RTO Insider
Your Eyes and Ears on the Organized Electric Markets
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Latest CAISO Proposal Fills out Western RTO Governance Plan

By Robert Mullin

CAISO last week released the third draft of a proposal outlining the governing framework for a Western RTO.

The latest draft fleshes out concepts introduced in earlier versions, including the composition and role of the Transitional Committee to guide regionalization, and sets out a timeline for transitioning to a board independent of California oversight.

The proposal also more thoroughly outlines the process by which a body of state representatives — the Western States Committee (WSC) — would determine whether a proposed RTO policy encroaches upon state regulatory authority.

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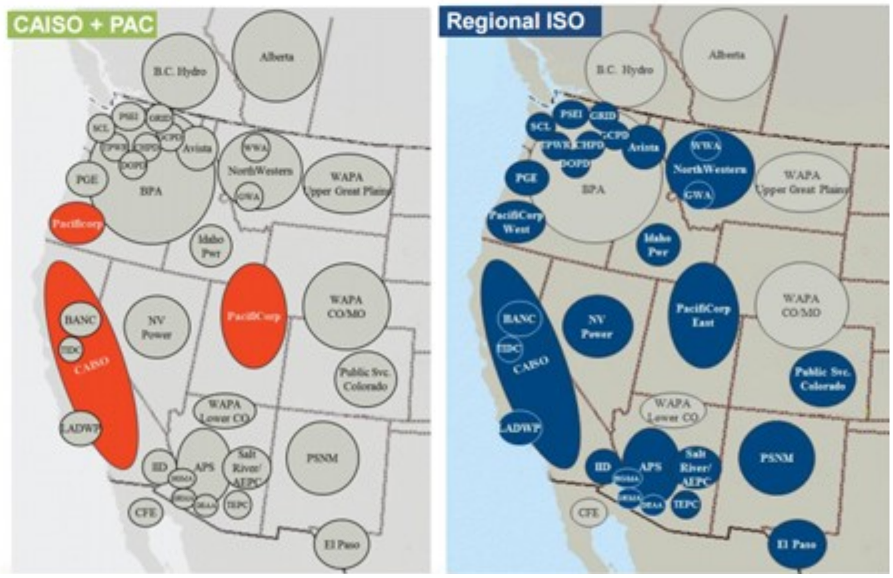

Two visions of the future | *CAISO*

Commenters Weigh in on Tx Needed to Meet NY Policy Goals

By William Opalka

NYISO last week forwarded to New York regulators 12 proposals for transmission projects to help the state meet its public policy objectives (16-E-0558).

The proposed projects, coming at the start of the ISO's 2016/17 transmission planning cycle, would provide the state with access to offshore wind resources off Long Island, Canadian hydropower and clean energy from PJM. There are also proposals to unbottle clean energy from upstate production areas that are distant from load centers.

The proposals follow the Public Service Commission's adoption of a Clean Energy Standard that seeks to overhaul the state's generation fleet by producing 50% of its energy needs from renewable resources by 2030. (See *New York Adopts Clean Energy Standard, Nuclear Subsidy*.)

New York has other public policy initiatives to decarbonize its generation, including its Reforming the Energy Vision initiative, the Clean Energy Fund and compliance with the federal Clean Power Plan.

'Holistic' Approach Sought

New York City said a holistic approach is preferable to evaluating individual projects in isolation. "Identifying a single transmission line, or a segment of a line, as a need driven by public policy requirements is insufficient to achieve the state's public

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Mass. Regulators Reject DER Surcharge in Rate Case

By William Opalka

Massachusetts regulators have rejected fees National Grid sought to impose on small commercial and industrial customers that own distributed energy resources (15-155).

In an order approved Sept. 30 that granted the utility a $101 million rate increase, the

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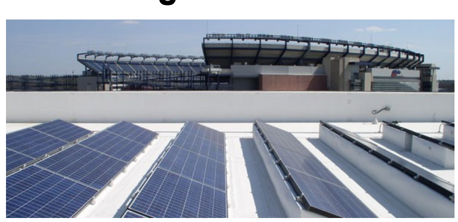

Solar cell panels near Gillette Stadium in Foxborough, Mass.

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Commenters Weigh in on Tx Needed to Meet NY Policy Goals

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policy goals, and such a piecemeal approach could effectively prevent timely achievement of those goals," it wrote.

HQUS, a subsidiary of Hydro-Quebec, said proposals to import hydropower could satisfy much of the state's requirements under the CES. "For example, a new 1,000-MW DC transmission project can deliver up to 8.7 TWh of incremental renewable energy to New York, nearly one-third of incremental renewable energy needed to meet the 2030 target."

A joint filing by the New York Power Authority, National Grid and Central Hudson Gas & Electric, said the key to satisfying the goals is unlocking bottlenecks in northern New York that limit access to Canadian imports and wind and hydropower along the Saint Lawrence River.

"The possible addition of over 1,000 MW of new wind projects in northern New York, as reflected in the NYISO interconnection queue, potential increased renewable imports from Canada, and possible additional load reductions could exacerbate transmission constraints in delivering clean, renewable energy and its environmental benefits to the state's load centers," the filing said.

Transparency Concern

Competitive transmission developer NextEra Energy Transmission New York expressed concern that incumbents could hold advantages in any solicitation for projects.

"Regardless of whether the renewable assumptions include new wind generation and solar development in western New York or northern New York, or increased imports from Canada, all assumptions should be made public so that all transmission developers can begin on a level playing field," NextEra wrote.

Developers from outside of New York praised the CES provision that gives equal footing to projects from outside of the state. "Adding new transmission capability from PJM will facilitate delivery of the associated hourly matching energy to downstate loads, thereby helping reduce in-state transmission bottlenecks. Access to transmission-enabled, least-cost renewables is critical for New York state to meet the CES while minimizing ratepayer impacts," wrote Poseidon, the developer of the proposed 500-MW Poseidon Transmission project, a 78-mile underground and undersea HVDC cable from South Brunswick, N.J., to Long Island.

Offshore Wind

PSEG Long Island, which operates the island's distribution grid, said it and the New York State Energy Research and Development Authority are evaluating scenarios for delivering up to 4,000 MW of offshore wind.

"In all such cases, the offshore wind resources are likely to be distributed to several points of interconnection within [New York City and Long Island], with additional transmission system upgrades being required for deliverability to the rest of the New York Control Area," it said.

Others making filings were Avangrid; Invenergy; New York Transco; the New York Transmission Owners and NYPA; North America Transmission; and PPL Translink.

PSC staff will review the filings and make recommendations to the commission.

In the previous planning cycle, which began in 2014, the PSC declared public policy needs for an AC project to serve the New York City area and one for western New York.

In response, the ISO issued a request for proposals in February for two projects in the Mohawk and Hudson valleys to deliver energy to load centers in and around New York City. (See *New York Transmission Developers Ask FERC to Order a Do-over*.)

In June, the ISO identified 10 projects as finalists to relieve congestion in western New York. (See *NYISO Identifies 10 Public Policy Tx Projects*.)

Correction

An article in the Sept. 26 issue said that the Organization of MISO States had taken a position on cost allocation of sub-345-kV economic projects. It was OMS' Transmission Cost Allocation Working Group that took that position. The OMS board of directors has not taken a position on the issue.

CAISO NEWS

Smooth EIM Transition for Arizona Public Service, Puget Sound Energy

By Robert Mullin

The entry of Arizona Public Service and Puget Sound Energy into the Western Energy Imbalance Market was largely "uneventful," according to a CAISO official who helped lead the effort to integrate the two utilities into the region's only real-time market.

"I've been through three sets of transitions, and I would say that each one is getting smoother," Mark Rothleder, the ISO's vice president of market quality and renewable integration, said during an Oct. 5 meeting of the EIM's governing body.

Still, Rothleder noted that it took a "huge amount" of work on the part of CAISO to guide the Oct. 1 rollout, which required about 30 staff to be present at the ISO's Folsom, Calif., headquarters while others joined APS and PSE at their operations sites.

"We found that the APS and PSE teams were very well prepared," Rothleder said.

APS brought on 16 new hires, created four new operations and trading desks, and undertook 9,000 hours of training related to the EIM, said Justin Thompson, the utility's director of resource operations and trading. Utility staff had been testing systems since late winter.

"My recommendation to our execs was that you need 20 months to execute this," Thompson said. "We shoehorned it in 15 to 16 months, and I wouldn't recommend that for anybody."

Average price in APS vs. PSE (15-minute and real-time dispatch) | *CAISO*

Four days into the transition, Rothleder said that it was "not unexpected" that the ISO had observed price volatility. Staff are still reviewing the issue to determine whether it reflects actual system conditions or stems from a data anomaly or software problem in need of correction.

Delving into the operational underpinnings of the EIM, Rothleder explained that each balancing authority area (BAA) participating in the EIM needs to pass two tests heading into every hour.

The first: A BAA must be balanced between generation and load in order to match its forecast.

The second: It must demonstrate enough ramping capability or resource flexibility to meet expected variability within the hour.

"These two tests are an indication that they're coming into the system sufficiently resourced without leaning on other parts of the system," Rothleder said.

During the first four days of participation in the EIM, APS and PSE passed the balance test 95.8% and 100% of the time, respectively. Both utilities have so far rated 100% on the flexible ramp test.

"These are very good results — and don't take 95.8% as an indication that anything's wrong," Rothleder said, adding that it can take time for a utility to adjust to the "new paradigm" of the EIM.

According to Rothleder, APS has so far shown good price convergence between the EIM's 15-minute and five-minute markets, which have yielded averages of $16/MWh and $20.50/MWh, respectively.

The PSE system experienced more price volatility during the first day, but the market stabilized after that, Rothleder said.

PSE's prices have been in the "normal range," averaging in the upper teens to mid-$20s/MWh, "which is consistent with the [bilateral] market," said Josh Jacobs, director of load-serving operations at PSE. "So that's a good result."

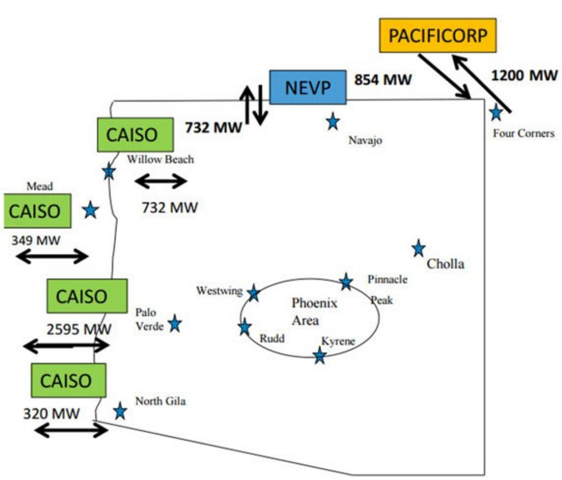
Day Four in the market also saw Arizona real-time price averages dip into negative territory, which CAISO attributes to maintenance-driven transmission constraints in Southern California trapping generation in an area currently experiencing low seasonal demand.

"This is the role of the Energy Imbalance Market — to absorb some of that energy which can then go somewhere else at those times," Rothleder said. "If we didn't have transfers to APS for that energy from the south, we would've probably been economically reducing — or potentially curtailing — renewable resources because there was too much energy at the time relative to the transmission constraints that were binding."

Rothleder pointed out that the APS system boasts "quite a bit" of transfer capability.

"We can transfer a lot back and forth with PacifiCorp, NV Energy and the California ISO," Thompson noted. "We're kind of the freeway of the EIM system there."

"Transfer capability is really the grease that makes the Energy Imbalance Market work well," Rothleder said.



Arizona boasts ample transfer capacity with its three EIM neighbors — CAISO, NV Energy and PacifiCorp. | *APS*

CAISO News

Q&A: Western Resource Advocates Sees Environmental, Consumer Benefits from Western RTO

By Robert Mullin

Colorado-based environmental group Western Resource Advocates was an early proponent of CAISO's Energy Imbalance Market and is actively supporting the ISO's effort to transform itself into an RTO serving the broader West.

RTO Insider spoke with senior policy advisor Nancy Kelly and staff attorney Jennifer Gardner — both based in the organization's Utah office — about California's push for regionalization of the Western grid and its political challenges.

Kelly, an economist, previously worked for Utah's Office of Consumer Services and followed the regional effort to form a transmission organization in the West prior to the Western Energy Crisis of 2000-2001. She also served on the board of the Western Electricity Coordinating Council from 2002 to 2014.

Gardner, who focuses primarily on clean energy issues, said she is trying to play an active role in the regionalization discussion "to make sure governance is structured fairly for all of the relevant parties that have been involved."

[Speaking to Kelly] You were once with the Utah consumer advocate, and that agency is currently taking a skeptical view of PacifiCorp joining CAISO. Given your background, how do you weigh consumer issues in your perspective on regionalization?

Kelly: "I think a regional organization and a regional system operator is a necessary tool to reliably operate the resource mix that we're going to be facing as we transition from our current resource base to a new resource base over the next five to 10 years.

"However, from a consumer perspective, I also believe it's going to bring down costs, and I think we're already seeing how it can bring down costs by reliably operating an increasing mix of renewables that have no fuel costs — free wind, free sun — so those resources can get bid in very cheaply."

Kelly

Gardner

[Executive Director of the Utah Office of Consumer Services] Michele Beck has said that she wants PacifiCorp to perform a state-by-state consumer benefits study before it joins CAISO. Would you seek such a study before the utility advances with regionalization?

Kelly: "I think that everyone realizes that PacifiCorp has to be able to make the case [for consumer benefits] in front of each of its six [utility] commissions before it could join as a participating transmission owner. And, yes, I'd think that we'd want to see forecasts of those benefits.

"I think one of the concerns for some in the regulatory community is whether the benefits will grow in the future. They grow as the penetration of renewables grows and as coal plant retirements occur. Some in the regulatory community — and some consumer groups — are concerned that those future benefits may not be realized, and I just don't think that will be the case. The very drivers that drive those benefits will be increasing in the future rather than going away."

Given the relative simplicity of joining the EIM compared with creating an expanded RTO, would it make sense to step back from regionalization of the ISO and see what develops as more utilities join the EIM?

Kelly: "Having a regionwide EIM would be a great first step. The additional benefits in moving to an RTO would be further reductions of gas burns, because of the ability to share resources across time zones and across hours in ways that you can't do with an energy imbalance market. Because [utilities] come into the Energy Imbalance Market with resources that match [their] load, [they're] only balancing within the hour. By moving to day-ahead, you can reduce the number of resources that need to come into the day beyond the number of resources that come into the hour, so you get greater savings.

"I think the EIM can continue to grow separately from the speed of progress on the regional system operator. As utilities and customers in the West experience those benefits, I think they will become even more willing to do the hard work necessary to take the next step."

How do you see the West working through the thicket of RTO governance issues, because there seem to be a lot of points of contention both inside and outside California?

Gardner: "We're really working with a complicated situation. We've got six states within PacifiCorp's footprint with very different politics and policies. I think the biggest issue that we're finding is … if this seems like a California-driven effort, there's going to be an expected amount of skepticism. I think that's normal when you look at all of the policies and political implications at play.

"We're finding that [California is] going to have to give a little to get something in return. One of the biggest issues that came up in the [governance] process was the issue of voting [in an RTO]. We could all agree that we wanted some kind of advisory body that would provide input to a future independent board, but we couldn't agree what its voting rights would look like. For example, does California get more votes than Utah because it has a greater load profile?

"Those are the kinds of complicated issues that we're working through. Ultimately, we want a fair and balanced governance model that recognizes the variety of interests involved in this complicated market structure and that's ultimately fair to participants — whether it's a state, a utility or [nongovernmental organization] like us."

What next steps must be taken to work through the governance issue?

Gardner: "Right now, California needs to pass legislation by the end of 2017. That legislation needs to be clear that CAISO has the legal authority to actually transition to a regional system operator with a fully independent regional board that is advised by a Western states committee of state

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CAISO News

Q&A: Western Resource Advocates

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representatives — and that also has some type of formal stakeholder process. Once we have that legislation in place — then and only then — can we start a transition process that's necessary to transform CAISO into a regional organization."

Do you think there's a willingness on the part of the California legislature to give up enough in the next year?

Gardner: "I can't say for sure what the temperature of the California legislature is. I think some of the biggest concerns in California primarily focus on making sure that, under a regional expansion model, California isn't losing clean energy jobs to other states in the West.

"Do I think that's a fair characterization of what we're trying to do? No. But when you look at where they're coming from, this is a California entity, and for the life of that entity, it is charged with implementing — arguably — California policy. So what has to happen is a little bit of letting go and realizing that California can still have its policies and its individual state requirements — and so can Utah. But, ultimately, operation of that regional market must take place by an independent entity. Once we get over those concerns, I think we can make progress, but it's going to be a heavy lift."

Kelly: "Within California, there are certainly different interests. What seems to be clear is that CAISO understands that it needs the expansion in order to operate the level of renewables that are coming down the pike — effectively and at lower costs while maintaining reliability.

"I think that CAISO — maybe more than anyone else in the West — gets that. But I do hear in a lot of conversations skepticism about what's really driving CAISO, and I do think sometimes they're seen as expansionist and imperialist."

What are your thoughts on the Mountain West Transmission Group proposal to create a competing RTO in the West? Does that seem like a serious effort — and one that would be competitive with the ISO?

Kelly: "I think it's totally serious. Whether it's competitive or not is unknown. They have put out a request for information to four different RTOs, including the CAISO, SPP, MISO and PJM. So they are looking to either form a single tariff group or [create an RTO] if the numbers come in right. I think they've been looking at the results of their benefits studies and they're waiting for information on their requests for information. If they were to choose CAISO, it wouldn't be competing at all. It would provide transmission access across the West, which I think would be an excellent thing for renewables and customers in the West.

"We'll support any efforts to improve operation and reliability going forward. I think we would prefer to see one — as opposed to many — simply because that would create the best opportunities to share back and forth across the region."

Is there any policy point that would cause your organization to withdraw its support from the regionalization effort?

Kelly: "I would say that we definitely support an independent board with an open stakeholder process. I think having the governance right is important for our organization. We would not support an organization run by a board appointed by the governor of California. We understand

CO Limon Wind Turbines | *Western Resource Advocates*

that would never go in the rest of the West.

"Our desire is to see the formation of an organization that can really meet the needs of the entire West and that's where we're focusing our work."

Gardner: "It would be hard to convince Western Resource Advocates to not support this, but there are a few things that could cause us to step back and re-evaluate how we're engaging in this effort.

"The first would be what happens in California during the 2017 legislative session. We want to make sure that any legislative package is narrowly focused on the issue at hand — which is to enable the California ISO to actually transition to a regional market — rather than [legislators] trying to slip in a lot of additional initiatives.

"We want to ensure that any governance model is fair to all stakeholders involved, and that states outside California are given an equitable say in governance and a seat at the table.

"So it's really hard to say right now what will be a deal breaker for us. I would say that, depending on what happens with California legislation, we'll know a lot more about where things stand and whether this process is going to turn out with an equitable governance structure in the long run. But, so far, we've been very encouraged and we're certainly not stepping back anytime soon."

Latest CAISO Proposal Fills out Western RTO Governance Plan

Continued from page 1

(See *Revised Western RTO Governance Plan Highlights State Authority*.)

The draft is the first revision since California Gov. Jerry Brown asked CAISO and other state agencies to postpone their joint effort to present lawmakers with a governance proposal in early August. Under state law, the legislature must authorize the ISO's transition into a regional body. (See *Governor Delays CAISO Regionalization Effort*.)

"The governance structure of a regional ISO is clearly one of the

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CAISO NEWS

Latest CAISO Proposal Fills out Western RTO Governance Plan

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key topics that must be addressed for regionalization to go forward," CAISO said.

What is still unknown is whether the proposal will convert enough RTO skeptics — inside and outside California — to jump-start the process of regionalization and provide California legislators with a well-supported set of principles in January.

'Collaborative Process'

Preservation of state authority remains a central focus of the revised proposal, which addresses stakeholder requests that the ISO delineate the process for determining whether a proposed policy initiative by a future RTO would "materially diminish" state or local authority. CAISO set out a series of measures modeled on the "collaborative process" currently used in the Energy Imbalance Market when a stakeholder challenges ISO staff assumptions about whether a policy matter falls under the primary authority of the ISO board or the EIM governing body.

The first step: a procedure for state and local authorities to raise concerns with RTO staff — and, if necessary, the board and WSC — during the stakeholder policy development process prior to a FERC filing.

The board would then consult and collaborate with the WSC to determine whether an initiative complies with the RTO's provisions protecting state authority.

When either body — by majority vote — determines that a policy impairs state authority, the policy will be subject to a combined vote of both bodies. If a majority of the two bodies collectively vote against the policy, it will not be approved — unless members of the WSC unanimously approve it.

Transitional Committee Changes

The revised governance proposal also takes up stakeholder concerns about the Transitional Committee charged with transforming CAISO into an independent RTO and developing a final proposal on governance.

The latest draft narrows the range of issues to be considered by the committee, with the process of selecting a final, independent board delegated to separate Nominating and Approval committees.

"This change is made to ensure that the [Transitional] Committee has a well-defined and achievable scope of work that is focused specifically on the key outstanding issues that are not resolved in these principles," CAISO said.

The proposal specifies that the committee will include one public official — as opposed to the more loosely defined "representative" — from each state in the RTO's footprint.

As set out in the previous draft, the committee will also consist of one representative each selected from a cross-section of eight industry sectors. The proposal saw a few alterations to those sectors, including the folding of power generators and marketers into the independent power producer sector, the insertion of community choice aggregators into the publicly owned utilities sector, and the expansion of the consumer advocate sector to include "end-use" consumer groups as well as state-sanctioned ratepayer advocates.

Sectors will now directly choose their representatives, rather than forward two nominees to the current ISO board for final consideration. Still, the board will retain the option to appoint additional members in order to ensure geographical diversity on the committee.

CAISO's draft also encourages the Transitional Committee to develop a governance proposal supported by all members, while providing for a resolution process if achieving consensus is not possible.

In response to stakeholder concerns about timelines, the revised proposal sets a deadline for the ISO's transformation to a fully independent RTO. It would conclude with a new board selected through a new nomination and approval process, which must occur within 36 months of the adoption of the regional governance plan.

Supermajority Voting

To accommodate the interests of smaller Western states concerned about California's outsized representation in an expanded CAISO, selection of the new RTO board will be subject to supermajority provisions that will apply to both the Nominating and Approval committees described in the latest proposal.

The final board will consist of nine members, a count the ISO says is consistent with other RTOs in the country — and which spreads responsibilities sufficiently enough without being too unwieldy to bring members together for monthly meetings.

The stakeholder-based Nominating Committee will be chosen by members of up to nine industry sectors, while the Approval Committee will consist of voting members of the WSC.

Board candidates will be forwarded to the Approval Committee only after winning 75% support in a load-weighted vote of the Nominating Committee. Finalists must meet the same vote threshold to be seated by the Approval Committee.

Decisions falling under the "primary authority" of the WSC will be subject to the same 75% load-weighted voting process. The committee — comprising one representative from each state in the RTO's footprint — will be responsible for approving FERC filings related to "certain regional ISO policy initiatives on specific topics" dealing with transmission cost allocation and resource adequacy.

Exceptions to the WSC approval requirement can made when a reliability threat necessitates that the RTO file with FERC on a temporary basis or if a supermajority of the board determines that a WSC filing would undermine a reliability standard or FERC requirement.

The RTO would also be permitted to file at FERC without WSC approval after "a sustained period of inaction" by the committee, which the latest proposal defines as at least 90 days after a matter has been submitted for consideration.

Despite requests from a number of industry participants, the revised proposal makes no provision for the creation of a formal stakeholder committee — such as a market advisory committee.

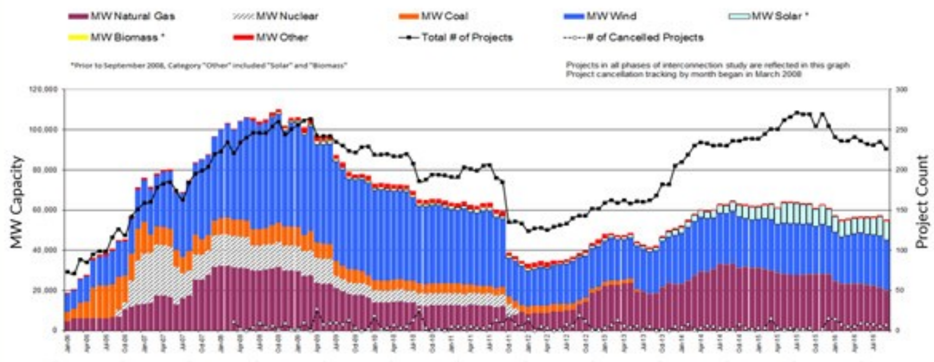
"This is an important topic and one that deserves further discussion among all stakeholders, both in comments on this second revised proposal and ultimately in the transitional committee forum contemplated in this principle," CAISO said.

ERCOT NEWS

ERCOT's Bermudez Resigns from Board Position

Jorge Bermudez has resigned from one of five unaffiliated positions on ERCOT's Board of Directors after his recent marriage triggered a conflict of interest.

Bermudez's wife is an officer with an ERCOT market participant affiliate, Citibank. The affiliate is not directly involved in the ERCOT market, but the ISO's bylaws outline a number of stringent requirements for unaffiliated directors. ERCOT said its legal department determined the relationship to be a conflict "based on those requirements."



ERCOT fuel mix | *ERCOT*

"We have no reason to believe at this time that this conflict resulted in any inappropriate actions during his service to the board," ERCOT spokesperson Robbie Searcy said. The ISO's board Tuesday will vote again on any matters that Bermudez participated in during its August meeting "to ensure all board actions of record are consistent with these bylaws," she said.

"For some odd reason, he chose his wife over ERCOT," joked Texas Public Utility Commissioner Ken Anderson during the commission's open meeting Oct. 7.

Anderson and his fellow commissioners closed the meeting by heaping praise on Bermudez. The PUC has regulatory oversight of ERCOT and approved Bermudez's selection to the board in September 2010.

"He's such a tremendous gentleman, but what are you going to do with kids today? They run off and fall in love," Commissioner Brandy Marty Marquez said. "It's sad to lose him."

In a statement, ERCOT CEO Bill Magness said Bermudez's "expertise and careful deliberation, particularly regarding financial matters, will be missed greatly."

Under ERCOT's bylaws, the board's Nominating Committee will select and vote on his replacement, retaining an executive search firm to begin the candidate selection process. The candidate must be approved by both the ISO's membership and the PUC, with the latter's approval coming "within a time frame that will … avoid or minimize the length of unaffiliated director vacancies on the board."

Candidates must have experience in one or more of the fields of: senior corporate leadership; professional disciplines of finance, accounting, engineering or law; regulation of utilities; risk management; and information technology. Candidates must be independent of any ERCOT market participants.

Bermudez had 33 years of experience with Citigroup, retiring in 2008 as chief risk officer. He is currently CEO of the Byebrook Group , a research and advisory firm in the financial services industry.

336 MW of Wind and Solar Added in September

An additional 336 MW of wind and solar began operating in September, according to ERCOT's latest generator interconnection status report. The new additions were:

- Duke Energy Renewables' 110-MW Los Vientos wind farm in South Texas;
- Invenergy Wind's 120-MW Gunsight Mountain Wind Farm in West Texas; and
- OCI Solar Power's 106-MW facility, contracted to San Antonio's CPS Energy, north of Abilene in West Texas.

The ISO now has 25,254 MW of wind capacity and 9,391 MW of solar power operating, under study or with signed interconnection agreements.

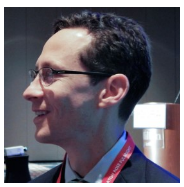
The additional capacity helped ERCOT set new demand records for October with peaks of 59,359 MW and 59,909 MW, respectively, during the late-afternoon hours of Oct. 5. The Texas grid operator's final Seasonal Assessment of Resource Adequacy for October and November had projected a peak demand of 54,400 MW this fall.

— Tom Kleckner

GCPA Fall Conference

AUSTIN, Texas — Industry insiders last week gathered here for the Gulf Coast Power Association's 31st Annual Fall Conference, which featured presentations on ERCOT pricing and the effect of market forces, as well as discussions on distributed generation, Mexico's reformed energy market, wholesale market design and efficiency improvements, new developments on ERCOT's seams, current cyber threats and cross-border transmission issues with Mexico.

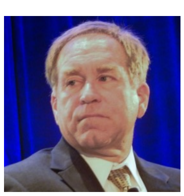
Future Market Prices in the Texas Market



Taking a look at current market conditions, the opening panel discussed what the future will hold. **Sam Newell**, a principal with The Brattle Group, said should solar costs continue to drop, it could replicate what ERCOT saw in the early years of the 21st century.

"At the beginning of the market, we built out [gas-fired combined cycle plants] in spades, and that's why prices were so low," he said. "I think that could happen with solar. [If I] were thinking about investing in traditional power gen in this market, I'd be worried because of that prospect. If we get 25-MWh, all-in solar, that will just kill prices for everybody else."

"I think [pricing] is as big an issue for the coal," said **Bob Helton**, director of market design and policy for ENGIE. "If you look at capacity factors, a baseload coal plant runs at 88, 89%. They're running today down in the 30s. I think you will potentially see some changes in operations. It's like my car is not running, but I'm not about to put new tires on it. You're going to see some of those issues in maintenance that are going to change for coal plants with large capital expenditures."

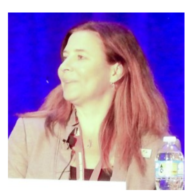


"Many generators [in ERCOT] have another revenue stream from their integrated retail side," pointed out **Charles Griffey**, president of Peregrine Consultants. "Retail margins are very, very high right now in certain sectors of the market."

ERCOT Stakeholder Process and Market Efficiency

"It's in the best interest of the ERCOT market for us to be constantly moving forward, whether it's real-time co-optimization, which is brought up by the [Independent Market Monitor] from time to time, or something else," said ERCOT COO **Cheryl Mele** during her panel's discussion on balancing efficient markets with economics. "We need efficiency, we need reliability and we need people to get behind us and support us when we have reliability issues."

"We all put ERCOT in a tough spot," Market Monitor **Beth Garza** said. "We want the highest and best and most impartial decisions out of that organization, but they're also responsible to their members. Sometimes those interests aren't always advocated for. … We expect the highest and best, but that's never good enough. There is a role for the [Public Utility Commission of Texas] in some of these decisions that is even higher and broader than ERCOT and its stakeholder organization. It seems like that's at a level at which disparate interests can be effectively adjudicated."

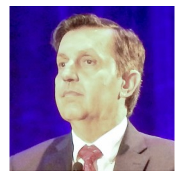


"If ERCOT is a democracy, then the PUC is a benevolent dictator," responded **Barbara Clemenhagen**, vice president of market intelligence for Customized Energy Solutions. "If the recommendations are coming from ERCOT and IMM, they should be based on perfect information. It may not always be correct, but the stakeholders have the right and the opportunity to weigh in on those things."

Randa Stephenson, vice president of wholesale markets for the Lower Colorado River Authority, also defended ERCOT's stakeholder process. "Even though there are different advocates, the voting structure is very balanced within ERCOT. Our communications and structure ensures there's equal weighting of all the market participants," she said. "We have to find ways to work together to find the best solution. When you have the pull and tug, we're going to come out with very different compromise solutions."

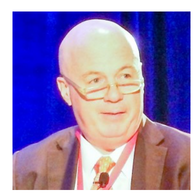
The Mexican Market's Progress and Future

Two panels were devoted to the newly deregulated and competitive Mexican market, a sign of the growing relationship between Texas and its neighbor below the Rio Grande. (See *Energy Wildcatter Hopes to Make His Mark in Emerging Mexican Market*.)

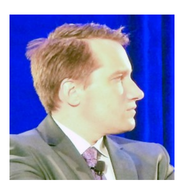


Mexican market participants can buy and sell power, ancillary services, financial transmission rights and clean energy certificates (CELs). The first auction of energy and CELs last year saw an average price of \$48/MWh, which decreased to \$33/MWh in this year's second auction. **Regulo Salinas**, vice president of Ternium Mexico, said he is optimistic about the third auction.

"That is where the private sector will come in," he said, welcoming their expertise. "We need more specialized people that understand the markets. We have hardly any of them in Mexico … traders, meteorologists, pricing, financial and accounting specialists. … It's an opportunity for intelligent communication types to come into Mexico."



"I'm confident we are on the right path. There's plenty to be done, but plenty has already been achieved," said **Eduardo Andrade**, a member of the advisory board for Mexico's Energy Regulatory Commission. "We have a framework based on competition. As a country, we're moving away from having the government looking over your shoulder and determining who should generate the electricity and at what price."



Panelists credited **Jeff Pavlovic**, managing director of electric industry coordination for Mexico's Ministry of Energy, with much of the market's success, though he politely declined to accept their praise. "Our guiding principle has been to make as many decisions as possible and not give any more control to the government than is absolutely necessary," said Pavlovic, who left Xcel Energy eight years ago to work on the Mexican market.

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"We know a lot of companies are interested in the market," he said. "We're asking them to make big investments, and that takes information. We've been doing this one step at a time, but until all rates are public, it will be hard to get that investment."

Enrique Giménez Sainz de la Maza, managing director of The Blackstone Group affiliate Fisterra Energy, said the "next challenge" is developing a retail market. "Without a robust retail market, I have my doubts about the wholesale market."

Fisterra owns the 524-MW combined cycle Frontera plant in Mission, Texas, just 2 miles from the Mexican border. Frontera only recently withdrew from the ERCOT system and dispatches power into Mexico through a DC tie and a 400-kV line. "We now have something very interesting. We have a market on both sides … one is an energy market, the other is an energy capacity market. At the end of the day, we have managed to develop the reality of a market in Mexico thanks to this interconnection."

Gerardo Serrato, InterGen Mexico's commercial director, said future interconnections will only help the price convergence between the two markets. "Theoretically, those prices have to converge, but reliability issues might stop that convergence. Not all the Mexican systems are interconnected. If they can interconnect the whole system, we can see convergence between the Mexican and U.S. system."

Genscape's Rick Margolin said strengthening the energy infrastructure between Mexico and the U.S. will only feed further economic development. The senior natural gas analyst pointed to the NET Mexico Pipeline that connects the Agua Dulce Hub in South Texas with Monterrey in northern Mexico as an example.

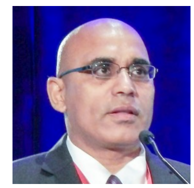
"Gas prices aren't what Mexican consumers can get by tapping into the U.S. market, so there's a major push to gain access to the international markets, which means primarily the U.S.," Margolin said. "Consumers are insanely frustrated by the level of service they get from [Mexico's national gas supplier] Pemex. Global manufacturers are very interested in expanding operations into the Mexican market. Mexico has more trading partnerships than the U.S., but they're hesitant … because of the lack of service or reliable service. We're seeing a massive buildout of both gas and power infrastructure to the border."

Dynegy CEO Shares Thoughts

Dynegy CEO Robert Flexon celebrated his company's emergence from bankruptcy in 2012 and its entry into ERCOT earlier this year with the acquisition of almost 4,000 MW of ENGIE combined cycle gas turbines. Fifteen percent of Dynegy's capacity is part of the Texas ISO.

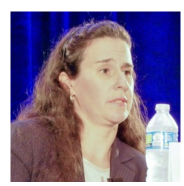
"ERCOT's view around generating assets tends to be fuel neutral. They're not trying to create winners and losers; they're trying to create a competitive market," Flexon said. "We like our position, we like the assets we have. The market is going to continue to have need for flexible resources. The way wind affects price formation and with solar shaving peak pricing, it's just going to be a really difficult environment for non-flexible resources to survive that.

"Is the price signal going to be there to change the resources?" he asked. "Will it force Texas into a situation where we're doing out-of-market things? We hope Texas doesn't do that."



Anil Kumar, a senior research economist and adviser for the Federal Reserve Bank of Dallas, said the regional economy is expanding at a moderate pace, thanks to "robust" job growth in services and goods-producing sectors overcoming oil prices in the $40s. "Sharp drops in oil prices used to drop us into a recession, but that's no longer the case," he said, pointing to an unemployment rate of 4.7%, slightly below the national average. "We are probably looking at the worst of the energy bust being over."

Cybersecurity Risks Included 'Uninformed User'



October being National Cyber Security Awareness Month, it was only appropriate one of the GCPA panels examine the growing cyber threats to electric utilities and how to fend them off. **Renee Tarun**, deputy director of the National Security Agency's Cyber Task Force, warned attendees that external cyberattacks are growing increasingly sophisticated.

But she also said not to ignore the dangers from inside.

"We're seeing these attacks surface as more and more technologies are connected to the Internet. We've seen ransomware becoming more prevalent. We're seeing nation actors develop specific harmful code. These different types of malicious actions can range from hackers in their basement to sophisticated nation actors," Tarun said.

"But there's also the uniformed user,

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ERCOT Frontera tie to Mexico | *Fisterra Energy*

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someone accidentally clicking on a phishing link that introduces malware to the network. It's important we leverage our technologies to be more automated in our defenses, but also the user being educated in the system as well. Security needs to be built in at the beginning, not as an afterthought."

"I would say 50% [of cyberattacks] are pure human negligence," said Boris Segalis, a partner with Norton Rose Fulbright. "Vendors can lose track of hard drives that include critical customer data … small companies may not vet the vendor … not having your anti-virus up to date … you can't really prevent hackers, but humans can take measures to mitigate the effects of these incidents."

Asked by an audience member whether cybersecurity insurance is available, moderator Doug Henkin, a partner with Baker Botts, said insurance brokers do specialize in the product, but "it's a growing market that essentially didn't exist. It's not a simple insurance to buy, it's not a simple insurance to be underwriting. With respect to anti-virus software, you might be underwriting 15,000 different companies, but those companies are using five to 10 subsets of the software."

Developers Look Beyond ERCOT's Seams

Bill Bojorquez, vice president of planning for Hunt Transmission Services, suggested ERCOT's DC ties with Mexico — which include a connection through Hunt subsidiary Sharyland Utilities — could provide an alternative to building more transmission in the Rio Grande Valley.

"We believe these ties … give ERCOT the ability to say, 'Wait a minute, we have an extra tool' and call their neighbor when there are unplanned outages," said Bojorquez, who helped develop the ERCOT market while at the ISO in the early 2000s. "One of the things I'm most proud of is establishing relationships with Mexican utilities. They have the ability to respond in emergency situations, and they are highly motivated because it helps with trade."

David Parquet, senior vice president of special projects for Pattern Energy, is looking eastward instead. His company's HVDC Southern Cross Transmission Project, a project six years in development, is scheduled to connect ERCOT with the Southeast in 2021.

"If you think back 10, 15 years ago when the whole renewable business started, there was a lot of low-hanging fruit where you could find wind relatively close to load," he said. "Those days are gone. Today's big efficient renewable projects are a long way from load so therefore, you have to think about transmission. Sometimes, you can hook up to the local grid through a wheel, or you can put together your own project."

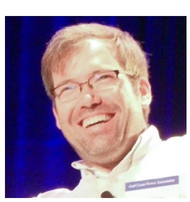
But Parquet reminded his audience that transmission projects across the seam must "ensure no change in FERC jurisdiction over flows into ERCOT. [Maintaining ERCOT's independence] is the Holy Grail. You will not change that. Period. Full stop."

Distributed Generation a Coming Force

"In planning the future of the grid, we're very much looking at distributed generation resources," said Oncor's **Don Clevenger**, senior vice president of strategic planning. "The numbers are still small, but they really don't tell the whole story as far as looking ahead into the future. … Last year, only one-third of our feeds had any DG; today, it's half. In four to five years, that [growth] is going to be astronomical."

"If you look at overall capacity, 80% of the DG installed throughout the [ERCOT] system by the end of 2016 will be dispatchable. We'll have close to a gigawatt by the end of the year," said Greg Thurnher, general manager for regulatory policy with Shell Energy North America. "We're very interested in that gigawatt as it becomes very intelligent as far as price. You will have a comparable playing field for wholesale resources when they act as true resources … and have the ability to influence the price."

Austin's Pecan Street Project, a collaboration between the University of Texas at Austin, Austin Energy, city officials and industry and environmental representatives, has been testing DG's "intelligence."



"We can manage every single circuit in the house," said the project's engineering director, **Scott Hinson**. "It's a rather granular management … air conditioning controls, creating an electric vehicle charging control, looking at solar controls … things as simple as pointing the solar panels west, so their peaking output is available later in the day."

> ***"With respect to anti-virus software, you might be underwriting 15,000 different companies, but those companies are using five to 10 subsets of the software."***
>
> **Doug Henkin, Baker Botts**

Renewables Key to Texas' CPP Compliance

Participating in a panel discussing the Clean Power Plan's potent effects on the Texas market, the Environmental Defense Fund's John Hall said the state is already "90% closer" to compliance, thanks primarily to its abundant renewable resources. "We currently produce more wind power than any other state. We have more potential for solar, energy efficiency and demand response than any other state," he said.

"From our perspective, the market in Texas and our vast, clean-energy assets are putting us in a position where the market is driving us to the use of clean-energy resources," Hall continued. "We have an opportunity to take the massive clean-energy resources we have and we can significantly rebuild this economy."

"There may be permanent coal-plant reductions that occur as a part of the Clean Power Plan, but fuel diversity is going to suffer," said a more cautious Susana Hildebrand, Energy Future Holdings' director of environmental policy. "It affects our power prices, because there may be a day where for whatever reason, you need coal or baseload plants to be available. Betting on the future of natural gas prices doesn't always work out."

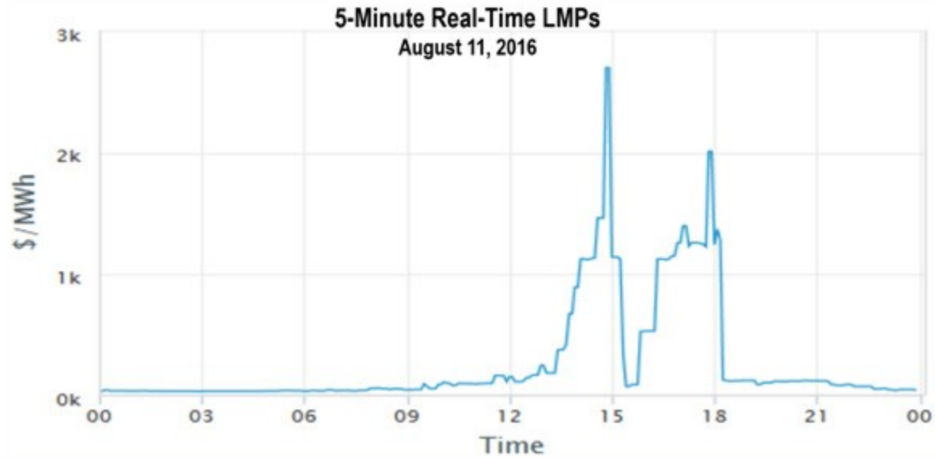
Greg Sopkin, a partner with Wilkinson Barker Knauer, warned about increased costs to rural customers. "Urban areas have a lot more customers to spread around the costs," he said. "If you're talking about forcing a change on rural areas in a very short period of time by shutting down baseload plants, you're looking at real, very significant costs."

— Tom Kleckner

ISO-NE NEWS

Generators: 'Unjust' Rule Cost $100M in New England Heat Wave

By William Opalka



ISO-NE

New England generators say a rule meant to prevent withholding of generating resources unfairly cost them $100 million during an August heat wave (EL16-120).

The New England Power Generators Association filed a complaint with FERC on Sept. 30, saying ISO-NE's peak energy rent (PER) adjustment created "absurd" results during a six-hour period of intense heat that featured unexpected outages and high prices.

The PER adjustment reduces capacity suppliers' monthly capacity payments by an amount that approximates the "peak energy rents" earned by a hypothetical generator in the real-time energy market.

NEPGA asked FERC to order ISO-NE to "return the PER adjustment to a just and reasonable level" effective immediately.

The association said that on Aug. 11, as temperatures approached 100 degrees across New England, energy demand rose to 25,195 MW, the highest peak demand in several years. ISO-NE entered the day with 3,334 MW of reserves.

A morning lightning storm in Connecticut caused voltage problems that led to transmission outages and the loss of 3,113 MW of generation. ISO-NE implemented demand response at 2:25 p.m. At 2:50 p.m., the wholesale price peaked at $2,690.60/MWh, with the hourly price settling at $1,438.97/MWh, according to the complaint.

"Far from earning significant compensation during this emergency, the vast majority of capacity resources incurred significant losses across these operating hours. In other words, suppliers have been put in the untenable position of paying load to run during the electricity system's most critical hours," NEPGA wrote. "Suppliers incurred an aggregate penalty through the PER adjustment mechanism of over $100 million for just six hours on Aug. 11, while the total cost of energy paid by load for those six hours was only about $18 million."

The generators added that 37 hours subject to the rebate over the past 20 months have caused suppliers an estimated $193 million in financial penalties.

When the hourly real-time energy market price exceeds a predetermined daily "strike price," the RTO calculates an "hourly PER" value that roughly equals the difference between the real-time clearing price and the strike price. These monthly values are added for the month, averaged over a rolling 12-month period, and then deducted from suppliers' monthly capacity payments.

The PER adjustment is intended to discourage economic withholding and to provide a hedge to load against price spikes in the real-time market.

"The rebate has become an unjust and unreasonable penalty," NEPGA said. "The problem is that ISO New England calculates the rebate based on the earnings of a hypothetical generator in the real-time energy market, but the vast majority of generators that pay the rebate earn their energy market revenue in the day-ahead energy market."

According to the complaint, the Aug. 11 strike price was approximately $233/MWh. Capacity resources in the real-time energy market were paid approximately $1,400/MWh but had to pay a rebate penalty of roughly $1,075/MWh.

NEPGA tried and failed to persuade FERC to eliminate the PER adjustment two years ago. (See *ISO-NE Gens. Challenge Capacity Rules Ahead of FCA*.) An appeal to the D.C. Circuit Court of Appeals is pending.

FERC last year approved a Tariff change submitted by ISO-NE that eliminates the PER adjustment on June 1, 2019, at the start of the 10th capacity commitment period. The RTO said reforms in the day-ahead energy market and its Pay-for-Performance program that starts on the date have made the rule unnecessary (ER15-1184).

MISO NEWS

MISO Market Roadmap Projects Reordered Following Stakeholder Frustration

By Amanda Durish Cook

CARMEL, Ind. — MISO's Market Roadmap projects have been rearranged following stakeholder complaints over the lack of transparency behind the RTO's reasoning for how it ranked the projects.

Stakeholders first raised their concerns over the rankings, and how MISO's ordering was merged with stakeholders' classification preferences, during the August Market Subcommittee meeting. The projects in the Market Roadmap, a work plan for market issues, were originally supposed to be ranked by early August.

"There were obviously some differences between what MISO and its stakeholders thought were priorities," said Mia Adams, a senior market strategy analyst. Now, the four high-priority Market Roadmap projects are:

- Aggregating load to meet minimum participation limits, which was previously ranked as a low priority by MISO;
- Automatic generation control enhancement for fast-ramping resources, which was ranked high priority by stakeholders; MISO revised the priority from "low" in June to "high" in a second draft of the work plan in August;
- Behind-the-meter storage aggregation under Type II demand response resources, which MISO previously gave a low priority; and
- Introduction of multiday financial commitments, voted high priority by both MISO staff and stakeholders.

With the reorder, MISO's goals of developing additional short-term capacity reserve requirements and incorporating DR, emergency DR and boiler-turbine-generator deployment during capacity emergencies moved from high to medium priority. In addition, a pricing structure for voltage and local reliability commitments moved to low priority despite solid accord for a medium-priority ranking from the RTO and stakeholders.

The reorder provoked little discussion, as MISO almost completely aligned its prioritization with the stakeholders' opinions.

MISO's power marketers sector advocated that a virtual spread product be given high priority, but Adams said the RTO would need technological upgrades before it could complete the project. The issue was ranked low priority.

Of the 17 issues identified in the Market Roadmap process at the beginning of the year, five — including coordinated transaction scheduling with SPP — were placed in "parking lot" status, meaning they aren't going to be given attention anytime soon.

MISO will unveil the final project prioritization in December.

MISO 4.0 Prioritization Proposal

	Voters (Members & Non-Members w/ Voting Rights)	MISO 2.0	MISO 3.0	4.0	
MR 36 - Aggregate Load to Meet Min Part. Limits	H	L	L	High	IN WORK PLAN
MR 27 - AGC Enhancement for Fast-Ramping Resources	H	L	H		
MR 50 - Behind Meter Storage Aggregation Under DRR Type II	H	L	L		
MR 31 - Introduce Multi-Day Financial Commitments	H	H	H		
MR 49 - DR/BTG/EDR deployment during Capacity Emergency	M	H	H	Medium	
MR 10 - Develop Add'l Short-term Capacity Reserve Requirements	L	H	H		
MR 2 - Enhanced Modeling of Combined Cycle Generators	M	M	M		
MR 51 - New Storage Resource	M	M	M		
MR 54 - Application of Dynamic and Predictive Ratings	L	M	L	Low	
MR 5 - Introduce a Virtual Spread Product	M	PL	L		
MR 7 - Optimize Flow-Control Resource Dispatch	M	L	L		
MR 28 - Pricing for VLR Commitments	M	M	M		

Note: priorities listed in alphabetical order by priority level.

MISO Recommends No Change to Transfer Limits

By Amanda Durish Cook

CARMEL, Ind. — Facing a FERC complaint from transmission customers, MISO last week defended its calculation of sub-regional transfer limits for the 2016/17 Planning Resource Auction and recommended that it continue to use the same numbers for future auctions.

The RTO made its recommendation based on stakeholder feedback it received, which shows general support for maintaining the status quo, said Kevin Sherd, director of forward operations planning, during a presentation at the Oct. 5-6 Resource Adequacy Subcommittee meeting.

MISO calculates the transfer limits between its North and South regions by deducting firm reservations from 2,500 MW for flows South to North and 3,000 MW for North to South. The initial transfer limits were prescribed in the RTO's settlement with SPP that became effective in February.

Last month, a coalition of transmission customers filed a challenge to the results of the PRA with FERC, arguing that the limits are too strict and trapped capacity in MISO South, driving up clearing prices. (See *MISO, IPPs Ask FERC to Reject Bid to Redo Capacity Auction*.)

Six of 11 stakeholder respondents to a MISO survey on the issue endorsed deducting all firm reservations, while three wanted only pseudo-ties subtracted, and one apiece wanted nothing subtracted and net reservations subtracted. Seven recommended maintaining the current initial limits, with the minority split between using 1,000 MW or another method altogether.

Sherd said MISO doesn't have much of a choice in subtracting firm reservations. "It's firm transmission service. Firm transmission reservations can be scheduled at any point. It can't be reduced absent a transmission congestion event," he said.

But some stakeholders at the meeting disagreed that all firm reservations are absolute and must be subtracted.

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MISO NEWS

Market Subcommittee Briefs

Cost Allocation Set in MISO-SPP Settlement

CARMEL, Ind. — MISO's mechanism for allocating charges under its settlement with SPP was certified by a FERC administrative law judge last week (ER14-1736).

MISO has been using a temporary miscellaneous charge based on market load ratio share to collect the $1.33 million a month it is paying SPP until February for flows over 1,000 MW passing through MISO's North-South interface. Under a settlement reached with its stakeholders, MISO will use a new, modified market load ratio share basis to allocate those costs. This method also applies to the $16 million it paid from Jan. 29, 2014, to Jan. 31, 2016, but that amount won't be subject to resettlements, MISO Director of Market Services John Weissenborn told the Market Subcommittee Oct. 4.

From Feb. 1, 2017, to Jan. 31, 2021, MISO will use a transitional, hybrid method, with a continuously declining percentage of the costs allocated through the new load ratio share calculation and an increasing amount through a flow-based benefits allocation methodology.

Weissenborn said the RTO will continue to allocate the costs under the current method until FERC accepts the settlement agreement and accompanying Tariff language. After approval, MISO can begin resettlement for costs from Feb. 1, 2016, and beyond.

"We can almost anticipate two resettlements: one to true-up the $1.33 million and another to implement the cost allocation," Weissenborn said. Weissenborn said payments under a true-up will be a simple calculation, but the new cost allocation will be trickier: "The challenge that we have is that this is another new software change, but we will comply. We will get it done."

Weissenborn said MISO will hold future stakeholder meetings on two remaining internal cost allocation issues under the settlement: how much entities with firm transmission that reduced the 1,000-MW capacity limit will have to pay and what cost allocation is needed for entities with capacity benefits that raised the Planning Resource Auction limit above 1,000 MW.

IMM Seasonal Review: Pricing Changes Still Needed

Independent Market Monitor David Patton used a review of last summer to continue his push for pricing changes.

Patton said summer's 44% rise in energy prices over spring's was due to increased natural gas prices and 1% larger year-over-year demand from summer 2015.

"Because of hot temperatures, we did rely more heavily on peaking resources," Patton told the Market Subcommittee. The uptick led to more revenue sufficiency guarantee payments, culminating in a peak of almost $1.7 million in payments on July 21, when nearly all of MISO's generating turbines

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MISO Recommends No Change to Transfer Limits

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In this year's State of the Market report, MISO's Independent Market Monitor recommended subtracting "a derating factor that represents the probability that MISO neighbors will request a derating" of the current initial limits.

"MISO is saying there's no room for redispatch when all of the firm transmissions are subtracted," Monitor Michael Chiasson said. "We're saying there has to be something in between. ... What's the chance of that really being the norm and what's the more likely case?"

Steve Leovy, a transmission engineer at WPPI Energy, agreed and said a "probabilistic" approach was needed.

But ITC Holdings' Ray Kershaw said he had never heard of using transmission-use probability. "We can throw out terms like 'probability,' but I don't know of a method for calculating the probability of transmission use. There are certain things that need to be assumptions; there's the [loss-of-load] expectation, I understand that. Could someone put this method down on paper?"

Leovy said MISO should make a best effort to estimate expected system capability and not focus so much on making sure it does not exceed the limit under any circumstances.

Sherd said it would be an "administrative nightmare" to track individual firm reservations and monitor the likelihood of it being used. "It's not on a planning year basis; it's on a daily, weekly, monthly basis," he said.

According to MISO, the Monitor's suggestion is not allowed, as MISO and SPP's settlement agreement forbids a "unilateral" lowering of the sub-regional limit.

Firm Flow Limits Study

Rather than the existing initial limits or 1,000 MW, one stakeholder suggested a study of firm flow limits to establish new initial limits.

Per that request, MISO reviewed market flows compared with firm flow limits on several days this summer, examining 19 Tennessee Valley Authority flowgates that experienced transmission loading relief anytime in 2016. The analysis, MISO said, showed that South-to-North market flows "would generally be firm at flows near or above 2,500 MW." The RTO said only one of the analyzed flowgates averaged below 2,500 MW.

MISO said it plans to continue reviewing transmission loading relief annually. The RTO is seeking final feedback on reusing the limit approach in the PRA by Oct. 12. MISO staff plan to review a limit proposal at the Nov. 2-3 RASC.

Per SPP and MISO's settlement, firm transmission reservation holders have until Dec. 1 to confirm or cancel service above 1,000 MW for planning year 2017/18. MISO will publish its sub-regional import constraint and sub-regional export constraint values for the 2017/18 PRA before March.

Dynegy's Mark Volpe asked if MISO could even discuss its North-South contract limit plans given the complaint at FERC.

"I think given the complaint is public and MISO's response is public, there should be very little issue in discussing it," MISO's Jacob Krause said.

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Market Subcommittee Briefs

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were committed during a maximum generation event. The day also resulted in 1.6 GW of voluntary load curtailment, which lowered real-time energy prices to $36/MWh, even though the day-ahead price was $78/MWh. (See "IMM Makes Pricing Suggestions Following First Max Gen Event Since Polar Vortex," *MISO Markets Committee of the Board of Directors Briefs*.)

"The problem with this is these are megawatts outside of MISO's control," Patton said. "You're incurring an awful lot of costs just to turn these generators on. You're certainly forcing the system to accept a lot of high-price energy. It makes it difficult to price the energy. …There are some things MISO could take a look at, and MISO is taking the process very, very slow."

Patton repeated his suggestion that increasing the number of generators allowed to set prices under extended locational marginal pricing would temper erratic pricing.

"Procedures that say 'turn everything on' are not efficient, especially when there's a more surgical" method, Patton said.

Jeff Bladen, executive director of MISO market services and liaison to the MSC, said the RTO will need to work with individual states and load-serving entities to improve the visibility of demand response. But he stood by the July 21 decision to issue the alert.

"What drove the over-commitment was not self-deployment. It was very much about the weather. Had the [stormy] weather in the forecast materialized, we would have absolutely needed the commitments," Bladen said. Patton said he didn't completely agree with that assessment.

Patton also said summertime outages that impacted constraints had a hand in increasing real-time congestion to $463.4 million in summer 2016 from $342.2 million in summer 2015.

MISO to Expand ELMP Price Setting, but not to IMM's Specs

MISO Market Design Engineer Congcong Wang said the RTO is willing to expand ELMP to online resources with a one-hour start-up time without software changes.

The RTO says the possible expansion "captures a majority of peaking resources."

Wang said the Monitor's original recommendation that online price setting be spread to all resources with a two-hour minimum run time is neither cost effective nor beneficial with MISO's current software. "The full expansion to two-hour minimum runtime will require software changes," Wang said. (See *MISO Study Undercuts IMM Proposal on Expanding ELMP Pricing*.)

MISO's path forward would increase eligible peaking resources from 8% to 58% on a capacity basis. Wang said the expansion without software changes captures about 60% of the Monitor's recommendation "in terms of real-time commitment."

With the addition of one-hour start-up units, ELMP price setting, which currently includes about 45 10-minute start-up units with a combined capacity of 1.2 GW, would increase to 179 units at 8.4 GW. The Monitor's advice to include two-hour minimum runtime units would bring the number to 256 units at 14.4 GW.

However, MISO is not willing to budge on removing offline units from price setting in ELMP, another Monitor suggestion. Wang said MISO's research shows that offline fast-start resource participation can address shortages. MISO said it "will work with its IMM to continue monitoring offline participation and will exclude a resource from pricing if it is found infeasible."

Wang said MISO would likely makes a final decision on resource pricing under ELMP at the December Market Subcommittee meeting.

If the RTO decides to go with the option that does not require a software change, Wang said implementation could begin in the first quarter of 2017.

MISO-PJM Coordinated Transaction Scheduling Delayed

The introduction of coordinated transaction scheduling with PJM will be delayed from March to next October, Bladen said during a Market Subcommittee liaison report.

Bladen said the date change is needed while MISO waits on PJM to complete market improvements and staff training. He added that joint filings will be made soon to update FERC on the later implementation date.

Wang

David Sapper of Customized Energy Solutions asked how stable CTS will be given that MISO is also trying to implement interface pricing rules with PJM. (See "No Consensus on Interface Pricing," *MISO/PJM Joint and Common Market Meeting Briefs*.)

Bladen said while there is a relationship between the two market improvements, they aren't related to a degree that would prevent them from being introduced independently.

"There's no premise that you have to have one before the other," he said. "They're not intrinsically tied. They're relative improvements of the same process."

CTS is intended to reduce uneconomic flows between the two RTOs. The new product would allow traders to submit "price differential" bids that would clear when the price difference between MISO and PJM exceeds a threshold set by the bidder.

MISO Considering Moving Reserve Buy-Back into RSG

MISO is investigating a way to make up lost revenue for resources committed in real time that have previously cleared day-ahead offline supplemental reserves, said Jason Howard, MISO manager of market quality.

Currently, generators that commit in the real-time markets have to buy back their supplemental reserves.

MISO is considering providing make-whole payments to such generators through revenue sufficiency guarantee payments, Howard said. He said the proposal, which would require a Tariff change, would ensure that those units aren't operating at a loss.

MISO looked at four years of historical data and found the average cost for buying back supplemental reserves amounts to $1 million per year across the RTO, Howard said.

— Amanda Durish Cook

MISO NEWS

Resource Adequacy Subcommittee Briefs

MISO Takes 1st Steps in Monitor Recommendations

CARMEL, Ind. — MISO is canvassing feedback on two Independent Market Monitor recommendations that seek to improve the Planning Resource Auction.

Manager of Resource Adequacy John Harmon said MISO agrees with the Monitor's 2015 State of the Market recommendation to apply its 50-MW physical withholding threshold to affiliated market participants collectively, rather than to each individually. To do that, MISO would have to revise Module D of its Tariff, Harmon said at the Oct. 5-6 Resource Adequacy Subcommittee meeting.

The Monitor has said its proposal would prevent a supplier from dodging mitigation by creating multiple affiliates to increase its withholding threshold.

Consumers Energy's Jeff Beattie said he thought the proposal might be discriminatory, as his company cannot talk to its generation affiliates anyway because of requirements set by the Michigan Public Service Commission.

"It's like Dynegy over there. I can't collude with them!" he hollered across the room at Mark Volpe to lightheartedly make his point.

Michigan PSC staffer Bonnie Janssen confirmed that both Consumers and DTE Energy have to file paperwork with the commission promising not to communicate with affiliates.

Harmon said MISO wants all stakeholder feedback by Oct. 21.

MISO is also tackling the Monitor's 2013 suggestion to remove "inefficient barriers" for generators to participate in the PRA. The change would involve allowing a generation owner with an Attachment Y retirement request to participate in the auction and have the ability to postpone or cancel the retirement if it clears, which is not allowed under current Tariff language.

MISO adviser Neil Shah said the RTO will set aside time for discussions on the issue in future RASC and Planning Advisory Committee meetings to see if a rule change is warranted.

Minnesota Public Utilities Commission staff member Hwikwon Ham said he hoped changes to the rule would not further delay projects in MISO's interconnection queue.

MISO to Move Ahead with Brattle Demand Curve for Forward Auction

MISO's forward capacity auction proposal for merchant supply is nearly ready to be filed with FERC, and the RTO is using the final weeks to make presentations to support its stance.

Jeff Bladen, MISO's executive director of market design, said there have been more than 200 questions, comments and suggested edits since the redesign of the capacity market was first proposed. He said he didn't anticipate "dramatic changes" at this point.

"We are closing in on that Nov. 1 filing date," Bladen said. "It is late in the day to be bringing up issues, and we don't anticipate new issues because we've gotten such a robust response so far."

Bladen said the only unfinished business is MISO working with the Monitor to make any necessary additions to Module D Tariff language pertaining to the Monitor's role in both the new auction and the PRA.

Meanwhile, some stakeholders are criticizing as too low The Brattle Group's sloped demand curve price cap of 1.4 times net cost of new entry (CONE). (See Brattle Endorses MISO Forward Auction Proposal, Designs Demand Curve.)

"In spite of the comments we've received, we're still recommending the same curve," Brattle analyst Sam Newell said.

Per stakeholder request, Brattle ran sensitivity analyses with higher price caps. Brattle analyst David Oates said moving the cap to 1.7 times net CONE moves the foot of the curve to the right but still manages to maintain reliability, at 109% of MISO's planning reserve margin requirement. Moving the cap to two times net CONE results in procuring 106% of the planning reserve margin requirement.

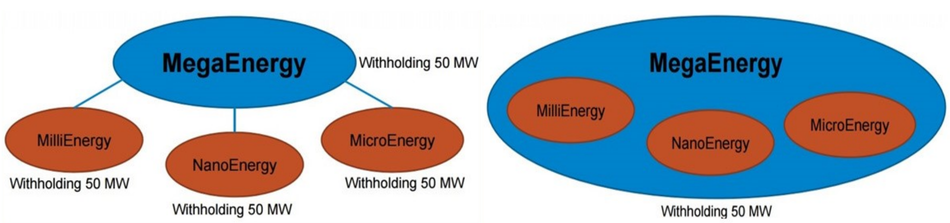
But Oates also said that with higher price caps, price volatility increases by 30 to 80% compared with Brattle's proposed curve. The two higher caps attract 100 MW and 220 MW, respectively, more merchant supply than Brattle's 1,800 MW.

Newell again backed MISO's forward proposal over the Monitor's prompt, two-stage hybrid auction. "What most impresses me about this approach and the prompt hybrid that's been discussed is that this approach allows all different suppliers to compete," Newell said. "The hybrid proposal actually discriminates; it pays a much lower price to [regulated] supply than merchant supply. … It's economic waste to buy a $150/MW-day resource when a lower-cost one is available." He added that while relying solely on a sloped demand curve to price the marginal value of megawatts is "elegant," it's not realistic.

Jim Dauphinais of Illinois Industrial Energy Consumers said "it would make sense" to have a discussion to urge MISO to delay the Nov. 1 filing. "I'll be frank: The word on the street is MISO is anxious to file this before FERC. The question is can some of these issues be worked out before the filing? There are certainly unresolved issues at this point."

Dauphinais said delaying the filing to the end of the year might clear up issues. He is concerned that MISO's Tariff language might be unclear, leading to a messy back-and-forth process with FERC, he said.

"I've also been walking on the streets and heard some people saying that," Madison



The existing physical withholding framework (left) allows a hypothetical company to increase its threshold by creating multiple market affiliates, according to the Market Monitor. The Monitor's proposal (right) would solve that problem. | *MISO*

Continued on page 16

MISO NEWS

Monitor Again Criticizes MISO's Uninstructed Deviation Rules

By Amanda Durish Cook

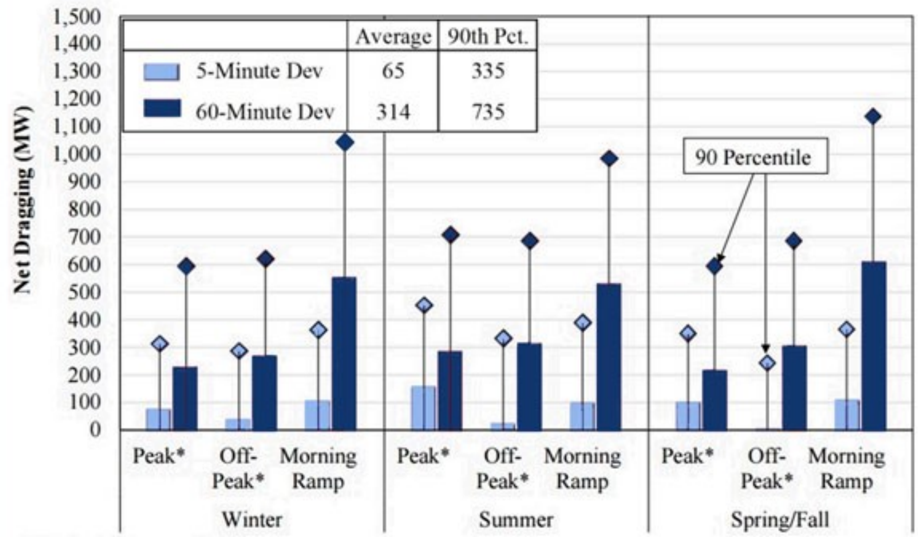
CARMEL, Ind. — Reviving his criticism of MISO's lenient thresholds for uninstructed deviations, the Independent Market Monitor last week presented new data showing the impact of the RTO's rules.

Market Monitor David Patton told the Oct. 4 Market Subcommittee meeting that slow-ramping units have too much flexibility to deviate from their dispatch instructions — so much so that generators can essentially ignore dispatch signals and not be penalized under MISO's rules. Currently, generators are flagged if they deviate more than 8% from dispatch instructions for four consecutive intervals.

Under the current rules, generators drag by an average of 65 MW five minutes after receiving their dispatch instructions, and the drag worsens to an average of 314 MW when extrapolated to an hour, Patton said.

Generators are "basically being held harmless for poor performance," Patton said. "We should not be paying you for refusing to turn on a mill."

Patton has proposed moving to a system based on ramp rate, setting the threshold at half of the unit's ramp capability with a cap of 10% of the dispatch level to limit gaming. The rules would make it so that units that are not responding to instructions after 20 minutes would be flagged.



Uninstructed deviations' effect on net dragging (excludes morning ramping hours). | *Potomac Economics*

"You can be motionless for 20 minutes before you would be flagged for dragging," Patton explained. "You have to fail for three consecutive dispatch intervals before you are flagged for that hour."

Patton also said the proposal would eliminate the incentive to understate a unit's ramp rate. The current 6-MW floor and 30-MW ceiling would remain.

The Monitor's suggestion is not new: It first appeared in his 2012 State of the Market report, and it's been brought up every year since, with Patton expressing disappointment that no progress had been made. (See *MISO Monitor Debates Capacity Rules with Board*.)

Stakeholders countered that it takes a long time to get large, baseload generators running. Operators will sometimes delay starting up units to make sure the dispatch signal is accurate, they said.

Patton responded that the heart of his suggestion is a "tolerance" that would give generators extra time to respond before they are flagged for dragging. But he said he could do more analysis on the reasons

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Resource Adequacy Subcommittee Briefs

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Gas and Electric's Gary Mathis said. He said some were concerned that while implementation was delayed by a planning year, the filing date was only delayed by four months.

"I don't think there's uncertainty around the details. There's disagreement about the details," Bladen said. "It's our conclusion that another month would not bring stakeholder consensus."

Bladen said that MISO was already uncomfortable with the original "compressed" timeline to implement in planning year 2017/18. "The time we have in front of us is actually less than people realize," he said. "We expect FERC to take 120 days to get back with an order. We expect it might well include guidance, maybe a technical conference; it might not. We need time to build the conclusion FERC orders. We have to have our systems up and running in the fourth quarter in 2017 in order to register units."

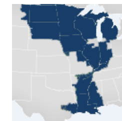
Other stakeholders urged MISO to get language in front of FERC by Nov. 1 as planned.

MISO is also still weighing accelerating the creation of external resource zones in time for the 2017/18 PRA, ahead of the redesign implementation. Harmon said MISO was going to come back at the November meeting with a suggested approach, even though five of nine responding stakeholders were in favor of holding off on external zones until the 2018/19 planning year.

Dynegy's Volpe said MISO not making a decision by October would make a 2017/18 implementation out of the question, though Harmon disagreed. In response to another question from Volpe, Harmon said it was possible that Tariff language would be presented by the next RASC meetings.

— Amanda Durish Cook

MISO News



FERC Rejects MISO's Filing on Reactive Power Compensation

By Amanda Durish Cook

FERC last week rejected MISO's plan for ensuring it terminates reactive power payments when generating units are no longer capable of providing the service or are transferred out of a fleet. FERC said MISO's proposed method wasn't "timely" enough, ordering the RTO to make another compliance filing within 60 days (ER 16-2187 and EL 16-61).

MISO contended its approach was similar to one the commission approved for PJM, which requires a generation owner to either file a revenue requirement adjustment or make an informational filing with FERC. (See *FERC OKs PJM Revisions on Reactive Power Payments*.)

However, while generation retirement and suspension notices are public and made 90 days in advance in PJM, MISO proposed a "generation owner make its filing on or before the date of the change in status for a generation resource."

FERC also said MISO's proposed effective date "on the first day of the month immediately following acceptance of the revenue requirement by the commission" fails to guarantee that the termination date and the last day of revenue requirement align. MISO submitted the Tariff revisions to comply with FERC's June order to show cause that it was not continuing to pay resource owners with deactivated units for reactive service.

In a related order, FERC last week set for hearing and settlement proceedings Illinois Power Generating Co.'s proposal to reduce the reactive power compensation for its coal-fired plant Newton Power Station in southeastern Illinois from $1.6 million to about $821,000 effective Sept. 15, 2016, when the plant's Unit 2 was scheduled to deactivate (ER16-2422 and EL 16-119).

FERC said further decreases could be warranted because the company, a unit of Dynegy, did not provide capability reports or cost information on the remaining equipment that will continue to provide reactive service at the plant. Dynegy announced the shutdown in May.

Monitor Again Criticizes MISO's Uninstructed Deviation Rules

Continued from page 16

behind start delays.

The Monitor also said his team continues to investigate wind resources, which have larger deviations than any other resource type. "We think there may be economic incentives to over-forecast wind, and wind resources may be deliberately over-forecasting to MISO," Patton said.

Chad Koch, market strategist for WEC Energy Group, said Patton's proposal may hurt "fast-moving, accurate machines." While "big resources move slowly and wind resources are up to the whims of Mother Nature, they should not get free rein," Koch said.

MISO said an analysis against historical real-time data is needed to understand the impacts of the Monitor's recommendation before it is adopted. In late spring, the RTO said the scope of the project had delayed its target for implementation to next year. (See "Changes to Uninstructed Deviation Thresholds Longer than Anticipated," *MISO Market Subcommittee Briefs*.)

MISO's John Weissenborn said staff would come back to the Nov. 29 Market Subcommittee meeting with its own proposal. Threshold changes, Weissenborn said, would most likely go into effect by the middle of the second quarter.

PJM News

Generator Notification Plan Gets Mixed Review

By Rory D. Sweeney

VALLEY FORGE, Pa. — PJM has found a way to provide generators with the performance assessment hour alerts that owners requested, but it's not going to be easy.

The problem is how to get the PAH alerts from PJM's emergency procedures channel to the Inter-Control Center Communication Protocol (ICCP) and Distributed Network Protocol channels that unit operators say they monitor with far more frequency. The process would translate the emergency procedure signal into a yes or no signal for each resource.

"We can do it. It's not the prettiest thing," PJM's Rebecca Stadelmeyer told the Operating Committee last week. "This is not an easy plug and play. This is a lot of systems actually talking together, even though it sounds like it's just a simple output. To get there is going to take us some time and some money."

The minimum estimate of eight months and $150,000 is expected to increase as outside vendors are contracted and PJM staff are redeployed from other major projects, she said. The cost of the changes means that other projects that were already planned may be delayed.

There may be additional costs for generators to make updates to properly receive the signals.

Brock Ondayko of American Electric Power pointed out that PJM has had since at least April to integrate this request into its budgets and avoid any interference with other projects. (See "PJM Considering Notification of Performance Assessment Hours," *PJM Markets & Reliability and Members Committees Briefs*.)

"Maybe there needs to be a better mechanism to describe things that stakeholders are asking for to be considered in the budget for the following year," he said.

All generating units above 100 MW have ICCP access to receive the upgraded signals, PJM confirmed. Those without the feeds will only be able to receive PAH alerts through the emergency procedures channel.

The RTO must map every resource to each region, transmission owner zone and subzone. Stadelmeyer warned that units won't be excused from nonperformance penalties that arise from incorrect mapping or "broken signals" stemming from owners' failure to make changes needed to receive the signals.

PJM's request for feedback on whether to move forward with the plan failed to muster much enthusiasm, even with committee chair Mike Bryson twice stepping in to solicit comments. Finally, Sharon Midgley of Exelon said her company is "very much interested" in the project being completed despite the complications. Jim Benchek of FirstEnergy also offered support, but he cautioned that "the devil's in the details" on the project's cost-benefit ratio.

The development of the project will likely be tracked through PJM's new Tech Change Forum, Bryson said.

PJM Considering Tougher Regulation Performance Requirement

By Rory D. Sweeney

VALLEY FORGE, Pa. — PJM is considering a significant increase in the performance participation threshold for participants in its regulation market.

The current minimum participation threshold of 40% may be increased to 75%, RTO officials told the Operating Committee meeting last week. Each unit is evaluated for participation based on its average scoring over the past 100 hours of regulation service on three components: precision, accuracy and delay.

American Electric Power's Brock Ondayko said increasing the participation thresholds could have a major impact on the number of megawatts available to respond, noting that steam units, which make up the vast majority of RegA participants, average a 75% performance score.

As part of a quarterly report on regulation performance, PJM's Eric Hsia provided a graph of participants' average performance and frequency of participation. The results provided a stark contrast between participation in RegD — a dynamic regulation signal meant to stabilize constant frequency deviations — and RegA, a signal that is sent every four seconds.

Regulation-capable units that accept the

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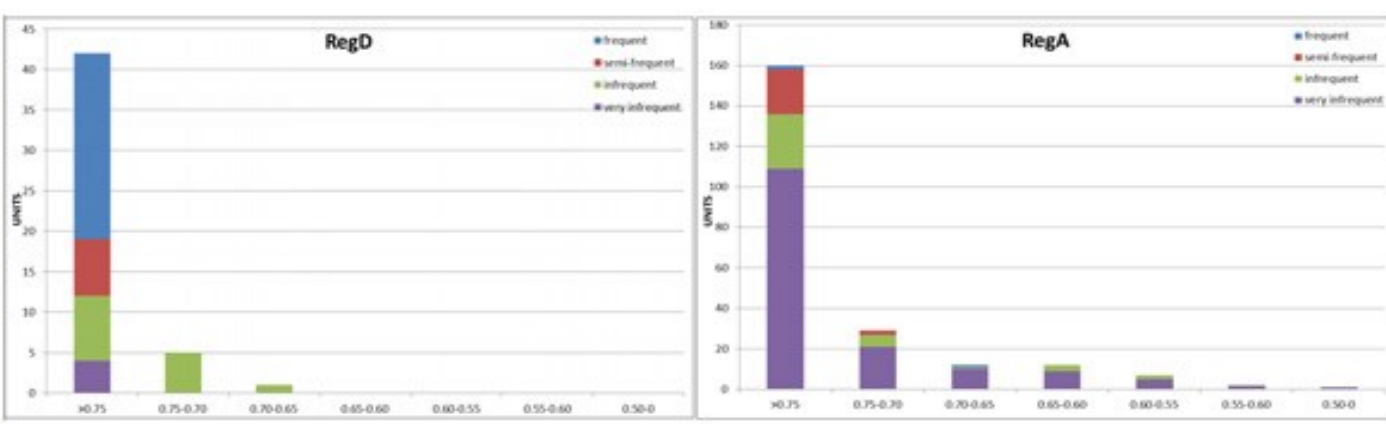

Current performance score distribution | *PJM*

PJM News

CAPS Leader Looking to Pass the Torch

By Rory D. Sweeney

It's been three years since Dan Griffiths became the first executive director of the Consumer Advocates of the PJM States.

Now he's ready to hand the reins to someone else.

Griffiths describes himself as "a startup guy," which served the nascent CAPS organization well when it was all just ideas. The concept of a single voice for all of the state consumer advocates within PJM's territory had been around for some time — Griffiths himself had started thinking about it in the early 2000s — but the opportunity didn't materialize until 2012 when FERC, in a market manipulation settlement with Constellation Energy, ordered that $6 million in fines should benefit PJM consumers.

Griffiths, who had been representing demand response provider Comverge at PJM after seven years in the Pennsylvania Office of Consumer Advocate and 18 years at the state's Public Utility Commission, emerged from the hiring search. (See Consumer Advocates Name Director.)

"They had the money, but … they didn't have the structure," he said. "I've always enjoyed the creative anxiety that makes me perform well in startups. … There's a lot of problems to solve and there's not a lot of structure."

Well, the structure is now there. Protocols, policies, procedures — they're all in place.

Griffiths was able in April to get the members to convene and decide how the organization should be run.

The members developed policies for prioritizing the issues the group will pursue. Members also identified a need for a conflict of interest policy and made improvements to bylaws, financial policies and reimbursement policies, Griffiths said. The updates are scheduled to be approved at CAPS' next board meeting, he said.

Pleased with the progress, he realized that he had reached the extent of his usefulness to the organization, he said. "The organization was coming together in the right way, and I could step away without feeling like I was leaving gaps," he said. "It's been great personally; it's been great professionally; and it's time for me to get the right person in here."

He plans to find his successor and retire by the end of the year.

Rather than someone who can build something from nothing, CAPS' next executive director should be a strong administrator, Griffiths said. Because most consumer advocates are attorneys and have the legal aspects covered, candidates don't necessarily have to be lawyers, he said. Engineers and policy experts stand just as good a chance at being the right fit.

"We're looking for somebody from the RTO space, hoping to find somebody with some consumer perspective," he said. "If we get somebody who's been in the stakeholder process, they will know the policy map" and won't have too steep of a learning curve.

Luckily, the successful applicant will soon have help. Space has been carved out in the budget for the new executive director to also hire an administrative assistant, Griffiths said.

In March, FERC approved PJM's creation of a funding mechanism to support CAPS through a charge to residential electric customers. Beginning next year, CAPS will receive an initial annual budget of $450,000. FERC approval would be needed for any budget increase of more than 7.5%. (See FERC Approves PJM Funding of Consumer Advocates.)

Application details are available for download on CAPS' website.

PJM Considering Tougher Regulation Performance Requirement

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offered price for participation are expected to align their output with the signals they receive from PJM. The RTO's data show that, while there is far more participation in RegA, participants in RegD participate far more often.

Responses Hard to Predict

PJM said it is seeing wide variability in primary frequency response between evaluated frequency events, with many generators either not responding, withdrawing responses or responding in the opposite direction — decreasing output, for example, when frequency declines. Additionally, a "significant portion" of primary frequency response is coming from load, which can't be predicted or controlled, PJM's Danielle Croop said.

It's a "roll of the dice" every time to see what's going to happen, she said. Croop presented several graphs of units' responses to recent frequency response events that showed the units either not responding, stopping their response, not providing sustained response or responding in the opposite direction.

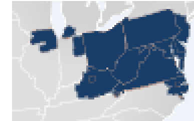
One potential cause of the erratic performance is that a unit's "operating control mode" is following some other indicator and not in droop mode allowing them to respond to frequency deviations, she said. Units that don't respond at all might be operating in modes or with governor settings, that don't allow for response — or have their governors turned off altogether, she added.

About 69% of frequency response in 2016 has come from coal-fired units, Croop said. In response to a question from Ondayko, she speculated that the participation level of natural-gas-fired units at just 19% was likely due to three factors:

- Units must be on the grid to provide frequency regulation, so fast-response natural gas units that run sporadically often won't have an opportunity to get involved;
- Control systems might be "squelching" or preventing the response; or
- Units might be operating so close to their maximum capacity that they don't have much room to adjust.

Units that are providing regulation are not expected to also provide primary frequency response, Croop said, and so aren't calculated into PJM's expected performance.

PJM News



Operating Committee Briefs

PJM, NYISO Release Joint Whitepaper on 'Wheel' Replacement

PJM and NYISO released last week their joint whitepaper on replacing the Con Ed-PSEG "wheel," which will end May 1. The paper outlines the grid operators' joint proposal, which would create scheduled, fixed flows over the interconnections based on a predetermined protocol. (See *Analysis Recommends Continuing Reduced Con Ed-PSEG 'Wheel' for Grid Stability*.)

The proposed protocol — which would continue on a smaller scale than the New York-PJM-New York flows of the wheel — has attracted criticism from stakeholders, which continued at last week's PJM committee meetings. The influence and resiliency of phase angle regulators received some scrutiny from Citigroup Energy's Barry Trayers at the Operating Committee meeting.

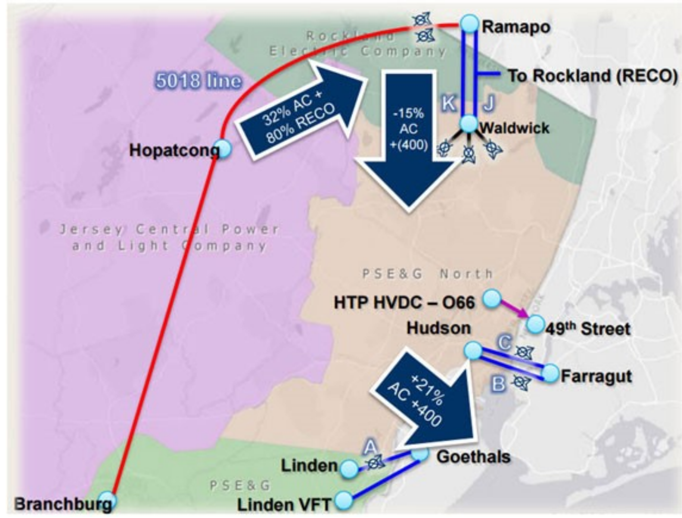
"In a way you can kind of be picking winners and losers by adjusting [their] flows," he said, asking how they had been factored into the grid operators' guidelines for developing the replacement protocol.

"We consider PAR moves just like switching: a non-cost move that we'll do prior to redispatching generation," PJM's Mike Bryson explained. "If we start running up against some of the either daily or monthly PAR adjustments, we're going to have to take a step back and say, 'Are we moving them too often? What's the impact?'"

One challenge for the new protocol: One of the PARs on the 5018 line at Consolidated Edison's Ramapo facility is not functional, which limits the ability to export power to NYISO. The grid operators have identified 1,800 MW as the maximum that needs to be available for export to NYISO, but the nonfunctional PAR limits PJM's export capability to 1,400 MW.

While the future of Con Ed's PAR has received a lot of discussion from other stakeholders, PJM has not received any details on when or if it will be fixed. One plan under review is to compensate by adjusting flows on the western interconnections across the Pennsylvania-New York border.

PJM and NYISO are currently working on updates to their joint operating agreement, which PJM will present upon completion for stakeholder review. NYISO plans to begin its stakeholder approval process at the end of October and complete it by January, which would allow the grid operators to make a joint filing to FERC later that month.



Proposed future wheel protocol | *PJM*

Stakeholders Urged to Submit Unit-Specific Parameter Adjustments

Generation unit operators have until Feb. 28 to submit adjustments to their unit-specific parameters, but PJM is urging them to begin the process as soon as possible because it can take several weeks.

PJM is aiming to have the status of delivery year 2017/18 adjustment requests posted by April 15. Parameters will be implemented in June. Any adjustments that are already approved remain valid, PJM's Alpa Jani said, and don't require resubmittal. Requests will receive a case identification number, with which requesters will be able to look up their current status through the RTO's online member portal.

eDART Improvements Will Slow in Anticipation of Overhaul

PJM's eDART system is getting an overhaul to incorporate new functionality, including single sign-on. To allow staff the time necessary to develop the new system, refreshes of the current system will be reduced to only those that are operationally necessary.

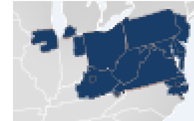
What won't be changing are the business rules, the system interfaces or email notifications, said PJM's Chidi Ike-Egbuonu. "One thing we can agree on is that it's going to be a multiyear project; it's not going to happen overnight," she said.

PJM Moving Flat-File Data to Data-Management Tool

Raw data files are becoming too cumbersome and are being retired in favor of access through PJM's Data Miner 2 tool, the RTO's Thomas Zadlo explained. The tool will allow access to all data that is currently being stored on flat files, including five-minute settlements. Progress on the transition will be shared with stakeholders through PJM's new Tech Change Forum.

— Rory D. Sweeney

PJM NEWS



MIC Briefs

Stakeholders Approve Last-Minute PJM-IMM Operating Parameters Collaboration

VALLEY FORGE, Pa. — After months of debate on proposed definitions for operating parameters, PJM and the Independent Market Monitor rankled some Market Implementation Committee members last week by introducing an unexpected, last-minute compromise package that included one key change but largely maintained the status quo.

The proposal leaves many of the definitions untouched, except for minimum runtime and soak time. The endorsed definition of minimum runtime replaces a unit's "breaker closure" with simply when a unit is "dispatchable" as the starting point. It also "un-nests" soak time from minimum runtime, differentiating it as its own parameter.

"We think it's a big step forward," Monitor Joe Bowring said.

Several stakeholders said they wouldn't have enough time to give the proposal a reasonable review that day, but a seconded motion to vote on the issue forced them to act. The vote, which was planned for the morning session, was delayed until the afternoon to provide extra time.

It was enough: The joint package received support from 75% of stakeholders — far exceeding competing proposals. It also won more than 60% support in a head-to-head vote against the status quo, meaning it will be forwarded to the Markets and Reliability Committee. (See "Members Hear First Read on Plan to 'Un-Nest' Operating Parameters," *PJM Market Implementation Committee Briefs*.)

The last-minute proposal by PJM and the Monitor caused several stakeholders to question the functionality of the stakeholder process. "Do we just not care about the stakeholder process anymore?" Ed Tatum of American Municipal Power asked during the initial discussion. "What's the idea of bringing something that no one's been able to look at?"

After the vote, PJM's Dave Anders thanked the members "for working through the issue." He acknowledged their frustration, but he said this was an example of "the stakeholder process actually working."

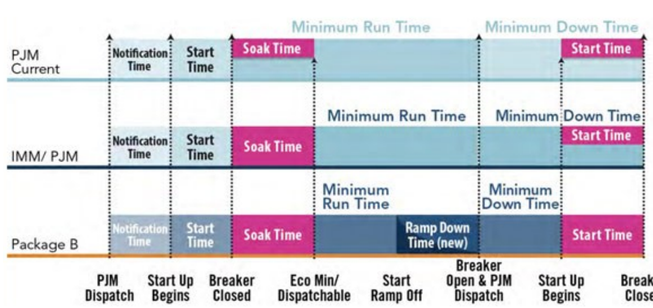
He invited members who have thoughts on reforming the process to attend the Stakeholder Process Forum Oct. 24.

Stakeholders Debate ARR Changes

In response to a problem statement approved earlier this year, PJM has begun revisiting its procedures for allocating residual auction revenue rights and hopes to file a solution with FERC on Dec. 31.

Exelon and Direct Energy issued a proposal last week for reducing potential revenue fluctuations under the current allocation. Their proposal would eliminate any residual ARR paths that could receive negative values based on monthly financial transmission rights clearing prices. PJM would then rerun the simultaneous feasibility test before allocating residual ARR megawatts for the month.

PJM's proposal would give stakeholders the opportunity to opt out of allocations on a path-by-path basis. Sharon Midgley of Exelon said both proposals solve the issue but differ on the approach taken to address the current forced allocation of negative paths to customers. The Exelon/Direct Energy package puts an additional administrative requirement on PJM, while the RTO's proposal places new analytical requirements on load-serving entities.



Operating parameter packages | *PJM*

PJM's Asanga Perera explained that the stakeholder proposal puts a heavy burden on PJM staff to process the data for negative pathways within a few days to have the results back to stakeholders in time for the next round of ARRs. He said it creates the potential for PJM to miss a deadline and leave stakeholders without the information necessary to identify negative pathways.

He pointed out that the process for stakeholders under PJM's plan uses what they already do for the annual ARR process.

However, several stakeholders criticized PJM's plan, saying their companies don't have the staff to analyze the thousands of potential pathways each month. "I think PJM's proposal with the burden placed on the stakeholders, that would be too overwhelming," said a stakeholder who asked not to be identified. "It would give an advantage to the stakeholders that have the staff and the resources available to do that."

PJM Looks to Revise Shortage Pricing Procedures

PJM's Adam Keech presented a shortage pricing proposal to avoid potential volatility posed by implementation of FERC Order 825 (RM15-24).

Under the order's transient shortage pricing rules, even brief shortages will trigger the maximum penalty factor, which could cause volatility as market participants attempt to respond. (See *FERC Issues 1st RTO Price Formation Reforms*.)

PJM's proposal would create steps below the maximum penalty factor based on historical performance so that the maximum penalty does not apply until the reserve is down to the largest single resource's actual output as opposed to its economic maximum. The measurement would change every five minutes.

Keech noted that in the past 21 months, PJM has observed 845 instances where, under the rules in Order 825, reserve prices would have hit the maximum $850/MWh penalty factor in the Mid-Atlantic and Dominion regions. He hadn't analyzed the data enough to explain why 759 of them were in 2015 compared with 86 in 2016.

Attachment Q Modified; Credit Requirements Unaffected

Stakeholders endorsed by acclimation changes to PJM's credit policy. The revisions to Attachment Q of the Tariff reorganize provisions and make five minor changes to them, none of which affect credit require-

Continued on page 22

PJM News

Planning Committee Briefs

PJM to Implement FERC-Approved Standards on GMDs

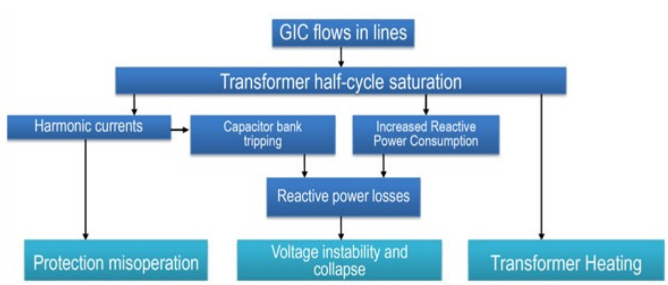
PJM last week laid out a timeline for compliance with the geomagnetic disturbance reliability standard approved by FERC in September. (See *FERC Approves GMD Reliability Standard*.)

The RTO told the Planning Committee it will be required to perform a network vulnerability analysis, and owners of 200-kV and larger transformers must perform transformer heating analyses. As of Jan. 1, stakeholders will have six months to establish roles and responsibilities. Within 18 months, they'll have to provide models to accomplish the analyses. FERC has allowed up to five years to complete the remainder of the implementation plan.

"We're not stuck with a blank sheet of paper here," PJM's Frank Koza said. "We did a lot of this work in 2014 with all of your cooperation, so we're pretty far down the road in terms of understanding what needs to be done. We will need to do more in terms of gathering better data for doing the study again, but we're on our way."

Among the changes FERC required for the standard is public disclosure of all geomagnetically induced current detector and magnetometer data. Within the PJM region, 47 such devices are in use.

"The science here is not fully done on GMD, so what's going to be done here is additional research," Koza said.



Potential GMD impacts on the transmission network | *PJM*

Members OK Revised Relay Subcommittee Charter

Members approved an update to the Relay Subcommittee's charter, which was last amended in 2012.

More Granularity Requested on Winter Reserve Targets

Stakeholders approved PJM's installed reserve margin study results and recommendations, but they asked the RTO to be more specific with its weekly reserve targets for winter.

The 27% winter reserve target, which is identical to last year, was produced using an average for the entire winter. But the margin needed to meet the one-day-in-10-years loss-of-load expectation ranged as low as 22% in December and peaked at almost 39% for the first week in January.

Stakeholders asked if PJM would switch from a season-long average to monthly ones.

"That's something that PJM would like to assess internally," PJM's Tom Falin said. "I think it's going to depend on how confident PJM is that the winter peak will happen in January. It doesn't always."

PJM to Retire Manual 35

With staff focused on maintaining PJM's online glossary, the definitions in Manual 35 haven't been updated in years, explained Janell Fabiano, senior stakeholder process facilitator. That, combined with definitions available in several other outlets, have led PJM to decide to eliminate the manual.

Though the news didn't generate substantial discussion, it did engender mild protests from some stakeholders. Ed Tatum of AMP and Jim Benchek of FirstEnergy joked about making "Save Manual 35" T-shirts.

Dominion Retiring Bath County Thermal SPS

A special protection scheme used to minimize N-1 overloads and allow for a higher pond level at a pumped storage facility is no longer needed thanks to a number of regional system upgrades.

Dominion Resources plans to retire the Bath County thermal SPS by Dec. 1, but it says the stability SPS there will remain in place.

— Rory D. Sweeney

MIC Briefs

Continued from page 21

ments, according to PJM's Harold Loomis.

The changes also specify that collateral may not be encumbered or restricted and provide PJM "reasonable time" to investigate breaches of credit requirements before implementing remedies, ensuring the RTO's action is not foreclosed if it does not act immediately.

The revised attachment also replaces a section on peak market activity (PMA) collateral requirements with one specifying PMA credit requirements.

'Working Groups' Removed from MIC Charter

Stakeholders endorsed edits to the MIC charter that removed references to "working groups," as they no longer exist. Working groups were eliminated as part of a larger reorganization of the stakeholder process starting in 2009 that standardized the purposes for and creation of task forces and subcommittees.

Stakeholders Develop Interest List for Black Start Requirements

PJM is soliciting stakeholder feedback on the priorities that should be considered in developing annual revenue requirements for new black start units. The current interest identification includes 13 concerns, including that the Monitor calculate revenue within six months of units entering black start service.

Bowring said the calculations can't be made without explicit documentation to support "every penny of requested revenue changes" and that documentation must be submitted in a timely fashion. Members asked Bowring to specify what documentation is required.

— Rory D. Sweeney

SPP NEWS

Exit Study Task Force Begins Lubbock Power & Light Work

SPP's Exit Study Task Force, formed to provide technical support and advice regarding Lubbock Power & Light's move to ERCOT, conducted its first meeting last week.

The Public Utility Commission of Texas asked SPP and ERCOT to work together to study the implications of LP&L's plans to migrate 430 MW of its load from SPP to ERCOT in June 2019. (See *Texas PUC OKs ERCOT, SPP Studies on Lubbock Move*.)

One issue is who will pay for the studies. PUC Chair Donna Nelson has said the burden shouldn't fall on ERCOT ratepayers, suggesting during a Sept. 22 meeting LP&L should either fund the work or that the issue should be open "pending the outcome of the studies."

"'Depending on the outcome' … I don't know what that means," said LP&L legal counsel Chris Brewster during the task force's first meeting Friday.

Oklahoma Gas & Electric's Jake Langthorn, the group's chair, told the group the study costs will become clear once the scope and schedule are developed. SPP staff will begin its assessment by using its normal base cases from its near-term and 10-year studies.

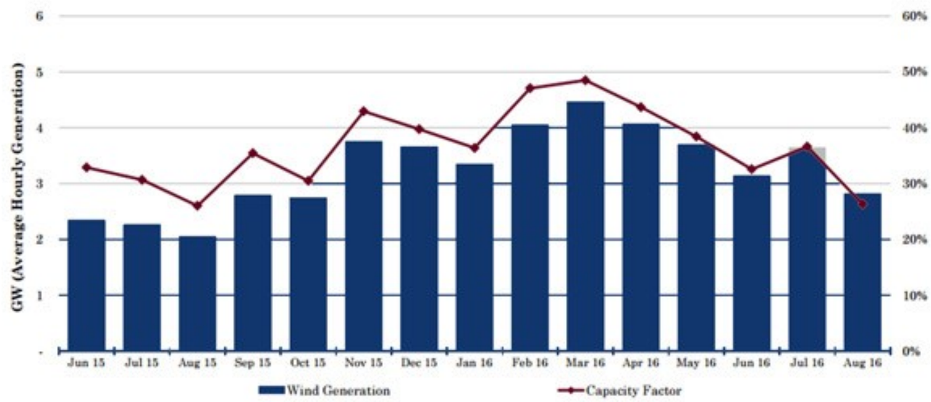
"We'll evaluate the system with Lubbock in SPP and without. In each case, we'll evaluate the system against SPP planning criteria and NERC criteria to see whether we're outside the acceptable ranges," said Antoine Lucas, SPP's director of transmission planning. He said the study will seek to identify any new transmission projects needed — or planned projects that can be deferred — as a result of Lubbock's move.

LP&L representatives pushed SPP, which has targeted an April completion date, to accelerate its timeline.

ERCOT has said it will complete its assessment by the end of the year.

SPP says its existing planning workload will keep it from completing its work by the end of the year as ERCOT has promised.

"Having said that, we're expecting it's more than 90% in place right now," said Lanny Nickell, SPP's engineering vice president. "Once we put the schedule together, we can identify when we need it 100% finalized."



SPP real-time wind generation and capacity factor | *SPP*

SPP staff said it is meeting with ERCOT staff next week to review all questions posed by LP&L.

The task force is composed of four members of the Strategic Planning Committee and two each from the Transmission and Economic Studies working groups.

Wind, Coal Generation Continue to Rise, Fall

Wind energy continues to rise in the SPP footprint and coal-fired generation continues to drop, according to the Market Monitoring Unit's State of the Market report for this past summer.

The MMU said wind generation accounted for more than 12% of all energy produced in 2016, compared with 10% in 2015 and 9% in 2014. At the same time, coal generation's share dropped to 51%, down from 62% in 2014.

Natural gas prices rose from this spring's record low levels, the MMU said. The average price at the Panhandle Hub was \$2.51/MMBtu this summer, compared with \$2.60/MMBtu in 2015 and \$4.00/MMBtu in 2014.

The "wind alley" of the Texas panhandle, western Oklahoma and western Kansas continues to experience most of the SPP footprint's congestion. However, the MMU said, congestion has increased in southeast Kansas and parts of Arkansas, which it attributed to higher summer loads and planned generation and transmission outages.

SPP, MISO Shared Joint Study Needs List

SPP staff told the Seams Steering Committee last week it has made available to stakeholders the final needs list for the 2016 Coordinated System Plan study with MISO and is asking for solutions by Nov. 30. Four of the needs were identified by both RTOs and three were cited by SPP. (See *MISO-SPP Study Scope Finalized; Stakeholders Doubtful Projects will Result*.)

Staff will review the submittals and share them at their next Interregional Planning Stakeholder Advisory Committee meeting.

SPP staff said a joint model is being developed, but it will likely have differences with each RTO's regional models, and that some of the identified regional needs may not show up in the model.

Separately, SPP and Associated Electric Cooperative Inc. have developed models and assessed the needs for the target areas, posting them to allow stakeholders to submit solutions. The two organizations requested input be submitted by Nov. 7.

SPP Interregional Coordinator Adam Bell told the committee the Northeast Oklahoma target area will no longer be evaluated in the SPP-AECI joint study because of a change of power suppliers in the region. He said the change "resulted in there no longer being potential needs observed on both sides of the SPP-AECI seam."

— Tom Kleckner

FERC News

Judge Orders FERC to Pay Gates Brothers' Attorney's Fees in FOIA Dispute

By Ted Caddell

FERC has been ordered to pay attorney's fees for stonewalling an energy trading company's request for documents under the Freedom of Information Act.

While the award — $60,168 — was not huge, the fact that a U.S. District Court judge ruled against FERC was unusual.

Kevin and Rich Gates, acting as principals of the energy trading company STS Energy Partners, filed FOIA requests seeking documents related to investigations by FERC's Office of Enforcement into two other energy trading companies, Oceanside Energy and Black Oak Energy.

The Gates brothers, who have been involved in a very public battle with FERC over market manipulation allegations against one of their other companies, Powhatan Energy Fund, said in filings that they wanted the documents "to shine light on FERC's recent and punitive efforts against small power market traders for engaging in legal and ubiquitous activity."

They have accused FERC of withholding information before. (See *Gates, Powhatan Say FERC Enforcers Didn't Share Crucial Info*.)

FERC eventually produced the information STS had asked for, but the two sides couldn't agree on the attorney's fees issue, and it was argued in D.C. District Court.

In his Oct. 5 ruling, Judge John D. Bates noted that the award of legal fees can serve two purposes: encouraging FOIA suits that benefit the public, and compensating plaintiffs for "enduring an agency's unreasonable obduracy in refusing to comply" with FOIA requirements.

Bates noted that "FERC did show some recalcitrance and at least 'appeared' to 'withhold' the segregable portions of requested documents merely to avoid embarrassment or frustrate the requester."

The commission initially issued "blanket denials" for the 41 documents related to the Oceanside investigation and the 294 records identified in the Black Oak case, Bates noted.

FERC released several documents after STS filed suit over the denial, and it released all or parts of 115 documents after the court denied the agency's summary judgment motion. The commission reached a settlement with the company over the remaining documents in May 2015.

Bates said the agency's contention that the requested information could not be culled out, or "segregated," was not a "reasonable basis in law."

"Nor can FERC prevail on the reasonable basis factor by deciding to release the documents only after forcing the requester to sue," he wrote.

Last year, FERC ordered the Gates brothers and their associates to pay $34.5 million in penalties and disgorged profits in the Powhatan case. (See *FERC Orders Gates, Powhatan to Pay $34.5 Million; Next Stop, Federal Court?*)

The brothers have asked the U.S. District Court for the Eastern District of Virginia to allow it to defend itself against FERC's allegations in a jury trial (3:15-CV-00452-MHL).

Energy Bar Association Mid-Year Energy Forum

EBA Speakers Recall Overcoming Racial, Gender Bias; Decry 2016 Election Rhetoric

By Rich Heidorn Jr.

From left to right, FERC Acting Chief Administrative Law Judge Carmen Cintron, FERC Commissioner Cheryl LaFleur, former Texas regulator Robert Gee, former FERC Commissioner Vicky Bailey and moderator Emma Hand, president of the Energy Bar Association. | © *RTO Insider*

WASHINGTON — The Energy Bar Association opened its conference last week with four present and former regulators discussing their career challenges as women and minorities. Although the speakers' recollections dated back decades, they said the issues they confronted remain salient today.

Former Texas regulator Robert W. Gee recalled how he moved to D.C. to find work after being told he wouldn't be hired by major law firms in Houston because he was Asian American.

Although he found Washington "more hospitable," he was nevertheless told in an interview at one federal agency that if he were hired, "'we're going to have to keep an eye on you because we hired [a minority] in the past and she didn't work out.'"

Overachieving

The "difficulty getting that first job has always been with me," he said. "It's sort of like the fear factor that drives you. You have to prove to people that you're better than the next person."

Puerto Rico native Carmen Cintron, FERC's acting chief administrative law judge, felt a similar need to overachieve. As a woman and a Latina, she said, she had "two strikes" against her when started her career at the Federal Communications Commission.

"I still work 24/7. And I work when I'm on vacation. And I think that was because I had to prove, more so than anybody else, that I can do the work and complete the assignments in a timely fashion," she said.

Former FERC Commissioner Vicky A. Bailey recalled being bused to her high school during the integration of schools in Indianapolis. She praised the "courage" of former Indiana Gov. Robert D. Orr for appointing her to the state Utility Regulatory Commission, where she was the second female and first African American appointee.

FERC Commissioner Cheryl LaFleur, the first in her family to attend college, cited a high school classics teacher and former New England Electric System CEO John Rowe for mentoring and sponsoring her. Although she was not immune to sexism — she recalled seeing "girlie" pinups in a utility locker room — she said her most difficult time came in her 30s when she was trying to raise two young children as a working mother. While other people talked of their five-year plan, she said, her concern was, "How do I get to Friday?"

Divisive Campaign Rhetoric

Although each of the speakers' stories was one of triumph, the issues they confronted remain — as evidenced, they said, by the rhetoric in the 2016 presidential race.

The issue was raised by a questioner from the audience, who said the campaign's rhetoric was reminiscent of 1930s Germany.

Although no one mentioned him by name, it was clear the questioner, and the speakers on the dais, were thinking of Republican presidential nominee Donald Trump.

LaFleur responded by recalling her regret over not challenging a client's anti-Semitic remarks at a dinner to celebrate a legal victory 40 years ago.

She said she finds "very troubling … what our public discourse has come to [concerning] people who are different than we are."

"In your own life, I think it's important to have the courage to speak up if somebody says something that's inappropriate no matter how difficult and awkward it is to say 'We don't do that,'" she said.

Gee also responded.

"If we let this type of rhetoric divide us, we will become another Weimar Germany. We could become that," he said. "There are people who would like to see that happen. We cannot allow that to happen."

Bailey, now a Republican, grew up a Democrat, the daughter of a domestic worker.

"It has been hurtful to hear some of the divisive rhetoric that has been spewn across the TV," she said. "I am now an African American who happens to be a Republican. I'm waiting for someone in leadership to stand up and say, 'This is not what we're about.'"

"'We're going to have to keep an eye on you because we hired [a minority] in the past and she didn't work out.'"

Robert W. Gee, recalling a job interview

Energy Bar Association Mid-Year Energy Forum

EBA Panel Debates Net Metering, Distributed vs. Utility-Scale Solar

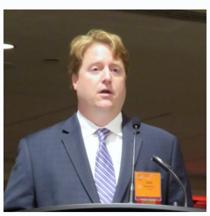
By Rich Heidorn Jr.

WASHINGTON — "Pernicious subsidy" or "rough justice"?

Audience members got to decide for themselves how to characterize net metering for rooftop solar generation during a debate at the Energy Bar Association's Mid-Year Energy Forum last week.

Richard L. Roberts, head of the electric group at Steptoe & Johnson, said it's unfair that rooftop solar owners are paid retail prices as high as $0.13/kWh for the power they inject into the grid while central station generators are paid wholesale rates of about $0.04/kWh.

As a result, a customer whose solar panels generate energy equal to their consumption for the month "pays nothing for their electric service. They pay nothing for the reserves that they've been given. They pay nothing for transmission. They pay nothing for distribution. They pay nothing for public purpose programs, all of which go into retail service."



Scott Hennessey, SolarCity's regulatory counsel and vice president of policy and electricity markets, responded by citing a Sept. 30 ruling by the Massachusetts Department of Public Utilities last week that he said found rooftop solar provided more benefits than costs to the state's grid. (See related story, *Mass. Regulators Reject DER Surcharge in Rate Case*, p.1.)

He dismissed as a "common trope" the notion that rooftop solar is only for the "wealthy and well meaning." The introduction of smart inverters allows rooftop solar to provide voltage support and other services to the grid, he said, while the introduction of financing options makes it available to the middle class.

Also participating in the discussion — though not staking a position on either extreme — was Mark Glick, administrator for the State Energy Office in Hawaii, a state that has provided a cautionary tale for regulators as generous subsidies have threatened to overwhelm the islands' grids with solar generation.

Utility-Scale vs. Distributed Solar

The session, moderated by Caileen Gamache of Chadbourne & Parke and Matthew R. Rudolphi of Duncan, Weinberg, Genzer & Pembroke, also touched on the virtues of distributed versus centralized solar generation.

"The question of whether or not [rooftop solar is] harmful to the grid or harmful to the average consumer I would turn around," Hennessey said. "When you have infrastructure purchased by a utility and then spread across the entire rate base — with a fat profit, by the way, for the utility — that is a choice made decades in advance — and I think we've seen now, not always with the best of foresight," he said. "Whereas when you have solar and the other distributed energy resources I've mentioned, that's private investment in infrastructure that then benefits everyone around, with less peaking generation required."

Hennessy said utilities that want to develop large-scale solar should be required to use a nonutility business unit rather than competing with other developers by using the utility's low cost of capital and other advantages.

"What we've found is that every time they have tried that they have failed and they've had to close up shop, as [Arizona Public Service] did in Arizona."

Jurisdictional 'Mess'

Roberts said the Supreme Court's *FERC v. Electric Power Supply Association* ruling, which preserved FERC's right to regulate demand response, left a "jurisdictional mess" because the commission has no authority over net metering sales. Such sales should be a FERC-regulated wholesale sale under the Public Utility Regulatory Policies Act (PURPA), he said.

Roberts also cited studies showing utility-scale solar is two to three times more efficient than rooftop solar.

The rush to distributed generation could repeat the kind of mistakes California regulators made with the first retail choice program in the 1990s, which resulted in overpayments to qualifying facilities under PURPA and politicized integrated resource processes, he said.

"The goal of grid modernization should be to allow — without preferences or without predetermining who's the winner and who's the loser — equal access to all of these forms of technology to compete against each other and then wait and see where the next innovations come from," he said.

"Nobody knows what the next big technological breakthrough is going to be. It might be large-scale generation, and if we've skewed our investments in the grid toward microgrid or small-scale [generation], we could find ourselves once again looking at investments and wondering why we did that."

Hawaii's Glick said "there's no doubt" that utility-scale solar is cheaper than distributed resources. "But ultimately that will change and we have to allow the market to develop while that change occurs," he said.

Left to right: Hennessey, Glick and Roberts | © *RTO Insider*

Energy Bar Association Mid-Year Energy Forum

EBA Speakers Ponder a Western RTO as Seattle City Light Moves to Join EIM

By Rich Heidorn Jr.

Left to right: Cromwell, Weisgall, Baskerville, Jaffe and Schneider | © *RTO Insider*

WASHINGTON — Seattle officials Monday deferred action on a proposal by the city-owned utility to join the Western Energy Imbalance Market. Seattle City Light could become the sixth utility to join the CAISO-run EIM, following recent additions Arizona Public Service and Puget Sound Energy, which began EIM operations Oct. 1, and Portland General Electric, which is scheduled to join in 2017. (See related story, *Smooth EIM Transition for Arizona Public Service, Puget Sound Energy*, p.3.)

An official of the Seattle utility joined several other Western energy leaders at the Energy Bar Association's Mid-Year Energy Forum last week to discuss the growth of the EIM, "Caliphopia" and how the Western Interconnection is likely to change.

To Robert W. Cromwell Jr., director of regional affairs and contracts for Seattle City Light, the math of joining the EIM is a no-brainer. Cromwell said it will cost the city $8.8 million to join the EIM and $2.8 million a year in operating costs. The payoff? An estimated $4 million to $23 million in annual savings through arbitrage opportunities by "capturing low prices to serve load [and] high prices to sell surplus energy."

Cromwell said the utility differs from other public power companies because its large hydropower facilities on the Skagit and Pend Oreille rivers "force us to sell into the market."

He said the utility also is pressured by declining wholesale revenue — a trend likely to worsen as growing wind and solar power create more frequent periods of zero and negative pricing — and declining retail loads. "I've got about 60 tall cranes [constructing] very large buildings in my city and my load went down," he said.

On Monday, the Seattle City Council delayed a vote on the EIM initiative for three weeks. The bill would allow City Light to enter an exploratory phase for joining the EIM, but some council members were concerned about the costs of doing even that.

Jonathan M. Weisgall, vice president of legislative and regulatory affairs for Berkshire Hathaway Energy, also sees the advantages of regionalization as undeniable. Pointing to a map showing the 38 balancing authorities in the Western Interconnection, he joked, "To call this Balkanized is to insult Macedonia."

Bilateral trading with manual dispatch and little situational awareness of other BAs is like using Craigslist, he said. The EIM, he said, is like "Match.com for electrons," with five-minute dispatch, which is more accommodating for renewable generation.

Berkshire Hathaway's NV Energy and PacifiCorp have saved $60 million since joining the EIM — a 20-month information technology project, Weisgall said, that required no new physical infrastructure.

> **"You're trying to marry three incredibly blue states — California, Oregon and Washington — where it's almost a felony to produce coal — with three very red states ..."**
>
> **Jonathan M. Weisgall, Berkshire Hathaway Energy**

'Caliphobia'

Not everyone is rushing to join CAISO's expansion, of course. For some, any sentence containing the words "California" and "energy" sends shivers. It's not just the state's liberalism but also memories of the 2000 energy crisis and Enron, which purchased Portland General Electric before imploding following disclosures of accounting and power trading frauds.

"The Northwest didn't forget. Memories are long up there," said Jonathan D. Schneider, of Stinson Leonard Street, who moderated the discussion.

Weisgall acknowledged that what he called "Caliphobia" is a challenge to a West-wide RTO.

"You're trying to marry three incredibly blue states — California, Oregon and Washington — where it's almost a felony to produce coal — with three very red states — Wyoming, Idaho, Utah — states that do not care about getting to 50% renewables much less ... about greenhouse gas emission programs," he said. "That makes it very, very tough."

"We should not underestimate the challenge of getting there," agreed Kenneth G. Jaffe, a partner with Alston & Bird, who represents CAISO.

"There are a large number of public power brethren in the Northwest who simply will not join a centrally cleared market before they die," agreed Cromwell.

He noted efforts by Xcel Energy and others

Continued on page 28

Energy Bar Association Mid-Year Energy Forum

Coal States Pondering 'Carbon-Considered' Future

By Rich Heidorn Jr.

WASHINGTON — The Supreme Court's stay of the Clean Power Plan has largely ended the progress states were making toward creating regional frameworks for compliance, says Alexandra Dapolito Dunn, executive director of The Environmental Council of States (ECOS).

But even the most coal-dependent states are pondering ways to reduce their carbon footprints, she told a panel discussion at the Energy Bar Association's Mid-Year Energy Forum last week.

"'Carbon-considered' is [the term used by] states that might have at one time been questioning whether or not there was climate change," said Dunn, whose organization represents state environmental officials. "They've come around now.

"I think states will be more open to bringing renewables into their [generation] mix than they may have been before," she explained. "There are companies that are located in very coal-oriented states that are already projecting ahead with their boards of directors and their shareholders to bring in a little bit of renewables, a little wind, a little solar, do some research and development in battery technology. You might not have seen that before."

Allison Wood (left) and Alexandra Dapolito Dunn | © RTO Insider

Two CPP opponents told the EBA forum that even if the EPA rule withstands legal challenges by states and utilities, its implementation will likely be delayed. The D.C. Circuit Court heard arguments on challenges to the rule on Sept. 27. (See *Analysis: No Knock Out Blow for Clean Power Plan Foes in Court Arguments*.)

"The likelihood of this rule being implemented the way it was finalized in August of last year is getting lower all the time," said former EPA General Counsel **Roger Martella Jr.**, of Sidley Austin. If the rule is upheld, he said, its 2030 deadlines could be pushed back to 2032 if the court also "tolls" the deadlines to account for inaction during the stay.

Allison Wood of Hunton & Williams, who argued before the D.C. Circuit on behalf of non-state challengers, agreed. Wood said the postponement of the D.C. Circuit arguments, which had originally been scheduled for June, means no Supreme Court review is likely until its next term, starting October 2017.

Dunn said the stay ended discussions among state officials on the technical issues concerning compliance, such as the development of emission trading programs.

"There were some really fantastic forums … where people were really putting their noses to the grindstone and trying to sort out these technical questions," she said. "I almost wish we were still putting the same level of intensity into sorting out some of these questions that probably will be part of any future … carbon-managed environment."

While some states are continuing their work and renewable generation is continuing to benefit from technological innovation, she said, "People are definitely following their own playbook at this point."

— Rich Heidorn Jr.

EBA Speakers Ponder a Western RTO as Seattle City Light Moves to Join EIM

Continued from page 27

to create a Day 2 market in the Front Range in central Colorado and southeastern Wyoming, which he predicted will be operated by SPP or MISO. "The Cal-ISO isn't the only game in town. (See "Xcel Seeking Larger Dispatch Areas in the West," *Overheard at the Transmission Summit*.)

BPA's View

In addition to the political challenges and governance questions, another obstacle to an RTO West has been the Pacific Northwest's bounty of rivers. Cheap hydropower represents about half of the power generation in the Northwest.

That's "one of the reasons why a standalone market in the Northwest hasn't penciled out the way it would in a somewhat more diverse resource base as is so in the east," Schneider said.

"If you've got a local public utility district and your embedded costs of delivering power is about 2 cents/kWh … [any change] is a cost adder," agreed Cromwell.

Nevertheless, the Bonneville Power Administration has been seeking ways to collaborate with CAISO, said **Sonya Baskerville**, manager of BPA's national relations office. The agency is concerned with serving BPA load located within BAs that have joined the EIM as well ensuring it has outlets for marketing surplus energy.

"We can't just sit by and let things roll on without being a player in that. We are having active conversations with the Cal-ISO, with other utilities in our region to talk about our primary goal, which is to preserve the value of our system — both hydro and our federal transmission system," she said.

"To call this Balkanized is to insult Macedonia."

Jonathan M. Weisgall

Central to any agreement would be a governance structure that preserves BPA's financial and operational interests, Baskerville said.

"In the Northwest, we like to have control over our own destiny," she said. Previous regionalization efforts "have failed because [of] that one issue." (See related story, *Latest CAISO Proposal Fills out Western RTO Governance Plan*, p.1.)

— Robert Mullin contributed to this article.

Energy Bar Association Mid-Year Energy Forum

Order 1000 Producing Savings, but Transparency, ROFR Remain Challenges, Speakers Say

By Rich Heidorn Jr.

WASHINGTON — FERC's Order 1000 is providing savings to ratepayers, but a lack of transparency in RTOs' competitive solicitations is undermining confidence, and limited opportunities may doom nonincumbent developers, speakers told the Energy Bar Association Mid-Year Energy Forum last week.

The range of comments were similar to those FERC heard at its June technical conference on the landmark rule. More than 60 stakeholders filed post-technical conference comments last week before the deadline Oct. 3 (AD16-18). (See *Five Years Later, FERC Takes Another Look at Order 1000*.)

"We're out of the policy debates and into implementation," said Brian Weber, managing director of transmission development for Transource, a joint venture of American Electric Power and Great Plains Energy.

Weber said it is "too early to make broad brush changes" in the rules, given that some RTOs have yet to complete their first Order 1000 solicitations.

Other speakers at the EBA session saw no need to wait to fix problems.

Paul Jett of Midcontinent MCN, GridLiance's operating company in MISO, said FERC's policy is sound, but the implementation "is off to a slow start" because the continued existence of state rights of first refusal and RTOs' reliability project "carve outs" for incumbents have left an "extremely narrow" set of projects open to competition.

George Dawe, vice president of Duke-American Transmission Co., echoed Jett's complaint, saying incumbent transmission owners weren't the only ones to oppose competition. RTOs don't like it, Dawe said, because "they're in the spot of having to pick winners and losers."

"So we end up with these design flaws … created in the very beginning because those two entities in particular didn't want competition in the first place. And so you end up with arbitrary voltage thresholds, cost allocation issues [and] limited benefit metrics to determine which project should be eligible" for competition.

FERC needs to "course correct," he said, by reassigning the competitive selection job from the RTOs to their Market Monitors.

Transparency

Dawe and other speakers also said more transparency is needed to increase confidence in the selection process.

Weber said that's one reason his company likes the sponsorship model used by PJM rather than the practice in CAISO, where the ISO accepts competitive bids on a solution developed by its engineers.

"You propose your solution and if your solution is the best solution it saves the need for all the issues which may come with more of a competitive bid process," Weber said.

"There are some regions that have issued very subjective criteria — multiple criteria — but really only give one of the criteria that they've issued," he continued. "So that leaves you in a situation at the end where you can't draw a straight line between the end result and what was communicated up front."

Weber contended competition should be limited to capital costs, saying the inclusion of operations and maintenance and tax considerations introduces too much subjectivity into the evaluation.

"We've been involved in certain regions where … you put everything in an Excel spreadsheet, there's a multi-hundred-page contract behind it that covers every potential outcome and the decision is made on a single cell in [the] spreadsheet."

Shakeout Coming?

Judy Chang of The Brattle Group said the introduction of competition and cost caps is providing benefits to ratepayers, a conclusion with which other speakers agreed.

"Cost containment and cost caps … look to be the new normal," Dawe said. "It's hard to imagine there would be a successful bid that doesn't include some form of containment."

Brattle says annual transmission spending has increased since FERC issued Order 1000 in 2011. It predicts $120 billion to $160 billion in transmission investments over the next decade.

But that may not be enough for the growing number of independent transmission developers, Jett said. "If you're a developer and Order 1000 transmission projects are your only path to success, you've got a problem today," he said.

"If these design issues are not addressed quickly, I have to wonder how long will developers be able to hang on."

Former FERC Commissioner Tony Clark urged members of the Energy Bar Association to "stand up for the rule of law," saying the politicization of regulatory processes threatens the ability to raise investment capital for infrastructure projects.

"For years, [state] commissioners, FERC commissioners [and] the State Department have gone around the world to developing countries and said, 'If you're looking for infrastructure development … you have to have a stable legal, regulatory and tax climate. Set up independent commissions and make decisions on the record that aren't swayed by politics,'" said Clark, who left the commission Sept. 30.

Clark cited the Obama administration's rejection of the Keystone XL pipeline. "Can anyone defend the process that it went through? A seven-year process where there's not really any fixed standards ... and it becomes the subject of multimillion-dollar political campaigns and people giving contributions on one side or another. … Is that how we want critical infrastructure to be developed in this country? Through a sort of plebiscite as opposed to on the record through a known and knowable process?" | © *RTO Insider*

COMPANY BRIEFS

Korsnick Elected President of NEI


Korsnick

Maria Korsnick was elected president and CEO of the Nuclear Energy Institute, effective Jan. 1, 2017. She succeeds Marvin Fertel, who retires on Dec. 31.

Since May 2015, Korsnick has served as NEI's chief operating officer as a loaned executive from Exelon Generation and Constellation Energy Nuclear Group.

"The NEI Executive Committee is confident that Maria will enable NEI to increase recognition of nuclear energy's value, further empower the nuclear industry's commitment to efficiency and reliability, and facilitate the development of next-generation reactors," said Don Brandt, chairman of NEI's board and CEO of Pinnacle West Capital.

More: *Nuclear Energy Institute*

Mississippi Power's Lignite Plant Adds to Delay, Cost Overruns

Mississippi Power's Kemper County plant has delayed running on lignite by one month, adding another $33 million in cost overruns to a project that is more than two years behind schedule.

The delay, from Oct. 31 to Nov. 30, raised the total estimated cost of the project to about $6.9 billion.

The new delay is necessary to prepare both of the plant's gasifiers to use syngas and to integrate systems so that both of the plant's combustion turbines will operate simultaneously, Mississippi Power spokesman Jeff Shepard said.

More: *Mississippi Today*

Apex Plans Wind Park In Texas Panhandle

Apex Clean Energy has purchased the up-to 360-MW Novus IV wind project in Texas from Novus Windpower and plans to construct a wind park in the north Texas Panhandle.

Construction could begin as early as 2017, according to Apex.

More: *SeeNews Renewables*

GE, Southern California Edison Plan World's First Hybrid System

General Electric and Southern California Edison announced last week a plan to install the world's first battery storage and gas turbine hybrid in response to the energy crisis in California's Aliso Canyon earlier this year.

By the end of 2016, SCE plans to install a battery energy storage system from Current, powered by GE, and then integrate the system with a gas turbine in 2017.

The hybrid system will be deployed at two SCE sites.

More: *General Electric*

PSEG Plans to Close Two Coal-Burning NJ Plants

PSEG Power plans to close two of its New Jersey coal-burning power plants effective June 1, 2017, citing the cost of modernization as its reason.

The plants, located in Jersey City and near Trenton, would need to be upgraded to comply with new rules imposed by PJM to ensure reliability, PSEG President Bill Levis said.

"The sustained low prices of natural gas have put economic pressure on these plants for some time," Levis said. "In that context, we could not justify the significant investment required to upgrade these plants."

More: *The Record*

Duke Plans to Recycle Coal Ash from Salisbury, NC, Basins

Duke Energy last week announced plans to remove coal ash from three basins at the Buck Steam Station in Salisbury, N.C., and recycle the material for concrete.

North Carolina's coal ash law requires Duke to install three recycling units across the state.

Duke said it is still evaluating locations for the second and third units.

More: *Duke Energy*

Xcel Completes Transmission Line Across New Mexico, Texas

Xcel Energy has completed a 115-kV transmission line spanning more than 37 miles across the New Mexico-Texas state line.

Xcel built the line, which cost approximately $38 million, after a SPP study identified a need for a stronger transmission link in the area.

The transmission line is part of Xcel's multibillion-dollar Power for the Plains grid improvement initiative.

More: *Xcel Energy*

Dynegy Names New COO, Executive Vice President

Dynegy has promoted Martin Daley, who previously served as vice president in charge of the power company's natural gas-fired fleet, to chief operating officer. It is the first time the company has appointed a COO in nearly four years.

The company also promoted Carolyn Burke to executive vice president of strategy. Burke previously was the executive in charge of business operations.

More: *FuelFix*

Calpine Purchasing Noble's US Unit

Calpine is purchasing the U.S. energy business of commodity trader Noble Group, the companies announced Monday.

The companies said Calpine will pay $800 million plus working capital for Noble Americas Energy Solutions, which claims to be the nation's largest independent supplier of power to commercial and industrial retail customers. Calpine said the working capital totals $100 million; Noble put it at $248 million.

"In addition to expanding our retail customer sales channels and product offerings, we will more than double the volume of retail load we are capable of serving across the country from our complementary wholesale power generation fleet," Calpine CEO Thad Hill said in a statement. The sale will help Noble reduce debt.

More: *Bloomberg*; *The Wall Street Journal*; *Calpine*

FEDERAL BRIEFS

Public Input Sought on First Fresh-Water Wind Farm in US

U.S. agencies are calling for public input by Oct. 21 on the nation's first fresh-water wind farm.

The project, 8 to 10 miles off the western end of Lake Erie north of Cleveland, consists of six wind turbines.

Its goal is to increase Great Lakes participation in the offshore wind industry, said Lorry Wagner, president of the Lake Erie Energy Development Corp.

More: *WBFO*

Canada to Create New Rules, Single Board for Offshore Energy Projects

Canada is working to establish a comprehensive set of rules for approving and monitoring offshore energy projects and a regulatory board to oversee them.

The new rules would address offshore wind, wave and tidal current technologies, according to Department of Natural Resources documents.

Several federal departments currently have authority to regulate offshore renewable energy activities, the department said.

More: *CBC News*

Pipeline Regulators Issue Rule Expanding Emergency Powers

Federal pipeline regulators issued a rule last week expanding their power to address pipelines that pose a threat to public safety or the environment.

If the rule is finalized, the Department of Transportation's Pipeline and Hazardous Materials Safety Administration will be able to issue emergency restrictions and safety measures on gas or liquid pipeline operators whose lines pose a public danger.

"Pipeline incidents can have devastating impacts on local communities and the environment," Transportation Secretary Anthony Foxx said in a statement.

More: *The Hill*

Appeals Court Hears Tribe's Argument to Stop ND Pipeline

Opponents of the $3.8 billion, four-state Dakota Access oil pipeline argued last week before a federal appeals court to keep a temporary work stoppage in place for a small area of North Dakota.

The Standing Rock Sioux Tribe argued before a three-judge panel of the D.C. Circuit Court of Appeals that the pipeline impacts sites of historic, religious and cultural significance and threatens the area's water supply.

The land at issue spans 20 miles on either side of the Missouri River at Lake Oahe.

More: *The Associated Press*

US Officials Approve Expansion Of Montana's Largest Coal Mine

Cloud Peak Energy

U.S. officials approved a 117 million-ton expansion of Montana's largest coal mine after the Interior Department found the mine would generate about 160 million tons of carbon dioxide over the next five years, one-half of 1% of annual projected emissions in 2020.

The expansion of Spring Creek Mine was first approved in 2012 but then delayed when environmentalists filed legal action.

More: *The Associated Press*

STATE BRIEFS

CALIFORNIA

Imperial Approves Hoover Dam Contract

Imperial Irrigation District last week approved an agreement to secure an additional 3 MW of renewable energy from the Hoover Dam, bringing the reallocation total up to 10 MW for the next 50 years.

IID will pay an all-in rate of $27 to $29/MWh, compared with its all-in average ranging from $50 to $75/MWh. Delivery will begin Oct. 1, 2017, after the dam's current contracts expire.

"This is an example of how IID is working to diversify its energy portfolio while, at the same time, investing in low-cost energy resources," IID Board President Norma Sierra Galindo said. "It serves as an important reminder of the true nexus between water and power."

More: *Imperial Irrigation District*

CONNECTICUT

State Building Energy Efficiency Program Apparently Stalled

A program established by the General Assembly in 2011 to increase energy efficiency in state buildings may be stalled, according to an Oct. 4 report issued by Acadia Center.

The "Lead by Example" (LBE) program was enacted with the goal of achieving a 20% reduction in energy use in state buildings by 2018. LBE required the Department of Energy and Environmental Protection to develop a plan achieving minimum energy savings targets by certain dates and to submit annual reports to the Energy & Technology Committee of the General Assembly regarding the status of implementation.

According to the Acadia Center, annual LBE status reports for 2013, 2014 and 2015 do not appear to have been submitted.

More: *Acadia Center*

Branford Expected to Approve Ordinance Banning Fracking Waste

Branford officials are expected to approve on Oct. 12 a proposed ordinance banning fracking waste from being used for any purpose within the town. The proposed

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ordinance does not affect transport of waste materials through Branford on Interstate 95.

If Branford approves the ordinance, it will be the fifth state municipality to enact such a regulation. The towns of Washington, Coventry, Mansfield and Portland also have banned fracking waste.

New proposed regulations addressing how the state will monitor the movement and usage of fracking waste are due between July 1, 2017, and July 1, 2018, according to the state's Fracking Waste Moratorium.

More: New Haven Register

IDAHO

City Council Seeks Alternative To Second Transmission Line

The Ketchum City Council is seeking a renewable energy alternative to a second Idaho Power transmission line that is expected to cost ratepayers $30 million. The line was intended to address outages in the northern Wood River Valley if the existing transmission line fails.

The council voted last week to ask the state's Public Utilities Commission to require Idaho Power to analyze the costs, benefits and reliability of an alternative project.

Members of the Ketchum Energy Advisory Committee "believe the $30 million proposed for the line is not the most efficient use of the funds," Ketchum Planning Director Micah Austin said at last week's council meeting.

More: Idaho Mountain Express

IOWA

Alliant Says 'Sorry' for Higher-Than-Normal Bills

Alliant Energy has apologized to customers who were surprised by higher-than-normal bills, but stands by their accuracy.

Alliant installed a new software system that increased the number of checks it performs on customers' monthly usage. When the system found usage that was a lot higher than in previous months, it sent estimated bills to customers.

The company said it has temporarily stopped disconnections for affected customers and that it will help them set up payment plans and waive late-payment fees.

More: The Des Moines Register

MASSACHUSETTS

Solar Farm Anticipated for Former Westover Air Base Land

The Chicopee City Council is expected to create a solar field on land outside Westover Air Reserve Base that once held about 128 homes.

Chicopee acquired the land in 2011. Last week, the council was asked to approve a 20- to 25-year lease with Con Edison Development, which was selected through a bidding process to design, construct and maintain a solar farm on the property.

The solar farm is expected to cut the base's electric bill by 5%, or $100,000 a year.

More: MassLive

City-Funded Upgrades May Save Covanta Plant

Pittsfield's city council will vote Tuesday on whether to spend $562,000 to upgrade Covanta's waste-to-energy recycling facility to keep it open for at least four more years.

In July, Covanta announced plans to close the Pittsfield facility in March 2017, stating that high operating costs and the size of the plant made it unprofitable.

The money, which would come from Pittsfield's economic development fund, would pay for a state-mandated recycling enclosure and upgrades to the facility's fossil fuel boiler.

More: The Berkshire Eagle

NORTH CAROLINA

Hurricane Matthew Leaves Thousands Without Power

Hurricane Matthew has dissipated, but it left about 491,000 residents in the state without power in its wake as of Monday morning, according to the Department of Public Safety.

The figure, which includes about 310,000 Duke Energy customers, was as high as 600,000 on Sunday. Duke could not estimate how long it would take to restore service, but the prognosis is not good. "In some of the harder hit areas, we expect to have to rebuild portions of our system before we can restore power, and that takes time," spokeswoman Meredith Archie said.

Duke has deployed about 5,600 workers to respond to outages and help with clean up, Archie said. Some communities on the state's coast have been evacuated because of dangerous flooding.

More: The Associated Press; The News & Observer

OHIO

$8M Available for Clean Coal Research

The Development Services Agency is offering up to $8 million to advance research on cleaner, economical and greater use of the state's coal and/or its combustion products.

The agency expects to issue eight to 10 awards for up to two years of research. Amounts will range from $3.5 million for full-scale projects to $100,000 for paper studies.

Proposals are due by the end of October to the Coal Development Office.

More: Columbus Business First

Mass. Regulators Reject DER Surcharge in Rate Case

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Department of Public Utilities rejected proposed monthly charges for new stand-alone DER, including solar and wind. The customers who are most likely to be affected by the proposal include local governments and community-aggregated solar projects, which are intended to benefit low-income ratepayers and those otherwise unable to install solar panels on their own homes.

National Grid had sought to impose the fees to help cover the fixed costs of the distribution grid and avoid shifting them to other ratepayers.

Regulators agreed with opponents who said the company failed to justify the charge or demonstrate cost-shifting. "With the exception of interval meters, the company has not quantified the costs that it contends stand-alone DG facilities impose on its distribution system," the DPU wrote.

It did approve a $1 increase from the $4 minimum monthly charge for residential customers and a one-time interconnection charge of $28 for distributed resources to cover the application process.

National Grid had proposed a fixed fee of up to $20 for residential customers based on usage and $30 for small commercial customers.

A law passed in the spring by the Massachusetts legislature opened the door for the company to collect a "monthly minimum reliability contribution" (MMRC) for customers who receive net metering credits. (See Massachusetts Raises Net Metering Cap, Cuts Payments.)

The law also allows for the consideration of an access fee once solar capacity reaches 1,600 MW statewide, a threshold expected next year. National Grid has met its share of that total.

The DPU agreed with opponents of the proposal that the fees did not qualify as MMRCs because the rate case was filed before the law's enactment. It also said that once the 1,600-MW threshold is passed, a fee could be considered in a separate proceeding.

The company had proposed a monthly access fee of $7/kW, reduced by an assigned capacity factor (40% for solar and 30% for wind). National Grid said the fee was necessary to recover its costs for the operation and maintenance of the transmission and distribution grids and the increase in costs it says will result from further penetration of distributed resources.

Several intervenors contended that the proposal ran contrary to Massachusetts' efforts to have its rate design more accurately reflect market conditions.

"Reforms to electricity rate design must strike a careful balance between economic efficiency, equity for all customers, protection of low-income ratepayers and access to community distributed generation," Mark LeBel, staff attorney at Acadia Center, said in a statement.