RTO Insider

Your Eyes and Ears on the Organized Electric Markets

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

ISSN 2377-8016 : Volume 2019/Issue 16 April 16, 2019

BUSINESS NETWORK FOR OFFSHORE WIND INTERNATIONAL PARTNERING FORUM

Europe Sees Dollar Signs in East Coast Waters

By Rich Heidorn Jr.

NEW YORK — With 30 MW installed, the U.S. has barely dipped its toes into offshore wind. Europe, which has been harvesting its ocean breezes since the 1990s, has 18 GW.

But based on the Scandinavian, German and British accents at the Grand Hyatt New York last week, a lot of people in the European OSW industry believe the waters off New England and the Mid-Atlantic states are the next big thing.

More than 1,100 attendees crammed into the Hyatt's ballroom next to Grand Central Station for the Business Network for Offshore Wind's 2019 International Partnering Forum — double last year's attendance, according to the group's CEO, Liz Burdock.

Liz Burdock | *© RTO Insider*

The excitement is largely based on pledges by New York and Maryland since January that have boosted the East Coast's planned OSW pipeline to almost 18 GW from 10 GW in 2018.

"In our view, the Northeast U.S. is the most attractive opportunity for the expansion of offshore wind outside of Europe," said Sunny Gupta, head of new market development for

Continued on page 3

OSW Industry Urges Cooperation as States Covet Jobs (p.4)

Longer Tx Planning Horizon Seen for OSW (p.7)

AWEA: Another Record-breaking Year for Wind Industry (p.10)

FERC Rejects *RTO Insider* Bid to Open NEPOOL

Glick Calls Closed Meetings 'Misguided'

By Rich Heidorn Jr.

FERC on Wednesday rejected *RTO Insider*'s bid to force the New England Power Pool to open its meetings to the public and press, saying it lacked authority to act (*EL18-196*).

New England is the only one of the seven U.S. regions served by RTOs or ISOs where the press and public are prohibited from attending stakeholder meetings.

RTO Insider's complaint under Federal Power Act Section 206 asked the commission to terminate NEPOOL's role as the stakeholder body for ISO-NE or order it to adopt an open stakeholder process like those used by others. The publication filed the complaint in August in response to NEPOOL's request to bar members of the press from joining the organization.

NEPOOL asked FERC permission to amend its rules after *RTO Insider* reporter Michael Kuser,

Continued on page 19

Calif. Must Limit Wildfire Liability, Governor Says

By Hudson Sangree

SACRAMENTO, Calif. — Gov. Gavin Newsom's "strike force" on utilities and wildfires Friday called for the state to limit the liability that utilities face when their equipment sparks destructive blazes, while reforming the Public Utilities Commission and holding Pacific Gas and Electric accountable for its repeated safety failures.

Gov. Gavin Newsom released his "strike force" report on utilities and wildfires at the former Mather Air Force Base on Friday. | *Calif. Governor's Office*

The task force's 59-page report details a strategy to ensure that the state's utilities "are securing our grid, hardening their resources, participating in a procurement strategy that can meet our long-term climate goals and … deliver affordable, reliable service to millions and millions of Californians," the governor said at a press conference at the state Office of Emergency Services' operations center.

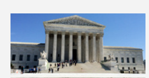
It recommends ways to prevent the type of catastrophic fires that have killed 139 residents, destroyed tens of thousands of structures, and burned 2.8 million acres since 2017. The report says equipment owned by

Continued on page 13

Former FERC Commissioner Brownell Named PG&E Chair (p.12)

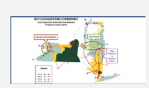
Judge Puts off Decision in PG&E v. FERC (p.15)

Also in this issue:

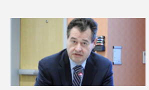


Supreme Court Won't Hear ZEC Challenges (p.9)

Most MISO Zones Clear at $3/MW-day in 2019/20 PRA (p.21)



NYISO Board Selects 2 AC Public Policy Tx Projects (p.26)



PJM to Hold Capacity Auction in August (p.31)

RTO Insider

CAISO ERCOT ISO-NE MISO NYISO PJM SPP

In this week's issue

Business Network for Offshore Wind International Partnering Forum

Europe Sees Dollar Signs in East Coast Waters 1
OSW Industry Urges Cooperation as States Covet Jobs 4
Longer Tx Planning Horizon Seen for OSW 7

FERC/Federal

Supreme Court Won't Hear ZEC Challenges 9
AWEA: Another Record-breaking Year for Wind Industry 10

CAISO/WECC

Calif. Must Limit Wildfire Liability, Governor Says 1
Former FERC Commissioner Brownell Named PG&E Chair 12
Judge Puts off Decision in PG&E v. FERC 15

ERCOT

ERCOT Board of Directors Briefs 16
Oncor-Sharyland-Sempra Deals Inch Toward Approval 18

ISO-NE

FERC Rejects *RTO Insider* Bid to Open NEPOOL 1

MISO

Most MISO Zones Clear at $3/MW-day in 2019/20 PRA 21
New MISO Report Starting Point for Major Grid Change 22
MISO Gives Tentative Nod to Seasonal Capacity Design 24
MISO Signals Readiness for DER Stakeholder Process 25

NYISO

NYISO Board Selects 2 AC Public Policy Tx Projects 26
NYISO Seeks to Refine Carbon Price Equation 27
NYISO Draft Gold Book Shows EVs Driving Load Growth 29

PJM

PJM to Hold Capacity Auction in August 31
PJM Operating Committee Briefs 32
PJM MIC Briefs 33
Nuke Talks Continue in Pa. Assembly 35
PJM PC/TEAC Briefs 36

Briefs

Company Briefs 38
Federal Briefs 38
State Briefs 39

BUSINESS NETWORK FOR OFFSHORE WIND INTERNATIONAL PARTNERING FORUM

Europe Sees Dollar Signs in East Coast Waters

Continued from page 1

Sunny Gupta | *© RTO Insider*

Danish-owned Ørsted U.S. Offshore Wind.

Gupta recalled that at his first meeting with the fledgling business network about eight years ago, no more than 40 or 50 people were in attendance. "Here we are today with IPF 2019 — four years straight sold out — in a big fancy hotel in midtown Manhattan," he marveled. "Not many people get to say they helped create an industry, so this is indeed a very unique moment in all of our lives."

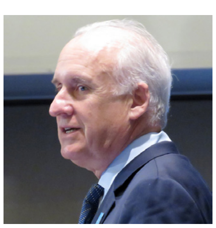
Thomas Brostrøm | © *RTO Insider*

"It feels good to say it's no longer a question of when offshore wind will ever come to the U.S.," agreed Gupta's boss, Ørsted U.S. Offshore Wind CEO Thomas Brostrøm. "Because now it is here, and I think the question is more: How much potential do we actually see? How big can this industry become?"

Eric Thumma | *© RTO Insider*

Eric Thumma, director of policy and regulatory affairs for Avangrid Renewables, said the IPF conference reminded him of his introduction to land-based wind power in Los Angeles in 2007. The U.S. has since grown from less than 17 GW to more than 96 GW of land-based wind, he noted. (See *AWEA: Another Record-Breaking Year for Wind Industry*.)

New York Gov. Andrew Cuomo jolted the market in January by proposing the state nearly quadruple its offshore wind energy goal to 9 GW by 2035. (See *New York Boosts Zero-carbon, Renewable Goals.)*



Richard Kauffman | © *RTO Insider*

Richard Kauffman, chair of the New York State Energy Research and Development Authority, said the response his agency received to its first, 800-MW solicitation for offshore wind is proof the industry is taking the U.S. market seriously. Four groups of companies entered 18 bids; NYSERDA is expected to announce the winners in about a month. (See *Four Bidders Vie for NY Offshore Wind Project.)*

"Offshore wind on the East Coast of the U.S. has gone from being a distant dream to a huge market opportunity," Kauffman said.

Phil Murphy | *© RTO Insider*

New Jersey Gov. Phil Murphy said the Board of Public Utilities will announce the results of its 1,100-MW solicitation by the end of June.

"We have a lot of lost time to make up," said Murphy, a Democrat who revived the state's OSW plans after taking office in 2018. Murphy replaced Republican Gov. Chris Christie, who had not supported the initiative.

Murphy noted the state issued its OSW plan in 2010. "But for seven-and-a-half years, that plan sat on a shelf collecting dust. That was just one of many oversights by the prior administration that stymied our progress as a state."

Also adding to momentum was the Maryland legislature's April 8 approval of a bill (*SB 516*) that boosted the state's offshore wind target to 1,200 MW by 2030, up from 366 MW.

Burdock said the pressure is now on the industry to show it can execute the development plans on schedule. Some 1,800 MW is targeted to be built and operating by 2023.

"So, we are under [a] severely compressed time frame," she said. "That is one of the reasons why I stay awake at night. The one thing I worry about is supply chain capacity. Do we have enough businesses?"

Lessons from Europe

How much the U.S. could, or should, take from Europe's experience was a recurring theme at the conference.

The U.S. Bureau of Ocean Energy Management, which oversees OSW development in federal waters, met with counterparts from nine countries last week to share experiences and best practices. Acting BOEM Director Walter Cruickshank said it was the first of what will be an annual forum of global OSW regulators.

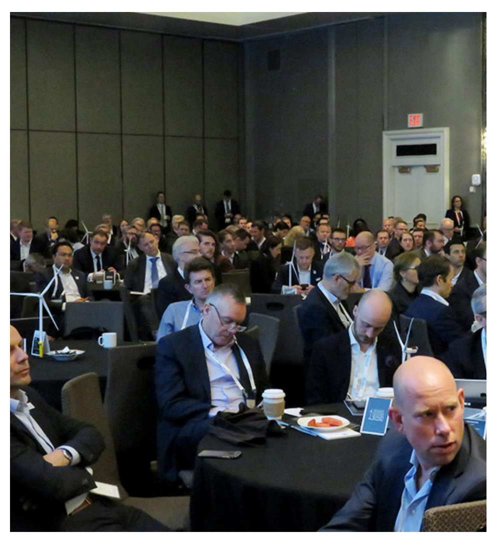
Gil Quiniones, CEO of the New York Power Authority, said the U.S. will be looking to the Europeans for guidance for the foreseeable future. While New York hopes to have 9 GW of OSW by 2035, Europe is expected to expand from its current 18 GW to 60 GW by 2027. "So, we are going to learn a lot from the Europeans as this journey happens," he said.

"The U.S. can learn a lot from the U.K. experience in particular," Gupta said. "The U.K. was not the original wind market in Europe, but it quickly became the largest player, and governments made significant investments knowing that is what it would take to attract [a] supply chain. The result of that has been an achievement of significant local content [production] in the U.K. — not only for their own projects, but now they're exporting that technology to other European countries and indeed to emerging markets."

Gupta said the takeaway is "don't do it small. And focus on what you're good at."

Still, he acknowledged some lessons won't translate. "The U.S. is very different … [from] state and federal permitting, to the way transmission works; the way the energy market works in general here, there's only so much you can draw from the European experience."

Sven Utermöhlen, a board member for E.ON Climate & Renewables, said there is no one model to follow. "I think you really have to cater it to the specific situation in terms of coastline, number of suitable connection points, number of wind farms and geographical situations." ■



More than 1,100 people attended the Business Network for Offshore Wind's 2019 International Partnering Forum, double last year's attendance. | © *RTO Insider*

BUSINESS NETWORK FOR OFFSHORE WIND INTERNATIONAL PARTNERING FORUM

OSW Industry Urges Cooperation as States Covet Jobs

By Rich Heidorn Jr.

NEW YORK — Looking for a place to assemble offshore wind farms on the East Coast?

New York officials say their 63 acres at the South Brooklyn Marine Terminal could be just the place. For about $300 million, a report for the New York State Energy Research and Development Authority says, it could demolish existing warehouses, dredge the dock area and fortify the ground to withstand loads of 6,000 pounds/square foot to dedicate the port to OSW staging and deployment.

Massachusetts officials, meanwhile, are touting New Bedford, insisting the new industry can coexist with fishermen in the most productive fishing port in the country. In October, developers *signed* a lease to use the New Bedford Marine Commerce Terminal to stage and construct turbines for the 800-MW Vineyard Wind project 15 miles south of Martha's Vineyard.

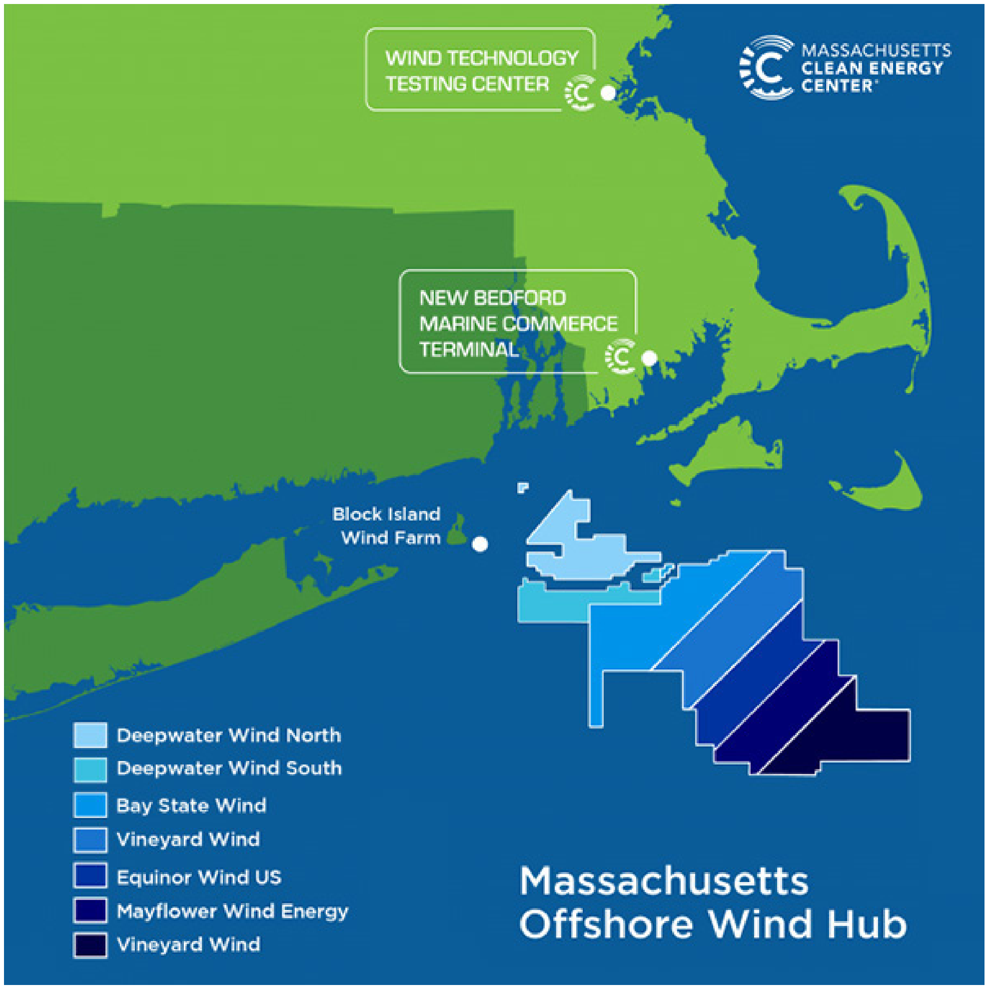
And Boston office buildings are renting space to members of the European OSW industry looking to create a headquarters for their U.S. operations.

East Coast states are now promising to fund the construction of nearly 18,000 MW of offshore wind, almost equal to Europe's current capacity. While state officials say the procurements are long-term investments intended to address climate change, they acknowledge the immediate lure is economic development. The European OSW industry employs 40,000 people.

At the Business Network for Offshore Wind's 2019 International Partnering Forum at the Grand Hyatt New York last week, the talk was all about the jobs and contracts the industry would bring. In the forum's exhibit area, state economic development agencies and labor unions manned booths alongside engineering firms and providers of everything from cranes to helicopters to drones.

Liz Burdock, CEO of the Business Network, said that while building a local supply chain will lower the cost of U.S. OSW, it is the economic development that the industry should promote in talking with other stakeholders.

"As we talk about public acceptance and getting more people willing to support our industry, I don't think it is really about what is the lowest cost of energy. It has to be about what is the job creation. And maybe we are going to have to pay a little bit more," she said. "I think that's something that we need to start saying."



Massachusetts Offshore Wind Hub | *Mass. Clean Energy Center*

Jason Folsom | © *RTO Insider*

"We have every intention to be here locally," said Jason Folsom, director of U.S. sales for MHI Vestas Offshore Wind, a joint venture between Mitsubishi Heavy Industries and turbine maker Vestas Wind Systems based in Denmark. "We do not want to run our new market businesses from Europe. We're here to build stuff."

Cooperation vs. Competition

Numerous speakers at the conference questioned whether states can cooperate to nurture the fledgling industry even as they compete to promote their ports as potential manufacturing hubs. Several urged states to stagger their procurements to create steady, predictable demand.

"The supply chain in the U.K. was really dependent on having consistent procurements happening," said Eric Thumma, director of policy and regulatory affairs for Avangrid Renewables. "When they had an on-again, off-again nature of the procurements, that made it very difficult to get supply chain folks to be confident enough to invest. So, one of the challenges in the U.S. is how do you get the states to collaborate on sort of a comprehensive offshore policy?"

NYSERDA Chairman Richard Kauffman said the states are cooperating through the *National Offshore Wind Research & Development Consortium*, which the agency started last year with funding from the U.S. Department of Energy. Other participants include the National Renewable Energy Laboratory, Brookhaven National Laboratory, developers, and the states of Maryland, Massachusetts and Virginia.

BUSINESS NETWORK FOR OFFSHORE WIND INTERNATIONAL PARTNERING FORUM

South Brooklyn Marine Terminal | *New York City Economic Development Corp.*

"We frankly never realized the power of friendly competition that we started through this collaboration," Kauffman said. "All Eastern states with water can benefit from scale."

Alicia Barton | © *RTO Insider*

NYSERDA CEO Alicia Barton was asked by an audience member during one panel discussion at the IPF whether New York would invest in assets outside the state if it can't build a manufacturing hub in any of its ports.

"We get that question a lot," she acknowledged, without definitively answering it. "I work for the people of New York, and I am, along with Gov. [Andrew] Cuomo, committed to making New York the center for the U.S. offshore wind industry. We're not shy about that.

"On the other hand, we are quite realistic. … We want 9,000 MW of offshore wind. That makes us a very large buyer of offshore wind, locally speaking. … It is without a doubt in our interests to see the U.S. supply chain mature [and] develop as fast as possible to see the U.S. industry scale as fast as possible so that as a large buyer, we will get the best deal possible."

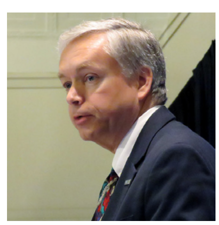
Tim Sullivan | © *RTO Insider*

Tim Sullivan, CEO of the New Jersey Economic Development Authority, said he's realistic. "We'd love to have those 40,000 [jobs] in New Jersey, but it's going to be a regional thing," he said.

Sullivan said states will need to work with community colleges and labor unions to develop the workforce needed to ensure the supply chain is developed locally. "Cobbling together wind, offshore wind and oil and gas [resources] from the European supply chain … would be a really unfortunate outcome," he said. "That would be a terrible outcome for New Jersey … for the Northeast, because this is a once-in-a-generation opportunity."

Sullivan said officials overseeing port development for OSW also need to balance short- and long-term considerations.

"There will be an impulse to overly design the infrastructure and the supply chain to [accommodate] the first set of projects that are moving forward as opposed to designing for an industry," he said. "We want a network of ports that is somewhat project-agnostic, that is somewhat developer-agnostic, so it can have multiple users over the next 45 to 50 years."



Walter Cruickshank | © *RTO Insider*

Walter Cruickshank, acting director of the U.S. Bureau of Ocean Energy Management, which awards leases and oversees OSW projects in federal waters, said his agency is doing its part to ensure the industry's growth by developing "an efficient and predictable regulatory process."

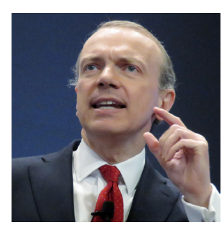
BOEM has issued 15 leases totaling more than 1.7 million acres at a cost of almost $477 million since 2012. The lease price per acre — which had been as low as $39 in 2013 — topped $1,000 in three auctions off Massachusetts last year.

Cruickshank said OSW projects will be subject to President Trump's "*one federal decision*" executive order, which requires all federal agencies to coordinate their reviews of major infrastructure projects in a single proceeding and to issue rulings within two years.

BOEM also is taking a regional approach to its evaluation of some potential new wind energy areas (WEAs), he said.

Rather than focus on the small section of the ocean off New Hampshire's narrow 18.5-mile coast, he said, "We see value in looking at the Gulf of Maine as a whole, and pulling in the states of Maine and Massachusetts to look … at the effect of sharing natural, socioeconomic and cultural resources to plan how we might proceed in that area."

BOEM also is combining the planning processes for the Carolinas, with plans to identify a WEA there later this year.



Giles Dickson | © *RTO Insider*

Giles Dickson, CEO of WindEurope, a trade group representing the European wind industry, said success for the U.S. OSW industry will require "happy coexistence" with the military as well as the fishing and shipping industries.

NYSERDA was cognizant of those stakeholders when it issued a solicitation for the state's first, 800-MW OSW procurement, Barton said. The agency is expected to announce the winners next month. (See *Four Bidders Vie for NY*

BUSINESS NETWORK FOR OFFSHORE WIND INTERNATIONAL PARTNERING FORUM

Offshore Wind Project.)

"We made clear … that we wanted to see great projects," Barton said. "That we wanted to see strong economic development commitments, that we wanted to see commitments to labor … we wanted to see fishery mitigation plans."

100% Clean

The Atlantic states' OSW targets are central to their efforts to reduce carbon emissions and address climate change.

In January, for example, Cuomo announced New York was nearly quadrupling its offshore wind energy goal to 9 GW as part of its plan to reach "100% clean power" by 2040. (See *New York Boosts Zero-carbon, Renewable Goals*.)

New Jersey, California, Hawaii, New Mexico, Puerto Rico and more than 100 cities across the country have also pledged to move to 100% renewable or "clean" energy, as have more than 150 companies, from Adobe to Walmart.

While the 100% goal has no shortage of critics who question its feasibility, those who support it say OSW will be a big part of the resulting generation mix. A recent Stanford *study* projected a 19% share for offshore wind, with onshore wind and utility-scale PV at 31% each.

"It's very ambitious, but we do believe it's actually achievable," Barton said of Cuomo's goal.

"To achieve that target, offshore wind has to be a huge piece of the puzzle," she added, noting that the 9,000 MW of OSW would represent 30% of the state's load.

Barton said the 100% pledges by Cuomo and other governors reset "the conversation about what's possible. Even a year or two, three years ago, we would not be talking about California, New York [and] New Jersey — major economies in the U.S. — committing to a 100% clean electricity. It's been a radical mind shift. It's clear we don't have a lot of time … to do what we know needs to be done to combat climate [change]."

Marie Hindhede | *© RTO Insider*

Marie Hindhede, deputy permanent secretary for the Danish Ministry of Energy, Utilities and Climate, said higher penetration by renewables doesn't mean less reliability, noting her country had 99.99% "security of supply" despite getting *three-quarters* of its power from wind, solar and biomass.

To reach the 100% goal, she said, Denmark needs an active demand-side response and more transmission to sell power across national boundaries. Hindhede said power trading with other countries has been key to balancing intermittent generation thus far but that electric storage will likely be part of the solution in the future.

Steve Dayney | *© RTO Insider*

Steve Dayney, head of North American offshore operations for Siemens Gamesa Renewable Energy, said reaching 100% is "not really an issue of technology. It's an issue of, do we have the will to do it? It's an issue of how fast new technologies can emerge and how quickly can we industrialize it to make it cost-competitive."

Ditlev Engel | *© RTO Insider*

Ditlev Engel, CEO of DNV GL, which provides risk management and quality assurance services to OSW and other maritime energy industries, said one key to winning political support for 100% policies is to include the health-related costs of climate change and air pollution in the discussion.

"Everybody talks about the cost of electricity per megawatt or per kilowatt-hour. But what about the costs to society? Are we using the right rulers for how we set the systems up?" he asked. ■

State	OSW Target (MW)	Acres Leased (000)	Lease Payments ($ millions)
New York	9,000	79.35	$42.47
New Jersey	3,500	343.83	$1.89
Massachusetts	3,200	742.98	$405.45
Maryland	1,200	79.71	$8.70
Rhode Island	600	-	-
Connecticut	250	-	-
Maine	12	-	-
Virginia	12	112.80	$1.60
Delaware	-	96.43	NA
New Hampshire	-	-	-
North Carolina	-	122.41	$9.07
South Carolina	-	-	-
RI/MA	NA	164.75	$7.68
TOTAL	**17,774**	**1,742.25**	**$476.85**

The U.S. Bureau of Ocean Energy Management has issued 15 offshore wind leases totaling more than 1.7 million acres at a cost of almost $477 million since 2012. The lease price per acre — which had been as low as $39 in 2013 — topped $1,000 in three auctions off Massachusetts last year. | *Business Network for Offshore Wind*

BUSINESS NETWORK FOR OFFSHORE WIND INTERNATIONAL PARTNERING FORUM

Longer Tx Planning Horizon Seen for OSW

By Rich Heidorn Jr.

NEW YORK — U.S. grid operators may have to consider a different way of transmission planning for offshore wind, panelists told the Business Network for Offshore Wind's 2019 International Partnering Forum last week.

Speakers said interconnections to the land-based grid should be shared "social" resources and that queue positions shouldn't be a deciding factor in states' OSW solicitations.

Christer af Geijerstam | © *RTO Insider*

Christer af Geijerstam, president of Equinor Wind US, said locating offshore cables is not a concern. "But if you are targeting substations that are 20 miles inland, how many times do you want to go dig up that same road for future projects? Should we pre-invest in capacity?"

Sven Utermöhlen, board member for E.ON Climate & Renewables, agreed that a long time horizon is essential to OSW transmission planning.

Sven Utermöhlen | © *RTO Insider*

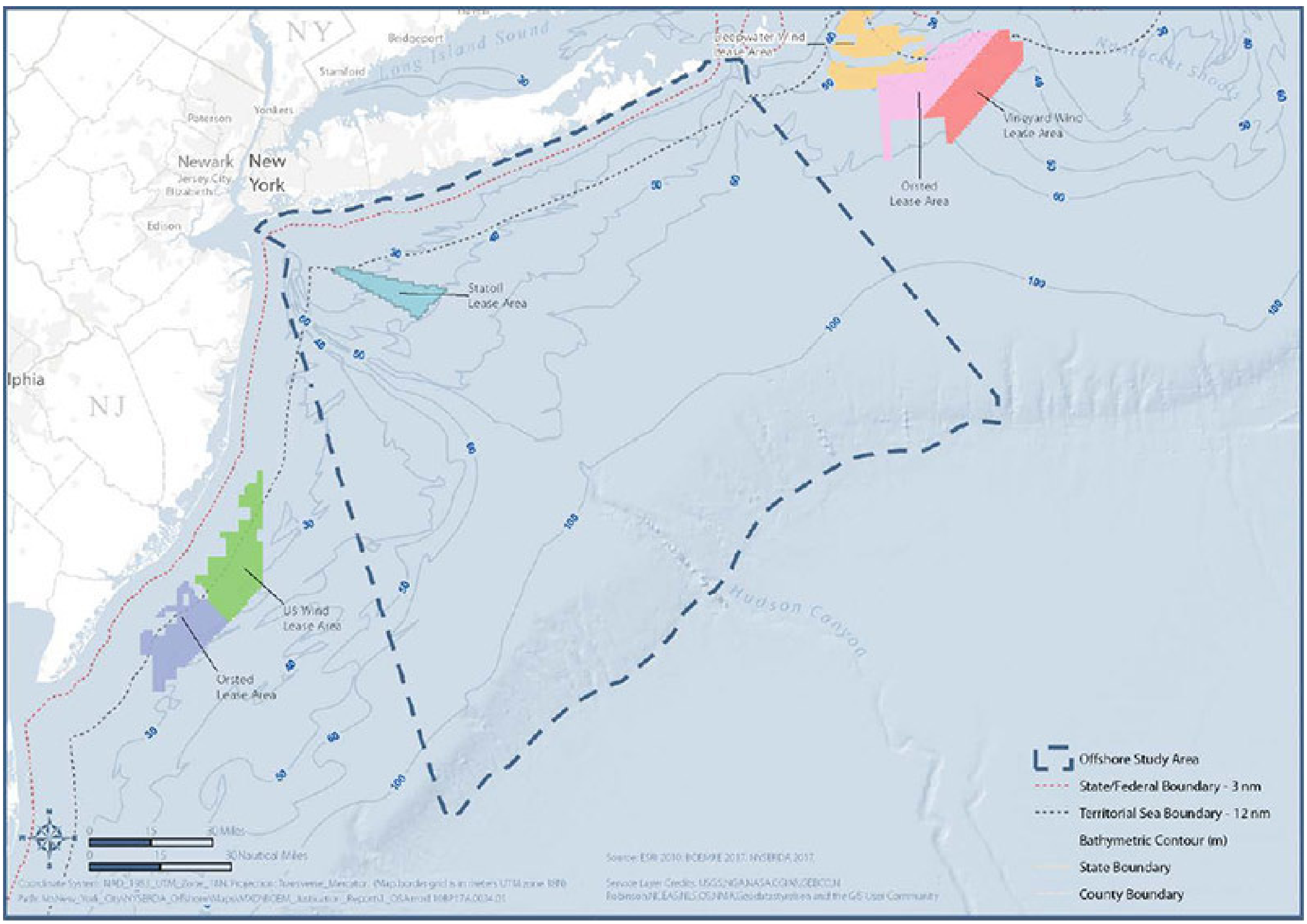
"If you think about 15 to 20 individual projects in the next decade or so to be constructed, you may find that there is only a handful of really suitable, sensible grid connection points … you better have a plan in place because you don't want to dig up the same onshore connection route five times over the next 15 years."

Repeated construction could undermine public support and complicate permitting, he said. "So, you better start thinking about a real network development plan."

Clarke Bruno, lead partner for Anbaric Development Partners, said New York will have to expand its onshore grid to move its planned 9,000 MW of offshore wind from delivery points on Long Island and in New York City.

Clarke Bruno | © *RTO Insider*

"Long Island [is] about a 2,400-MW load. Taking half of that 9,000 MW and trying to drop 4,500 MW into a 2,400-MW system is going to be a challenge. The same is true in New York City [with] a much larger average load of 6,400 [MW].



Existing BOEM lease areas capable of supplying offshore wind to New York state | *New York State Offshore Wind Master Plan*

BUSINESS NETWORK FOR OFFSHORE WIND INTERNATIONAL PARTNERING FORUM

"There are very few interconnection points in Long Island and New York that have the degree of robustness that you would like to have. And … getting from offshore to those interconnection points, you have very few good routes, given the congestion on Long Island and the wetlands and, in New York City, the bottleneck of the Verrazano Narrows. So, with those challenges in mind, it strikes me that a planned transmission system is essential."

The state must "plan and permit the offshore wind so that we are able to … seize the optimal interconnection points and allow equal access to all developers to those very scarce social resources."

Gil Quiniones | © *RTO Insider*

Gil Quiniones, CEO of the New York Power Authority, agreed with Bruno's description of the challenges.

"Long Island, especially on the East End … we [say] 'the wires are thinner.' And New York City is very dense and [does not have] a lot of very easily accessible connection points. … Logic tells you that there is maybe an opportunity to have a collector system … and bring it to the optimal interconnection point. It does require planning. It requires all the regulatory bodies — state and federal — to be aligned in making that happen."

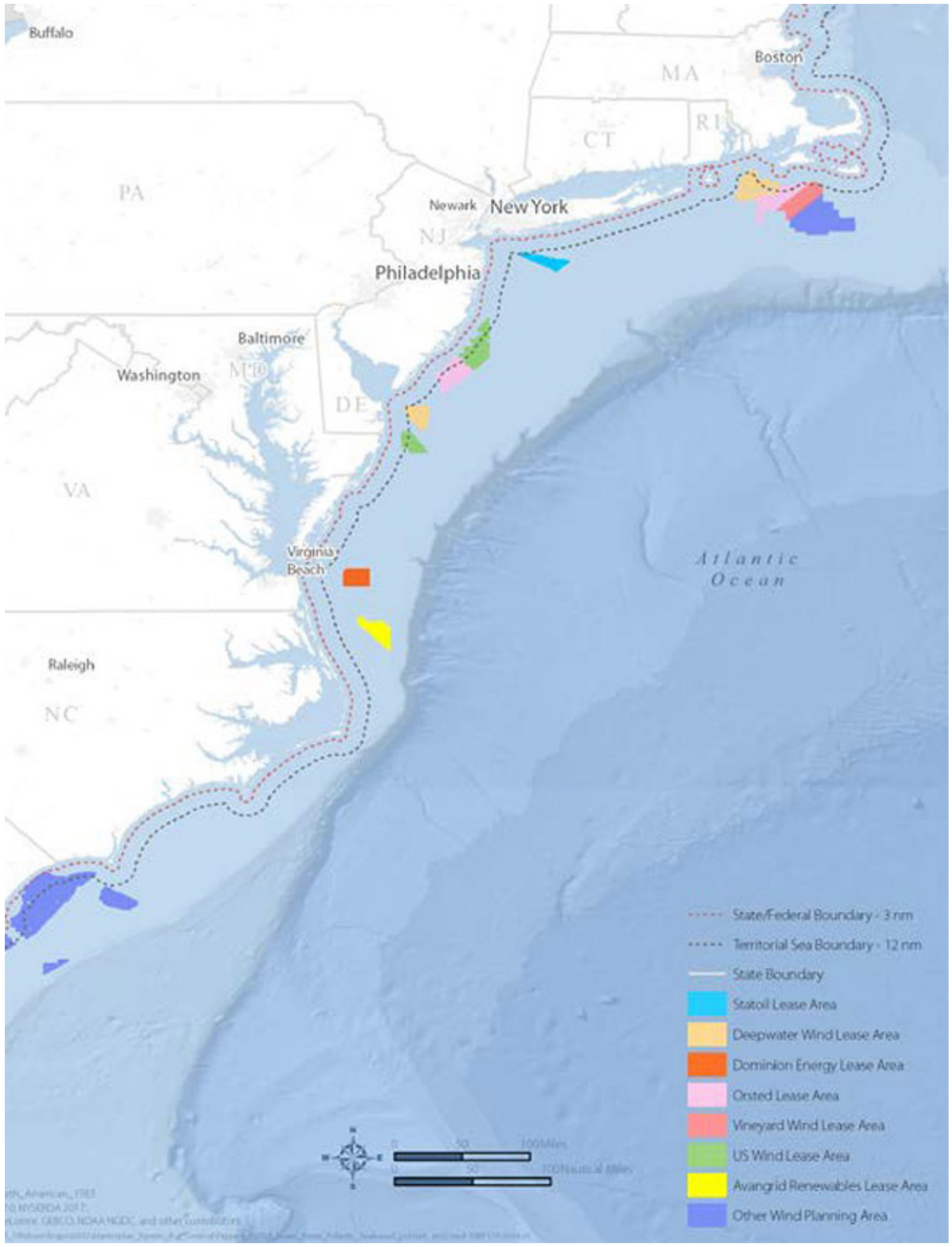
State officials and grid operators have only begun to consider the transmission challenges of offshore wind.

The New York State Energy Research and Development Authority's OSW *Master Plan*, published in January 2018, said an expandable "backbone" transmission system would offer economies of scale and reduced barriers to entry but could also lead to overbuilding and stranded asset costs. A transmission system custom-built for a single offshore facility — the "direct radial" model — would be less efficient and is limited in scope, the report said. (See *NY Offshore Wind Plan Faces Tx Challenge*.)

Proposed offshore wind projects in Connecticut (1,760 MW), Rhode Island (1,056 MW) and Massachusetts (6,064 MW) represent almost half of the 18,600 MW in ISO-NE's transmission queue, Alan McBride, the RTO's director of transmission and strategy services, told the IPF conference in a *presentation*.

PJM Begins Talks on OSW Tx Rules

In February, PJM's Planning Committee approved a problem statement to consider granting merchant transmission developers capacity interconnection rights (CIRs) for offshore wind. (See "PC Moves Forward on Offshore Interconnection Rights," *PC/TEAC Briefs: Feb. 7, 2019*.)



Existing BOEM East Coast offshore wind lease areas | *New York State Offshore Wind Master Plan*

Current rules allow merchant transmission developers to obtain transmission injection and withdrawal rights for DC facilities or controllable AC facilities connected to a control area outside the RTO. Under the problem statement, stakeholders will consider allowing merchant transmission developers to request CIRs, or equivalents, for non-controllable AC transmission offshore.

Offshore transmission developers want to acquire CIRs so PJM can identify the necessary network upgrades.

The key difference from the normal procedure is that the developers want to build transmission before the generation is sited. Without generation at the other end of the line, PJM cannot perform stability or short-circuit analyses.

The first meeting of the *initiative*, on April 16, will consist of education about the RTO's current process. Three months of exploration into alternative options are planned before members will return to the PC in August to consider endorsement of proposed changes. ■

FERC & Federal News

Supreme Court Won't Hear ZEC Challenges

By Rich Heidorn Jr.

The U.S. Supreme Court on Monday declined to hear challenges to Illinois' and New York's zero-emission credit payments to nuclear plants.

The court *denied* the Electric Power Supply Association's petitions for certiorari without comment. The decision left standing last September's rulings by the 2nd and 7th U.S. Circuit Courts of Appeals that rejected claims that New York's and Illinois' ZECs intrude on FERC jurisdiction (18-868 Electric Power Supply Assn. v. Star, Anthony M., et al.; 18-879 Electric Power Supply Assn. v. Rhodes, John B., et al.).

EPSA had been joined by NRG Energy and Calpine in its challenges. The challengers also won support from PJM's Independent Market Monitor and others, who said lower courts have misinterpreted precedent on federal jurisdiction. (See *Courts Misread Hughes on Nuke Subsidies, Supreme Court Told*.)

The court's unsurprising decision — it hears only a small percentage of the cases on which it is petitioned — was a victory for Exelon, the nation's largest nuclear operator. The company is currently lobbying for nuclear subsidies in Pennsylvania. (See related story, *Nuke Talks Continue in Pa. Assembly*.)

FirstEnergy also is supporting the legislative effort in Pennsylvania and a similar bill *introduced* Friday in Ohio to support its Davis-Besse and Perry plants.

New Jersey and Connecticut have also approved nuclear subsidies.

Hughes Ruling

EPSA's supporters had contended the appellate courts misinterpreted the Supreme Court's 2016 ruling in *Hughes v. Talen*, in which the court unanimously rejected Maryland's contract-for-differences with a natural gas plant.

The court provided state regulators guidance for crafting subsidy programs in the future, saying it rejected Maryland's initiative only because it was tied to PJM capacity prices. Monitoring Analytics, PJM's Monitor, contended that legislators could easily avoid the "explicit tether" the court rejected in *Hughes*.

ClearView Energy Partners said the court's refusal to hear the New York and Illinois challenges "may cement the 'fatal defect'" in *Hughes*.

"In other words, the Supreme Court has not changed its stance that [states] have legal authority to favor certain resources so long as their programs do not require those resources to participate in wholesale electricity markets (even if, as a practical matter, those resources do participate in the markets)," ClearView said.

"Today's decision likely leaves ZEC opponents looking to the market operators to propose tariff reforms that FERC can approve as the source for relief," ClearView continued, referring to efforts to ISO-NE's implementation of a minimum offer price rule (MOPR) for subsidized resources and FERC's June 2018 order requiring PJM to strengthen its MOPR to address nuclear and renewable subsidies. (See *FERC Orders PJM Capacity Market Revamp*.)

EPSA Seeks FERC Action

EPSA CEO John Shelk said FERC — which had argued against EPSA's claim for federal pre-emption of the Illinois law — should now act to protect wholesale market prices from being distorted by nuclear subsidies.

"Even though … FERC determined state nuclear subsides and others impair the integrity of PJM's wholesale market, FERC has yet to fashion a solution. That is hardly what FERC told the court it would do to protect markets," Shelk said in a statement.

"The problem has only gotten worse since the June 29, 2018, order, with emboldened nuclear subsidy seekers now pounding on the doors of state legislatures in Ohio, Pennsylvania and again in Illinois for a *second helping*. FERC told the appeals court the solution lies with FERC; the time for FERC to live up to that promise is now."

The Electricity Consumers Resource Council (ELCON), which represents industrial customers, said it was disappointed in the ruling. "Subsidizing uneconomic power sources undercuts the competitiveness of U.S. manufacturing, which must maintain a global fuel cost advantage," CEO Devin Hartman said in a statement.

Environmental Defense Fund Senior Attorney Michael Panfil praised the ruling as "great news for all states that are working to create their best possible climate and clean energy policies."

"In case after case, our courts have confirmed that states have the fundamental legal authority to craft clean energy policies, address climate change and work to reduce unhealthy air pollution in order to safeguard the welfare and wellbeing of their people," he said. "The Supreme Court's order today puts any lingering questions to rest." ■

Supreme Court | © *RTO Insider*

FERC & Federal News

AWEA: Another Record-breaking Year for Wind Industry

By Tom Kleckner

HOUSTON — The American Wind Energy Association's annual *market report* on the wind industry, released April 9, marks off one record achievement after another.

U.S. wind capacity grew another 8% last year, helping the industry support a record 114,000 jobs, more than 500 domestic factories and more than $1 billion a year in revenue for states and communities hosting wind farms.

Tom Kiernan | © *RTO Insider*

Credit that to the 2020 wind-down of the production tax credit, AWEA CEO Tom Kiernan said.

But how does the end of tax credits help the wind industry if that means it becomes one of the few energy sources without some sort of tax support?

Kiernan said the 2015 extension of the PTC, which included a phased end of tax credits, provided the certainty the wind industry needed after years of on-again, off-again legislation in D.C. He said the "longer-term policy" was just what AWEA had been looking for, as it created an incentive for further investment in the industry and its technologies.

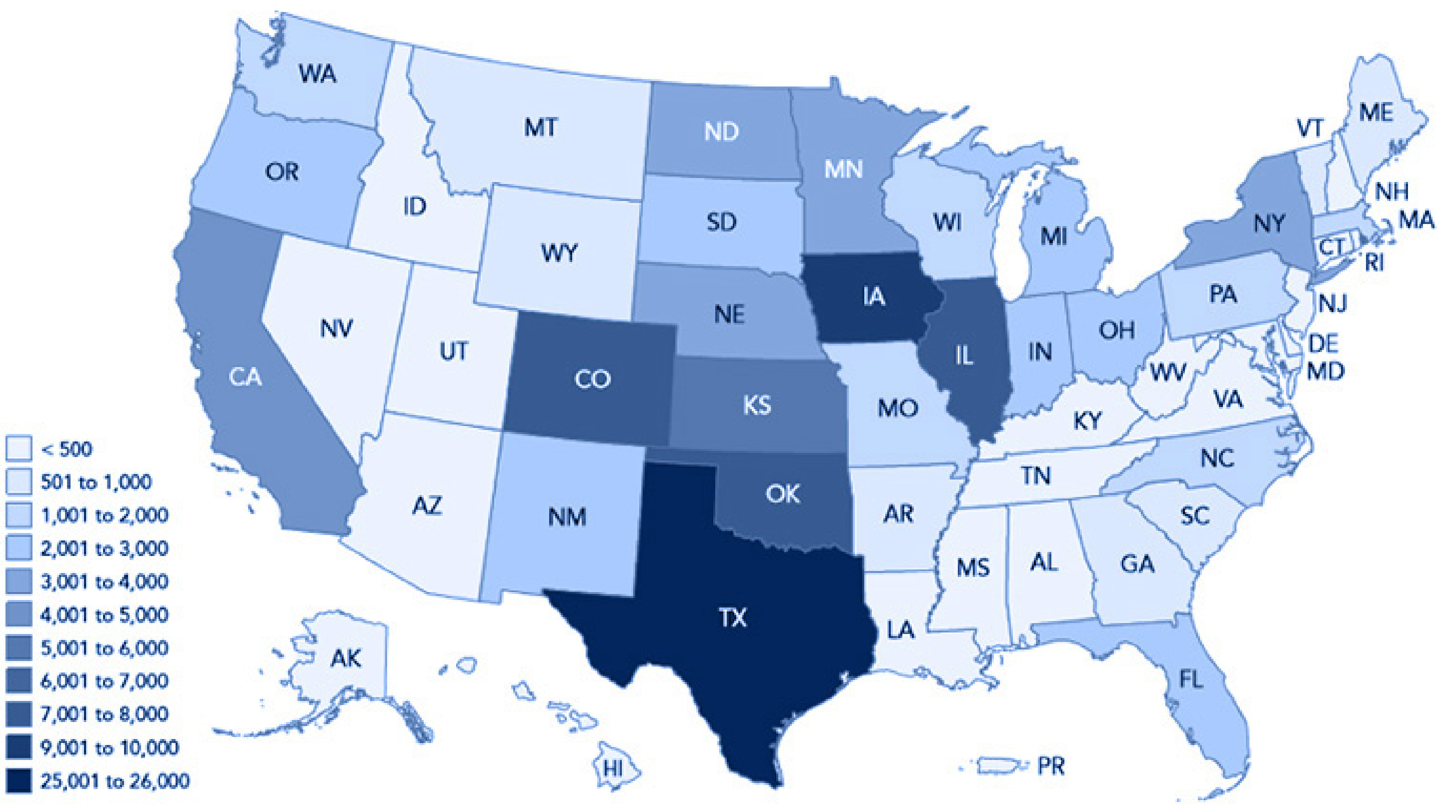
Kiernan said major turbine designers have all announced new designs, adding longer blades, newer technologies, digitization and "other factors that will continue to increase our productivity." Noting developers have added about 8 GW of wind energy each year since 2015, he said he expects the growth to continue, if not increase, over the next few years.

"Because of that long-term policy, [wind] companies have been able to make investments and keep driving down costs," Kiernan said. "After the PTCs phase off, there will probably be a softening, but because of that five-year horizon, we'll be two to three years into our next product cycle. We still think we'll be able to compete with solar, storage and gas."

AWEA projects a "record amount" of wind generation to come online in the near future. It says more than 35 GW of capacity is either under construction or in advanced development across 31 states.

'Americans Want It'

Wind energy now stands at 96.4 GW of cumulative installed capacity, more than double what it was in 2010. AWEA says the U.S. now has enough installed wind energy to power more than 30 million homes. According to the report, wind energy now "reliably delivers" more than 20% of the electricity produced in six states: Iowa, Kansas, Maine, North Dakota, Oklahoma and South Dakota.



Wind jobs by state | *AWEA*

FERC & Federal News

Kiernan attributed the growth to corporate and industrial purchases of wind energy — 11.3 GW of clean wind energy because "Americans want it" — and utility purchase agreements.

"Fifty percent of Americans are more likely to buy products from a company that purchased wind energy," Kiernan said, citing a *Yale University poll*. "Wind energy is the cheapest source of new electricity on an unsubsidized basis. Utilities are buying it because it's clean but also affordable."

To ensure the momentum continues, Kiernan said AWEA is encouraging the continued advancement of tax-abatement policies and other legislation at the state level, while asking for a focus on transmission infrastructure at the federal level.

"Our transmission grid is outdated and not built out to provide clean energy sources for the future," he said, drawing comparisons to the interstate highway system. "We're asking Congress to do a better job of permitting transmission, and we're calling on FERC to do the interregional planning."

Kiernan said transmission should be a key element in any infrastructure package Congress is working on, and it should include an element "requiring FERC to call on RTOs to do joint planning."

"[Planning] should be done the same way and at the same time in addressing joint projects," he said. "Connecting these different grids will allow more efficiency in connecting wind projects to the grid."

Success in Texas

AWEA officials chose to announce its annual market report in Texas partly because Houston will be the site of its May 20-23 *WINDPOWER Conference and Exhibition*, billed as "the Western Hemisphere's largest gathering of the people and technology driving wind power trends."

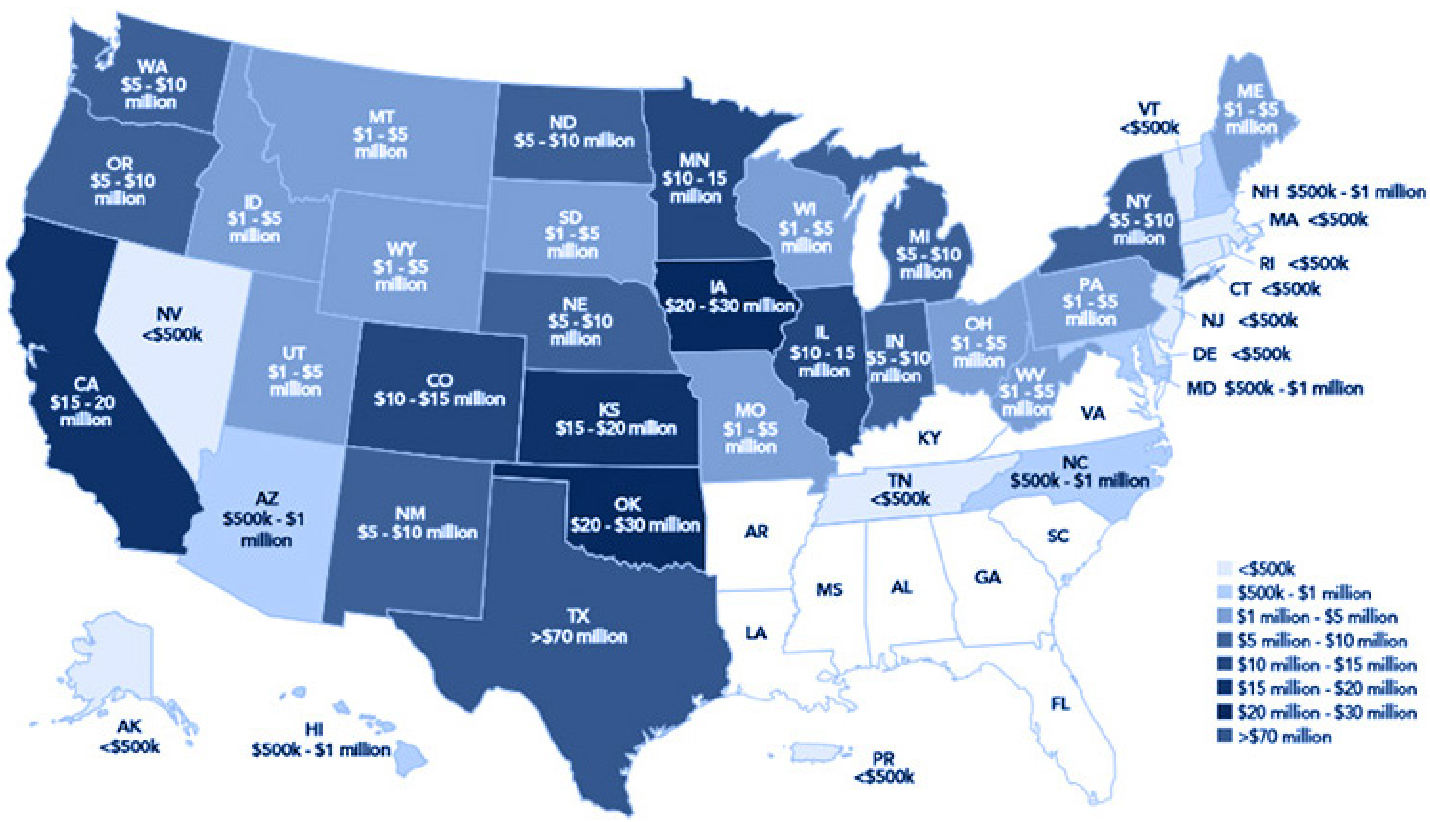
But Texas is also a "living, breathing example of what's happening nationally," Kiernan said.

AWEA says if Texas were a country, it would rank fifth globally in wind energy capacity, with nearly 25 GW of installed capacity. Texas is home to about a quarter of the nation's wind capacity, and the 7 GW of additional projects under construction or in advanced development is more wind than all but two other states have installed.

The state's Competitive Renewable Energy Zones transmission buildout, which connected West Texas wind farms with urban population centers, serves as a model of the type of legislation the organization would like to see nationwide.

"The Texas success story is very much an American success story," Kiernan said.

AWEA's 2018 market report is just the latest annual or quarterly report it provides. The report includes market rankings of major players, state-by-state details, economic and environmental impacts and assessments of power offtake, wind capacity ownership and project finance. ■



Annual lease payments by state | *AWEA*

CAISO/WECC News

Former FERC Commissioner Brownell Named PG&E Chair

By Hudson Sangree

Former FERC Commissioner Nora Mead Brownell | © *RTO Insider*

As part of its continued leadership shakeup, PG&E Corp. said Thursday that former FERC Commissioner Nora Mead Brownell would be its new board chair and that Jeffrey Bleich, a veteran lawyer and former U.S. ambassador, would chair its utility subsidiary Pacific Gas and Electric.

"We are focused on taking additional actions to bring about real and dynamic change that reinforces our commitment to safety and continuous improvement," PG&E said in a news release. "The appointments of Nora Mead Brownell and Jeffrey Bleich, two respected leaders with a deep understanding of the California and federal regulatory environments, underscore our commitment to engage with our stakeholders to address the state's evolving energy challenges."

The news came a week after PG&E announced that a "refreshed" board of 13 directors, to be approved at the next board meeting, would include Brownell, Bleich and eight other new members, along with three holdovers from the current roster. The company also said Bill Johnson, the outgoing head of the Tennessee Valley Authority, would be its new CEO starting May 1. (See *PG&E Names New CEO, Board Members*.)

The selections were a response to calls from California's political leaders and utility regulators for greater change at PG&E, which has been blamed for more than 90 deaths from a series of disasters in the past decade, including catastrophic wildfires and a gas pipeline explosion. Critics have said the company's leadership was skewed toward Wall Street and lacked safety and operations expertise.

PG&E Corp. and Pacific Gas and Electric filed for Chapter 11 bankruptcy reorganization in January, citing the potential for billions of dollars in fire liability.

Some officials, including California Gov. Gavin Newsom, said the newly announced board represents only minor improvement. BlueMountain Capital, a New York-based investment firm, has put together its own slate of candidates that includes former California state treasurer and gubernatorial candidate Phil Angelides.

Brownell helped oversee the transition of NERC to FERC oversight during her term (2001-2006). She later co-founded energy consulting firm ESPY Energy Solutions and has served on the boards of directors of National Grid and Spectra Energy Partners and the advisory board of Morgan Stanley Infrastructure Partners. She was president of the National Association of Regulatory Utility Commissioners during her time as a member of the Pennsylvania Public Utility Commission.

Bleich is a former partner at the global law firm Dentons and a leader of its diplomatic consulting group, PG&E said. He previously served as special counsel to President Barack Obama and president of the California State Bar.

Kristine Schmidt, a member of the Energy Imbalance Market Governing Body who was an aide to Brownell at FERC, was also named as a new PG&E board member. Schmidt is president of Swan Consulting Services.

Brownell did not respond to requests for comment. PG&E has said it may make its new leaders available for interviews after they are "onboarded." ■

Calif. Must Limit Wildfire Liability, Governor Says

Continued from page 1

the state's three large investor-owned utilities, including PG&E, has sparked 2,000 fires in the past four years.

Sections of the report deal with climate change, changing how the PUC oversees safety and holding PG&E accountable. But shielding the state's IOUs from wildfire liability is the top priority, Newsom said.

"The most vexing public policy challenge addressed in this report is the equitable distribution of wildfire liability," the report says. To address the issue, it proposes three potential fixes.

One is changing the state's strict liability standard, which holds utilities liable for wildfires started by their equipment regardless of negligence. The legal doctrine, called "inverse condemnation" and enshrined in the state constitution, is based on the premise that utilities have the power of eminent domain to take private property for rights of way and are therefore strictly liable for damage to that property.

Other states have inverse condemnation on the books, but none uses it as extensively as California. Critics have said the doctrine inordinately punishes utilities and puts them in financial peril. The report recommends moving to a more common fault-based standard, under which plaintiffs would be required to show wrongdoing to recover damages.

The "fair allocation of wildfire damages [is] the core of this report," Newsom said. He pointed to a chart showing a massive increase in wildfire damages in the past two years — with nearly $20 billion in 2017 and almost $25 billion in 2018.

"Who the heck's going to pay for that? Everybody wants someone else to pay. … The person behind the curtain is going to pay for that," the governor said. "I'm of the opinion … [that] we all have a burden and responsibility to assume the costs."

Newsom said it would be difficult to meet the state's ambitious green energy goals and have a reliable and affordable electric system if changes aren't made. He said last year's SB 901, which gave utilities some relief but left inverse condemnation unchanged, is "not enough."

The strike force report suggests establishing a catastrophic wildfire fund or a "utility liquidity fund" financed by investors, utilities and ratepayers to pay for damages caused by wildfires. (See *Does California Need a Catastrophic Wildfire Fund?*)

| Calif. Governor's Office

PG&E said in a statement Friday it welcomed the strike force's recommendations. The company's beleaguered stock price jumped from below $19 to almost $23/share Friday after Newsom's presentation.

Southern California Edison parent Edison International also got a boost, rising from below $62 to more than $67. Sempra Energy, parent of San Diego Gas & Electric, rose from less than $128 to almost $130.

Ratepayer advocacy groups, including The Utility Reform Network, were more circumspect in their assessment of the proposals.

"The goal of protecting consumers by making it clear that investors, taxpayers and other stakeholders must share in the costs of wildfire prevention and damage is one we are in total agreement with," TURN Executive Director Mark Toney said in a statement. But customers "obviously can't afford to bail PG&E out of billions in liabilities when it is negligent."

Reform the PUC

Reforming the PUC was another of the strike force's major recommendations.

The report recommends expanding the PUC's safety expertise and improving its ability to review wildfire mitigation plans, conduct inspections and audits, and enforce safety standards.

It urges delegating more authority to the commission's staff "so that judges and commissioners [can] focus on core questions of ratesetting." The PUC has been criticized for moving slowly and lacking a sense of urgency in addressing utility safety. PUC President Michael Picker recently told lawmakers the commission is set up to slowly process rate cases, not react quickly to emergencies. (See *Lawmakers Grill PUC on PG&E, Fires*.)

The effort is "long overdue," Newsom said.

Picker stood near the governor at Friday's press conference, in an apparent show of unity, and Newsom lauded his reform efforts.

Newsom said the report's other recommendations are contingent on changes at the PUC.

"Know that each and every one of these attaches to consideration of reforms at the Public Utilities Commission," the governor said.

Hold PG&E Accountable

Even as they urged overhauling liability standards, the report says PG&E must account for its poor safety record and past disasters.

PG&E filed for Chapter 11 bankruptcy in

CAISO/WECC News

January, a few months after its equipment was suspected of starting the Camp Fire, which killed 86 people and leveled the town of Paradise. The company said it was forced to seek bankruptcy protection because of the liability it faced for the Camp Fire and a devastating series of blazes in 2017. (See *Bankruptcy Only 'Viable' Option for PG&E, Lawyer says*.)

"PG&E is a textbook example of what happens when a utility does not invest in safety after numerous deadly reminders to do so over many years," the report says. "Even today, PG&E is taking advantage of the bankruptcy process to promote the interests of investors over fire victims and other stakeholders."

State fire investigators have determined that PG&E equipment started at least 17 of the 21 major wildfires in Northern California in October 2017. The utility remains on criminal probation for illegal conduct related to the deadly San Bruno gas pipeline explosion in 2010.

The report says the state should monitor and intervene in the utility's bankruptcy proceedings where necessary to protect California residents and "demand that a reorganized PG&E serve the public interest." Breaking up the company ought to remain an option, it says.

"After years of mismanagement and safety failures, no options can be taken off the table to reform PG&E, including municipalization of all or a portion of PG&E's operations; division of PG&E's service territories into smaller, regional markets; refocusing PG&E's operations on transmission and distribution; or reorganization of PG&E as a new company structured to meet its obligations to California," it says.

At the press conference, Newsom said, "I just want folks to know we're watching. … I expect the investors that are involved at PG&E to participate in the solutions, and I expect that PG&E's going to get serious [and] no longer misdirect, manipulate [and] mislead the people of this state.

"They haven't been good actors," the governor added. "I know this personally. I was mayor of San Francisco, where [PG&E is] headquartered. I'm not here to beat them up, but you know the state has suffered because of their neglect and their misdirection.

"Lives have been lost," he said.

Calls for Legislative Action

Newsom called on lawmakers to implement the report's recommendations.

"Let's get something big done before [the legislative] recess," which begins July 12, he said. "I'm hopeful [the legislature] can meet this moment and meet the demand to be bold and resolved."

Investor services have downgraded the credit ratings of PG&E, SCE and Sempra to junk-bond or near-junk-bond status because of wildfire liability worries, Newsom said. The legislature can help alleviate those concerns, he said.

"Let the folks on Wall Street know we're not screwing around," he said.

Newsom formed his strike force in February and asked for its members to submit recommendations in 60 days.

It was led by his chief of staff, Ann O'Leary, and included members of O'Melveny, one of the nation's largest law firms (formerly O'Melveny and Myers), and Guggenheim Partners, a global investment and advisory firm, Newsom said. State fire officials and utility regulators were part of the team, news reports said. A complete list of members was not immediately available. ■

CAISO/WECC News

Judge Puts off Decision in PG&E v. FERC

Asks Lawyers to Seek Compromise to Avoid Injunction

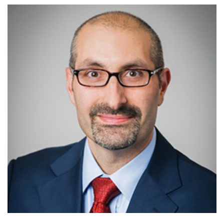
By Hudson Sangree

A federal judge asked lawyers Wednesday to find common ground in a case that has pitted Pacific Gas and Electric against FERC in a conflict over billions of dollars in power purchase agreements that the bankrupt utility has said it might try to modify or cancel during its Chapter 11 reorganization.

Judge Dennis Montali | *Commercial Law League of America*

Judge Dennis Montali, of the U.S. Bankruptcy Court in San Francisco, asked the attorneys to take two weeks to determine if they can "unring the bell" that was rung when FERC declared in January that it shared jurisdiction with the court in deciding the fate of the wholesale power contracts.

PG&E's lawyer, Theodore Tsekerides, told the judge he thought a compromise was unlikely. The New York-based litigator, of Weil, Gotshal & Manges, argued strenuously for Montali to impose a permanent injunction against FERC that would prevent it from interfering in the bankruptcy case. He said the bankruptcy code governed the matter, not the Federal Power Act, as FERC contended.



Theodore Tsekerides | *Weil, Gotshal & Manges*

Attorneys for FERC and the wind and solar generators under contract with PG&E argued against an injunction but said a compromise might be possible. FERC's attorney said he would need to ask for the commission's approval.

Montali suggested to the attorneys that FERC might somehow soften or change the language in its Jan. 25 *order* to remove the apparent conflict between the court's authority and the commission's jurisdiction.

"Have we got a deal here?" Montali asked the lawyers half-jokingly at one point in the two-and-a-half-hour proceeding. They said they didn't but were willing to work on it.

The case began in January, when NextEra Energy and Exelon, two companies that have PPAs with PG&E, asked for FERC's help in anticipation of PG&E trying to reject the agreements in bankruptcy.

In response, FERC declared it shares authority over PG&E's wholesale PPAs with the bankruptcy court. (See *FERC Claims Authority Over PG&E Contracts in Bankruptcy*.)

PG&E then moved for an injunction blocking FERC from meddling in its bankruptcy, which was brought about by the utility's potential liability for billions of dollars in wildfire damages. (See *Bankruptcy Only 'Viable' Option for PG&E, Lawyer says*.)

To comply with the state's renewable power requirements, the utility entered into contracts that were far pricier than they would be today, when wind and solar are among the lowest-priced electricity sources. The utility said it has 387 PPAs with 350 companies worth about $42 billion. (See *PG&E Wants to Undo Contracts, Revamp Biz in Bankruptcy*.)

The PG&E v. FERC matter, known in court as the adversary proceeding, is distinct from, but closely linked to, PG&E's *bankruptcy case*. Over FERC's objections, a U.S. district court judge ruled last month that the adversary proceeding should remain in Montali's court for the sake of judicial efficiency. (See *Judge Sides with PG&E over FERC in PPA Dispute*.)

Montali wrote to the judge in that case, saying the "plain language" of Section 365 of the bankruptcy code could answer "the question of whether FERC can decree that [the code section] must be construed to permit FERC to second-guess the bankruptcy court and impose its own decision on that court."

Montali has not said if he intends to enjoin FERC or dismiss PG&E's request for an injunction. However, he repeated his view Wednesday that it would be best to issue a permanent injunction, rather than a preliminary one, if he chooses that route.

A preliminary injunction would require a trial to determine if a permanent injunction is warranted and would consume time and energy when there may be no facts in dispute, Montali said. Issuing a permanent injunction would allow FERC to quickly appeal the matter to the higher court, he said. ■

PG&E's efforts to obtain an injuction against FERC center on its renewable power purchase agreements.

ERCOT News

ERCOT Board of Directors Briefs

Staff Warns of Credit Risks Heading into Summer

ERCOT staff last week warned that forward energy markets indicate high prices this summer, which could lead to unexpected increases in credit obligations.

Given current forward prices, Mark Ruane, ERCOT director of settlements, retail and credit, told the Board of Directors during its April 9 bimonthly meeting that forward adjustment factors may increase materially as summer draws closer, leading to "substantial increases in collateral requirements for ERCOT counterparties."

Ruane said the market "seems to be expecting high prices," pointing to August forwards that approached $185/MWh for ERCOT's North hub but settled back to $160/MWh in mid-March. July forwards were about $100/MWh, and June forwards $85/MWh.

Forward prices are used to adjust the day-ahead and real-time exposure components of ERCOT's credit calculation. Counterparty letters-of-credit are capped at $750 million, which has been reached only three times — all during last summer.

Ruane said he wants to ensure counterparties are aware of the risks of increased credit requirements and constraints on letter-of-credit issuers, and that they maintain "appropriate collateral" and sufficient letter-of-credit capacity.

"We're highlighting this risk because we hit the limit three times" last summer, Ruane said.

ERCOT's April Board of Directors meeting

The Texas grid operator has a historically low planning reserve margin of 7.4% as it heads into summer. It is projecting a record peak of 74.9 GW this summer, with 78.2 GW of capacity on hand. (See *ERCOT Summer Forecast: Record Demand, Alerts*.)

Ruane also said ERCOT will be holding a mass transition drill with market participants and Texas regulatory staff during the second quarter. The drill is intended to identify potential issues in transitioning a defaulting competitive retailer's electric service identifier IDs.

Mark Ruane, ERCOT director of settlements

Staff, TAC Promise Updates on Cold Weather Event

ERCOT CEO Bill Magness and ENGIE's Bob Helton, chair of the Technical Advisory Committee, both promised directors and stakeholders a future update on the grid operator's actions to address events during an early March cold spell that led to much market consternation. (See *ERCOT Generators Upset over Early March Weather Event*.)

Magness said ERCOT actions "focused on delaying scheduled outages that had not begun prior to forecast peak day morning loads." Stakeholders complained about a lack of transparency into market information and confusion over communications.

"Sometimes, it's very important what words you use. 'Request' and 'instruction' are different things in our world," Magness said during his *CEO update*. "The market has to know exactly what to expect from us when we get into these situations."

The TAC has created a task force to determine improvements that can be made in future situations. Magness said changes could involve:

- Communications and procedures during anticipated emergency conditions;
- Market visibility of ERCOT forecasts as conditions change;
- A process governing delay or withdrawal of planned outages; and
- Consideration of cost recovery related to postponing or canceling outages for reliability reasons.

Helton said the TAC plans to hold one or two workshops on the recommendations that might come out of the work.

ERCOT News

"We were using new tools, based on where we are today in unchartered territory," he said. "Sometimes, when you use those tools, you find concerns. There was a little rust on those tools."

ERCOT Projecting $34M Favorable Budget Variance

Magness told the board that ERCOT is already projecting a favorable budget variance of $34 million this year, after having ended last year with a roughly $29 million favorable variance.

The CEO said the variance is driven by interest income from congestion revenue rights and continued load growth. Interest income is expected to be almost $19 million over budget this year as a result of higher balances and rates, and administrative fees are projected to be $6.1 million over budget, based on current system load actuals and forecasts.

A reduction in ERCOT project costs could add another $7 million to the variance. The grid operator moved several projects up from 2019 into 2018, accounting for much of the variance, Magness said.

Magness also unveiled ERCOT's annual State of the Grid *report* in a redesigned format that features major accomplishments from 2018's record-breaking year and highlights the grid operator's effort to facilitate a competitive retail market, incorporate new technologies and improve cybersecurity awareness.

Directors Approve Changes to NPRR916

The board unanimously approved a pair of Nodal Protocol revision requests (NPRRs) previously endorsed by the TAC during its March meeting.

NPRR916, which changes the mitigated floor for natural gas units from a fuel-indexed price to -$20/MWh, was approved as amended by ERCOT comments. Staff recommended the mitigated floor price be reduced from its original level of $0 and also requested the NPRR's implementation be accelerated from May 1 to April 10 to "correct inconsistencies in pricing outcomes." (See "ERCOT to Ask Board for NPRR916 Changes," *ERCOT Briefs: Week of April 1, 2019*.)

The amendments were driven by recent negative gas prices at the Waha Hub and to match the mitigated floor for coal and lignite units.

NPRR909 resolves a gap in the protocols by addressing the unplanned unavailability of emergency response service (ERS) loads and generators. Morgan Stanley, in the Independent Power Marketer segment, cast the lone opposing vote at the TAC "as a matter of principle," Helton said.

Directors also approved the Human Resources and Governance Committee's *recommendation* to allow business-continuity emergency purchases by ERCOT of up to $5 million and unanimously approved nine other NPRRs, a change to the Retail Market Guide (RMGRR) and a system change request (SCR) on its consent agenda:

- *NPRR891*: Removes the 50-kW threshold for non-opt-in entities to report unregistered distributed generation to ERCOT for its unregistered DG report.
- *NPRR900*: Addresses inconsistencies in the current Nodal Protocol language that don't align with current processes, Texas Public Utility Commission rules and system design.
- *NPRR906*: Streamlines the protocol language and removes ambiguity over how ERCOT systems handle the decision-making entity during the security-constrained economic dispatch (SCED) mitigation processes.
- *NPRR908*: Aligns RMG references and updates mass transition notification requirements for emergency qualified scheduling entities (QSEs) to match with RMGRR159's revisions.
- *NPRR912*: Addresses the settlement of switchable generation resources (SWGRs) that receive a reliability unit commitment instruction to switch from a non-ERCOT control area to the ERCOT control area. The change provides a make-whole payment for an SWGR when its real-time ERCOT revenues are not sufficient to cover certain specified costs the resource may have incurred in complying with the RUC instruction.
- *NPRR914*: Adds data points unique to a controllable load resource available for dispatch service or dispatch with a real-time market bid to the existing 60-day SCED disclosure report.
- *NPRR8920*: Modifies the resource ramp rate logic in the protocols (Section 6.5.7.2, Resource Limit Calculator) to dynamically adjust the amount of ramp rate reserved for regulation service in real time based on the percentage of regulation service being deployed in the opposite direction.
- *NPRR922*: Aligns the DC tie import forecast with forecasts of other resources in ERCOT's Capacity, Demand and Reserves (CDR) report that are deployed during ERS and other energy emergency alert events. The revision also addresses a reporting gap in the CDR by specifying an approach for forecasting expected capacity imports for planned DC tie projects.
- *NPRR925*: Increases the minimum quantity that can be submitted for point-to-point (PTP) obligation bids from 0.1 MW to 1 MW, matching the minimum quantity for energy-only offers and energy bids.
- *RMGRR159*: Clarifies the mass transition processes and communications by shortening required minimum timelines for initial notification to affected parties from two hours to one hour, and allowing preliminary notification of mass transition to affected transmission and distribution service providers, providers of last resort and PUC staff, as long as protected information is not disclosed. Also clarifies that ERCOT may coordinate periodic testing of mass transition systems and processes with market participants.
- *SCR798*: Introduces a limit on the total number of PTP obligation bids that can be submitted into the day-ahead market per QSE and per counterparty. The limit will apply to the number of bid IDs per operating day. ■

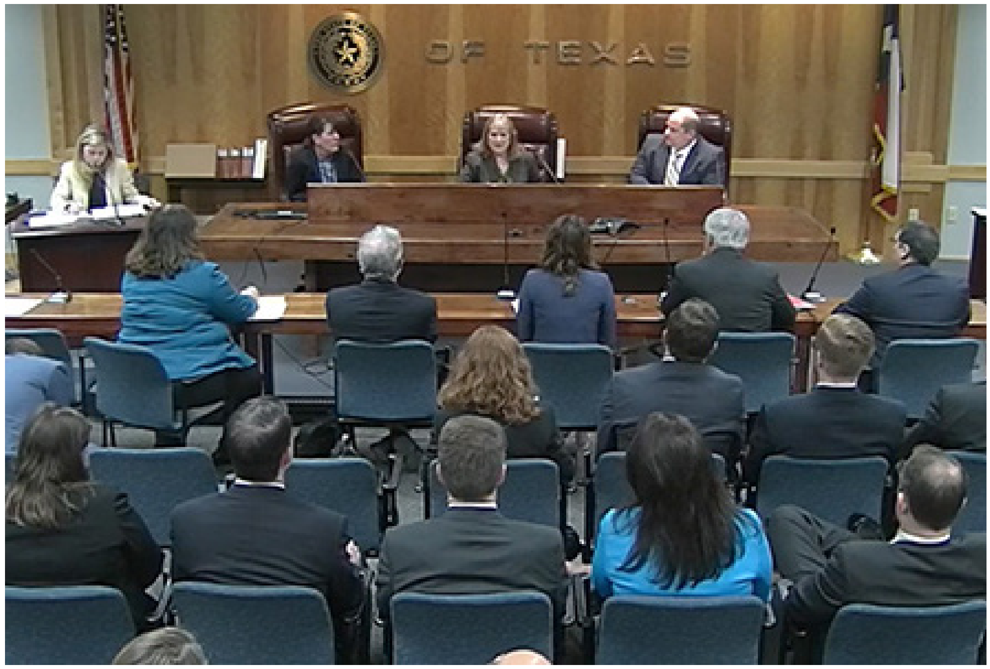
— Tom Kleckner

ERCOT Board Chairman Craven Crowell (left) and CEO Bill Magness (right)

ERCOT News

Oncor-Sharyland-Sempra Deals Inch Toward Approval

By Tom Kleckner



Texas PUC begins its hearing on proposed acquisitions involving Sempra Energy, Oncor and Sharyland Utilities.

A combined $1.37 billion worth of transactions involving Oncor, Sharyland Utilities and Sempra Energy all but gained regulatory approval last week following a brief hearing on the merits before the Texas Public Utility Commission.

The commission reviewed a *stipulated settlement* among the three companies and seven other parties, complimenting them on the agreement. The proceeding has been placed on the agenda for the PUC's open meeting Thursday (Docket *48929*).

"It took a lot of work to get here and compromise on everybody's part," PUC Chair DeAnn Walker said. "Thanks for bringing us something that is a very good solution to this situation."

"I'm largely content with [the settlement]," Commissioner Arthur D'Andrea said.

The settlement agreement resolves all issues in a complex series of deals announced by the parties in October, with Sempra buying a 50% stake in Sharyland Distribution & Transmission Services and Oncor acquiring transmission owner InfraREIT. An exchange of transmission assets would increase Oncor's footprint in West Texas and "de-REIT" the Sharyland utility in South Texas. (See *Sempra, Oncor Deals Target Texas Transmission*.)

Oncor, Sharyland and Sempra filed for approval with the PUC in November.

Approximately 260 miles of InfraREIT's transmission system were previously owned by Oncor. They were exchanged for Sharyland's distribution system as part of a 2017 rate case settlement. (See *Texas PUC OKs Settlement in Oncor-Sharyland Asset Swap*.)

"This is a rare opportunity for us to acquire assets in ERCOT. Assets don't come up for sale very often," Oncor General Counsel Matt Henry said. The assets "happen to be not only on our border but overlapping our existing transmission footprint. As everyone knows, West Texas is absolutely going nuts. We're excited about the deal from a commercial standpoint."


Left to right: attorneys Erika Kane (ERCOT), Matt Henry (Oncor), Lino Mendiola (Sharyland), Ron Moss (Sempra) and Katie Coleman (TIEC) before the Texas PUC.

The PUC's approval would mean Oncor will become responsible for building the infrastructure needed to accommodate Lubbock Power & Light's move from SPP to ERCOT.

"Based on the stipulated language, Oncor would be stepping into the shoes of Sharyland and nothing would slow it down," said Cody Faulk, an attorney representing LP&L.

PUC staff, the Office the Public Utility Counsel, Alliance for Retail Markets, Steering Committee of Cities Served by Oncor, Texas Energy Association for Marketers, Texas Industrial Energy Consumers and Hunt Consolidated were parties to the agreement. ERCOT, the city of Lubbock, Golden Spread Electric Cooperative and the Texas Cotton Ginners Association do not oppose the revised stipulation.

California-based Sempra acquired an 80% interest in Oncor early last year in a $9.45 billion all-cash buyout. (See *Texas PUC OKs Sempra-Oncor Deal, LP&L Transfer*.)

Sempra's legal counsel, Ron Moss, said the company wants to be part of Texas' "vibrant utility industry."

"The proposed transaction represents the next step," he said. ■

ISO-NE News

FERC Rejects *RTO Insider* Bid to Open NEPOOL

Glick Calls Closed Meetings 'Misguided'

Continued from page 1

an electric ratepayer in Vermont, applied to join as an End User Customer.

On Jan. 29, the commission rejected NEPOOL's request, saying prohibiting membership based on employment was unduly discriminatory. NEPOOL is seeking rehearing of the ruling, but last month its Participants Committee agreed to admit Kuser as an End User member under strict rules that prevent him from reporting publicly on what he hears in meetings. (See ***RTO Insider Reporter Admitted to NEPOOL***.)

NEPOOL said it sought to change its membership rules because allowing the press to join would inhibit the group's ability to foster candid discussions and negotiations that narrow and resolve complex issues. NEPOOL also contended FERC had no jurisdiction to reject the rule change.

The commission — which said in the Jan. 29 ruling that it had jurisdiction to reject the membership rule change — ruled Wednesday that it did not have authority to grant *RTO Insider*'s request to open NEPOOL's meetings to public scrutiny.

Commissioner Cheryl LaFleur did not participate in the 3-0 ruling by Chairman Neil Chatterjee and Commissioners Bernard McNamee and Richard Glick, the latter of whom filed a concurrence calling on NEPOOL to change its rules. LaFleur declined to say why she abstained.

Because NEPOOL does not own or operate facilities involved in the interstate transmission of electricity, it is not a public utility under the FPA, the commission said. As a result, it said its jurisdiction is limited to NEPOOL's operations "only insofar as they directly affect jurisdictional rates."

In the Jan. 29 ruling, the commission said it found that rules governing NEPOOL membership "directly affect what filings the commission receives pursuant to FPA Section 205" because they dictate who may vote on proposed ISO-NE filings and NEPOOL-originated "jump ball" proposals.

"However, NEPOOL rules prohibiting press and public attendance at NEPOOL meetings do not directly affect such filings because they do not affect who may vote on NEPOOL proposals. Only NEPOOL members may vote on proposed ISO-NE filings and NEPOOL-originated 'jump ball' proposals. As nonmembers, the press and public could not vote on such proposals or speak in support or against such proposals even if they were to attend NEPOOL meetings," the commission said. "Therefore, rules governing only attendance at NEPOOL meetings do not directly affect the filings brought before the commission in the way that membership rules that allow members to vote do."

New Hampshire Consumer Advocate D. Maurice Kreis, a former journalist, said in a blog post he had turned his photo of Supreme Court Justice Louis Brandeis upside down in protest of FERC's ruling. | *D. Maurice Kreis*

The commission also rejected arguments that press coverage of NEPOOL meetings could ease the burden of monitoring NEPOOL activities for smaller or prospective members.

"We are not convinced that easing the burden of monitoring these meetings can directly affect the outcome of NEPOOL proceedings. Even if reporting eases the burden of participating in NEPOOL, it does not enable participation; therefore, any effect it may have on jurisdictional rates is indirect," the commission said.

ISO-NE News

Glick: Change the Rules

In his concurrence, Glick said that while he agreed with his colleagues on the jurisdictional issue, NEPOOL's membership policies are "misguided" and should be changed.

"NEPOOL meetings address a broad range of important issues, including, among other things, the reliability of the electric grid, state policies for addressing climate change, and the integration of new technologies into the resource mix. The public and, by extension, the press have a legitimate interest in how NEPOOL, the entity charged with administering ISO New England's stakeholder process, is considering these matters of public interest.

"Although I appreciate NEPOOL's concern about preserving a forum for candid discussion, I am troubled by NEPOOL's apparent belief that closed-door meetings with no opportunity for public involvement or education through the press furthers the mission of the stakeholder process or the broader interests at play in these proceedings," Glick continued. "To paraphrase Justice Louis Brandeis, sunlight is the best disinfectant, and it is hard for me to understand how barring public and press scrutiny will further NEPOOL's mission or, ultimately, its legitimacy as the forum for considering how ISO New England's actions affect its stakeholders. Rather than trying to hide their discussions from the public, NEPOOL and its members would be better served by permitting public and press attendance, so that all entities — including those that cannot spend the time or money needed to attend all NEPOOL meetings — can remain informed of the discussions regarding the important issues under NEPOOL's purview. That result would lead to a more robust discussion of the issues and, ultimately, to better public policy."

New Hampshire Consumer Advocate D. Maurice Kreis, a former journalist, said in a *blog post* he had turned his photo of Brandeis upside down in protest of FERC's ruling, which he said "hobbles my ability to participate in NEPOOL effectively.

"There are 15 days of NEPOOL meetings on the calendar for April. … If you're a big transmission owner like Eversource or a big generation conglomerate like Exelon (owner of Mystic Station), you have the resources to staff all of these NEPOOL meetings as necessary. My tiny organization — we have five employees and a bit of consulting help — does not."

"NEPOOL is a gentlemen's club straight out of the 1880s, a time when financiers like J.P. Morgan determined the course of the U.S. economy behind closed doors," he added. "… NEPOOL is doing the public's business and its meetings should therefore be public."

While the two cases were pending, six members of New England's Senate delegation and a dozen members of the House of Representatives called on the commission to open the meetings. (See *New England Senators Urge FERC to End Press Ban*.)

Gag Rule

NEPOOL's Participants Committee conditioned Kuser's admission on compliance with its bylaws, which were rewritten in June 2018 in response to his application.

NEPOOL said the revisions were intended to codify a longstanding practice barring disclosure of meeting proceedings to nonmembers. But they also appear to carve out an exception for members who are not members of the press.

Section 5.6(a)(ii) states that:

"Attendees may use the information received in discussion, and may share the information received within their respective organizations or with those they represent, provided those who receive such communications are not press and also are aware of and agree to respect the nonpublic nature of the information. In no event may attendees reveal publicly the identity or the affiliation (other than sector affiliation) of those participating in meeting discussions…"

Members who violate the provision, the bylaws state, will have their attendance privileges revoked. ■

MISO NEWS

Most MISO Zones Clear at $3/MW-day in 2019/20 PRA

By Amanda Durish Cook

MISO's seventh annual capacity auction cleared at $2.99/MW-day in all but one zone, a significant decline compared with last year's nearly uniform $10 clearing price.

Zone 7 — representing the Lower Peninsula of Michigan — was the only area to deviate significantly, clearing instead at $24.30/MW-day.

MISO on Friday *reported* that it committed 134.7 GW worth of capacity for the 2019/20 planning year beginning June 1. The Planning Resource Auction was characterized by "lower offer prices from market participants in most of MISO," the RTO said, but the volume of generation supply was "consistent" with the predictions from last year's resource adequacy survey issued in partnership with the Organization of MISO States.

MISO received more than 142 GW worth of offers in this year's auction, about 7 GW above the nearly 135-GW reserve margin *requirement* for June 2019 to May 2020.

"There is a surplus above our resource adequacy requirements to meet peak load," Eric Thoms, MISO manager of capacity market administration, said during a media call Monday to discuss the results.

Market participants this year "simply offered in at a lower price" when compared to last year, Thoms said.

Having all but one local resource zone clearing at the same price is a familiar story for MISO auctions. Last year's auction cleared at $10/MW-day, with the exception of Zone 1 — covering parts of Wisconsin, Minnesota and the Dakotas — which cleared at $1/MW-day. (See *MISO Clears at $10/MW-day in 2018/19 Capacity Auction*.)

Although higher than 2017/18's single clearing price of $1.50/MW-day, last year's $10 price tag elicited criticism from some market stakeholders as being too low. In his 2017 State of the Market report issued last June, MISO's Independent Market Monitor David Patton said the "fundamental problem" with diminishing capacity can be traced to "the relatively low net revenues generated in MISO's markets." (See "Low Capacity Prices," *MISO to Address Growing Supply Shortage in New Year*.)

Price Separation, Mitigation for Lower Michigan

The Monitor has reviewed and certified this year's results but did have to enforce market mitigation for economic withholding in Zone 7. MISO said the IMM mitigated "several" offers representing about 1.5 MW, resulting in a 1 cent/MW-day impact in lower Michigan. It was the second time in the auction's seven-year history that the Monitor had to enforce mitigation, with the first instance of enforcement occurring in 2013/14 planning year. In a statement, MISO said that "while IMM mitigation is rare, we'd like to note the process is working as designed."

Thoms said the mitigation was "interesting development."

Speaking during a separate stakeholder call on the results Monday, Thoms said non-zero price offers, tight supply and a lower capacity import limit than last year contributed to price separation in lower Michigan. At nearly 22 GW, Zone 7 had the highest planning reserve margin requirement of MISO's 10 local resource zones.

Michigan Public Service Commission staffer Bonnie Janssen asked if the price separation was at least in part the result of MISO no longer counting external resources towards satisfying the local clearing requirements for local zones. Thoms said the RTO would examine that as part of future presentations on the auction.

MISO also reported that more solar and wind generation cleared this year's auction when compared to the 2018/19 planning year. The auction cleared 680 MW worth of solar, up 47% from last year, while wind capacity increased 21% to nearly 2.7 GW. The share of natural gas-fired capacity (38%) beat out coal (35%), which MISO said illustrates "the industry's ongoing shift away from coal-fired generation and increasing reliance on gas-fired resources and renewables."

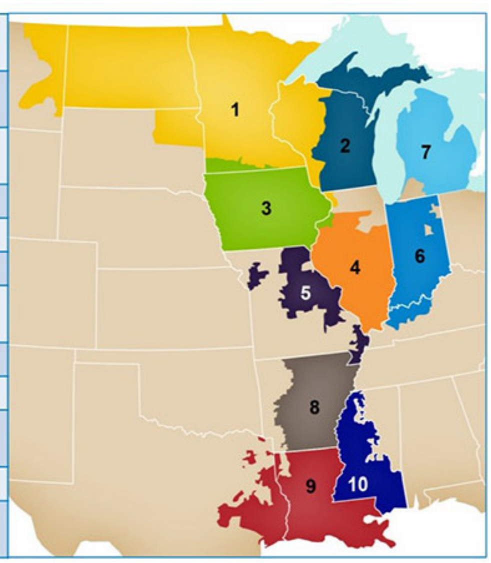
Thoms said this auction was the first in which natural gas supplanted coal as the leading source of MISO capacity. He also called the increase in renewables capacity "significant."

The PRA also cleared 15 GW of non-traditional resources, including demand response, energy efficiency, behind-the-meter generation and generation from external resources, compared with slightly more than 14 GW for those resource types last year. This was the first year that MISO included its newly created external resource zones in the auction. (See *FERC OKs MISO External Capacity Zones, Dispute Deadlines*.) Prior to its external zone creation, MISO treated external resources as if they were physically located within the nearest local resource zone. Even though external resources can clear at different prices than local resource zones, all external resource prices this year followed the $2.99/MW-day clearing price set by the planning reserve requirement.

MISO will go over more detailed PRA results with stakeholders at the May 8 Resource Adequacy Subcommittee *meeting*. ■

Zone	Local Balancing Authorities	Price $/MW-Day
1	DPC, GRE, MDU, MP, NSP, OTP, SMP	$2.99
2	ALTE, MGE, UPPC, WEC, WPS, MIUP	$2.99
3	ALTW, MEC, MPW	$2.99
4	AMIL, CWLP, SIPC	$2.99
5	AMMO, CWLD	$2.99
6	BREC, CIN, HE, IPL, NIPS, SIGE	$2.99
7	CONS, DECO	$24.30
8	EAI	$2.99
9	CLEC, EES, LAFA, LAGN, LEPA	$2.99
10	EMBA, SME	$2.99
ERZ	SPP, PJM, OVEC, LGEE, AECI, SPA, TVA	$2.99

ERZ = External Resource Zones



2019/20 auction clearing price overview | *MISO*

MISO News

New MISO Report Starting Point for Major Grid Change

By Amanda Durish Cook


Kim Sperry | © *RTO Insider*

CARMEL, Ind. — MISO's new annual report on future trends offers few specifics on the future resource mix and how the RTO will manage renewables growth and continued turnover in the resource stack.

But it does include a plethora of suggestions for market changes that could ease the transition to a still hard-to-pin-down future fleet.

Speaking during an April 9 workshop focusing on the report, MISO Consulting Adviser of Market Design Kim Sperry likened the RTO's future uncertainty to the small row of electric vehicle charging stations in the parking lot of its Carmel headquarters. She said it remains to be seen whether every parking spot will one day host a charging station.

Sperry asked stakeholders in the room if they thought MISO's previously identified industry trends of demarginalization, digitalization and decentralization will continue. (See *Overheard at MISO Market Symposium*.) Most of the about 20 attendees raised their hands, with an enthusiastic Jeff Beattie of Consumers Energy raising both.

"What's the fleet of 2030? It can be a huge range of possibilities," MISO Senior Manager of Market Strategy Mia Adams said.

MISO previewed its *Forward Report* last month by identifying three areas of focus: increasing the deliverability and availability of resources, bettering system flexibility and improving its visibility of distributed energy resources. (See *MISO: Winter Emergency Another Signal for Grid Ops Change*.)

The RTO said it may suggest scarcity pricing, a 15-minute day-ahead market, more storage integration efforts, modeling smart inverters in planning and collaboration with distribution operators so it can anticipate DER contributions. In the report, MISO CEO John Bear said the RTO recognized "seismic changes" affecting the energy industry at the end of 2017.

The report is part of MISO's new Integrated Roadmap process, which combines the old Market Roadmap list of prioritized market improvements with more research and reporting on industry trends and the annual publication of an insights and strategy report to explain how major trends might affect RTO operations. (See "MISO Rebrands Market Roadmap," *Committee Considers Ways to Streamline MISO Meetings*.) MISO is currently asking for new idea submissions for the Integrated Roadmap through May 1. The RTO will send out a stakeholder prioritization survey in June, and the Integrated Roadmap will be finalized in early November.

Ramping Needs

Sperry said that as multiple smaller generating plants replace large baseload plants and more customers install their own generation, MISO will need stronger resource ramping capability. She said solar and wind generation add more variability to an operating day with more peaks and troughs and steeper ramps as the wind picks up or clouds gather. A resource mix containing 20% each of wind and solar generation could require more than 10 GW of ramping ability in either direction within a few hours. MISO currently requires about a maximum 5-GW ramping capability in either direction.

"There's much more movement occurring throughout the operating day," Sperry said of a future with more renewable generation.

Indiana Utility Regulatory Commission staffer Dave Johnston asked if MISO has a method of measuring and predicting its zero-cost bid offers, which would drive the need for ramping. Sperry said MISO does collect data on zero-cost energy but must be mindful of confidential and proprietary information.

Adams said zero-cost energy does raise the question of whether a market based on locational marginal prices will continue to be appropriate. She said MISO may devise "more discreet revenue streams for market participants."

"With old generation, we didn't think about essential reliability services. Now we have to think about essential reliability service, so we might need a new market product," Minnesota

MISO News

Public Utilities Commission staff member Hwikwom Ham said.

Sperry agreed and said future solutions should reconsider "planning all the way through markets and settlements."

Forecasting and DER Visibility

Sperry said MISO also realizes it may soon have to stop forecasting load using historical averages as a basis.

"As the portfolio changes, that historical information is going to be a little less accurate," she said.

"If we just had the same mix of coal and gas thermal units, but they were decentralized, would MISO still see a risk?" Johnston asked.

Adams said MISO's lack of visibility into distributed resources, not necessarily the decentralization itself, carries the most significant planning and operations risk.

But Ham said MISO doesn't need total visibility into distributed resources, just more open lines of communication. "MISO doesn't need to see everything. It just needs to be communicating with the distribution companies," Ham said.

But Adams countered that more volatility in load will require a response from the bulk electric system, most likely in the form of more flexibility to simultaneously accommodate distributed and more traditional resources.

Johnston asked exactly where MISO draws the line between utility-scale and distributed generation. "We all use this term utility-scale. Can anyone tell me what utility-scale means?" Johnston asked.

Sperry said she didn't have a "firm" megawatt number and pointed out that even FERC rules vary in terms of what it means for generation to reach utility-scale output.

"It can be 100 kW in terms of storage resources, and I think we're seeing things in our interconnection queue as low as 1 or 5 MW," Sperry said.

Johnston said he found the report frustrating for its lack of detailed resource estimates. "I want to know what the problem is. I want to know how many resources are self-scheduling and bidding in at zero. … I don't know what MISO sees. … What's the situation now in MISO?" Johnston said.

Adams said the report is based in part on utilities' future resource plans and that while MISO does foresee significant fleet change, the report is not an attempt to quantify the change. The report, she said, is a starting point in the stakeholder process to begin discussion on needed changes.

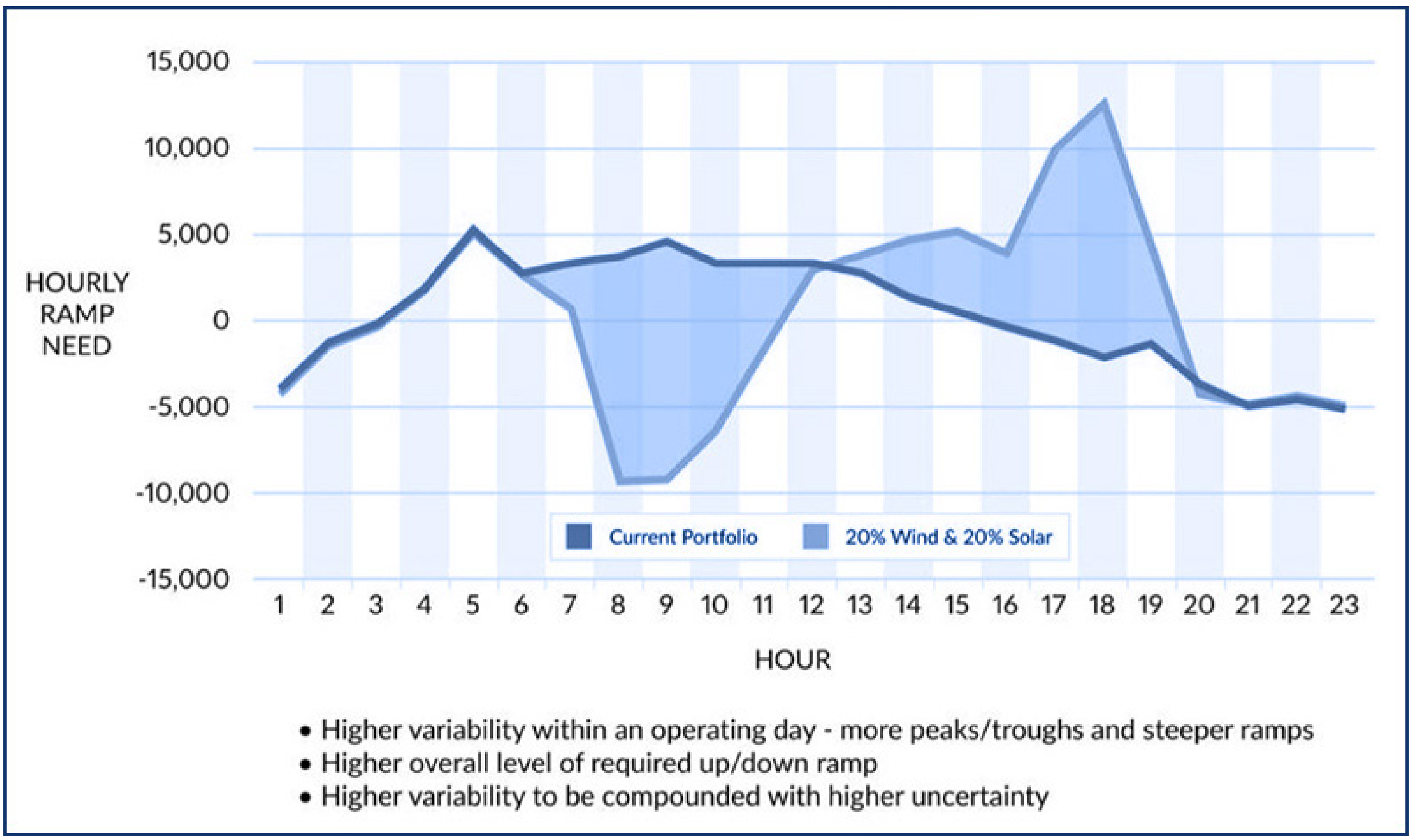
"We also know it's going to take a long time to start to change our markets," Adams said.

She also said MISO currently lacks the specifics to measure DER participation in its footprint.

"We have no DER visibility, and that's been fine so far because there's been very little volatility," she said.

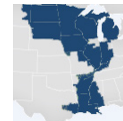
But Adams pointed out that MISO still needs more data and must figure out how detailed new data on intermittent and emerging technologies should be.

"Do we have to detail down to every asset and every smart thermostat? Well that seems a little out of control," Adams said. ■



MISO ramp needs with a renewable mix | *MISO*

MISO News



MISO Gives Tentative Nod to Seasonal Capacity Design

By Amanda Durish Cook

CARMEL, Ind. — MISO now cautiously estimates that the benefits of a seasonal capacity auction would outweigh potential drawbacks.

"Right now, our working hypothesis is that it makes sense … but at the end of the day, that's something we're really going to have to verify," Laura Rauch, MISO director of resource adequacy coordination, said during an Resource Adequacy Subcommittee meeting Wednesday.

Laura Rauch | © *RTO Insider*

The RTO last month rekindled the idea of a seasonal capacity auction as part of its multiyear resource availability and need (RAN) ***initiative***. (See ***MISO, Stakeholders Debate Merits of Seasonal Auction***.)

MISO planning adviser Davey Lopez said a seasonal auction would likely create price signals that better match the fluctuating value of capacity across seasons and a "better accounting of resource availability outside of summer." If MISO adopts a seasonal construct, it would probably establish seasonal reserve requirements.

A seasonal auction would provide "additional visibility into risks not currently captured due to variations in capacity, load, outages, transmission limitations and weather," Lopez said.

"There may be resources that are not participating in the annual construct when it would make sense for them to participate in one season," Lopez said, adding that retiring generation and new market entrants alike could participate as partial-year capacity resources.

Customized Energy Solutions' David Sapper said a seasonal auction could provide a solid foundation as MISO prepares for more renewable resources in its fleet. He said seasonal distinctions make sense when considering the varying output characteristics of the "wind and solar we're worried about."

"Setting a framework for this in the future is pretty critical," Rauch agreed.

But Lopez said MISO is thinking about potential tradeoffs in a seasonal capacity future. He said seasonal auctions could produce complex changes to the loss-of-load expectation (LOLE) study and resulting reserve margin requirement.

Consumers Energy engineer Jeff Beattie said that while his utility for years advocated for a seasonal auction, it has now backed off the idea.

"We're not necessarily seeing the benefit because our fuel mix is changing. We're going zero-carbon," Beattie said. He noted that much of the economic benefit of a seasonal auction derived from converting annual fuel contracts into shorter duration contracts.

"Whereas now, as we're retiring all of our fossil units, we're not seeing that cost savings anymore. … I hope we see a study with customer benefit and savings," Beattie told MISO staff.

But some stakeholders said zero-carbon resources reinforce a need for an auction with seasonal granularity.

Xcel Energy's Tom McDonough said utilities' solar additions require a more specific seasonal accreditation. He argued that it's not appropriate for MISO to accredit solar generation according to its summer output.

"As we know in Minnesota, it's not going to be there in the winter. It's not diluted so we're going to get an exaggerated credit. …We have a thing called snow that covers a solar panel," he joked.

McDonough said he would support even more auction specificity or even a return to MISO's earlier monthly capacity auction design.

Madison Gas and Electric's Megan Wisersky said MISO might consider that capacity today isn't as fungible as it used to be because of characteristics of new types of generation.

Davey Lopez | © *RTO Insider*

Lopez said MISO will return to the RASC in May with a skeleton design of a seasonal auction.

More LMR Details in LOLE Study

MISO will this year also model load-modifying resource availability information into its annual LOLE study, which does not currently include availability and resource lead times.

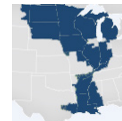
Rauch said the improved specificity in LOLE data shouldn't be considered a process change to the study. She said MISO will only be working with more specific availability data.

But Beattie said the small study alteration should still be documented for stakeholders.

MISO also said it will postpone a plan to model sub-optimized scheduled outages in the LOLE study. The RTO took stakeholders' advice that it should first gauge the impact of its new planned outage scheduling rules before modeling poorly scheduled outages in the LOLE study. (See "History on Repeat?" ***MISO, Stakeholders Debate Merits of Seasonal Auction***.) In the meantime, MISO will continue to gather information on how outages affect supply.

Lopez said aside from an unusual hypothetical testing scenario with high outages and zero LMR response, material loss-of-load risk within MISO still does not occur outside of summer. ■

MISO NEWS



MISO Signals Readiness for DER Stakeholder Process

By Amanda Durish Cook

CARMEL, Ind. — MISO will kick off discussions on distributed energy resources policy after it this month completes a third round of stakeholder workshops on integrating DERs into its system, the RTO said last week.

Over the next decade, MISO expects to confront increased volumes of DERs that will "likely challenge utility staff and processes" with possible two-way flows of electricity on the distribution system.

Those challenges were the topic of an April 9-10 workshop that nearly concludes a series of educational sessions hosted by the MISO and the Organization of MISO States.

The events are a precursor to MISO bringing discussion of DER market rules into its stakeholder process as RTO leaders prepare for a possible FERC rule on DER participation. (See *MISO Contemplates DER Effect, Possible Rules*.) MISO will host identical sessions April 17-18 in Little Rock, Ark., and April 24-25 in Eagan, Minn.

MISO staff said they would use input from the final workshops to set policy-level discussions with stakeholders on DER integration.

MISO DER project manager Kristin Swenson said that once the workshops are complete, the RTO may assemble stakeholders for periodic "debriefs" on what aspects of DER integration it might address first.

Discussion groups at the MISO DER workshop at the Renaissance Indianapolis North Hotel in Carmel, Ind. | © *RTO Insider*

Kristin Swenson | © *RTO Insider*

Swenson also said the RTO is trying to forge deeper connections with distribution utilities after it encountered difficulties assembling a large group of distribution operators for the early April event.

"MISO does not have deep connection with the distribution operators in our footprint. Our main connections are with our transmission operators," Swenson said, adding MISO might consider holding more local meetings "to move the conversation to them." She also asked stakeholders in the room for suggestions on how best to involve distribution operators in the DER conversation.

Breakout Session

Attendees broke into groups to consider several DER integration questions with the caveats that representatives from the same companies not sit together and that state regulators not share tables with representatives from the utilities they oversee. Participants observed *Chatham House Rules*, not attributing discussion points to specific individuals or companies. The idea, MISO representatives said, was to encourage free conversation.

MISO asked the roughly 50 attendees to discuss modeling behind-the-meter generation and how to best approach DER deployment in load forecasting and long-term DER planning assumptions. It also asked distribution operators how they approach generation interconnection on the distribution level and the funding of distribution upgrades, as well as how they might manage reverse flow congestion, real power flow patterns and phase balancing issues.

The RTO also prompted distribution companies to consider how they might alter their under-frequency and under-voltage load shed schemes under circumstances in which the schemes could shed generation as well as load.

Workshop attendees said distribution utilities will need to create interconnection protocols and facilitate a three-way communication system among the DERs, themselves and the grid operator. Many MISO members predicted distribution utilities will become mini system operators themselves. Others said utilities will need better visibility into their own operations before they can hand off DER information to MISO. Some distribution representatives probed MISO on what level of detail it could handle in terms of DER data submissions.

Other participants said MISO should determine when utilities might come to rely on DERs, though some allowed that long-term DER load forecasting is a difficult process. Attendees said MISO must factor in economics, weather patterns and unusual weather and state policies when forecasting DERs for planning. Some added MISO should hire an in-house meteorologist to better predict when certain DERs will be in use.

If DERs are to become market resources in MISO, the resources should be prepared to supply MISO with the same types of information required of traditional resources, many attendees agreed.

Break with Tradition?

MISO adviser Robert Merring said significant DER penetration could prompt the RTO to expand reserve requirements. He also noted that essentially "uncontrolled generation" could further impact transmission constraints.

"Our traditional way of doing business — we plan for an annual peak and we're good — may no longer work. Those load profiles are changing," he told attendees.

With significant solar generation on the system, MISO could also experience "huge ramps at sunset," Merring said. "They have one heck of a race at sunset to cover their ramping needs," he said of CAISO.

Merring added that MISO today has an "amazingly small" amount of regulating reserves, with the RTO handling virtually all load through its energy market.

He said that while an abundance of low-cost gas has put a "squeeze" on coal profitability in the footprint, distribution-level generation could soon take its turn in driving down price.

"We're not seeing a slow-down in distributed resources buildout. If that continues, we're going to see continued revenue constraints on the traditional fleet," he said.

Merring concluded with a point salient for most stakeholders: As an increasing volume of load is served by DER generation that bypasses the MISO wholesale market, the RTO's remaining load could be forced to shoulder more of the cost burden for the system. ■

NYISO News

NYISO Board Selects 2 AC Public Policy Tx Projects

By Michael Kuser

NYISO's Board of Directors last week selected two 345-kV transmission projects intended to address persistent transmission congestion in New York and foster delivery of renewable energy to the state's population centers.

The projects — part of the broader AC Public Policy Transmission Project — address transmission capacity at the Central East (Segment A) electrical interface and Upstate New York/Southeast New York (UPNY/SENY or Segment B) interface.

"The projects will add the largest amount of free-flowing transmission capacity to the state's grid in more than 30 years," the board said in a *statement* April 8.

The board in December issued a mixed decision on project selections made by the Management Committee, which, along with ISO staff, had backed two joint proposals by North America Transmission (NAT) and the New York Power Authority. (See *NYISO MC Supports AC Transmission Projects*.) Cost estimates for both projects ranged from $900 million to $1.1 billion.

But while the board accepted the committee's recommendation for Segment A, it switched Segment B to a competing proposal by National Grid and New York Transco. (See *NYISO Board Partially Reverses AC Tx Project Selection*.)

The NAT/NYPA Central East project involves construction of a new 345-kV line from Edic to New Scotland on an existing right of way; construction of two new 345-kV lines from Princetown to Rotterdam; decommissioning of two 230-kV lines from Edic to Rotterdam; and related switching or substation work at Edic, Princetown, Rotterdam and New Scotland.

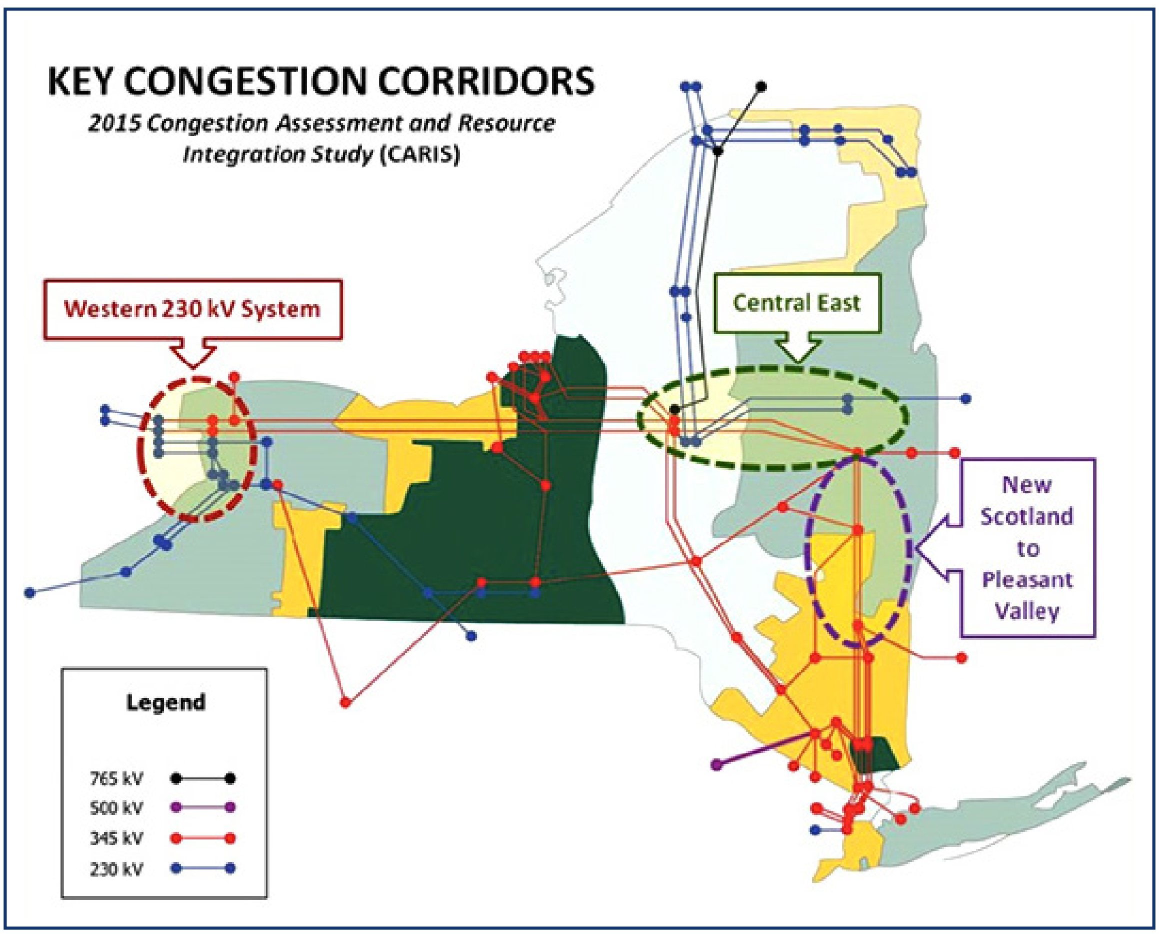
The National Grid/Transco UPNY/SENY project involves several different areas of focus, including construction of a new double-circuit 345/115-kV lines from Knickerbocker to Churchtown and on to Pleasant Valley; construction of a new tap of the New Scotland-Alps 345-kV line and new Knickerbocker switching station; and related switching or substation work at the Greenbush, Knickerbocker, Churchtown and Pleasant Valley substations.

The project also entails decommissioning a double-circuit 115-kV line from Knickerbocker to Churchtown and two double-circuit 115-kV lines from Knickerbocker to Pleasant Valley.

National Grid and Transco will also oversee new line traps, relays, potential transformer upgrades, switch upgrades, system control upgrades and the installation of data acquisition measuring equipment and control wire needed to handle the higher line currents resulting from the buildout. The companies also will build a new double-circuit 138-kV line from Shoemaker to Sugarloaf; decommission a double-circuit 69-kV line from Shoemaker to Sugarloaf; and perform related switching or substation work.

"The additional transmission projects selected will improve the flow of power from upstate renewable resources to meet downstate demand and enhance the reliability and resilience of the grid ... will alleviate congestion, help deliver power where it is needed most and aid the state in meeting its ambitious renewable energy goals," interim NYISO CEO Robert Fernandez said in a press release.

The projects are the second and third transmission projects to emerge from the ISO's Public Policy Transmission Planning Process, a planning activity required by FERC Order 1000 and the state's Public Service Commission. The PSC identified the public policy transmission needs to increase transfer capability from central to eastern New York by at least 350 MW and from the Albany region through the Hudson Valley region by at least 900 MW. ■



| NYSO

NYISO News

NYISO Seeks to Refine Carbon Price Equation

Carbon Pricing Impact on Waste-to-Energy Examined

By Michael Kuser

RENSSELAER, N.Y. — NYISO last week *proposed* using an estimated fuel cost to help determine the carbon component of locational-based marginal prices (LBMPc), while the state's largest waste energy producer called for carbon offsets to be included in the ISO's final carbon pricing plan.

The ISO's fuel cost proposal is intended to improve stakeholders' ability to estimate the LBMPc, carbon charges and credits, and the carbon residual allocation. It would use the real-time LBMP divided by an estimated marginal fuel cost to provide an approximate heat rate in MMBtus, which would be applied against a "conversion factor" for calculating tons of emissions per megawatt-hour.

"We propose using the lowest-cost fuel on the system, on an MMBtu basis, given the varying costs of natural gas and oil," Ethan D. Avallone, NYISO technical specialist, told the Installed Capacity/Market Issues Working Group on April 8.

NYISO would determine the conversion factor from MMBtus to tons of carbon emissions and post the factor and the fuel indices used, he said.

The ISO initially proposed calculating the LBMPc using a system of equations to determine binding transmission constraints and the characteristics of marginal resources, but staff found in many cases they could not solve the system of equations or could not determine a system of equations for a given market interval, Avallone said. (See *NYISO Looks at Carbon Charge Tariff Impacts, Residuals*.)

The new method would calculate the LBMPc in dollars per megawatt-hour by multiplying the tons of carbon emissions per megawatt-hour by the social cost of carbon.

Bias and Accuracy

"How do you determine a statewide lowest-cost fuel given the varying access to pipelines?" asked Howard Fromer, director of market policy for PSEG Power New York. "There's quite a variation among major pipelines for natural gas prices under peak conditions."

Avallone said one benefit of the new approach is that it captures price variations among different load zones.

Couch White attorney Michael Mager, who represents Multiple Intervenors, a coalition of large industrial, commercial and institutional energy customers, asked about levels of accuracy and whether NYISO is "comparing the former equations-based approach and this heat rate approach."

"Any approach we use is going to be an estimate, so we will be looking at accuracy factors," Avallone said.

David Clarke, director of wholesale market policy for Power Supply Long Island, was concerned about the potential for the new fuel-cost method to overstate the carbon component.

"You might end up dividing a high cost by a lower carbon component," Clarke said.

Mark Reeder, representing the Alliance for Clean Energy New York, agreed with Clarke.

"If you're using the lowest-cost fuel, and if it turns out the plant on the margin is really using a higher-cost fuel, then you would be overstating the carbon component," Reeder said. "This method seems a bit biased toward the high side. I recommend the NYISO, when judging the quality of any approach, give significant weight to the goal of a lack of bias and not just to the goal of accuracy. There is often a tradeoff between these two goals."

In the NYISO market, certain carbon-free resources able to store energy structure their bids to achieve schedules during the most profitable periods of the day. When energy prices are low, the bids from such resources include an estimated opportunity cost of profit relative to intervals with higher prices.

"The proposed LBMPc methodology we just walked through will incorporate carbon adders that are the result of bidding opportunity costs," Avallone said, noting carbon-free opportunity cost resource bids are also likely to increase as a result of carbon pricing in some hours.

He also said internal generators would be

$$\left(\frac{Load\ Zone\ LBMP}{Fuel\ Price} * Conversion\ Factor\right) * Social\ Cost\ of\ Carbon = Load\ Zone\ LBMPc$$

Variable		Interval 1
i	Zone LBMP ($/MWh)	$30.00
ii	Natural Gas Price ($/mmBtu)	$2.75
iii	Fuel Oil Price ($/mmBTU)	$6.00
iv	Heat Rate (mmBtu/MWh) (i/ii)	10.91
v	Conversion Factor (Tons of Carbon/ mmBtu)	0.025
vi	Tons of Carbon per MWh (iv*v)	0.273
vii	Social Cost of Carbon ($/ton)	$48.30
viii	LBMPc (vi*vii)	$13.17

Sample LBMPc calculation | *NYISO*

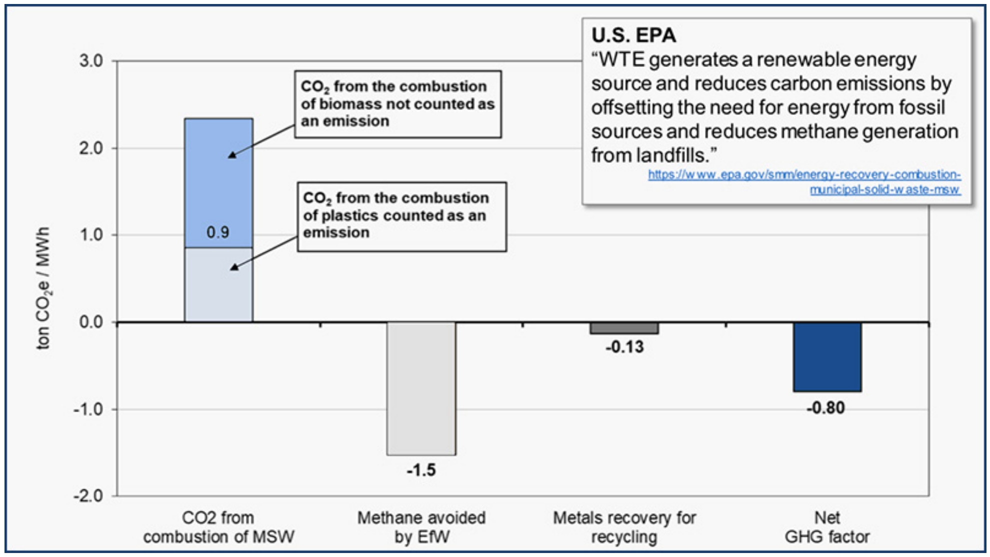
NYISO News

charged for carbon based on their actual emissions — not the LBMPc — and the LBMP used to calculate LBMPc would include the impact of resources' bidding opportunity costs when such resources are marginal, making any additional adjustments unnecessary.

Referring to an instance when a California gas-fired generator installed batteries as part of its facility, Couch White attorney Kevin Lang, representing New York City, asked how NYISO's carbon pricing would impact carbon resources able to store energy.

"I think you'd have the same treatment. ... The LBMP would still incorporate the costs of that generator," Avallone said.

Reeder said he found the ISO approach "an elegant way to determine opportunity costs."



| Covanta

Waste to Energy

Michael E. Van Brunt, director of sustainability for Covanta Energy, which owns or operates most of the state's waste-to-energy (WTE) plants, addressed a different challenge his industry faces regarding the carbon pricing scheme.

New York's 10 WTE plants employ nearly 1,400 workers and convert 3.2 million tons of solid waste per year into electricity, with a combined installed capacity of 285.1 MW. Van Brunt *said* that while New York state policy values WTE over dumping in landfills, the facilities do not qualify for renewable energy credits under the Clean Energy Standard (CES) *appendices*, while landfill methane conversion does.

Landfills are required by state law to capture methane beyond a certain volume and use it to run generators. The latest *figures* from the state's Department of Environmental Conservation show landfill methane generated 782,500 MWh of electricity in 2015.

In the voluntary emissions market, the WTE industry generates and sells offset credits from new capacity but "faces a significant penalty under the current NYISO proposal that will directly impact communities using WTE," Van Brunt said, displaying a slide that shows the industry in New York having a net greenhouse gas factor of -0.8 ton CO2/MWh.

"I think a rational carbon pricing policy has to account for carbon offsets," Clarke said.

Nicole Bouchez, the ISO's principal economist, said state policy is "conflicted to some extent" and the CES does not cover WTE, requiring NYISO to have state approval to exempt WTE facilities from carbon pricing.

"The ISO plays an important role as arbiter on policy and, in this case, where there are policy distortions," its voice could count, Van Brunt said.

"Are you looking to be held harmless, as if the [carbon] program didn't exist ... or do you want to keep all the incremental revenue from carbon pricing?" Fromer asked.

"We look for equal treatment with landfills from the state," Van Brunt said. "If landfills are going to be exempted, so should WTE."

Bouchez said the ISO will soon announce a date for a second presentation by Analysis Group, which last month revealed the *outline* of a new study to provide additional insight into pricing carbon in NYISO's wholesale electricity markets. (See *Analysis Group Presents NYISO Carbon Pricing Study Plan*.) ■

NYISO News

NYISO Draft Gold Book Shows EVs Driving Load Growth

By Michael Kuser

A *draft* version of NYISO's annual load and capacity forecast shows electric vehicle usage driving a 66% increase in New York's projected baseline peak demand growth rate over the next 20 years.

Much of that growth would occur in the second half of the study period, according to the preliminary 2019 Gold Book forecast released Thursday, which projects a cumulative electric load growth of 0.05% from 2019 to 2039, compared with the 0.03% growth from last year's *forecast*. The baseline summer peak demand forecast growth rate was relatively unchanged between forecasts.

The new report presents load and capacity data for 2019-2029 and energy and peak forecasts through 2039 on a zonal basis and through 2049 on a system basis.

The baseline forecasts show the expected New York Control Area (NYCA) load, including the impacts of energy efficiency programs, building codes and standards, distributed energy resources, and behind-the-meter energy storage and solar PV.

The topline forecast, formerly referred to as econometric, shows what the expected NYCA load would be if not for these impacts, with the listed impacts added back into the baseline forecast. Both the baseline and the topline forecasts include the expected impacts of EV usage.

Load Reduction

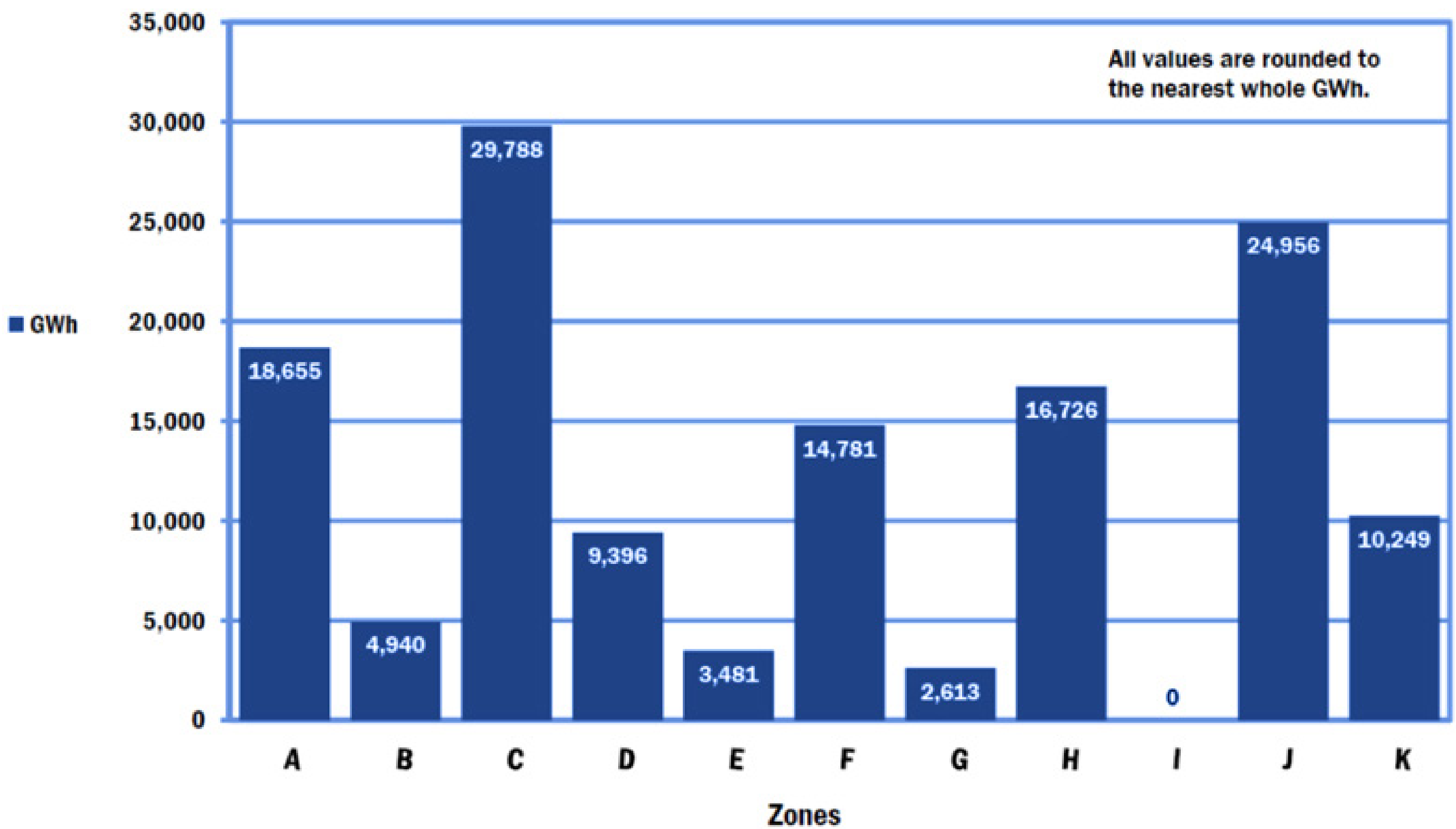
Significant load-reducing impacts occur because of energy efficiency initiatives and the growth of distributed BTM resources. Much of the impact is attributed to the state's energy policies and programs, including the Clean Energy Standard (*CES*), the Clean Energy Fund (*CEF*), the NY-SUN program, the energy *storage* initiative and other programs developed as part of the Reforming the Energy Vision (*REV*) proceedings.

NYISO staff employ a multistage process to develop load forecasts for each of the 11 zones within the NYCA. In the first stage, baseline energy and peak models are based on projections of end-use intensities and economic variables. End-use intensities specific to New York are estimated from appliance saturation and efficiency levels in both the residential and commercial sectors.

Since last April, net summer capability has increased 228 MW to 39,294 MW, reflecting 744 MW of new additions, against 373 MW of deactivations and 143 MW in decreased ratings.

Total summer 2019 resource capability in the NYCA is 42,056 MW, a decrease of 201 MW compared to the same assessment last year. The ISO credits the decrease to changes in existing NYCA generating capability, special case resources (SCRs) for demand response and net purchases of capacity from other control areas.

Total resource capability for the year includes generating capability of 39,295 MW; SCRs at 1,309 MW, up from 1,219 MW last year; and net long-term purchases and sales with neigh-



NYCA energy production by zone | *NYISO*

NYISO News

boring control areas at 1,452 MW, down from 1,625 MW last year.

The existing NYCA generating capability includes renewable resources totaling 6,351 MW, down from 6,373 MW last year; wind generation unchanged at 1,739 MW; hydropower virtually unchanged at 4,253 MW; large-scale PV unchanged at 32 MW; and other renewable resources down to 327 MW from 350 MW in 2018.

Beyond 2019, NYCA resource capability will be affected by additions of new generation, re-rates of currently operating units and the deactivation of existing generators, the ISO says.

Transmission Updates

The new report lists existing NYCA transmission facilities 115 kV and larger, including several new ones that came into service since the publication of the 2018 Gold Book. It also shows proposed transmission facilities, including merchant projects as well as firm and non-firm projects submitted by each transmission owner.

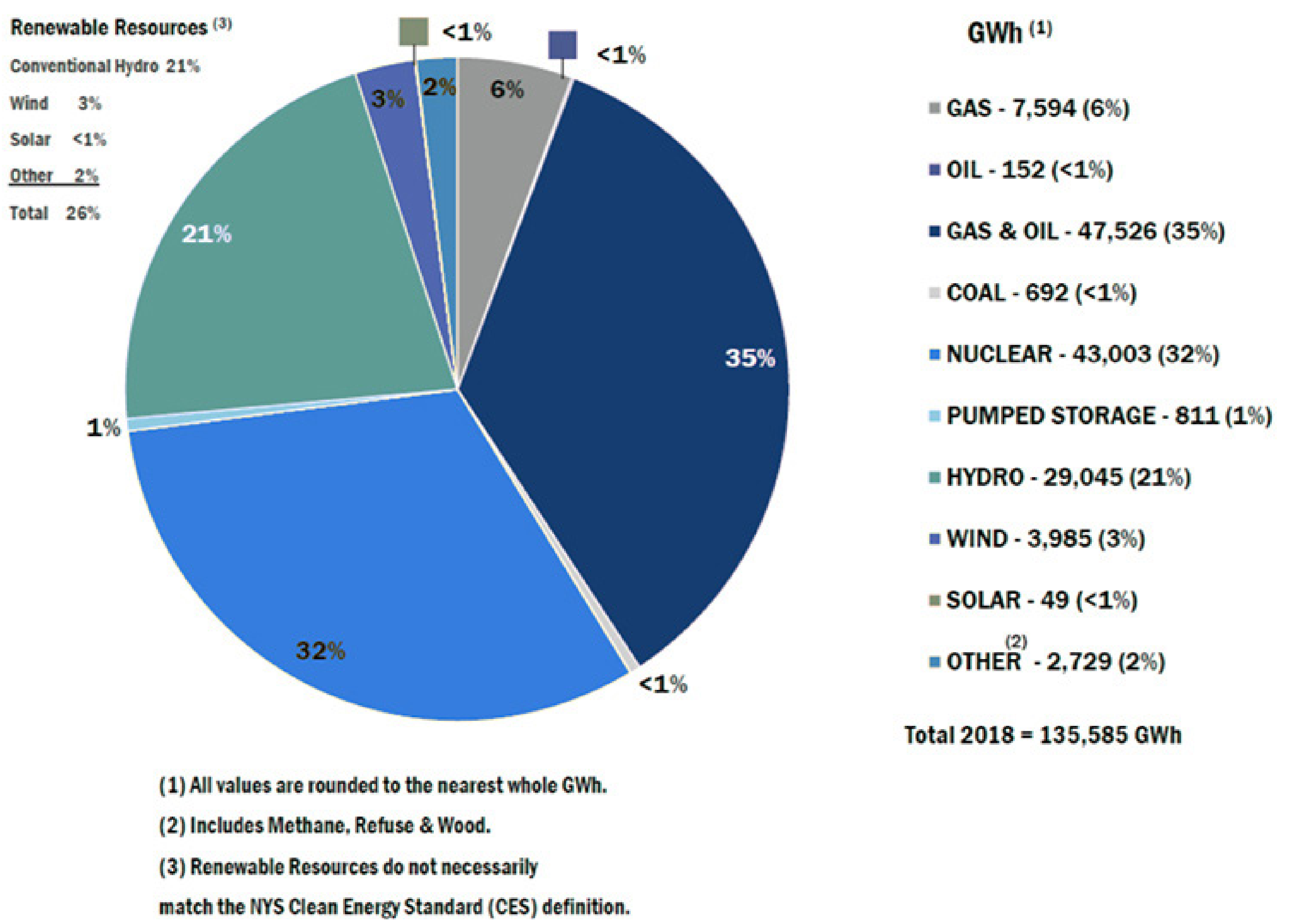
In 2017, NYISO's Board of Directors selected the NextEra Energy Transmission New York's Empire State Line proposal to satisfy the Western New York public policy transmission need, with an expected in-service date of June 2022.

The board last week selected two 345-kV transmission projects intended to address persistent transmission congestion in New York and foster delivery of renewable energy to the state's population centers. (See *NYISO Board Selects 2 AC Public Policy Tx Projects*.)

The projects — part of the broader AC Public Policy Transmission Project — address transmission capacity at the Central East (Segment A) electrical interface and Upstate New York/Southeast New York (UPNY/SENY or Segment B) interface.

While both projects are expected to be in service in December 2023, neither are included in the draft Gold Book, which lists only projects confirmed by March 15. Future Gold Books will include the newly selected public policy transmission projects, the ISO says.

The ISO is taking stakeholder comments on the Gold Book at *stakeholder_services@nyiso.com* through April 17. ■



NYISO got more than half of its electricity production from nuclear and hydropower in 2018. | *NYISO*

PJM News

PJM to Hold Capacity Auction in August

By Christen Smith

VALLEY FORGE, Pa. — PJM will move forward with its August capacity auction under current market rules, unless FERC says otherwise, CEO Andy Ott told stakeholders Wednesday.

Ott said the PJM Board of Managers settled on that course after determining the RTO's minimum offer price rule (MOPR) — rejected last year by FERC — impacts only a small number of resources, meaning an updated commission ruling on the matter wouldn't change prices too much within the current environment.

"We think this is the best approach," he told the Market Implementation Committee on Wednesday. "There is no way to get absolute certainty. This was not an easy decision."

PJM filed a ***request*** with FERC later that day seeking validation that the commission would not force the RTO to rerun the 2022/23 Base Residual Auction under new rules in the future — an outcome that stakeholders want to avoid at all costs.

"We're trying our best to provide a path forward that provides as much clarity as we can," Ott said.

The decision comes three weeks after PJM staff presented the Markets and Reliability Committee with four options for the August BRA, including: doing nothing and running the auction under current rules; filing a delay waiver; filing a request to confirm existing rules for the interim; or proposing an interim rate. (See *PJM Mulls Options for August Capacity Auction*.) Each option came with considerable drawbacks, PJM's Stu Bresler said at the time.

PJM CEO Andy Ott | © *RTO Insider*

PJM delayed the BRA once already after a June 2018 FERC ruling determined its MOPR was unjust and unreasonable because it didn't address price suppression arising from state subsidies for renewable and nuclear power. The RTO proposed a new rate in October and had hoped for a ruling from the commission by March 15 to no avail.

Ott said Wednesday many stakeholders expressed support for moving ahead as planned. The Electric Power Supply Association said in a press ***release*** that the RTO made the right choice and will boost much-needed investor confidence. The group also called on FERC to protect the capacity market from the distortions of nuclear subsidies and those who benefit from them.

"EPSA opposes delaying the 2019 auction to 2020," the group wrote. "This is merely an attempt by some to buy time to continue seeking costly subsidies. Such out-of-market payments erode PJM's markets at the expense of consumers and competition."

Jason Barker of Exelon called the chosen path "short-sighted." Exelon joined a coalition of utility companies in a letter to the board requesting a delay until April 2020, citing seven outstanding FERC dockets. Consumer advocacy groups from six states likewise sent their own letter pushing for a delay. (See ***Stakeholders Tell PJM Board to Delay Capacity Auction***.)

"We think the path that PJM is taking will make FERC address the underlying subject of MOPR, which they've been reluctant to do so far," he said. "Why is the balance of interest better served by this path than just the delay?"

PJM spokesman Jeff Shields said the RTO remains obligated to run the BRA and, given the uncertainty, staff decided it was best to move forward under existing rules.

"Certainty is needed and we simply don't know when FERC is going to act," Shields said. "We don't even know whether FERC will respond to this request for clarification or would have responded to an additional request for delay." ■

PJM News

PJM Operating Committee Briefs

Substation Fires Uncover Faulty Response Procedures

Two substation fires that occurred earlier this year revealed weaknesses in utilities' incident response procedures and command structures.

Donnie Bielak, PJM's manager of reliability engineering, presented a Feb. 28 "*Lessons Learned*" report by NERC to stakeholders April 9. The report did not disclose the location of the incidents.

In the first case, an arc flash on a closed 12-kV feeder circuit breaker cabinet in an enclosed substation sparked a fire. Four technicians at the scene heard the explosion, evacuated and called 911 after determining the third-party alarming system had not yet contacted emergency authorities.

Bielak said it was unclear which of the technicians should have served as incident commander, hampering effective communications with firefighters. A dead secondary battery for the substation card reader also forced first responders to break into the facility, despite existing rules that no one enter the facility without an escort.

In the second incident, a 230-kV transformer high-side bushing failed in an outdoor substation. Bielak said responding utility and fire department personnel arrived without the proper equipment for transformer fire suppression.

Corrective actions for utilities include:

- Implement policy that the first person to discover a fire must report it via 911 regardless of any central station monitoring that may be present.
- Perform a review of the effectiveness of the fire entry procedure for indoor substations and update it as appropriate along with the applicable training.
- Expand the fire entry procedure to include situations in which qualified personnel could already be present at the site. This procedure should identify who is the incident commander, who must call for the fire department, and what assistance, if any, do company personnel provide the fire department.
- Review fire entry requirements with the fire department to clarify the requirement that utility personnel should not enter the building prior to the fire department declaring the building safe.
- Coordinate with the fire department to establish the practice of immediately mobilizing a foam unit in the case of substation and switchgear fires, whether indoor or outdoor.
- Ensure expectations from the fire department are understood and documented on what assistance company personnel are supposed to do.
- Ensure additional equipment inside the substation is maintained.
- Ensure fire alarms at all substations work on the operator human machine interface (HMI) screen and are audible.

PJM Operating Committee Chair Dave Souder and Anisha Fernandes, who served as secretary of the April 9 meeting | © *RTO Insider*

Drones Deployed to Save Money, Time

Bielak said drone usage is *growing* across the RTO as companies use the devices in place of helicopters to survey major storm damage, identify line repairs and inspect power plants, wind farms and gas pipelines, among other uses.

The drones save time and money, Bielak said, and have provided essential support during storm recovery. In the aftermath of Hurricane Maria, a drone was used to string lines between structures on either side of uncrossable terrain in Puerto Rico.

The technology has its limitations, however. Short flying times of 20 to 45 minutes prevents long-distance transmission line inspections and government regulations complicate where drones can fly safely.

Spring Restoration Drill Invites Sent

PJM's Alpa Jani told the committee that invitations for the 2019 spring restoration drill went out April 3.

System restoration coordinators and transmission and generator operators with nuclear units, black start units and units with a hot start-up time of four hours or less received an email mandating participation in the system-wide drill on May 21 and 22. Recipients must complete the exercise in compliance with NERC standards.

Coordinators schedule the exercise twice a year and participation is required once every two years.

Manual First Reads

While there were no endorsements scheduled for last week's meeting, members heard first reads of several manual revisions, including:

- Manual 1: Periodic cover-to-cover *review* to update terminology and guidelines for control center and data exchange requirements.
- Manual 3: Biannual *review* to update transmission operating procedures.
- Manual 10: Clarifies existing *language* for prescheduling operations.
- Manuals 11, 13 and 28: *Clarifies* the impact of operationalizing gas contingencies on reserve requirements and reserve market eligibility.
- Manual 13: Periodic cover-to-cover *review* and changes to align with new Markets Gateway functionality for resource-limitation reporting to be implemented June 1.
- Manual 36: Annual update *requirement*. ■

— Christen Smith

PJM MIC Briefs

Financial Risk Management Task Force Proposed After GreenHat Report

VALLEY FORGE, Pa. — PJM on Wednesday proposed an alternative stakeholder process to implement the market rule changes recommended in a special report on the RTO's role in the GreenHat Energy default.

Last month, three independent consultants completed a six-month probe into how a small trading shop amassed the largest portfolio of financial transmission rights in PJM history without the collateral to back it up, ultimately blaming naive staff and underlying market flaws for the 890 million MWh default that could cost members up to $430 million. (See *Report: 'Naive' PJM Underestimated GreenHat Risks* and *PJM: FERC Order Could Boost GreenHat Default by $300M*.)

Dave Anders | © *RTO Insider*

CEO Andy Ott told the Market Implementation Committee on Wednesday he will oversee expedient organizational and procedural changes within PJM itself but will rely on stakeholders to guide the process for market rule changes.

"We are going to suggest a stakeholder process to you all," he said. "We think the current process may not be the best approach. Let me be clear: It's a suggestion."

PJM's *suggestion* is to create a Financial Risk Management Senior Task Force that will assemble beginning May 2 to begin the overhaul of credit and risk management requirements, market design, membership qualifications and processes and the stakeholder process itself.

PJM's Dave Anders wants the Markets and Reliability Committee to approve staff's proposed *charter* for the task force at its April 25 meeting so an educational session can commence in May. Staff will present their own observations at a May 13 meeting and propose foundational questions for thoughtful discussion over the following two weeks. The task force will then create a work plan and develop packages that produce the report's recommendations for the Board of Managers to consider at its Dec. 4 meeting.

"Our stakeholder process is a strong one, but

Variable	Base Case (CASE A) (Partial Unit Commitment)	Base Case (CASE B) (Full Unit Commitment)	Simulation Case (CASE C) (Full Unit Commitment)
Load Weighted LMP ($/MWh)	35.80	37.30	37.76
Generator Energy Revenue ($ millions)	26,801	27,946	28,312
Weighted Synchronized Reserve MCP ($/MWh)	1.99	2.58	7.89
Weighted Non-Synchronized Reserve MCP ($/MWh)	1.03	1.26	3.97
Weighted Secondary Reserve MCP ($/MWh)	N/A	N/A	0.001
Hourly Average Cleared Synchronized Reserve (MW/hour)	1,818	1,818	3,168
Hourly Average Cleared Non-Synchronized Reserve (MW/hour)	634	634	678
Hourly Average Cleared Secondary Reserve (MW/hour)	N/A	N/A	1,943
Hourly Average Cleared Total Reserve (MW/hour)	2,452	2,452	5,789
Total Cleared Synchronized Reserve (millions MWh)	15.5	15.5	26.9
Total Cleared Non-Synchronized Reserve (millions MWh)	5.4	5.4	5.8
Total Cleared Secondary Reserve (millions MWh)	N/A	N/A	16.6
Reserve Revenue ($ millions)	36.4	46.8	235.9
Uplift ($ millions)	109.9	30.4	26.8
Bid Production Cost ($ millions)	13,230	13,121	13,152
Total Energy and Reserve Market Revenues ($ millions)	26,838	27,993	28,548

2018 simulation results | *PJM*

PJM News

it's not always the most efficient," Anders said. "We believe we need to adapt the process to provide more efficiency."

ORDCs Shrink in Updated Energy Price Formation Simulation

A late-stage change to how PJM treats expected generation outages resulted in a smaller operating reserve demand curve (ORDC) in the RTO's energy price formation simulation.

Adam Keech | © *RTO Insider*

PJM's Adam Keech said changing unit commitments based on real-time instead of day-ahead markets increased LMPs, boosted energy revenues and cut uplift by more than 80% compared with the status quo.

"It's not exactly what real time is, but it's the closest we can get to what real time would be," he said. "We stayed toward real time because we think that's the best tool we have and gives us the best approximation we can get."

Likewise, implementing a 30-minute reserve market and PJM's proposed ORDC increased LMPs by an average of 46 cents/MWh, assigned an additional 1,350 MWh of synchronized reserves and 3,337 MWh of secondary reserves, and generated $550 million more in total energy and reserve market revenues, Keech said.

FTR Forfeiture Calculation Change Endorsed

Stakeholders endorsed calculation changes for FTR forfeitures on Wednesday.

Brian Chmielewski, manager of market simulation, said PJM and the Independent Market Monitor agreed the current forfeiture rules should be adjusted because they do not distinguish between on-peak and off-peak FTRs. (See "First Read on Change to FTR Forfeiture Calculation," *PJM MIC Briefs: March 6, 2019*.)

FTR forfeitures are intended to discourage traders from cross-market manipulation. Holders subject to forfeiture are credited for the hourly cost of the FTR. Under current rules, a $1,500 off-peak FTR for June 2018 would be credited an hourly cost of $2.08, equivalent to $1,500 divided by 720 hours (30 days x 24 hours). Under the endorsed change, the FTR cost would be divided by only 384 off-peak hours, increasing the credit to $3.91.

The proposal will now advance to a first read at the April 25 MRC. PJM hopes to implement the changes in the third quarter of 2019.

MIC Will Work IARR Funding Flaw

Stakeholders approved a *problem statement* and *issue charge* meant to address a risk to FTR market revenue funding.

Chmielewksi told the MIC last month underfunding of interregional incremental auction revenue rights (IARRs) may occur because MISO's process cannot guarantee future firm flow entitlements (FFEs) on upgrades consistent with PJM's rules. (See "Incremental Auction Revenue Rights Funding," *PJM MIC Briefs: March 6, 2019*.)

IARRs are granted to the customer only if the transmission improvement provides additional capacity that makes the request feasible. PJM guarantees that awarded IARRs are at least 80% of studied IARR megawatts. Any portion of the FFEs for an affected coordinated flowgate that is less than 80% of the IARR megawatt total will result in inadequate FTR revenues, the RTO has found.

PJM wants stakeholder work completed by Aug. 1 to allow implementation of the new rules for the 2020/21 planning period.

Gas Contingencies on Reserves Spur Manual Changes

PJM will *update* Manuals 11 and 28 to clarify the impact of operationalizing gas contingencies on reserve requirements and reserve market eligibility.

"In the existing manual language, based on the triggers that are defined for how PJM identifies a gas contingency, there's language in there that says very broadly that PJM would increase reserve requirements either in day-ahead or real-time to address the need for reliability for gas contingency," PJM's Natalie Tacka said. "So this just clarifies how we would do that."

The MIC will be asked to endorse the revisions in May.

RT SCED Process Lacks Transparency, Monitor Says

PJM's Independent Market Monitor wants stakeholders to review processes for real-time security-constrained economic dispatch (RT SCED) and pricing that PJM uses in the energy market to send dispatch signals to generators and calculate LMPs.

The Monitor presented a *problem statement* to the MIC and asked for feedback from stakeholders about the status quo. It raised questions surrounding RT SCED case execution and approval processes; who approves the SCED cases; what criteria PJM uses to approve RT SCED cases; and what criteria PJM uses for selecting cases to be used in the locational pricing calculator. Manual language should be updated to reflect the answers to these questions, the Monitor said.

Gary Greiner | © *RTO Insider*

"This is all good stuff, and we as a company, as a stakeholder, have been pushing for greater transparency," said Gary Greiner of PSEG. "More of an open kimono where we understand the dispatch decisions that are getting made."

Lisa Morelli, PJM's real-time markets operations manager, said staff would be open to exploring the issue further.

"We are certainly supportive of providing education in these areas and take the conversation from there," she said.

NYISO and PJM Agree to New Flowgate Type

NYISO and PJM will *revise* their Joint Operating Agreement to create a new flowgate type for the East Towanda-Hillside 230-kV tie line.

The grid operators will classify the line as an "other coordinated flowgate," defined as a flowgate where constraints are jointly monitored and coordinated for reliability purposes but are not settled on because of a lack of impactful dispatchable generation on the non-monitoring system.

The ISO and PJM last September filed with FERC a joint request for waiver of the JOA to permit them to add the East Towanda-Hillside tie line as a market-to-market (M2M) flowgate. The requested waivers enable PJM to temporarily conduct redispatch operations to control flows to the more restrictive rating on the NYISO side of the line without violating its Tariff while the grid operators work to develop a permanent solution. The commission granted the waiver in November. (See "NYISO, PJM Revising JOA for Tie Line Issues," *NYISO Business Issues Committee Briefs: March 13, 2019*.) ■

— Christen Smith

PJM News

Nuke Talks Continue in Pa. Assembly

By Christen Smith

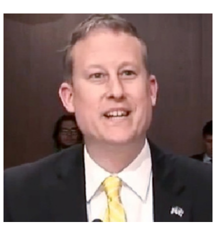
Pennsylvania senators waded into the debate over subsidizing the state's nuclear fleet on Wednesday, questioning the owners' need for a legislative solution at a time they are reporting substantial profits.

"You guys are not winning the war in my district," State Sen. Mario Scavello (R) told a panel of nuclear executives during a public hearing on Senate Bill 510 on Wednesday. "When they are told their electricity bill is going to go up, that just gets to them."

Exelon and FirstEnergy Solutions told the Senate Consumer Protection and Professional Licensure Committee that SB 510 levels the playing field for carbon-free energy sources unable to profit at low wholesale prices set by polluting fossil fuels. Both companies announced early retirements for nuclear facilities in Pennsylvania, including Three Mile Island in September and Beaver Valley in 2021.

Kathleen Barron

"When the rules allow you to pollute for free, not show up when customers need the power, and get paid the same as power plants that don't pollute and run 24/7, of course you like the rules," said Kathleen Barron, senior vice president of government and regulatory affairs for Exelon. "Fossil generators have the luxury of having the costs of their pollution borne by society so they do not have to factor those costs into their market offers."



Sen. Ryan Aument (R)

Sen. Ryan Aument (R) introduced SB 510 on April 3, more than three weeks after a similar House of Representatives plan drew criticism for its perceived favoring of expensive, aging nuclear facilities instead of cheaper renewable resources or fossil fuels. (See *Pa. Lawmakers Introduce 2nd Nuke Subsidy Bill*.) Both proposals create a third tier within the state's Alternative Energy Portfolio Standard (AEPS) program, from which suppliers must buy 50% of their power by 2021. Unlike the House version, however, the Senate bill directs the Public Utility Commission to set credit prices and guarantee between 17 and 23% of Tier III sources purchased include non-nuclear suppliers, like wind and solar. The first two tiers of the AEPS include 16 renewable resource types with targets of 8% and 10%, respectively.

"It's not a zero-sum game where only one resource, nuclear or renewables, can grow," Aument said on Wednesday. "My bill makes sure there's space in Tier III to build up a competitive renewable portfolio. I am not, nor have I ever been, interested in a direct government subsidy for the nuclear industry."

In February, Exelon reported record-breaking production levels for its nuclear fleet in 2018. It anticipates operating earnings of $3 to $3.30/share in 2019 based on growth in utility revenue, the impact of zero-emission credits on its New Jersey nuclear plants and previously announced cost reductions.

Sen. Kim Ward (R) pressed Exelon about the billions in profits the nuclear industry collected last year and questioned whether the company supported the bill for financial or philosophical reasons.

Barron said the wholesale market values the cheapest price over the cleanest form of energy, saying it is an unfair comparison that leaves nuclear plants with their hands tied.

"We feel like it's a financial question of what we are earning as a result of market rules," she said.

Dave Griffing, senior vice president of government affairs for FirstEnergy Solutions, told Ward to look no further than his company's latest bankruptcy filings.

"FirstEnergy Solutions wouldn't have entered into Chapter 11 restructuring if this wasn't a financial concern," he said. "We have two sources of revenue — generation and capacity — and those are deflated, so yes it's a financial concern for us." (See *Judge Rejects Liability Release in FirstEnergy Reorg*.)

Critics of the bill insist the subsidies disrupt the competitive wholesale market. (See *Critics Warn Pa. Lawmakers Against Nuke Subsidy Bill*.)

"With respect to nuclear power plants, [financial problems have] largely been limited to single-reactor units that do not possess the efficiencies of scale to be economically competitive," said David Spigelmyer, president of the Marcellus Shale Coalition. "Currently across the United States, six nuclear power facilities have announced retirement plans. Four of the facilities are single-reactor facilities, while the other two have announced retirements due to a variety of locally significant factors, including opposition from environmental organizations."

PJM's Independent Market Monitor said last month that three of the RTO's 18 nuclear facilities face revenue shortfalls through 2021. The three plants — Davis-Besse, Perry and TMI — each operate just one reactor. The remaining multiunit facilities, including the subsidized Quad Cities in Illinois, will remain profitable. Even without ZECs, Quad Cities would cover its costs for the next three years, according to the Monitor. (See *Monitor Says PJM's Capacity Market not Competitive*.)

House Resumes Hearings

The House Consumer Affairs Committee drilled deeper into questions surrounding Exelon's profits during a second hearing on the similarly structured HB 11 on Monday. Citing the Market Monitor's estimates, Rep. Ryan Mackenzie (R) asked Barron whether Exelon's other Pennsylvania plants — Limerick and Peach Bottom — earned nearly $350 million combined in 2018, compared to TMI's $37 million loss.

Barron refused to detail individual unit costs and revenue forecasts and said the Monitor's estimates are inaccurate.

"It is inaccurate to the extent that the data is based on industry averages in terms of costs," she said. "The Market Monitor does not have unit-specific costs, as that is competitively sensitive information. The estimates assumed there will be no change in costs and costs will stay exactly the same. It also assumes there will be no risks."

An *analysis* from the National Conference of State Legislatures determined SB 510 would cost $550 million in tax credits at a rate of $6.68/MWh — far lower than the prices of subsidies in Illinois, New York and New Jersey. Pennsylvania's sheer number of eligible megawatt-hours — $83 million spread across nine nuclear reactors — would make it the largest subsidy program nationwide.

Discussion on HB 11 will continue April 29. Barron said if no policy solution passes the legislature before June 1, TMI will shut down. ■

PJM News

PJM PC/TEAC Briefs

Manual Changes Move Ahead Without ELCC, for now

VALLEY FORGE, Pa. — PJM's Planning Committee endorsed capacity generation rule *changes* for Manual 21, save for the controversial effective load-carrying capability (ELCC) calculations deferred for a vote until next month.

The endorsed revisions include a new section devoted to obtaining, maintaining or losing capacity interconnection rights (CIRs), as well as sections for installed capacity calculations and testing requirements.

New rules on testing within temperature bounds would take effect June 1, with provisions on simultaneous testing and the ELCC effective for delivery year 2022/23. Wind and solar units losing CIRs would be notified before Jan. 1, 2025.

The committee will consider PJM's ELCC calculations, as well as modifiers proposed by the American Wind Energy Association last month, at the May 16 meeting. (See *AWEA Balks at PJM Plan on Wind, Solar Capacity*.)

PJM wants endorsement from the Markets and Reliability Committee at its April 25 meeting so that unforced capacity (UCAP) values for wind and solar can be posted by May 1 for use in the 2022/23 Base Residual Auction in August. The proposal would not affect UCAP values from prior auctions.

Market Efficiency Process Enhancement Task Force Gets Phase 3

Stakeholders agreed to a third phase for the Market Efficiency Process Enhancement Task Force after approving manual revisions that change how often PJM re-evaluates projects and shifts planning timelines.

The phase 2 proposal moves the long-term planning window back two months to January-April from November-February to align it with MISO's processes. If approved at the April MRC, both RTOs would post economic drivers in January.

The mid-cycle model refresh would be made in late April to allow project proposers extra time to analyze their projects under the revised case prior to a final submission.

Tim Horger, PJM | © *RTO Insider*

PJM's Brian Chmielewski said the task force agreed the RTO will not re-evaluate any projects once a certificate of public convenience and necessity (CPCN) has been issued or — in the case of states without such a process — once construction has begun. Under current rules, PJM reviews the costs and benefits of economic-based transmission projects annually to ensure they remain economical. (See "PJM Readies Package on Market Efficiency Rule Changes," *PC/TEAC Briefs: March 7, 2019*.)

Stakeholders modified proposed *language* in Section 1.5.7 of the Operating Agreement by adding "or relevant regulatory authority" to ensure projects that don't require a CPCN or fall under the jurisdiction of any state agency will be covered under the new rules.

Phase 3 will tackle how regional targeted market efficiency projects address historical congestion using the same criteria as used in interregional TMEPs and possibly changing the 1.25 benefit-cost threshold to measure energy benefits separately from capacity benefits.

Staff will seek MRC approval of the changes in April and Members Committee endorsement of Operating Agreement revisions in May. PJM wants the new rules effective Aug. 1 for the 2020/21 long-term window.

Revisit Benefit-cost Analysis, Monitor Says

The Independent Market Monitor wants stakeholders to reconsider how it performs benefit-cost analyses, noting the current process turns a blind eye to any drawbacks that come with a transmission project.

"The current analysis ignores anywhere where benefits are negative," said Howard Haas, of Monitoring Analytics, as he presented the Monitor's first read of a *problem statement* and *issue charge* addressing the matter. "If you are ignoring the effect on locations where the effect is negative and only accounting for effects where they are positive, you're going to approve things you shouldn't approve."

Specifically, the Monitor says PJM's current method ignores increased congestion in all zones resulting from a transmission project when calculating energy market benefits. Haas said the benefit-cost analysis does not account for the fact that transmission project costs are not subject to cost caps and may exceed estimated costs by a wide margin. When actual

PJM News

costs exceed estimated costs, the benefit-cost analysis is effectively meaningless and low estimated costs may result in inappropriately favoring transmission projects over market generation projects or the option of no project at all, he said.

"We think there is something we could be doing differently, and we'd like to have a discussion about what those could be," Haas said.

While stakeholders appeared supportive of discussing some of the Monitor's concerns, many — including PJM itself — pushed back against questioning the RTO's 15-year planning horizon for measuring benefits.

"That was literally just approved by FERC two months ago," PJM's Tim Horger said. "Let's get some experience with using this."

In a Feb. 19 ruling, PJM won its bid to revise the benefit-cost ratio to ensure projects with delayed in-service dates only receive analysis within the existing 15-year planning horizon. Under previous rules, PJM said it spent considerable time developing ad hoc projections for years beyond the current cycle, resulting in "risky" and "unreliable" modeling.

The Monitor protested PJM's reasoning, proposing instead a longer horizon exceeding 20 years. FERC rejected the Monitor's arguments. (See *PJM Extends Planning Window After FERC Approvals*.)

"To the extent that we just had the paint dry on one filing … if we had filed our proposal, we do believe it would have been approved," Haas said on Thursday.

Pauline Foley, PJM's legal counsel, questioned the Monitor's insistence on bringing the issue up now instead of during the earlier phases of the Market Efficiency Process Enhancement Task Force.

"There's a little bit of frustration. … I think the task force is the appropriate place to bring this, and I think we need a new problem statement, frankly," she said. "My suggestion is that this be a whole new initiative because it looks like you're trying to revamp the market efficiency process as a whole."

LS Power Will Seek 2nd Deferral on Transmission Replacement Language

LS Power's Sharon Segner told the PC on Thursday she will seek another 60-day vote deferral on her company's proposed revisions to the Regional Transmission Expansion Plan process.

Segner's amendment to Manual 14B was slated for stakeholder endorsement at the April 25 MRC meeting. The proposal specifies that a transmission owner's supplemental project "will generally be removed from the RTEP" following a final order by a state siting agency rejecting the project. Supplemental projects are proposed by TOs and are not required for compliance with PJM's reliability, operational performance or economic criteria.

Aaron Berner | © *RTO Insider*

Aaron Berner, PJM manager of transmission planning, said stakeholders agreed to another deferral after conducting two educational sessions last month to discuss how projects are removed from the RTEP. (See "RTEP Removal Discussions Scheduled," *PJM PC/TEAC Briefs: March 7, 2019*.)

"There is still some work to be done and some technical discussions to be had," he said. "It's a good step to keep moving forward. We are finding some resolution and some common ground on some of the language."

PJM will schedule as many as five additional meetings on the subject over the coming months, Berner said.

TMI Deactivation Costs Rise $1.5 Million

Three Mile Island's scheduled deactivation just got $1.5 million more expensive, PJM's Phil Yum said Thursday.

The plant *requested* new station service to a control building with a new 230-kV bus ahead of its planned closing in September. Yum said the work is necessary in order to fulfill the deactivation request.

JCP&L Needs Transmission Line Upgrades

Jersey Central Power & Light *requested* a dozen transmission line upgrades, citing outdated and faulty equipment with few experts left to fix it.

FirstEnergy identified protection schemes using a certain vintage of relays and communication equipment with a history of misoperation, the utility said in a problem statement submitted to the Transmission Expansion Advisory Committee on Thursday.

Affected 230-kV lines include: Atlantic-Red Bank, Atlantic-Eaton Crest-Red Bank, Pohatcong-West Wharton, Gillette-Traynor, Greystone-West Wharton, Raritan River-Werner, Greystone-Portland, Atlantic-Smithburg, Chester-Glen Gardner, Gilbert-Glen Gardner and Chester-West Wharton.

Dominion Supplementals

Dominion Energy said customers *requested* two new transformers in Northampton County, N.C., and Charles City County, Va. The new units will support commercial load growth and contingency loading for the loss of an existing transformer.

Dominion also proposed a $2.5 million project to satisfy requests for a new substation in Chesterfield County, Va. The plan involves cutting into line No. 2066, installing three switches and a 230-kV circuit switcher on the high side of a new transformer.

In addition to building a third transformer at the Winterpock substation, Dominion suggests installing a four-breaker ring and a circuit switcher on the high side of the new transformer for $8.5 million. The utility also wants to spend $750,000 to install a new 230-kV circuit switcher at the Rockville substation and $4.5 million to replace an old transformer along the Chesterfield line. Transformer replacements near the Peninsula substation are estimated to cost $16.1 million.

AEP Takes over Dayton Line

Dayton Power and Light will *retire* its Killen substation in June and transfer use of the 345-kV Don Marquis-Stuart line to American Electric Power. AEP said it will *need* to bypass Killen taps in order to complete the line circuit. ■

— Christen Smith

Company Briefs

SCE Asks FERC for 17.12% ROE

Southern California Edison last week asked FERC to approve a 17.12% base return on equity, plus incentives, citing "dramatic, material changes" to its regulatory and financial conditions because of exposure to extraordinary wildfire risk.

The company asserted that a "conventional" base ROE that does not account for the increased wildfire risks should be 11.12%. In comparison, SCE's current FERC-approved base ROE is 10.3% plus a 50-basis-point adder for participation in CAISO. If approved, the requested 17.12% ROE would also be by far the highest currently allowed for any U.S. electric utility.

The company estimated its ROE request would increase the FERC-regulated portion of its average residential customer's bill by about $2.20/month if approved.

More: *S&P Global Market Intelligence*

Amazon Workers Push for Climate Change Action

More than 4,200 Amazon employees last week called on the company to rethink how it addresses and contributes to a warming planet. The action is the largest employee-driven movement on climate change to take place in the influential tech industry.

The workers say the company needs to make firm commitments to reduce its carbon footprint across its vast operations, not piecemeal or vague announcements. They also say that Amazon should stop offering custom cloud-computing services that help the oil and gas industry find and extract more fossil fuels.

The letter adds support for a new tactic among activist tech workers: using the stock they receive as compensation to agitate for change. Like other shareholders, they can file a resolution urging a particular corporate change that investors vote on at a company's annual meeting. Historically, this approach has been used by outside activist investors, not employees.

More: *The New York Times*

Apple Announces more 100% Renewable Commitments for Supply Chain

Apple last week announced a near doubling of its suppliers that have committed to using 100% renewable energy for their work connected to the tech giant, bringing the total to 44 companies.

Apple hit its 100% renewables target for its own operations in April of last year. Now it's expanding to what it calls "Scope 3" emissions: those incorporated in a company's value chain. Manufacturing accounts for 74% of Apple's carbon footprint, the company said.

The push for more renewables within its supply chain means Apple is already 1 GW beyond the target of 4 GW it established for 2020.

More: *Greentech Media*

Federal Briefs

E&E: Chatterjee Helped Sink Nomination of New Chairman

FERC **Chairman Neil Chatterjee** played a role in torpedoing the all-but-final White House nomination of Republican David Hill to join the commission, several sources familiar with the matter told E&E News last week.

E&E spoke with a dozen industry and political sources who requested anonymity because of the sensitivity of the discussions. Multiple sources said Chatterjee made calls to energy companies and Republican allies, undercutting Hill's potential nomination.

The nomination of Hill, a veteran of the George W. Bush administration and longtime energy attorney, was all but officially announced, multiple sources said, including a series of FBI background interviews and paperwork, until the White House pulled away from the nomination in mid-March after lobbying efforts from Chatterjee and Energy Secretary Rick Perry. Media reports highlighted the efforts of Perry and the coal industry to stop Hill's nomination from going forward. But E&E's reporting shows the actions were also to prevent Hill from assuming the chair — a leadership position specifically chosen by the White House to direct the commission's agenda and policy considerations.

More: *E&E News*

Manchin Introduces Bipartisan Carbon Capture Bill

Sen. **Joe Manchin** (D-W.Va.) introduced a bill last week to increase federal funding toward developing carbon capture technology while also committing to fossil fuel use.

Cosponsored by a bipartisan group of senators, the bill would direct the Department of Energy to establish four new research programs within its Office of Fossil Energy. Those programs would be focused on carbon storage, carbon utilization, carbon removal, and coal and natural gas technology.

"The energy experts who have come before the Senate Committee on Energy and Natural Resources have been clear — fossil fuels are projected to be part of the generation mix through 2040, and likely beyond, and the United States needs to lead in technological innovations designed to reduce carbon emissions," Manchin, ranking member of the committee, said in a statement.

More: *The Hill*

House Dems Launch Probe into EPA Officials' Ties to Utilities

The House Energy and Commerce Committee is launching an investigation into whether top EPA officials violated ethics rules by launching a rollback of air pollution regulations that benefited their former lobbying clients in the electric utility sector.

The committee's Democrats are seeking to probe communications between the utilities and an industry group that was run from the offices of the lobbying firm Hunton Andrews Kurth, which had employed **Bill Wehrum**, EPA's air chief, and

David Harlow, the EPA air office's senior counsel. That industry organization, the Utility Air Regulatory Group, generated $8.2 million in 2017 alone for the lobbying firm and raised questions about whether Wehrum's involvement with it followed ethics guidelines.

The committee is seeking communications between the power companies and Hunton with EPA officials and to clarify their relationship to UARG.

More: *Politico*

State Briefs

CALIFORNIA

San Diego County to Develop 'Electric Vehicle Roadmap'

The San Diego County Board of Supervisors unanimously approved a plan last week instructing its staff to develop an "electric vehicle roadmap" for the region, a plan that will look at ways to increase EV use and build charging infrastructure throughout the county.

As part of developing the roadmap, the board also directed staff to support legislation and regulatory changes statewide that promote EVs, and to look for grant opportunities and other sources of funding that could be used to support recommendations the staff proposes.

Staff are expected to present a plan to the board by August.

More: *The San Diego Union-Tribune*

INDIANA

House Rejects Generation Moratorium

The House of Representatives last week voted 53-38 to establish a 15-member task force that would issue recommendations for state energy policy.

The original version of the bill, however, included a provision, introduced by Rep. **Ed Soliday** (R) that would have prohibited the Utility Regulatory Commission from approving generation projects larger than 250 MW for a period of 20 months.

Soliday said the intent of the proposed moratorium was to slow down the rapid changes happening within the state's electricity landscape while the task force made recommendations. Critics of the moratorium called it the "last gasp" of the coal industry to keep aging, expensive and polluting plants open.

More: *Indianapolis Star*

MAINE

PUC Approves New England Clean Energy Connect

The Public Utilities Commission last week unanimously approved Central Maine Power's New England Clean Energy Connect transmission project.

Chairman Mark Vannoy said that the economic and environmental gains are needed in a region trying to balance the need for more energy with environmental stewardship. "We're at a critical point here: It's needed, it's necessary and the state of Maine is moving forward," he said, calling the outcome "a good result for Maine ratepayers."

The 145-mile high-voltage line would allow 1,200 MW of Canadian hydropower to reach consumers in Massachusetts to meet that state's green energy goals.

More: *The Associated Press*

MARYLAND

General Assembly Approves 50% Renewables by 2030 Goal

Lawmakers approved a dramatic investment in renewable energy in the final hours of the 2019 General Assembly session, passing a measure mandating that half the state's electricity supply come from renewable sources by 2030.

The proposal appeared doomed as recently as two weeks ago, languishing in the House of Delegates until lawmakers revised it to preserve subsidies for the waste-to-energy industry. Senators had voted earlier in the session to stop subsidizing trash incineration as green energy.

The legislation heads to Republican Gov. Larry Hogan for his consideration. Hogan vetoed a similar bill in 2016. Democrats overrode that veto to set the state's current renewable energy goal of 25% of the state's electricity supply.

More: *The Baltimore Sun*

NORTH CAROLINA

Duke to Appeal Order to Excavate Coal Ash Basins

Duke Energy plans to appeal an order from the state requiring the power company to excavate the remaining nine ash basins across five counties.

The company argues that excavation would put financial strain on customers, suggesting the company would recoup the cost by increasing energy bills. House Democrats have introduced a bill that would block Duke from passing through cleanup costs to ratepayers.

The Department of Environmental Quality ordered excavation on April 1, specifically targeting the basins at Duke's Allen, Belews Creek, Cliffside/Rogers, Marshall, Mayo and Roxboro facilities.

More: *WGHP*

WASHINGTON

House OKs 100% Clean Energy by 2045

The House of Representatives last week voted 56-42 to pass a bill that would require utilities to eliminate coal as an energy source by the end of 2025 as the first step toward a goal to provide carbon-free electricity by 2045.

The bill passed the Senate last month 28-19, but the House amended it. The Senate will need to reapprove it before it goes to Gov. Jay Inslee's desk.

The state, which relies heavily on hydroelectric power, already generates more than 75% of its electricity from carbon-free sources. Existing hydropower would count toward the goal, giving the state about 25 years to find carbon-free sources for the remaining 25% of its electricity needs.

More: *The Associated Press*