# RTO Insider
Your Eyes and Ears on the Organized Electric Markets
CAISO ■ ERCOT ■ ISO-NE ■ MISO ■ NYISO ■ PJM ■ SPP

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# Clean Tech Presses on Following Dire Climate Report

## *'We Are Still In'*

*By Rich Heidorn Jr.*

BOSTON — "We Are Still In" said the button Anne Kelly wore Wednesday as New England's clean tech community gathered here, three days after a dire report by the U.N.'s Intergovernmental Panel on Climate Change.

For Kelly, senior director of CERES' Business for Innovative Climate and Energy Policy (BICEP) Network, the button was a rebuke to President Trump's plan to pull the U.S. from the Paris Agreement on climate change.

Anne Kelly, BICEP Network, Ceres, wearing "we are still in" pin | © *RTO Insider*

The IPCC report — which warned that preventing catastrophic effects from climate change will require unprecedented global cooperation — had a sobering effect on the *Horizon 18* conference, where New England clean tech companies looking to make sales and forge partnerships met with other stakeholders. (See *IPCC: Urgent Action Needed to Avoid Climate Trigger*.) But there was no hint of defeatism in the crowd.

### Silver Scattershot

"The need to move to action is more and more compelling," said Patricia Fuller, Canada's ambassador for climate change.


Patricia Fuller, Canada's ambassador for climate change | © *RTO Insider*

Keeping temperatures from rising more than 1.5 degrees Celsius (2.7 degrees Fahrenheit) from 1850-1900 levels will require carbon pricing, maximizing renewable energy and energy efficiency, and incorporating carbon capture and storage, Fuller said. "There is no silver bullet. Really, as someone put it recently, you need silver scattershot. You need all the tools."

Fuller cited a September *report* by the Global Commission on the Economy and Climate that recently concluded that "bold action" on climate could produce economic gains of $26 trillion through 2030 and create 65 million jobs compared with business as usual. "So, this is also an opportunity," Fuller said.

Canada is passing legislation for a federal carbon pricing system, reducing methane emissions and emissions from heavy duty vehicles, and accelerating the phaseout of coal-fired electricity. All federal buildings will run on clean power by 2025.

### States' Roles

Because the Trump administration and Congress have failed to take similar action in the U.S., it is the states that "are in charge of pro-

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# Northwest Ponders RTO with Mix of Hope and Skepticism

*By Robert Mullin*

UNION, Wash. — The California State Assembly bill intended to set CAISO's regionalization in motion may have died in committee this past summer, but talk of an organized market for the broader Western Interconnection lived on last week during the annual meeting of the

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# PJM CEO Ott Briefs Senate Committee on Black Start

*By Michael Brooks*

WASHINGTON — PJM CEO Andy Ott emphasized the importance of fuel diversity for grid resilience to U.S. senators Thursday, but he cautioned against government intervention in the RTO's markets to bail out specific resources.

Appearing before a Senate Energy and Natural Resources Committee hearing on black start capability, Ott acknowledged that the question of whether the grid was becoming too dependent on natural gas was a legitimate one. But, he said, "I do want to clear up some misconceptions about black start resources. Coal and nuclear generators are generally not black start. Black start resources tend to be flexible, smaller units, like gas units or ... hydro resources."

PJM has said the announced retirements of coal and nuclear plants do not pose any short-term threat to reliability, which Ott repeated Thursday. A fuel security study, examining at what point those retirements would cause PJM to violate its reliability requirements, will be released Nov. 1, he said. (See *Stakeholders Debate PJM Fuel Security Scope*.)

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# In this week's issue

## CAISO/WECC News

# Tx Path Uncertain for Massive New Mexico Wind Farm

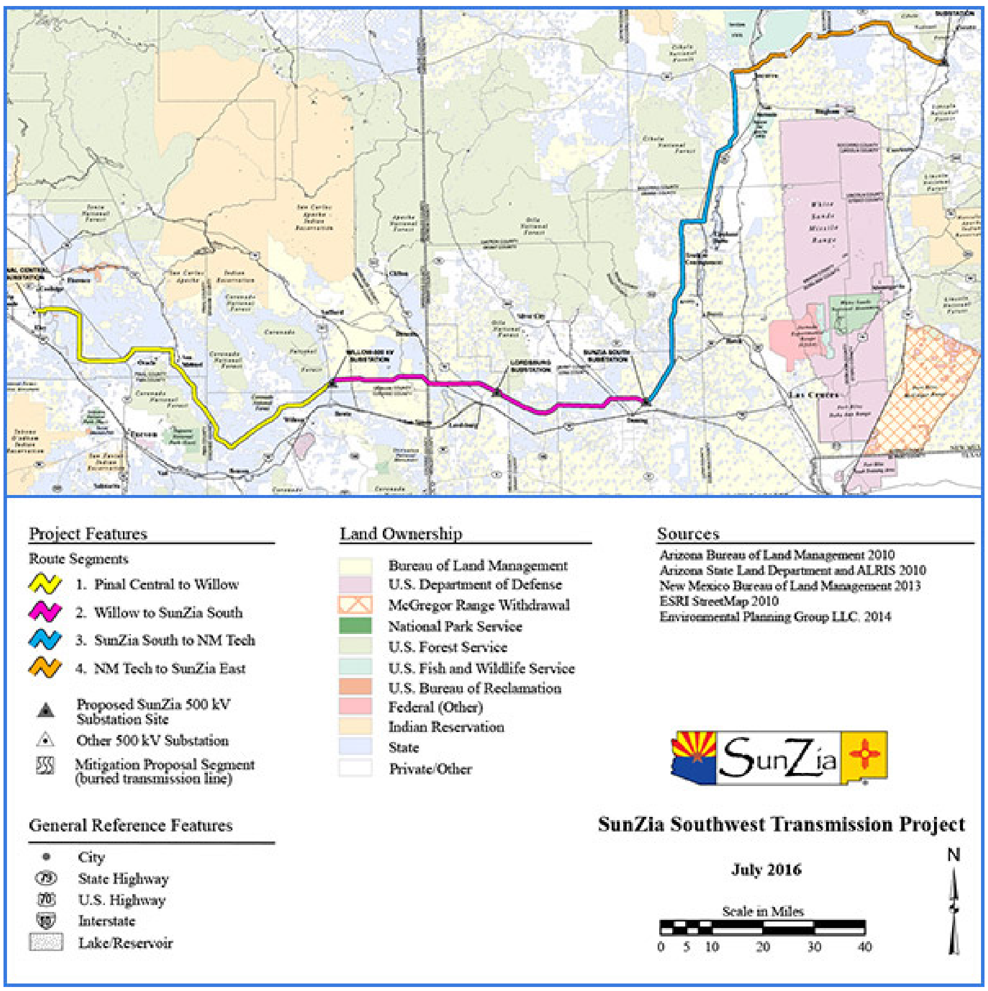
*By Hudson Sangree*

New Mexico regulators approved construction this month of what could be the Western Hemisphere's largest wind farm, capable of generating as much power as a mid-sized nuclear power plant. But whether all that energy will have a way to reach the load centers of California and the Southwest remains unclear after the regulators denied approval for new transmission lines meant to link the wind project to urban areas.

On Oct. 3, the New Mexico Public Regulation Commission voted 4-0 to allow Pattern Development's Corona Wind Projects to move forward. Pattern's plans call for construction of up to 950 wind turbines with the potential to produce 2,200 MW of electricity. That's about the same capacity as Pacific Gas and Electric's Diablo Canyon nuclear power plant, the last in California, which is scheduled to retire by 2025.

In September, however, the PRC declined to let the SunZia Southwest Transmission Project go ahead, citing unresolved concerns, especially that the developers had "failed to sufficiently define the location of the transmission line route for which it seeks approval." The commissioners denied the project without prejudice so that SunZia's developers could firm-up their plan and resubmit it.

"We didn't have any animus against the project at all," PRC Vice Chair Cynthia B. Hall said. "They just weren't ready. Things weren't coming together in the time frames expected."




*The proposed SunZia Southwest Transmission Project could connect wind farms in eastern New Mexico to end users in California. | SunZia*

With last-minute changes to SunZia's submissions, "What was actually being requested became sort of a moving target," Hall added.

SunZia's $2 billion transmission project would consist of two bidirectional 500-kV lines with a total rating of 3,000 MW. Its proposed 520-mile path from central New Mexico south across the Rio Grande and the Sonoran Desert in Arizona has met with resistance from federal agencies, the military, environmentalists, community groups and ranchers since it was first proposed in 2008.

Some of those concerns have been resolved, particularly with the U.S. Bureau of Land Management and Defense Department, whose land the lines would cross or abut, but problems with some private landowners persist.

Today SunZia's fate is linked with the Corona project, which would be the line's anchor tenant.

On Oct. 9, SunZia emailed RTO Insider a statement saying, "The PRC approval of Pattern's Corona Wind Projects is a very positive development for SunZia and New Mexico.

"The Corona Wind Projects are the anchor tenants for SunZia's first line," it continued. "This approval paves the way for SunZia to provide the PRC (and the hearing examiner [HE]) with the additional information they need to be able to approve the location of SunZia. We expect to provide this information to the PRC (and HE) in early 2019."

For its part, Pattern urged the commissioners to weigh each project on its own merits for permitting purposes, despite the close connection between Corona and SunZia.

"They agreed that our permit should stand on its own," said Crystal Coffman, business development manager for affiliate Pattern Energy Group, based in Houston.

Hall said the commissioners were impressed with Pattern's compliance and planning efforts. "They had everything nailed down," she said. And the commissioners also were excited about New Mexico potentially being home to the hemisphere's largest wind farm. "It sure gives us a sense of pride at the moment," she said.

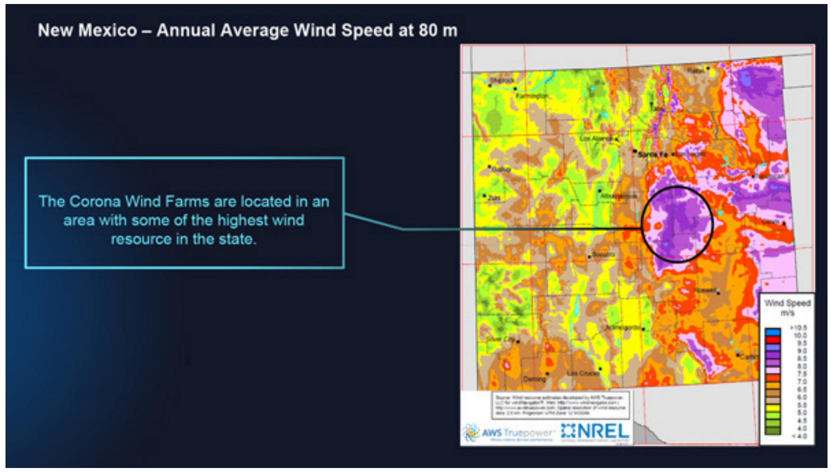
Adam Renz, who handles government rela-

## CAISO/WECC News

tions and external affairs for Pattern Energy, said the company was planning to work with SunZia on its next PRC filing to help ensure the transmission line's approval. A major goal for the West's biggest wind farm would be to supply energy to California as it seeks to meet its 100% clean-energy target by 2045. (See *Calif. Gov. Signs Clean Energy Act Before Climate Summit* and *Can Calif. Go All Green Without a Western RTO?*)

The best way of doing that would be through SunZia's high-voltage lines, sending energy across the Southwest to CAISO's territory, Renz said.

"SunZia has always been a bit of a dream project that would allow us to deliver electrons into CAISO," he said. "At the end of the day it's a direct long-lead line into California." ■




The huge Corona Wind Projects is proposed for an area of New Mexico with the highest average wind speeds. | *Pattern Energy*

# Western Regionalization a 'No-brainer,' PJM Chief Says

*By Robert Mullin*

UNION, Wash. — PJM is leaving the door open to developing an organized market in the Western Interconnection, despite the downfall of its initial partner in the effort, Peak Reliability.

And some of the region's utilities are also interested in continuing the effort, according to PJM CEO Andy Ott.

"We continue to stay interested in the West," Ott said Oct. 8, speaking at the Northwest & Intermountain Power Producers Coalition's (NIPPC) annual meeting. "We're still highly engaged — mostly not in the Northwest these days, but mostly in the Southwest."

Ott said PJM used Peak to gain an understanding of the issues in the West and get introductions to the region's market participants.

"But frankly, we feel we do have those introductions and we still are here and having discussions with folks," he said.

Ott offered that regionalization is a "no-brainer" for the West, and then slipped into what sounded like a not-so-subtle pitch for having his RTO help lead the way in that effort.

"What we are about is to say, 'Look, markets are a tool.' Regionalization is a means to create a more efficient utilization of the grid in the West," Ott said. "Our expertise is in coordinating markets in the East. Essentially, we did it a certain way. We realized [in the West] that it's not the same scope. You don't need capacity markets out here. We recognize that. Energy markets, transmission planning, regional operation, market-to-market coordination — those are the kinds of things and expertise we bring."

Ott acknowledged that the West is already experiencing a fair volume of trading, both through the Western Energy Imbalance Market and bilateral trades. But he said those options seem to be "significantly understating" the value of ramping, flexibility, firm energy and storage — echoing the complaints of Northwest hydroelectric producers who say that CAISO and the EIM undervalue the capabilities of their highly flexible resources.

The CEO said the situation is a failure of price formation.

"Price formation is fundamentally one of the key features of an electricity market. We have to get prices so that people feel they're being fairly treated," Ott said. "We came in understanding that we need to get an appreciation of the special cases in the region. We tried to do that. I have folks who've spent a fair amount of time to

PJM's Andy Ott addressing NIPPC annual meeting attendees. | © *RTO Insider*

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understand the different drivers, because they are different from what we have" in the East.

Ott suggested that Western market participants outside California collaborate to hash out their own approach to price formation — within their own organized market — and then reach out to CAISO and ask: "'Here's what we think. What do you think?'

"I don't think that conversation is happening. At least it's not happening systematically, but I hope it will," he said. "If we can be a catalyst to at least provide that conversation, we would love to do that."

Ott said the idea that Western utilities must choose between developing a new market and engaging with the EIM or CAISO is "a fiction." A "viable alternative" would be for other parts of the region to stand up a market with its own governance structure and price formation principles and then engage California through market-to-market coordination.

"It looks a lot like EIM, but it's under different sets of rules," Ott said. "You still have trading, and in fact you still have very efficient trading. In fact, we do this between PJM and New York; we do it between PJM and MISO. We even do it between PJM and part of the South where they don't even have organized markets, but we have protocols."

Clay Norris, power section manager with publicly owned Tacoma Power, asked Ott to elaborate on lack of engagement with the Pacific Northwest.

"I've had little interest from parties in the Northwest," Ott said. "Most of them say, 'We're resigned to the fact that we're headed in a certain direction so we really don't have time to talk to you.'"

Ott added that Southwest utilities had previously taken the position that they must choose between working with PJM on a new market or committing to the EIM, and they focused on the latter to avoid "creating too many waves."

"But more recently the conversation has been that [Southwest entities are saying], 'We're seeing some things that don't look so good, so we want to talk to you again,' and so they reached back out and said, 'We're willing to re-engage in the conversation,'" Ott said.

"We are having these conversations. Whether they go anywhere is still an open [question]." ■

# Northwest Ponders RTO with Mix of Hope and Skepticism

*Continued from page 1*

Northwest & Intermountain Power Producers Coalition (NIPPC).

That talk was tinged with a mixture of resignation, skepticism and optimism — and humor.

Steve Rodgers | © *RTO Insider*

"For the moment, it appears to me regionalization in the West is dead, at least from the CAISO perspective," said Steve Rodgers, director of FERC's Division of Electric Power Regulation-West.

"There's not going to be regionalization anytime soon, it appears. Some states perceive that California has a desire to export its policies to other states. I'm sure nothing like that would ever happen," Rodgers joked.

Rodgers noted that some California groups opposed to regionalization fear it will allow "free riders" in the rest of the West to take advantage of infrastructure paid for by California ratepayers, while some in other parts of the West worry about increased costs for their ratepayers.

"I had one experience back in the spring where in consecutive weeks I had two of these diverse groups come to meet with my staff to express their concerns," he said. "I felt like saying, 'You guys should get together, because some of these fears are not adding up.'"

Rodgers said that while FERC was closely monitoring developments around regionalization, it would not put pressure on any of the region's players because "that surely would be the kiss of death" for the effort.


Richard Glick | © *RTO Insider*

FERC Commissioner Richard Glick said that some California opponents of regionalization have argued that an "evil FERC is going to come in and they're going to reverse California's greenhouse gas emissions program."

"First of all, at least with regard to the California ISO, we already do have a significant amount of authority. If we wanted to engage or use certain words that could inhibit California policy, I think we could do that, but I'm not saying we're going to do that and we certainly shouldn't do that," Glick said. "And secondly, I think the evidence is out there already if you look at the other regions with RTOs that the commission is generally pretty deferential in terms of regional preferences."


Ralph Cavanagh | © *RTO Insider*

"We need a big bipartisan win, and I don't think we'll get it on carbon tax in the short term, but I'll tell you a place where we can get it. We can get it on enhanced regional grid integration," said Ralph Cavanagh, co-director of the energy program at the Natural Resources Defense Council.

Cavanagh recounted this summer sitting before the California Senate Judiciary Committee (which was pondering the regionalization bill), bracketed by the "extreme" left and right.

"I'm trying to get them to vote for a fully independent board for the California ISO, and there were howls of anguish from the extreme left in California on this because of a perception this was going to turn California over to the tender mercies of what is called the Trump FERC, without recognizing that the California ISO is fully regulated by the Trump FERC today," Cavanagh said.

Cavanagh noted the bill passed the committee with Republican votes, which would have been key to passing it if it had gone to the State Senate floor.

"And I really hope to see that. I really hope to see Democratic and Republican majorities on a

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tough issue. It's been controversial, and collectively the will of this room must be 'We will not give up on this,'" Cavanagh said, addressing his NIPPC audience.

Travis Kavulla | © *RTO Insider*

"I tend to agree that that is ideally a place where bipartisan agreement will emerge," said Montana Public Service Commission Vice Chair Travis Kavulla, who noted he sits on the Western Energy Imbalance Market Governing Body.

"Even in the absence of a kind of fully packaged regionalization of an ISO, which would be ideal, I think you can incrementally build on the regional efforts that are currently underway," Kavulla said. "Right now, you've kind of got a toolbox with only a Phillips-head screwdriver in it, but it would be nice to add some additional tools into the Western regional market."

Kavulla said he was disappointed to see the tenor of the California debate over regionalization, but that it was "hilarious" to see the NRDC's Cavanagh associated with regionalization proponent PacifiCorp.


Lauren McCloy | © *RTO Insider*

"But, fundamentally, as a non-California Westerner, it's simply inconceivable that you'd have a workable and productive market for electricity in this region in the absence of a jurisdiction that has half of its load," Kavulla said.

NIPPC's annual meeting | © *RTO Insider*

Lauren McCloy, senior policy adviser to Washington Gov. Jay Inslee, noted the governor supported passage of California's failed regionalization bill and understands that CAISO and regional stakeholders continue to work on enhancements to the EIM that "could pave the way for a more dynamic regional market in the future."

"The governor also continues to advocate for resolutions to the two biggest issues for Washington stakeholders participating in these discussions: governance and fair valuation for hydroelectricity," McCloy said. "In order for Northwest entities to join the regional market, they will have to have a decision-making role in how that market is run."

McCloy reminded conference participants that Washington produces about a quarter of U.S. hydropower. In establishing a fair value for the resource, a market operator would need to recognize that hydropower "is not only emissions-free, but it's also flexible and can be coordinated to complement other variable renewable resources such as solar and wind."

FERC's Rodgers said the EIM has been a "great success so far."

"First of all, there's been great benefits to date of over $400 million. Not only is that a large number, but that number is getting larger all the time as more and more entities join the EIM. The boundaries of the EIM are growing each year," he said.

Rodgers also pointed out that the possible extension of CAISO's day-ahead market could increase the benefits of the EIM, but that some observers are concerned it could prevent full regionalization.

Robert Kahn | © *RTO Insider*

NIPPC Executive Director Robert Kahn wrapped up the meeting with a healthy dose of skepticism on the issue: "NIPPC has been working to create an RTO/ISO since 2000, and we will continue to do so, but we're not holding our breath." ■

# Q&A: PJM's Ott Still Looking West

*By Robert Mullin*

PJM CEO Andy Ott | © *RTO Insider*

In addressing last week's annual meeting of the Northwest & Intermountain Power Producers Coalition (NIPPC), PJM CEO Andy Ott made clear his RTO is still in the running to provide wholesale market services to the Western Interconnection, despite the dissolution of its partnership with Peak Reliability. (See related story, *Western Regionalization 'No-brainer,' PJM CEO Says*.)

After his speech before attendees, Ott sat down with RTO Insider for the second time this year to discuss PJM's perspective on a Western market, this time in the aftermath of Peak's decision to wind down its operations next year. (See *PJM Chief Confident on Western Market Proposal*.)

The interview has been edited for clarity.

**RTO Insider: In a press conference last month, NERC CEO Jim Robb said he had heard Peak Reliability's effort to develop a Western market characterized as a kind of a Hail Mary pass intended to maintain their financial viability. Would you agree with that assessment?**

Ott: From what I understood from my conversations [with Peak CEO Marie Jordan], they were getting feedback that their costs for reliability services were above what others like [CAISO] or SPP felt they needed to charge. So I think Peak's approach was if they were going to provide high-quality reliability services, they had to find a better way to pay for the other infrastructure needed to provide those services. Their constituency was saying if you would like to provide market services like others do, you may be a viable alternative. So [Jordan] was actually getting asked that question.

They were facing a cost structure that people were telling them was unsustainable, so their answer could've been, 'We either fold the tent and more or less do the wind-down, or do something else.' From a [different] point of view, some people thought it was a Hail Mary pass because it came so late in the discussion. The notion of bringing in someone like us who does markets, it was certainly doable, but for them, they couldn't sustain that project for any length of time because they were facing cost pressures.

**How unexpected was it that things fell apart as rapidly as they did after Peak made the announcement to pursue a market? Did that take you by surprise?**

No. From our perspective, they're going to have regional markets in the West. It's just a matter of time and how they evolve. The thing we didn't have in the West was the relationships with people, and we also didn't have a real-time model that could be stood up fairly quickly. Peak brought both. We had the market expertise, but we didn't have that, so it was a pretty easy decision for us to pair up with them. That said, once [Peak] introduced us, we were able to build our own relationships. And then the real-time model, based on my understanding, is going to become available to everybody, so I don't see that as being a real challenge.

If all you provide is reliability services, there's a certain overhead that's required to do market operations, grid operations and reliability services. That infrastructure needs to be in place to do any of those three. If you build the infrastructure to do more than one of the three, then the costs for each one of those services per unit goes down. So what we're saying is that we can't be competitive in providing just reliability services, but if we could provide RC [reliability coordinator] services plus grid operations plus markets or some combination of those so that lowers the rate — because that's essentially what [CAISO] is doing.

**Does the balkanization of RC services in the West complicate things for PJM?**

If you've talked to Jim Robb, I'm sure he's told you this: Most folks on the reliability side preferred a single RC in the West. But it was obvious 18 months ago that Peak was saying, 'I've got California and I've got Mountain West both telling us it's too expensive,' it was already going to be balkanized. I think the attitude in the West is that it's too expensive to maintain the West-wide [RC] model because other folks want to do their own thing, so as you pull larger regions of the West out, the costs for everybody else goes up. So I think it's inevitable that it becomes more regionalized. So for us, I don't think it's something we're causing, we're just observing it's going to happen. It's a fait accompli at this point. It obviously helps us because if people want to look at alternatives, then they will look at us.

**You mentioned in your [NIPPC] speech that there's interest [regarding PJM] in the Southwest, not so much in the Northwest. What entities in the Northwest have you approached?**

If I've had conversations with folks, I'd rather not talk about that. I don't feel comfortable. Suffice it to say, there weren't many people in the Northwest that wanted to have conversations because they thought they already had a path forward. Hopefully that will change.

**Compared with CAISO, most RTOs appear to have a different model of stakeholder engagement, with CAISO probably being the most staff-driven, and MISO and PJM, for example, being more stakeholder-driven. What advantages do you see in the latter model?**

I think certainly in a Western context … who

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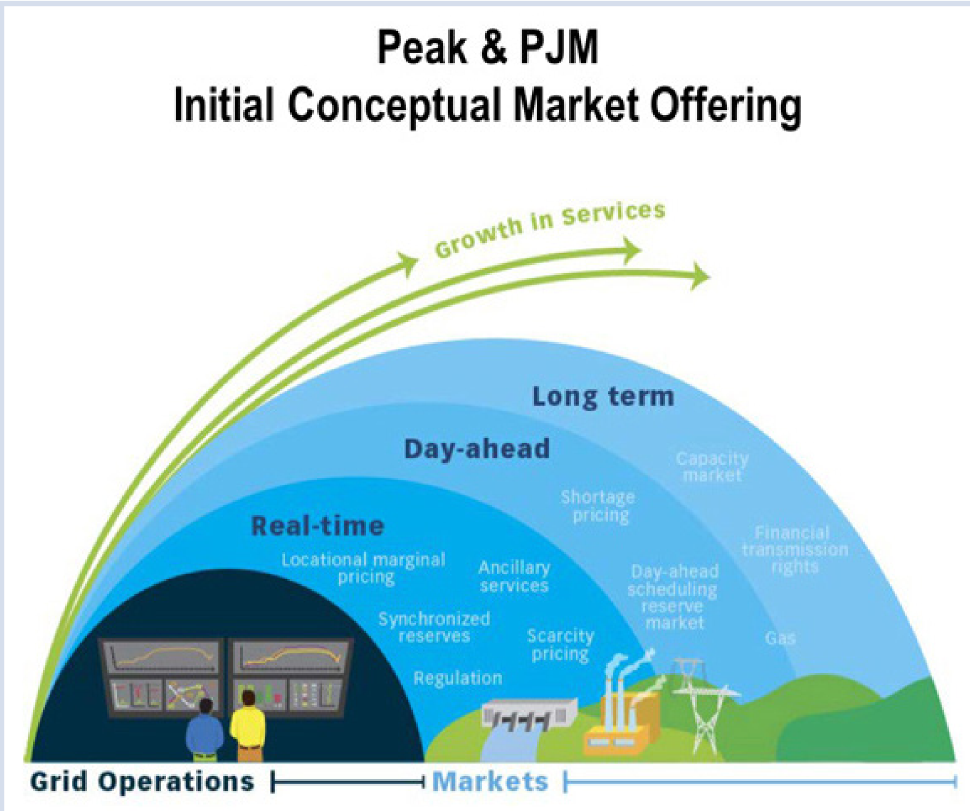



Peak/PJM's Concept for new market offering | *Peak Reliability*

better to decide what the rules of the road should be than the actual stakeholders of the market? And I am a bit biased because that's where I come from, but my people aren't wise enough to drive. I mean we can provide services, we can consult, we can give them the analytics, but at the end of the day, the RTO is more or less a service provider, an information provider to stakeholders who make decisions with that independent information. I just think it's a better model because it's more transparent.

Occasionally we have to step in and do something controversial because our mandate is to have nondiscriminatory results, but I think 90% of the issues are resolved through that consensus, and I think it's more healthy. And out here [in the West], if people feel they're not being fairly treated and they don't have any other option, how sustainable is that?

**You talked in your speech about the relationship [between a new market] and the Energy Imbalance Market. What kind of complications would there be in having an overlay with that market?**

This goes back to the mindset of folks saying, 'Either I do EIM or I have to do this regional market, and I have to choose between them.' And that was my point [in the NIPPC speech] — you don't.

I mean, the only difference is whether you are participating in the EIM as a group or individually. If you're participating as a group, then maybe you'll have a say in how prices are formed, where today you don't have a say.

If the California legislature won't give up control [of CAISO's governance], well then you're having a peer-to-peer discussion and that goes to FERC. So the point is, if [CAISO] won't change its price formation, then the entities outside will say, 'We got together and we decided we're going to price ramping this way, and we're going to price hydro this way,' and then you have to make those interact at the border. And so when we're selling to you, you'll pay our price, and when you're selling to us, we'll pay your price, and that's interregional coordination.

The whole point is that market-to-market coordination creates huge efficiencies. In fact, you'd have higher levels of trade than you would with the EIM, because EIM is individual, so if one person creates a constraint on another person's system, you have to stop. If you combine them together and say we'll manage constraints together, we'll have more throughput. So the whole notion out here that they have to make this choice between EIM or not is just fiction.

I hope they'll go back and think about this notion of participating as a team or a group, banding together and then participating in the EIM, and then you can have a conversation about, 'Well it doesn't matter what California says about price formation, we have an opinion too. And if there's a conflict, we'll resolve it at FERC.' And I know that scares some people, but my point is, who [is CAISO] going to trade with?

**So it would be something like a joint operating agreement? That would be the relationship?**

Yeah, it's a market-to-market coordination joint operating agreement. There would be an agreement approved by FERC. This is not unheard of. This is the way everybody else does it. We have them with New York, MISO, [the Tennessee Valley Authority], with Duke [Energy], so it's pretty standard.

**I've talked with some in the Northwest who say the idea of applying the standard market design is outdated and not really applicable to the region. What do you think about that?**

This is key: The market design has to adapt to the region, not the region to the design. So the whole mindset back in the day that you have a standard market design and we have to adapt to it was never going to work. In fact, we don't even have that. There's differences between MISO's design and PJM's design because of the regional structure.

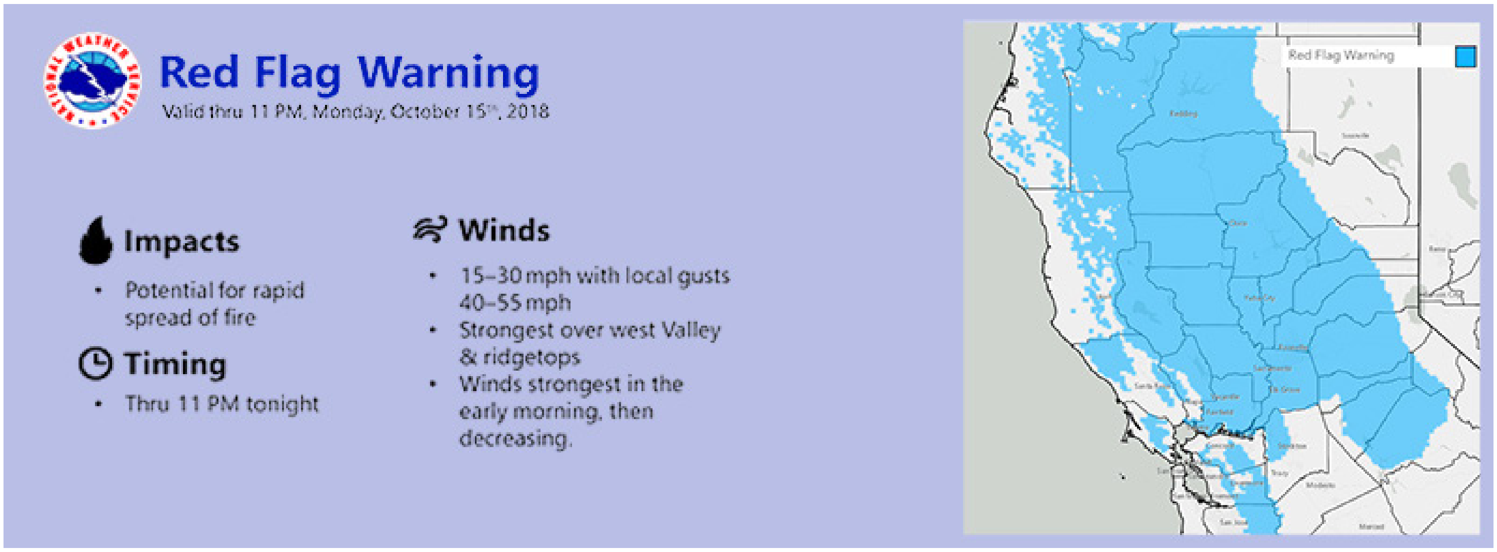
But for the West, we're not saying you have to take our design. Now there's stuff we've learned where every place in the world there are certain key things — like economic dispatch — that are always going to work. But as far as hydro coordination out here, it's a huge deal, so the market side has to adapt and let hydro coordination be a primary design criteria.

**Is there a timeline you're operating on in the West?**

No, it really depends on the folks here. There originally was a timeline because Peak had a certain burn and had to have an answer by a certain date. But once Peak and PJM dissolved their relationship, there's no timeline on our side. It's what the region wants. And this is why we considerably slowed down and we're talking to people at a more casual pace. My opinion is, the quicker the better for them. ■

## CAISO/WECC News

# PG&E Shuts down Power to Prevent Fires




PG&E shut off power to thousands of customers in Northern California because of high winds and extreme fire conditions. | *National Weather Service*

*By Hudson Sangree*

SACRAMENTO — Pacific Gas and Electric pre-emptively shut down power to thousands of its customers on Sunday and Monday, one year after high winds toppled live utility lines and started wildfires that burned through large swaths of Northern California.

The shutdown happened during similar conditions to those that preceded the 2017 blazes. The National Weather Service issued a red-flag warning for the potential rapid spread of fires through 11 p.m. Monday. Wind gusts of up to 55 mph were predicted in the state's coastal mountains and inland valleys. PG&E, which has installed 100 weather stations in fire-prone areas, said it also weighed factors that included low humidity, dry fuel on the ground and the low moisture content of live vegetation.

Up to 87,000 customers would be without power in mostly rural communities of the northern San Francisco Bay Area and the Sierra Nevada foothills, PG&E said in a *news release* Sunday.

"We have made the decision to turn off power as a last resort given the extreme fire danger conditions these communities are experiencing," Pat Hogan, PG&E's senior vice president of electric operations, said in the statement.

One major urban area, Santa Rosa, was also slated to have its electricity turned off. A significant part of the city was leveled in the Tubbs fire of October 2017, with 2,800 homes destroyed. The cause of that fire has yet to be determined.

PG&E is facing billions of dollars of liability for last year's fires, many of which started after the company's equipment came into contact with trees and other vegetation, according to the *California Department of Forestry and Fire Protection*.

Cal Fire most recently blamed PG&E equipment for starting the Cascade fire on Oct. 8, 2017, in Yuba County, saying in a *news release*, that "a high wind event in conjunction with the power line sag on two conductors caused the lines to come into contact, which created an electrical arc." That fire killed four people, destroyed 264 structures and burned 10,000 acres.

The weekend shutdowns were meant to prevent additional blazes. The company said it would conduct line inspections after the winds had passed and restore power once it deemed conditions were safe.

The electrical shutdown was extraordinary for Northern California, although San Diego Gas & Electric has implemented similar measures in Southern California during recent fire seasons.

The northern part of the state experienced by far its largest fire ever this summer, when the Mendocino Complex of fires burned more than 400,000 acres in rugged terrain north of San Francisco. Previous fire records also were set in 2017 and 2016.

The State Legislature and Gov. Jerry Brown have been seeking ways to prevent wildfires. Proactive shutdowns were a major topic of discussion during discussions this year of SB *901*, a wildfire prevention and liability-relief act for utilities.

The final measure, signed by Brown in September, requires electrical corporations to submit wildfire mitigation plans to the Public Utilities Commission. The plans must include "protocols for disabling reclosers and de-energizing portions of the electrical distribution system" as well as procedures for notifying customers. (See *California Wildfire Bill Goes to Governor.*)

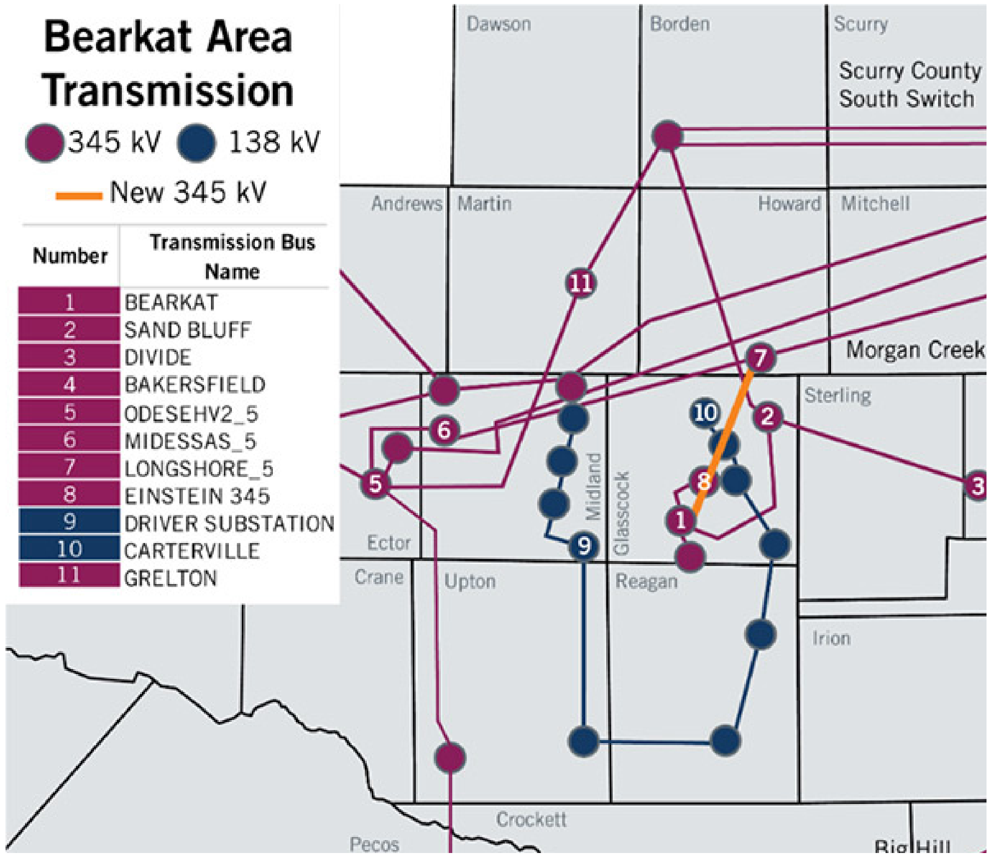
Over the weekend, PG&E sent automated voice messages, texts and emails to customers alerting them to potentially extreme weather conditions with high wildfire danger starting Sunday evening and lasting through Monday morning.

PG&E's automated call to potentially affected customers said: "Extreme weather conditions with high fire danger are forecasted in (county name), starting today and lasting through Monday morning. These conditions may cause power outages. To protect public safety, PG&E may also temporarily turn off power in your neighborhood or community. If there is an outage, we will work to restore service as soon as it is safe to do so." ■

## ERCOT NEWS

# ERCOT Board Approves $53.3M Economic Tx Project

*By Tom Kleckner*




Bearkat Area Transmission | *ERCOT*

ERCOT's Board of Directors last week unanimously approved the grid operator's first economic project in three years, a $53.3 million transmission upgrade in West Texas, despite concerns it doesn't address reliability issues.

Staff recommended Wind Energy Transmission Texas' (WETT) *Bearkat area project* as the "most cost-effective solution" to address congestion near Odessa. The region's wind generation has been bottled up by a lack of adequate transmission, resulting in congestion more than half the time, staff said.

Director Clifton Karnei | *ERCOT*

Director Clifton Karnei, who represents the cooperative market segment, referenced the state's Competitive Renewable Energy Zones (CREZ) initiative in expressing his unease about the board making "mini-CREZ" decisions. CREZ resulted in the construction of 2,800 miles of new transmission facilities, delivering West Texas wind energy to the state's urban centers at a cost of $7 billion.

"We built all the CREZ lines that raised transmission costs. People are concerned about transmission costs being high, yet here, we're adding another transmission project that's not needed for reliability," Karnei said. "We're doing it because we have all this wind in a constrained area that is being derated. So when we run the production cost model, that's when it shows the net societal impact. It makes me feel very uncomfortable."

ERCOT's analysis found the Bearkat project would produce $400 million in 30-year net savings, based on its economic planning criteria. Staff evaluated nine upgrade alternatives, all of which passed the criteria.

ERCOT's Fred Huang | *ERCOT*

Asked whether the area would require a reliability project in 10 years should the board reject staff's recommendation, Fred Huang, ERCOT manager of regional planning, said it's difficult to project future load reliability without doing a study.

"Without this project, we expect to continue to see congestion in this area," he said. The Bearkat area has 1.5 GW of wind energy already in operation or planned.

Director Peter Cramton| *ERCOT*

Unaffiliated Director Peter Cramton pointed out that building transmission for only reliability reasons would forego potential economic gain.

"It seems like this makes sense for reliability and social economic benefits to be included as a reason to do transmission projects. There aren't going to be the private incentives for somebody to build this," he said. "In a first best world, the private incentives would be aligned with the social incentives, and we would just let the market work, but it seems transmission is an area where we can't completely rely on the market."

Karnei was able to find comfort in ERCOT's Protocols and their reliability and economic criteria.

"If we are to follow Protocols, it appears to me we need to endorse this project," he said.

"This analysis supports the consistent regulatory framework we have in place," ERCOT Legal Counsel Chad Seely said, reinforcing Karnei's statement.

ERCOT *updated* its economic planning criteria in 2012, following the Texas Public Utility Commission's removal of a consumer benefit test from its economic criteria for certificates of convenience and necessity.

The Bearkat project comprises two new 345-kV bays and a 27-mile, 345-kV single-circuit line on double-circuit-capable structures. ERCOT's Technical Advisory Committee endorsed the project last month. (See "TAC Endorses $53.3M Economic Project in West Texas," *ERCOT Technical Advisory Briefs: Sept. 27, 2018*.) ■

## ERCOT News

# ERCOT Board of Directors Briefs: Oct. 9, 2018

### *Staff's Determination on DC Tie Flows, Pricing Gets OK*

ERCOT's October Board of Directors meeting | *ERCOT*

ERCOT's Board of Directors last week unanimously approved staff's determination that no market changes are currently needed to address price formation issues as a result of DC tie flows during emergency events.

The determination was in response to one of the Texas Public Utility Commission's *14 directives* to ERCOT related to the Southern Cross Transmission *project*. In approving the project, which would create merchant ownership of a DC tie connection to the Southeast, the PUC directed ERCOT to complete a number of tasks before allowing the line to be energized (Project No. *46304*).

ERCOT General Counsel Chad Seely explains staff's determination of price formation during DC tie emergencies. | *ERCOT*

ERCOT General Counsel Chad Seely assuaged the board's concerns by noting filing documents and information in the PUC's compliance docket allows the commissioners to discuss the grid operator's updates and provide feedback during open meetings. Seely and Compliance Director Matt Mereness both pointed to an existing *price mechanism* that allows up to 1,250 MW of DC tie imports to contribute to a reliability price adder, as minimizing pricing effects within the Texas grid.

The Technical Advisory Committee endorsed the determination during its September meeting, but not before adding language to make it clear staff recognized "potential price formation issues" and that stakeholder discussions were ongoing. (See "TAC Approves First PUC Directive Related to DC Ties," *ERCOT Technical Advisory Briefs: Sept. 27, 2018*.)

"The determination doesn't presuppose any type of future outcome," Seely said. "If a market participant wants to move forward with a NPRR [Nodal Protocol revision request], ERCOT will work with the stakeholders to facilitate those discussions. No one has had an appetite to sponsor an NPRR to try move any of those issues forward, and we're not sure it's necessary at this time."

Citigroup Energy's Eric Goff, chair of the Qualified Scheduling Entity Managers Working Group, said during the TAC meeting that a market participant plans to file an NPRR related to the issue. Goff did not identify the participant.

Vice Chair Judy Walsh leads the October Board of Directors meeting. | *ERCOT*

Board Vice Chair Judy Walsh, who led Oct. 9's meeting in Chairman Craven Crowell's absence, asked Seely if ERCOT would reach "a point of no return" where the Southern Cross project is energized and "we haven't addressed these issues, and we're behind the curve?"

Seely responded that even if the price formation issue isn't addressed by stakeholders in some form, there would be no problem from Southern Cross energizing the project.

### ERCOT Projects Year-end $25.5M Positive Budget Variance

ERCOT CEO Bill Magness continues to see a positive trend in budget differences, telling directors he expects "likely a significant [variance] at the end of the year."

The grid operator's net revenues were $23.3 million over budget as of Aug. 31, thanks to higher-than-expected loads ($6.7 million over) and increased income because of higher investment balances and rates ($6.4 million). Staff are projecting a year-end favorable variance of $25.5 million.

"We're still managing to the budget," Magness assured the board during his regular CEO's report.

ERCOT has now scheduled a Nov. 19 go-live date for the delayed $2.9 million upgrade to the congestion revenue rights system, having seen "substantial progress" since the last board meeting and resolving "vendor-quality issues," Magness said.

A re-plan is expected in October for a $4.3 million credit monitoring and management system project, a complex process that reaches down to staff PCs and ERCOT's server racks.

Looking ahead, Magness previewed a pair of security-related NPRRs wending their way through the stakeholder process. *NPRR899* looks at whether digital certificates are still state-of-the-art and creates an opt-out provision, while *NPRR902* will provide a definition for ERCOT critical energy infrastructure information and a clear line between public and confidential information.

Magness also said NERC's Accelerated Generation Retirements Special Reliability Assessment report will focus on the PJM and ERCOT systems. The assessment is expected to be discussed during the organization's November Board of Trustees meeting.

### West Texas Heat Could Mean More Wind Energy

Senior Meteorologist Chris Coleman shared an initial analysis of the effect of summer heat on wind generation, which seemed to bear out his hypothesis that more heat equals more

# ERCOT News

wind energy.

"My theory is that hotter-than-normal weather equals greater-than-normal wind generation," he said.

Coleman's study came at the request of Director Clifton Karnei, who represents the cooperative segment. It compared June's average high temperatures in Midland, Texas, with the average daily percentage of installed wind capacity at 5 p.m., dating back to 2014.

Over the past five summers, Midland's average high temperature peaked at 98.3 degrees Fahrenheit in 2018 during the state's fifth-hottest summer on record. That coincided with a 39.2% installed wind capacity production mark. Only June 2014's 42.9% figure, when highs in Midland averaged 95.7 F, was higher.

The other three years saw average highs between 91.7 and 96.9 F, with no average daily wind capacity above 28.9%.

Coleman said there were some exceptions to his theory, but he couldn't explain why. "I will need to chisel down into a day-by-day look," he said.

His preliminary winter forecast projects near-normal weather. He cautioned the board that winter is a "different animal" in how it correlates to peak loads.

"If I forecast colder-than-normal weather, it may not mean a higher peak," he said, noting that last winter's coldest day in ERCOT since 2011 (Jan. 17) came during the state's 75th coldest winter. "If I had to adjust [the forecast], I'd adjust it warmer."

## Staff Files Governance Changes with PUC

ERCOT has filed *amendments* to its Articles of Incorporation (which has been renamed the Certificate of Formation) and to its bylaws with the PUC (Docket No. *48677*).

The changes were approved by more than the necessary two-thirds of the grid operator's corporate membership by a Sept. 12 deadline. They had been previously approved by the board in August. (See "Special Membership Meeting to be Set," *ERCOT Board of Directors Briefs: Aug. 7, 2018*.)

Assistant General Counsel Vickie Leady said she expects the PUC to confirm the articles and bylaws amendments by its Dec. 20 open meeting.

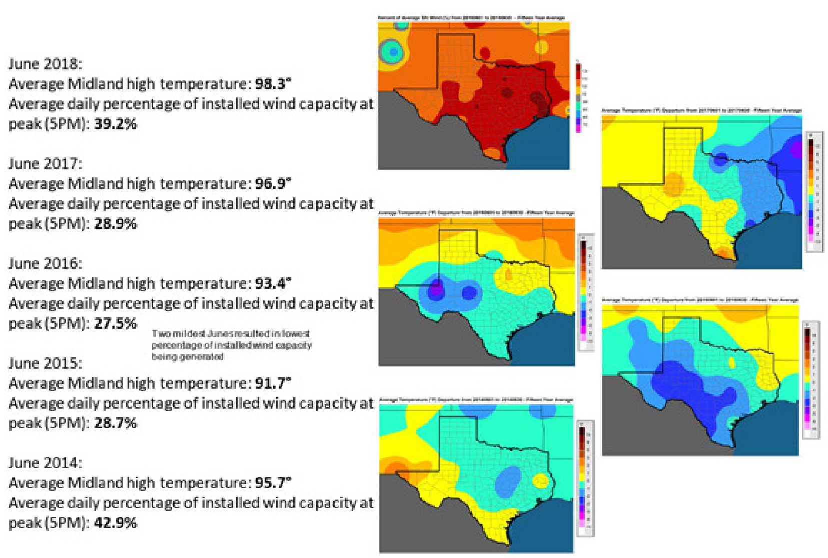
## Board Clears 10 Revision Requests on Consent Agenda

The directors unanimously approved seven NPRRs, a change to the Nodal Operating Guide (NOGRR) and two revisions to the Planning Guide (PGRRs) on their consent agenda:

NPRR845: Incorporates numerous revisions to the reliability-must-run process, including standardizing the standby cost in terms of dollars per hour instead of dollars per megawatt; adjusting availability metrics used in settlements to the current operating plan rather than the availability plan; clarifying a resource's post-RMR status and requiring an entity to submit a resource-notification change no later than 60 days before an agreement's conclusion; allowing ERCOT to retain a mutually agreeable third party to help evaluate submitted RMR budgets; and modifying the RMR agreement to require detailed budgeted costs with or without capital expenditures.

- **NPRR857:** Creates "direct current tie operator (DCTO)" as a market participant role, clarifying the obligations of entities operating DC ties interconnected with the ERCOT system.
- **NPRR869:** Requires generators over 1 MW within a private use network (PUN) to provide modeling information to ERCOT if they are not: registered with the PUC as a power generation company; part of a PUN with more than one connection to the ERCOT grid; or registered to provide ancillary services. The change includes a netting exemption for a small qualifying facility that provides energy to a customer behind a single point of interconnection. It also deletes a reference to the now-expired System Benefit Fund.
- **NPRR880:** Requires ERCOT to publish shift factors for PUN settlement points for the real-time market, as is currently done in the day-ahead market.
- **NPRR883:** Removes the real-time reliability deployment price adder from the real-time settlement point price to avoid double payment when resources have received an ancillary services assignment.
- **NPRR888:** Clarifies the four-coincident-peak adjustment methodology implemented in conjunction with NPRR830.
- **NPRR890:** Aligns protocol price calculation formulas with ERCOT's calculation of the real-time LMP at a logical resource node for an online combined cycle generation resource, distinguishing between scenarios in which the unit is online or offline.
- **NOGRR177:** Revises the NOG to be consistent with NPRR857's language on DCTOs.
- **PGRR063:** Outlines the process for evaluating the reliability impact of transmission projects 100-kV or above that are expected to be in service before the next Regional Transmission Plan's completion but that were not included in the current plan, a Regional Planning Group project submission, or a generation interconnection or change-request study.
- **PGRR064:** Requires resource entities to verify that dynamic devices used for reliability reflect their operating characteristics. ■

*— Tom Kleckner*




ERCOT weather review | *ERCOT*

## ERCOT News

# ERCOT 'more than Sufficient' on Reserves

ERCOT's current market design "will support more than sufficient reserve margins," according to a draft report the grid operator filed on Friday with the Texas Public Utility Commission.

The report by The Brattle Group estimates a market equilibrium reserve margin (MERM) of 10.25% under projected 2022 market conditions.

"This estimate should not be interpreted as a precise forecast for 2022 or any other particular year, but as a reasonable expectation around which actual reserve margins may vary as market conditions fluctuate," Brattle said. "Low reserve margins cause high energy and ancillary service prices and attract investment in new resources, and investment will continue until high reserve margins result in prices too low to support further investment.

"This is much lower than historical reserve margins, but close to the reserve margins from ERCOT's latest resource adequacy reports," the report added. ERCOT's reserve margin was 10.9% for summer 2018 and is projected at 11% for 2019.

Brattle also calculated a 9% economically optimal reserve margin (EORM), the point at which the marginal costs and marginal benefits of adding capacity are in balance. "The economic optimum occurs at the reserve margin that minimizes societal costs net of all supply costs and the lost value from any disruptions in electric service," Brattle explained.

The report was submitted as part of the PUC's review of ERCOT's reliability standard (Project No. 42302) and its performance during the summer's tight conditions (Project No. 48551).

The report notes MERM is a relevant measure because ERCOT does not have a resource adequacy reliability standard or reserve margin requirement, unlike other systems in North America. ERCOT's reserve margin is "ultimately determined by suppliers' costs and willingness to invest based on market prices, where prices are determined by market fundamentals and by the administratively-determined operating reserve demand curve [ORDC] during tight market conditions," the report's authors said.

Brattle worked with Astrapé Consulting to model ERCOT's wholesale market design and projected system conditions for 2022, simulating "a range of possible reserve margins under a range of weather and other conditions."

The report noted that the market equilibrium of 10.25% is greater than the economically optimal level by 1.25%. "Based on these results, we conclude that the current market design will support more than sufficient reserve margins from an economic perspective," Brattle said. "The market equilibrium is higher than the economic optimum because the ORDC as currently designed sets prices higher than the marginal value of energy during scarcity conditions."

The authors cautioned that "an important uncertainty" in the study is the likelihood of extreme weather. The base case gave all 38 years of historical weather an equal probability of occurring for the 2022 simulation. Assigning 10% weight to each of the last 10 weather years and ignoring the other 28 years would increase the equilibrium reserve level by 1.5% "due to the higher energy prices in these years," Brattle said. "However, it would increase the number of scarcity events, resulting in similar reliability."

The report's results for both the market equilibrium and economically optimal reserve margins were 1.25% lower than found in a 2014 study. Brattle said low gas prices, higher renewable penetration and updated assumptions on generators' forced outages and weather contributed to the change.

Brattle will present its study results during ERCOT's Supply Analysis Working Group meeting on Oct. 19. The report will also likely be used in an Oct. 25 PUC workshop on the grid operator's summer performance.

PUCT staff's Darryl Tietjen (right) updates commissioners on utility earnings report schedules as Stephen Journeay (left) listens. | *ERCOT*

# ERCOT News


PUC Commissioners (left to right) Shelly Botkin, DeAnn Walker and Arthur D'Andrea | *ERCOT*

ERCOT will accept stakeholder comments on the report through Nov. 26.

## WETT Faces Full Rate Case

During an abbreviated open meeting Oct. 12, the PUC moved to open a rate case for Wind Energy Transmission Texas (WETT), which staff said earned an excess $16.4 million last year.

The commission's action gives the company 120 days to file revised rates, although staff is hopeful a settlement agreement can be reached before then (Project *48158*).

WETT had a 12.43% return on equity in 2017, above staff's estimate of 9.60%. WETT reported a year-end 2017 capital structure of 53% debt and 47% equity, while the PUC said a 60/40 mix is appropriate for transmission-only utilities. "If WETT's actual capital structure were instead 60% debt and 40% equity, its reported level of 2017 return dollars would have generated an even higher ROE of approximately 14.1%," staff said in a memo.

## PUC Approves Cleco Acquisition of Gas Unit

The PUC's consent agenda included approval of Cleco Cajun's acquisition of NRG South Central Generating's 100% interest in Cottonwood Energy. Cottonwood owns a 1,263-MW gas-fired generation facility, interconnected with MISO, along the Louisiana border in Southeast Texas (Docket No. *48266*).

The acquisition is part of Cleco's $1 billion *acquisition* of NRG's eight power plants (3,555 MW) and contracts to provide wholesale power to nine Louisiana cooperatives, five municipalities in Arkansas, Louisiana and Texas, and one investor-owned utility. (See *NRG Selling Renewables, Other Assets for $2.8 Billion*.)

Louisiana-based Cleco would own the Cottonwood facility, but the project will be leased back to NRG, which will have full operational control until May 2025.

## Commission to Intervene in MISO FERC Docket

The commissioners agreed during their closed session to intervene in a FERC docket involving MISO's cost allocation methodology for targeted market efficiency projects with PJM (*EL18-2514*). (See *MISO, PJM Endorsing 2 TMEPs for Year-end Approval*.)

The PUC also agreed to have Executive Director J.P. Urban coordinate with the *Texas Commission on Environmental Quality* in providing comments on EPA's Affordable Clean Energy rulemaking (*EPA-HQ-OAR-2017-0355*), its proposal to replace the Obama administration's Clean Power Plan.

Commissioner Arthur D'Andrea drew laughs when, referring to the EPA's naming convention, he said, "We should adopt a system like that." ■

*— Tom Kleckner*

## ISO-NE NEWS

# Aggregation Rising, Retail Competition at Risk in Mass.

*By Rich Heidorn Jr.*

Rebecca Tepper, energy chief for the Massachusetts Attorney General's Office, listens skeptically as Chris Kallaher, senior director of government and regulatory affairs for Direct Energy, defends retail electric providers. | *© RTO Insider*

BOSTON — Municipal aggregation is becoming a potent tool for cutting electric prices and greenhouse gas emissions, while some believe retail choice has failed to live up to its promise for residential customers, speakers told Raab Associates' New England Electricity Restructuring Roundtable on Friday.

Rebecca Tepper | *© RTO Insider*

The *roundtable* featured a panel of state regulators on grid modernization and a second on the future of residential retail choice, where Rebecca Tepper, chief of the Massachusetts attorney general's Energy and Telecommunications Division, reiterated the AG's call for a ban on competitive suppliers signing up new individual residential customers. The AG's office initially made the *proposal* in March, when it released a *report* concluding that electric retailers were overcharging residential customers and preying on the poor.

Tepper *said* the AG estimates retailers overcharged Massachusetts residential consumers $253 million in the three years ending June 2018. The study found that low-income customers were twice as likely as others to choose a competitive supplier and that they paid a half-cent more per kilowatt-hour on average than other competitive shoppers.

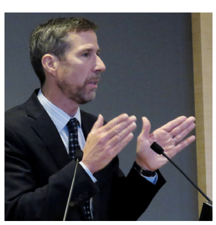
This is not a case of a "few bad apples," Tepper said, citing findings that 10 retailers, who held 63% of residential accounts, were responsible for 75% of the overcharges.

About 55% of households in the state receive basic (default) service from their electric distribution company, while 20% purchase from a competitive supplier and 24% via municipal aggregation — up from 19% a year earlier. The aggregation numbers are likely to grow further as the state's two largest cities, Boston and Worcester, consider joining in.

### Credibility Problem

Tepper said residential customers are being exploited because of their lack of knowledge and inability to negotiate contract terms. The state does not believe it can fix the problem through less severe rule changes, she said. Connecticut consumers overpaid by $46 million even after banning variable rates, she said, and efforts in Pennsylvania and New York to tighten rules resulted in three years of litigation.

"Restructuring has worked for lots of entities. It's worked for commercial and industrial customers; it's worked for municipal aggregation. It's working to lower wholesale prices. But after 20 years of restructuring, now is the time to look back and say where is it working and where is it not working. And this — that 20% [purchasing direct from competitive suppliers] — is where it's not working.



Chris Kallaher | *© RTO Insider*

Chris Kallaher, senior director of government and regulatory affairs for retailer Direct Energy, acknowledged, "We admit that [competitive suppliers] have a credibility problem."

But Kallaher *said* the AG's office is using the wrong yardstick in measuring what residential customers are paying competitive suppliers against default service, which he said is below market because of cross subsidies. Kallaher said default service has no customer acquisition costs because new and moving customers are assigned to it automatically unless they opt for a competitor. Direct Energy said the AG's pricing comparison did not account "for all of the types of products offered by the competitive supplier" versus the plain-vanilla standard offer.

"There's a ton of retail costs that are not in the default service rate," he said. "Costs which should be subject to competitive pressures: billing, customer service, collections, facilities. Everything else — everything we have to pay for — remains embedded in distribution rates and not subject to competitive pressures."

Direct Energy was one of 12 suppliers identified by the Connecticut Office of Consumer Counsel (OCC) as charging at least 20% of their customers 50% or more than the standard offer. The OCC said the company overcharged almost 38% of its Eversource Energy customers and 42% of its United Illuminating customers.

Kallaher said he was unable to explain why the AG's office found low-income customers paying more than others for competitive service. "We need to find out what's going on. If suppliers are discriminating on the basis of low-income status, that clearly needs to stop," he said. "All these other things are easily addressed."

He said the state should remove remaining barriers to customers switching and get the distribution utilities out of electricity sales altogether.

Janet Gail Besser | *© RTO Insider*

Janet Gail Besser, executive vice president of

# ISO-NE News

the Northeast Clean Energy Council (NECEC), suggested low-income customers are more likely to be lured by competitive suppliers' promised savings because the electric bill is a larger share of their household budget.

She also opposed the AG's call for eliminating residential choice. "Yank the licenses of these suppliers [preying on the poor]. Make the penalty really drastic if they are doing this kind of thing. But don't throw the baby out with the bathwater," she said.

She *disagreed* with Tepper's contention that residential retail competition had produced no innovation, citing community solar and residential solar leases for those unable to purchase solar panels. "That access to residential customers is absolutely critical to providing these services and to continue to have companies thinking of new ways to deliver services."

## Municipal Aggregation

Paul Gromer | © *RTO Insider*

Paul Gromer, CEO of Peregrine Energy Group, also supported a more targeted response, calling abuses of low-income customers "a discrete problem that can probably be addressed on its own."

But he also *touted* municipal aggregation, which he said provides the benefits of competition while avoiding many of the risks because the municipality vets retailers' savings and environmental claims. About 125 communities are participating in municipal aggregation in the state, some of them using it to provide funding for local renewable energy projects.

"It's probably the most powerful tool a community has to meet its climate goals," Gromer said. "A lot of communities in the state have very ambitious goals. As communities, they want to do more than the federal government is doing. They want to do more than the state is doing. But they've got limited tools with which to accomplish those goals. They don't regulate the power plants. They don't regulate the utilities. They don't run the [Massachusetts Bay Transportation Authority]. They can't tell people what kind of a car to drive. They can put solar on municipal rooftops and they can run programs like *Solarize* — all of which are great but have a small impact. Aggregation, on the other hand, can have a very big impact."

Lexington, Mass., for example, is reducing community-wide GHG emissions from electricity by 20%. "Communities have no

Regulators from Massachusetts, Connecticut, New Hampshire and Rhode Island, at table, listen to a question from the audience at the New England Electricity Restructuring Roundtable at the offices of law firm Foley Hoag in Boston. | © *RTO Insider*

other tool that has that kind of impact," he said. "Lexington decides to launch a program; 10,000 households and businesses are on a green-power product overnight. Cambridge launches its program: Another 40,000 are on green power."

Tepper said if the Massachusetts legislature doesn't ban residential retail choice, her office would like to see smaller fixes addressing low-income residents, auto-renewal practices and fixed teaser rates followed by higher variable rates.

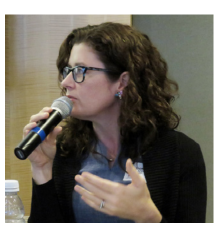
Kallaher disagreed with all but the need for protections for low-income customers. Banning variable prices and auto-renewals and subsidizing default service "are things we think are just killing the market without actually addressing the underlying problems," he said.

## New Technologies

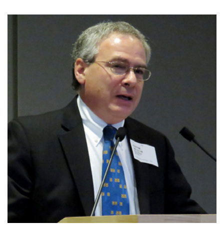
Besser said it is "tremendously ironic that we're having this discussion about ending residential retail choice just as new technologies are becoming available to make it work better."

She cited *Sense*, a monitor that can be connected to a home's electrical panel to track energy use by individual devices.

"If Massachusetts and the New England states don't figure out how to have the utilities deploying advanced metering, then we may see the utilities jumped over, because the competitive market will figure out ways to provide a shadow service or virtually the same service,"



Katie Dykes | © *RTO Insider*



Martin Honigberg | © *RTO Insider*

Besser said.

Abigail Anthony | © *RTO Insider*

Advanced metering and other aspects of grid modernization were the subjects of the first panel of Friday's roundtable, where Connecticut Public Utilities Regulatory Authority Chair Katie Dykes also endorsed Sense. "It's great data for marital disputes," she joked.

The session also featured Angela M. O'Connor, chair of the Massachusetts Department of Public Utilities; Martin Honigberg, chair of the New Hampshire Public Utilities Commission; and Rhode Island Public Utilities Commissioner Abigail Anthony.

O'Connor *explained* Massachusetts regulators' approval of $220 million in spending for three electric distribution companies' grid modernization investments. The investments include distribution management systems with advanced sensing and load flow analytics to improve EDCs' visibility of the grid; volt-var optimization and distribution automation; and spending to help EDCs integrate distributed energy resources.

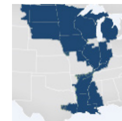
The Massachusetts DPU, however, rejected utility proposals for smart meter deployments, saying the customer benefits were uncertain and could result in high stranded costs if existing interval automatic meter reading (AMR) meters are replaced prematurely. Advanced meters will not optimize system demand without time-varying rates, O'Connor said.

Dykes *outlined* PURA's initiatives in EDCs' distribution system planning, distributed generation tariffs and pilot programs for grid-side system enhancements.

Honigberg *said* the New Hampshire commission's staff will be issuing a report soon with recommendations for future actions, based on stakeholder suggestions and its research of other states' efforts.

Anthony *said* the Rhode Island commission's August approval of a *modified settlement* with National Grid included funding for a system data portal, upgrades to the company's geographic information system and a program to separate distribution remote terminal units (RTUs) from transmission RTUs for the first year of the three-year rate plan. It also directed the utility and stakeholders to develop a long-term grid modernization plan and a business case for advanced metering functionality. ■

## MISO NEWS



# MISO Offers Storage Proposal, Promises to Exceed Order 841

*By Amanda Durish Cook*

CARMEL, Ind. — MISO last week offered its detailed energy storage participation proposal for a final round of stakeholder inspection while promising to introduce more new market rules in the future.

At a special Oct. 10 joint meeting of MISO's Planning Advisory Committee and Market, Reliability and Resource Adequacy subcommittees, Director of Market Design Kevin Vannoy took the podium with a nod to the RTO's long-running anecdote likening storage to a can of corn that must be opened and its use decided on.

Kevin Vannoy | © *RTO Insider*

"We've managed to open the can of corn and find that it's a can of beans," he joked.

Vannoy said stakeholders were instrumental in MISO crafting a compliance plan that meets the 76 requirements laid out in FERC's sweeping Order 841.

"We think we have a solid definition of electric storage resources. The input we've got from stakeholders definitely helped us define compliance and will help us beyond Order 841. It's going to help us with this generation of storage resources and the next generation of storage resources," Vannoy said.

Pavan Addepalle, of MISO's market engineering group, said the RTO envisions going beyond its current market storage definitions — ESR Type I and *ESR Type II* — to create third and fourth definitions.

MISO has put out a final call for suggestions on Order 841 compliance and will continue to vet the proposal in November before the Dec. 3 federal filing deadline.

The proposed rules stipulate that storage resources commit to the market through four main modes, including discharging, charging and continuous modes, and an outage status mode. The first three modes carry must-run designations and will be cleared between a resource's minimum and maximum discharge limits.

MISO said it will also allow for emergency discharging and charging commitment modes, and an "available" status similar to that of an offline generation resource. However, stakeholders at the meeting asked MISO to consider compressing the separate emergency charging and discharging modes into a single commitment mode. The RTO had proposed that emergency charging be used to consume power during minimum generation events while emergency discharging would inject power during maximum emergency events.

For metering purposes, electric storage withdrawals from the grid will be treated as negative generation and categorized as wholesale electric storage withdrawals, while injections will be treated like MISO's existing energy injections. MISO will also hold storage performance to the new uninstructed deviation threshold due to be filed with FERC later this month. (See "Final Uninstructed Deviation Proposal," *MISO Market Subcommittee Briefs: May 10, 2018*.)

MISO also said that "technically capable" storage is eligible to provide reactive supply and voltage control and black start service. The RTO said it will propose minor Tariff revisions to include references to storage in the wording. Indianapolis Power and Light earlier this month asked FERC to order MISO to include black start service in its current storage participation model (*ER17-1376*).

The proposal also includes a pro forma agreement for storage connected at the distribution level to participate and a multistep capacity determination process and capacity obligations for storage resources. (See *MISO Closing in on Storage Participation Plan*.)

### What the Proposal Won't Do

The proposal does not call for MISO to manage the state-of-charge for storage resources or optimize their energy schedules in the day-ahead or real-time markets. (See "No Optimization Yet," *MISO Closing in on Storage Participation Plan*.) Instead, market participants will manage state-of-charge through their bid parameters, although MISO will offer real-time hourly offer overrides for storage owners with "valid reasons." The compliance plan also does not address distributed energy resource aggregation or participation outlines for hybrid storage and generation pairings, an issue that MISO's Energy Storage Task Force is currently assessing. (See *New Direction for MISO's Energy Storage Task Force*.) Vannoy said MISO will likely soon take up a DER participation model in anticipation of a likely FERC order on the issue.

Stakeholders asked if MISO's Order 841 proposal risked FERC's rejection because it only provides for making commitments for discharge but not charging.

Vannoy said MISO strongly considered the notion, but it decided that because the owner currently controls the state of charge, and the RTO isn't yet prepared technologically to optimize energy scheduling for storage, commitment for discharging only was the best route.

"That's a capability of the resource, not a service we offer. That's not to say we won't offer it

MISO's Rick Kim addresses workshop attendees. | © *RTO Insider* in the future," Vannoy said.

DTE Energy's Nick Griffin suggested that MISO's FERC filing should include an explanation of its technological limitations to improve its chances of acceptance.

### Market Monitoring

After extensive consultation with Potomac Economics, its Independent Market Monitor, MISO decided that storage will be mostly subject to existing Tariff mitigation rules: offers should reflect known capabilities of the resource, revenue sufficiency guarantee eligibility will be revoked when a storage resource is discovered gaming make-whole payment mechanisms and anticompetitive conduct will be met with a Section 205 filing to seek mitigation measures.

MISO added that an electric storage resource "should not manage its state of charge in a manner inconsistent with its physical and operational characteristics." It also said mitigation measures will not apply when electric storage resources derate to provide capacity, with such behavior not considered physical withholding.

Potomac's Michael Chiasson said the Monitor doesn't foresee major mitigation measures unless storage resources contribute to binding transmission constraints.

Michael Chiasson takes notes during the workshop. | *© RTO Insider*

"I expect a lot of these resources to be relatively small. … They're not going to have a lot of market power," Chiasson said. "We don't want to come down on a half-megawatt. We want to have a hospitable environment for these technologies to enter the market."

Chiasson added that the Monitor would consider additional mitigation measures if it begins observing manipulation from storage resources.

"We're hesitant to jump in too tightly. … We don't want to slow someone down that doesn't have market power," Chiasson said. "We're happy to have the new entrants."

But Customized Energy Solutions' John Fernandes said that MISO storage resources might be perceived to be withholding when batteries manage their "state of health" — different than the state of charge — when batteries are stopped to "cool off" after an active period to avoid deteriorating the life of the battery.

"There's still a lot of gray area when it comes to this physical withholding," Fernandes said.

Vannoy said a storage facility going unavailable to preserve itself would probably fall under a reasonable motive to stop offering into the market. ■

# MISO Market Subcommittee Briefs: Oct. 11, 2018

## *Monitor Repeats Call to Remove Dual Tx Charge from CTS*

CARMEL, Ind. — MISO's Independent Market Monitor last week pointed to other RTOs to illustrate the ineffectiveness of the coordinated transaction scheduling (CTS) between MISO and PJM.

Market Monitor David Patton at MISO Board Week in September | *© RTO Insider*

Monitor David Patton told the Market Subcommittee on Thursday that the CTS between ISO-NE and NYISO includes an explicit waiver of uplift and transmission charges between them. As a result, the process last year yielded bids and offers of 700 MW in one direction and 400 MW in the other.

Patton has recommended that MISO remove transmission charges from CTS with PJM. MISO currently applies transmission charges to these transactions when they are offered, not just when they are scheduled, which the Monitor said discourage CTS offers and subsequent savings. (See *7 New Recommendations from MISO IMM*.)

Patton admitted that the New England numbers weren't as high as he'd like, but that it's important that the coordination is used.

"CTS has basically completely failed between PJM and MISO. Quantities have fallen to essentially zero," Patton said.

MISO and PJM launched CTS a year ago to allow market participants to schedule economic transmission transactions based on forecasted energy prices in the two RTOs. While CTS should have lowered the cost of serving load in both regions, it has not been used since mid-February because of the double transmission charges.

MISO will respond to the recommendation later this month, when it releases its formal response to the Monitor's State of the Market Report.

### Dynamic Line Ratings

The Monitor is also renewing calls for MISO to adopt dynamic line ratings that are adjusted based on weather conditions, opening up transmission lines for more capacity when temperatures are cooler.

"The hotter the temperature, the less electricity you want through the conductor," Patton said. "Transmission owners have long recognized that there are benefits to different ratings. … Every additional megawatt you can flow over the line can help you ramp down a higher-cost generator and ramp up a lower-cost generator."

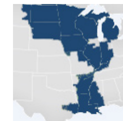
Transmission lines are rated based on seasonal ambient temperature and wind speeds. Patton said that of MISO's TOs, "almost none" submit upratings beyond seasonal limits.

Customized Energy Solutions' Ginger Hodge asked the Monitor how MISO might incentivize TOs to offer dynamic ratings. "I think there are few that offer dynamic ratings because they introduce risk to their system," she said.

Patton said TOs themselves can benefit from higher ratings. "This capability is valuable, and they should see an economic value from providing it," he said. ■

*— Amanda Durish Cook*

## MISO News



# MISO Monitor Reiterates Call for Capacity Deliverability

*By Amanda Durish Cook*

Michael Chiasson, Potomac Economics | © *RTO Insider*

CARMEL, Ind. — MISO's Independent Market Monitor urged the RTO and stakeholders Thursday to require that planning resources have firm transmission to ensure they can deliver their full installed capacity.

In its State of the Market report issued in June, the Monitor said that MISO's deliverability requirements are too lenient because resources with energy resource interconnection service must only secure firm transmission for its unforced capacity values, which are about 5 to 10% less than their full installed capacity levels. (See [7 New Recommendations from MISO IMM](#).)

"It's being relied on but it's not deliverable," Potomac Economics' Michael Chiasson said during an Oct. 11 Resource Adequacy Subcommittee meeting. "It's clear to us that the [loss-of-load-expectation] study is assuming resources will be deliverable to their installed capacity value."

Chiasson said MISO's current practice means as much as 1,400 MW procured in the 2018/19 Planning Resource Auction may not have been deliverable. He also acknowledged that some resource owners may have purchased more firm transmission service than MISO requires.

Chiasson said the rule change can be made with little economic impact to the PRA.

"The concern is more the potential reliability impacts, which could be serious," Chiasson said.

While roughly half of the about 190 resources contributing to the possible shortfall impact 2 MW or less of capacity, 23 of the resources could each affect 20 MW or more.

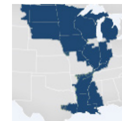
Chiasson pointed out that MISO currently requires full deliverability for resources with network resource interconnection service, leading Consumers Energy's Jeff Beattie to say the RTO was giving unequal treatment to the two groups of generators.

MISO Director of Resource Adequacy Coordination Laura Rauch said that the RTO generally agrees with the recommendation, which could result in a change to how it accredits capacity resources. The RTO is expected to formally respond to the State of the Market report by Oct. 17.

Some stakeholders said that the benefits of the more stringent requirement wouldn't be significant enough to justify more spending on transmission rights.

But Chiasson said if planning resources decide not to pay for more transmission rights, MISO could simply disqualify the portion of their installed capacity that cannot be guaranteed deliverable. ■

## MISO News



# Coal Group Seeks Reliability Bonus from MISO, SPP

*By Tom Kleckner and Amanda Durish Cook*

The Lignite Energy Council, a North Dakota coal lobbying group, reportedly plans to approach MISO and SPP in an effort to have them pay more for coal-fired generation.

CEO Jason Bohrer told the group's Oct. 3 fall meeting he thinks the LEC could show the RTOs that they should pay more for coal-fired power because it provides resilience benefits, The Bismarck Tribune reported.

Lignite Energy Council CEO Jason Bohrer | *Lignite Energy Council*

Williston Basin lignite mine | *North Dakota Studies*

Bohrer also said the council has applied for membership in MISO, saying its focus on coal energy is "sometimes overlooked in their boardroom and their circles," according to the report.

The LEC did not respond to a request for comment, and, as of late last Tuesday, MISO said it had not heard from the group. If MISO does receive a request, spokesman Mark Brown said it would likely go before the RTO's stakeholder process for discussion.

"Without having seen a specific request from the council, we can't speculate on these questions; however, it appears this would be a matter for our stakeholder process," Brown said.

SPP also hasn't been contacted. COO Carl Monroe said the RTO is aware "some in the industry" believe "particular resources deserve compensation specifically for their guaranteed availability and role in ensuring reliability."

"We are currently considering whether and how we might accurately and fairly assess a resource's ability to meet reliability-related requirements," Monroe said. "We assume this may lead to modifications to our market rules and capacity requirements and eventually to a market-based solution that values particular resources differently than we do today."

Bohrer was optimistic when the Department of Energy released its August 2017 study on grid reliability, which recommended supporting out-of-market coal and nuclear plants. (See *Perry Grid Study Seeks to Aid Coal, Nuclear Generation*.)

The CEO said coal "not only ensures reliability for our nation's electric grid, it also is far less expensive than heavily subsidized renewable fuels."

The council was disappointed, however, when FERC in January unanimously rejected DOE's proposal and opened a docket on grid resilience. (See *FERC Rejects DOE Rule, Opens RTO 'Resilience' Inquiry*.)

"Currently, regional electricity markets do not properly compensate generators who produce 'always on' power or whose power is not susceptible to weather disruptions," Bohrer said in a statement Jan. 9. "It remains our hope that FERC will ultimately level the playing field when it comes to dispatching energy sources with the long-term goal focused on a resilient grid to serve our homes, businesses and the national economy."

The council aims to maintain the viability of lignite, which is mined at five sites in North Dakota and one in eastern Montana, according to the LEC website. The group's members include mining companies, generators and service businesses.

By participating in RTOs, Bohrer said at the conference, the LEC would make the case that wholesale markets are skewed by subsidies for renewables. "The market is a competitive market, but it is not a free market," Bohrer said. ■

## MISO News

# MISO Presents Load Forecasting Compromise

*By Amanda Durish Cook*

MISO last week proposed bringing the three major players in its load forecasting together to coordinate on predictions for long-term transmission planning in the footprint.

MISO's proposal would have both Purdue University's State Utility Forecasting Group (SUFG) and consulting firm Applied Energy Group working with 20-year forecasts provided by load-serving entities. The RTO uses Applied Energy for distributed resource data predictions in its annual Transmission Expansion Plan.

The idea came in part from the Coalition of Utilities with an Obligation to Serve in MISO (CUOS), an ad hoc group of utilities and regulators, which proposed to require LSEs develop a 20-year base load forecast that includes monthly predictions for energy and non-coincident peaks. (See *MISO Utilities Float New Load Forecasting Approach*.)

The RTO put a temporary hold on ordering more independent load forecasts from the SUFG while it explored other stakeholder-proposed forecasting options. (See *MISO Looks to Members for Load Forecasting Ideas*.) It had received stakeholder criticism for its plan to order four versions of the Purdue forecast, each tailored to one of the futures used to inform its annual transmission plan, beginning with MTEP 20.

Speaking during an Oct. 12 special conference call, MISO planning manager Tony Hunziker said the RTO's new approach draws from the CUOS proposal in incorporating the LSEs' 20-year forecasts.

MISO would send LSE-originated demand and energy forecasts to the SUFG, which would compile and analyze them to inform its state-by-state forecast. The RTO also envisions the SUFG using LSE data to produce a complete 20-year demand and energy forecast for each of the 140-plus LSEs, which will influence the four MTEP futures. The SUFG uses its state-by-state forecast to corroborate what share of a state's load is located within MISO territory.

Tony Hunziker | © *RTO Insider*

The LSEs' gross forecasts would not include energy efficiency or other demand-side factors, such as distributed resources and electric vehicle programs. MISO staff said the RTO will ask LSEs to submit demand-side data separately to AEG, which would use them to develop the demand-side management potentials in the futures.

But some stakeholders are unconvinced that LSEs can simply change their forecast methods in under two years to detach energy efficiency totals from their forecasts.

Hunziker said LSEs, MISO staff and the SUFG will be able to communicate throughout the forecasting process.

"As [the SUFG] is looking at the data and they see an irregularity, there's a feedback loop. They can get ahold of the LSE that made the forecast and discuss and hash [it] out," Hunziker said.

Stakeholders were also concerned about how the SUFG would adjust LSEs' original forecasts to make the final LSE-specific forecasts used in the MTEP.

Hunziker said the SUFG will use its independent load data to fill in any missing gaps.

"There may be entities that don't provide some information, and we want to fill in those gaps. That's always been a concern for MISO," Executive Director of System Planning Aubrey Johnson said. "We still need to fill in for LSEs that don't provide forecasts or submit incomplete data."

He promised stakeholders that LSE data would be the "foundational piece" of the load forecast and said MISO will provide more detail on how and under what conditions the SUFG will modify LSE forecasts.

Johnson said MISO will present a firmed-up proposal at the Nov. 14 Planning Advisory Committee meeting. He asked for stakeholders to send written input on the proposal by Oct. 31. ■

## NYISO News

# NY Carbon Task Force Looks at REC, EAS Impacts

*By Michael Kuser*

NYISO on Thursday recommended steps to prevent certain wholesale market suppliers, designated as carbon-free in the New York Clean Energy Standard (CES), from collecting double payments for carbon-emission reductions that have already been captured by renewable energy credit contracts.

"The idea is to prevent these resources from benefiting from a change in [locational-based marginal prices] resulting from a carbon price," said Michael DeSocio, the ISO's senior manager for market design. DeSocio presented a *report* on the treatment of REC contracts to the state's Integrating Public Policy Task Force (IPPTF), which met by teleconference.

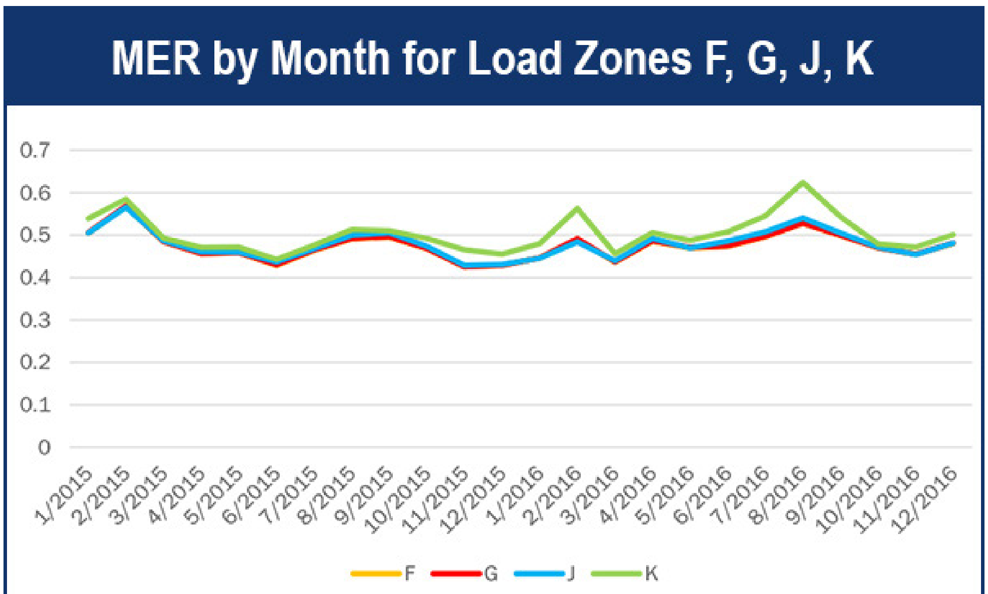
NYISO proposes applying a carbon charge to wholesale market suppliers with active, fixed-price REC contracts with the New York State Energy Research and Development Authority that are based on a REC solicitation that began or was completed prior to the carbon pricing rules taking effect.

At the July 16 IPPTF meeting, the ISO said it was considering options to reduce or eliminate the potential for such double payments. (See *NY Sets Carbon Pricing Timeline, Reviews Progress*.)

### NYSERDA Only

"I want to remind everybody that NYISO is not a party to any of these agreements, and we're aware of resources only because NYSERDA has made us aware of them," DeSocio said.

The proposal is limited to NYSERDA contracts because the ISO believes it has no authority to put conditions on out-of-state REC contracts, DeSocio said.




| MER | F | G | J | K |
|---|---|---|---|---|
| 2016 | 0.477350 | 0.477997 | 0.481291 | 0.513221 |
| 2015 | 0.472293 | 0.472817 | 0.476244 | 0.492306 |
| Δ | 0.005057 | 0.005180 | 0.005047 | 0.020915 |

Marginal emissions rate by month for Load Zones F, G, J and K. | *NYISO*

Wholesale market suppliers with such NYSERDA REC contracts are initially settled at the LBMP, including the carbon component. NYISO will then deduct the carbon charge from the supplier's settlement based on the social cost of carbon and the real-time marginal emission rate for the supplier's zone.

"This carbon charge will be applied to the actual output of the resource based on the proportion of the REC contract to the nameplate capacity," DeSocio said.

Generators designated as carbon-free under the CES, and whose NYSERDA REC contract has expired, will settle at the LBMP including the carbon component — and not be subject to a carbon charge. Zero-emission credits and offshore wind RECs are not included, as they have an option to adjust to changes in market conditions, he said.

### 'Hard Squeeze'

Seth Kaplan of EDP Renewables said, "NYSERDA has entered into REC contracts for virtually all of the output of the facilities they contract with — that's just what they do." He suggested that NYISO check with NYSERDA about how much of the output it buys from projects.

Kaplan said the ISO "is assuming that RECs are carbon payments and that therefore there is a problem to be solved." He referred to an updated Brattle Group *analysis* showing a minimal effect of carbon pricing on pre-2020 RECs, with actual customer costs of 4 cents/MWh in 2020 and 2 cents/MWh in both 2025 and 2030.

"It raises a very serious question of whether the hard squeeze that you're putting on companies that have taken risk and moved forward under REC contracts is worth the juice that comes out of the bottom of the orange, [and] of whether this is an enormous effort that would produce, as I believe [Brattle's Sam] Newell said, nearly invisible impact, and whether this is really worth the trouble," Kaplan said.

Kathy Slusher, director of energy procurement and utility regulatory affairs for the State University of New York, said the university system has a campus that will put a bid request out for 150,000 RECs, representing 150,000 MWh of energy in a "ready commodity market."

"However this is going in NYISO would interrupt that market and would really throw everything for renewables in New York up in

# NYISO News

the air because none of us could sign a [power purchase agreement] because we don't know if we're going to get RECs, what value they would have, or if they'd be able to be sold," Slusher said. "Sorry ... but I think NYSERDA punted this over to [NYISO] and it doesn't belong in your court."

To the extent that there's a secondary market for RECS, the ISO doesn't know about it or seek to administer some clawback, DeSocio said.

## Weird Dynamic

Anne Reynolds, executive director of the Alliance for Clean Energy New York, said that not considering REC sales elsewhere "does raise a weird dynamic."

"If you're saying the generators can't sell their RECs to NYSERDA and still realize the carbon charge revenue increment, but they can sell them to someone else ... there's no logical reason for that, and it illustrates again that a REC payment and a social cost of carbon are not the same thing," she said.

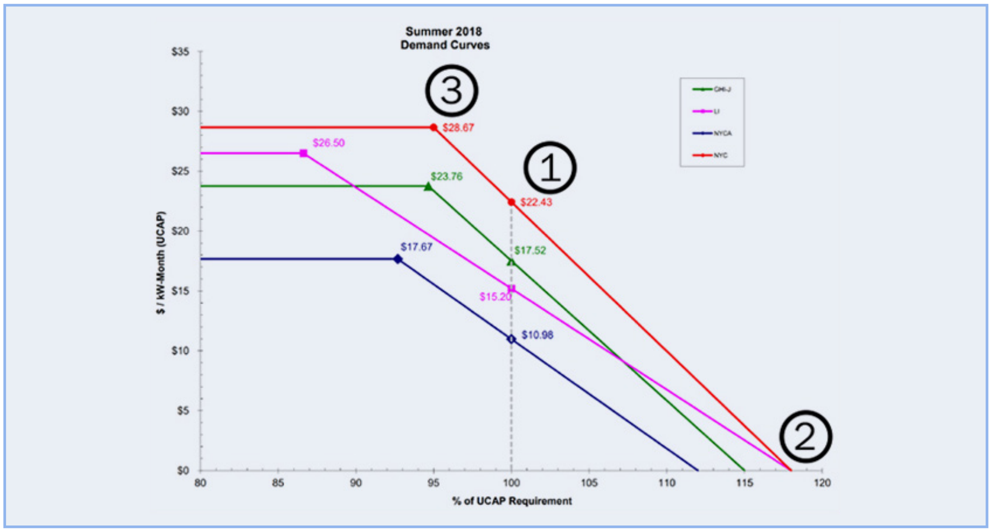
Reynolds also spoke of the perception among some industry participants that the Public Service Commission addressed the grid operator's responsibility regarding RECs in a state proceeding, "but the fact is that petition [Case No. 15-E-0302] has never been answered by the commission; it's an open petition. In the offshore wind order [Case No. 18-E-0071], there was discussion of the issue, and one sentence that said, 'it might be more appropriate for the ISO to take on this issue' or something like that, but there was no ordering clause from the commission telling the ISO to solve this problem."

She also said the utilities are acquiring RECs through value of distributed energy resources (VDER) payments and that VDER projects are getting LBMPs that include the carbon charge increment. She noted that some VDERs qualify as Tier I renewables (for example, a community solar project getting the value stack and exporting to the grid) and utilities can use those RECs to meet their Tier I obligations.

Warren Myers, Department of Public Service director of market and regulatory economics, said the utilities can use such RECs for compliance: "They're not tradeable RECs, but they can use them to satisfy their Tier I REC requirements."

## ICAP Demand Curve and Net EAS Revenues

Ryan Patterson, NYISO associate for capacity market design, presented a *report* recommending that any carbon charge in the wholesale market should be rolled into net energy and ancillary services (EAS) revenue estimates through the existing annual update process.




Carbon pricing impacts the capacity market through the ICAP demand curves. | *NYISO*

The ISO analyzed the impacts of carbon pricing on the installed capacity (ICAP) demand curves to illustrate how the annual update process could affect future capacity market clearing prices, finding that net EAS revenue will be impacted by a carbon charge.

Increasing carbon prices and LBMPs will likely impact both cost and revenue, Patterson said. The net EAS revenue offset values and the reference point have an inverse relationship: as net EAS revenue increases, the reference point decreases, and vice versa.

In the last ICAP demand curve reset process, the ISO moved to a historic model that averages projected net EAS revenue over a three-year period preceding the new ICAP demand curves taking effect. The study period ran from Sept. 1 of Year 1 through Aug. 31 of Year 3, using actual historic data such as LBMPs and fuel and emission costs.

The 2017/18 ICAP demand curves used net EAS revenue offset values measured from Sept. 1, 2013, to Aug. 31, 2016, and the ISO implemented an annual update process that allows for specific variables used in calculating the reference point to be recalculated each year between the quadrennial resets.

Changes to the reset process implemented in 2016 were intended to allow for the ICAP demand curves to capture changes in market conditions over time, including the impacts of changes to market rules. Adjustments to the net EAS model to allow for incorporation of a carbon charge will be evaluated as part of the upcoming reset process, Patterson said.

Two datasets were used to run several scenarios, Patterson continued. The first was 2015 and 2016 marginal emissions rates (MER) prepared by Brattle, under which the LBMP was increased by $50/MWh and, to account for the carbon price change, the Regional Greenhouse Gas Initiative price was increased by $50 for hours that LBMPs were adjusted for carbon pricing.

The second dataset was derived from modeling and pricing software (MAPS) runs for 2020, 2025 and 2030, in which LBMPs were output for carbon and no carbon base cases, and then fed into the net EAS model along with projected fuel costs used in each respective MAPS run. As with the previous dataset, the RGGI price was increased by $50 for the carbon cases.

No stakeholder asked questions about the net EAS revenue impact analysis, but Brett Kruse of Calpine said he would like to make a presentation to the IPPTF on Oct. 22 on the issue of how a carbon charge might affect hedges on transmission congestion contracts.

IPPTF Chair Nicole Bouchez, the ISO's principal economist, shared a revised *schedule* that foresees the task force meeting on the remaining Mondays this month, collecting stakeholder feedback in November and presenting a formal proposal on carbon pricing Dec. 17.

RTO Insider will have coverage later this week of the task force's Monday meeting at NYISO headquarters. ■

## NYISO NEWS

# NYISO Business Issues Committee Briefs: Oct. 10, 2018

## *NYISO and PJM JOA Waiver Request*

NYISO and PJM last month jointly filed a request with FERC for a waiver of their joint operating agreement (*ER18-2442*), Rana Mukerji, ISO senior vice president for market structures, told the Business Issues Committee on Wednesday while presenting the monthly Broader Regional Markets *report*.

The waiver would permit the two grid operators to add the East Towanda-Hillside tie line as a market-to-market (M2M) flowgate. If granted, it will enable *PJM* to conduct redispatch operations to control flows to the more restrictive rating on the New York side of the line without violating the PJM Tariff for a limited time while the RTO and NYISO work to develop a permanent solution.

Mukerji also highlighted efforts to clarify the minimum deliverability requirements for external capacity from PJM into NYISO's Installed Capacity (ICAP) market. The ISO will continue discussions of this topic with stakeholders at the Installed Capacity/Market Issues Working Group meeting this month, he said.

In August, the ISO briefed the BIC on proposed market design changes to improve the supplemental resource evaluation process for external capacity resources.

### Improving Public Policy Tx Planning

The BIC approved revisions to improve the efficiency of the Comprehensive System Planning Process in the short term, including eliminating the requirement that the New York Public Service Commission issue an order before NYISO begins evaluating transmission solutions. Under the proposal, the PSC retains the ability to cancel or modify identified public policy transmission needs (PPTNs) prior to the ISO's selection of the more efficient or cost-effective solution, which would halt the evaluation or result in an out-of-cycle process to address the modified need.

In one case, NYISO had to wait about five months before evaluating and selecting Western New York PPTNs, according to a *report* by Yachi Lin, senior transmission planning manager. Under the new process, the ISO would begin the process following completion of a viability and sufficiency assessment and if developers meet the necessary requirements to proceed.

NYISO has proposed related Tariff amendments and will seek approval from the Operating and Management committees this month before seeking board approval in November.

In addition, the ISO will clarify in the Tariff that the project description in the transmission interconnection application or interconnection request must match the description in the PPTN proposal or face rejection.

### Technical Details

Within 60 days after a formal solicitation from NYISO, interested developers must submit both redacted and unredacted versions of their complete project proposal to satisfy the PPTN, submit identical proposals in the interconnection process and provide a nonrefundable $10,000 deposit and a $100,000 study deposit for each project.

NYISO will then post a brief description of the project proposals within five business days after the solicitation window closes.

The ISO will file the final viability and sufficiency report at the PSC, and within 15 days of the filing, each developer must confirm that it intends to proceed and agree to a system impact study.

### Long Term

NYISO will present a long-term process design concept to stakeholders by the end of 2018 to improve its Local Transmission Owner Planning Process (LTPP); Reliability Planning Process (RPP); Congestion Assessment and Resource Integration Studies (CARIS); and Public Policy Transmission Planning Process (PPTPP).

Under the proposal, prior to issuing a formal solicitation, the ISO will hold a technical conference to get input from developers and interested parties on the application of selection metrics to the PPTN.

### LBMPs Up 31% Year-on-Year

NYISO locational-based marginal prices averaged $38.70/MWh in September, down from $42.56/MWh in August but up 31% from the same month a year ago, driven by four days in early September in which the peak load topped 28 GW compared with no such days in September 2017, Mukerji said in his monthly operations *report*.

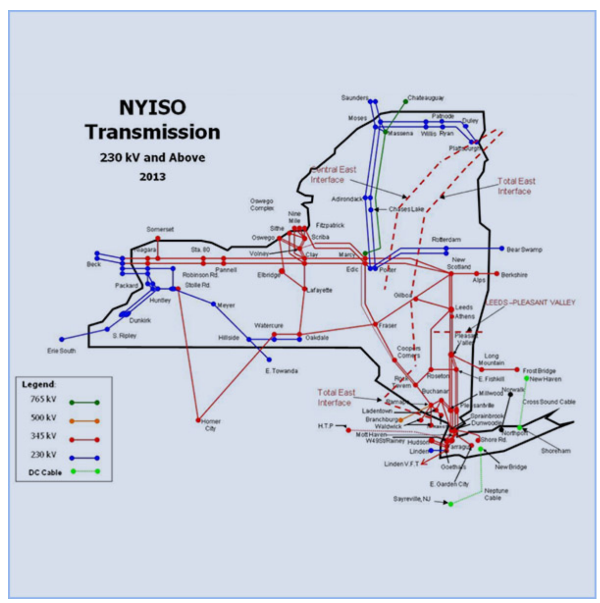
Year-to-date monthly energy prices averaged $45.75/MWh in September, a 29% increase from a year ago. September's average sendout was 458 GWh/day, lower than 537 GWh/day in August and 437 GWh/day a year earlier.

Transco Z6 hub natural gas prices averaged $2.75/MMBtu, down about 8.3% from August and up 21.5% from a year earlier. Distillate prices climbed slightly compared to the previous month but were up 23.3% year-over-year. Jet Kerosene Gulf Coast and Ultra Low Sulfur No. 2 Diesel NY Harbor averaged $16.21/MMBtu and $16.08/MMBtu, respectively.

Total uplift costs and uplift per megawatt-hour came in lower than August, with the ISO's 37-cent/MWh local reliability share in September down from 59 cents the previous month, while the statewide share climbed from -61 cents/MWh to -48 cents. Uplift, excluding the ISO's cost of operations, was -11 cents/MWh, lower than -2 cents in August.

The Thunderstorm Alert (TSA) cost in New York City was 33 cents/MWh, more than double the 14 cents in August. ■

*— Michael Kuser*




NYISO and PJM have jointly filed a request with FERC to waive a portion of their JOA to allow the East Towanda-Hillside tie line to be added as a market flowgate. | *NYISO*

## NYISO NEWS

# Overheard at ACE NY 2018 Fall Conference

*By Michael Kuser*


The Alliance for Clean Energy New York held its annual fall conference in Albany Oct. 9-10. | *© RTO Insider*

ALBANY, N.Y. — Carbon pricing, siting challenges for new renewables and new funding for energy storage initiatives all topped the discussion at the annual fall conference of the Alliance for Clean Energy New York on Oct. 9-10, which opened in the wake of a renewed warnings about global warming.

Kristina Johnson | *© RTO Insider*

State University of New York Chancellor Kristina Johnson pointed to the newly released report by the U.N.'s Intergovernmental Panel on Climate Change that said catastrophic effects will likely occur sooner than previously thought and that preventing them will require unprecedented global cooperation. (See *IPCC: Urgent Action Needed to Avoid Climate Trigger*.)

Johnson, a former U.S. undersecretary of energy, said some people believe that any construct that would reduce greenhouse gas emissions enough to stop the planet from getting warmer would cost too much, but SUNY analysis conducted with the Boston Consulting Group determined it would "cost $1 trillion invested over 25 years."

That works out to $40 billion a year to decarbonize the electric sector, electrify personal vehicles, modernize the grid and ramp energy efficiency, she said, "so that's basically a grande latte per household per week. Who in their right mind wouldn't do that?"


Alicia Barton | *© RTO Insider*

New York State Energy Research and Development Authority CEO Alicia Barton said her organization is "very close" to being able to issue the first request for offshore wind proposals, and it *announced* $40 million in energy storage funding incentives through the NY-Sun initiative.

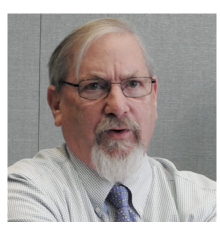
"We're not only serious about setting the targets but serious about getting the projects built," Barton said.

Sunrun Chief Policy Officer Anne Hoskins, a former member of the Maryland Public Service Commission, shared her experience going to Puerto Rico to help with recovery from last year's hurricane.

Anne Hoskins | *© RTO Insider*

"We are partnering with three local installers ... and the amazing thing is how everybody I talked to — the cab driver, the governor — all want distributed solar," Hoskins said. "It's because they realize they need to do something different."

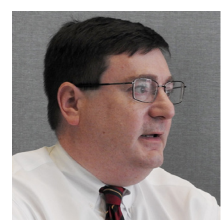
### Pricing Carbon



Frank Murray | *© RTO Insider*

Participants also discussed New York's effort to price carbon into its electricity market. The state's Integrating Public Policy Task Force (IPPTF) has been meeting almost weekly this year to model the impact of carbon pricing on emissions and prices in New York and neighboring regions. (See *'Negative Leakage' from NY Carbon Charge, Study Shows*.)

"A lot depends on the assumptions being used ... low gas price projections may not be realized, and if natural gas prices spike, then the dollar value of the environmental benefits rises, too," said former NYSERDA head Frank Murray, now with the Natural Resources Defense Council.



Michael Mager | *© RTO Insider*

Couch White attorney Michael Mager, who represents a coalition of large industrial, commercial and institutional energy customers, said, "The past six months have seen many new state initiatives and mandates on things like storage ... and we haven't had time to digest the *analyses* released over the past month or so by Brattle [Group], [Resources for the Future] and Daymark [Energy Advisors]."

Mager characterized a carbon charge as potentially the biggest market design change since NYISO was formed in 1999 and said his clients have two main concerns: What are the likely consumer impacts, and what are the environmental benefits?

"We're also concerned about how the Public Service Commission sets the social cost of carbon and how they update it, and how often," Mager said. "And we're concerned about the potential for double cost recovery."

# NYISO News

Christopher LaRoe | © RTO Insider

In addition, he said that two out of three recent analyses indicate emissions would increase in New York state and drop in the region as a result of implementing a carbon charge.

"We're undecided, not yet opposing, and may never oppose," Mager said.

Christopher LaRoe of Brookfield Renewable Energy Group said a carbon adder may be the best way to achieve the state's aggressive policy goals. He said his company provides the environmental benefits sought by the state but does not get compensated for it.

The state "recognizes the value of maintaining existing baseline resources, and yet you go incremental to that to achieve your 50[% renewables] by [20]30 goals," LaRoe said, referring to the state's Clean Energy Standard target. The PSC didn't see fit to provide a revenue stream for Tier II resources, outside of a maintenance tier, which is "basically a nightmare," he said.

Brookfield has lobbied to value Tier II resources at 75% of the Tier I price: "Not quite a made-up number, but it was meant to provide a discount off of the Tier I price," LaRoe said.

That effort failed at the last minute in the legislative session this year, but FERC would like to see progress by the states and grid operators putting their policies and markets together, so hopefully New York "can get there voluntarily and not through coercion," LaRoe said.

## Clean Energy Progress

Anne Reynolds | © RTO Insider

Anne Reynolds, executive director of ACE NY, highlighted progress over the past year, including new offshore wind targets, energy storage programs and energy efficiency targets.

"NYSERDA completed their first Tier I procurement, awarding contracts for 3.2 million more megawatts than they set out to do, and they issued the second Tier I procurement on schedule, delivering the much-needed certainty and regularity in the Clean Energy Standard procurement process," Reynolds said.

In addition, Gov. Andrew Cuomo announced an ambitious energy efficiency goal of 185 billion Btu of savings by 2025, she said.

"Energy efficiency was a missing piece of the puzzle last year, not just because it can save ratepayers money and it's good for the environment, but because under the CES, when they determined the Tier I, they assumed a lot more energy efficiency than New York was then achieving," Reynolds said.

However, "developers still need efficient and predictable processes for permitting large-scale wind and solar under Article 10," she said, referring to the state law governing the siting of generating facilities.

"Since last October, there's been real progress with the queue itself, with one project certified, four projects deemed complete [and] one additional application. But in that same year, 21 new projects embarked on the process," Reynolds said. "The process in itself in the last year hasn't gotten faster or more predictable."

Peter Olmsted | © RTO Insider

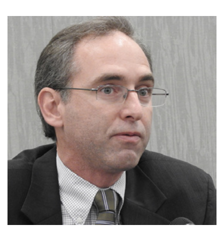
Sarah Osgood | © RTO Insider

Peter Olmsted, assistant secretary for energy to Cuomo, said, "We need to double down on collaborating with each other," and that Article 10 process improvements should be coming faster now with the appointment of Sarah Osgood, director of policy implementation at the Department of Public Service, to speed implementation.

## Siting Challenges

Osgood said there are currently 34 active projects in the Article 10 pipeline, 31 of them renewable energy projects.

"Overall we have over 6,300 MW of generation capacity proposed, three-quarters of it renewable energy," Osgood said. "The projects are split pretty evenly between wind and solar, but we are noticing that the projects that came into Article 10 earlier tend to be more large-scale wind. We're starting to see a little bit of a shift to have more solar entering the pipeline."



David Gahl | © RTO Insider

David Gahl, director of Northeast state affairs at the Solar Energy Industries Association, said that some shortcuts have been taken on value of distributed energy resources (VDER) compensation.

"Right now, the VDER provides compensation for the avoided pollution, and that's great, but I think some decisions were made in determining what that value should be that essentially shortchange what a number of solar projects or DER projects should receive," Gahl said.

"There are little changes on the margins that have reduced that compensation, and ultimately that's probably not the direction the state wants to go if it wants to put more DER on the system," Gahl said. "We shouldn't take shortcuts, shouldn't shave off value."

Jeff Bishop | © RTO Insider

Jeff Bishop, CEO of storage developer Key Capture Energy, said there are several frameworks to consider and that "as we move to the energy future, there's a role for all the new technologies."

VDER doesn't include hydro, biomass, small wind or PV, he said, "but there is a role for storage ... we have to be sure that technologies get paid for all their attributes."

Dan Hendrick | © RTO Insider

Dan Hendrick, head of external relations for Clearway Energy, said New York is heading in the right direction, but with considerable gaps.

"There's a talk of devaluing in a five-year timeline, but some of these facilities generate for 30 years," Hendrick said. "Con Edison has only 8 MW of community-distributed generation in the pipeline around New York City."

Michael Gerrard of Columbia Law School reviewed some of the legal history around siting requirement waivers and the tug of war between state and municipal officials.

"The main difference between the old version of Article 10 and the new is that the former had the phrase 'unreasonably restrictive,' which has been supplanted by the phrase 'unreasonably burdensome,'" Gerrard said. "There's no clear explanation anywhere of why that change was made or what it amounts to. My own view is that it probably means that economic considerations can certainly be a factor in addition to everything else that used to be considered." ■

## PJM News

# PJM CEO Ott Briefs Senate Committee on Black Start

Continued from page 1

Instead, Ott is more concerned about "a single point of failure": Some black start resources are only gas-fired, without dual-fuel capability. In July, PJM stakeholders approved an issue charge to work on black start fuel assurance, and Ott told reporters Thursday he expects the RTO to file proposed changes with FERC early next year. (See "Manual Revisions Approved," *PJM MRC/MC Briefs: July 26, 2018*.)

"The reality check is it becomes more expensive when you ask for more fuel diversity," Ott told senators.

But, "as long as you identify the service and don't fall into the trap of saying 'I want a specific technology and I want to save a specific type of plant,' then it becomes a little less expensive."

Sen. Joe Manchin (D-W.Va.) nearly paraphrased Ott's words later, saying he was concerned about the closures of coal plants in his state. Ott repeated that PJM has determined that the units slated for retirement would not impact reliability and pointed to its coming fuel security study.

"And so we'll be able to say we've actually looked at this analytically, looked into the future," Ott said.

Manchin responded by saying he supported President Trump's directive to Energy Secretary Rick Perry to order RTOs and ISOs to forestall the closure of a designated list of plants for two years under the Defense Production Act of 1950.

From left, David S. Ortiz, acting director of FERC's Office of Electric Reliability; PJM CEO Andy Ott; Juan Torres of the National Renewable Energy Laboratory; Utilities Technology Council CEO Joy Ditto; North American Transmission Forum CEO Thomas Galloway Sr.; and Timothy Yardley of the University of Illinois Urbana-Champaign. | © *RTO Insider*

The directive — which Trump issued in June — "makes sure that we keep the best of the best as far as coal-fired plants and nuclear plants that are up to specs and have the latest of technology in operation for at least two years until you can get through this," Manchin said. (See *Trump Orders Coal, Nuke Bailout, Citing National Security*.)

"Because a lot of analytical [sic] is going on right now," the senator continued, "and if this all comes down, and these retirements continue at an accelerated rate, I continually believe that the grid is going to be jeopardized and the security of our nation is going to be jeopardized."

"We do have time, should we find a problem, to take action within our system," Ott replied. "Instead of the federal government stepping in, allow us to complete our analysis."

Ott did tell the committee that he would like to see FERC wrap up its work on its resilience docket, which it commenced in January after rejecting the Energy Department's proposal to compensate plants with 90 days of on-site fuel.

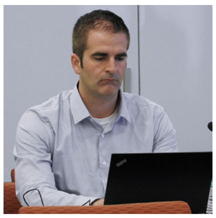
"My desire would be for FERC to get the message that we do need their assistance, and I think any forum I can have that discussion in, I will," he told reporters after the hearing. "We just really need to move forward."

On Oct. 5, the Washington Examiner *reported* that the administration may be backing off the Defense Production Act order, as the White House has been struggling with its legal justification and received pushback from conservative organizations such as the R Street Institute and Heritage Foundation. ■

# PJM Operating Committee Briefs: Oct. 9, 2018

## A Story of Storms

VALLEY FORGE, Pa. — The Mid-Atlantic region experienced heavy precipitation this summer that was great for hydro generation, PJM staff told attendees at last week's meeting of the Operating Committee.



PJM's Chris Pilong | © RTO Insider

"The story of this summer has been rain," PJM's Chris Pilong said.

He noted that several states within the RTO's footprint recorded some of the wettest months of July and August since records began in 1895. While all the rain created localized flooding and high rivers, it didn't result in any system issues. Generation outages on Aug. 28, when the RTO had its peak demand this year at 150,650 MW, were down compared to generation outages during last year's peak on July 19. There were 13,590 MW on outage this year, while there were 16,538 MW on outage last year during a lower peak of 145,638 MW.

There were seven hot weather alerts between Aug. 27 and Sept. 6 that resulted in 100 planned transmission outages being deferred.

Staff also addressed the impacts of Hurricane Florence, which impacted 2,000 Dominion Energy customers in the North Carolina section of PJM's zone. Staff held calls with several industry stakeholders and federal officials and declared conservative operations for the period.

Pilong also noted that the Oyster Creek nuclear facility in New Jersey went offline at noon on Sept. 17 and that there were no related system impacts.

## Resilience Study Delayed

PJM's Dave Souder announced that the special session of the Markets and Reliability Committee on fuel security scheduled for Sept. 22 had been moved to Nov. 1 to coincide with the revised publication date of the RTO's study of the issue. (See related story, *PJM CEO Ott Briefs Senate Committee on Black Start*.)

The study had to be revised because of new deactivations that have been "communicated" to PJM, Souder said. The goal of the study is to identify locations with fuel delivery risks, evaluating how resources can reduce them and determine the need for additional mitigation efforts. (See *Stakeholders Debate PJM Fuel Security Scope*.)

PJM's Jonathon Monken outlined the remainder of the RTO's "resilience roadmap," which includes short-, mid- and long-term goals. Short-term actions are expected to be completed by the end of the year and encompass mostly analysis and planning. Mid-term changes, which include incorporating "resilience criteria" in the RTO's Regional Transmission Expansion Plan, gas-electric coordination for its Dispatcher Interactive Map Application (DIMA) and gas-electric contingency pricing, are targeted to be implemented by the end of 2019. The long-term changes are intended for 2020 or beyond and include strategic

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islanding of critical infrastructure, enhancing tools for dynamic restoration and a "deep dive" vulnerability assessment with the Department of Homeland Security.

## Regulation

PJM's Danielle Croop said an MRC *proposal* to revise pricing for regulation will fix what is "a little broken" in the regulation market but won't impact operations. The proposed problem statement and issue charge, which would consider not allowing the benefits factor to decrease past 0.1, received a first read at the MRC's September meeting.

"I really don't think we're going to see operational changes at all," she said. "You're talking about very small megawatts at that point."

Croop *noted* the average clearing price for regulation in September was $20/MWh, which was $1 lower year-over-year and in line with the trend. She said manual moves of resources, in which PJM operators manually direct resources up or down for a maximum of two minutes, was "drastically down" thanks to the new regulation signal that was implemented in April 2017. Resources are set to automatically follow the signal, but many resources following the RegD signal often ended up moving the wrong direction. Operators performed approximately 16 manual moves in September for a total duration of roughly 1,600 seconds compared to approximately 40 moves in January for a total duration of roughly 4,600 seconds.

Croop said a spike in the number of RegD pegging incidents, in which a resource is held at the top or bottom of its regulation continuum based on system conditions for a certain amount of time, wasn't "anything chronic" or an issue necessary to consider revising the signal. There were nine incidents of resources pegged for between 20 and 30 minutes, compared to August when there was only one such incident.

"I think it's probably just a shoulder-month operation," she said, referring to the weather vacillations in spring and fall months as the seasons change.

## Winter Prep

PJM's Vince Stefanowicz discussed *cold-weather preparations* for generators, which include submitting a checklist preparations into the RTO's eDART system by Dec. 15. A seasonal fuel and emissions survey must be completed by Nov. 16.

"We're focused on fuel supply and delivery," Stefanowicz said.

PJM will create a list by Nov. 10 of generators eligible to participate in a cold-weather exercise "to identify and correct start-up, operational and fuel switching issues prior to cold-weather operations," and owners will have until Nov. 20 to identify participating units. Only non-Capacity Performance units are eligible for compensation.


PJM's Vince Stefanowicz | © *RTO Insider*

## Resource Tracker

PJM's Rebecca Stadelmeyer reviewed a *problem statement* and *issue charge* proposed by the RTO to document timing and tasks required by generators in its Resource Tracker application. Staff believe the solution is "simple and straightforward" and have already proposed a *solution*, which would survey generation owners about windows and deadlines for inputting information in the application. PJM prefers one four-week window at the end of the year for revising information rather than the current two-week biannual windows.

PJM's Rebecca Stadelmeyer | © *RTO Insider*

The proposal would also install the final details in Manual 14D.

## Mount Washington 115-kV RAS Done

Ken Braerman with Baltimore Electric and Gas announced the *retirement* of the Mount Washington remedial action scheme (RAS), which has been in service since June 1, 2014. The RAS addressed potential N-1-1 voltage drops at five buses in BGE's territory by "reliev[ing] load to acceptable voltage levels," but it will no longer be necessary once the Camp Small ring bus and capacitor bank goes into operation of Oct. 31. ■

*— Rory D. Sweeney*

PJM NEWS

# PJM PC/TEAC Briefs: Oct. 11, 2018

## IRM Study

VALLEY FORGE, Pa. — Stakeholders at last week's Planning Committee meeting endorsed PJM's annual reserve requirement *study* and recommendations for a 15.7% IRM and a 1.0887 forecast pool requirement (FPR) for next year's Base Residual Auction, both slight reductions from last year. (See "IRM, FPR Reduced," *PJM PC/TEAC Briefs: Sept. 13, 2018*.)

The study found a reduction in the standard deviation for the RTO-wide forced outages from the 2017 study to the 2018 study, which indicates the outliers "are slightly less extreme than they were last year," PJM's Andrew Gledhill said.

Staff traced the change back to a "slightly smaller" average unit size this year of 121 MW compared to 129 MW in 2017.

## Ride Through

PJM's Emanuel Bernabeu detailed the *results* of the RTO's two-day workshop on distributed energy resources ride-through held on Oct. 1 and Oct. 2.

"We made tons and tons of progress," he said, adding that staff plan to seek an endorsement vote at the Nov. 11 PC meeting on a problem statement and issue charge to address questions surrounding implementation of a new Institute of Electrical and Electronics Engineers standard on how DERs should react to system voltage fluctuations.

The PC will then vote on endorsing required settings for resources wishing to participate in PJM's markets, but it will not vote on guidance developed by staff for state regulations on locally regulated resources. The issue raised stakeholder concerns at last month's meeting. (See "Workshop Set on DER Ride-through Standard," *PJM PC/TEAC Briefs: Sept. 13, 2018*.)

Bernabeu confirmed that several revisions have been made to the *problem statement* and *issue charge* since then, including not making the standards retroactive for existing resources and creating rules for both inverter-based and synchronous resources.

"They behave quite differently. … We are trying to tackle the entire DER space and not just focus on inverters," he said. "We are trying to achieve both."

Alex Stern of Public Service Electric and Gas and Tonja Wicks of Duquesne Light expressed

PJM staff present operational updates to stakeholders at last week's Planning Committee meeting. | © *RTO Insider*

appreciation for PJM's willingness to address stakeholder concerns.

"We just have to be sure at the RTO level that, as we incorporate greater levels of distributed energy resources, … we're doing it safely and reliably," Stern said.

"That's why we want to solve this now as opposed to California," Bernabeu said in reference to solar generators disconnecting from the grid during wildfires. "I don't want to be like California." (See *NERC Chief: Inverter, Fuel Assurance Standards Needed*.)

## Offshore Wind Interconnection

The growing wave of interest in offshore wind is finally hitting PJM. Staff announced *plans* to review the Tariff for revisions necessary to address the "new and creative ways" offshore wind developers are proposing to interconnect facilities, which include offshore transmission networks with multiple interconnections.

The issue was a topic of interest at a recent offshore wind conference in New Jersey, although PJM staff did not attend. (See *Offshore Wind Industry 'Really Moving;' Coordination Key*.)

PJM's Susan McGill | © *RTO Insider*

"We haven't anticipated this," PJM's Susan McGill said of the developers' proposals. "There's some ideas out there that this [current] construct doesn't fit perfectly."

Ken Foladare of Tangibl requested that PJM also look into other long-term firm transmission projects that sometimes cause delays with generation interconnection queue requests and asked that staff investigate ways to eliminate these delays.

"For generation project developers, these delays often cost them a considerable amount of time and money," he said.

## Impacts of the Energy Transition on Transmission

PJM's Yuri Smolanitsky detailed *plans* for two new 500-kV lines and substations that highlight the changes resulting from shale gas and solar development in the RTO.

The Flint Run 500/138-kV substation west of Clarksburg, W.Va., will tap the Belmont-Harrison 500-kV line to provide extra-high voltage for Marcellus shale load growth in the area. The $40.1 million *project* in the Allegheny Power Systems zone — b2996 in PJM's Regional Transmission Expansion Plan — will run 138-kV lines of approximately 3 miles each to 138-kV buses at Waldo Run and Sherwood. It's expected to be in service by December 2019.

In addition, a $5.7 million project in Dominion's zone will upgrade the Spotsylvania substation and construct approximately half a mile of 500-kV line to connect with the 500-MW Spotsylvania Energy Center solar farm. Smolanitsky said it will be the largest solar farm in the RTO when it goes into service, which is expected next fall. It was developed by Sustainable Power Group (sPower), which was

## PJM News

acquired by AES and AIMCo in February 2017, according to the *project's* website.

### TMEP Congestion Analysis

Two recently approved targeted market efficiency projects (TMEPs) would have resolved $55 million (approximately 11%) of the total $523.2 million in congestion costs over 2016 and 2017 from the 61 facilities that MISO and PJM identified as part of study begun in the spring, PJM's Alex Worcester *announced*. (See *MISO, PJM Endorsing 2 TMEPs for Year-end Approval*.)

Other planned system changes would have resolved $213 million (approximately 41%). Outages drove $201 million (approximately 38%), and $6 million (1.1%) were caused by situations where the congestion isn't persistent. The remaining $48.2 million (9.3%) includes potential TMEPs, as well as ones where the effectiveness is uncertain, the upgrade is unknown or the proposal didn't meet the necessary benefit-to-cost ratio.

### RTEP Recommendations

PJM's Board of Managers *approved* another $214.9 million in RTEP baseline reliability projects at its Oct. 2 meeting. The recommendations come after the board approved $629.23 million in recommended baseline projects at its July 31 meeting.

The majority of the cost comes from a $155 million plan to construct two new 69/13-kV substations in the Doremus area of the PSE&G zone.

### Dominion Supplementals

Dominion's Ronnie Bailey *presented* three new need assessments and two planned solutions as part of the transmission owners' new FERC-ordered process for developing supplemental projects. Dominion has presented 19 needs assessments since the process was implemented in September. (See "First M-3 Experience," *PJM PC/TEAC Briefs: Sept. 13, 2018*.)

The planned solutions address the first and second needs identified by Dominion last month. The solution for the first need, which would serve a new data center campus in Loudoun County, Va., with total load in excess of 100 MW, is estimated to cost $27.8 million.

The second solution, which would accommodate a request by Old Dominion Electric Cooperative to serve residential, commercial and industrial growth south of Fredericksburg, Va., that is expected by 2023, is estimated to cost $1.4 million. The summer load in the area is around 35 MW, Bailey said, and the winter load is expected to be around 41 MW. ■

*— Rory D. Sweeney*

# PJM Market Implementation Committee Briefs: Oct. 10, 2018

### Vote on Credit Revisions Initiative Delayed

VALLEY FORGE, Pa. — A proposal to revise PJM's credit requirements for financial transmission rights in response to the historic GreenHat Energy default will be delayed a month but should still be on track for April implementation, PJM's Lisa Drauschak told attendees at last week's Market Implementation Committee meeting. RTO staff had previously planned to bring a problem statement and issue charge to the meeting for consideration.

"We think it's important to take a breath," Drauschak said, explaining that the RTO's Credit Subcommittee has decided to further vet the proposals before it.

"We still feel we can get a filing to FERC in January" to be effective April 1, she said.

Dayton Power and Light's John Horstmann asked that staff consider alternatives to the current market design to eliminate the structural credit flaws that allowed the default and to the usual stakeholder process that develops the credit requirements for the risky and sophisticated long-term FTR product. Attorney Steve Huntoon asked why the *list* of "lessons learned" from GreenHat didn't address PJM's efforts to increase GreenHat's collateral. [Editor's Note: Huntoon is a columnist for RTO Insider and is representing it in its effort to open meetings of the New England Power Pool to the press and public.]

GreenHat agreed to sign over the proceeds to two FTR sales that appear to have already been paid for. (See *Doubling Down – with Other People's Money*.)

Staff said it will prevent the situation from occurring again by revising the credit policy to give the RTO increased authority to make collateral calls.

PJM's Lisa Drauschak | © *RTO Insider*

"That agreement did not come out of a collateral call. It came out of something else," Drauschak said.

"If we had the authority to do a collateral call, we would have done that," PJM counsel Jen Tribulski said.

Despite the revisions, staff were careful to avoid suggesting the FTR market has no risk of defaults.

"Nothing is 100% absolute," Drauschak said.

However, stakeholders pressed PJM to take more responsibility for the market's security.

"We agree that you can't prevent defaults — those things will happen — but we depend on PJM to protect us," Rockland Electric Co.'s Brian Wilkie said.

DC Energy's Bruce Bleiweis questioned whether the lessons learned fully encapsulated the advice PJM received during the closed-door *workshop* that precipitated the document. He said he was told by one of the participants that they weren't given an opportunity to review a draft of the RTO's takeaways.

"These items did come out of the workshop. … I'm not sure why someone would say that, but these items did come out of the workshop," Drauschak said, defending staff's work.

Independent Market Monitor Joe Bowring, who attended the workshop, concurred that the document accurately reflected the results of the meeting.

## Must-offer Exception

Stakeholders deferred a vote on revising *exceptions* to capacity providers' must-offer requirement after PJM changed its proposal from the last time it was presented to the MIC. Staff revised the proposal to give resources receiving an exception three years before being required to change their status from a capacity resource to energy-only. Capacity resources must offer any uncommitted capability into all capacity auctions unless they have been granted an exception.

PJM's Pat Bruno explained that, after three consecutive years of exceptions, a unit would be modeled as energy-only in the capacity model, so its capacity megawatts would be reduced to zero and its owner would have 12 months to nominate its capacity interconnection rights (CIRs) elsewhere. The nominated generator wouldn't have to be operational if it's in the interconnection queue, he said. CIRs, which grant access to inject generation into the transmission system, have value and can be sold. (See *PJM, Generators Debate Injection Rights for Exempted Capacity*.)

The proposal, which has undergone several iterations, was satisfactory for some stakeholders.

"I feel pretty confident in this," said Carl Johnson, who represents the PJM Public Power Coalition.

Bowring, however, objected to the changes.

"We're not confident at all that this will prevent exercising market power," he said, noting that resources could potentially delay relocation of the CIRs for perhaps six years. "This is a very long time period. It's not consistent with maintaining open access to the grid."

Exelon's Sharon Midgley said that while her company — which requested the rule changes — would like to vote, she was willing to wait another month.

## Surety Bond Use

Stakeholders endorsed two competing proposals to allow use of surety bonds as credit in PJM's markets, despite concerns raised by Bowring and others. The proposals will receive consideration at the Markets and Reliability Committee.

A *proposal* developed by the PJM Credit Subcommittee that would allow surety bonds as credit for all activity except FTR portfolios received 61% in favor in a sector-weighted vote, easily surpassing the necessary 50% threshold. The proposal would also set a $10 million cap per issuer for each member and a $50 million aggregate cap per issuer.

VECO's Chris Carpenter explains to stakeholders at last week's Market Implementation Committee meeting his firm's concerns with PJM's current FTR forfeiture rule. | © *RTO Insider*

Exelon's *proposal*, which would allow using surety bonds for all credit requirements with a $20 million cap per issuer for each member and a $100 million aggregate cap per issuer, received 58% in favor. Stakeholders also indicated their interest in making a change, voting 66% in favor of not keeping the status quo.

Bowring repeatedly asked PJM and Exelon, which proposed the change, to verify that surety bonds are as secure as letters of credit (LOCs), which the RTO currently accepts.

"We believe they are legally as strong," PJM's Hal Loomis said.

"They're a weaker form of credit," Bowring said. "That's why they're cheaper." He asked PJM whether it had requested the opinion of the same expert panel it used for a review of FTR credit issues on the advisability of using surety bonds and whether it has determined whether exchanges permit the use of surety bonds in place of LOCs.

Midgley countered that surety bonds are cheaper than LOCs because of Basel III and a more robust underwriting process. Since 2008, banks must now realize LOCs as a liability on their balance sheet, which affects their capital ratios for regulatory purposes.

"We don't share your view that this is an inferior product. ... We would not be seeking to [get them approved] unless they were comparable," she said. "What you have before you is a proposal that would reduce cost for market participants, provide diversification for PJM and, at the end of the day, benefit customers."

Other stakeholders were concerned about comparing PJM's markets to those of NYISO and ERCOT, where surety bonds are already accepted for credit needs.

"It's extremely smaller than the amount of dollars we're talking about in PJM," Direct Energy's Marji Philips said. "Now I am mindful of a huge default happening [again like GreenHat], so now I'm seeking detail."

### FTR Forfeiture

PJM staff's proposal to *modify* the FTR forfeiture calculation rules to include loop flow impacts doesn't go far enough for some stakeholders. Staff proposed incorporating loop flows when determining whether virtual transactions in the day-ahead market have a 10% or greater impact on coordinated market-to-market flowgates.

Chris Carpenter of VECO Power Trading would also like to see the FTR impact test relaxed so that a virtual trade that creates a very small contribution to an FTR's settlement wouldn't trigger forfeiture of the FTR profit. Exelon and NextEra Energy supported VECO, which *proposed* three alternatives to mitigate that situation:

- Forfeit the portion contributed by the "triggered" constraint instead of the entire FTR settlement value;
- Require the FTR to have a 0.1 distribution factor (DFAX) on the triggered constraint; or
- Require the triggered constraint to be "substantially linked" and contribute a "significant dollar share of the FTR settlement value."

The current FTR impact test, which has been in effect only since last year, triggers forfeiture if the DFAX multiplied by the shadow price is greater than or equal to $0.01. The previous test triggered forfeiture if the DFAX was greater than or equal to 0.1.

"There is a pretty significant impact from that change," Carpenter said. "From our perspective, this forfeiture amount doesn't really line up with the impact of the activity."

"One penny manipulation is manipulation," the Monitor's Howard Haas said. "What we have seen, under the current rule, is a dramatic reduction in forfeitures because of changes in behavior."

Carpenter acknowledged the reduction but attributed it to market participants "not feeling the risk tradeoff is worth" attempting the virtual trades.

"My firm has stopped doing [increment offers] and [decrement bids] because we're concerned about this rule," Midgley said. "In the FERC proceeding, PJM raised concerns that the new rule would restrict legitimate market activity that promotes market convergence and increases market efficiency. I'm here today to say this is happening. ... I think it's a really beneficial conversation to have."

Gabel Associates' Michael Borgatti, representing NextEra, said the rule should be very selective in not penalizing unforeseen impacts and only punishing manipulative behavior.

"We agree that we think the PJM package takes a meaningful step forward. ... Having a rule that serves as a [deterrent] to that activity is healthy," he said. "It's an oversimplification at best to say that a penny change in the FTR is tantamount to manipulation."

Carpenter argued that the first alternative proposed is like CAISO's forfeiture rule in that "the concept of forfeiting by constraint is something that has been done."

Haas countered that CAISO's definition of an FTR is different from PJM's. "You have to rethink the FTR product itself," he said. ■

*— Rory D. Sweeney*

## SPP

# SPP Briefs: Week of Oct. 8, 2018

## *FERC Approves SPP-AECI Morgan Transformer Seams Project*

FERC last week approved SPP's first seams project with a neighboring utility when it accepted Tariff revisions incorporating a cost-sharing and usage agreement with Associated Electric Cooperative Inc. (AECI).

The Oct. 10 letter order allows SPP and AECI, a Missouri-based collection of six generation and transmission cooperatives, to proceed with the Morgan transformer project. It was the entities' second attempt to gain FERC approval (*ER18-2243, ER18-2245*).

SPP says the project is the most efficient, cost-effective solution to economic and reliability issues identified in two separate studies. It also said the project will reduce day-ahead market uplift costs and avoid the cost of a more expensive regional solution, resulting in a regionwide load-ratio-share benefit of more than $17 million.

The RTO included both arguments in its revised filing, after its first attempt failed in 2017. (See *FERC Rejects Cost Allocation for SPP-AECI Seams Project*.)

SPP has proposed to regionally fund the project, as it will solve congestion issues on its side of the seam. The RTO will cover 82.91% of the $13.75 million engineering and construction cost, while AECI will cover the remainder and is responsible for the project's construction, operations and maintenance.

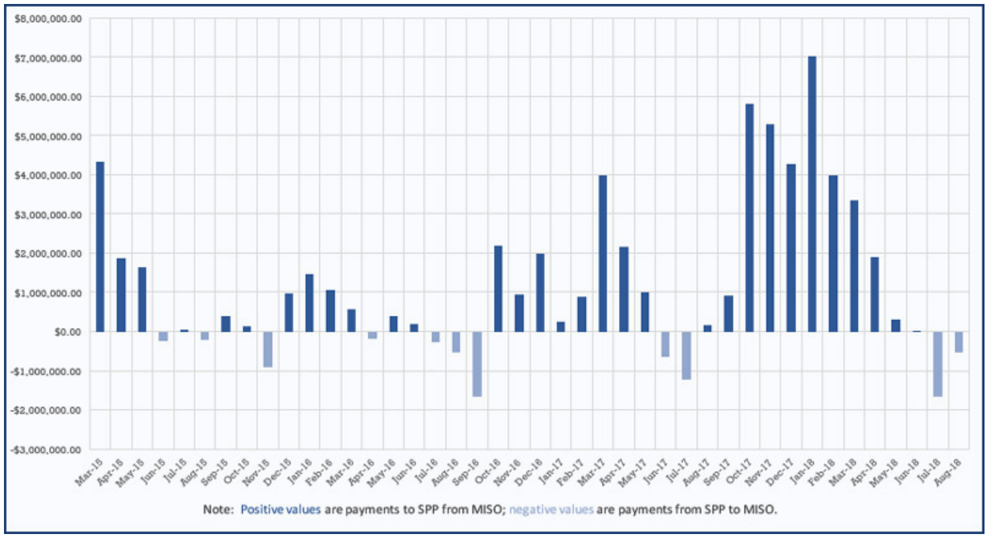
David Kelley | © *RTO Insider*

David Kelley, the RTO's director of seams and market design, told RTO Insider that FERC's approval "is evidence it's possible to share both costs and benefits of new transmission projects across regions."

"We continue to work with all of our seams partners to enhance our processes to identify and approve mutually beneficial transmission projects," Kelley said.

The Morgan project comprises a new 345/161-kV transformer at AECI's Morgan substation and an uprated 161-kV line, both near Springfield, Mo. It was identified during an SPP-AECI 2016 study as outlined by the entities' joint operating agreement and by the RTO's 2017 10-year assessment.

"It's important to SPP and our industry to continue to provide affordable and reliable electricity to our customers, and our success in doing so will depend more and more on our ability to work across regional boundaries to create win-win scenarios," Kelley said.

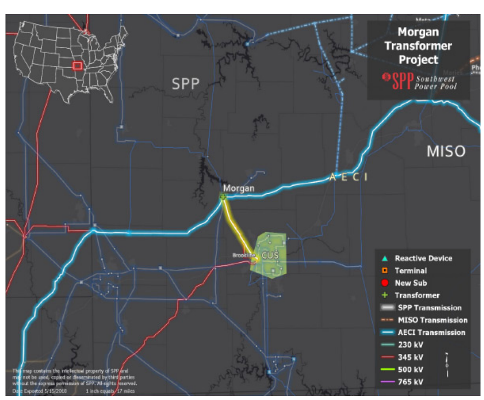



M2M settlements since go live – $51.4 million to SPP through August 2018 | *SPP*

SPP said stakeholders, its Board of Directors and state regulators have consistently recommended regionwide cost allocation for the Morgan project.

FERC last year rejected SPP's first attempt to allocate the project's costs, ruling it had not shown that the proposed allocation on a regionwide, load-ratio-share basis was "roughly commensurate" with the project's benefits.

The commission in 2015 also rejected SPP efforts to create a new class of seams transmission projects, saying its plan to identify projects outside the Order 1000 interregional planning process was "too broadly drawn" (*ER15-2705*). FERC did allow SPP to make filings on a project-by-project basis for non-Order 1000 facilities. (See *FERC Rejects SPP Proposal for Seams Transmission Projects*.)




Morgan Transformer Project | *SPP*

FERC does not comment beyond an order's language. A spokesperson would not confirm whether this was the first interregional project the commission has approved on a case-by-case basis.

### August M2M Payments Again in MISO's Favor

Replicating an outcome last seen two years ago, the market-to-market (M2M) process between SPP and MISO resulted in the latter receiving more than $531,000 in payments for August.

MISO last received back-to-back payments in July and August 2016, the beginning of the only three straight months the RTO has seen M2M payments in its favor. SPP has been on the right side of the ledger 19 of the 21 ensuing months.

Temporary flowgates were binding for 327 hours in August, resulting in $788,835.60 in M2M payments to MISO. That was reduced by $257,098.85 for permanent flowgates binding for 127 hours in SPP's favor.

SPP still has as healthy balance of almost $51.4 million in M2M payments since the process began in March 2015. ■

*— Tom Kleckner*

# Company Briefs

## Emails Show SCANA Hid Critical Info from Investors

Newly released emails show that SCANA executives intentionally hid critical information from an audit of the V.C. Summer nuclear plant expansion project and pressured its partner Santee Cooper to do the same.

The audit by Bechtel was first drafted in September 2015 and contained damning revelations, including that the project would not be completed in time to receive federal tax credits. The final published report in 2016 did not contain this information, and it did not come to light until SCANA and Santee Cooper abandoned the project last year.

The emails released last week show SCANA executives, including its current CEO, downplaying the significance of Bechtel's findings and becoming alarmed when Santee Cooper considered revealing them to bondholders. The emails could factor into several class action lawsuits against SCANA over the project's failure.

*More: The Post and Courier*

## Sempra Appoints 2 New Directors to Board

Sempra Energy on Thursday announced that it had appointed **Cynthia L. Walker** and Michael N. Mears to its board of directors.

Walker is senior vice president of marketing and midstream operations and development for Occidental Petroleum. Mears currently is CEO of Magellan Midstream Partners. They will serve on the board's LNG and Business Development Committee.

"With their considerable management experience in the energy industry, especially in the midstream sector, Cynthia Walker and Mike Mears will add critical depth and experience to our board as we continue to expand our energy infrastructure businesses," Sempra CEO Jeffrey W. Martin said. "In addition, their experience evaluating and advising on significant transactions will inform their important work on the LNG and Business Development Committee as part of our expanded business review."

*More: Sempra Energy*

## Royal Caribbean Cruises Signs PPA for Southern Power Wind Farm

Royal Caribbean Cruises on Friday said it has signed a power purchase agreement with Southern Power to buy the entire output of the 200-MW Reading Wind Facility in Osage and Lyon counties in Kansas.

RES America Developments, which developed the wind farm, will lead construction on it, accompanied by Southern. The companies expect to break ground on it in the second quarter of next year and complete it in the second quarter of 2020.

*More: Southern Co.*

## Westmoreland Coal Files for Bankruptcy

With more than $1.4 billion in debt, Westmoreland Coal, one of the oldest coal companies in the U.S., filed for Chapter 11 bankruptcy protection last Tuesday. It is the fourth major coal company to file for bankruptcy in the past three years.

Interim CEO Michael Hutchinson said despite filing for bankruptcy, operations will not be interrupted, and he does not expect layoffs to occur. He said the restructuring agreement would include refinancing an outstanding loan and going through a "business transformation" meant to increase revenue.

"After months of thoughtful and productive conversations with our creditors, we have developed a plan that allows Westmoreland to operate as usual while positioning Westmoreland for long-term success," Hutchinson said.

*More: The Associated Press* ■

# Federal Briefs

## McNamee Hearing Pushed back After Senate Recesses

The Senate Energy and Natural Resources Committee rescheduled the confirmation hearing for President Trump's nominee to FERC, Bernard McNamee, for Nov. 15, after the upper house recessed until after Election Day.

McNamee's hearing had been scheduled for Today, only a week after Trump formally nominated him on Oct. 9. The committee will also consider Rita Baranwal to be the Energy Department's assistant secretary for nuclear energy and Raymond David Vela to be director of the National Park Service.

The Senate went into early recess Thursday after Democrats agreed to confirm 15 of the president's judicial nominees on an expedited basis. Senate Majority Leader Mitch McConnell (R-Ky.) had been prepared to slow-walk the nominees in order to keep Democrats in D.C. and off the campaign trail ahead of the mid-term elections.

*More: Senate Energy and Natural Resources Committee; The New York Times*

## Thousands Still Without Power in Southeast After Michael

The Energy Department on Monday morning reported that 341,937 customers in Alabama, Florida, Georgia, North Carolina and Virginia are still without power after Hurricane Michael tore through the Southeast last week.

Michael made landfall in Mexico Beach, Fla., as a Category 4 storm and effectively wiped the city out, according to the Federal Emergency Management Agency. Nearly half the outages are in Florida, mostly in the panhandle region.

As of Sunday, 18 U.S. residents have died as a result of the storm, and 30 to 35 are missing, according to FEMA and Mexico Beach officials.

*More: Department of Energy; CNN*

### Wind, Solar Provided 20% of Generation in 10 States

Wind and solar generation, including small-scale photovoltaic generation, was at least 20% of all generation in 10 states last year, the Energy Information Administration said Oct. 11.

Wind accounted for more than 50% of generation in Iowa and Kansas, and solar accounted for more than 20% of generation in California.

Nationwide, wind and solar was 8% of all generation. It was 11% of all generation in April, its highest percentage in any month last year.

*More: Energy Information Administration*

### GAO Report Details DOE Funding for Advanced Fossil R&D

Nearly half of the $2.66 billion that the Department of Energy spent on 794 advanced fossil energy research and development projects since 2010 went toward nine carbon capture and sequestration projects, only three of which were active by the end of fiscal year 2017, according to a Government Accountability Office report released Oct. 1.

According to the report, prepared for the Senate Energy and Natural Resources Committee, the department spent about $1.12 billion on the nine CCS projects. Of the three still active, only one is at an actual power plant: Petra Nova, which has captured more than 2 million tons of carbon

dioxide emitted by NRG Energy's W.A. Parish plant in Texas, according to an NRG spokesman. DOE provided about $190 million for the project from 2010 to 2017.

The report also examined the department's loan guarantees from fiscal year 2006 to August 2018. It issued three solicitations for $2 billion to $8 billion for advanced fossil energy loans; no loans have been guaranteed as of August.

*More: POWER* ■

# State Briefs

## ARKANSAS

### Entergy Begins Installing Advanced Meters

Entergy Arkansas has begun a two-year effort to install 700,000 advanced meters across the state.

The company is touting the new meters as a way for customers to be more efficient in their electricity use. Customers will be able to view their usage data in 15-minute increments and review daily reports. The company also says the meters will give it better visibility of the grid and respond to outages more quickly.

Entergy began installing the necessary equipment on its distribution poles last month, and it will begin installing the actual meters for homes and businesses next year.

*More: magnoliareporter.com*

## CALIFORNIA

### CPUC Raises CCA Exit Fee

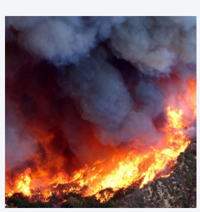
The Public Utilities Commission on Thursday voted to raise the fee customers must pay if they want to switch to a community choice aggregator.

According to the commission, residential customers leaving Pacific Gas and Electric would see an estimated increase of 1.68% over 2018 bills; Southern California Edison customers a 2.5% increase; and San Diego Gas & Electric customers a 5.24% increase.

Beth Vaughan, executive director of the California Community Choice Association called the decision a "devastating blow to the flourishing CCA movement in California and could deter further market entry by CCAs." Several city mayors across the state also slammed the decision.

*More: Bloomberg; Route Fifty*

### Cal Fire: Sagging PG&E Lines Caused Fatal Wildfire



Two sagging Pacific Gas and Electric distribution lines made contact, sparked and ignited a wildfire in Yuba County last year that killed four people and injured a firefighter, the Department of Forestry and Fire Protection said last Tuesday.

Cal Fire found no negligence on the part of PG&E for the fire. Nevertheless, under state law, it is liable for the damages. Its equipment has been blamed for 13 fires last year and expects to pay more than $2.5 billion in damages.

*More: The Associated Press*

## DELAWARE

### PSC Rejects Request to Review Bloom-Delmarva Deal

The Public Service Commission refused to review a deal between Delmarva Power and Bloom Energy under which Delmarva ratepayers pay a surcharge for Bloom's fuel cells.

Consumers and lawmakers have complained the surcharges have grown too expensive for little benefits. Customers have paid $200 million since 2011, and the charge is expected to reach $5 next month.

PSC staff and the Division of the Public Advocate, however, advised the commission that it had no authority to alter the deal. "You are in a straitjacket. You don't have any discretion here," a staff lawyer told commissioners. "It is what it is."

*More: The Associated Press*

# INDIANA

## Vectren CEO Defends Request to Build Natural Gas Plant

Vectren CEO **Carl Chapman** appeared before the Utility Regulatory Commission last Tuesday to argue for approval of an 800- to 900-MW natural gas plant the company wants to build to replace its aging coal fleet.

The plant would cost $781 million and reduce the company's total emissions by 60%, according to Chapman. It would be built on the site of one of the coal plants the company would close, the A.B. Brown Generating Station in Posey County.

A final decision is not expected until 2019.

*More: Evansville Courier & Press*

# MASSACHUSETTS

## Fisheries Director Prefers Covell Beach for Vineyard Landing

The transmission cable for Vineyard Wind's proposed offshore wind farm will pose less of a threat to marine resources if it comes onshore at Covell Beach in Centerville rather than going through Lewis Bay, Division of Marine Fisheries Director David Pierce wrote in a letter to Executive Office of Energy and Environmental Affairs Secretary Matthew Beaton.

Beaton chairs the Energy Facilities Siting Board, which will determine where the cable comes on shore. It began a monthlong hearing on the issue the week of Oct. 1 and is expected to announce its decision in April.

Pierce's Oct. 3 letter reviews new information contained in a supplemental draft environmental impact report that Vineyard filed with the Office of Energy and Environmental Affairs in August. The report, which follows up on an earlier draft, includes more detailed information about two possible landing sites for the cable: Covell, and New Hampshire Avenue in West Yarmouth.

*More: Cape Cod Times*

# NEW HAMPSHIRE

## Supreme Court to Hear Eversource Appeal of Northern Pass Rejection

EVERSOURCE ENERGY

The state Supreme Court on Friday agreed to consider the Site Evaluation Committee's rejection of the Northern Pass transmission project.

Eversource Energy, which appealed the SEC's February decision, said it remains "fully committed" to building the 192-mile line with Hydro Quebec. It said in a statement it is "grateful for the opportunity to demonstrate that New Hampshire siting requirements were misinterpreted and incorrectly applied in reviewing Northern Pass."

*More: The Republican*

# NEW YORK

## NY-Sun Program Providing $40M for Solar+Storage

NEW YORK STATE

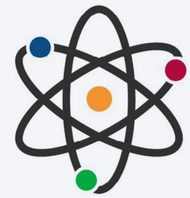
Gov. Andrew Cuomo said Wednesday that the NY-Sun program will make $40 million available in early November for the development of solar-plus-storage projects for the commercial and industrial sector.

The $40 million will be the first storage incentive funds made available since the release of the New York State Energy Storage Roadmap in June. The state expects the money will accelerate the development of at least 50 MW of storage paired with solar.

*More: Gov. Andrew Cuomo*

# OHIO

## New FirstEnergy-backed Group Trying to Get Nuclear Plant Bailout



A newly formed group backed by FirstEnergy called the Ohio Clean Energy Jobs Alliance is trying to convince lawmakers to bail out FirstEnergy's Davis-Besse and Perry nuclear power plants, which produce 14% of the state's power.

FirstEnergy has said it will close the plants by 2021 if a solution to their financial troubles can't be found. The coalition says a solution must be found within nine months.

Opponents of a bailout plan say it would raise electric rates in the state.

*More: The Associated Press*

# OREGON

The state recouped $13 million from SolarCity after an investigation found the company had inflated the cost of 14 commercial-scale solar energy projects to qualify for higher state tax credits.

As part of a settlement with the state, SolarCity, known as Tesla Energy Solutions since its purchase by Tesla Motors in 2016, did not admit wrongdoing. Tesla said in a statement that the "dispute merely reflects a difference of opinion about how to interpret an Oregon regulation regarding [Business Energy Tax Credits] that were received by SolarCity many years ago."

The state Department of Justice and the FBI launched an investigation into the company in 2015 after a report by The Oregonian.

*More: The Oregonian* ■

# Clean Tech Presses on Following Dire Climate Report

*Continued from page 1*

Ed Krapels, Anbaric | *© RTO Insider*

gressive energy policy," said Ed Krapels, CEO of Anbaric Development Partners.

Krapels said proposed offshore wind projects in New England represent "probably the largest single investment opportunity in clean energy in the country." Citibank has estimated as much as $100 billion of capital spending is needed to develop 20 GW of offshore wind on the East Coast.

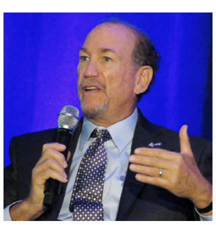
"While I can see why some people would be a little pessimistic about where we are with respect to the latest U.N. report, there really is an enormous amount of stuff that is very positive and very constructive that is happening. The money is here; it's available. And I think the challenge is to create a set of policies and market structures that enable that market structure to be deployed," Krapels said.

### Transmission's Role

Among the policy challenges, Krapels said, are how the offshore transmission infrastructure is developed and the role of energy storage. (See *Anbaric Pushes Offshore Grid Plans*.)

"Every transmission line should look at … the role that storage can play in increasing the capacity factor of renewable resources. I think the RTOs are very open to this idea. There is a lot to be done because they're reactive organizations. They need to have developers put forward innovative new ideas."

Gregory Wetstone, CEO of the American Council on Renewable Energy (ACORE), said renewable generation will never reach its potential without the ability to site transmission in areas like New England. "We need to be able to have transmission to renewable resource areas and so we've got to get beyond the NIMBY issues," he said.



Gregory Wetstone, American Council on Renewable Energy | *© RTO Insider*

Wetstone called the lack of carbon pricing "the biggest externality in the history of economics."

"If you care about these issues, vote," he told the audience.

Matthew Nicholls, GE Distributed Energy Solutions | *© RTO Insider*

Matthew Nicholls, managing director of distributed energy solutions for General Electric, said his optimism comes from his prior career as a semiconductor engineer, where — per Moore's law — computers' processing power doubled about every two years. "Everybody lowered their heads, worked with partners, worked with capital and made it happen, year after year," he said. "We see a similar type of transformation happening in the energy industry now."

Researchers haven't been as successful in cracking challenges such as carbon capture, despite billions in investments. But Rolf Nordstrom, CEO of the Great Plains Institute, said he was optimistic about the success of the "carbon capture coalition," which won a federal tax credit for the technology in February. "We had the most liberal and the most conservative members of Congress voting for that — which probably deserves the Nobel Prize," he joked.

Rolf Nordstrom, Great Plains Institute | *© RTO Insider*

### Transforming Transportation and Heating

Patrick Woodcock, Massachusetts Exec. Office of Energy and Environmental Affairs | *© RTO Insider*

Patrick Woodcock, Massachusetts' assistant energy secretary, noted that the rise of natural gas and renewable generation has reduced U.S. power sector emissions below that of the transportation sector.

In contrast to the "unprecedented transition" in the electric sector, there has been only "incremental progress in transportation," he said. "I see components of that disruption occurring in transportation. We have those fundamentals of cost curves coming down in batteries; disruptive companies receiving billions of dollars in investment to be at the vanguard of a new transportation system."

Carol Grant, Rhode Island's commissioner of energy resources, said progress also has been slower in converting the heating of buildings.

Carol Grant, Rhode Island Office of Energy Resources | *© RTO Insider*

"We really have to work on transportation and on heating. Those are two areas that we have not made the same kind of progress in. … This is hugely important in heavy transport, in marine transport, in air transport. It's not just about all of us getting electric vehicles."

Jed Dorsheimer, managing director for financial services firm Cannaccord Genuity, also sees transportation as ripe for disruption, noting that personal vehicles sit unused about 95% of the time.

Jed Dorsheimer, Cannaccord Genuity | *© RTO Insider*

"Greed always trumps green," he said. "I do believe most decisions — while we like to take an altruistic view of things — the economics play a heavy role. I do think this area is ripe for economics to drive decisions to change the transport industry."

### Cities and Universities

In addition to states, cities and universities are also providing climate leadership, speakers said.

Mayor Jon F. Mitchell, City of New Bedford | *© RTO Insider*

Jon F. Mitchell, mayor of New Bedford, Mass., and head of the United States Conference of Mayors' Energy Committee, boasted his city of 100,000 has the largest EV fleet of any city in the state, with 30% of its vehicles electrified. The city also has won recognition for its high per capita municipal solar capacity. The largest fishing port on the East Coast, New Bedford also is hoping to become a hub of the offshore wind industry.

Mitchell said the city's efforts were motivated by climate change and cost savings "but also because, as an older industrial city, we saw that it's pretty good for our brand. Instead of being seen as older and gritty and sort of struggling, we're emerging as a place that's seen as progressive, forward thinking and creative. And that's what we want to be."

Rosalie Kerr, director of sustainability for

Rosalie Kerr,Dartmouth College | © *RTO Insider*

Dartmouth College, said universities can be nimbler than states and cities because renewable investments can be made with approval of just a handful of decision-makers. "There are 4,200 universities around the country. We control something like 3% of GDP. So it's not a tiny market," she said.

## Utilities 'at the Hinge'

Lance Pierce, CDP North America | © *RTO Insider*

Lance Pierce, president of CDP North America, a nonprofit that runs a global disclosure system for investors concerned with companies' environmental impacts, said utilities "sit at the hinge" of the old and new energy models. "In that regard they can be catalytic, I think, in helping make some of the changes."

Although "utilities have been spotty" in disclosing their emissions and other environmental metrics, he said, Southern Co. and Dominion Energy began providing his company with data in the last year.

Marcy Reed, National Grid | © *RTO Insider*

Marcy Reed, executive vice president of U.S. policy and social impact for National Grid, said her company no longer refers to itself as a utility. "We consider ourselves a clean energy transition company. And that is because … we deem it our obligation, and indeed our privilege, to help think through some of these challenges."

New York and the New England states have pledged to reduce carbon emissions by 80% below 1990 levels by 2050. That will require 10 million EVs in New England, with all light-duty sales to be EVs by 2030, Reed said. "That just calls for a massive shift," she acknowledged. "People think it can't happen. Well actually it can. That's a decade from now."

## Reality Check for Big Oil

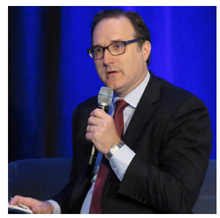
BP, which dropped its "beyond petroleum" marketing slogan several years ago following losing bets on solar power manufacturing, is seeking to get back into the sustainability game, said David Gilmour, vice president of business development.

Gilmour said the company's sustainability

David Gilmour, BP | © *RTO Insider*

goals and investments in the [Oil and Gas Climate Initiative](#) were prompted by customers' demand for more environmentally friendly products and the company's need to attract new talent. "I think we really do need to be inspiring our workforce to be working for a company that actually works for real positive benefits for society. … For BP to be around in 100 years, we need to be part of the energy transition. … Given that most of these technologies are highly disruptive to our existing business, we want to be part of and actually shape the future through the work we do."

## Enough Money?

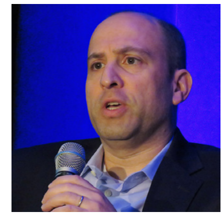


Jarett Carson, Enertech | © *RTO Insider*

Jarett Carson, managing director of venture firm EnerTech Capital, said although U.S. venture capital investments are likely to set a record of more than $100 billion this year, investments in clean technology and energy will be below $6 billion, down from $7.5 billion in 2011. "That seems to be a direct dichotomy with the challenge issued by the IPCC, talking about the $2.4 trillion being needed to be invested almost every year," he said.

But Daniel Goldman, co-founder and managing director of Clean Energy Venture Management, another VC firm, said a lot of investments before 2011 were in very capital-intensive technologies. "Today we're involved in companies that aren't capital intensive. Our fund will only invest in a company where you

Daniel Goldman, Clean Energy Ventures | © *RTO Insider*



Adam E. Bergman, Wells Fargo | © *RTO Insider*

don't need more than $30 [million] or $40 million to get to cash flow break even and have a product that can scale."

Adam E. Bergman, Wells Fargo's senior vice president for clean tech banking, also was less troubled by the availability of capital, citing the increasing involvement of corporate venture funds and "family office" investors, who tend to have longer time horizons and lower hurdle rates than Silicon Valley VC funds. He also noted that many of the big technology bets of the past, such as solar and wind, have reached maturity.

Emily Reichert, Greentown Labs | © *RTO Insider*

Emily Reichert, CEO of Greentown Labs, which claims to be the largest clean tech startup incubator in the U.S., said there are also more strategic investors now, such as BP, that can provide expertise to help new companies grow. "Ten years ago, there was definitely a green bubble. There were a lot of people that were investing in clean technology that perhaps didn't necessarily have the knowledge or information they needed. They were not experts in energy," she said. "I think it's a lot more positive now." ■

Attendees at Horizon 18 in Boston | © *RTO Insider*