERC by March 18. That gives states time to explore their option to abandon the capacity market for the fixed resource requirement (FRR), he said. Delaying the



FERC Chair Neil Chatterjee defended the commission's controversial MOPR ruling at a press conference Feb. 11. | © *RTO Insider*

auctions longer could mean default service providers will include a "risk premium" in their bids, increasing prices, Haque said.

Tezak said energy retailers also favor an earlier return to auctions because "they have no ability to forecast what their [capacity] costs are going to be."

NRG circulated a handout that said customers in FRR markets in Ohio and Virginia have paid up to four times more for capacity than those in the rest of PJM because of reduced economies of scale. Kavulla said FRR also would result in a "re-monopolization" of the power sector that would create barriers for innovative technologies such as demand response and storage.

## Changes on Rehearing, Appellate Rulings?

Tezak said her company is advising its institutional investors to exercise "caution" because of the possibility of changes in the rule on rehearing or in the appellate courts.

"There's probably not a lot of durability to the MOPR order," she said. "One of the things that we see as a big wild card is whether the position on self-supply, in particular, shifts. That would probably extinguish a lot of the criticism, [though] not all." (See *MOPR Ruling Threatens to Upend Self-supply Model*.)

Tezak also noted that FERC has yet to act on rehearing requests on its original June 2018 order that found the existing MOPR unjust and unreasonable. "So, there could be all sorts of cascading legal weirdness that turn up that make assuming that this is as positive for the IPP community as it looks at first blush to be probably less beneficial in reality."

## Chatterjee Defends Order

In a press conference at the NARUC meetings on Feb. 11, FERC Chair Neil Chatterjee defended the Dec. 19 order, which he and Commissioner Bernard McNamee supported.

Like Haque, he cited the Monitor Joe Bowring's support for the ruling. The IMM requested clarification on some points but said the order "defines a clear, consistent and comprehensive approach to the PJM markets and to the role of subsidized resources in the markets."

Bowring is "someone who's very well respected in the field. Nobody would question his motivations," Chatterjee said.

He also expressed skepticism that states will leave PJM. "Let's see how this shakes out; let's see how the auctions go; let's see what the impacts on these generators are before anyone makes these kinds of decisions," he said. "I think when folks do the analysis and see what the benefits of participation in organized markets [are], I would think a state would have to think twice before losing the benefits that their consumers enjoy. ...

"I know there's a lot of focus ... on tension between the states and federal regulators, but there are also a number of areas where we are continually and actively cooperating in," Chatterjee added, listing cybersecurity, innovation, "the energy transition" and the Public Utility Regulatory Policies Act as among the topics he had discussed with state regulators at the conference. ■

PJM News

# Dominion: 'No Near-term Impact' from PJM MOPR

*By Christen Smith*

Dominion Energy executives told investors last week that PJM's expanded minimum offer price rule (MOPR) poses no near-term threat to its 2,600-MW offshore wind farm planned for 2026.

CFO Jim Chapman on Feb. 11 said Dominion's balanced portfolio in Virginia will shield the company from any financial impact, but that electing the fixed resource requirement (FRR) alternative in the future remains a possibility.

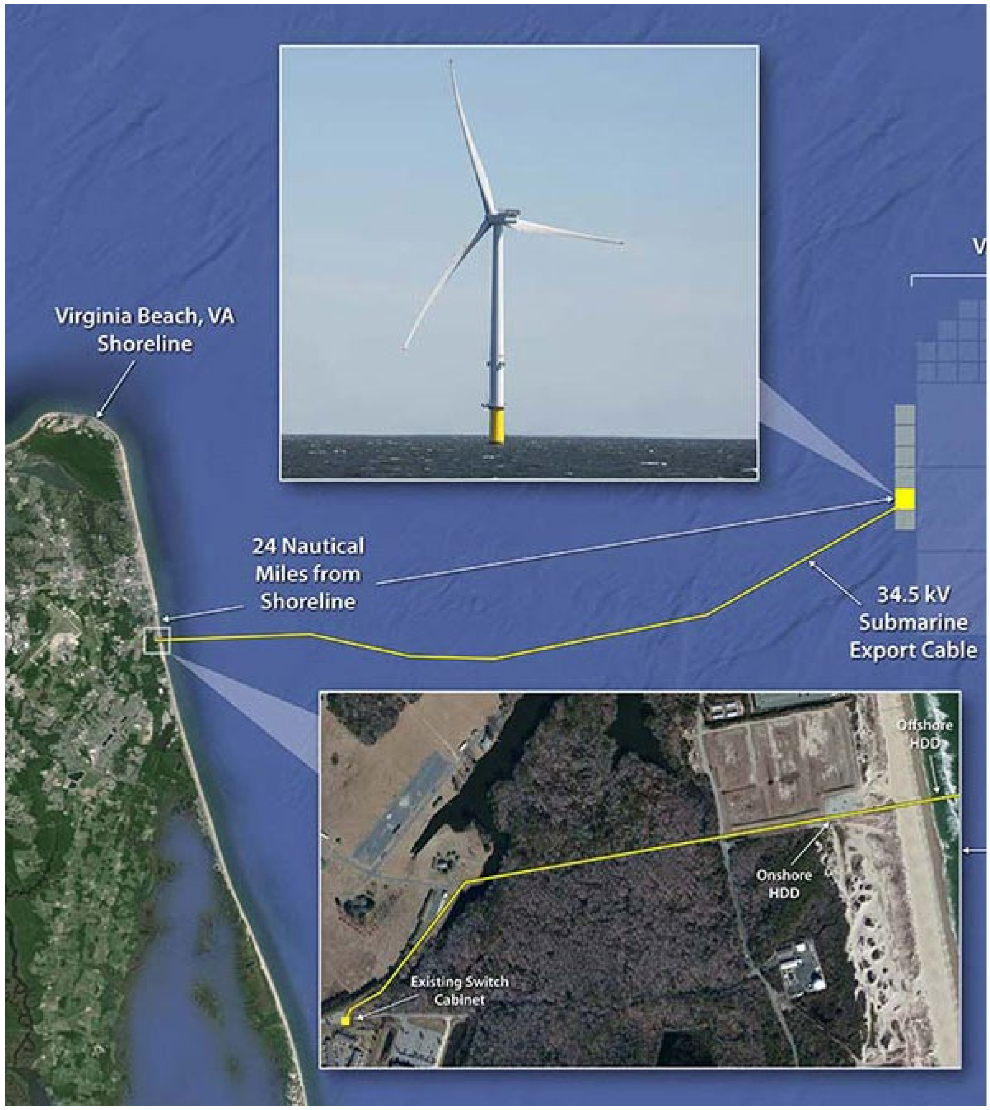
"We don't expect that that MOPR as proposed will have really any financial impact on Dominion," he said. "As you know, our capacity and load in Virginia is pretty well balanced, so no near-term impact. And if we foresaw that some change with MOPR and PJM rules that would mean that we would not be potentially receiving capacity payments on new build generation, we could very easily ... just elect that FRR option, which we think is pretty straightforward."

In December, FERC expanded PJM's MOPR to all state-subsidized resources entering the capacity market. Critics hold that the ruling will limit renewable energy development because offer price floors will push them out of the capacity market, while others insist capacity revenue factors little into renewable investment decisions.

Dominion's $8 billion offshore wind farm, the largest in the nation, will sit 27 miles off the coast of Virginia in federal waters. The company said ocean survey work will begin on the project in April, with construction slated for 2024. The company also confirmed Siemens Gamesa will provide the 210 turbines needed and that it contracted with three labor unions to perform the onshore interconnection work.

"We will continue to monitor that situation as it winds towards resolution," Chapman said. "In the meantime, we do not see this as a material financial risk for our company given the even balance of supply and demand at Dominion Energy Virginia."

Chapman's comments came during a quarterly earnings conference call with investors where the company touted its progress on emissions reductions and improving its environmental, social and governance principles. The company reported a 33% increase in year-over-year earnings in its fourth quarter, totaling $4.48 billion.




Dominion's offshore wind project plans. | *Dominion Energy*

Last month, global investment manager BlackRock, which — as of August 2019 — held a combined 12% stake in Dominion with fellow financial firm Vanguard, announced plans to divest from companies that collect more than a quarter of their revenue from thermal coal production by mid-year. (See *BlackRock to Divest from Coal Companies*.) *RTO Insider* reached out to BlackRock regarding the status of its Dominion shares but received no response.

Dominion CEO Tom Farrell said coal-fired generation produced just 12% of the company's electricity last year, representing an 80% decline over the last 15 years. He said most current estimates suggest that "coal-fired generation today accounts for less than 8% of our total regulated investment."

Farrell also expanded on Dominion's plans to reach net-zero emissions by 2050, including extending licenses for its nuclear generation fleet; promoting customer energy efficiency programs; investing in wind and solar power; further reducing coal-fired generation; enhancing natural gas infrastructure leak detection; replacing legacy distribution lines; and repurposing agricultural methane emissions as renewable natural gas.

"We will never lose sight of our fundamental responsibility to customers: provision of safe, reliable and affordable energy," he said. "Though certain approaches will undoubtedly evolve over the coming decades to reflect the most up-to-date assumptions, our commitment to net-zero emissions will not change." ■

## PJM News

# Critics: Pa. RGGI Hearing Stacked with Detractors

By Christen Smith

The Pennsylvania House Environmental Resources and Energy Committee held a hearing on Feb. 5 to discuss the potential impacts of the state joining the Regional Greenhouse Gas Initiative. | *RGGI*

A dozen witnesses told a Pennsylvania legislative panel on Feb. 5 that joining the Regional Greenhouse Gas Initiative (RGGI) would undermine the state's energy production dominance and do nothing to accelerate $CO_2$ emission reductions in line with national and global targets.

The House Environmental Resources and Energy Committee fielded comments from researchers, trade groups and labor unions about House Bill *2025*, a proposal that delineates a legislative process for joining RGGI.

Noticeably absent, however, was anyone in favor of the program — an unusual occurrence for legislative hearings on proposed bills.

"We were not invited to testify," said Julian Boggs, policy director of the Keystone Energy Efficiency Alliance. "It would be nice if we could have a constructive conversation in the legislature and say, 'Hey, this is what's happening; what should we do with the proceeds?'"

Mark Szybist, senior attorney for the Natural Resources Defense Council, called the hearing a "staged burlesque."

"I don't know how you can have a fair hearing if you're not even bringing in the state agency that's working on this regulation," he said. "There's no way you can look at this and say it was a fair and balanced hearing or a hearing that was even intended to deliver facts or truly honest discussions about RGGI."

### One-track Hearing

HB 2025 is a result of Democratic Gov. Tom Wolf stunning the Republican majority in both chambers in October when he directed the state's Department of Environmental Protection (DEP) to join the regional emissions-reduction program. (See *Pennsylvania Governor Signs RGGI Executive Order*.) Delaware, Maryland and New Jersey are the only three PJM states currently involved in the program, with Virginia next in line to join.

According to a RGGI *report* released in October, participating states reduced their power sector carbon emissions by more than 50% between 2005 and 2017 despite an increase in their GDP. The nine participating states — either through regulation or legislation — cap power plant emissions on a quarterly basis and auction off credits to generators, who then purchase the allowances as proof of compliance. The proceeds return to participating states for reinvestment.

Majority Committee Chairman Rep. Daryl Metcalfe (R) *told* RGGI's Executive Committee in a Jan. 16 letter that Wolf "simply and unequivocally" lacks the unilateral authority to join the program and that bipartisan and bicameral talks "are already underway" to stop it.

"Welcoming Pennsylvania into your ranks without legislative approval would be foolish and harmful both to RGGI and our commonwealth," he said. "This will leave both RGGI and Pennsylvania in an unwelcome state of limbo. It will complicate RGGI's administration and likely take years to resolve. You will not be able to count on Pennsylvania's participation in RGGI, but you will have to expend time and resources planning for it, nonetheless."

Metcalfe's office did not respond to *RTO Insider's* request for comment on Wednesday regarding the hearing's slate of witnesses.

Minority Committee Chairman Rep. Greg Vitali (D) said the tenor of the meeting disappointed him, as comments from his caucus members were routinely shut down to keep the hearing agenda on track.

"Most of the testifiers had a vested financial interest in the fossil fuel plants that would be targeted by RGGI," he said. "It's relatively safe to say that no pro-RGGI groups were invited and that was entirely Chairman Metcalfe's decision."

Vitali said Democrats and other RGGI supporters also believe the federal Clean Air Act gives Wolf and the DEP the power to join the program without the support of the Senate or the House of Representatives — though lawmakers would likely challenge that authority in court. Notably, other RGGI states have moved forward with the blessing of their respective legislatures, except Virginia.

"Even if the bill passes, the governor will almost certainly veto it," Vitali said. "Even so, our committee will most likely vote on this bill."

Rep. Jim Struzzi (R) introduced HB 2025 in November, with Reps. Pam Snyder (D) and Donna Oberlander (R) as co-sponsors.

"I'm trying very hard not to let my emotions or my bias into this because we are talking about the bill today," Struzzi told the committee. "I represent hard-working Pennsylvanians who will suffer dearly if RGGI is implemented."

### No Apologies Necessary

Indeed, Struzzi's concerns about RGGI's impact on the state's fossil fuel power generators were echoed again and again by witnesses who said the program produces no real benefits and would diminish energy production, force coal plants into early retirement and increase leakage throughout PJM.

"If you want to spend $5.5 billion per year with no significant reduction in emissions, by all means join RGGI," said David Stevenson, policy director for the Caesar Rodney Institute's Center for Energy & Environmental Policy. "But I don't see this as a good idea for Pennsylvania."

Continued on page 35

## PJM News

# Traders Respond to IRC on Risk Management Efforts

*By Christen Smith*

The financial trading group behind a request to update decade-old RTO credit policies fired back last week against claims that its filing proposes a "one-size-fits-all solution" that would trample on stakeholder processes.

The Energy Trading Institute said stalling "centralized discussion and information sharing of best practices" would waste a "golden opportunity" for each RTO to learn from the experienced risk management professionals their organizations lack.

"The current efforts/discussions underway at the ISOs and RTOs to address credit practices do not go far enough or are not exploring the appropriate corrective measures to address credit risk and market participant exposure in today's market dynamics," the group said in its answer filed Feb. 10 (*AD20-6*). "The ISOs/RTOs and industry undoubtedly could benefit from a discussion on well established industry best practices for credit and risk management."

The ISO/RTO Council urged FERC on Jan. 24 to allow the grid operators and their stakeholders to address their credit and risk management issues individually before considering ETI's request for a technical conference and rulemaking. (See *RTO Council Balks at Credit Rulemaking*.)

The IRC also challenged ETI's premise that the rules should be standardized, saying "the underlying markets to which the credit policies apply are not standardized."

ETI asked the commission on Dec. 16 to schedule a technical conference by March 30 and convene a rulemaking to update FERC Order 741, its 2010 rulemaking on credit and risk management in the RTO/ISO markets.

The institute said GreenHat Energy's default on its 890 million-MWh financial transmission rights portfolio in PJM and RTOs' slow adoption of credit policies to manage risks means the time is ripe for collaboration. In its answer, ETI points out that its rulemaking proposes "to explore common risk principles and risk management tools, such as the use of initial and variation margin and know-your-customer processes."

"The technical conference and rulemaking process will allow parties to discuss the different methods to manage risk, the practical application of such methods and the tools available for implementation, which in turn will inform the ISOs'/RTOs' efforts to protect their markets and their market participants," ETI said. "This clearly is not a one-size-fits-all solution; it would allow the ISOs/RTOs and their stakeholders to work within a best-practices framework to implement credit and risk management policies and procedures appropriately suited for their respective markets."

ETI also challenged IRC's contention that RTOs have made significant progress on addressing credit reforms on their own. It said all regions save PJM still expect market participants to self-report rule violations. SPP lacks basic know-your-customer processes, while MISO could benefit from a deeper exploration of the practice, ETI said. The group did commend PJM, however, for hiring outside contractors to help design a margining model.

The institute said FERC's regulatory oversight means it must safeguard open and competitive markets from lackluster credit policies implemented by RTOs.

"The GreenHat default in PJM's FTR market served as a significant eye-opener for the ISOs/RTOs and their stakeholders," ETI said. "While it has been nearly two years since the default … the subsequent actions taken by the ISOs/RTOs to assess and improve their respective credit policies appear to be uneven in terms of whether they are addressing credit and to what degree, and include objectives that may not align with industry best practices for risk management." ■

# Critics: Pa. RGGI Hearing Stacked with Detractors

*Continued from page 34*

Stevenson said he's spent nearly a decade studying RGGI impacts and argues that when comparing results from participating states to five who do not participate, emissions reductions are "exactly the same."

Since 2005, per capita emissions reductions in both groups of states is 40%, according to Stevenson's research. Coal production in both groups decreased 16%, while natural gas production increased 10%. GDP grew in both by 7.2% and electricity prices rose 50% slower in non-RGGI states. Stevenson concludes that pushing the state into the program would curtail energy-intensive businesses, further dragging down its economy.

It makes little sense then, Stevenson argued, to join RGGI when Pennsylvania's booming natural gas exports have reduced carbon emissions nationwide by 308 million tons, far exceeding the 215 million tons it produces.

"Pennsylvania doesn't owe anybody an apology about carbon dioxide emissions," he said. "It's done more than any other state in this country to reduce carbon emissions."

Democrats on the committee challenged Stevenson's research, insinuating that it was shaped by the Caesar Rodney Institute's conservative donors. Vitali also pressed Stevenson to vocalize his opinion on climate change.

Stevenson said that donors don't impact his research and some have even forgone financial support because of his conclusions.

"It is a certainty that carbon dioxide is rising in the atmosphere," he said. "We have the ability to adapt and to use things that actually work, and one of those things that actually works is switching from coal to natural gas. I agree that it's an issue, but I don't agree that it's a crisis."

Szybist said Stevenson's suggestion that RGGI doesn't drive emission reductions was nonsensical. He cited a Duke University *study* from 2015 that found that while not all emissions reductions were attributable to RGGI, the program was still the single biggest factor, accounting for more than half.

"The fact that emissions went down under RGGI due to factors other than RGGI — the Great Recession and the boom in gas-fired generation due to fracking — isn't evidence that cap-and-invest doesn't work," he said. "Had the start of RGGI not coincided with the Great Recession and the fracking boom, RGGI would have ensured that emissions went down anyway."

Szybist also pointed out that RGGI "was never intended as an all-encompassing emissions-reduction policy."

"It was intended as a way to ensure emissions reductions and generate funds to invest into other decarbonization strategies," he said. ■

## PJM News

# FERC OKs FES Sale to Bondholders

By Rich Heidorn Jr.

FERC voted 2-1 on Friday to approve FirstEnergy Solutions' plan to emerge from bankruptcy by allowing investment funds to convert secured and unsecured bond claims into a 50% equity stake (*EC19-123*).

Avenue Capital Management will claim 15% and Nuveen Asset Management will acquire 35% of FES, FirstEnergy Corp.'s merchant unit, which will be spun off from its parent under a reorganization plan approved by the U.S. Bankruptcy Court for the Northern District of Ohio last year. (See *FirstEnergy Reorganization OK'd After Labor Settlement*.)

The deal was opposed by Commissioner Bernard McNamee, who said FERC's action was "premature."

FES *owns* about 7,200 MW of capacity, including the coal-fired W.H. Sammis Plant in Stratton, Ohio (2,210 MW) and Pleasants Power Station in Willow Island, W.Va. (1,300 MW). FES also owns three nuclear plants: Beaver Valley Power Station in Shippingport, Pa. (1,872 MW); Davis-Besse Nuclear Power Station in Oak Harbor, Ohio (908 MW); and Perry Nuclear Power Plant in Perry, Ohio (1,268 MW).

The company retired its three-unit coal-fired Bruce Mansfield Plant in Shippingport (2,490 MW) last year.

FES *announced* in November that it will change its name to Energy Harbor. The company, which will be headquartered in Akron, Ohio, will employ nearly 2,800 people. The company said its "substantial carbon-free power" will make the company competitive in a low-carbon future.

The company *withdrew* its retirement notices for Davis-Besse and Perry and a portion of the Sammis plant in July after Ohio lawmakers approved legislation subsidizing the plants. (See *Ohio Supreme Court Dismisses FES Nuke Lawsuit*.) It has not withdrawn *plans* to retire Beaver Valley in 2021.

### No Harm to Competition

The commission concluded that the transaction, which does not include any transmission facilities, will have no impact on vertical competition. It also said the deal will not increase rates, create a regulatory gap, allow for cross-subsidies or harm horizontal competition.

"Overall, the proposed transaction decreases market concentration because debtor applicants will become unaffiliated with 3,825 MW of generation in PJM owned by other FirstEnergy affiliates and will gain an affiliation with only 1,233 MW," the commission said. "Since the market presence of the larger entity (i.e., FirstEnergy) decreases as a result of the proposed transaction, while that of the smaller entities (i.e., Avenue, Nuveen and their respective affiliates) increases, the market becomes more evenly distributed as a result of the proposed transaction and overall market concentration as measured by [the Herfindahl-Hirschman Index] decreases."

### PPA Terminations

The commission said its approval did not address a dispute over FES' bid to terminate power purchase agreements and its intercompany power agreement (ICPA) with the Ohio Valley Energy Corp. (OVEC), because the proposed rejection of the agreement is not a part of the proposed transaction and the commission's review of it under Section 203 of the Federal Power Act.

OVEC owns two coal-fired plants: the 1.1-GW Kyger Creek in Cheshire, Ohio, and 1.3-GW Clifty Creek in Madison, Ind. FES has a 4.85% stake in OVEC, requiring it to pay about $30 million annually to cover OVEC's losses. (See *FES Bankruptcy Creating Additional Uncertainty*.)

The commission said it will address whether the proposed rejection of the OVEC agreement is just and reasonable under the 6th U.S. Circuit Court of Appeals' Dec. 12 ruling that remanded the issue of the rejection to the U.S. Bankruptcy Court in Ohio.

McNamee said the commission should have waited until it has "further guidance from the courts," noting the reorganization is subject to two appeals pending before the 6th Circuit.

"The outcome of these appeals could affect the proposed transaction," McNamee said. "Indeed, the restructuring support agreement provides, 'if an adverse ruling in the PPA appeal proceeding occurs prior to the effective date, the debtors may be unable to comply with the terms of the plan term sheet, which provides that in no event shall either [the] reorganized FES or new FES assume the OVEC ICPA.'"

### Purchasers' Generation Assets

Nuveen, which provides investment management services, is a subsidiary of Teachers

The W.H. Sammis plant coal-fired plant on the Ohio River in Stratton, Ohio | *FirstEnergy Solutions*

Insurance and Annuity Association of America (TIAA), a life insurance company that owns 40% of a 683-MW gas-fired electric generator in Carroll County, Ohio. TIAA is affiliated with Catalina Solar Lessee, which operates a 100-MW solar facility in California, and Otay Landfill Gas, which owns qualifying facilities in California totaling 10.7 MW.

Avenue is a subsidiary of *Avenue Capital Group*, an investment firm that indirectly owns a portfolio of 2,740 MW of generation:

- CP Crane, a retired coal facility near Baltimore, that may be converted to 160-MW dual fuel peaking facility.
- Middle River Power II, which owns High Desert Power Project, an 852-MW natural gas-fired facility in San Bernardino County, Calif.; Big Sandy Peaker Plant, a 342-MW natural gas-fired generator in Kenova, W.Va., and Wolf Hills Energy, a 250-MW natural gas-fired plant in Bristol, Va.
- San Joaquin Energy, the owner of three generating facilities: Tracy, a 330-MW natural gas-fired combined cycle facility in Tracy, Calif.; Hanford, a 97-MW natural gas-fired facility in Hanford, Calif.; and Henrietta, a 96-MW natural gas-fired facility in Lemoore, Calif.
- Middle River Power IV, which owns a 60.5-MW gas-fired facility in San Diego; a 58.9-MW gas-fired facility in Escondido, Calif.; a 60.5-MW natural gas-fired facility in Vacaville, Calif.; and a 60.5-MW gas-fired facility in Firebaugh, Calif.
- Midway Peaking, which owns a 139.8-MW gas-fired facility in Fresno County, Calif., and Malaga Power, a 121-MW gas-fired facility in Fresno County, Calif.
- Coso Geothermal Power Holdings, which operates several geothermal plants on the Naval Air Weapons Station at China Lake in California. ■

## PJM News

# PPL Spells out $14B International Tx Upgrade Plan

By Christen Smith

PPL executives told investors Friday the utility will invest $14 billion over the next five years into hardening its transmission system and incorporating more renewable resources — both in PJM and the U.K.

CEO Bill Spence said during a quarterly earnings call that planned improvements "are aimed at strengthening grid resiliency in the face of worsening storms, incorporating automation, replacing and rebuilding power lines and substations, and reshaping electricity networks to support the growth of renewables and other distributed energy resources."

"The majority of the spend this year remains in our transmission business, which has been the fastest growing business in our portfolio for a number of years now, due to the ongoing needs to upgrade and modernize our transmission system," he said.

PPL's fourth-quarter earnings dropped 14% to $364 million. The utility said the decline "primarily reflects special items related to unrealized gains and losses on foreign currency economic hedges." PPL operates a U.K.-based subsidiary that serves 7.9 million customers.

COO Vincent Sorgi said distribution network investments include smart grid devices, targeted tree-trimming efforts and automated control systems that help reduce the number and duration of power outages in its territory.

The utility also ramped up its environmental goals and aims to cut its carbon emissions 80% over 2010 levels in the next 20 years.

Sorgi said the utility cut its emissions in half

PPL's headquarters in Allentown, Pa.

with the retirement of 5,200 MW of coal-fired generation in its Pennsylvania and Kentucky service territories. He said additional coal retirements "in the back half" of the decade and in the 2030s will help propel the momentum for renewable integration.

"We are not at a point where renewables can compete on a replacement capacity basis as renewable-plus-storage options are not even competitive," he said. "With that said, it is clear that these factors are rapidly changing as we move through time, which requires us to continuously assess the most proven strategy that's in the best interest of our customers, something we've always demonstrated." ■

## SPP News

# Interregional Projects May Become Reality for SPP, MISO

NEW ORLEANS — Could this be the year SPP and MISO finally agree on an interregional transmission project?

Maybe. At least that's what staff responsible for planning at the RTOs' seam implied last week during a panel discussion at the Gulf Coast Power Association's 7th annual MISO South Conference on Feb. 11.

An optimistic Casey Cathey, SPP's manager of transmission planning and seams, assured a questioner that the grid operators will produce a coordinated system plan (CSP) this year. Two previous attempts have failed to yield an interregional project the organizations could agree on.

"We're in heavy coordination and very close to coming up with some projects," Cathey said. "For the first time in I don't know how many years, we've got a good shot of getting a project through [the CSP]."

SPP's desire for interregional projects has been driven by a wish to relieve congestion in eastern Kansas, which borders the MISO footprint. The growing impetus for MISO is the north-south transfer constraint between its Midwest and South regions.

As a result of a 2015 settlement agreement between the RTOs that also involves other parties, MISO is limited to 1,000 MW of contracted, firm transmission capacity between the two regions through SPP's system, but it also has access to additional non-firm service capped at 3,000 MW in southbound flows and 2,500 MW northbound. (See *SPP, MISO Reach Deal to End Transmission Dispute*.)

Under the agreement, MISO pays SPP between $16 million and $38 million in base annual payments based on an annual available system capacity-usage factor. In February, that arrangement became subject to a 2 to 4% escalation rate. The limits also created problems during energy emergency alerts (EEAs) in 2018 and 2019, when MISO said the constraint prevented it from accessing resources to relieve the emergency.

With the agreement set to expire in February 2021, MISO is motivated to bring "operational certainty" to its members through new transmission projects or by purchasing additional firm capacity. (See *MISO Floats New Option for Midwest-South Constraint*.)

FERC last year rejected a MISO cost allocation plan that included a new benefit metric for market efficiency projects (MEPs) that could reduce the costs of its settlement with SPP. The commission denied that proposal over treatment of local projects, and MISO has since refiled a new proposal that includes the same MEP metric. (See *MISO Allocation Plan Fails on Local Project Treatment*.)

"One of our objectives is to get to the point of long-term regional certainty," said Jeremiah Doner, director of seams coordination for MISO.

"There will be another EEA event, with possible load shed," Cooperative Energy COO Nathan Brown warned. "We really need some focus there."

SPP could also be looking at its first international interregional project, Cathey said. The RTO shares a direct tie with Canada's SaskPower through Basin Electric Power Cooperative's existing transmission facilities in North Dakota and completed its first international transaction in 2015 when it imported power during an emergency situation. (See *SPP, SaskPower Make First International Trade*.)

A provision in SPP's joint operating agreement with SaskPower allows joint planning analysis and coordinated system planning. With the oil-rich province of Saskatchewan facing continued load growth, SaskPower and SPP have held preliminary discussions.

"[SaskPower] can help fund projects in SPP and therefore improve their import capability," Cathey said. "There are just so many things going on."

### Electric Industry Outpacing Others in Cybersecurity


SPP Director Mark Crisson | © *RTO Insider*

SPP Director Mark Crisson opened a special briefing workshop GCPA held on the RTO by noting the growing importance of cybersecurity in the electric industry.

"Twelve years ago, this wasn't on anyone's radar," he said. He recalled that when he became CEO of the American Public Power Association in 2007, he would receive "private, confidential" briefings from the Department of Homeland Security on industry cyber threats that were not to be shared with anyone else.

"It's much more of an industry dialogue with the government now," he said. "The nature of these threats evolve all the time. It's hard to stay ahead of the bad guys, but it's critical for our industry. We are way ahead of what other industries are doing, both with the steps we're taking, the information we're getting from the government, and the teamwork between us and the government."

Crisson said SPP has developed its own set of cybersecurity criteria "that allows [us] to evaluate how effective or robust our cybersecurity really is."

SPP currently scores itself above average, or between three and four on a five-point scale, Crisson said.

"We feel like we're making good progress, but there's a lot more to do here."

### Uncertainty Product a Key for SPP Reliability

The workshop mostly focused on the SPP Holistic Integrated Tariff Team's work to integrate the growth of renewable energy, boost reliability, and improve transmission planning and the wholesale market. (See *SPP Board Approves HITT's Recommendations*.)

Bill Grant, regional vice president of regulatory and strategic planning for Xcel Energy's Southwestern Public Service, joined a panel of SPP members in explaining the HITT's recommendation to develop an uncertainty product as "the art of dispatching."

"We can handle the system a little differently if we have certainty," said Grant, a former control center manager. "We have to develop tools for operators so they can react when there are any questions about the [generation] forecast."

The HITT listed the uncertainty product as an "other reliability service," which include new technologies that change the "underlying nature of grid operations that are not traditional operator tools."

Grant pointed out that SPP's market protocols and rules limit the flexibility dispatchers have to work with. However, the flexibility, or uncertainty product, is also needed as variable renewable generation takes a larger share of the fuel mix.

"Developing the uncertainty model will help us better learn about the market," said Nebraska Public Power District's Tom Kent, who chaired the HITT. ■

*— Tom Kleckner*

# FERC Approves SPP's PMU Installations

FERC last week accepted SPP's proposed Tariff revision requiring the installation of phasor measurement units (PMUs) at new generator interconnections (*ER19-2845*).

The commission determined the PMUs will "provide data to SPP that it can use to improve system reliability and system model validation, and that may assist with compliance with current or future NERC requirements."

"We expect that PMUs will also enhance SPP's phase angle monitoring, voltage stability assessments, wide-area situational awareness and post-grid event analysis," the commission wrote.

FERC in August 2018 rejected an early version of the proposal over cost concerns raised by renewable energy developers. It directed SPP to clarify how transmission owners would treat PMU installation costs to avoid including them in transmission rates. Otherwise, FERC said, nonaffiliate customers could end up subsidizing installations for generators belonging to TOs or their affiliated interconnection customers. (See "Commission Rejects PMU Proposal over Cost Concerns," *3rd Time's a Charm for SPP Resource Adequacy Proposal*.)

SPP's revised filing retains a requirement that PMUs be installed for all resources 50 MW and above and requires that PMU equipment be installed by the TO on its side of the system before a resource's initial synchronization date. The revision also makes clear that the PMU equipment will become part of the TO's interconnection facilities and be funded by the interconnection customer.

The commission rejected an argument by EDP Renewables North America and RWE Renewables Americas that PMUs should be considered network upgrades and that their ongoing communications and operations and maintenance costs should be borne by transmission customers. It said SPP's designation of PMUs as being TO interconnection facilities was reasonable "because the PMUs are equipment owned, controlled or operated by the transmission owner between the point of change of ownership to the point of interconnection."

The change is effective Nov. 20, 2019.


A phasor measurement unit | *Siemens*

### Revamped Rate Design Approved

The commission also issued a letter order Feb. 6 accepting SPP's revisions to Schedule 1A of its Tariff that will replace a broad rate schedule with four targeted ones, effective Jan. 1, 2021 (*ER20-418*).

Under the new rate design, four schedules will replace Schedule 1A's previous rate with the hope of better aligning beneficiaries with payers and including energy transactions.

Planning, scheduling and dispatch costs will be paid by transmission customers; financial administration costs by their users; market-clearing costs by virtual and real-time market participants; and markets facilitation by real-time market participants. Market costs will be recovered through energy charges and planning costs through demand.

A Schedule 1A Task Force provided much of the design work, which was approved by SPP's Board of Directors and the Markets and Operations Policy Committee in January 2019. (See "Board Approves Modernized Cost-recovery Structure," *SPP Board of Directors/Members Committee Briefs: Jan. 29, 2019*.) ■

*— Tom Kleckner*

# Company Briefs

## Billionaire Ellison Aims to Shift His Hawaiian Island to Renewables

Billionaire **Larry Ellison** last month suggested Hawaiian Electric executives sell him and his Pulama Lanai company the generation, distribution and transmission assets on Lanai so he can then power the island exclusively with renewable energy.

Save a couple megawatts from Ellison's La Ola solar farm, Lanai's grid largely runs on nine ultra-low-sulfur diesel generators with a capacity of 9.4 MW. Transitioning the grid to renewables was part of the billion-dollar plan Ellison announced eight years ago when he bought 98% of the island. Turning the grid into a renewables system will require upgrades, and it is unknown whether Ellison would pay for the upgrades or the cost would be passed on to customers.

As of now, Hawaiian Electric's assets are not up for sale. If Ellison were to acquire the assets, Pulama Lanai would turn into a public utility regulated under Chapter 269 of the Hawaii Legislature's Revised Statute and report to the Public Utilities Commission. The PUC would have to approve the sale and would only do so if the sale is shown to be "prudent, in the public interest and would lower electricity costs for residents," Commissioner Lorraine Akiba said.

More: *Forbes*

## BP CEO Sets Net-zero Carbon Goal

BP CEO **Bernard Looney** last week announced a goal to reduce the company's greenhouse gas emissions and become net-zero carbon by 2050.

BP produces the equivalent of 55 million tons of carbon dioxide per year from global operations, while another 360 million tons is released from the oil and natural gas it sells, according to company figures. Looney said the company would achieve its goal by employing emissions-reducing technology, offering more low-carbon or no-carbon products, and supporting policy changes such as carbon pricing.

More: *Houston Chronicle*

## Delta Aims to be First Carbon-neutral Airline

Delta Airlines last week said beginning March 1 it will spend $1 billion over the next decade to become carbon neutral.

Delta, the world's biggest airline by revenue, will purchase "carbon offsets" that presumably help cancel out carbon emissions by preventing emissions elsewhere in the world, like planting trees or supporting renewable energy. However, the company did not disclose how many and how much it will spend on the offsets.

Still, Delta said it will minimize its reliance on carbon offsets, though it concedes technologies enabling it to reduce its emissions aren't readily available and plans to research those technologies with an allocation of $1 billion.

More: *Axios*

## Dominion Energy Announces New Greenhouse Gas Goals

Dominion Energy last week announced it will aim to reach net-zero greenhouse gas emissions by 2050. The utility had previously committed to cutting methane emissions by 50% between 2010 and 2030 and carbon emissions by 80% between 2005 and 2050.

Dominion said it will achieve the goal by extending the licenses of its nuclear fleet, promoting energy efficiency programs and investing in wind, solar, natural gas and renewable natural gas programs.

More: *The Associated Press*

# Federal Briefs

## Climate Leadership Council Proposes Policies to Curb Climate Change

The Climate Leadership Council, a group of politicians, economists and corporate executives, met last week with members of the Senate Climate Solutions Caucus, a bipartisan group of senators, to try and come up with policies that will curb climate change.

One proposal would impose a carbon fee, which would be set at $43/ton in 2021 and rise every year by 5 percentage points above inflation. That would double the price of a ton of coal, tax natural gas at $2.28/Mcf, and raise gasoline pump prices by about 38 cents/gallon. The collected fees would be returned to families to help offset higher energy costs and would also act as an incentive for individuals and companies to cut carbon emissions.

The proposal is said to have plenty of high-powered backing, with more than 3,500 economists, four former Federal Reserve chairs, 27 Nobel laureates in economics, and 15 of 16 living former chairs of the presidential Council of Economic Advisers backing the carbon fee-and-dividend plan.

More: *The Washington Post*

## IEA Says Global $CO_2$ from Power Generation Flattened in 2019

The International Energy Agency last week reported that global carbon dioxide emissions from power production flattened last year to 33 gigatons after two years of increase.

The agency attributed the plateau to the growth of renewable energy, advanced economies switching from coal to natural gas, milder weather in several countries, and slower economic growth in emerging markets.

While the U.S. recorded a fall of 140 million tons (2.9%) in emissions from the previous year, emissions in the rest of the world increased by nearly 400 million tons in 2019, with almost 80% of the growth coming from Asia where coal-fired power generation continued to rise.

More: *Reuters*

## Trump Budget Slashes EPA, Yucca Mountain Funding

President Trump's proposed budget for

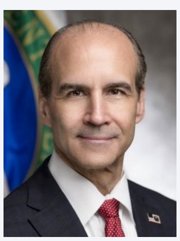
fiscal year 2021 calls for a 26% cut to EPA funding, including 50 programs and research and development, as well as removal of all funding to restart the licensing for the Yucca Mountain nuclear repository in Nevada.

The budget request would reduce spending at the Energy Department by 8% and cut 16% of the Department of the Interior's budget. At EPA, the budget would cut the Superfund program that cleans up hazardous waste sites by 10% despite data showing the agency has the largest backlog of toxic waste cleanups in 15 years. The budget would also cut research and development funding nearly in half ($500 million to $281 million).

As for the Yucca repository, Trump seemed to reverse course with a *tweet* on Feb. 6. After requesting $116 million and $120 million from its last three budget proposals, the administration said the next request will not ask for any money to license the project. The shift comes at a time when Republicans are pushing to build the next generation of nuclear power plants even though there is no permanent spot to store the waste.

More: *The Hill*; *The Washington Post*

## Trump Intends to Nominate Menezes for Deputy Energy Secretary



President Trump last week said he intends to nominate Undersecretary of Energy **Mark Menezes** to serve as deputy secretary of energy. Menezes would replace Dan Brouillette, who is now secretary of energy.

"I am honored President Trump intends to nominate me to serve as deputy secretary of energy and grateful for the opportunity to continue serving in his administration," Menezes said.

Menezes has served in his current position since November 2017. Prior to joining the Energy Department, he was vice president of federal relations for Berkshire Hathaway Energy and a partner at Hunton & Williams.

More: *Department of Energy*

## Trump Sends Danly's FERC Nomination to Senate for 2nd Time

For the second time in less than five months, President Trump last week nominated FERC General Counsel **James Danly** as a commissioner for the remainder of a term expiring June 30, 2023. Trump first nominated Danly

last October, but the Senate failed to vote on the nomination in 2019 and it was returned to the White House on Jan. 3.

If confirmed by the Senate, Danly would fill the vacancy left by the death of Commissioner Kevin McIntyre early last year.

More: *Natural Gas Intelligence*

## TVA Adds Solar, Batteries

The Tennessee Valley Authority last week said it has contracted 484 MW of solar power in the last two months and will increase the company's share of solar generation by 44%.

The winning projects were selected out of a total of 3,700 MW of proposals submitted in response to an April 2019 request for proposals for TVA's newly launched Green Invest program, which aims to provide large corporate power purchasers with renewable energy. The projects include a 35- and 80-MW solar system developed by Silicon Ranch, a 100- and 200-MW solar farm/battery developed by Origis Energy, and a 69-MW far developed by OPD Energy.

TVA, which encompasses seven states, gets less than 3% of its power from wind and solar, compared to 39% nuclear, 26% natural gas, 21% coal and 10% hydropower. However, its integrated resource plan calls for adding between 1,500 and 8,000 MW of solar and 2,400 MW of energy storage by 2028.

More: *GreenTech Media*

## DOJ Accuses Ameren of Failing to Comply with Pollution Order

The Department of Justice has accused Ameren of failing to comply with its September order to curb air pollution from the utility's coal-fired Rush Island Energy Center in Missouri.

According to the department, Ameren failed to provide a complete permit application for major modifications to the facility that would add scrubbers, which the company has since appealed. On top of omitting required information in its application, the company left out a corresponding $5,000 fee and only submitted a lesser $250 fee applicable for separate, minor permits.

An Ameren spokesperson said the company is "working on a response brief, which will be filed with the court."

More: *St. Louis Post-Dispatch*

## Vineyard Wind Project Launch Pushed Beyond 2022

The Trump administration last week announced a new timeline for the ongoing federal review of the $2.8 billion, 800-MW Vineyard Wind project, and the project's developer no longer expects it to become operational by 2022.

The Bureau of Ocean Energy Management published its new "one federal decision permitting timeline," which envisions the issuance of a decision for permit approval by Dec. 18, 2020. Before the government launched a broad review of wind projects, a decision on permit approval had been expected by Aug. 16, 2019.

Vineyard Wind officials said the company remains committed to being the first large-scale offshore wind project in the country and is in contact with the utilities it is under contract with about any impacts the review could have on the project.

More: *South Coast Today*; *GreenTech Media*

## 4th Circuit Denies Powhatan's Statute of Limitations Argument

The 4th U.S. Circuit Court of Appeals last week rejected Powhatan Energy Fund's motion to dismiss FERC's lawsuit against it for alleged market manipulation in PJM, ruling that that the five-year statute of limitations commences when the commission fulfills each of the statutory prerequisites to filing suit in district court, not when the alleged activity occurred.

The court remanded the case back to the U.S. District Court for the Eastern District of Virginia, where FERC had filed its lawsuit seeking that Powhatan pay $34.5 million in penalties and disgorged profits for allegedly making riskless up-to-congestion trades in PJM to profit on line-loss rebates. Unless Powhatan and FERC settle, the district court will hear the case *de novo*. (See *FERC Loses Again on 'De Novo' Review*.)

"We are disappointed but respect the court's opinion," Powhatan principal Kevin Gates said in a statement. "We look forward to the opportunity of finally litigating the merits of the case, which focus on simple spread trades that took place 10 years ago."

More: *4th U.S. Circuit Court of Appeals*

# State Briefs

## MICHIGAN

### PSC Approves Resource Plans for UPPCO, Northern States Power

The Public Service Commission has approved settlement agreements involving the integrated resource plans for Upper Peninsula Power Co. (UPPCO) and Northern States Power.

Under the agreement with UPPCO, the utility will eliminate plans for a natural gas reciprocating internal combustion engine and will increase its energy waste-reduction target to 1.65% in 2020 and 1.75% in 2021. The company will also move ahead with a 125-MW power purchase agreement for a proposed solar facility, as well as a proposal to enable two hydroelectric facilities to operate in the wholesale market. UPPCO will file its next IRP by Dec. 6, 2024.

The agreement with NSP will increase its energy waste-reduction goals to 1.5% by 2021, continue to assess demand response for customers, and participate in the PSC's Power Grid initiative. The company also agreed to summarize impacts to its service territory among other things. NSP will file its next IRP within five years in coordination with Minnesota.

More: *Daily Energy Insider*

### Whitmer Proposes $10M for Green Bank, Clean Energy Revolving Fund

Gov. **Gretchen Whitmer** released her 2021 fiscal year budget last week, which included introducing $5 million into a green bank and spending another $5 million on a revolving fund for clean energy projects.

Officials said the spending is meant to encourage lenders to give favorable rates to residents and businesses for renewable energy improvements through the nonprofit Michigan Saves, the state's "green bank," which was created in 2009 and has financed more than $230 million in energy efficiency and renewable energy projects.

The other $5 million is for a "green revolving fund" for energy efficiency and renewable energy projects at state buildings. The fund would "allow for the reinvestment of funds generated from long-term cost savings in new projects and establish a long-term program focused on reducing the state's carbon footprint."

More: *MiBiz*

## MONTANA

### NorthWestern Energy Files to Buy Added Share in Colstrip Unit 4

NorthWestern Energy has filed paperwork with the Public Service Commission asking for approval to buy an additional 25% share of Colstrip Unit 4 from Puget Sound Energy for $1. The purchase would add roughly 185 MW to the utility's portfolio, though it intends to sell about 90 MW back to PSE for five years.

The utility said it relies too much on purchasing energy from the open market and needs to add about 200 MW of capacity annually with a goal of an extra 725 MW by 2025.

"There's a shrinking amount of power that we can actually go out and buy, especially the unique type of power that Colstrip provides, and that's the type that you can count on when it's really cold out, when it's dark out," NorthWestern Vice President of Energy Supply John Hines said.

The PSC has seven to nine months from the date of filing to decide.

More: *Montana Public Radio*

## NEW HAMPSHIRE

### Sununu Vetoes Net Metering Bill

Gov. **Chris Sununu** last week vetoed SB 159, which would have increased the limit on net metering for customer-generators. Sununu said the bill was nearly identical to two bills that were previously vetoed and sustained.

"The proponents of this bill claim to have made a compromise, when in fact it still would result in hundreds of millions of dollars in higher electric rates for our citizens," Sununu said.

Conversely, Rep. Bob Backus, chairman of the House Science, Technology and Energy Committee, said the bill was a bipartisan effort aimed at encouraging the development of home-grown, small-scale renewable energy in the state.

More: *New Hampshire Public Radio*; *InDepthNH*

## NEW MEXICO

### Bills Opposing Nuclear Waste Site Moving Through Legislature

A bill that would expand the state's authority to regulate nuclear waste in the state passed on a 5-4 vote in the Senate Conservation Committee last week. It would increase the authority of the State's Radioactive Waste Consultation Task Force to not only analyze federally owned facilities but also those privately owned.

Holtec International applied for a license to build a storage facility near Carlsbad with the Nuclear Regulatory Committee in 2017, with the application being accepted for review a year later. The facility would temporarily store up to 100,000 metric tons of spent nuclear fuel rods.

Earlier this month, the House Energy and Natural Resources Committee voted 8-5 to pass legislation opposing the transportation and storage of high-level nuclear waste in the state for at least 40 years.

More: *Carlsbad Current-Argus*; *Carlsbad Current-Argus*

### Grid Modernization Proposal Advances to Senate

A bill to modernize the electricity grid passed the House floor last week by a 61-1 vote and will now head to the Senate.

HB 233 directs the Energy, Minerals and Natural Resources Department to develop a strategic roadmap for updating the electric grid and would also create a competitive grant program to support local communities in implementing the modernization projects.

At the same time, HB 9, which would have expanded access to solar energy for residents through the development of community solar projects, failed to pass the House with a 28-36 vote.

More: *New Mexico Political Report*

## NEW YORK

### FERC Accepts NYISO Tx Cost-containment Proposal

FERC on Friday accepted Tariff revisions establishing a cost-containment mechanism for NYISO's public policy transmission planning process, including voluntary cost caps in developer proposals, effective Feb. 16.

Under the new rules, transmission developers can propose either a hard or soft cap for capital costs. (See *NYISO Business Issues Committee Briefs: Oct. 16, 2019*.) A hard cap represents the amount over which the developer agrees not to recover capital costs from ratepayers, while the soft cap is the amount above which shareholders and ratepayers share excess costs, based on a defined percentage, with the developer's share at least 20%.

More: *ER20-617*

## SOUTH CAROLINA

### Lawmakers Mulling Santee Cooper Options

Of the three options lawmakers are mulling over regarding the fate of Santee Cooper, the utility that racked up $4 billion in debt associated with the failed V.C. Summer nuclear project, the Department of Administration recommended NextEra Energy's proposal as the best for the outright sale of the company.

The proposal would sell Santee Cooper to NextEra for a multibillion-dollar package of cash, acquisition of present and future debt, and a pledge for a four-year freeze in electric rates for the utility's ratepayers. NextEra's proposal would also result in reducing the current workforce by 705 employees.

The House Ways and Means Committee and the Senate Finance Committee now have 30 days to recommend a path forward.

More: *The State*

## VIRGINIA

### General Assembly Passes Clean Economy Act

The Democratic-controlled General Assembly last week passed the Virginia Clean Economy Act, which is designed to get the state to zero-carbon emissions by 2050, with a 52-47 vote.

The act encompasses a dozen goals clean energy advocates have been pushing for, including a mandatory renewable portfolio standard, binding energy efficiency targets, beefed-up distributed generation and raised power purchase agreement caps.

More: *Virginia Mercury*

## WYOMING

### Bill to Penalize Utilities for Renewable Energy Returns to Legislature

Lawmakers last week proposed a bill that would penalize utilities for using renewable energy sources to supply electricity.

The bill, which is sponsored by the Senate Appropriations Committee, would require utilities to provide 95% of their electricity from a restricted list of energy sources, including coal, oil and natural gas, by 2021. They would then be required to procure 100% of their electricity from the sources by 2022. Through the language, if a utility chose to invest in renewable energy sources, the state could penalize it with a fine for each megawatt of energy not produced from the acceptable sources.

As of the middle of last week, the drafted bill had yet to be introduced or receive a vote, but it is one of several bills drafted during the legislature's session in an attempt to inject life into the state's coal industry.

More: *Casper Star-Tribune*