RTO Insider
Your Eyes and Ears on the Organized Electric Markets
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Vistra Energy Swallowing Dynegy in $1.7B Deal

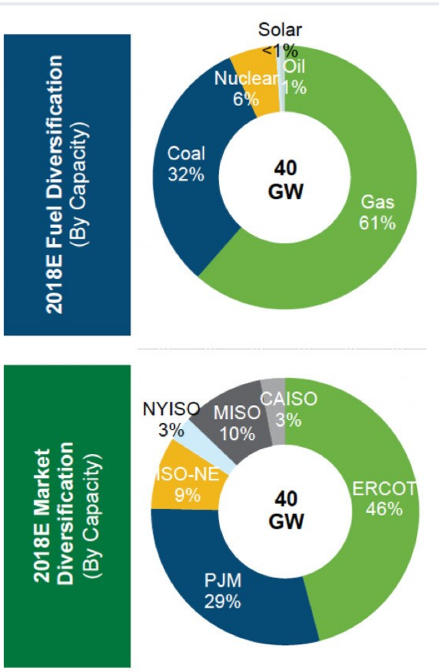
By Michael Kuser and Rich Heidorn Jr.

Vistra Energy will acquire Dynegy in a $1.7 billion all-stock deal that will create a power generation and retail giant owning 40 GW of capacity and serving nearly 3 million customers, mainly in ERCOT, PJM and ISO-NE, the companies announced Monday.

In a conference call, Vistra CEO Curt Morgan said the companies planned to close the deal by April 30, 2018, allowing six months for regulatory approvals from FERC, the New York Public Service Commission and the Public Utility Commission of Texas.

Dynegy's combined cycle gas turbine fleet and geographically diverse portfolio were a

Continued on page 43



| Vistra Energy

Critics Slam PJM's NOPR Alternative as 'Windfall'

Monitor Suggests RTO Officials Doing Exelon's Bidding

By Rich Heidorn Jr.

No commenter delivered a more damning takedown of Energy Secretary Rick Perry's call for out-of-market compensation for nuclear and coal generators last week than PJM.

PJM said the Department of Energy's Notice of Proposed Rulemaking makes "a sweeping and unsupported conclusion that, solely in regions with capacity and energy markets, certain units, regardless of their location, performance history or competitiveness, deserve full cost recovery through out-of-market mechanisms" (RM18-1).

But the Independent Market Monitor and other critics say the alternative PJM proposed in its filing would also be expensive and also undermine the RTO's markets. Where Murray Energy and its customer FirstEnergy appear to have influenced DOE's call to aid coal, the Monitor suggests that PJM is acting in the interest of Exelon, which would be the biggest winner from a boost to nuclear plants.

In an interview Thursday at the Markets and Reliability Committee meeting, PJM CEO Andy Ott said the RTO's proposal will ensure LMPs "reflect which units are actually operational" but is "not going to benefit spe-

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California Enviros Debate Priorities for Policy Report

By Jason Fordney

While reducing greenhouse gas emissions and increasing the use of renewable resources will remain top priorities for California for the foreseeable future, a biennial policy report by state energy planners has some environmentalists calling for even more aggressive pivots — such as phasing out utility-scale renewable projects.

The California Energy Commission is taking comments on its 2017 Integrated Energy Policy Report (IEPR) through Nov. 10. The current version released earlier this month lists many policy goals, including doubling energy efficiency savings, achieving 50% renewables by 2030, advancing the electrification of the transportation system and addressing barriers for low-income consumers in reaping the benefits of cleaner energy. The nearly 500-page document also discusses new technologies, transmission-scale planning, natural gas and climate issues, among other topics.

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Conference Coverage:

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In this week's issue

Correction

Last week's newsletter incorrectly reported that MISO did not file its own response to the Department of Energy's Notice of Proposed Rulemaking to provide price supports for coal and nuclear generation (RM18-1). The RTO did file comments, as reflected in the updated story on our website, *RTOs Reject NOPR; Say Fuel Risks Exaggerated*.

STAKEHOLDER SOAPBOX

Paving the Way for New Electric Resources: A New York Success Story

By Joel Yu

For more than a year, Con Edison, NYISO and its stakeholders, including generation and transmission owners, customers and environmental groups, have been hard at work developing reforms that will streamline the interconnection process for new energy resources in New York.

Given the state's Clean Energy Standard, which requires 50% of the state's energy to be sourced from renewables by 2030, the proposed interconnection process improvements are expected to have an immediate, positive impact. The process will better facilitate the entry of thousands of renewable megawatts for the benefit of all New Yorkers by bringing renewables to the market more efficiently.

While the American Wind Energy Association petition[1] and FERC's proposed rulemaking[2] seem to target reforms for queue-based interconnection processes, we took advantage of the opportunity to improve NYISO's batch-based "Class Year" process through several refinements, reforms and clarifications.

Headlining Con Edison's proposed reforms is a suggestion to split the Class Year structure into two phases so that most New York projects can complete their interconnection processes faster.

New generators are studied for their impacts on the transmission system and are required to fund system upgrades if they are found to trigger reliability upgrades.

Currently, all projects must wait to complete the Class Year study process together. In many cases, projects end up waiting for months as NYISO performs additional studies, generally for the largest Class Year project(s).

Under a split Class Year, projects that do not require additional deliverability studies after phase one will be allowed to complete the process on an expedited basis.

At the conclusion of a phase one study, NYISO will notify developers of its preliminary deliverability study results. The developers then will have several options: They can accept their allocated costs for shared upgrades and complete the Class Year; continue on to the phase two study, with an option to modify their requested energy and capacity deliverability levels; or withdraw from the Class Year.

Developer feedback has been overwhelmingly positive; many are hopeful that the new Class Year process can be implemented expeditiously.

In addition, NYISO proposes to streamline its study agreements.

Recognizing the administrative challenge of having multiple parties (NYISO, the developer and the interconnection TO) execute multiple study agreements, stakeholders agreed to reflect the terms and conditions in the *pro forma* interconnection request form and NYISO Tariff.

The proposal provides adequate opportunity for the interconnecting TOs[3] to obtain necessary information and provide input on the study scope, while reducing the number of study agreements needed to administer the process.

For the most critical study, a facilities study, a three-party study agreement will continue to be required.

The Class Year process already provides substantial flexibility and cost certainty for developers.[4] Nevertheless, like all interconnection processes, it can be one of the most complex and time-consuming aspects for developers wanting to enter the market.

NYISO's recent filing[5] represents a package of reforms that improve process efficiency while maintaining necessary evaluations to meet reliability requirements. With FERC's approval, potentially by the end of the year, stakeholders will begin reaping the benefits.

Joel Yu is a senior energy policy advisor at Con Edison. Subsidiaries Con Edison Company of New York and Orange and Rockland Utilities are transmission owners within NYISO. A subsidiary of Orange and Rockland Utilities, Rockland Electric, is a transmission owner within PJM.

[1] AWEA's Petition for Rulemaking, RM15-21 (June 19, 2015)
[2] FERC's Notice of Proposed Rulemaking, RM17-8, 157 FERC 61,212 (Dec. 15, 2016)
[3] Including connecting TOs and affected TOs
[4] Comments of the Indicated New York Transmission Owners, Docket RM17-8 (April 13, 2017)
[5] ER18-80 (Oct. 16,2017)

CAISO NEWS

California Enviros Debate Priorities for Policy Report

Continued from page 1

California Energy Commissioners (from left): David Hochschild, Karen Douglas, Chair Robert Weisenmiller, Andrew McAllister and Janea Scott. | © RTO Insider

Down with Centralization, Up with DER

Another key element in the state's grid planning process is Renewable Energy Transmission Initiative (RETI) 2.0, which recognizes that greater reliance on renewable energy may require additional transmission or infrastructure improvements to achieve renewable energy goals and reduce emissions. The initiative is meant to facilitate electric transmission coordination and planning, and involves the CEC, the California Public Utilities Commission and CAISO.

RETI's "landscape-scale" planning approach, included as a component of the IEPR, considers environmental conservation and other land uses, tribal cultural resources and stakeholder concerns to help identify the best areas for potential electric infrastructure development.

But some environmentalists calling into a CEC workshop last week questioned the landscape-scale approach, saying that utility-scale generation, even for renewables, is an outdated concept. Planning agencies are "clinging to the outmoded notion that thousands of acres of desert land are needed for utility-scale projects," with landscape-level planning leading the way, said Steve Mills, of the environmental group Alliance for Desert Preservation.

"Why do the energy agencies continue to reach for this old, familiar tool, which is a vestige of the outmoded centralized planning regime, when the IEPR makes it clear that it is time to throw away the whole toolbox?" Mills asked. He said the focus should be on energy efficiency, storage, distributed generation and other new technologies, not new utility-scale projects.

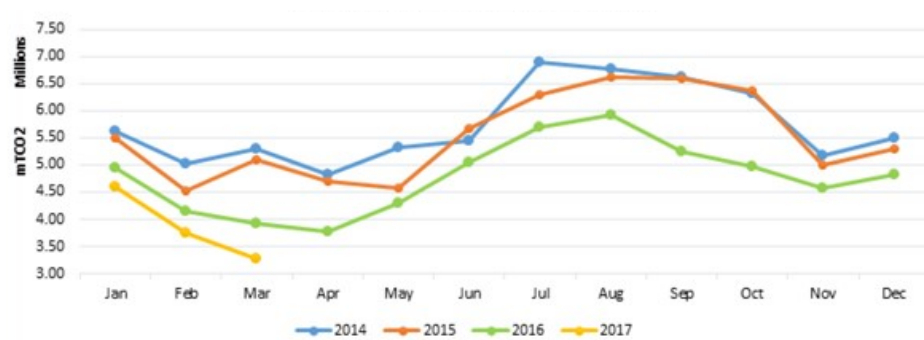
But Kate Kelly of Defenders of Wildlife said that the landscape-scale approach is the best one, and is "the tool to make informed decisions as when, where and how to site large-scale renewable energy development."

Kelly said that while a move to distributed resources is desired, "That is not going to happen today, tomorrow or next week, and meanwhile we have to plan intelligently for renewable energy in a variety of places."

CAISO this month issued a separate planning document, that envisions less fossil-fuel and nuclear resources by 2030, and a host of other proposals. (See *CAISO Symposium Panelists Talk Grid of the Future, Western RTO*.)

Transition from Gas

Reducing GHG emissions is not a new policy in California, but rapid changes in technology and resources are changing the way state planners must approach the electricity grid.



Total GHG emission to serve load | *CAISO*

The report notes the customer load currently served by investor-owned utilities could drop by 85% in the next 10 years. Chief among the new technological issues are renewable resource variability, the effect of DG on grid operations, and the impact of energy storage and electric vehicles.

The state reduced its CO_2 output by 1.5 million metric tons between 2004 and 2014, a 10% decline. The electricity sector produces about 19% of California's GHG, while the transportation sector emits 40%. The state accounts for about 1% of global GHG emissions.

The CEC is the primary policy-setting and planning energy agency in the state, and is responsible for certification and compliance of thermal power plants 50 MW and larger, including all project-related facilities.

NRG Energy recently indicated it will pull plans for a proposed 262-MW natural gas plant in Oxnard after Commissioners Janea Scott and Karen Douglas recommended the project not be approved. (See *NRG Signals Pull-out on Proposed Puente Plant*.) Distributed energy resources are alternatively planned to deal with the expected loss of generation in the area due to state rules prohibiting the use of once-through cooling at power plants.

Earlier this year, CEC Chair Robert Weisenmiller, who is quoted in the IEPR as desiring "a portfolio of solutions," recommended permanent closure of the Aliso Canyon natural gas storage facility, saying it could be replaced with renewable energy, energy efficiency, electric storage and other tools. (See *California Officials: Aliso Canyon Safe to Open*.)

CAISO NEWS

CPUC Bolsters Demand Response, Pans Resiliency NOPR

By Jason Fordney

California PUC staff present their comments on the DOE NOPR to the commission. | *© RTO Insider*

SACRAMENTO, Calif. — California regulators voted Thursday to extend the life of a demand response pilot project, saying they hope it could lead to a permanent program to help meet the state's clean energy goals.

The California Public Utilities Commission heard from the public about several matters at the meeting, held across the street from the state capitol. The five commissioners were also predictably unified in their opposition to any possible FERC-proposed grid resiliency pricing rule as a result of the U.S. Department of Energy's Notice of Proposed Rulemaking calling for financial support for nuclear and coal-fired power plants.

DRAM Extended

The PUC unanimously approved extending the Demand Response Auction Mechanism (DRAM) pilot program into 2018, against the recommendation of its administrative law judges.

"There were a lot of things that really led me to this decision to see the merit of continuing with this an additional year," Commissioner Martha Guzman-Aceves said. The program has grown in terms of new participants, including low-income residents, "to levels that are really quite outstanding and different from the [investor-owned utility] programs."

In the DRAM program, third-party sellers bid aggregated DR directly into the CAISO day-ahead energy market. Utilities acquire the capacity but do not receive revenues winning bidders might gain from the market. In the 2017 DRAM, third-party providers could bid in as both local and flexible resource adequacy, not just system resource adequacy.

Thursday's decision requires Pacific Gas and Electric and Southern California Edison to procure $6 million of DR in their territories in a 2018 auction for 2019 delivery, while San Diego Gas & Electric must acquire $1.5 million. DR companies bid for the contracts on a pay-as-bid basis.

The program also created two new working groups: one to define new DR programs, and one to study barriers to DR.

Commissioner Liane Randolph said, "It is helpful for us to continue these pilot projects until the evaluation is complete and we decide whether we are ready to adopt the DRAM as a permanent program." By keeping the auctions going and modifying the guidelines, "we encourage market participants to continue to invest in this new type of DR," she said.

Commissioner Carla Peterman said there are limited opportunities for DR.

"I do think it is important to continue our momentum in this area," Peterman said. She noted the auction will use the same procurement guidelines as a permanent auction. "I think it will be a good opportunity to see how those guidelines work in practice," she said.

Commission Encourages CCA, Direct Access DR

The commission's decision also moves forward the process of enabling community choice aggregators (CCAs) and direct access (DA) providers to create DR programs to compete with those of IOUs.

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FERC Denies CAISO Waiver for DR Availability

FERC last week denied CAISO's request to waive Tariff requirements regarding "availability assessment hours" used to assess utilities' compliance with resource adequacy requirements (ER17-2263).

The ISO uses availability assessment hours to measure the availability of generation during a predetermined time period of the day for each type of capacity. Resources that are available for 98.5% of the hours for a month are eligible for payments, while resources that are available for less than 94.5% for that month are subject to non-availability charges.

CAISO wants to keep its 2017 availability assessment hours for 2018, but that violates a requirement that the hours vary by season. The ISO requested the waiver to provide relief to demand response companies that had offered to provide capacity based on qualifying capacity values calculated under California Public Utilities Commission rules, which are the same as 2017, creating a conflict with CAISO rules.

FERC's Oct. 24 order said the waiver request affects the availability assessment hours applied to all nonexempt resource adequacy resources and not solely the DR providers that require relief.

"CAISO does not provide a precise accounting of the demand response resources that require relief through this waiver request," FERC said. "However, the number appears to be relatively small compared with the total number of resource adequacy resources subject to the availability assessment hours. In sum, CAISO has not shown that the small amount of resources requiring relief justifies or requires the proposed scope of the waiver CAISO requests."

The commission said CAISO could submit a limited waiver request that directly addresses the problem of DR participation without creating undesirable consequences for the resource adequacy program.

— Jason Fordney

CAISO NEWS

CAISO Proposes EIM Governance Changes

By Jason Fordney

CAISO has proposed to change the selection process for members of the Western Energy Imbalance Market (EIM) Governing Body to rely less on outside search firms and more on the contacts of its Nominating Committee.

The ISO is taking comment on the proposal, which would give the EIM Nominating Committee discretion regarding use of an outside search firm. The proposal would also alter the process that occurs when a Governing Body member asks to be considered for another term.

According to the proposal, "It has become clear that members of the Nominating Committee have contacts with many qualified candidates who could be a good fit for the EIM Governing Body, both directly and through the other companies and organizations in their sectors."

The changes are being made in preparation for the June 30, 2018, expiration of Chair Doug Howe's and member Carl Linvill's terms, which requires months of work before then, CAISO Lead Counsel Dan Shonkwiler said in a Wednesday presentation. The terms for Vice Chair Valarie Fong and John Prescott expire June 30, 2019, and Kristine Schmidt's expires on June 30, 2020.

CAISO is taking comment on the proposal through Nov. 8, with an advisory vote from the Governing Body slated for Nov. 29 and a final vote from the ISO's Board of Governors during its Dec. 13-14 meeting.

The eight-member Nominating Committee includes representatives from eight different sectors and currently uses an executive search firm to identify possible candidates. If a body member seeks to be re-nominated, the committee may decide to do so without considering other candidates.

Under the proposed changes, the Nominating Committee must interview the current member seeking re-nomination and must consider other candidates, but it is not required to utilize a search firm as is the case now.

"It is not strictly necessary to use an executive search firm to come up with qualified candidates," Shonkwiler said, adding that the cost of the search firm to CAISO is "not insignificant."

The ISO says the goal of the selection process is to create diversity in expertise, and to ensure that one state or sub-region is not overrepresented. The body requires at least one member with expertise in Western energy markets, and candidates with regional experience get preference.

The body has authority over market rules for the EIM but holds just an advisory vote on other EIM-related CAISO decisions. CAISO is also proposing to change the decisional classifications" that determine whether the body, the ISO board or both have the authority to make decisional votes. The document clarifies that CAISO management can work with the chairpersons of its board or the EIM's body to resolve disputes over decisional authority.

The Governing Body's next meeting is scheduled for Nov. 29 in Boise, Idaho.

CPUC Bolsters DR, Pans Resiliency NOPR

Continued from page 5

California's CCA program allows local governments to aggregate retail electric customers and secure electricity supply contracts to serve them, while the DA program allows some nonresidential customers — such as agricultural, commercial and industrial, and small business — to choose alternative electricity suppliers.

The decision allows CCAs and DA suppliers to file with the PUC to determine whether their DR programs are similar to those of utilities. The measure takes steps to implement the "Competitive Neutrality Cost Causation Principle," which defines what constitutes a similar program and adopts a four-part process to make a final determination. If a CCA or DA provider proves its case, competing utilities must cease cost recovery for DR from customers that sign up with the third-party programs.

Chairman Michael Picker said he supports the proposal, but he is concerned that by moving existing DR customers out of the rate base of regulated utilities into the rate base of the CCAs, "we are frustrating the second promise of the CCAs, which is that they will create competition. Here we are actually hindering competition."

Picker added that it will be important to carefully analyze the applications for DR programs. "The practice has not always met the theory in CCA world; they have been uneven in actually expediting our drive for clean energy sources," he said.

But he said he strongly supports the continuation of the DRAM because it has created unique products, not just opportunities to arbitrage.

Strong Opposition to DOE NOPR

The commission also endorsed comments developed by staff in opposition to the DOE NOPR. Comments on the proposal were due to FERC on Oct. 23.

The approved comments state that "this rushed effort erodes trust in U.S. wholesale electric markets and undermines the role of the FERC as an independent body. If the energy crisis has taught us anything, it is that diversification of resources is critical for resiliency and reliability planning."

Instead of narrowing the choice of resources that qualify as "resilient," the PUC said there should be "a wide range" of tools to meet reliability needs, including energy storage, flexible demand and distributed energy technologies.

Picker said that while any such rule would have little immediate impact in California, it could in the long term, and it has aroused concern in neighboring states. He said it was a signal that the Trump administration does not "care to observe a series of long-held conventions on wholesale markets." The parties creating the rule "don't have their act together to actually come up with a reasonable argument" and "they have a prescription that is looking for a problem," Picker said.

Commissioner Clifford Rechtschaffen said "this rule did what was otherwise unimaginable," noting that it united petroleum, natural gas and renewable energy interests in opposition. "It is so beyond the pale," he added, saying that PUC staff had devised a strong mix of legal and policy arguments against the rule.

ERCOT NEWS

Texas Regulators Seek More Details on Sempra Oncor Bid

PUC also Rules on SPS Right of First Refusal, ERCOT Budget

By Tom Kleckner

Commissioner Ken Anderson confers with Commissioner Brandy Marty Marquez (foreground). | *© RTO Insider*

AUSTIN, Texas — The Public Utility Commission of Texas on Thursday threw a bit of cold water on Sempra Energy's proposed $9.45 billion acquisition of Oncor after issuing a preliminary order that calls for Sempra to prove it's financially fit to own the state's largest utility.

Whether that's enough to short-circuit yet another bid — the third — for Oncor remains to be seen.

Commissioner Ken Anderson filed a memo last week asking for more information on Sempra's debt, the transaction's financing, Oncor's governance structure, the effect of Sempra's other projects on its credit rating and Sempra's corporate relationship with Oncor (Docket 47675).

"These issues are important because Sempra creates uncertainty when it fails to produce details about how it will fund the transaction," Anderson wrote. "The purchaser must be able to prove it has the financial strength and stability to complete the purchase on its own, without impairing itself or Oncor."

Hunt Consolidated and NextEra Energy failed in previous acquisition attempts to meet the PUC's ring-fencing measures. Sempra announced it would make a bid for Oncor in August. (See *Sempra Outmuscles Berkshire for Oncor*.)

Anderson said Sempra's current application before the commission provides "very limited details" on how it will finance the transaction and manage "liabilities associated with its debt and far-flung operations." He noted the company's debt has risen from $5 billion in 2007 to about $18 billion, but that cash from operations increased slightly through 2009 and has remained relatively stable since.

"So far, it seems Sempra has not realized a proportional increase in cash flow from its projects," Anderson wrote.

Anderson reminded Chair DeAnn Walker and fellow Commissioner Brandy Marty Marquez that the PUC's goal is to "once and for all" help Oncor escape a "risky, debt-laden majority owner" and "move forward without the nagging specter of a financially troubled parent."

Oncor parent Energy Future Holdings, which declared bankruptcy in 2014, has retained an 80% stake in the utility since going into Chapter 11.

"Our objective," Anderson said, is to "ensure that Oncor is not being permitted to hop from one frying pan into another, or even just into a simmering pot."

He added a list of additional issues to be considered in the preliminary order, which Walker and Marquez approved.

Spokesperson Amber Albrecht took exception to Anderson's comments, saying Sempra is a "very strong, growing and conservatively financed company."

"We have investment-grade credit ratings at the holding company level, as well as at all of our operating subsidiaries, and our market capitalization over the past 10 years has grown to nearly $29 billion from about $15 billion," she said.

Anderson allowed that while Sempra's current credit ratings of Baa1 (Moody's) and BBB+ (Standard & Poor's) are investment grade, they are also "bottom tier."

"The company is vulnerable to changing economic conditions and could face challenges if overall economic conditions decline or if Sempra continues to experience significant challenges," Anderson said, pointing to the company's $10 billion LNG export project in Louisiana and international holdings in South America.

Sempra has already revised its financing structure since its initial bid in an effort to appease intervenors in the previous attempts to acquire Oncor. (See *Sempra Reworks Oncor Bid to Erase EFH Debt*.)

The PUC has scheduled a Feb. 21-23, 2018, hearing on the proposed acquisition in Austin.

PUC Orders Refiling in NextEra Ownership Bid for Oncor

The commission also rejected NextEra's bid to acquire a 19.75% interest in Oncor and directed the parties involved to refile an application that includes Oncor as an applicant.

Walker had suggested in a memo that the filing be dismissed, saying the state's Public Utility Regulatory Act (PURA) requires the "statutorily specified entity" to submit the filing. Anderson and Marquez agreed.

NextEra and Texas Transmission Holdings Corp. (TTHC), which owns the 19.75%, filed a joint application with the PUC in July. However, staff in August ruled the application deficient, saying neither applicant is a public utility under state regulations and that the case should not proceed without Oncor's involvement (Docket 47453).

Oncor intervened in the proceeding in September, telling the PUC that it was not

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ERCOT NEWS

Texas Regulators Seek More Details on Sempra Oncor Bid

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"seeking commission approval of the proposed sale."

In her memo, Walker referenced statutory language that "an electric utility or transmission and distribution utility must report to and obtain approval of the commission before closing any transaction in which … a controlling interest or operational control of the electric utility or transmission and distribution utility will be transferred."

Noting that neither NextEra nor TTHC complies with the requirements, Walker wrote, "In this case, Oncor must file the relevant report regarding this proposed transaction."

Walker said the refiling would allow the commission to determine whether the proposed transaction should close.

Vinson & Elkins' Matt Henry, representing Oncor, promised action within a few weeks. He said the utility intended to consult with NextEra and TTHC to determine how to proceed with a final filing, and that it would have to talk with Oncor's board as well.

Commission Rules Against SPS' Right of First Refusal

The commission issued a final order that made official its earlier rejection of Southwestern Public Service's exclusive right to build new regionally funded transmission facilities in its service territory (Docket 46901).

The PUC discussed the issue publicly in July, making it clear how it would rule. (See *Texas Commission Rejects SPS ROFR Request*.) SPS said at the time it would seek a rehearing and an appeal.

The commission further concluded that transmission facilities serving the public cannot be constructed in Texas without first obtaining a certificate of convenience and necessity (CCN) from the commission.

"Such a right would be inconsistent with the commission's authority to issue CCNs for transmission facilities, which is not limited to only utilities that have a certificated service area in which the facilities would be located," the commission wrote.

Walker abstained from the order, as the proceeding occurred a month before she joined the commission.

SPP and SPS in February requested the PUC determine whether the utility has the exclusive right to construct and operate new, regionally funded transmission facilities in areas of Texas that lie within its certificated service area. (See *SPS, SPP Ask Texas to Rule on Transmission Competition*.)

SPS contended that as an incumbent utility operating outside ERCOT, PURA gave it a right of first refusal to build in the service area prescribed by the PUC. SPP claimed that no such right existed, giving the RTO the ability to solicit and designate transmission-only utilities to construct and operate new transmission facilities within SPS' service area under FERC Order 1000.

The project in question, the 345-kV Potter-Tolk transmission line in the Texas Panhandle, was pulled from SPP's 10-year planning assessment in April. SPP's Board of Directors directed staff to conduct a congestion study in the area, due within a year. (See *SPP Board Cancels Panhandle Line, Seeks New Congestion Study*.)

ERCOT's Budget, Admin Fee Approved

The commission formally approved ERCOT's 2018/19 biennial budget, which will keep the ISO's system administration fee flat at 55.5 cents/MWh for the next two years (Docket 38533). The fee was raised from 46.5 cents/MWh in 2015.

The ERCOT board approved the budget in June, setting operating expenses, projects and debt-service obligations at $222.3 million and $228.0 million for 2018 and 2019, respectively.

ERCOT Approves 2 Plant Retirements

ERCOT last week approved the shutdown of two plants, including Luminant's coal-fired Monticello facility in East Texas, that will take nearly 2 GW of antiquated generation out of service.

Staff approved Monticello's retirement, effective Jan. 4, saying the plant is not necessary for reliability operations. The plants' three units, dating back to the 1970s, have a combined capacity of 1,880 MW but found themselves frequently out of the market. Luminant announced the units' proposed retirement Oct. 6. (See *First Shoe to Drop? Vistra to Retire 3 Texas Coal Units*.)

The ISO also approved the indefinite mothballing of two gas units at the city of Garland's Spencer plant, totaling 118 MW of capacity. The city filed notice with ERCOT on Oct. 4. The units began service in 1966 and 1973.

TAC Approves LDF Library Changes in Email Vote

ERCOT's Technical Advisory Committee last week unanimously approved staff revisions to the ISO's load distribution factor (LDF) library. The measure gathered 23 out of a possible 30 votes by email.

The vote was conducted after an Oct. 23 web informational session, which became necessary following revisions to account for a nodal protocol revision request (NPRR831).

Staff made changes related to private-use networks (PUNs), which are connected to the ERCOT grid and contain load that is typically netted with internal generation and not directly metered by the ISO. The change updates market systems to calculate a net load value for each PUN that will be included in the load zone price for all markets, when the load is a net consumer from the grid.

LDFs are used in congestion revenue rights and day-ahead market clearing activities, and developed using historical state estimator or supervisory control and data acquisition (SCADA). ERCOT staff added language to generate LDFs for PUN loads, which behave differently from non-PUN loads.

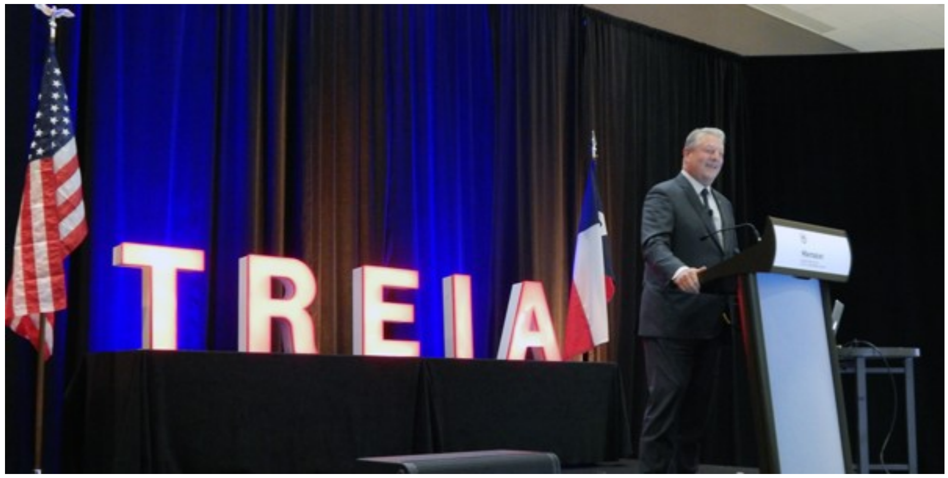
TAC's October meeting, scheduled last Thursday, was canceled because of a lack of voting items.

— Tom Kleckner

Texas Renewable Energy Industries Alliance GridNEXT

Former VP Gore Lauds Texas Town's Environmental Efforts

By Tom Kleckner



| © RTO Insider

GEORGETOWN, Texas — He came armed with his traveling slideshow, a sequel to his Oscar-winning documentary, homespun wisdom, and warnings of what human activity is doing to our planet.

And what better place than in Georgetown, Texas, a community north of Austin that last year became the first U.S. city to draw all its power from renewable resources, and where a local brewery proudly markets its beer as being produced with 100% wind power?

Al Gore, former vice president and current environmental activist, has drawn praise and scorn for his efforts to raise awareness of the threats posed by climate change. Last Monday afternoon, speaking before the Texas Renewable Energy Industries Alliance's GridNEXT conference, he pointed to Georgetown's diminutive mayor, Republican Dale Ross, and thanked him for "spreading the gospel of renewable energy."

Earlier this year, Ross had teased Gore about inventing the internet, saying he himself had invented green energy.

"You better be careful about that," Gore kidded Ross at the conference. "What you said could be interpreted as being somewhat friendly to the environment."

It was all in good fun. Both realize environmental concerns cross political lines.

"Congratulations, Georgetown," Gore said. "You are really an amazing city, and others are joining you."

The Need to Change

In delivering the first of two slideshow presentations last Monday — he would repeat his performance that night in Houston at Rice University — Gore asked three questions:

- Do we really have to change?
- Can we change?
- Will we change?

Gore, who won the 2007 Nobel Peace Prize for his efforts, is unequivocal about the need to change. He reeled off record temperatures that have scorched parts of Europe, Asia and the Middle East in recent years. He showed videos of California wildfires, melting asphalt streets in India and raging floodwaters, all the result of climate change, he said.

"We can't treat the world like an open sewer," Gore said. "Every day we're dumping 110 million tons of CO_2 in the sky, and it traps heat."

In fact, he said, humans are trapping as much heat as would be produced by 400 Hiroshima-class atomic bombs, leading to ocean warming that has produced global catastrophic rain events. He used Hurricane Harvey as an example, noting it crossed Gulf of Mexico waters that were 7 F warmer than normal as it blew up almost overnight into a major storm.

Most scientists agree there is a link between climate change and extreme weather, droughts, wildfire, famine and other socioeconomic upheavals. A 2006-2010 drought in Syria destroyed 60% of the country's farmland, wiped out 80% of its livestock and forced 1.5 million refugees to move into the already crowded cities — events that many, including Gore, say led directly to civil war.

"There was a social explosion," Gore said. "Some of these countries have trouble governing themselves just in the best of times. You overlay these extra burdens, and some of them just crack under the burden.

"The Defense Department has been warning about this," he said. "It hasn't mattered to the department whether the president in power is a Democrat or a Republican. For the last four administrations, the generals have been saying, 'Hey, wake up folks! This is going to be an international crisis, because we're going to have refugees, we're going to have food shortages, we're going to have water shortages, pandemic disease, so get ready for this.'"

Signs of Progress

The good news, Gore said, is that global carbon dioxide emissions have stayed flat three years in a row and are likely to remain so again in 2017. He pointed to the closing of coal plants in the U.S., drawing applause from the friendly crowd when he updated a map to include Vistra Energy's recent announced closures. (See *Vistra Energy to Close 2 More Coal Plants*.)

"We are shifting away from coal very, very rapidly," Gore said.

"You want to get our economy growing? You want to make America great?" he asked. "Let's build solar and wind plants, batteries and the renewable energy economy. According to the Bureau of Labor Statistics, the single fastest-growing job in the country is wind turbine technician. There are 565 solar employers in Texas."

Gore's slides highlighted data showing the growth of wind and solar energy in Texas, currently the largest producer of wind power in the U.S. They also took note of China's reduced coal use, the growth of electric vehicles worldwide, and other initiatives that have slowed the release of

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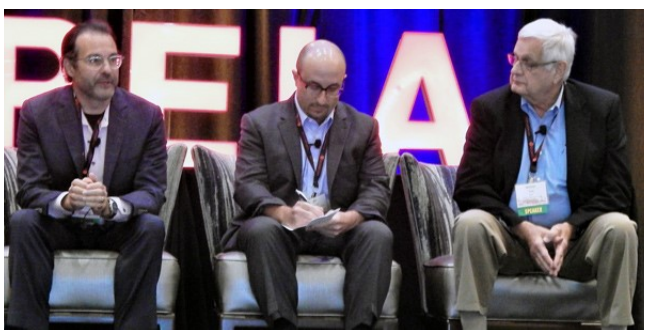
Texas Renewable Energy Industries Alliance GridNEXT

Overheard

GEORGETOWN, Texas — The Texas Renewable Energy Industries Alliance GridNEXT conference brought together more than 100 industry leaders, producers, developers, utilities, large consumers, entrepreneurs and policymakers to discuss the latest energy trends and developments. They attended workshops and participated in panel discussions on new technologies and the smart grid, integrating renewables and corporate energy management.

ERCOT Market Awaits Coal Retirements' Effects in 2018

Cyrus Reed, conservation director for the Lone Star Chapter of the Sierra Club, moderated a panel discussing emerging issues in the ERCOT market. Reed has long led the fight against fossil-fueled generation in Texas, a fact NRG Energy's Bill Barnes couldn't help alluding to.



Left to right: ERCOT IMM's Steve Reedy, NRG's Bill Barnes and Wind Coalition's Walter Reid discuss market issues. | © *RTO Insider*

"Four thousand megawatts of coal retirements ... I figured you'd be in a tuxedo," Barnes deadpanned, referring to Luminant's recent decision to close three coal plants. "This is what you've been waiting for." (See *Vistra Energy to Close 2 More Coal Plants*.)

In a way, so are others involved in the market. Steve Reedy, deputy director of ERCOT's Independent Market Monitor, noted that the ISO hasn't seen a summer with tight reserve margins since 2007. He said the Monitor is anxiously waiting to see how the market performs in 2018.

"Will we see coal generators making profits that justify future investment?" Reedy asked. "We did see too much capacity on the system, more than justified for the load. If the load doesn't rise fast enough to justify the generation, we expect to see retirements. So we will see if retirements in the market work."

"We're in Steve's camp," Barnes said. "We've made market improvements, but we still need to live through the events we've set up. We haven't had a true scarcity event in years, but if we have severe weather, we could have one. That's when we can all sit back and say, 'Yes, that's how it's supposed to work.' Or will there be temptation to intervene in the market?"

"The ERCOT market ... is brutally competitive," said The Wind Coalition's Walter Reid. "You have true competitors, with a very low barrier to entry for new generators. You also have the wild west of open access to true transmission. Generators are able to interconnect with the lowest impediment anywhere in the country."

Reid credited the state's regulators and legislators with helping bring a sense of order to the market.

"They've adjusted the market, as opposed to making dramatic changes," he said. "Any time you make a dramatic change, you're disrupting entrepreneurial energy. Only entrepreneurial energy will help us when we have energy shortfalls."

Asked by Reed why real-time co-optimization makes him "scream like a 13-year-old girl at a Justin Bieber concert," Reedy acknowledged the Monitor is a "really big fan." Of several market-design improvements the Public Utility Commission of Texas is considering, "our favorite idea is real-time co-optimization," he said. (See *ERCOT, Regulators Discuss Need for Pricing Rule Changes*.)

"It's effectively choosing on an every-five-minute basis where you get [the] spare reserve capacity you're paying for. That's your insurance policy," Reedy said. "And you're paying for it effectively and appropriately."

The Monitor agrees with the proposals being offered by a report commissioned by NRG and Calpine, Reedy said, but not all the implementation details.

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Former VP Gore Lauds Texas Town's Environmental Efforts

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CO_2 and other greenhouse gases.

"We're starting to see a decline [in global emissions], but we have to have a steep decline," Gore said. "If we had started this 20 years ago, we could have skied down a bunny slope. Now, we gotta go down the double black diamond. It's not going to be the easiest thing, but we have got to do it. We have to do it. We now know we can do it, but will we do it?"

Calling the Paris Agreement a "historic breakthrough," Gore said the U.S. is still technically in the agreement, although it has joined with Syria as the only two countries not committed to the agreement. He pointed out that India and China, two of the world's leading polluters, are on track to reach the commitments they have made in Paris.

So, too, he said, is the U.S., "regardless of what President Trump has announced."

"With the commitment of cities like Georgetown and all the other cities that have made plans to do the same and follow Georgetown's lead," and with commitments made by "thousands" of business leaders, Gore said, "The U.S. is on track to exceed the commitments it made under the Paris Agreement."

Gore closed with a quote from Wallace Stevens' poem "The Well Dressed Man With A Beard":

"After the final no there comes a yes
And on that yes the future world depends."

"Every great social and technological advance that has bettered humanity has met with a lot of opposition and a lot of noes, but ultimately, we get to a yes," Gore said. "Will we change? I believe we will. Will we change in time? I believe we will. And for those who believe we don't have the political will, [remember] political will is a renewable resource."

Texas Renewable Energy Industries Alliance GridNEXT

Overheard

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"We also like factoring marginal [line] losses into the price. Prices are important. They're the signal to tell people where to invest and how to operate. If energy is less valuable — if all the wind farm is doing is heating up the lines — it's not really as useful. To the extent it's doing that, it should be factored into the price."

"It's easy to support an energy-only market when the prices are low ... but logic can tell you that it can't last forever," Reid said. "It's going to take some courage to stay the course and say this is how the market is designed to work. There's periods of low prices, then high prices which incent new development and bring about a period of lower prices."

Does Grid Resiliency Override Solar & Storage?

Speaking on a panel devoted to solar energy and storage, Judy McElroy, CEO for Fractal Energy Storage Consultants, surprised some in the audience when she focused her comments on grid resiliency and the importance of baseload generation.

"Don't confuse [solar and storage] with resiliency. You still need to have conventional generation with solar and storage," McElroy said. "While I'm at 50% renewable energy, I still need that conventional generation on standby and pay it to maintain the system. You're never going to be free from that conventional generation.

"I know we want it so bad and we're working so hard to make it happen, but we have to do it responsibly. If you're a grid operator or someone who's in the service utility industry, your job, first and foremost, is to keep the lights on, and we have to be responsible about that."

As Tesla's Topher Blunt said, "Solar doesn't work if you don't have grid power. When your challenge is to rebuild the grid, what do you do when your whole rooftop array is rolled up like a burrito?

"We're finding storage is not necessarily the thing you have when power is out," Blunt said. "Trying to plan for the absolute worst scenario, and have batteries at the ready, is not the best use of batteries."

DERs Pose Big Changes for the Grid

The coming of distributed energy resources means big changes for the consumer, said Enbala Power Networks' J.T. Thompson.

"The costs have gone down, and the grid is inverting. We're moving from a centralized grid to one very much at the edge," Thompson said. "We have to be ready for that, our utilities have to be ready for that, and we have to help our customers be ready for that. All of this is taking place at breakneck speed."

Scott Hinson, director of engineering for Pecan Street — a research project at the University of Texas involving several Texas utilities, energy retailers and technology companies — related the story of one 12-year-old consumer who understood the future grid. Hinson was working on a residential microgrid controller in one participant's garage, while the young man watched.

"He was dubious of the amount of space it took up in the garage," Hinson said. "When I explained how it worked, he said, 'So the power goes out, but I get to keep playing Xbox?'

"'Yes, you do.' He gave me a thumbs-up, and then he was out in the yard."

Public Power Still Has Role in Texas' Market

Panelists discussing public power issues agreed that the state's municipalities and co-operatives, many of which have not opted into ERCOT's competitive market, still have a role to play.

"When we talk retirements and reserve margins, it's the munis and co-ops ... that can provide the cash flow to help the market," said the city of Georgetown's Chris Foster. "We're at that level that if the rest of the market goes belly up and prices are expected to rise, we expect the PUC to turn to us and say, 'Can you help?'"

"As a rural cooperative, we're not an early adopter by any means," said Ingmar Sterzing, with Pedernales Electric Cooperative. "We appreciate CPS [Energy] and Austin [Energy] getting out in front so we can learn and grow from that. We also have a traditional mindset of lower-risk investments. We take things in a prudent, measured approach."

Georgetown's commitment to 100% renewable power presents another example of public power leadership.

"We went 100% renewable in our contracts because they were price competitive," Foster said. "It was a pretty easy adoption for us. It speaks to the competitiveness of those resources. Why aren't more utilities adopting that strong of a stance?"

"You can't just spin around and diversify [your] assets," said Austin Energy's **Khalil Shalabi**, referring to the utility's nuclear and coal generation. "If we sign a bunch of renewables contracts, we have to keep rates affordable. But to go to a net-zero utility — with nuclear and 65% renewables — we'll almost be there by 2027."

'Decarbonized' Economy Poses Big Challenges

Jan Vrins, Navigant's global energy practice leader, said there's no doubt the economy will decarbonize. When, he would not say.

"The pace by which and how is up to debate," Vrins said during a "fireside chat." "We're going through a huge transformation ... and the energy markets are not working anymore. We have to fix them. DERs will be 10 times more disruptive to our markets than renewables have been. There will be a complete value shift away from generation to transmission, distribution and beyond. Smart cities will create more value to customers and citizens. That's where the investment will go, not to generation."

— Tom Kleckner

Left to right: Fractal Energy Storage's Judy McElroy, Tesla's Topher Blunt and Pecan Street's Scott Hinson. | © *RTO Insider*

Boston U 'Fireside' Chat Takes up New Energy Investment

By Michael Kuser

As homes become smarter and electric vehicles increasingly become the norm, there will be money to be made in managing how and when people use power. But investors are still in the early stages of figuring out how to make returns on the rapid changes overtaking the power sector, according to energy finance professionals.

Investment experts discussed new energy technologies, regulatory trends and the evolving business model for utilities at an Oct. 19 "fireside" chat hosted by Boston University's Institute for Sustainable Energy.

Panel moderator Nalin Kulatilaka, of the university's Questrom School of Business, asked how capital will be drawn to new energy technologies, whether for generation or energy storage — or the software that can manage energy better.

"Historically, energy investment has been with big instruments and now it's going to be much more a mix of large and small, centralized and distributed," said Michael Lapides of Goldman Sachs. "It's going to have much more of a technology overlay to it. From a software perspective, we're barely at the surface of what's likely to happen in the broader electricity industry. What is the real customer usage level? What's the normal?"

Utility or Tech Firm?

Stephen Byrd, who heads Morgan Stanley's North American power research group, said that while traditional utilities appreciate new opportunities conceptually and are making efforts to adapt, he questioned whether they'll become the agents or interfaces that enable customers to benefit from the advances in technology.

Such a company — he said he could think of several already operating in California — analyzes "the data within your house or business and says 'here are all the ways we can change the pattern of your usage,' and then links that up with the utility bill structure," Byrd said. "I can see the day when one of those companies goes to a utility and says, 'I've got a million of your customers and they're all on an app on their phones, and we can press a button and shift your peak usage by around X%.' What is that worth? We don't know, but it's worth a lot. That's not the death of the utility, but there's a lot of value there that I think the utility may not capture. Maybe a technology company captures that."

Sheldon Simon, an equity analyst with Adage Capital Management, said a system built to move megawatts from central stations was not designed to accommodate the changing case of distributed — and variable — power generation.

"If you think about significant lumpiness in the U.S. electricity industry's [capital expenditure] cycles, it's almost always been very generation-friendly," Simon said. "The grid is not built to have every house be a power plant, or to have so much intermittent generation as we're going to have. We're going to see some markets, far more than planned, where the intermittency creates problems for the grid operator."

Barbarians at the Wall

It's currently harder to create true value in power generation than in distribution and energy management, Byrd said.

"Truly new generation technologies are pretty rare to actually have an impact, though we're watching some areas. There are a lot of very smart people focused on that," he said. "It's just very hard to beat the low-cost nature of larger, more centralized power plants. But I wouldn't rule that out."

On the disruptive power of wind, Byrd likened wind to a barbarian horde: "They're going to spread everywhere. I can think of some nuclear plants that are castles along the wall that are being attacked by the barbarian horde. That's an opportunity for some, and it's a serious threat to others."

Simon said "that in a very different way, utility-scale and distributed solar will have a very similar impact. It will be more localized, it will be closer to the customer, if not owned by the customer."

Utilities now face the question of how to grow, which will partly be through fleet transformation, according to Lapides.

"A few years ago there were some very large utilities that owned almost no renewables, and now they're major top-10 players in the industry because they have huge economies of scale and balance sheets," Lapides said. "And they serve a lot of customers. Is that what happens with storage? Maybe. Is that what happens with software that deals with grid management? Maybe."

Regulatory Trends

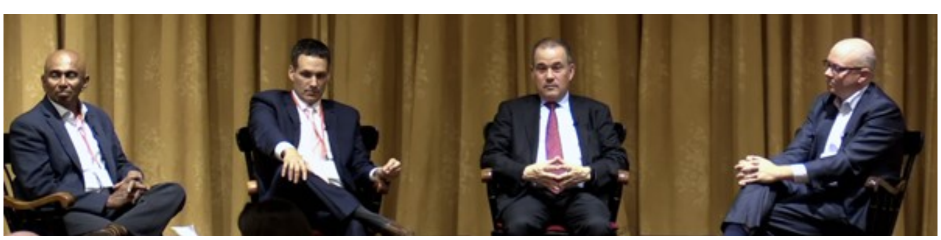
As technologies evolve and customers use less electricity or go elsewhere for power, utilities have to reallocate their fixed costs to a smaller base, which means that rates could go up for remaining customers. Kulatilaka asked how regulators would likely deal with that new situation facing utilities.

"If we're entering a period where interest rates go up — they've been going down for 30 years — the regulatory models' gist is that utilities will seek higher returns, forcing rates higher," Simon said. "So there are limits to how high customer rates can go up when you have less utilization and fewer customers. That could be the real conflict that causes real stress on the industry, because at the end of the day, it is about the money, about what people can pay and what's politically palatable."

Speaking about the impact on the regulatory paradigm, Lapides said: "The answer's out there staring us in the face. ... The states that were early movers in decoupling, basically, whether they realized it or not, got their utilities out of the business of caring a lot about demand growth. Think about the implications. From an earnings power perspective, from an environmental perspective, from a planning perspective, it hits all of those three. It's not rocket science."

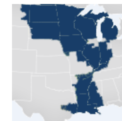
Simon expressed little confidence in the responsiveness of utility commissions.

"Regulators, with few exceptions, will not be forward-thinking," he said. "They'll swing the bat when the ball's in the catcher's mitt. They're risk-averse, so they'll step in when things get to be dire, and what they'll do is unclear. ... [Regulators] are not necessarily friends of the utilities; they just want to make sure that when people turn the switch on, the lights come on."



From left to right: Nalin Kulatilaka, Boston University; Michael Lapides, Goldman Sachs; Sheldon Simon, Adage Capital Management; and Stephen Byrd, Morgan Stanley.

MISO NEWS



Organization of MISO States Annual Meeting

Lively OMS Discussion Probes Common Grid Beliefs

By Amanda Durish Cook

Tanuj Deora runs his Q&A for the OMS annual meeting. | © *RTO Insider*

CHICAGO — State regulators, their staff and utility executives proved reluctant to be pinned down on predictions about the future of the grid during a spirited question-and-answer session at the annual meeting of the Organization of MISO States (OMS) last week.

Tanuj Deora, chief content officer of clean energy facilitator Smart Electric Power Alliance, posed a series of questions to scrutinize attendees' core assumptions about the power grid during the Oct. 27 meeting.

"We have an agreement that the power grid is the foundation of our modern civilization, yes?" he asked the audience rhetorically. "Well, there are a number of folks pushing back at that."

Deora said he's encountered people who are convinced that the power grid will become a stranded asset. Just a smattering of hands went up in the audience when he asked if any of them believed that people would altogether defect from the grid in the future.

A Future of Low Load Growth

Deora pointed out that recent trends demonstrate that economic growth no longer drives power consumption. "I think most people are planning on a world where we don't have a lot of load growth," he said.

Some in the audience noted that electricity demand could spike over the next five to 10 years as more consumers adopt electric vehicles, similar to past spikes when refrigerators and air conditioning started to become commonplace. Deora also pointed out that electricity could increasingly displace natural gas for water and space heating as gas suppliers realize that may be more feasible to meet state emission-reduction targets.

Other audience members noted that if President Trump succeeds in reviving American manufacturing, companies won't return to now-vacant energy-devouring factories, but instead design energy-efficient spaces.

Wisconsin Public Service Commission staffer Randy Pilo added that, after multiple years of growth, a recession will loom sooner or later.

A Gray Area

Deora was met with no audience agreement when asked if regulators should continue to plan the grid on the assumption that generation should follow load with no reserve inventory.

"That is a sea change, because, gosh, the [Department of Energy] believes this with their measure of resiliency," Deora said. He added that he believes the U.S. is on the verge of a "demand response renaissance."

At least half of the audience agreed that economies of scale still favor central station generation, but generally hesitated when Deora asked whether that supply is best provided through the usual baseload, mid-priced peaker model.

"Come on, this was the first thing I learned as an intern," Deora said, lightheartedly goading the audience.

Multiple audience members called out: "You can't choose!" and "It's gray area!"

"That worked really well when you could build a baseload plant and get energy value. … It's turned on its head," said Bruce Campbell, director of regulatory affairs at CPower Energy Management. He said once natural gas prices eventually rise, developers will migrate to yet another fuel type.

Deora ventured that it may be time to reconsider the economic model for power. "Usually when I bring up at conferences that we might need a rethink of power economics, the audience shudders and tells me it's not time," he said.

'Sleepy Backwater'

Deora said that while some utilities are still focused on being a strict wires-only owner or operator, more are exploring how to optimize a distribution system platform or interconnect distributed energy resources — and are even open to owning their own portfolio of distributed resources.

Charles Goldman, a strategic adviser with the Lawrence Berkeley National Laboratory, said past predictions of the adoption of

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MISO NEWS

Organization of MISO States Annual Meeting

OMS Still Seeking Unity on MISO Tx Cost Allocation

By Amanda Durish Cook

CHICAGO — The Organization of MISO States (OMS) last week failed to reach consensus on how to respond to MISO's plans to allocate costs for smaller transmission projects that produce broader economic benefits for the grid.

OMS is slated to present its suggestions on cost allocation at a Nov. 16 Regional Expansion Criteria and Benefits Working Group (RECBWG) meeting, but members were still unable to develop a unified position during their annual meeting on Oct. 27. OMS set a priority to establish a group position on the subject late last year. (See *No OMS Consensus on MISO Cost Allocation Changes*.)

MISO currently has no mechanism in place for allocating costs for economic projects with voltage ratings below 345 kV.

OMS board members say they might ask MISO to require market efficiency projects to be at least 230 kV and have a cost threshold of either $1 million or $5 million to $20 million in order to be eligible for cost

OMS President Angela Weber | © *RTO Insider*

allocation. They could also request that the benefit-cost ratio be increased from 1.25:1 to 1.5:1 if benefits other than the adjusted production cost are factored in, a move MISO has promised to consider.

The RTO has meanwhile assembled a straw proposal that would lower the cost allocation eligibility threshold to 100 kV, replace the 20% footprint-wide allocation with a postage stamp rate and enact a still unspecified project cost threshold. The proposal would limit cost allocation to benefiting transmission pricing zones.

Missouri Public Service Commission economist Adam McKinnie said his state requires a voltage threshold below 230 kV. "The interconnections between my state are 161 kV [or] 169 kV. I'm very wary of any cost allocation that does not give lower-voltage projects between SPP and MISO a cost allocation," he said.

North Dakota Public Service Commissioner Julie Fedorchak expressed discomfort with any proposal that would allocate 100% of costs to benefiting transmission pricing zones, pointing out that much of the transmission development occurring in her state will not necessarily benefit its ratepayers.

The OMS board has also contemplated a cost-sharing proposal that would designate one portion of costs to benefiting transmission pricing zones and another to the local resource zones that contain those pricing zones.

"I think this debate shows that regulators need time to go back to their states and digest this," said OMS President Angela Weber.

"Every state might not get everything they want, but the question is, 'Can we come up with something that is better than what MISO is proposing?'" said Public Utility Commission of Texas staffer Werner Roth.

"I think this debate shows that regulators need time to go back to their states and digest this."

OMS President Angela Weber

Lively OMS Discussion Probes Common Grid Beliefs

Continued from page 13

photovoltaic DER have proven too conservative. He said in his state of California, distributed solar is in clustered hot valley areas, wealthy coastal communities and tech-friendly Silicon Valley. Rooftop solar has significantly shifted the noon to 6 p.m. load curve.

"It's all happened in the last four to seven years," Goldman said.

"I realize in the Midwest, this is not a topical, front burner issue," he said, but he noted that Minnesota is considering requiring its utilities to file distribution system plans, including DER forecasting.

"Distribution planning has been the sleepy backwater," Goldman said.

He admitted that RTOs will have more difficulties forecasting and modeling future distributed resources than single-state ISOs.

Outgoing OMS President and Indiana Utility Regulatory Commissioner Angela Weber said regulators and OMS are uniquely positioned to steer the industry in rules surrounding DER.

"It's the first time in OMS that I see the states leading on an issue."

MISO NEWS

MISO Committee Again Rejects Debate on Customer-funded Upgrades

By Amanda Durish Cook

MISO Advisory Committee members decided there was nothing amiss in the stakeholder debate that ultimately shut down the possibility of creating a cost recovery mechanism for customer-funded transmission upgrades.

But supporters of the proposal contend the idea didn't receive fair consideration.

During an Oct. 25 Advisory Committee call, Bruce Grabow, an attorney representing EDF Renewables, argued that MISO's Regional Expansion Criteria and Benefits Working Group (RECBWG) did not understand the proposal, nor allow full debate before rejecting it this summer after deciding that after-the-fact cost allocation would be too complex to introduce.

"There wasn't any discussion on whether this is really needed," he added.

Grabow said the joint proposal — which would allow simple cost recovery of customer-funded upgrades from other transmission users directly benefiting from them — from EDF and Wind on the Wires (WOW) could be a "win-win" because it would initiate construction of needed sub-345-kV projects that would be otherwise overlooked in MISO's annual Transmission Expansion Plan. (See *Participant-funded Projects Get 2nd Shot at MISO Cost Recovery*.)

But Advisory Committee members held that the RECBWG performed its due diligence before voting 15-4 in July to deny EDF and WOW another round of presentations on the topic. Voting in favor were Adam Sokolski and Mark Volpe of MISO's Independent Power Producers sector, as well as WOW's Beth Soholt, of the Environmental sector, and Adam McKinnie of the State Regulatory Authorities sector. Two state regulatory representatives — Ted Thomas and Hwikwon Ham — abstained from the vote.

"It's not clear at all to me what … the shortcoming of process at the RECBWG was," Entergy's Matt Brown said. He pointed out that EDF and WOW were granted presentation time, a feedback gathering phase and follow-up at a later RECBWG meeting.

"[They're saying] if only we understood the points, we'd agree. I'd argue that we understand and don't agree. I don't think what we have here is a misunderstanding of the proposal, but a disagreement of the merits of the proposal," Brown said.

Steering Committee Chair Tia Elliott said she didn't want similar Advisory Committee petitions cropping up whenever stakeholders were disappointed with the reception of their proposals. She maintained that the issue received proper consideration according to MISO's stakeholder process, even if EDF and WOW didn't like the outcome.

The discussion was a follow-up of one that took place at the last Advisory Committee meeting Sept. 20. "Although I think the proposal has some merits, the question is whether the stakeholder process was followed," Kevin Murray, executive director of Industrial Energy Users-Ohio, had said then.

Soholt said EDF does not believe it was given sufficient time for stakeholders to explore the cost recovery proposal. "Going to the heart of the issue, it really goes to heavily congested areas and bringing in transmission," said Soholt, who added that MISO has a problem in some cases luring transmission developers to build lines where they are most needed. She said the "narrow focus" of the proposal provides a solution.

"It looks like there's just some dissatisfaction with the outcome of the process rather than any failure of the process," Brown said. He also added that he disagreed with EDF's assertion that MISO lacks a process for identifying sub-345-kV projects.

Xcel Energy's Carolyn Wetterlin, chair of the RECBWG, said the issue was given a fair hearing in the working group.

"I know there are times I have to work the agenda and cut discussion short, but I don't recall that that was the case with this presentation," Wetterlin said.

Murray said EDF and WOW are still free to lobby their case in front of MISO officials or file a complaint at FERC.

MISO Clear to Adopt One-Time Interconnection Study Fee

FERC last week approved a MISO proposal to charge interconnection customers subject to quarterly operating limit studies $10,000 as a deposit (ER17-568).

MISO had estimated that its annual cost of quarterly operating limit studies for an interconnection customer was about $2,500, which it had been collecting yearly.

The change allows the RTO to charge a single $10,000 fee to cover four years and refund any remaining amount when the customer is no longer subject to quarterly operating limits. MISO said the new collection schedule will be more efficient for interconnection administrators.

FERC accepted the Tariff revisions effective Feb. 15, 2017, on the condition that MISO clarify that the $10,000 study deposit is a one-time fee and not due every quarter.

MISO created quarterly operating limits almost a decade ago to allow for the limited operation of some generators based on seasonal studies.

— Amanda Durish Cook

MISO NEWS

Stakeholders Give MISO High Marks, Call for Improvements

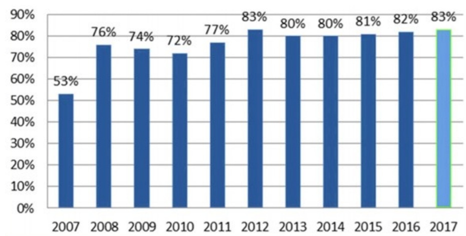
By Amanda Durish Cook

Stakeholders gave MISO strong marks in this year's annual customer opinion survey, but they still see room for improvement, especially with the interconnection queue, outage planning and transmission cost allocation.

MISO sent surveys to more than 457 companies and reported 24% participation, better than its historic 16 to 17% response rate.

"This is the best response rate we've ever gotten," MISO Executive Director of External Affairs Kari Bennett said during an Oct. 24 call hosted by the Human Resource Committee of the Board of Directors.

Nearly 90% of respondents reported an overall satisfaction with MISO, the highest percentage in five years, while 83% said the RTO's market rules and processes are transparent, the highest rating in four years. MISO has commissioned a survey since 2005 and scored an average 80% or better since 2012.



MISO customer survey aggregate results by year | *MISO*

Bennett said stakeholders identified four areas of concern: MISO's generation and transmission outage coordination process, transmission cost allocation, the lengthy interconnection process and quality of the search function on the website.

Bennett said the areas singled out for improvement were "not surprising," as all the stakeholder-flagged issues have been discussed before in MISO public meetings.

Last month, outage-related congestion, combined with hot temperatures, drove real-time revenue sufficiency guarantee payments above $13 million, nearly doubling last year's monthly total. Stakeholders and MISO officials in September agreed with the Independent Market Monitor that outages need to be more carefully scheduled. (See *MISO in Harmony with IMM State of the Market Report*.)

MISO is beta testing a new website design that will launch in December, Bennett said. "People right now say it's easier to search Google [to find MISO information] than use our search function."

Bennett also expressed in interest in how MISO's new interconnection queue process will fare in next year's survey, after being in place longer than a year. This year, stakeholders viewed the interconnection process as too long to be effective.

Survey respondents also asked for added benefit metrics aside from the adjusted production costs that MISO uses to mete out costs for the RTO's market efficiency and multi-value projects, an issue the RTO and stakeholders will tackle in 2018.

MISO is developing responses and action plans based on survey responses, Bennett said.

Board Committee Approves MISO Budget Boost

By Amanda Durish Cook

A key MISO committee is recommending that RTO leaders sign off on a $370.2 million preliminary budget for 2018 — the largest spending package ever.

The Audit and Finance Committee of the Board of Directors last week unanimously approved the draft budget, which includes a $264.9 million base operating budget and $29.6 million in capital spending. The final budget will be presented to the full board in early December.

MISO's total expense budget represents a 9.5% increase from 2017, while the operating budget is up 9.6%.

The RTO next year expects to collect 750 TWh of rates at an average 40 cents/MWh, earning $303.7 million, compared with this year's projected accumulation of $279.3 million.

CFO Melissa Brown said MISO was able to partly reduce the 2018 budget estimate by $5.5 million by deferring certain technology improvements, which will allow the RTO's information technology division to better manage a heavy workload, which will include a NERC audit, IT security improvements and a multiyear market platform replacement, in addition to dealing with day-to-day operations. The platform replacement will cost almost $22 million spread across the operating and capital budgets.

Other savings come from deferring some pseudo-tie change solutions with PJM for a year because FERC has not yet ruled on related filings, Brown said.

Alliant Energy's Mitchell Myhre, chair of the Finance Subcommittee, said his group reviewed the budget and recommends that MISO focus on reducing noncritical work and create "efficiencies to limit cost increases going forward."

Myhre said that MISO's expenses usually increase 1% year-over-year, but the 2017 and 2018 budgets combined have increased by about 5% on average. He noted that MISO has promised to limit expense increases to a 1.9% compound annual growth rate from 2017 to 2021.

Next year's spending increase will be driven primarily by employee pay increases and medical costs, new hires in MISO's interconnection queue planning and security staffs, IT improvements, cyber and physical security improvements and the market platform replacement, Myhre said. He asked for MISO to monitor budget items stemming from the platform replacement and present them individually during budget discussions for the sake of transparency.

"I think it's critical for our stakeholders who bear the cost that we be very vigilant about this," Director Phyllis Currie said of spending money prudently.

NYISO NEWS

New York Stakeholders Question Carbon Pricing Process

By Michael Kuser

From left to right: Scott Weiner, New York DPS; Rich Dewey, NYISO; Marco Padula, DPS; and Nicole Bouchez, NYISO. | © *RTO Insider*

ALBANY, N.Y. — Stakeholders told New York and NYISO officials Friday they are concerned about the transparency and aim of the process being laid out to integrate carbon pricing into the wholesale electric market.

The ISO and the New York Department of Public Service this month jointly formed an Integrating Public Policy Task Force. At the group's first public meeting Oct. 27, Scott Weiner, DPS deputy for markets and innovation, asked stakeholders to "kick the tires" on the concept from every angle.

New York Public Service Commission Chair John Rhodes and NYISO CEO Brad Jones cosigned an introduction to The Brattle Group report on pricing the social cost of carbon into generation offers and reflecting the cost in energy clearing prices. The two opened the first public hearing on the issue in Albany on Sept. 6, before the chartering of the task force. (See *NYISO Stakeholders Talk Details of Carbon Charge*.)

In announcing the formation of the task force, a PSC notice Oct. 19 outlined the process, solicited comments and set a schedule of meetings this year, including a technical conference Dec. 11.

DPS or NYISO Procedures?

James Brew, an attorney speaking for Nucor Steel, asked if anyone could "explain how the PSC's process is supposed to work with the NYISO process, and will we be looking at orders or rulings from the PSC?"

Marco Padula, DPS deputy director for market structure, said the commission will not be issuing rulings. "This was a notice from the [DPS]; it has not instituted a commission proceeding," he said. "It's a joint process that enables stakeholders to develop a proposal that eventually would go through the whole ISO stakeholder process and any other regulatory approval mechanism, if necessary."

Attorney Kevin Lang of Couch White, representing New York City, said it would be helpful to understand DPS staff's position on the Brattle report, "because right now [it is] the only thing we have before us."

"While what may come out of the process may not be the same as the Brattle report, that is the starting point," Lang said. "NYISO has been telling us for months and months that's where we're going to start the conversation."

Although the task force is not a commission process, Lang said, "the DPS issued a series of questions that they're looking for answers to, which certainly is not consistent with the way we do things at NYISO.

"It struck me and others that much of what you're requesting in that notice is horribly premature," he continued. "To ask parties about what their input assumptions are, what the costs and benefits [are]… We haven't even got that level of detail from Brattle, and we just started the discussion."

No Embrace

Paul Gioia, representing transmission owners New York Power Authority and Long Island Power Authority, said "the DPS has made it clear that it has not embraced the Brattle report as a solution. I'm not aware of whether the DPS has ever identified the aspects of the Brattle report that it has concerns about or disagrees with. I think it would be helpful to us as we go forward if we could know that."

Padula responded that the department was working closely with the ISO to examine the details of the report and look for things that could be revised. "Absolutely we'll get into more of that as we move forward in the process," he said. "Have we put out a paper on staff's position? No. Are we going to? Not until we continue through this process and hear input from all parties."

Weiner emphasized that the task force is a joint process, neither wholly conforming to the department's normal operating procedures nor to those of NYISO. He said that since the Brattle report came out in August, several stakeholders have suggested other approaches, but they're "still around the fundamental design element ... that we're looking at wholesale markets and incorporating a value of carbon that would become part of the [NYISO] settlement."

"I know that there are individuals and organizations in this room and on the phone that have been working and are continuing to work to provide at least a first offering, if you will, of other approaches that either build off the Brattle foundation or may take it in another direction," he added.

Starting Point

Weiner said the process is not about the strengths and weaknesses of the Brattle report but about how to take elements of the report and other suggestions that may come in through filings to build a consensus solution. "The Brattle report, by its own definition, called out areas that were not addressed, but I don't think we'll advance the discussion by calling out what did any

Continued on page 18

NYISO News

Federal Appeals Court Stays New York's ESCO Order

By Michael Kuser

A federal appellate judge Friday stayed a New York Public Service Commission order that prohibits most energy service companies (ESCOs) from serving low-income customers (17-3361).

Judge Jose A. Cabranes, of the 2nd U.S. Circuit Court of Appeals, issued the stay while the court considers an appeal in a lawsuit filed by an anonymous ESCO customer who participates in New York's energy assistance program. A federal district court had previously denied a stay and injunction in that suit, which alleges that the PSC's order denies energy assistance program participants equal protection under the law and interferes with their right to contract. Cabranes referred the plaintiff's motion to the next available three-judge panel.

In its brief with the court, the PSC opposed the appeal, contending that it was exercising its authority to set just and reasonable electricity rates and protect customers from overcharges.

While the commission's December 2016 order banned most ESCOs from serving low-income customers, it left open the possibility of issuing waivers for any ESCO that promised to offer bill savings or guarantee benefits to those customers. A state appellate court earlier this year issued a temporary restraining order on the ESCO ban, which was subsequently lifted by the Albany County Supreme Court. (See Court Blocks NYPSC Order Barring ESCO Contracts.)

Right to Choose?

The plaintiff's attorney, William J. Dreyer, argued in his brief that his client would be harmed by being forcibly "enrolled in energy programs they do not want and de-enrolled from programs they voluntarily chose." Furthermore, the suit alleged that the ESCO restrictions could put "low-income New Yorkers in a position where they may no longer be able to pay their electric and gas bills," and that disclosure of customers' income levels would violate their privacy rights.

The National Energy Marketers Association reacted to news of the stay with a statement applauding "the 2nd Circuit for stopping the PSC from discriminating against low-income New Yorkers until the facts can be properly litigated before a federal three-judge panel."

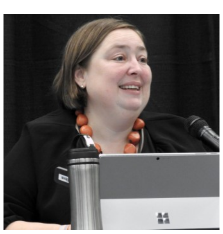
Cabranes' ruling came one day after the commission acted on allegations of deceptive sales and marketing practices by Brooklyn-based MPower Energy, giving the company seven days to show why it should be allowed to serve low-income customers. The commission on Thursday also allowed three ESCOs to continue serving low-income customers while denying waiver requests for four other ESCOs. (See New York PSC Adopts DER Rules, Sanctions ESCOs.)

New York Stakeholders Question Carbon Pricing Process

Continued from page 17

party like or dislike about" the report, he said.

Attorney James King, speaking for multiple parties, said "everybody keeps talking about the market, so I'd like to get clarification that what we're looking at here is the potential of carbon pricing that would be integrated into the wholesale markets as part of NYISO's settlement process. Is that the starting point that we're looking at here?"



Nicole Bouchez | © RTO Insider

Nicole Bouchez, a NYISO market design economist who co-chaired the session with Padula, said "the starting point is even a little bit higher than that. It's how do we integrate public policy and wholesale markets with respect to carbon policy. Now, one of the options is definitely integrating within the NYISO market and the settlement, but there are a lot of open questions on the settlement. ... We're in the listening mode and the proposal hasn't yet been fleshed out."

Technical Details

Weiner said that the department's engagement with the Brattle report began with a briefing by NYISO and Brattle after DPS staff sought to review the report's methodology.

At Brattle's request, staff also corrected factual errors regarding DPS and PSC proceedings or positions, Weiner said.

The department also suggested removal of what Weiner called "charged" words. "The example I'll give you revolved around the use of the word 'markets.' When I read the report, [I got] the impression that one organization was more market-oriented than the other, that one point of view was more supportive of markets than another. So we tried to suggest neutral language. That was the extent of it."

The Dec. 11 technical conference will cover at least two topics: border adjustment mechanisms to prevent leakage, and the criteria and principles that should be applied in developing a plan for allocating carbon revenues.

Erin Hogan, of DPS' Utility Intervention Unit, asked if stakeholders will have an opportunity to modify the topics for the technical conference. "I understand that the leakage issue was a concern, but ... it could be premature if we're not setting up other alternatives first," she said.

"We expect many technical conferences over the course of this proceeding — or this activity," Weiner said.

"If there are other ideas, by all means [tell us]. Your question reminds me why we decided to do leakage. [Some people] believe leakage becomes an issue in certain contexts, in certain designs. In other designs it manifests itself differently."

NYISO NEWS

Management Committee Briefs

RENSSELAER, N.Y. — The NYISO Management Committee was briefed Wednesday on the ISO's strategic planning process, which broadly examines issues the grid operator expects to face over the next five years.

"A lot of the issues concern public policy," Rich Dewey, NYISO executive vice president, said in reviewing the ISO's draft plan. They include carbon pricing, locational capacity requirements, better integration between the distributed system platform and wholesale markets, and planning for transmission to support offshore wind.

On integrating public policy with the market, the report asked, "How will the wholesale markets adapt to provide the necessary services (i.e., ramping, transmission security, inertia, frequency regulation) to balance the intermittent renewable generation?"

Howard Fromer of PSEG Power New York asked, "What sense of urgency did the board have, looking ahead five years, about a sense of fear in the market — whether we will even have this market in five years? The market design did not contemplate today's reality of zero and negative prices."

Dewey said there was no fear at the board, but members did feel a sense of urgency and "have been spending a lot of time on figuring out how to use a very powerful tool, the markets, to achieve our goal of a sustainable energy market and grid."

2018 Budget Recommended to Board

The committee voted to recommend that the board approve the ISO's proposed Rate Schedule 1 revenue requirement of $155.7 million for the 2018 budget year, which translates into spending of $0.987/MWh.

Alan Ackerman, chair of the Budget and Priorities Working Group, presented the budget, the key priorities of which include physical and cybersecurity enhancements to secure operations and meet audit and compliance needs. (See "2018 Budget Up 5% on Security Enhancements," *NYISO Management Committee Briefs: Sept. 27, 2017*.)

Tariff Changes for Inverter-Based Storage Approved

The committee approved proposed Tariff and Ancillary Services Manual changes to define the role of inverter-based energy storage in providing synchronized reserves.

Daniel F. Noriega, NYISO associate market design specialist, presented the changes — already approved by the Business Issues Committee on Oct. 11 — that would allow generators and demand-side resources that use inverter-based storage technology to provide spinning reserves. (See "Proposed Tariff Changes for Energy Storage," *NYISO Business Issues Committee Briefs: Oct. 11, 2017*.)

Fuel Cost Adjustment, Penalty Calculations Approved

The committee also approved a proposal, approved earlier this month by the BIC, to more closely align the real-time and day-ahead impact tests and penalty calculations used to identify generator misuse of fuel cost adjustments (FCA). The current day-ahead process is considered more precise than the real-time because it also tests the impact on real-time prices based on market reruns.

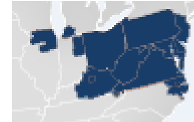
The proposed changes will be submitted to the board in November prior to filing with FERC. (See "Fuel Cost Adjustment Calculation to be Refined," *NYISO Business Issues Committee Briefs: Oct. 11, 2017*.)

New Vice Chair Chosen

The Management Committee elected Chris LaRoe of Brookfield Renewable as vice chair for 2018. Scott Butler of Consolidated Edison also stood for the position.

— Michael Kuser

PJM NEWS



IMM, Consumers Miffed over PJM Plans to Vet Energy Offers

By Rich Heidorn Jr.

WILMINGTON, Del. — Consumer representatives and the Independent Market Monitor expressed concern Thursday over PJM's plans for vetting energy offers exceeding $1,000/MWh, with the Monitor seeking manual changes and consumer groups fearing excessive demand response costs.

The issues arose during a discussion at the Markets and Reliability Committee meeting on changes to Manual 11: Energy & Ancillary Services.

Catherine Tyler | © *RTO Insider*

The manual changes, part of PJM's implementation of FERC Order 831 (RM16-5), passed with 13 objections and two abstentions after Catherine Tyler, senior economist for Monitoring Analytics, reiterated complaints the Monitor filed with the commission in response to the RTO's May 8 compliance filing on the order.

The order doubled the "hard" offer cap for day-ahead and real-time markets from $2,000/MWh — a response to the 2014 polar vortex, which caused natural gas price spikes that left some generators in the Northeast complaining they were unable to recover their costs.

Incremental energy offers must be capped at the higher of $1,000/MWh or a resource's cost-based energy offer, with $2,000/MWh being the maximum offer eligible for setting LMPs; approved offers over $2,000 are eligible for uplift payments.

The Monitor said PJM's plan does not follow the order's requirement that RTOs build on existing mitigation processes in verifying that offers above $1,000 are based on actual or expected costs and does not mention the Monitor's role in that process.

"We will review offers over $1,000," said Tyler. "The manual should make that clear."

The Monitor told FERC that PJM instead "proposes to create a new cost-based offer verification process," does not provide a way for verifying cost-based offers that fail its automated screen and lacks a process for verifying DR offers over $1,000.

Susan Bruce | © *RTO Insider*

It said the commission should require "a new proposal that builds on existing cost verification processes, including the Market Monitor's cost verification process and fuel cost policies."

Greg Poulos, executive director of the Consumer Advocates of PJM States, requested the vote on Manual 11 be conducted separately from three other manual changes, saying the Monitor should have joint approval with PJM of energy offers over $1,000.

It was the DR issue that concerned Susan Bruce, of the PJM Industrial Customers Coalition. She said although her group is "a big supporter of demand response … we're concerned we don't have the same rigor" in ensuring the cost inputs in DR offers as for generation.

The lack of rules creates "opportunities for strategic behavior," Bruce said.

Pete Langbein | © *RTO Insider*

PJM's Pete Langbein said that although the RTO has considerable experience in verifying generation offers, "we're a little bit in uncharted territory" for DR. He said PJM wants to analyze "what costs we see from DR in the next six to 12 months" before creating rules.

Bruce agreed it would be difficult to guess what costs DR providers will file but said that during the interim, "customers will be vulnerable" to potentially inflated and improper costs.

Langbein said PJM will address the issue in the stakeholder process and deal with offers in the interim on a "case-by-case basis."

Bruce Campbell of CPower said he supported the RTO's approach. "It's difficult for me to imagine a standard that would be workable at this point beyond what PJM has outlined."

PJM's Chantal Hendrzak added that the RTO wants to wait for FERC's response to its compliance filing before implementing standards. The rules will not go into effect until the RTO receives the commission's response, she said.

Manual 11 also had been the subject of debate at the Market Implementation Committee meeting earlier in the month. (See "Debate Continues on Intraday Offers," *PJM Market Implementation Committee Briefs: Oct. 11, 2017*.)

The New Jersey Board of Public Utilities filed comments supporting the Monitor, saying, "PJM's filing appears to be yet another attempt by PJM to minimize the role of the IMM." The Delaware Public Service Commission called on FERC to reject PJM's filing, saying its formulaic screen is unsupported and would result in higher prices than verifying all offers above $1,000.

PJM responded to the Monitor's comments in June, reassuring FERC that all cost-based offers must be in accordance with the market seller's RTO-approved fuel-cost policy, "including the IMM's review of such policies." The RTO said the proposed screen is "an additional safeguard" to ensure only legitimate generation offers greater than $1,000 are eligible to set LMPs.

PJM NEWS

Unanswered Questions Force Special PJM Session on OVEC Integration

By Rich Heidorn Jr.

WILMINGTON, Del. — PJM will hold a special meeting from 3 to 5 p.m. Nov. 7 to address stakeholder concerns over how the proposed integration of the Ohio Valley Electric Corp. into the RTO would affect existing members.

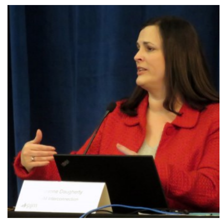
Scott Cunningham | © RTO Insider

RTO officials agreed to schedule the meeting after being unable to quell stakeholder concerns during a presentation by OVEC's Scott Cunningham at Thursday's Markets and Reliability Committee meeting.

Stakeholders expressed apprehension over the future of OVEC's generation and costs of potential upgrades to its double-circuit 345-kV transmission network, most of which dates to the 1950s.

OVEC, which is headquartered in Piketon, Ohio, owns 2,200 MW of generation capacity but will have no load after a U.S. Department of Energy contract ends sometime before 2023. The company was created in 1952 to service roughly 2,000 MW of load from a uranium enrichment plant near Piketon operated by the defunct Atomic Energy Commission.

The company's two coal-fired generating plants — the 1.1-GW Kyger Creek in Cheshire, Ohio, and 1.3-GW Clifty Creek in Madison, Ind. — are already pseudo-tied into PJM, and its eight "sponsors" can sell their portions of the output into the RTO's markets. The generation would become internal to PJM following membership, eliminating the pseudo-ties.



Suzanne Daugherty | © RTO Insider

MRC Chair Suzanne Daugherty said PJM had conducted operational and planning studies to ensure the integration would not harm reliability. General Manager of System Planning Paul McGlynn said testing also ensured the generation is deliverable.

But Steve Lieberman of American Municipal Power said stakeholders have not seen any analysis on the financial implications of adding OVEC. "There's just a lot of things we don't understand," he said.

Six of OVEC's eight sponsors — American Electric Power, Buckeye Power, Duke Energy, FirstEnergy/Allegheny Power, Wolverine Power Cooperative and Dayton Power and Light — are PJM members. Another sponsor, Vectren, is a MISO member. The final sponsor, PPL's LG&E and KU Energy, does not belong to an RTO.

Cunningham said there had been "very little incentive" for OVEC to join PJM in the past because of the sponsors' "different philosophy" and split between RTOs.

"All that has changed over the years," he said. "For a small entity like ours, we have struggled with meeting compliance obligations."

Clifty Creek power plant in Madison, Ind.

Direct Energy's Marji Philips said the addition of OVEC's 2,200 MW of 1950s vintage coal-fired generation is "very significant," coming at a time when FERC is considering Energy Secretary Rick Perry's proposal to grant coal plants cost-of-service rates. (Philips said PJM officials later informed her that 90% of OVEC's power already flows into PJM, with 10% flowing to LG&E/KU.)

PJM's internal "kick-off" discussion on integration was held June 6, according to spokesman Ray Dotter — nearly four months before Perry announced the proposed rulemaking.

Philips noted that the generators have been the subject of proceedings before the Public Utilities Commission of Ohio seeking to put them into the rate base. In March, for example, Duke Ohio asked PUCO to bill ratepayers for the costs of its 200-MW share of the plants, warning that "premature closing of the OVEC generating plants would have an immediate adverse impact on the communities in which these plants are located" (17-0872-EL-RDR).

"We do not anticipate them retiring any time soon," said Cunningham, who said they had received "considerable" investments in environmental upgrades. "Those [subsidy requests] were made by the sponsors. We have never acknowledged that they were not economic."

Delaware Public Service Commission staffer John Farber asked PJM for an estimated cost per mile for upgrading OVEC's 345-kV transmission.

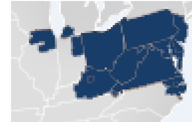
Steve Herling | © RTO Insider

Vice President of Planning Steve Herling was reluctant to offer a number, saying "it would really depend" on the nature of the upgrade.

"Is it safe to assume it would be substantial?" persisted Farber, attending his last meeting before retirement. (See related story, *Delaware PSC's Farber Retires — Again*, p.22.)

"I'm not jumping into that one," Herling demurred.

PJM News



Delaware PSC's Farber Retires — Again

By Rich Heidorn Jr.

WILMINGTON, Del. — The first time John Farber tried to retire, after 35 years in regulatory affairs at Florida Power & Light, didn't work out so well.

It was 2007, and the collapse of the overheated housing market set off the financial crisis that would cut the value of the S&P 500 by half.

His retirement funds pummeled, Farber began looking anew for work. He found a job in October 2008 at the Delaware Public Service Commission as a public utility analyst.

Last week, after nine years at the PSC and regular attendance at PJM stakeholder meetings, he retired again. He hopes it's for good this time, although he warns friends: You might want to shift your stock holdings to something more secure, just in case.

Before taking the PSC job, he had a question for his future boss, Bruce Burcat, then the commission's executive director. Having lived his entire life in South Florida, he had never experienced the seasons. How harsh, he asked Burcat, are the winters in Delaware?

Don't worry about it, Burcat, now executive director of the Mid-Atlantic Renewable Energy Coalition (MAREC), told him. "Maybe an inch or two [of snow] once or twice" a year.

With that assurance, Farber moved north to take the job. "That was a year when they had two 18-inch snowfalls," Farber recalled. "I remember getting out there and just cursing Bruce Burcat up and down: 'He lied to me! He absolutely lied to me.'"

But most winters weren't that bad, Farber said, and he found himself surprised at being able to appreciate the seasons.

He also said he "appreciated the stakeholder community enduring me" despite his limited technical knowledge.

"All I know is if it's snowing up here, I'm going to head south.

John Farber

"I wish I was an engineer, an economist and a lawyer, but I'm none of those," said Farber, who has an undergraduate business degree.

At his final Markets and Reliability Committee meeting Thursday, members celebrated his retirement with a standing ovation and a PJM coffee mug. Despite the accolades, he couldn't let one last chance go by to press PJM officials on behalf of his Delaware ratepayers, attempting to pin down Vice President of Planning Steve Herling on potential costs for upgrading the Ohio Valley Electric Corp.'s transmission system. (See related story, *Unanswered Questions Force Special Session on OVEC Integration*, p.21.)

In an interview after the meeting, Farber was asked about the most important issue that had come up during his tenure representing Delaware before PJM.

"I'd guess I'd have to say it was Artificial Island," he said, without hesitation. "That was a true Sisyphus moment. We're still pushing that boulder up the mountain. Hopefully we can push it across the top."

In 2016, FERC approved a cost allocation that would assign Delmarva Power & Light ratepayers 93% of the cost of the $280 million project, with all other transmission zones paying less than 1% each. The commission later agreed to consider rehearing requests over whether PJM's use of the solution-based distribution factor (DFAX) cost allocation method is appropriate (EL15-95, ER15-2563). In April, PJM asked transmission owners to develop a more equitable allocation. (See *Board Restarts Artificial Island Tx Project; Seeks Cost Allocation Fix*.)

Having turned 70 in August, Farber said "it just seemed like this was the time" to retire. "I think we've done as much on Artificial Island as we can. Now we're waiting to see what FERC does," he said.

"A lot of what goes on at PJM is not as singularly significant as was Artificial Island," he continued, cautioning that he was speaking for himself and not the PSC. "I don't know that the 'death of a thousand cuts' is appropriate, but it's a thousand different things that are going to be happening that are flowing through PJM, through FERC and down ultimately to the rates that Delaware customers have to pay."

John Farber | © *RTO Insider*

He mentioned capacity and energy costs and a rising concern: supplemental transmission projects that are not subject to strict PJM review. (See *Report Decries Rising PJM Tx Costs; Seeks Project Transparency*.)

And as he leaves, a new worry: The U.S. Department of Energy's proposal to give cost-of-service treatment to coal and nuclear plants in PJM. "It's not like putting a thumb on the scale," he said of the proposal by Energy Secretary Rick Perry. "It's like jumping on the scale with both feet."

As the MRC members filtered out of the conference room, Mike Borgatti, of Gabel Associates, stopped by to wish Farber well.

"It's been a pleasure working with you all these years," said Borgatti, a former legal analyst for the New Jersey Board of Public Utilities who now represents mostly generators before PJM.

"It's been great working with you," Farber responded, deadpan, "even though you did go to the dark side."

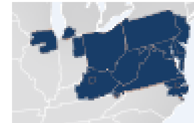
"I've got some DR [demand response] clients too, John," Borgatti protested, with mock defensiveness.

"Where are you headed?" Borgatti then asked.

"I haven't had time to plan," Farber responded. "All I know is if it's snowing up here, I'm going to head south."

By Saturday, his first day of retirement, he had already updated his LinkedIn page. His new "office": Sunset Grill, Cocoa Beach, Fla.

PJM News



MRC/MC Briefs

Markets and Reliability Committee

Stopgap Balancing Ratio OK'd Despite Questions

WILMINGTON, Del. — PJM members approved a Tariff revision setting 78.5% as the balancing ratio to be used in calculating the default market seller offer cap (MSOC) for the 2021/22 Base Residual Auction next May.

PJM said the change was a stopgap measure required for next year's BRA because there have been no penalty assessment hours (PAHs) since 2015. PAHs are one factor used to calculate MSOC for Capacity Performance resources. (See "Give me a B…," *PJM MRC/MC Briefs*.)

The Tariff change passed with no opposition but 10 abstentions.

The MSOC is the product of the net cost of new entry (CONE) and the average of the balancing ratios for the three years preceding the delivery year. PJM proposed using 78.5% because it was used for the 2020/21 BRA earlier this year.

"I'm not sure how you got here," said Gary Greiner of PSEG Energy Resources & Trade. "I do know 78.5 is not the right number."

Susan Bruce of the PJM Industrial Customers Coalition agreed that the stopgap number was not correct. "I think there's something to be said for the fact that there have been no performance assessment hours. That should be telling us something, but that's part of a larger conversation," she said.

The Independent Market Monitor's Catherine Tyler also criticized the number as incorrect. She said PJM should instead rely on its avoidable cost rates, which she said are "already well defined in the Tariff."

With one abstention, members also approved a problem statement and issue charge to develop a long-term solution. The issue was assigned to the Market Implementation Committee with a target of developing a solution in time for the 2022/23 BRA.

Bruce asked that PJM make clear in its FERC filing that the 78.5% balancing ratio is "not to be precedential in any fashion."

DER Subcommittee Charter Sent Back to MIC

The MRC postponed voting on a draft charter to transfer all work on distributed energy resources into a subcommittee because of a disagreement over a proposed amendment by FirstEnergy.

The charter would create the Distributed Energy Resources Subcommittee, reporting to the MRC. It arose from concerns that the current problem statement and issue charge on DER is overly narrow and inhibited discussions that should include markets, operations and planning implications. The talks had been taking place in special sessions of the MIC.

FirstEnergy sought to add an amendment saying "Market rules must respect the distribution system and state/local jurisdictional agency standards and protocols to ensure safety and reliability. Rules should adhere to all pertinent jurisdictions and respect the relevant electric retail regulatory authority (RERRA)." (See "Amendment on DER Charter Sparks Debate," *PJM MRC/MC Briefs*.)

MRC Secretary Dave Anders said that some stakeholders thought the amendment had been considered in the draft that came out of the MIC-DER group and others did not. The MIC did not formally vote on the measure.

As a result, the charter will be returned to the MIC, which will vote on versions with and without the amendment, with the winner brought to an MRC vote next month.

MRC OKs Sharing Generator Data for Restoration Planning

Members approved Operating Agreement revisions governing PJM's sharing of restoration planning generator data with transmission owners. (See "TOs to Receive Confidential Generation Data for System Restoration," *PJM Operating Committee Briefs: Sept. 12, 2017*.)

The changes will allow PJM to provide confidential generator data for any unit:

- that is or will be modeled in TO energy management system; and
- that is or will be identified in a TO restoration plan.

The second reference to "or will be" was added as a correction between the first read and Thursday's vote. The corrected version was endorsed with no objections or abstentions.

PJM Consulting with Chinese on Real-Time Market

PJM Chief Financial Officer and MRC Chair Suzanne Daugherty informed members that the RTO's consulting subsidiary, PJM Technologies, has signed a contract to help the Chinese province of Zhejiang develop a real-time energy market.

Daugherty declined to share financial details of the contract but said it will involve three to four full-time equivalent PJM staffers for 18 months. The province, south of Shanghai, has a load equal to almost half of PJM's.

For security, the PJM employees will be working on dedicated computers separate from the RTO's network, Daugherty said.

IRM, Manuals Endorsed

The Markets and Reliability Committee unanimously approved the 2017 installed reserve margin (IRM) study results. (See "IRM Reductions," *PJM PC/TEAC Briefs: Sept. 14, 2017*.)

The IRM dropped nearly 1 percentage point, from 16.6% to 15.8%, for delivery year 2021/22, thanks largely to an anticipated fleet-wide EFORd (equivalent forced outage rate – demand) reduction from 6.59% to 5.89%. EFORd measures the probability a generator will fail completely or in part when needed.

The reduced EFORd is the result of 7,150 MW in planned retirements with a 14.56% weighted average EFORd, and the anticipated entry of 16,980 MW of new generation with a 4.42% EFORd.

The IRM will be 16.1% for 2018/19 and 15.9% for 2019/20.

The MRC also endorsed the following proposed manual changes with one abstention and no objections:

Manual 11: Energy & Ancillary Services. Revisions, which also include changes to the OA and Tariff, were developed to address capping of intraday offers. The current rule offer caps units that fail the three-pivotal-supplier test, but prohibits reapplying the cap during the unit's day-ahead commit-

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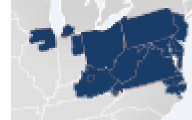

PJM Grilled on Price-Responsive Demand Rule Changes

By Rich Heidorn Jr.

WILMINGTON, Del. — State and consumer representatives grilled PJM officials Thursday over proposed changes to price-responsive demand (PRD) bids, with the head of the Organization of PJM States Inc. accusing the RTO of flouting the 2005 Energy Policy Act.

PJM says PRD bids should be available year-round, the same as generation resources under Capacity Performance rules. But OPSI argues they should be allowed the option to make only seasonal contributions because PJM's summer peak loads exceed winter peaks by more than 20,000 MW.

Gregory Carmean | © RTO Insider

"What problem are you trying to solve?" asked OPSI Executive Director Gregory Carmean at Thursday's Markets and Reliability Committee meeting. "The states obviously would like to see the effectiveness of their demand-side programs reflected in PJM's load forecasts."

PRD — a program that lets customers agree to reduce their loads in response to energy prices in exchange for reduced capacity requirements — was developed during 2010-12, before CP rules changed the requirements for demand response. It requires dynamic retail rate structures and advanced metering. PRD providers — electric distribution companies, load-serving entities or curtailment service providers — must be able to remotely curtail load when a PJM maximum emergency event has been declared and LMPs exceed trigger prices.

Because PJM approved its first PRD plans for the 2020/21 delivery year, it must now bring the rules in line with CP, the RTO says.

Thursday's discussion came during a first reading of three proposals developed by the Demand Response Subcommittee.

The RTO's proposal would extend DR's annual requirements to PRD. A second proposal would limit the triggers for assessing CP penalties to just penalty assessment intervals. The third, from DR-participant Whisker Labs, would extend the existing PRD rules to the winter, create a summer-only product and allow it to be aggregated with a winter resource for an annual CP resource.

Carmean said PJM was acting in "direct contradiction of Congress' intent" in the Energy Policy Act of 2005, which said that DR "shall be encouraged" and "unnecessary barriers to demand response participation in energy ... markets shall be eliminated."

"I have not gone back to read the law," said PJM's Pete Langbein, who presented the proposals, which the RTO plans to bring to an MRC vote next month. But he said PJM had made modifications to its monitoring and verification rules and expanded regions to ease requirements for DR. "We are continuing to work on this in the seasonal task force," he said, referring to the group being created as a result of a problem statement and issue charge approved by the MRC in August.

Greg Poulos, executive director of the Consumer Advocates of PJM States, said he shared Carmean's concerns. "Residential customers can no longer participate in this program," he said. "Customers are kind of getting the short end [of the stick]."

Morris Schreim | © RTO Insider

"It seems to be a different product now," added Morris Schreim, senior adviser to the Maryland Public Service Commission.

Carmean said the changes could mean "stranding hundreds of millions spent on [advanced metering infrastructure] meters. ... OPSI believe the PRD program as it exists today should be allowed to continue."

Earlier this month, OPSI drafted a resolution calling on PJM to postpone the imposition of annual resource requirements on PRD "until it has implemented an improved mechanism for summer seasonal resource participation in excess of winter seasonal resource participation, or until such time that winter reliability requirements equal or exceed summer reliability requirements." (See "OPSI, PJM at Odds over PRD," *PJM Market Implementation Committee Briefs: Oct. 11, 2017*.)

On Friday, PJM CEO Andy Ott responded with a letter to OPSI. "PJM agrees demand response resources are valuable, and we seek ways to have them receive compensation in accordance with their contribution to reliability," Ott said. "For seasonal resources that do not participate as Capacity Performance resources, the new stakeholder group will explore measures to value their contribution to grid reliability."

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ment or minimum run time. The changes would re-evaluate capped units when offers are updated. The changes would also apply to self-scheduled resources. (See "Debate Continues on Intraday Offers," *PJM Market Implementation Committee Briefs: Oct. 11, 2017*.)

Manual 14B: Regional Transmission Planning Process. Revisions developed to add information related to contingency definitions.

Manual 19: Load Forecasting and Analysis. Clarifies when load drop estimates are produced and includes updates from a periodic review of the manual. (See "Cleared PRD Forces Manual Revisions," *PJM PC/TEAC Briefs: Sept. 14, 2017*.)

Members Committee

The Members Committee unanimously approved the IRM study results, the Tariff changes for the balancing ratio, and changes to Manuals 11, 14B and 19 approved earlier by the MRC. (See descriptions in MRC briefs above.)

The committee also approved Tariff and Operating Agreement revisions to clarify definitions, as recommended by the Governing Document Enhancement & Clarification Subcommittee.

— Rich Heidorn Jr.

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cific fuel types."

In his comments on the NOPR, however, Monitor Joe Bowring said that PJM's proposal appears "to reflect a desire to administratively alter the markets to favor nuclear and coal-fired generation." Those generation types would receive a "disproportionately large increase in revenues," he wrote.

Price Formation Report

PJM's proposal, which would allow less flexible, traditionally baseload units to set LMPs, was first outlined in its June report, "Energy Price Formation and Valuing Flexibility." (See *PJM Making Moves to Preserve Market Integrity*.)

"The PJM report claims that baseload — nuclear and coal — generation is undervalued in the market, that negative energy market offers have a pernicious effect in hastening the retirement of baseload generation and that an increasing reliance on capacity market revenues, rather than energy market revenues, results in a bias in the markets," the Monitor wrote. "The PJM report provides no evidence supporting these claims."

The Monitor is not alone in his suspicions of PJM.

"The real issue is not necessarily the proposed DOE rule, but what the RTOs like PJM will propose in its place," Tyson Slocum, director of Public Citizen's Energy Program and a harsh critic of the RTO rulemaking process, said in an email. "FERC will be far more inclined to endorse whatever the RTOs put forward. What PJM is saying here is that they are NOT opposed to coal/nuclear bailouts AS LONG as the 'bailouts' are conducted through the RTO's 'market' rules. While everyone is distracted by the shiny DOE cost-of-service proposal … we cannot simply focus only on the DOE proposal, but what is coming next."

That is why, Slocum added, Dynegy and NRG Energy filed comments opposing the

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Reaction to PJM Price Formation Proposal

RTO Insider invited numerous interest groups to comment on PJM's proposed price formation proposal. Below is a summary of their responses.

John Shelk, CEO, Electric Power Supply Association

EPSA welcomes and supports PJM's leadership and active pursuit of further market reforms that are needed in light of continued major changes in the region's resource mix. The specific issues outlined in PJM's recent DOE NOPR comments at FERC should be further developed and filed at FERC as soon as possible so that implementation of approved reforms occurs in 2018.

Pat Jagtiani, executive vice president, Natural Gas Supply Association

NGSA is supportive of proposals that provide clear, competitive market signals in a fuel-neutral manner, and we agree that it should be RTOs working with their stakeholder to achieve the best path forward. With that said, we haven't seen enough detail around PJM's proposal to provide a detailed comment on their proposal. We do wholeheartedly agree with PJM's statements that put natural gas' excellent record of reliability on the record.

Todd Foley, senior vice president of policy & government affairs, American Council on Renewable Energy (ACORE)

ACORE agrees with PJM's comments on the importance of relying on competitive markets and regional flexibility to ensure system reliability, resilience and lowest possible electricity costs for consumers. We believe that FERC, working with PJM, other organized markets and stakeholders, should establish objective, market-based criteria in price formation to reward system flexibility. We need to see how PJM's proposals reward system flexibility, since that is what is needed for grid modernization and managing higher penetrations of renewable resources.

Amy Farrell, senior vice president of government and public affairs, American Wind Energy Association

Grid reliability and performance have gone up, all while wholesale electricity prices have gone down, because PJM markets allow uneconomic inflexible units to retire and be replaced by new, efficient and flexible units capable of responding to market signals. Let's not try to solve a "problem" of low-cost electricity.

The PJM proposal is still being developed, so we don't have a final position on it yet. However, if PJM divorces payment from performance, ultimately keeping less efficient units online, that could distort the market in the long run. More market-friendly approaches exist. For example, MISO and other market grid operators have improved efficiency and minimized out-of-market payments by incorporating start-up and no-load costs into market prices.

Jennifer Chen, attorney, Natural Resources Defense Council's Sustainable FERC Project

While we may be able to support shortage pricing and ORDC revisions, PJM's proposal to allow inflexible resources (largely coal and nuclear) to set LMP raises both process and substantive concerns. From a process perspective, PJM has been working on its inflexible unit pricing proposal without input from the stakeholder body for some time now, and we still do not know the details of it. Yet PJM, in its RM18-1 comments, asked FERC for immediate action and appears to be seeking a near-term deadline to implement its proposal. … Reliability isn't a justification and PJM didn't invoke it. In fact, PJM has more than enough resources available with reserve margins hovering around 29% this past summer and the last [Base Residual Auction] clearing a reserve margin of 23.9%. FERC directive on any of these potential reforms would be inappropriate at this point.

We also have concerns about the substance of the PJM proposal based on what's known about it. … Artificially inflating prices will attract new supply, which would in turn lower energy market prices, defeating an apparent purpose of the proposal to put more money into the energy market. If anything, PJM should act to reduce its oversupply, which would better achieve what PJM set out to do with its price formation proposal.

Tyson Slocum, director of Public Citizen's Energy Program

RTOs' constant rejiggering of their capacity markets to accommodate the needs of their powerful members to earn more money for their aging power plants isn't any better just because they dress up their bailouts in difficult-to-understand pseudo-economic jargon. … So, it will be no celebration for consumers if the DOE cost-of-service remedy is simply substituted by an RTO capacity auction redesign that falsely calls itself as a more palatable "market" solution.

(No responses were received from the Organization of PJM States Inc. (OPSI); Consumer Advocates of the PJM States (CAPS); the PJM Industrial Customer Coalition; the PJM Public Power Coalition; the Solar Energy Industries Association; the Nuclear Energy Institute; the American Petroleum Institute; the National Mining Association; or the American Coalition for Clean Coal Electricity.)

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NOPR even though they acknowledged they would benefit from it: "They love their odds of getting a market-based bailout through MISO and PJM." (See related story, *Vistra Energy Swallowing Dynegy in $1.7B Deal*, p.1.)

John P. Hughes, CEO of the Electricity Consumers Resource Council (ELCON), said PJM's June proposal is "simply an unsubstantiated directive to subsidize coal and nuclear plants with no consideration of the impact of the out-of-market costs on load. The one-price-clears-all nature of the market design also means that this gimmick will create a windfall for all generators that are dispatched. PJM is behaving as if it were captured by Exelon. PJM should be moving in the direction of improving market operation and price formation — not against it!"

PJM included in its filing a letter from Harvard economist William Hogan endorsing what he called PJM's plan to "ensure that the incremental cost of serving load is reflected in LMP." Hogan said it was "an ap-

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Cost Estimates on DOE NOPR: $300 million to $32 billion+

The Department of Energy's proposal to provide "full recovery" of coal and nuclear plant costs in RTOs with capacity and energy markets was short on details, notably providing no estimate of the cost of such policies.

But PJM's Independent Market Monitor and several other stakeholders have published estimates ranging from $300 million to more than $32 billion.

In its response to the DOE proposal, PJM's Monitor estimated the NOPR would cost ratepayers in the RTO $3 billion annually — equal to 36% of capacity payments in 2016 — if nuclear and coal units were all paid 25% of current replacement value. (The current replacement value of a coal plant is $1,434/MW-day and that of a nuclear plant is $2,639/MW-day. In contrast, the gross cost of new entry for a combustion turbine is $312/MW-day and a new combined cycle is $406/MW-day.)

The cost would rise to $13 billion — a one-third increase in the total cost of wholesale energy — if nuclear and coal units were paid 50% of replacement value.

If the units received full replacement value, the price tag would rise to $32 billion — an 84% increase in total wholesale energy costs.

Robert Chilton, executive vice president of Gabel Associates and a former New Jersey regulator and consumer advocate, told FERC he calculated the NOPR would result in increased costs of about $7.1 billion annually for the first five years. Gabel mostly represents generators in PJM.

Chilton cited cumulative costs of between $35.4 billion ($28.9 billion net present value) and $100.8 billion ($64.1 billion net present value) over a five- and 15-year term, respectively. His analysis assumes all fixed and variable costs are recovered by the eligible generators and all incremental net revenues are returned to customers.

Four Scenarios

A separate analysis, by the Climate Policy Initiative and Energy Innovation Policy & Technology, put the nationwide cost of the NOPR at between $300 million and $10.1 billion annually, based on which of four scenarios are used. (Energy Innovation is devoted to supporting policies "that most effectively reduce greenhouse gas emissions." The Climate Policy Initiative seeks to improve energy and land-use policies to "help nations grow while addressing increasingly scarce resources and climate risk.")

Their analysis assumed the NOPR would include PJM, ISO-NE and NYISO, which have mandatory capacity markets, as well as MISO, whose capacity market is voluntary.

The $300 million lower-band estimate assumes units with negative net cash flows (energy and capacity market revenue, minus the sum of fuel, variable and fixed operations and maintenance, and annual capital expenditures) receive uplift payments to bring their net revenue up to zero.

The $10.1 billion upper-band estimate assumes covered units would receive all their fixed operation and maintenance, full recovery of undepreciated past capital expenditures and ongoing capital expenditures, at a guaranteed rate of return, on top of energy and capacity market revenues. It also assumes payments to all coal and nuclear units in the RTOs — not just those with negative cash flows — and that coal plants will increase generation to their maximum output. (Nuclear units generally already run at maximum output.)

Small Number of Winners

About $7.3 billion of the $10.6 billion would be paid by PJM ratepayers, raising the RTO's total costs by 17%. "Spreading the incremental costs evenly over the 65 million people served by PJM results in an increase of $112 per person per year (though this probably is not how costs would be passed through)," the report said.

In both the high and low scenarios, nuclear plants account for two-thirds of the out-of-market payments.

Under all four scenarios, more than 80% of the coal subsidies would go to five companies, with NRG Energy's revenue boosted by $40 million to $1.2 billion annually, and FirstEnergy and Dynegy seeing an increase of up to $500 million each.

Exelon would receive half of the nuclear subsidies, as much as $3.6 billion. Other winners would include Entergy and Public Service Enterprise Group.

Depending on the final rule, the NOPR could also bring 2 to 4 GW of recently retired plants back into service, resulting in additional costs of $113 million to $228 million annually. "While costs represented here are annual, they could continue in perpetuity, since generators would now have no reason to retire," the report said.

— Rich Heidorn Jr.

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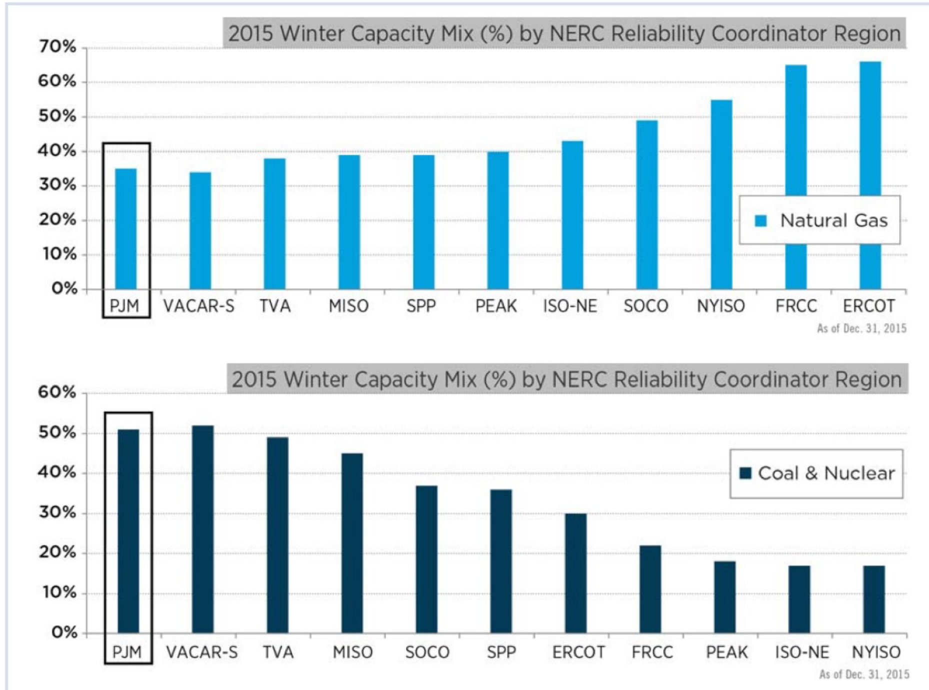
propriate step forward in price formation." He added, however, "I do not expect it likely to produce a dramatic change or have as significant an impact as improved scarcity pricing."

Consultant James Wilson, who often represents state consumer advocates in PJM, said in an email that it was "notable [that] Prof. Hogan does not support PJM's proposal as described in the June whitepaper. While he supports some things discussed with PJM verbally, he does not mention or cite to the whitepaper."

The Electric Power Supply Association (EPSA) told *RTO Insider* it is encouraged by PJM's proposal and is hopeful it will be considered on an "accelerated time schedule." (See sidebar, *Reaction to PJM Price Formation Proposal*, p.25.)



PJM's winter capacity mix is less dependent on natural gas — and more reliant on coal and nuclear — than almost all other NERC regions in the continental U.S. | *PJM*

Three-Month 'Compliance' Process

The RTO said the DOE NOPR "incorrectly identifies a perceived problem and its cause, and seeks to impose a remedy that is not supported by the reliability and resilience concerns [it] claims to address."

But while it was dismissive of the NOPR, PJM acknowledged it is behind other RTOs in adopting rule changes to improve price formation. It asked FERC to set a deadline for each RTO/ISO to identify "whether changes in the resource mix [have] created issues in their respective regions that are currently not addressed in the market" and propose solutions "within a commission-specified deadline that is in the near term."

Asked to define "near term," Ott said, "we're thinking three months … would be appropriate."

If FERC agrees to PJM's request, said Ott, "We'd still have time to talk about it but it wouldn't be the traditional … issue charge type" stakeholder process. It would likely be filed by the PJM Board of Managers under Section 206, he said.

Exelon's Role

Ott said PJM's proposal "is very consistent" with FERC's price formation docket (AD14-14) and fast-start NOPR (RM17-3), but that the problem is manifested differently in PJM, which has fewer fast-start units and more large gas combined cycle units. "All we're saying is it's a bigger problem than just a few units — it's not just fast-start units. It's these others," he said.

In its written comments, the Monitor suggested PJM is following the talking points of Exelon, noting the company is the RTO's "largest participant."

Bowring said the proposal to extend the fast-start NOPR's pricing concept to all resources "was not proposed by PJM in Docket RM17-3 but was included in Exelon's comments in the docket."

The Monitor said that while PJM "held no open stakeholder discussion of the proposals in the report," Exelon discussed the RTO's June report in its second-quarter earnings call. During the call, Joseph Dominguez, executive vice president of governmental and regulatory affairs, said the company would "push very hard" to make sure that PJM would propose its pricing reforms to the commission for implementation by summer 2018.

Bowring said this "aggressive timeline … would not likely be met for a significant market pricing proposal through the PJM stakeholder process."

PJM did not respond to a request for comment regarding Exelon's involvement.

An Exelon spokeperson responded: "Dozens of entities including the U.S. Department of Energy, [Edison Electric Institute], EPSA, PJM, Dr. Bill Hogan and PJM states have similarly concluded that PJM's energy market rules are flawed and reforms are needed to preserve critical resources for our customers. We will address in our reply comments a number of factual and analytical errors in the IMM's filing."

The Monitor said FERC should allow the regular stakeholder process and not rush to approve PJM's proposal.

"The PJM report's proposal, which would impose significant costs on customers to the benefit of the owners of nuclear and coal-fired generation, is not the result of the pro-

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cess designed to support independent, deliberate decision-making," he wrote.

Extended LMP

PJM told FERC it is "actively exploring" the extended LMP method, which would bifurcate its security-constrained economic dispatch into separate dispatch and pricing runs, as is already done in MISO, ISO-NE and NYISO.

"Under our proposal, the flexibility would be called a separate product and then you would have the supply-demand balance actually set the price," Ott explained. "Under that scenario, the price of electricity would more reflect which units are actually operational. So it's not going to benefit specific fuel types. But what it would say is the units that are actually running today — every day — and we have to have them — the pricing would reflect the fact that they are on.

"Today, for example, we may have a $30 unit running but the price is $27. … So the unit that's $30 would get the $3 through uplift. If the price actually reflected that it was on, the forward prices would pick that up and it would be more economic."

While coal plants cannot toggle on and off like modern gas-fired plants, Ott said they are flexible within their minimum and maximum outputs. "The challenge today is many of the gas units' production costs are below all the coal," he said. "So, the coal tends to sit at minimum."

PJM said improved price formation "may help to ensure an appropriate mix of resources that can meet future grid demands and have clear incentives to follow dispatch instructions."

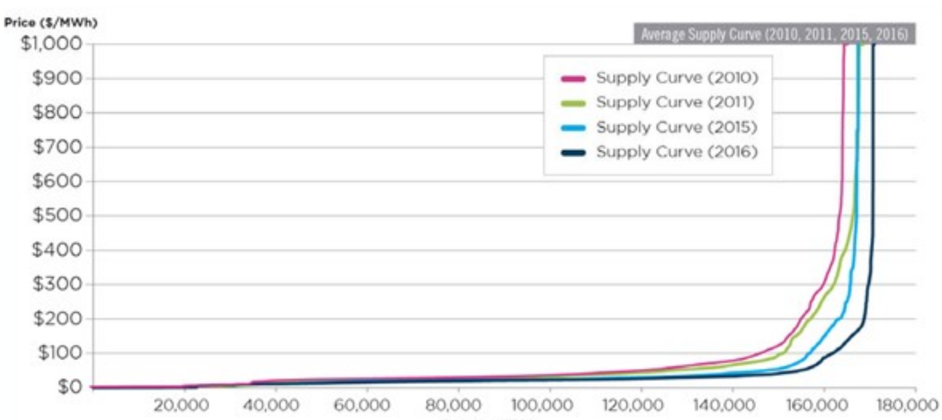
Impact on Incentives

Ott said the only incentive for generators to offer load-following flexibility is the ability to set LMPs.

But PJM says the incentive has diminished because its supply curve has become too flat — particularly between 120,000 MW and 150,000 MW, where load typically peaks in summer and winter — because of "the competitive economics of combined cycle gas turbines, assisted by low-cost shale gas and increasing renewables with zero fuel costs."

"When [resources are] all within the same 50-cent part of the curve, it's like, 'What do I care?'" Ott said. "So a gas resource is sitting here saying, 'If I'm going to be flexible, I have to buy a flexible fuel contract that will cost me more money. I've got to spend more money on maintenance. And I'm not going to do that for 20 cents.' That's the reality we're facing."

The Monitor contends, however, that separating the real-time five-minute energy price from the five-minute energy dispatch instructions would eliminate the incentive for marginal units to follow the dispatch instruction. "The result would undermine PJM's control of the system and further increase the cost of serving load," he said.



PJM says its flat supply curve has diminished incentives for generation to follow dispatch instructions. | *PJM*

Higher LMPs, More Uplift

Ott said the changes PJM has proposed will increase energy prices while reducing uplift and capacity prices. But he said he couldn't say how it would affect the total cost to ratepayers or whether it would increase overall coal and nuclear revenues because the RTO hasn't yet run any simulations.

"Obviously, under our proposal, electricity prices would go up. [We're] pretty sure of that. As far as the magnitude, I think I'd rather wait until we see the proposal."

The Monitor said, however, the PJM proposal to allow less flexible units to set price would result in higher LMPs and new uplift payments, raising "the cost to consumers of serving the same load in each market interval with no counteracting decrease to production costs."

"The proposed pricing solution would raise the price to that of any inflexible unit that would provide the marginal megawatt-hour as if it were willing and able to change its output level, which it is not. The pricing solution is a fictitious solution that produces higher prices that are not consistent with the efficient dispatch of the market," he said.

Jennifer Chen, an attorney for the Natural Resources Defense Council's Sustainable FERC Project, cited an estimate that including no-load and start-up costs of inflexible units in LMPs would boost energy market prices by 10 to 15%.

Bowring said Monday that would put the cost of PJM's proposal at $3 billion annually, equivalent to paying 25% of the plants' current replacement value. (See related story, *Cost Estimates on DOE NOPR: $300 million to $32 billion+*, p.26.)

Better Options

The Monitor said it has discussed with RTO officials energy market price formation improvements that would not interfere with

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competitive outcomes. "Improvements to better reflect local scarcity due to transmission constraints, system scarcity and necessary reserves in prices would direct greater market value to the specific resources that support reliability. Some of these changes are already underway in the PJM stakeholder process, while others have made less progress," the Monitor said.

The Monitor said it agrees with PJM on a need to consider changes to the operating reserve demand curves (ORDCs). The RTO said it is conducting the first broad review of its ORDCs since it implemented shortage pricing in 2012.

The ORDCs are based on the largest unit operating on the system. "As such, they do not accurately reflect the value of excess reserves on the system in a manner consistent with the reliability value of those reserves," PJM said.

"When we developed the N-1 criteria, we were looking at storm-related outages and equipment failures," Ott said. With the added concern of terrorist attacks on infrastructure, he said, the RTO is evaluating what areas of the grid are vulnerable. For example, Ott noted, NERC's Critical Infrastructure Protection standard requires expenditures to protect substations designated as critical.

"Is there some criteria you can put around that to say we should be protecting against those types of risk?" Ott said, adding, "realizing that, of course, you can't protect every piece of equipment."

Could that mean contingencies based on large gas pipelines that supply multiple generators? "There's a lot of discussion that has to occur before we get to that point," Ott said.

Shortage Pricing

PJM said it also will propose new shortage pricing rules that would "incentivize appropriate behavior [and] could mitigate operational reliability concerns."

The RTO currently institutes shortage pricing if its system is short of 10-minute reserves, "which from a reliability perspective would constitute a grave operating condition," it wrote in its NOPR response. "Modeling and invoking shortage pricing for longer-term reserve products such as 30-minute reserves would provide better incentives and information to the market regarding potentially severe operating conditions by escalating energy and reserve prices earlier and incentivizing behavior that would ameliorate the condition," PJM said.

ERS Problems?

Ott said PJM does not have a lack of "essential reliability services" as defined by NERC.

"The issue is not that we don't have enough of resources that can provide these services. The concern that we have is that we're not paying for them," he said.

While PJM has a compensation scheme for some ERS such as black start, "We don't pay for inertia. We don't pay for voltage control, things like this," Ott said. "We don't have a problem with them today, but we aren't paying for them. So we need to look at — if we continue to not pay for them — [whether] they're going to go away."

Ott rejected the notion that its proposals are designed to benefit the same uneconomic resources as the DOE NOPR. "What we're saying is the price of electricity has to reflect the units that are actually running to serve load. It should be no more; it should be no less. We're not saying anything about what fuel types," Ott said.

"There are a significant number of times when we have resources operating and the market price doesn't reflect the fact that the resource is operating. Whether the resource is coal, nuclear or gas, that's wrong in my opinion."

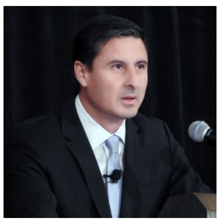
Decade of Disruption: Marcellus Shale and Regional Energy Markets

Shale Gas Impacts Cut a Wide Swath, Panelists Say

By Rory D. Sweeney

| © RTO Insider

HERSHEY, Pa. — From societal benefits to electricity market design concerns to regulatory issues, it's clear that a decade of shale gas production has had a major impact that extends well beyond Pennsylvania's borders, panelists said last week during a power industry seminar focusing on the Marcellus shale.



"It only seems appropriate to hold a discussion on competitive markets in a region that has one of the most impactful disruptions in the energy sector in recent history," NRG Energy CEO **Mauricio Gutierrez** said at "Decade of Disruption: Marcellus Shale and Regional Energy Markets," an electricity conference organized by John Hanger, a former Pennsylvania state utility regulator and environmental secretary during the early stages of Marcellus development from 2008 to 2011.

Gutierrez noted that the "shale gas revolution" has "changed the landscape" of the power generation industry and manufacturing in the U.S.

Marcellus Benefits

Philadelphia Gas Works CEO Craig White said one of the biggest advantages of shale gas for his company has been sustained low prices, which have allowed for investment in infrastructure.

"The biggest problem we had [before] is prices would spike above oil," which reduced demand, White said. Low prices have allowed his gas delivery utility to replace aging distribution pipes while still lowering customer rates.

While shale gas has been an "unequivocal win for retail consumers … it's also been a win for electric power customers," said Christina Simeone, director of policy and external affairs for the University of Pennsylvania's Kleinman Center for Energy Policy. "The electric power sector is really where prices dropped the most."

Simeone reviewed the findings from her study on shale gas development that showed how a "Pennsylvania gas discount" has expanded low-cost gas-fired generation. (See related story, *Study: Pennsylvania 'Discount' Spurred Spike in Gas-Fired Generation*, p.33.)

"The electric power sector is now the natural gas industry's No. 1 customer both in Pennsylvania and nationally," she said.

Gas Role in Decarbonization

Increased reliance on gas is leading the power sector down the right path for decarbonizing the country's economy, according to Risky Business Project research reviewed by the World Resources Institute's Karl Hausker.

By transitioning energy consumption from fossil fuels to electricity, decarbonizing electricity production, and finally driving through any efficiencies developed along the way, the U.S. can reduce carbon dioxide emissions by 80% by 2050, Hausker said. But generators needn't worry about betting the farm on renewables. If done correctly, it's "an incredible growth opportunity for the electric power sector," he said.

"It's crazy to shut down a safe nuclear plant if it's producing at a reasonable cost," he said. "We are still [projected to be] using a lot of natural gas in 2050. … It is a key bridge fuel."

While the Risky Business Project plan calls for hundreds of billions per year in infrastructure spending over the next 30 years, Hausker said the impediments are largely political, such as opposition to siting substantially more generation and transmission infrastructure.

"Technologically, we can do this. … Economically, the cost is manageable," he said. "We really need to put the pedal down hard and really come up with better business models. … If you're serious about [addressing] climate change, we have to build out the power sector, so please, tamp down the NIMBYism."

The plan also "needs to be resilient in the face of falling fossil fuel prices," he said, because International Energy Agency modeling indicates that by 2050, oil and coal prices will drop by 40% and gas by 33% compared to reference prices.

"Whatever we do, we're going to need to expand the transmission system a lot too," he said.

While speaking on a separate panel, ISO-NE CEO **Gordon van Welie** contended that expansion is more a challenge on the pipeline side than the wires side in his region.

"Quite frankly, it's not likely. We've got as much pipe as we're ever going to see in New England," he said. "But for the fuel security issue, we've actually been a pretty reliable grid. … There's hardly any congestion left in New England."

Pennsylvania Public Utility Commissioner Andrew Place supported decarbonizing through the electricity industry. "If we are going to tackle our climate goals … the best way to do that is through our energy markets," he said.

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Shale Gas Impacts Cut a Wide Swath, Panelists Say

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Decarbonizing the Industry

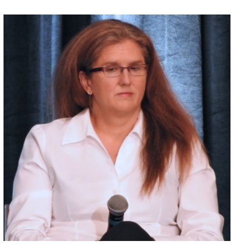
Who will lead the effort to decarbonize generation remains to be seen. As panel costs have plummeted, solar arrays combined with energy storage systems "can actually beat" gas-fired generators on price alone without factoring in renewable energy credits (RECs), Community Energy CEO **Brent Alderfer** said. The issue, he said, is getting long-term power commitments. "For some reason," gas plants have been able to secure long-term investment based on short-term price signals while renewables have not, he said.

"The only folks that have taken a generation facility and turned it into what Facebook wants, which is a 15-year delivered power renewable contract, are cost-of-service utilities."

Another panel discussion featured a debate on recent state and federal actions to promote large-scale, zero-emission production from nuclear plants.

NRG's Abe Silverman argued that states, including Illinois, New York and — as of last week — Connecticut, have committed more than $10 billion to support aging nuclear generation that is too expensive to clear energy auctions, while new renewable development could produce the same power for half the price. He called for a process to identify the desired attributes (such as zero emissions) and value it so competitors can develop novel solutions to address them.

"Let's compete for carbon production, not just hand it out on a no-bid contract," he said.



Kathleen Barron of Exelon, the beneficiaries of zero-emission credit (ZEC) programs in Illinois and New York, argued the inverse, calling ZECs "short-term programs designed to bridge the gap" for states to develop carbon policies.

"It's cheaper to keep the current fleet going than it is to build new renewables," she said. "They are competitive [in markets] if you factor in the cost of the avoided emissions."

Van Welie said he supported ZEC programs.

"It's about jobs. I don't know how you solve that problem through market design," he said. "The New England states want to control the speed at which they go down the path of decarbonization. Given all the constraints on the system, that's a pretty innovative outcome."

PJM CEO **Andy Ott** reiterated his RTO's position that subsidies suppress prices in competitive markets.

Where RTOs Fit

Ott and van Welie mutually opposed any single-solution federal mandates, such as the price supports for coal and nuclear units recently proposed by the Department of Energy. (See *RTOs Reject NOPR; Say Fuel Risks Exaggerated*.)

"It's not going to be productive for us to be forced to work on Andy's problem or for Andy to be forced to work on our problem," van Welie said. "We're not going to build more coal in New England, so having a discussion about building more coal in New England is a pointless exercise."

"The issues we're facing are unique to our fleet. The issues Gordon's facing are unique to his fleet," Ott said.

The two CEOs agreed that the solution is defining and valuing attributes. PJM has run into problems posting negative prices to reduce wind production when there is oversupply because it harms large, inflexible baseload units dispatched earlier in anticipation of upcoming demand spikes. The RTO has proposed defining a "load following" attribute for the ability to adjust output as necessary and pay units to do so.

"What that does is it opens up that market," Ott said, to "surgically" address the issue rather than with the "sledgehammer" of negative prices.

Completing Deregulation and the Promise of Technology

Pennsylvania's deregulation 20 years ago was just the first step, said Jim Steffes, executive vice president for North American corporate affairs at Direct Energy.

"It wasn't about design in 1997. It was about stranded cost recovery for utilities," he said.

With consumers now holding increased technological power, such as through smart meters and other ways to monitor and control power use, they are much better equipped to engage directly with their retail supplier. For example, smart thermostats have been shown to reduce usage by 10%, Steffes said, and "it's not forced conservation." Yet, incumbent utilities maintain control of the customer interaction.

"Why do we still have this irrational, non-competitive player in the market?" he asked. "The fact that we don't know even know if they're competitors or not creates a barrier."

"We really have to get the utility out of the place of being the gatekeeper," said **Mike Starck**, general manager of NRG's northeastern retail business.

NRG's Gutierrez had kicked off the conference on that issue, calling for four reforms in Pennsylvania by 2020. He argued that all "business transactions," such as customer switches and sharing meter consumption data, should be standardized and routed through PJM, and that competitive suppliers should be allowed to compile all fees and send customers a single bill that includes utilities' distribution charges, an idea known as supplier-consolidated billing. Currently, only utilities have that ability and suppliers must send a separate bill if they want to bill directly.

"It is essential to unlocking innovative payments and bundled products," he said. "Consumers demand simplicity and convenience. They want a single energy bill that includes not only the energy needed to keep their lights on and houses warm, but also the other products and services that they need provided to them, whether it's home security or energy efficiency devices."

Gutierrez also called for defining and valuing necessary generator attributes and adjusting utilities' tariff structures to prohibit them from offering retail products or generation.

Decade of Disruption: Marcellus Shale and Regional Energy Markets

Powelson Outlines FERC Tenure Agenda

By Rory D. Sweeney

HERSHEY, Pa. — FERC Commissioner Robert Powelson had to hit the ground running after being appointed to the commission in August. He and his colleagues are working to clear the backlog of decisions that accrued during the six months the commission lacked a quorum.

But part of the job also includes dealing with issues he doesn't want to touch.

"The FERC is trying to stay out of the fuel wars, and that's what's going on right now. Coal against gas; nuclear trying to stay above the fray. It's becoming unnecessarily all about 'my fuel's more resilient that your fuel,'" Powelson said last week during an industry conference. "If the [2014] polar vortex is the example of that, there's a lot of people with sins they need to confess, and I think we know that."

He pointed to the 24% forced outage rate stemming from that epic cold snap, and noted that he once "called out" the companies that failed to meet their capacity obligations.

"We know who they are. Some of them are in the room today. We have a 12-step program in the back," he said.

Powelson was speaking at "Decade of Disruption: Marcellus Shale and Regional Energy Markets," the second annual electricity conference organized by John Hanger, a former Pennsylvania state utility regulator and environmental secretary. Before Powelson spoke, Hanger presented him with a 2017 Energy Leadership Award.

Vortex Fatigue

Powelson's comments were part of a discussion touching on many industry topics, but that repeatedly returned to the U.S. Department of Energy's recently proposed grid resiliency pricing rule. The department's Notice of Proposed Rulemaking used the 2014 extreme weather event as a pretext to endorse — and financially compensate — the reliability of units with 90-day onsite fuel supplies.

"I'm a little fatigued by the use of the polar vortex as this screaming cry for why we have to do something. … I think we did a lot in PJM with Capacity Performance. I'd like to honestly see CP kick in at 100%, make a metric call there and then get into this question," he said.

Powelson also explained his views on state subsidies in the form of renewable energy credits (RECs) to build preferred wind and solar resources or new zero-emissions credits (ZECs) to support existing nuclear plants. Critics say RTOs must limit the ability of those units to bid into competitive auctions to prevent them suppressing markets by offering at prices below their true operating costs.

"If a state has a [renewable portfolio standard] and wants to value carbon goals, they should be allowed to do that. The problem is when you create a market bastardization of the thing known as the minimum price offer rule … we've got to address that issue," Powelson said. "Those state mechanisms have to be able to pass the minimum offer price rule smell test, so that's where it gets a little prickly for us as an agency that just allowing a state to go amend its RPS without, in my view, having a strong MOPR screen gives me a little bit of heartburn, because you do know we're causing a lot of havoc now in the markets to gas units that are dispatching and not being able to cover their marginal costs."

He provided the example of CAISO, where some gas-fired generators are declining to engage in the market and, in some cases, seeking early retirement. He pointed to PJM as a market doing a good job significantly reducing emissions in the past decade.

"In lieu of a carbon tax, that is market-based decarbonization at its best," he said.

To incentivize transmission development, he said the industry must focus on tweaking financial mechanisms.

"The big conversation at the FERC is [return on equity] policy and how under FERC Order 1000 we get these projects cited and we get them commercialized," he said.

Getting Gas to Market

The issue of gas-electric coordination "cries out for a broader conversation," Powelson said.

"I personally don't think we're out of the woods there yet," he said. "The conversation about gas and electric folks not being able to coordinate efforts, being able to sit them in a room together to have a conversation… Market synchronization would be helpful."

Robert Powelson | © *RTO Insider*

Powelson said the "tectonic shifts taking place in our bulk power system" and the days of large plant construction appear to have been superseded by interest in unique and localized solutions, like combined heat and power facilities, islanding, microgrids and oxidized fuel cells.

"If you look at the grid right now, 1,000-MW cathedrals, we're just not there anymore," he said. "The consumers are demanding these changes."

As a former Pennsylvania regulator during a period of explosive growth in shale gas production, it wasn't surprising that Powelson also defended natural gas and promoted its expanded use.

"There will be some in Washington who come into my office and say, 'Gas is not a baseload resource.' Well, if you're in Pennsylvania and Texas and Louisiana and West Virginia and Ohio, you take exception to that," he said.

However, the gas can't stay in those areas, he said.

"We need to get it to load centers," he said, and indirectly criticized New York state's reluctance to approve pipeline construction permits.

"If anybody here can help, there's a state capitol — I think it's called Albany — we would greatly appreciate your advocacy work in there," he said. "We're inching our way ahead."

New York's reticence has been a major hurdle for getting Pennsylvania gas to New England markets, where there are often supply constraints. Earlier in the conference, ISO-NE CEO Gordon van Welie said he didn't expect to see another pipeline ever connected into his RTO. Powelson appears to have other plans.

"I would take a little bit of exception to

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Study: Pennsylvania 'Discount' Spurred Spike in Gas-Fired Generation

By Rory D. Sweeney

HERSHEY, Pa. — The prevalence of gas-fired generation has skyrocketed in recent years, upending power market structures and leading to nationwide debate over the future of the electricity industry.

Much of that might be attributable to what Christina Simeone, director of policy and external affairs for the University of Pennsylvania's Kleinman Center for Energy Policy, calls the "Pennsylvania Gas Discount."

At a conference to analyze Pennsylvania's electricity markets last week, Simeone unveiled her study on price impacts from the recent expansion in shale gas development.

"The electric power sector is now the natural gas industry's No. 1 customer both in Pennsylvania and nationally," she said.

That has come, she said, because production from the state's Marcellus shale has been prodigious, while "takeaway capacity has not kept up with production growth." In 2007, Pennsylvania accounted for less than 1% of the nation's natural gas production and consumed four times more gas than it produced. By 2016, the state had increased its output 2,800%, accounting for 16% of

Christina Simeone | © *RTO Insider*

national production — four times more than it consumed.

In-state pipeline construction has not maintained that pace. Simeone said FERC has approved 59 interstate pipeline projects since 2007 that would impact Pennsylvania, but many of them have been delayed. Williams' Constitution pipeline, for example, was approved in 2014, but construction has been blocked by a permitting battle with New York.

The pipeline constraints have led to an oversupply that has dramatically depressed in-state prices.

"The electric power sector is really where prices dropped the most," she said.

Average annual delivered power prices in Pennsylvania in 1997 were $3.02/Mcf, 24 cents more than the national average of $2.78. The differential widened to 70 cents in 2007, with Pennsylvania prices rising to $8.01/Mcf.

By 2016, the Pennsylvania average had fallen $1.05 below the national average to $1.95/Mcf.

Correspondingly, in-state consumption since 2007 increased by half, with usage up almost 250% by Pennsylvania gas-fired generators, whose number increased 15% in that time. Gas deliveries for power production nationwide have risen 46% in the past decade, as gas-fired units increased nearly 4%.

The price drop has had a profound impact on power markets, shaking the fundamentals of market design and sparking a national debate about subsidies for financially struggling coal and nuclear generation. (See *RTOs Reject NOPR; Say Fuel Risks Exaggerated*.)

Simeone said it's unclear how long the discount will continue because there are "huge reserves, but we also have this record interest in pipeline takeaway capacity." If built, the nearly 60 FERC-approved projects could transport more than 20 Bcfd, but producers could also increase supply, prolonging the Pennsylvania discount. Pennsylvania produced about 5,264 Bcf in 2016, according to Simeone's research, and has a cumulative outflow of 6 Bcfd.

Powelson Outlines FERC Tenure Agenda

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Gordon's assessment that we're never going to see a pipeline built," he said. "I think there's a steadfast commitment to getting pipeline infrastructure built."

Or perhaps it will be a case of moving gas into the region by whatever means necessary. Powelson said he shares a half-joking agreement with fellow Commissioner Cheryl LaFleur that "if we can get one thing done in our careers, it's repeal the Jones Act."

The Merchant Marine Act of 1920 — commonly known as the Jones Act for its sponsor, Sen. Wesley Jones — forbids foreign-flagged ships from carrying cargo between the U.S. mainland and certain noncontiguous parts of the country, including Hawaii, Puerto Rico, Alaska and Guam. Enacted in the aftermath of World War I — and in case of World War II — it was intended to ensure the country had a large enough supply of merchant ships to survive attacks by German subs.

Powelson called the law an "antiquated document that doesn't reflect where we are in our energy landscape." He said it limits the ability to ship LNG around the country from the growing number of export terminals to demand areas, such as New England.

"It's alarming to me the storage crisis that they face," he said. "When they hit that constraint, it's 'OK, let's see what we need to do to get something into one of the storage facilities.' That's not the way I want to run an RTO."

From left to right: John Hanger, Robert Powelson and Steve Huntoon, principal of Energy Counsel LLP (and *RTO Insider* columnist). | © *RTO Insider*

Infocast Mid-Atlantic Power Market Summit

Market Summit Tackles Ongoing PJM Changes

By Rory D. Sweeney

PHILADELPHIA, Pa. — "We don't know the right answer," PJM Senior Market Strategist Andrew Levitt said last week. "We think the right answer is going to emerge."

Levitt was speaking on a panel about distributed energy resource integration in PJM, but the comment could have applied to any of the topics discussed at last week's Mid-Atlantic Power Market Summit hosted by Infocast.

With all the technological innovation and game changing occurring in the power industry, market rules are having to move quickly to keep pace. While some PJM stakeholders are reluctant to jump to decisions, others have urged that decisions — right or not — have to be made.

"Recently, the market has been thrown upside down," said **Scott Taylor**, vice president at generation developer Moxie Energy. "I think the political risk is a big issue that even if it gets sorted out, there's an overhang with what's the next attempt?"

Taylor, whose company focuses on gas-fired generation, was referring to the Department of Energy's recent proposal to provide price supports for coal and nuclear resources. He said that the Notice of Proposed Rulemaking and state subsidies for nuclear units known as zero-emissions credits (ZECs) have shut down investment. Three states — Illinois, New York and Connecticut — have instituted ZEC programs.

Michael Ferguson, director of U.S energy infrastructure for Standard & Poor's, said the financial woes for such large-scale units haven't been a surprise.

"You can almost see it in slow motion where you know there's a problem out there," he said. "It's been playing out in slow motion for a long time."

Scalpels and Sledgehammers

Surprising or not, the issue has created enough market fervor that the conference featured a debate between **Joe Bowring**, PJM's Independent Market Monitor, and **Kathleen Barron**, Exelon's senior vice president of competitive market policy. Exelon's nuclear facilities are the beneficiary of the ZEC programs in both Illinois and New York.

The debate focused on the minimum offer price rule (MOPR), which screens capacity auctions for subsidized bids and exchanges them for class-specific standardized offers. In current market conditions, the restated bids effectively ensure that such bids don't receive capacity obligations and inappropriately suppress the clearing price.

Responding to criticism of the rule, Bowring said he has "yet to hear one iota of evidence" of it hurting market participants. "It's very much not a sledgehammer; it's very much a scalpel," he said.

Barron questioned the timing of concerns. "We didn't have a minimum offer price rule for renewables. … Why do we suddenly care about it when it's nuclear?"

She noted that the ZEC payments can adjust downward to reflect changing market conditions, but Bowring countered that they never adjust negatively to pay consumers back.

"Clearly, there's an efficient way to deal with carbon," he said. "This is an inefficient way to handle it."

Barron said the programs allowed states to prevent backsliding on emissions levels until they can develop long-term policies.

"Versus the replacement cost of bringing on new generation that's clean, [the ZEC payment] is a bargain," she said. "It's cheaper to keep them than to let them go. … You need to have an objective way to value what you care about, and once you do that, you let the chips fall where they may."

Plants that still can't cover their costs after receiving carbon valuations should then retire, she said.

Beyond the ZECs, Bowring criticized the NOPR, which he said would cost up to $32 billion per year, as "a stalking horse for something else." (See related story, *Cost Estimates of DOE NOPR: $300 million to $32 billion+*, p.26.)

"I don't think it was intended as a serious proposal," he said.

While it might be cheaper to keep existing plants than build new ones, he said it "eliminates alternative investment."

"We also need to determine whether the current gas pipeline business model is the right one if we're going to rely on it further," he said.

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Infocast Mid-Atlantic Power Market Summit

Market Summit Tackles Ongoing PJM Changes

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Downside of Cheap Gas

Taylor said his company is not interested in developing renewable resources because the field has "too many players in it right now" and remains "real estate heavy."

Andrew Rosenbaum, a managing director at RBC Capital Markets, agreed that renewables can't support themselves.

"No one's really building merchant renewables," he said. "How many of the various support mechanisms do you get your arms around is an interesting question."

Jim Guidera, who heads Credit Agricole CIB's energy and infrastructure group, noted that potential for corporate taxes reductions under President Trump has made it harder to make deals because there could be less benefit for writing off failed projects.

"Elections matter," he said. And with gas remaining at low prices, "it's a tough model."

That low gas is stifling innovation, according to Abe Silverman, deputy general counsel at NRG Energy.

"When prices are high, we incent creativity and we incent innovation. With the shale gas revolution, the price to beat is too low right now," he said. "I think we need to raise the price to drive decarbonization."

Silverman debated with Scott Vogt, vice president of energy acquisition at Commonwealth Edison, over who should control engagement with end-use customers. With incumbent utilities solely allowed to consolidate charges into a single bill, "we're basically competing for one line on the bill," Silverman said.

Vogt countered that retail suppliers are able to send separate bills if they prefer and in fact asked utilities to bill for them.

From left to right: Andrew Levitt, PJM; Scott Vogt, Commonwealth Edison; and Abe Silverman, NRG Energy. | © *RTO Insider*

FirstEnergy Selling Merchant Fleet Despite DOE NOPR

By Rory D. Sweeney

FirstEnergy supports the U.S. Department of Energy's call to financially support nuclear and coal-fired units, but that won't stop the company from selling off its merchant generation fleet and retreating to the predictable returns of regulated assets.

CEO Chuck Jones last week said he is also "pleased" with signs of state-level support, including a resolution from the Pennsylvania legislature supporting the department's proposal and the introduction of the Ohio Clean Energy Jobs bill to support nuclear units with zero-emissions credits (ZECs). But "whether these state or federal activities result in meaningful and timely support remains to be seen," he said.

"We have no interest in maintaining generating assets that have commodity exposure, and we're moving forward with exiting the commodity-exposed generation business," Jones said during a call to discuss third-quarter earnings.

FirstEnergy reported earnings of $396 million ($0.89/share) on $3.7 billion in revenue, missing guidance by $80 million. However, operating earnings of 97 cents/share beat guidance by 10 cents. The results exceeded performance from the same quarter a year ago, when the company reported earnings of $380 million ($0.89/share) on revenue of $3.9 billion and non-GAAP earnings of 90 cents.

Company executives credited the success to "stronger-than-expected results" in its competitive and corporate segments, along with solid regulated performance that included distribution deliveries that were better than forecasted and higher transmission revenues.

The company increased its GAAP forecast for 2017 to a range of $2.02 to $2.42/share and non-GAAP to $3 to $3.10/share, which had been targeted at $2.70 to $3/share.

Jones said Ohio's House Bill 381 was introduced earlier this month with terms that were "reduced" from FirstEnergy's previous requests for nuclear price supports. But they're "likely" enough to make plants "economically viable" when combined with the planned restructuring of First Energy Solutions (FES), the company's competitive generation arm. He expects a final vote on the measure around the middle of the first quarter next year.

"We believe this effort is imperative for Ohio's energy security," he said.

Despite the price support discussions, the company remains focused on shedding FES, Jones said.

"A preferred outcome" would include agreement from FES' creditors, he said, but Chapter 11 bankruptcy remains an option that hinges on several variables, including DOE's proposal, FERC's actions and discussions with creditors' advisers.

"We recognize the varied interests of our stakeholders, but we're also aware that some have an interest in floating rumors about our company," he said in warning that he would not discuss the progress of negotiations.

The company is moving quickly to disgorge the assets. LS Power has agreed to pay $825 million in cash for 1,615 MW of capacity that includes four Pennsylvania gas-fired plants and interests in the Bath County Hydro and Buchanan gas-fired facilities in Virginia, which are owned by FirstEnergy's Allegheny Energy Supply subsidiary. The transaction involving the four Pennsylvania gas plants is expected to close this year, while the sale of the interest in the Virginia facilities is expected to close in the first quarter of 2018.

Jones said the full deal, which added some assets but was still reduced by $100 million since it was announced earlier this year, was priced on "the existing market conditions."

The company's regulated Monongahela Power subsidiary in West Virginia "continues to work through the regulatory process" to take ownership of the 1,300-MW Pleasants plant and expects approval from the West Virginia Public Service Commission and FERC by early 2018, Jones said. Allegheny expects to receive $350 million in net proceeds after paying off all its remaining long-term debt.

Entergy Profits up as Company Continues Merchant Gen Exit

Entergy last week reported a third-quarter profit of $398.2 million ($2.21/share), up from $388.2 million ($2.16/share) a year ago.

"We now expect to finish the year in the top half of our utility, parent and other adjusted earnings guidance range," CEO Leo Denault said in a statement.

The New Orleans-based company affirmed its 2017 operational earnings guidance range of $6.80 to $7.40/share, and its utility, parent and other segment adjusted guidance range of $4.25 to $4.55/share. Operational earnings do not include non-routine expenses, such as the costs to close or sell the company's merchant nuclear power plants.

Denault said Entergy will work with regulators to recover $85 million to $120 million in Hurricane Harvey restoration expenses, and that the company expects $3 million to $5 million in unbilled revenue for 2017.

The CEO also said Entergy's recent decision to extend a power purchase agreement with Consumers Energy regarding the Palisades nuclear plant does not mean the company is staying in the merchant nuclear business. (See *Entergy Abandons Palisades PPA Termination*.)

Palisades nuclear plant | *NRC*

"Our strategy to exit the merchant business and become a pure-play utility remains unchanged," Denault told analysts in an earnings call last Tuesday. "This decision to continue to operate the plant will preserve value for our owners while extending our exit from the merchant nuclear business by only a year."

— Tom Kleckner

AEP Falls Short of Q3 Expectations, Remains Optimistic

By Tom Kleckner

American Electric Power on Thursday said the mildest weather conditions since 1992 led its third-quarter sales to fall 12.8% from a year ago, down to $4.1 billion.

The Columbus, Ohio-based company reported a quarterly profit of $544.7 million, a vast improvement over last year's loss of $765.8 million for the same period. A one-time $2.3 billion impairment charge in 2016 related to the value of competitive coal plants, wind farms and coal-related properties accounted for much of that loss. (See *AEP Turns Away from Generation to Transmission, PPAs*.)

But the company's adjusted earnings per share of $1.10 missed the Zacks consensus estimate of $1.19. It was also down from $1.30/share — which excluded the impairment — a year ago. Its year-to-date earnings are $2.82/share, down from $3.25/share in 2016.

During an earnings call, CEO Nick Akins, a drummer in his spare time, drew inspiration from the progressive rock group Dream Theater's song "Another Day" in reaffirming 2018's guidance range of $3.75 to $3.95/share, built around a 5 to 7% growth rate. He recited the song's lyrics to analysts: "Live another day, climb a little higher, find another reason to stay."

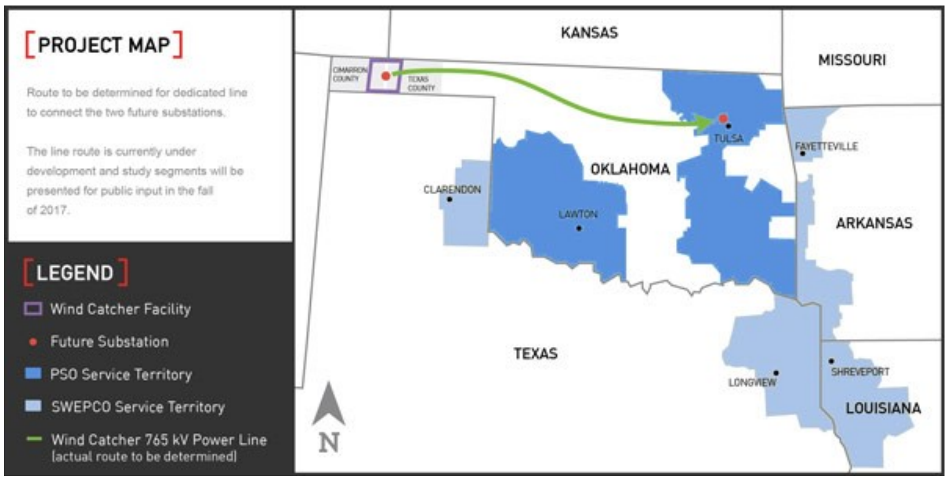
"Because of our efforts to overcome the weather and other obstacles, we'll finish out the year 2017, we'll live for 2018, and continue on our path," Akins said. "The fundamentals of our business plan remain secure, and we're confident going into 2018."

AEP narrowed its guidance range for 2017 to $3.55 to $3.68/share. Akins said the company will make up lost ground by "driving efficiency, eliminating expenses where practical and with negligible movement of expenses to 2018." The company also expects to benefit from continued economic growth in its footprint.

Akins said AEP now has procedural schedules in the four state jurisdictions — Arkansas, Louisiana, Oklahoma and Texas — with regulatory oversight of the company's proposed $4.5 billion Wind Catcher Energy Connection Project, a 2-GW wind farm in the Oklahoma Panhandle. Hearings will be held January in Oklahoma and Texas, February in Louisiana and March in Arkansas. The company has requested approvals by April 30.

"At this point, I should figuratively drop the microphone," Akins said, "but we'll let the facts — $4.5 billion invested, $7.6 billion in customer savings, substantial infrastructure development and great use of wind resources — speak for themselves."

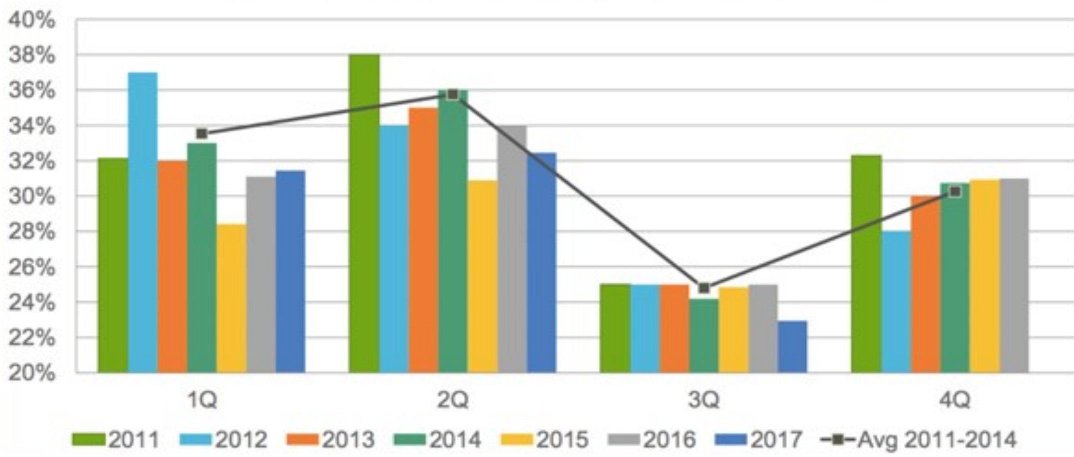
AEP also has $603 million in pending rate cases before five state regulatory commissions.



| AEP

Weak Wind Drives down Avangrid Q3 Earnings

By Michael Kuser



Avangrid Renewables wind net capacity factor | *Avangrid*

Avangrid third-quarter earnings fell 9% to $99 million on weaker-than-expected wind production, which the company said was partially offset with improved operations elsewhere. Year-to-date profits were still up 8%.

"The third quarter historically sees the least amount of production from wind resources, and this third quarter was even below that," CEO James P. Torgerson said during an Oct. 24 earnings call. "We have been implementing best practices and cost management across all of our business, so the new rate plans in Networks and the cost management we've implemented helped to offset the low wind resource, which was really 5% below our normal."

The company's two primary lines of business are Avangrid Networks, comprising eight electric and natural gas utilities in New York and New England, and Avangrid Renewables, which operates nearly 7 GW of mostly wind power in 23 states.

State Regulatory Update

During the call, Torgerson addressed a recent move by Connecticut regulators to investigate Avangrid and Eversource Energy for potentially manipulating natural gas prices in the state between 2013 and 2016 (17-10-31). The state's Public Utilities Regulatory Authority (PURA) is working off allegations set out in a report issued earlier this month by university researchers and the Environmental Defense Fund, who contended the companies unjustly reaped gains of about $3.6 billion over the period.

In Connecticut, "we have an obligation to supply gas, and we also have a very strict code of conduct for our employees," Torgerson said. "We will be looking to make sure we're following all the rules, which I believe we are, and we'll cooperate with PURA in their review."

In New York, Avangrid subsidiaries New York State Electric and Gas and Rochester Gas & Electric next year expect to implement a collaborative earnings adjustment mechanism designed to facilitate interconnection of distributed energy resources, which Torgerson said "provides incentives that would actually increase the [return on equity] if targets are achieved." Regulatory discussions on the two utilities' joint proposals for advanced metering infrastructure and a distributed system implementation plan have been deferred to late this year, with decisions expected by June 2018.

Federal Scene

Torgerson noted that FERC earlier this month rejected a bid by New England transmission owners — including Avangrid's Central Maine Power — to increase their ROEs to the previous level of 11.14% after a federal appeals court earlier this year temporarily vacated a 2014 commission order that reduced the ROE to 10.57%. The commission said it would address the actual rate in a later remand order (ER15-414, EL11-66). (See *FERC Rejects New England Tx Owners on ROE*.)

"[FERC] really didn't, in my mind, get to the merits of the ROE," Torgerson said, contending the commission seemed more concerned about the "whiplash" of moving the rates back and forth.

Transmission Projects, Wind and PPAs

Three-year rate plans in Connecticut and New York, along with the FERC formula rate, are giving Avangrid better than 80% certainty, Torgerson said.

Avangrid looks to continue developing onshore renewables and transmission projects for long-term growth, "some of it through the Massachusetts Clean Energy [request for proposals] and the New York transmission renewables solicitations, but also with the offshore wind RFP that will be in Massachusetts," he said.

For the Massachusetts solicitation, CMP in July partnered with Hydro-Québec to bid the New England Clean Energy Connect, a 145-mile, 320-kV HVDC line that would carry 1,200 MW of hydro and wind energy from Canada to Maine. The company also teamed with NextEra Energy on the Maine Clean Power Connection, a new 345-kV connection from western Maine to the New England grid with capacity options of 460 to 1,110 MW, allowing varying combinations of wind, solar and storage facilities in eastern Canada and western Maine. (See *Tx Developers Pitch Mass. Clean Energy Bids*.)

Avangrid continued to sign on new wholesale customers during the third quarter, executing a power purchase agreement for 86 MW, "adding to the 401 MW of PPAs previously secured and announced in 2017 — all with 100% production tax credits," added Torgerson. "Construction on approximately 800 MW of wind and solar projects is well underway, of which 590 MW will be operational by year-end 2017."

He added that the market for PPAs has become more competitive this year as customers look not only for renewable energy, but renewables at a low cost.

COMPANY BRIEFS

EnerNOC Buys EV Charging Station Maker

Demand response provider EnerNOC, a subsidiary of Enel, has acquired Electric Motor Werks for an undisclosed amount.

Based in San Carlos, Calif., Electric Motor Werks is a fast-growing developer of charging stations and power management software.

"Electric vehicles have the potential to be one of the most disruptive technologies the modern electricity grid has faced in the last 100 years," said Francesco Venturini, head of Enel's Global e-Solutions division, in a statement.

More: *Tech Crunch*

Xcel Partnering with Wanzek Construction on 2 Wind Farms

Xcel Energy is partnering with Wanzek Construction to build two wind farms that will have 175 turbines and be able to produce 350 MW between them.

Construction will start on the 150-MW Foxtail Wind in Dickey County, N.D., in 2018. A construction date wasn't specified for the 200-MW Freeborn Wind Energy facility, to be located in Freeborn County, Minn., and Worth and Mitchell Counties, Iowa.

Both wind farms are among the 11 that Xcel proposed in March.

More: *KVRR*; *Xcel Energy*

Duke Customers to Stop Paying For Failed Nuclear Project

The Florida Public Service Commission on Wednesday approved a settlement between Duke Energy Florida and several consumer groups to ensure customers won't have to pay any more money to help the company recover costs from its never-built Levy Nuclear Project.

Duke has recovered $800 million for the project from ratepayers over the past five years.

The company will write off the remaining $150 million it owes on the project, meaning its shareholders will foot that part of the bill.

More: *Tampa Bay Times*

Exelon Agrees to Make 2nd GE Predix Software Deployment

Exelon and General Electric on Wednesday announced a multiyear agreement to deploy GE's Predix advanced analytics software in Exelon's six electric utilities.

The software will use information such as historical data and weather, asset and area conditions to help predict when and where outages might occur. It will also produce real-time reports on equipment, integrating data from intelligent assets deployed on Exelon's grid to help the company more precisely determine when maintenance is required.

Exlelon already uses Predix to improve the efficiency of its generation fleet.

More: *GE*

PG&E Most Cited Utility in California for Late Repairs

Pacific Gas and Electric was cited for late repairs and maintenance jobs more frequently than any other utility in California over the past five years.

Safety experts with the California Public Utilities Commission counted more than 1,000 late repair or maintenance jobs in six of PG&E's nine Bay Area districts in a series of audits conducted from 2013 through this year.

No other California utility or utility division was found to have more than 1,000 late corrective actions over that time.

More: *San Francisco Chronicle*

OG&E Sued for Death at Muskogee Power Plant

A lawsuit filed against Oklahoma Gas and Electric for a 2015 death at the company's power plant in Muskogee seeks a minimum of $150,000 in damages for the estate of Raymond Crooks on two claims.

Crooks died in November 2015 from injuries sustained while he was working at the plant as an employee of Brock Services, according to the suit filed in Muskogee County District Court.

More: *Muskogee Phoenix*

FERC Allows SDG&E to Buy Capacity from Affiliate

FERC last week granted San Diego Gas & Electric authority to purchase resource adequacy capacity from its affiliate, Sempra Gas & Power Marketing, effective Aug. 29, 2017.

"We find that the competitive solicitation process conducted by SDG&E satisfies the commission's concerns regarding the potential for affiliate abuse," FERC said in the Oct. 23 order.

SDG&E made the request on June 30, saying it had conducted a solicitation to procure capacity for its 2018 local resource adequacy requirement to address a short position. It picked Sempra amid a portfolio of resources, and said it had met the requirements for a competitive solicitation.

More: *ER17-2046*

Hedge Fund Buys Claims Against Toshiba

Hedge fund The Baupost Group has acquired the biggest chunk of $2.2 billion in claims that two South Carolina utilities had against Toshiba following the bankruptcy of its Westinghouse Electric subsidiary, people familiar with the matter told Reuters last week.

The hedge fund bought the claims after SCANA and Santee Cooper decided they did not want to wait for Toshiba to make the payments, which were owed to them as penalty for Westinghouse's failure to complete a contract to design and build the V.C. Summer nuclear power project in South Carolina.

More: *Reuters*

FirstEnergy Says Nuclear Plant Protected from Ohio River Flood

FirstEnergy recently submitted final paperwork to the Nuclear Regulatory Commission that states that its Beaver Valley Nuclear Power Station is adequately protected from any kind of flood that could take place along the Ohio River.

The commission mandated that all U.S. nuclear power plant owners study and re-evaluate their flood prevention protocol following the 2011 accident at the Fukushima Daiichi Nuclear Power Plant, which was brought on by a tsunami.

More: *The Times*

FEDERAL BRIEFS

PREPA Cancels Controversial Whitefish Contract

The Puerto Rico Electric Power Authority on Sunday canceled the contract that it gave Montana-based Whitefish Energy to rebuild the territory's power grid, fulfilling a request made by Gov. Ricardo Rosselló.

The move comes after the Federal Emergency Management Agency on Friday expressed "significant concerns" about how Whitefish won the contract.

Whitefish is based in the hometown of Interior Secretary Ryan Zinke, who said Friday he "had absolutely nothing to do" with the company getting the contract.

More: *The New York Times*; *The Washington Post*

19 Dem Senators Send Pruitt a Letter Questioning CPP Repeal

Nineteen Democratic senators on Thursday issued a letter to EPA Administrator Scott Pruitt questioning his methodology and logic for repealing the Clean Power Plan.

The letter questions the repeal's stance on the health effects of pollution, its overstatement of the costs and the understatement of the benefits.

More: *The Hill*

US Agrees to Work with Denmark On Offshore Wind Power

The U.S. on Thursday signed a deal with Denmark to expand cooperation on offshore wind power.

The move assuaged fears by DONG Energy, Denmark's largest power company, and Vestas, a Danish wind turbine maker, that the nascent U.S. offshore wind industry would be stymied by the Trump administration's efforts to revive the coal industry and its condemnation of renewable energy as being expensive and reliant on government subsidies.

More: *Reuters*

Critic of Environmental Rules Nominated to Head Mining Office

The White House on Thursday announced the nomination of J. Steven Gardner, the president of engineering firm ECSI, to be the director of the Office of Surface Mining Reclamation and Enforcement (OSM). The office is the Interior Department's top regulator of the coal mining industry.

Gardner has been at Lexington, Ky.-based ESCI since 1983 and was a frequent critic of environmental rules during the Obama administration, including those from the OSM.

More: *The Hill*

EPA, DOE Reveal Initiatives to Relieve Regulatory Burdens

EPA said Wednesday it will review how bedrock laws like the Clean Air Act and Clean Water Act affect energy industry job losses, one of several measures U.S. agencies will take to "reduce unnecessary regulatory burdens" on businesses.

The measure was one of four initiatives proposed by the agency to help carry out an executive order issued by President Trump in March that directed cabinet chiefs to identify ways to ease regulatory burdens on energy development.

The Energy Department said it will streamline natural gas exports, review its national laboratory policies, review National Environmental Policy Act regulations for approving major infrastructure projects, and review its popular household appliance standards program.

More: *Reuters*

Inhofe's Hold on Glick Delays FERC, DOE, Interior Confirmations


Inhofe

Sen. Jim Inhofe (R-Okla.) has refused to help advance Democratic FERC nominee Richard Glick, which may end up indefinitely delaying the confirmations of multiple nominees his party supports, including President Trump's pick for commission chair, Kevin McIntyre.

Inhofe wants EPA nominees confirmed before he'll release his hold. Democrats, however, are also unwillingly to budge on the nominees for the agency, many of which have proven controversial. Because of the rules of the Senate and a jampacked calendar, leadership is unlikely to burn days clearing nominees through procedural votes rather than unanimous consent.

Glick is part of a package of nominees — which includes McIntyre and picks for the Energy and Interior departments — negotiated between leaders of the Energy and Natural Resources Committee. Thus without Glick, none of the nominees can advance to the Senate floor.

More: *Politico*

Pruitt Vows to Get Tough on Polluters, Despite Record

EPA Administrator Scott Pruitt said Wednesday that he will get tough on corporate polluters and dismissed critics who said he was too cozy with industry.

Pruitt, who sued the agency more than a dozen times as Oklahoma attorney general, is pursuing what he calls a "back to basics" agenda that he says will prioritize action on traditional pollutants.

The Environmental Integrity Project, a watchdog group, reported in August that during President Trump's first six months in office, civil penalties paid for environmental violations were 60% smaller on average than for comparable periods in the administrations of Presidents Barack Obama, George W. Bush and Bill Clinton.

More: *Bloomberg Politics*

Perry Says Obama Discriminated Against Coal, Nuclear Industries

The Obama administration discriminated against the coal and nuclear industries, Energy Secretary Rick Perry told reporters at the Africa Oil Week Conference in Cape Town, South Africa, last week.

Perry was responding to a question about his Notice of Proposed Rulemaking that would guarantee "full cost recovery" to certain coal and nuclear plants for their "resiliency."

Asked about threats to U.S. energy supplies, Perry cited cybersecurity followed by natural disasters such as hurricanes.

More: *Reuters*

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FEDERAL BRIEFS

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Two Clean Energy Jobs Will Grow the Most by 2026

Two clean energy jobs will experience the greatest percentage growth between 2016 and 2026, the Bureau of Labor Statistics said last week.

The bureau expects the number of solar panel installers to increase 106% from 11,300 to 23,200. It expects the number of wind turbine techs to grow 96.1% from 5,800 to 11,300.

More: CNBC

HQ, Berkeley Lab Agree to Study Forming Joint Research Center

Hydro-Québec and the Department of Energy's Lawrence Berkeley National Laboratory said they have signed a memorandum of understanding to assess the feasibility of creating a joint research center in the San Francisco Bay Area to advance transportation electrification and energy storage.

The joint research center would work to speed up development of next-generation battery materials, processes and methodologies. It also would perform manufacturing from pilot scale to preproduction levels.

Hydro-Québec and Berkeley Lab said technologies developed at the center would be transferred to battery manufacturers with the aim of creating jobs in Québec and California.

More: Berkeley Lab

DOE to Provide $15M for Extreme Fast-Charging EV Projects

The Energy Department said last week it will provide up to $15 million for research projects on batteries and vehicle electrification technologies to enable extreme fast charging.

The funding will be provided through the department's Vehicle Technologies Office, which funded a report that identified technical gaps to implementing an extreme fast-charging network in the U.S.

More: DOE Office of Energy Efficiency & Renewable Energy

EPA Increasing Pruitt's Security To Unprecedented Level

EPA is beefing up security around Administrator Scott Pruitt to an unprecedented level at the same time that the Trump administration plans to cut the agency's budget by 30%.

Pruitt's security detail is in the process of expanding by a dozen more agents, a source with knowledge of the situation told CNN, as the number of threats against the agency leader increase. The incoming agents will grow the team that works in shifts to provide him around-the-clock protection, something unheard of for Pruitt's predecessors.

According to the agency's inspector general, Pruitt receives four to five times the number of threats received by his predecessor, Gina McCarthy. The IG has launched more than 70 investigations into threats against Pruitt and other agency employees.

More: CNN

GAO Report Says Climate Change Will Hike Costs of Disasters

A Government Accountability Office study said fires, floods and hurricanes are already costing the federal government tens of billions of dollars a year and climate change will drive those costs ever higher in coming years.

The study was requested by Sens. Maria Cantwell (D-Wash.) and Susan Collins (R-Maine), who said it should help move Congress and the administration past partisan fights over the science of global warming and toward a search for solutions.

More: The New York Times

STATE BRIEFS

IDAHO

PUC Delays Request to Create New Rooftop Solar Customer Class

The Public Utilities Commission said it will hold a hearing in March before rendering a decision on Idaho Power's request to create a new class of energy providers consisting of people who install rooftop solar panels.

Idaho Power in July asked the commission for permission to create the new class starting Jan. 1.

If the new class of customer were created, Idaho Power would be able to discuss charging customers in it more than the company's current solar customers pay to access its power grid.

More: The Associated Press

Avista Awaits PUC Approval On Rate Increase Request

Avista has reached a proposed settlement over its request to raise rates in 2018 and 2019.

If the Public Utilities Commission were to approve the settlement, Avista would collect an additional $17.4 million in electric revenue and an additional $2.3 million in natural gas revenue over the next two years.

Approval would also mean that Avista would not seek to raise rates again before Jan. 1, 2020.

More: The Spokesman-Review

ILLINOIS

EmberClear Seeks State Approvals for Gas Plant

EmberClear said Siemens has made a "substantial" investment in a 1,100-MW natural gas power plant near Pawnee.

To construct the plant, EmberClear needs the state Department of Commerce and Economic Opportunity to approve enterprise-zone tax breaks extended to the site by the city of Springfield and Sangamon County. It also must get permits from MISO and the state Environmental Protection Agency.

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State Briefs

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EmberClear would like to break ground on the plant in 2019 and have it begin producing power in 2022.

More: The State Journal-Register

MAINE

NextEra Subsidiary Planning To Apply for 2 Solar Facilities

NextEra Energy Resources subsidiary Winslow Solar plans to file for a permit early next month to build a $30 million, 20-MW solar facility on about 150 acres in Clinton.

NextEra also is in the application stage for a similar project on a farm in neighboring Fairfield.

More: centralmaine.com

MASSACHUSETTS

Study Details Costs of Readying Sites for OSW

A study released last week by the publicly funded Massachusetts Clean Energy Center details the cost of readying 18 sites in the state for offshore wind manufacturing, staging and operations.

The 415-page engineering study lets developers compare the investments necessary for a particular function, such as turbine manufacturing, across six locations in New Bedford, six in Boston, three in Fall River, two in Somerset and one on the Quincy-Braintree border.

The three bidders for the state's first commercial offshore wind contract have already committed to using the New Bedford Marine Commerce Terminal as a staging and deployment point. But locations for manufacturing, storage and operations remain up in the air.

More: South Coast Today

NEW YORK

State Files Notice of Intent to Sue EPA for Failing to Curb Smog

Gov. Andrew Cuomo and Attorney General Eric Schneiderman on Thursday filed a notice of intent to sue EPA for violating the federal Clean Air Act by failing to curb ground-level ozone pollution from upwind states.

In the notice, Cuomo and Schneiderman ask EPA to require pollution sources in five other states to take action. If EPA fails to act within 60 days, Schneiderman said, he will sue the agency.

More: Gov. Andrew Cuomo

PENNSYLVANIA

State Drops Tax on PJM Virtual Transactions

PJM's financial traders were breathing easier Monday following Gov. Tom Wolf's approval of a revenue package that does not include a tax on virtual transactions in the energy markets. The funding bills — which ended a more than three-month budget stalemate — did not include the Electric Grid Virtual Financial Transactions Tax, which would have assessed incremental bid, decremental offer and up-to-congestion transactions in PJM's markets.

PJM first disclosed the potential for a tax to stakeholders at its Financial Committee meeting in May but did not specifically alert financial traders until mid-June, when state legislative staffers indicated an interest in a tax specifically on virtual transactions. This set off a firestorm of complaints among traders and lobbying in the state capitol.

"We're thrilled that the Pennsylvania House and Senate reached agreement on a revenue package and declined to pursue the unprofitable and unconstitutional virtual transaction tax," Ruta Skucas, who represents the Financial Marketers Coalition, said in an email.

More: Traders: PJM Delay Could Mean Pa. Tax; RTO Denies Supporting Levy

SOUTH DAKOTA

PUC Rejects Application For Crocker Wind Farm

The Public Utility Commission on Wednesday voted 3-0 to reject an application for a wind farm that would have had up to 200 turbines spread across 2,900 acres in Clark County.


Fiegen

In voting against the application, Commission Chairwoman Kristie Fiegen cited the fact that the Crocker Wind Farm's developer, Geronimo Energy, had submitted four possible configurations for it.

The commission rule called for "a configuration," Fiegen said.

More: Watertown Public Opinion

VERMONT

DPS, SolarCity Reach Proposed Settlement over Contracts

The Department of Public Service has reached a proposed settlement with rooftop solar system installer SolarCity over problems discovered earlier this year with some of its contracts.

The stipulation doesn't call for SolarCity to be fined but would require it to spend $200,000 on 134 customers whose net metering contracts and registrations were filed improperly. SolarCity was facing "significant financial penalties," according to a Sept. 14 order from Public Utility Commission Chairman Anthony Roisman opening the investigation.

The PUC still has to approve the settlement.

More: Rutland Herald

VIRGINIA

Delegates Vow Bill Forcing Dominion to Bury Line

Two Republican state legislators said last week that if they are re-elected to the House of Delegates, they will pass legislation that would force Dominion Energy to build a 230-kV transmission line underground so as to minimize its impact on homeowners in Gainesville and Haymarket.

Dels. Tim Hugo and Bob Marshall said they believe the project would so adversely affect property values and damage areas with historic significance that it needs to be put underground somehow, although they aren't sure how.

Dominion and state regulators believe burying the line would increase its cost by as much as $150 million, an amount that Dominion would pass on to its customers.

More: Inside Nova

ICC Rolls out Stricter Rules for Retail Suppliers

By Amanda Durish Cook

Wrapping up a three-year effort, the Illinois Commerce Commission issued strengthened consumer protections against the marketing practices of alternative retail electric suppliers.

The commission's Oct. 19 order (15-0512) requires retail suppliers to provide customers with a disclosure statement that details whether electricity rates are fixed or variable; the price per kilowatt-hour and the number of months that price is guaranteed; all monthly fees and any early termination fees; and whether the contract renews automatically.

The ICC also ordered suppliers to send customers identical disclosure statements about automatic renewals via mail and one other form of communication. Termination fees cannot exceed $50 for residential customers and $150 for small commercial retail customers under the new provisions.

The new rules also require retail suppliers to retain for two years any copies of customer contracts and a recording of telemarketing solicitations that result in enrollment. Suppliers must also make more detailed disclosures about renewable energy offers and cannot describe plans as "green" unless they go beyond Illinois' renewable portfolio standard.

Retail suppliers are also prohibited from using the name and logo of any Illinois public utilities in their electric power and energy service offers. Any supplier that is an affiliate of a public utility and starting doing business as of Jan. 1, 2016, can continue to use that utility's name and identifying information in marketing offers outside the utility's service territory.

Under the rules, all customers now have the right to cancel a contract with a retail supplier within 10 business days of their first bill.

The ICC said it was prompted to tighten the rules following the spike in electricity prices during the 2013-2014 "polar vortex" winter, when its consumer services division received "a sharp increase in public complaints about the marketing practices of certain retail electric suppliers."

"The rules will ensure that consumers have information about electricity supplier options that enable them to compare offers and utility plans, and make better-informed decisions. The new marketing guidelines also provide regulators with improved enforcement mechanisms, and require suppliers to take improved verification and quality control measures," the ICC said.

Chairman Brien Sheahan said the changes are "a major victory for the public interest and all stakeholders by ensuring consumers have clear information to make good choices regarding their energy needs."

Executive Director Cholly Smith said the new rules will protect customers from "bad actors" while "fostering a robust competitive market." He added that the ICC will now work with stakeholders and industry officials to implement the rules uniformly.

Vistra Energy Swallowing Dynegy in $1.7B Deal

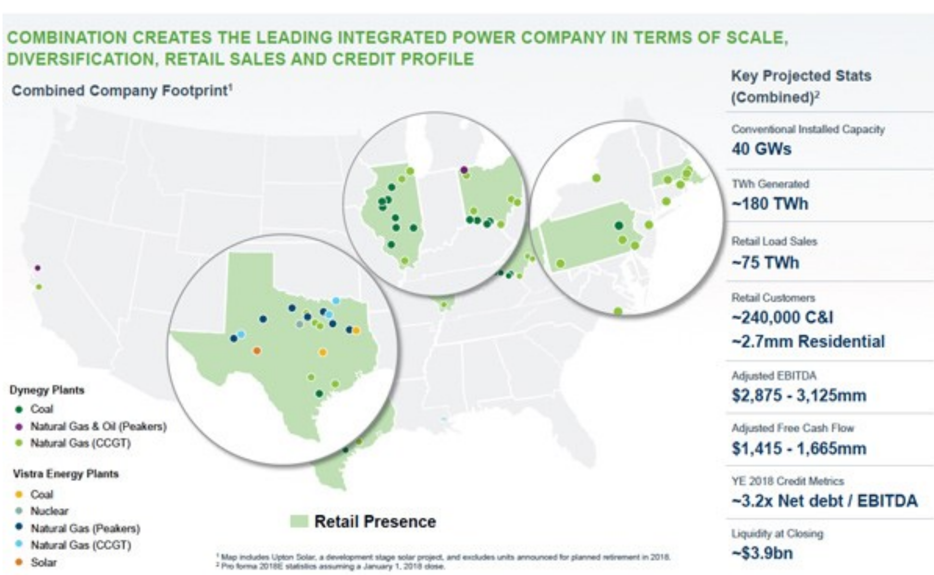
Continued from page 1

big attraction for Vistra.

Morgan said the deal "should create a more stable earnings profile and offers some downside earnings protection, especially when combined with our retail operations."

The CEO had previously indicated Vistra would consider a large-scale acquisition outside ERCOT "if it was all stock, there were substantial value levers, quality assets in PJM and ISO-NE, and also a large natural gas fleet to move us to a gassier portfolio and preserve balance sheet flexibility. In short, this deal does that."

It will be structured as a tax-free reorganization and will not trigger change-in-control provisions in either entity's credit or bond agreements. The combined company will have a market cap around $10 billion.



| *Vistra Energy*

Vistra's executive team, including Morgan, Chief Operating Officer Jim Burke and Chief Financial Officer Bill Holden, will lead the combined company, based at Vistra's headquarters in Irving, Texas. Morgan said he will announce his full team within a few weeks.

The new board is expected to have 11 directors: the current eight members of the Vistra board and three members from Dynegy's board. Dynegy CEO Bob Flexon will continue to serve until April 30, 2019, or the date the transaction closes, whichever comes first.

Flexon said the deal was "an incredibly compelling opportunity" for Dynegy and its shareholders.

The combined company projects streamlining to achieve approximately $350 million in annual savings before interest, taxes, depreciation and amortization (EBITDA) within a year. Morgan said it will maintain Vistra's "balance sheet strength and discipline. … Vistra would not be entering into this transaction if that were not the case."

De-Levering

Morgan said the deal provides Dynegy "instant de-levering." The combined company will have a net debt-to-EBITDA ratio of

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Vistra Energy Swallowing Dynegy in $1.7B Deal

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about 3.2 by the end of 2018, which is projected to decline to 2.6 by the end of 2019 and 2.4 by the end of 2020. It will have $3.9 billion in liquidity as of April 2018.

"Three times gross debt-to-EBITDA is the right long-term leverage target in this industry given the high degree of commodity price exposure and the necessity to maintain dry powder on the balance sheet in order to be able to transact at opportunistic times in market cycles," Holden said.

Analyst Neel Mitra of Tudor, Pickering, Holt & Co., said it is a good deal for both companies, saying the $350 million in synergies, tax savings and the addition of PJM assets benefit Vistra. "At the same time, Dynegy's EBITDA contribution should trade at a higher multiple given that its over-leverage issue is corrected by Vistra's pristine balance sheet," he said by email.

ERCOT Market Power

Morgan said the company will need to shed about 900 MW in ERCOT to remain under the 20% market share limit. "We've got two paths that we can go down. We will be kicking off a divestiture process that we've already started and will be going out in the market," Morgan said. "But there's also another avenue that I won't get into in too much detail here … where we wouldn't have to do any divestiture at all. You guys will see that in the marketplace. We can execute that in the six-month period that we're talking about getting [regulatory] approval. And we will have a mitigation plan in place when we file with the [Texas] PUC for approval."

PJM Outlook

Morgan said the company was assuming no improvements to capacity or energy prices in PJM, but it also did not expect prices to fall further.

"It takes a substantial amount of net megawatts — meaning net between new additions and retirements — to actually move the capacity curve. It's such a flat curve. It takes on a net basis about 6,000 MW of additional [capacity]. I don't think 6,000 MW on a net basis is going to come into this market. That's why we are looking at capacity being relatively flat."

He said the projections do assume some new generation in the RTO "because for some reason people are still investing. But I think this last [capacity auction] clear put a chilling effect. ... And also, capital going into PJM projects is beginning to dry up. I've heard that from a number of people. So, I think the market there is beginning to discipline itself."

Morgan said the company will be "opportunistic" in seeking additional generation, predicting "there's going to be just a ton of assets that come into the market."

"But that's not going to be a primary [focus]. … What we would like to do, we think we have this tremendous platform to grow our retail business." The company will begin with 240,000 commercial and industrial customers and 2.7 million residential customers.

Generation Mix

Morgan said the move to a "gassier portfolio" would give the combined company the lowest-cost structure in the industry, with wholesale costs as low as $9/MWh and retail costs as low as $45 per residential customer equivalent.

The combined company will have more coal — 32% — than Vistra's current 28% share. But the deal will boost its natural gas share to 61% from 54% while reducing nuclear from 17% to 6%. It will also provide more geographic diversification, reducing Dynegy's PJM exposure (45%) to 29% in the new company. Of the combined company's 40 GW of installed capacity, 84% is in Texas, PJM and New England.

Terms

Under the terms of the agreement, Dynegy shareholders will receive 0.652 shares of Vistra common stock for each share of Dynegy common stock they own, resulting in Vistra and Dynegy shareholders owning approximately 79% and 21%, respectively, of the combined company. Based on Vistra's closing share price of $20.30 on Friday and the agreed exchange ratio, Dynegy shareholders would receive $13.24 per Dynegy share.

Price Formation

Morgan said he is hopeful that the Department of Energy's Notice of Proposed Rulemaking will result in FERC actions boosting the company's generation and noted that Vistra has introduced a price formation proposal in ERCOT as an alternative to the Calpine-NRG Energy whitepaper. (See *ERCOT, Regulators Discuss Need for Pricing Rule Changes*.)

"With the DOE action taken I do think there is some pressure for PJM and ISO-NE and others to come forward with something around price formation because that was very prominent in the DOE [proposal]," he said. "I don't think DOE will get implemented, obviously, the way that it was put in.

"But more importantly I think that FERC will be inclined to act on whatever the ISOs bring forward. You hate to handicap things, but it sure seems like there's a good chance — a better chance than not — that if there is something brought forward, which I expect there will be around price formation, that it will ultimately be approved by FERC."

Tom Kleckner contributed to this article.

FERC Rejects Rehearing on FitzPatrick Sale

FERC last week denied Public Citizen's request for rehearing on Entergy's sale of the James A. FitzPatrick nuclear plant in New York to Exelon. The commission dismissed as "irrelevant" the group's concerns about the impact of the state's zero-emissions credits (ZECs) on either Exelon's market power or the broader NYISO energy and capacity markets.

The commission authorized the sale last December over Public Citizen's protests, saying the issues raised concerned the effects of the ZEC program rather than the impact of the plant sale on competition, rates, regulation or cross-subsidization.

In its rehearing request, Public Citizen argued that the commission had "committed errors of fact by inaccurately reporting the nature" of its protest, which "plainly and repeatedly raised the connection between the proposed transaction and the ZEC" program.

The commission's Oct. 24 order (EC16-169-001) said that "under commission precedent, issues unrelated to the commission's analysis of a proposed transaction under [Federal Power Act] Section 203 should be addressed in other proceedings or forums. Further, Public Citizen offers no analysis regarding how the [sale] would affect wholesale markets, with or without the ZEC program."

— Michael Kuser