RTO Insider

Your Eyes and Ears on the Organized Electric Markets

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ANALYSIS: No Knock Out Blow for Clean Power Plan Foes in Court Arguments

By Rich Heidorn Jr.

WASHINGTON — Obama administration lawyers squared off with opponents of the Clean Power Plan last week, as oral arguments scheduled for less than four hours stretched over seven.

We won't know for months how those whose opinions count — 10 judges of the D.C. Circuit Court of Appeals — scored the arguments. And whatever they decide will inevitably be reviewed by the Supreme Court.

But based on the judges' questions and comments, four of the five challenges — a Constitutional issue; a bill drafting error; EPA's alleged failure to provide sufficient notice of changes between the original and

Three judges nominated by President Obama to the D.C. Circuit Court of Appeals in 2013 are among 10 that will rule on the EPA Clean Power Plan. From left are Robert Leon Wilkins, Cornelia "Nina" Pillard and Patricia Ann Millett. | *The White House*

Continued on page 2

ERCOT, SPP Collaborate to Improve Open Source Visualization Tool

By Tom Kleckner

Cody Park and a fellow SPP employee discuss the Macomber Map. | *SPP*

In an industry where grid operators often engage in bickering and litigation over their borders, ERCOT and SPP have proven neighbors can also collaborate for the common good.

The grid operators' in-house developers have worked together to produce version 2.0 of the Macomber Map, a visualization tool for control rooms. Projected on large overhead monitors, the map provides a geographical depiction of the system, including customizable views of power flows, constraints and other core system data that feed into the map and are then pieced together.

"As we collaborate on the software, we're supporting each other," said Mike Legatt, ERCOT's principal "human factors engineer." Legatt says the Macomber Map improves operators' decision-making by increasing their situational awareness and simplifying the complexity wrought by integrating renewable resources, changes in market design and faster information flows.

Continued on page 28

Luminant, TXU Energy Emerge from Bankruptcy

By Tom Kleckner and Rich Heidorn Jr.

Energy Future Holdings reached a major milestone in its Chapter 11 reorganization Monday, completing its tax-free spinoff of Luminant and TXU Energy into a new standalone company, TCEH Corp.

TCEH issued 427.5 million shares of common stock and other assets to the "pre-emergence" first-lien creditors of Texas Competitive Electric Holdings Co. It will trade on the OTCQX market under the ticker symbol THHH.

Luminant is Texas' largest electric power generator with almost 17,000 MW of generation, including 2,300 MW of nuclear power, 8,000 MW of coal and 6,000 MW of natural gas. TXU Energy, a competitive retail electricity provider, has 1.7 million business and residential customers in Texas.

TCEH appointed as its CEO Curt Morgan, a consultant for the first-lien creditors and a former operating partner at private equity firm Energy Capital Partners. Also appointed to the board of directors were Gavin Baiera, Jennifer Box, Jeff Hunter, Michael

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ANALYSIS: No Knock Out Blow for Clean Power Plan Foes in Court Arguments

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final plan; and a claim that it relied on dubious assumptions on the growth of renewables — appeared to have little chance of prevailing.

'Beyond the Fence Line'

For opponents, the best hope of overturning the CPP is likely the argument that was presented first, led by West Virginia Solicitor General Elbert Lin.

Lin contended that EPA overreached its authority by creating CO_2 emission limits that coal-fired generators can't meet, forcing a "generation switch" to natural gas and renewables.

"Ninety-six percent of [West Virginia's] power comes from coal," he said. The rule, he said, was "clearly designed to make us change our generation source."

Judge Brett M. Kavanaugh evidenced the most sympathy for the "beyond-the-fence-line" argument.

The CPP seeks to cut the power sector's carbon emissions by 32% by 2030, compared with 2005 levels. It uses two different CO_2 emission rates to define the "best system of emission reduction," one for coal-steam and oil-steam plants and a second for natural gas plants. The agency said compliance can be achieved through improving generators' efficiency (Building Block one) and shifting generation from coal to lower-emitting natural gas plants (Building Block two) and zero-emitting renewables (Building Block three).

Citing what he said was at least three decades of Supreme Court precedent, Kavanaugh said EPA needed explicit Congressional approval for the magnitude of the changes contemplated by the CPP. "This is a huge case," he said. EPA is "fundamentally transforming the industry."

Justice Department attorney Eric Hostetler, speaking for EPA, insisted the agency is entitled to deference under the Supreme Court's *Chevron* decision, which held that courts should defer to agencies' interpretations of the laws they are charged with enforcing unless the court finds their actions unreasonable.

"This is far from the first time EPA has relied on generation-shifting," he said.

EPA's rule is a "proper and sensible" response for the "most urgent threat that our country has ever faced," Hostetler said.

Judge Thomas B. Griffith also expressed concern over EPA's strategy. "It doesn't help that the president said, 'If Congress doesn't act, I will,'" he said.

Judge Janice Rogers Brown asked why EPA wasn't regulating under Clean Air Act Section 115 instead of going through "linguistic gymnastics" under Section 111(d).

No Climate Denier

While his questions indicated he may vote to overturn the CPP, Kavanaugh made clear he is no climate denier. He called EPA's policy "laudable," saying "I understand the climate is warming."

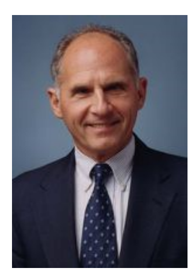
He added that "I understand the frustration with Congress," which has not been able to reach agreement on climate policy.

But he also expressed sympathy for coal states such as West Virginia, saying that national policy, authored by Congress, could incorporate a safety net such as public assistance and job training.

"Whole communities are going to be left behind," he said, addressing EPA's lawyers. "If you do it, all the people who will be left back will [remain] left back."

It's questionable that Kavanaugh will be able to carry a majority in overturning the rule, however. Less than a minute into Lin's argument, Griffith interrupted to challenge his claim that the rule would be "transformative."

He noted that EPA estimates that the amount of coal-fired generation will still be 27.4% of total generation in 2030 — only 5.4% less than projected without the rule. "That hardly sounds transformative," Griffith said.


Tatel

Judge David S. Tatel also expressed skepticism. The term "best system of emission reduction" is "an awful broad grant" from Congress, he said. "It says best *system* of emissions reduction," he repeated twice, emphasizing "system."

Continued on page 29

CAISO NEWS

FERC OKs Ramping Product for CAISO, EIM

By Robert Mullin

FERC last week approved CAISO's plan to implement a new market mechanism designed to improve the real-time integration of the increasing volume of variable renewable energy resources coming on to the ISO's system (ER16-2023).

The flexible ramping product will also be incorporated into the CAISO-run Western Energy Imbalance Market.

The product will enable the ISO to procure resources equipped to quickly respond to dispatch orders and ramp output up or down in response to swings in forecasted net load between five-minute real-time market intervals.

Net load is the ISO's gross load forecast minus output from intermittent wind and solar resources. The new product will also allow the grid operator to procure additional ramping capability to account for uncertainty in its forecasts.

The mechanism is intended to help CAISO prevent power balance violations that can result from mismatches between generation and load, a growing risk as California moves toward fulfilling its mandate to generate 50% of its electricity from intermittent renewable resources by 2030.

The procurement of ramping capability will be bundled into the real-time energy market run, rather than being administered through a separate bidding process. Under the mechanism, load or supply resources that increase the need for ramping capability between real-time market intervals will be charged for the flexible ramping product, while resources that decrease the need will receive a payment.

"Settling ramping capability directly between load or supply resources that consume ramping capability and those that provide ramping capability will help manage the ramping need by incentivizing load-serving entities to have a portfolio of both dispatchable and non-dispatchable resources that can follow their load profile," CAISO said in its proposal.

The ISO says the ramping product is readily dispatchable, distinguishing it from an ancillary services product for standby "unloaded" capacity withheld from the market.

The product replaces CAISO's flexible ramping constraint, an interim measure implemented in 2011 to ensure upward ramping capability of dispatchable resources in the 15-minute real-time unit commitment process.

That measure enabled the ISO to reserve uncommitted ramping capability from dispatchable resources that were not designated to provide contingency or regulation reserves and whose upward ramping capability was not forecast to be needed to meet real-time loads.

The new product addresses the ISO's need for shorter dispatch intervals and downward ramping capability.

Bidding Process Rejected

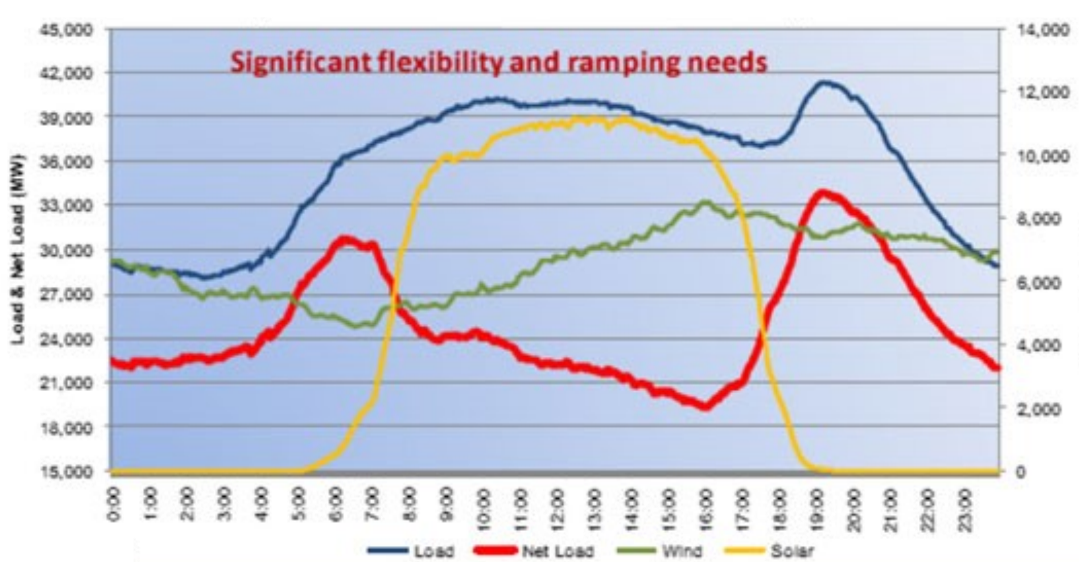
In its ruling, the commission rejected a request by the Western Power Trading Forum, the Electric Power Supply Association and the Independent Energy Producers Association to subject procurement of the flexible ramping product to a bidding process similar to that used for ancillary services.

"That the flexible ramping product may meet the definition of an ancillary service, or be similar to other ancillary services, such as spinning reserves or regulation, does not require that CAISO procure it in the same manner as those other products," the commission wrote.

FERC also denied a request by the Six Cities municipal utilities — Anaheim, Azusa, Banning, Colton, Pasadena and Riverside — that it condition its approval of the product proposal on successful completion of market simulations. The commission said the ISO already stated that it would not roll out the product until it completed simulations and addressed market participants' concerns.

The commission rejected as beyond the scope of the proceeding a request by the California Energy Storage Alliance to lower the ramping product's -$150 bid floor.

On Sept. 28, CAISO petitioned the commission to delay the effective date for the product implementation by one month until Nov. 1. The ISO said that it didn't learn of FERC's decision until hours after a Sept. 26 call scheduled to confirm the roll-out to market participants. A decision on the petition is pending.



The red line in this graph represents CAISO's projected net load profile in April 2020, after California meets its 33% RPS. Net load represents total load minus output from wind and solar resources and provides an indication of the ISO's ramping needs in the face of high solar penetration. | *CAISO*

CAISO NEWS

Arizona Public Service, Puget Sound Energy Begin Trading in EIM

By Robert Mullin

Arizona Public Service and Puget Sound Energy began transacting in the Western Energy Imbalance Market on Oct. 1, bringing the region's only real-time market up to five members — including market operator CAISO.

The utilities' full entry into the EIM follows on two months of testing in which they operated in the market under real conditions without their transactions becoming financially binding. (See *Arizona Public Service, Puget Sound Energy Enter EIM Testing Phase*.)

The two utilities follow in the footsteps of NV Energy, which entered the market last December, and PacifiCorp, which helped launch the effort in November 2014.

"Participation by Arizona Public Service and Puget Sound Energy in the EIM will strengthen the market and yield substantial benefits in the form of access to low-cost energy for them and for all EIM participants," CAISO CEO Steve Berberich said in a statement.

The EIM has produced $80 million in economic benefits for its members during the past two years, according to CAISO. Those benefits stem from more efficient inter- and intraregional dispatch in the 15-minute and real-time markets, lower curtailment of renewable energy and reduced need for market participants in all balancing areas to carry flexibility reserves.

Studies commissioned by the utilities indicate that APS could save $7 million to $18 million a year through EIM participation, while PSE could save between $18 million and $30 million.

"Participating in a market that enables APS to buy and sell power closer to when electricity is consumed will result in meaningful economic savings to customers through lower production costs and better integration of renewable resources like solar," said Tammy McLeod, vice president of resource management at APS, which has transmission connections into both the CAISO and PacifiCorp-East balancing authority areas (BAAs).

PSE's sole point of connection with the market is via a 300-MW long-term firm transmission reservation on the Bonneville Power Administration system that connects the utility with the PacifiCorp-West balancing authority area.

FERC last week authorized PSE to transact in the EIM at market-based rates, ruling that the company provided sufficient evidence that its limited link would not become constrained frequently enough to create an EIM submarket requiring measures to mitigate market power (ER10-2374).

The commission also directed APS to revise its proposed rules related to how resources external to the EIM can use dynamic scheduling to participate in the market through the utility's transmission network. (See *APS Ordered Again to Revise EIM Dynamic Scheduling Rules*.)

Portland General Electric is scheduled to enter the EIM in October 2017, with Idaho Power slated to follow in April 2018.

FERC Sets PG&E Rate Increase Proposal for Talks

By Robert Mullin

FERC last week accepted Pacific Gas and Electric's filing for a proposed rate increase under the utility's transmission owner tariff, but the commission suspended implementation of the increase for five months out of concern that the proposed rates could yield "substantially excessive revenues."

The utility's filing raised "issues of material fact" that would be better addressed through further proceedings, the commission said in its Sept. 30 order (ER16-2320).

The new rates will become effective March 1, 2017, but they remain subject to a refund based on the outcome of settlement and hearing proceedings.

In its filing, PG&E proposed a 10.9% return on equity for 2017 — composed of a 10.4% base return plus a 50-basis-point incentive adder for its continued participation in CAISO. The utility said its transmission rate base will jump 29% to $6.71 billion, while its retail network transmission service revenue requirement is projected to increase 15.4% to $1.718 billion.

Opponents of the rate increase, which include the California Public Utilities Commission, contend that the utility should be required to calculate its ROE based on the median of its own discounted cash analysis, which would reduce the base rate to 8.65% and lower the revenue requirement by about $114 million.

Those opponents also argue that PG&E's proposed 3.26% depreciation rate is excessive and represents an unjustified increase from its currently authorized depreciation rate of 2.52%.

The commission denied a CPUC request that it not approve PG&E's 50-basis-point adder based on the fact that the justification for the adder is the subject of a proceeding before the 9th U.S. Circuit Court of Appeals. The CPUC contends the adder is unnecessary because PG&E is required to be a member of CAISO under California law.

"While we recognize that appeal is pending, such an appeal does not operate as a stay of the commission's consideration of this issue here," FERC said.

The commission will appoint a settlement judge on the matter later this month, but it encouraged PG&E and opponents to settle their disputes before the start of settlement proceedings.

CAISO NEWS

APS Ordered Again to Revise EIM Dynamic Scheduling Rules

By Robert Mullin

FERC rejected for a second time Arizona Public Service's proposed rules over how external resources can use dynamic scheduling to participate in the Western Energy Imbalance Market.

The commission ruled that APS' tariff changes failed to comply with an April 29 directive to "clarify that dynamically scheduled external resources are not required to enter into commercial contracts with APS in order to participate in the EIM" (ER16-938).

FERC's Sept. 26 order affirmed that APS could require dynamically scheduled external resources to have the technical capability to provide load-following and regulation services, but it said APS could not condition eligibility on their provision of the services.

"Consistent with the April 29 order, we affirm that APS may not condition a dynamically scheduled external resource's participation in the EIM on its contracting to provide load-following or regulation service to APS," the commission wrote.

The ruling came just days before APS made its first transactions in the market on Oct. 1. (See related story, *Arizona Public Service, Puget Sound Energy Begin Trading in EIM*, p.4.)

EIM members PacifiCorp and NV Energy currently restrict external EIM participation to only those resources pseudo-tied into their respective balancing areas. While APS will allow EIM transfers via pseudo-ties, the utility elected to further extend market participation to those external resources equipped to dynamically schedule into its transmission network.

But APS required that dynamically scheduled resources meet the tariff-defined qualifications of a Balancing Authority Area Resource (BAAR).

Under the EIM's rules, a BAAR designation denotes a resource's eligibility to contribute to an EIM participant's "available balancing capacity" — the verifiable operating reserves a market participant carries to ensure that it isn't leaning on the EIM to meet its capacity requirements.

Arizona Public Service's Hassayampa-Gila 500-kV line serves the utility's Phoenix load center. | *AECOM*

APS' tariff proposal included requirements that a BAAR resource be unit-specific rather than an unspecified system resource and be able to provide regulation and load-following services to help the utility to meet its resource adequacy criteria.

The proposal also required that a BAAR either be owned by APS or under contract with the utility for energy, ancillary services or capacity.

In its April order, the commission objected to that last provision and directed the utility to clarify that external resources do not have to qualify as a BAAR in order to transact with the EIM.

Instead of inserting a new provision covering dynamically scheduled resources, APS' compliance filing redefined BAARs to exclude the ownership and contracting requirements. The utility expressed concern that removing the BAAR provision could enable resources to circumvent operational and technical specifications applicable to all resources participating in the EIM — specifications already approved by FERC. APS also contended that, by revising the definition to eliminate the commercial relationship requirement, it had complied with FERC's directive.

The commission disagreed, saying that "APS has failed to comply with the directive to remove the requirement that an external resource qualify as a BAAR to be eligible to participate via dynamic scheduling."

The BAAR qualification is "commercial in nature," given that APS' tariff still required any resource designated as such to provide load-following and regulation service, the commission found.

Market participants' transactions in the EIM are expected to be voluntary and not subject to such obligations, FERC said. While an external resource participating in the EIM can enter a contract to provide ancillary services to APS, it cannot be required to do so, the commission said.

The commission ordered APS to restore the original commercial language to the BAAR qualification in order to ensure that APS and CAISO, the EIM's operator, can identify those resources that contribute to the utility's EIM capacity requirement.

"In the context of the available balancing capacity mechanism, it is crucial that APS either own or have a contractual right to call upon the capacity for regulation or load-following services from a designated resource," the commission wrote.

Other elements of the ruling include:

- FERC affirmed APS' requirement that external resources participating in the EIM via dynamic scheduling be capable of responding on a unit-specific basis. "As APS notes, requiring that resources be unit-specific will ensure that APS can distinguish an external resource's dynamic schedule from an intertie bid," FERC wrote.
- The commission denied a rehearing request by the Southwest Public Power Agency (SPPA) over its approval of APS' proposal to adopt EIM pricing of transmission losses without giving transmission customers the option of self-supplying losses within the same hour. The commission said FERC precedent does not "preclude the use of a financial settlement mechanism to the exclusion of in-kind replacement of losses."
- The commission directed APS to submit a compliance filing providing more details about the timing and duration of its evaluation of operating reserve obligation payments and credits from CAISO. SPPA contended that APS has not committed to ensuring that customers will share in the benefits of reduced reserve costs resulting from EIM participation.

CAISO NEWS

CAISO Seeks to Extend Aliso Canyon Gas Rules Through Winter

By Robert Mullin

The Aliso Canyon gas storage facility was closed last October after inspectors discovered a massive methane leak. | *California Department of Emergency Services*

CAISO's Board of Governors has approved a proposal to extend most of the temporary Tariff provisions the ISO implemented in June in response to natural gas pipeline restrictions stemming from the closure of the Aliso Canyon storage facility.

The ISO will now seek expedited approval from FERC to extend the measures through Nov. 30, 2017 — a year beyond the original sunset date.

While the region weathered the summer without grid emergencies, the ISO has identified a continued risk of gas shortages for generators in the face of limited operations at Aliso Canyon during the winter, according to Cathleen Colbert, senior market design and regulatory policy developer at CAISO.

"The goal [of the extension is] to determine what provisions were needed for winter reliability," Colbert said during a Sept. 26 call to discuss a draft final proposal to renew the measures.

CAISO implemented the changes to ensure reliable grid operations in the face of potential gas shortages during the summer, the region's peak season for electricity consumption. (See *FERC Approves CAISO's Aliso Canyon Response Plan Ahead of Summer*.)

The provisions were geared to helping Southern California gas-fired generators manage their gas burns to avoid system-balancing penalties and enable them recover gas costs after the fact, while providing the ISO the flexibility to move energy into the region during periods when gas supplies became constrained.

During winter, electric load is not the "primary driver" of gas imbalances, as the bulk of gas demand shifts from "non-core" gas customers such as electric generators to "core" residential heating customers, Greg Cook, CAISO director of market and infrastructure policy, told the board during an Oct. 3 call.

"It's good to note that the non-core generators are the first to be curtailed in the event that we do not have sufficient on-system gas to meet the core and non-core demand," Cook said.

Among the measures CAISO proposes to extend:

- The release of advisory schedules by CAISO two days ahead of an operating day to help scheduling coordinators plan for gas procurement further in advance.
- The ability of generators to reflect gas cost expectations into day-ahead bids by using an approximation of next-day gas prices, which are published after the ISO's morning day-ahead market runs. ISO rules typically require generators to incorporate the previous day's next-day gas prices into energy bids.
- A gas adder and an after-the-fact cost recovery mechanism for generators connected to the Southern California Gas system to tie cost recovery and penalties to same-day gas prices rather than day-ahead gas indices.
- Authority of the ISO to manually override its "dynamic competitive path" assessment when it determines that the transmission path is no longer competitive in the face of a gas constraint.
- Suspension of virtual bidding in circumstances when CAISO determines the practice could produce market inefficiencies.

CAISO also seeks to refine a provision allowing it to enforce a market constraint that limits the minimum and maximum amount of gas that can be burned by generators in the affected area during periods of restricted gas supply. The refinement would set a limit on the maximum burn only.

One key provision from the original Aliso Canyon plan is on the chopping block: a measure that allows the ISO to reserve transmission capability on the Path 26 transmission line linking the Pacific Gas and Electric and Southern California Edison service territories in order to ensure adequate delivery into the southern part of the state during gas restrictions.

CAISO says it no longer needs that capability because Peak Reliability, the reliability coordinator for most of the Western Interconnection, recently modified its system operating limit (SOL) methodology to allow Path 26 to exceed its capacity rating under emergency conditions.

One board member expressed concern that the expanded limit would provide the ISO with only a short timeframe in which to respond to a gas-driven grid emergency before being required to return the line to its SOL.

"Why wouldn't it be prudent to retain the internal capability?" asked board member Dave Olsen. "Are we giving up flexibility it would be prudent to retain?"

Cook responded that the new SOL methodology provides CAISO with the reliability protections it was seeking when it originally proposed the Path 26 provision — which had prompted concerns from some market participants about the impact on the ISO's congestion revenue rights market.

"Now that we have this increased flexibility provided by Peak [Reliability] that helps deal with the reliability concern, it's probably best to retire that provision so that those market concerns could go away," Cook said.

The ISO plans to file the updated Aliso Canyon proposal with FERC in mid-October.

CAISO News

CAISO Sees Steady 2017 Revenue Requirement Despite Spending Rise

By Robert Mullin

CAISO expects to hold its 2017 revenue requirement to this year's level despite a planned $4.3 million increase in spending driven by rising labor costs, the ISO's chief financial officer said Thursday.

Although next year's proposed budget is projected to increase 2% to $214.5 million, the ISO is seeking maintain its revenue requirement at $195.3 million for a second straight year, CFO Ryan Seghesio said during a Sept. 29 stakeholder call.

The additional expenses will be offset by revenues from other sources, including money earned from the operation of the Western Energy Imbalance Market.

Although the revenue requirement has increased 0.3% annually since 2007, it is 18% below its 2003 peak, when the ISO's yearly debt service costs were more than three times as high as today.

"This shows our commitment to a stable revenue requirement," Seghesio said.

CAISO recovers its annual revenue requirement through grid management charges assessed to market participants based on their use of the transmission system to serve load or deliver exports. Two out of three of those charges are slated to decline slightly next year, while a service charge associated with congestion revenue rights is expected to see an uptick.

Other fixed fees contributing to the requirement — such as those related to bidding into CRR auctions and trades by scheduling coordinators — are expected to remain unchanged.

The ISO's operations and maintenance budget, which accounts for more than 80% of total spending, is expected to rise 2.5% next year on the back of a $4.6 million (3.8%) increase in salary and benefits expenses. The salary figure includes merit increases for existing staff and plans to hire seven new employees, bringing the total headcount to 600.

"We've held a very tough line on headcount for a while, but there's some stress points [in various departments] that need to be relieved," Seghesio said, adding that the number of full-time equivalent employees has fallen since 2012.

CAISO expects to reduce expenses related to outside contractors, consultants, training, travel and building leases, while fees to outside professionals such as attorneys are projected to rise.

Next year's proposed revenue requirement also includes a $24 million cash-funded capital component, of which $20 million will be budgeted for approved projects, with the remainder to be held in reserve.

Debt service costs remain at $16.9 million, a figure Seghesio said will hold steady until 2023, when some of the ISO's bonds become eligible for refinancing.

Declining transmission usage coupled with a steady revenue requirement will cause CAISO's *pro forma* bundled cost per megawatt-hour — a measure of the ISO's costs per transmission volumes used by market participants — to increase by $0.004/MWh to $0.809/MWh.

Next year's transmission volumes are forecast to fall by 1.2 TWh to 241.5 TWh, continuing a trend in recent years.

CAISO attributes the decline to California's extended drought — which has reduced both hydroelectric output and the amount of energy needed to move water supplies throughout the state — and the increased adoption of distributed generation, which is increasingly displacing the state's reliance on central station power. Recent estimates indicate that rooftop solar now accounts for about 5,000 MW of capacity within the ISO's balancing area.

Stakeholder comments on the proposed 2017 budget are due by Oct. 6. CAISO will seek board approval for a final budget in mid-December.

Transmission Summit West

SAN DIEGO — Transmission industry owners, operators, generators, regulators, financiers and other key players from the Western U.S. attended Infocast's 8th annual Transmission Summit West last week. They discussed the strategic, regulatory, investment and technology issues facing the industry.

Western Regionalization

CAISO's **Stacy Crowley**, vice president of regional and federal affairs, pushed the benefits of ISO participation in her solo presentation, saying, "Utilities and stakeholders have found these ISOs to be valuable, as far as providing cost-effective power.

"We know in the Midwest, states like Iowa could not have reached their renewable standards without an ISO. We've seen entities around the Northwest asking if there are efficiencies with a larger market. Clearly, a board appointed by the California governor and approved by the State Senate would not fly in a regional ISO. California clearly has the largest load of any state in the West, but a regional ISO must speak for everyone and their policies."

ColumbiaGrid CEO Patrick Damiano agreed, but he made the case that coordinating planning doesn't require a centralized market.

ColumbiaGrid conducts transmission planning and other coordination for its eight members: Avista, Bonneville Power Administration, Chelan County Public Utility District, Grant County PUD, Seattle City Light, Snohomish County PUD, Tacoma Power and Puget Sound Energy, which joined the Western Energy Imbalance Market on Oct. 1.

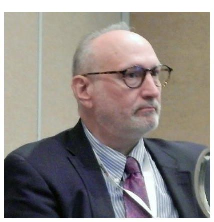
"The Northwest has always been an active bilateral market," Damiano said.

"We've been very excited about the creation of the EIM," said **Gerald Deaver**, manager of regional transmission policy for Xcel Energy. "Our first baby step was FERC's approval of a joint dispatch area in Colorado [with Platte River Power Authority]. We'll be the market operator, but we look at it as a way to more efficiently use generation resources in the balancing area. Our ultimate goal is to develop a larger geographic footprint to better integrate renewables. Our hope is that entities will become more comfortable operating in that environment."

"I can't imagine all of the West as we know it today would be one RTO. It's too big. I see two or three RTOs with seams agreements," SouthWestern Power Group's **Tom Wray** said. "For resource management and market efficiency, [RTOs] are clearly a good policy move for the country. One of the motivating factors for expansion of the regional market we know as Cal-ISO is largely coming from regulatory pressure."

Tanya Bodell, executive director of Energyzt, called for "market-based solutions" to cope with too much generation on the Western system. "West Texas retailers are selling energy for free on nights and weekends. FERC Order 745 has opened up an opportunity for demand to come into the market. I can see 745 creating a mechanism through which system operations encourage people and pay people to use more energy. Generators have a different bid price to operate, versus a bid price to curtail. You may end up getting a curtailment market, where the ISO asks for bids from generators."

Renewable Integration Remains Sticky Issue



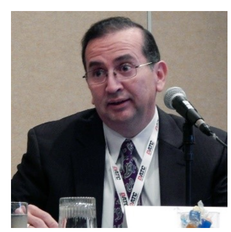
"We've done pretty well so far in integrating renewables. We didn't think 20% would be that easy, but it turned out to be not so much of a challenge," said **Carl Zichella**, director of Western transmission for the Natural Resources Defense Council. "We have 38 different balancing authorities in the West. It's one big grid operating in discrete chunks, rather than an integrated system. While that's worked so far, we're going to need to do much better to integrate deeper penetration of wind.

"The worst-case scenario for renewables is what we have now … [balancing authorities] complicating the use of transmission with bilateral contracts and artificial congestion. The biggest hurdle to regionalization is the governmental structure."

Jay Caspary, SPP's director of research, development and Tariff studies, said America's best renewable resources straddle the seam between the Western and Eastern interconnections. While SPP, MISO and ERCOT have built and continue to build transmission to access those resources, the abundance does create a dilemma.

"ERCOT is harvesting thousands of megawatts in SPP's backyard and pulling them into ERCOT," he said. "We have two separate independent networks in the Texas Panhandle. At some point, we'll probably have to integrate those two, but there are a lot of jurisdictional issues."

In California, rooftop solar is the oncoming train. **Jack Moore**, director of market analysis for Energy + Environmental Economics, said his company is projecting the state will enjoy 17 to 23 GW of the sunshine resource by 2025. "The big driver we see is in certain hours, California has more solar than it can use. That does set up a reason for [increased] transmission to be able to bring more flexibility to the system."



"Our experience in Texas is that you build these [interconnection] ties and they get oversubscribed," said **Bill Bojorquez**, vice president for Hunt Power. "There are great stranded resources in New Mexico. Sharyland Utilities has over 11 [GW] of generator-interconnection requests. We are literally over-subscribed. It's one of those stories where if you build it, they'll be oversubscribed."

Getting Utilities to Embrace Alternative Technologies

Several speakers complained about the industry's conservatism.

William White, director of public affairs for CTC Global, said his company has found it difficult winning acceptance of its high-temperature, low-sag, composite core

Continued on page 9

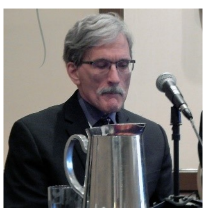
Transmission Summit West

Continued from page 8

conductors. "We're in the odd position of having a proven product that works," he said. "We know it works, our customers know it works, but old habits die hard. Most of [today's] conductors are literally 100-year-old technology."

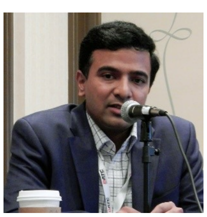
"Some of the biggest resistance to regionalization is the cost," said **Gregg Rotenberg**, president of Smart Wires, which provides "grid optimization solutions."

"If we're having a conversation about regionalization and we're only using existing infrastructure, that means we're using the grid inefficiently," Rotenberg said. "The hardest group to get involved is the transmission groups at these utilities. When we get them on an equal playing field and we're spending less on new technologies, we'll have a new grid."



Byron Woertz Jr., the Western Electricity Coordinating Council's manager of system adequacy planning, preferred to see his glass half full. "This a country that put a man on the moon with 20th century technology, so I think we can improve the grid," he said.

Battery Storage Ready for Prime Time



Asked whether battery storage needs tax credits similar to wind and solar resources, **Kiran Kumaraswamy**, market development director for AES Energy Storage, said storage is "absolutely ready for prime time."

"What we really need is a framework to value this class of resources. Four to five years ago, we started talking about the value of solar in a way in which you could bring all those benefits to the table and compare them with all the other options. The gap right now is being able to evaluate [storage] resources on an apples-to-apples basis."

"I think energy storage works best when paired with other grid assets, to increase the value of the electricity being generated," said John Jung, CEO of Greensmith Energy Management Systems. "You can do a lot more with electricity when you have the ability to shape the nature of it and the quality of it."

John Fernandes, RES Americas' director of policy and market development, said he is not worried about customer migration from the grid. "I've been announcing the death spiral of the utility death spiral for years now."

Non-utilities "are not dealing with NERC violations worth millions of dollars a day," he said. "When you're talking about megawatts, [reliability] matters. We're so highly dependent on this super-reliable service."

Making FERC Order 1000 Work

A panel sharing their experiences with FERC Order 1000's directive on competitive transmission projects agreed that CAISO continues to put space between itself and other RTOs with its implementation of the order.

"The evaluation process is certainly evolving. Cal-ISO maybe puts more emphasis on costs and less emphasis on [operations and maintenance], but it's gotten much better," said **Charlie Adamson**, principal manager of major transmission and distribution projects for Southern California Edison. "Every evaluation, they've gotten better at it. Things like the EIM or the ultimate experience of an ISO … opens up market availabilities for that energy transfer to make sense. Over time, that could enable long-haul lines that bring in energy from where it's cheap to where it's necessary."

Josh Burkholder, director of transmission asset strategy and grid development for AEP Transmission and Transource Energy, relayed his experiences in SPP's first competitive process, which resulted in one project being awarded — and then canceled as unneeded. "There were some real head scratchers [in how an industry expert panel graded the projects]. A notch difference in your parent company's credit rating was a five-point difference [in the scoring]. In a $10 million project, [the credit rating is] pretty irrelevant. Be careful what you wish for a little bit, when it comes to clarity and understanding with how the decision is made."

"From my standpoint, a lot of things that may not be apparent may become a reliability issues when it's too late to solve the issue with transmission," said **Bob Smith**, vice president of transmission development for TransCanyon, a joint venture of Pinnacle West Capital and Berkshire Hathaway Energy. "This is the second year we've had laws in California that are going to require a 50% [renewable portfolio standard], maybe higher, to comply with greenhouse gas laws. Yet, Cal-ISO is relying on a 20% portfolio? It doesn't make sense for Cal-ISO to be planning when you don't know where the resources are. By the time Cal-ISO gets clarity on where resources are, we're coming pretty close to 12 years from the 2030 policy deadline, and you don't develop transmission in three or four years."

Speaking of transmission projects in general, Chris Jones, a vice president with Duke-American Transmission Co., said delays in the permitting process "that can happen over the decades-long process" remains "the biggest risk in each of our projects."

"One of the things that's changed since I started doing this work is the sensationalism of these projects and the media coverage you get and the protests that come with that. It's usually local groups, but we're seeing more and more groups outside the [non-governmental organizations] get media coverage. You're seeing that now with the North Dakota pipeline project."

Ali Amirali, a senior vice president with the Starwood Energy Group, called transmission development "a giant game of economic chicken." He said, "The generation developers are waiting for the transmission to be built. The transmission developers want the generation to be built before getting into the heavy capitalization of transmission."

— Tom Kleckner

ERCOT NEWS

TAC Briefs

Stakeholders Send Three RMR Revisions to ERCOT Board

AUSTIN, Texas — ERCOT's Technical Advisory Committee passed three nodal protocol revision requests (NPRRs) Thursday to improve the ISO's reliability-must-run procedures following its decision earlier this summer to extend an RMR contract for an aging natural-gas unit in the Houston area.

The three revisions, previously endorsed by the Protocol Revision Subcommittee, would modify the Texas grid operator's RMR planning studies, create a clawback mechanism for ERCOT-funded capital expenditures and clarify the reliability unit commitment process. The Board of Directors is scheduled to consider all three revision requests at its Oct. 11 meeting. The NPRRs were classified as urgent requests following this summer's extension of an RMR contract through 2018 for NRG Texas' Greens Bayou Unit 5. (See *ERCOT Finds No Alternatives to Greens Bayou; RMR Rule Changes Advance*.)

The TAC approved NPRR788, which modifies the system's RMR planning studies, after accepting revisions from the Independent Market Monitor. The revision request will require that future studies include forecasted peak loads, and it says a potential RMR unit must have "a meaningful impact on the expected transmission overload" to be considered for an agreement.

"ERCOT filed comments [after the subcommittee vote] that I feel effectively rebutted the comments made by [stakeholders] that they were concerned ERCOT was not being compliant with NERC standards," said Beth Garza, the IMM's director.

The Monitor's revisions would allow ERCOT, "in its sole discretion," to deviate from the planning criteria "in order to maintain … reliability. However, ERCOT shall present its reasons for deviating from the above criteria at the next regularly scheduled [TAC] and [board] meetings."

Transmission Providers Opposed

The measure was opposed by transmission providers American Electric Power, CenterPoint Energy, Sharyland Utilities and Luminant, Texas' largest generating company.

Valentine Emesih, CenterPoint's vice president of grid and market operations, said the ISO's approach could create problems in a year or two. "If you force me to operate the line at 110% of [rated capacity], you're essentially using a policy that forces you to use load shed to upgrade the system," he said. "The real solution to mitigate the issue is to build appropriate infrastructure to inoculate yourself from that situation, and that's where the planning comes in."

ERCOT staff assured stakeholders there were no plans to shed load and there were no reliability issues.

"It's more about what is the risk this market is comfortable with when deciding whether or not to get an RMR unit," said Jeff Billo, senior transmission planning manager. "We are going to plan transmission projects to address those issues."

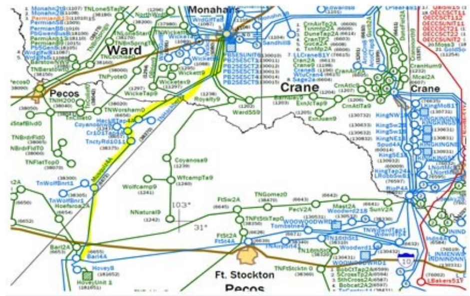
The transmission providers also lost a bid to revise the planning criteria's threshold for overloaded transmission facilities to 100% of the emergency rating under normal system conditions following a contingency loss of a generating unit, transmission unit or other facilities. The threshold will instead remain at 110%.

Stakeholders unanimously approved NPRR795, which creates a mechanism to refund capital expenditures funded by ERCOT under an RMR agreement, but not before adding amended language from Texas Industrial Energy Consumers and the ISO.

Attorney Katie Coleman, representing industrial customers, said she wanted to "tighten the parameters around the depreciation assumptions" and compensate customers for the value of accelerated tax depreciation, "which can provide a significant tax write-off for a resource owner."

Coleman proposed requiring 10% of this value to be repaid along with the capital expenditure before a resource re-enters the market.

"This approach compensates loads for funding a tax write-off for the resource entity in excess of what straight-line depreciation would provide during the RMR contract period," Coleman said, "but then transfers the value of any accelerated depreciation back to the asset owner after the asset is returned to service."



AEP-Oncor transmission line study area | *ERCOT*

ERCOT added language that would only require a signed attestation from a company's officer or executive, rather than having the ISO audit tax forms.

The TAC also quickly passed the final revision request, NPRR793, by a unanimous vote. It adds several responsibilities for RMR unit owners, revises RMR formulas and makes other clarifications to ensure RMR units are not accidentally committed as a reliability unit before other resources.

Two Transmission Projects Sent to Board

ERCOT stakeholders endorsed staff recommendations for a pair of West Texas reliability projects that address the region's Permian Basin oilfield load growth without opposition. Reliant Energy Retail Services abstained from both votes.

The first project, estimated at $50.6 million and belonging to Texas-New Mexico Power, will rebuild 39 miles of 69-kV line and three substations to 138-kV standards, and add a new 138-kV ring substation and 6 miles of 138-kV line.

According to ERCOT's analysis, that portion of the TNMP system will see coincident peak loads of 254 MW by 2022, resulting in reliability violations. The project, expected to go into service in the fall of 2019, would reduce loading on other transmission lines in the utility's system.

AEP and Oncor proposed the second project, a 138-kV line between Barrilla Junction and the Permian Basin. The 54-mile line's load is expected to grow from 95 MW to 150 MW by 2020.

Staff recommended a rebuild of the existing

Continued on page 11

ERCOT NEWS

Luminant, TXU Energy Emerge from Bankruptcy

Continued from page 1

Liebelson, Cyrus Madon and Geoffrey Strong.

In a statement Tuesday, Morgan said the company emerged from bankruptcy "with a strong balance sheet and the potential for stable earnings and significant cash generation," having eliminated more than $33 billion of debt and other obligations and reduced its leverage to a low 2.3 times of gross secured debt to cash flow.

EFH said it was continuing its efforts to complete its reorganization with its sale of its 80% interest in Oncor, Texas' largest transmission and distribution utility.

NextEra, EFH Seek to Reassure Texas PUC on Merger

Last week, EFH and NextEra Energy sought to assure Texas regulators they won't be constrained in their review of NextEra's agreement to purchase Oncor, which includes a $275 million termination fee.

During an update hearing Sept. 26 on EFH's emergence from Chapter 11 bankruptcy (14-10979-CSS), Judge Christopher S. Sontchi said he had filed a joint letter from EFH and NextEra addressing the Public Utility Commission of Texas' concerns.

PUC Commissioner Ken Anderson said during a Sept. 22 open meeting that the termination fee "appears to be an effort to really tie the commission's hands in the proceeding," as it would allow NextEra to cancel the deal if the commission imposed "overly burdensome" conditions. Anderson also called the fee an "improper attempt to constrain the commission." (See *Texas PUC Expresses Doubts over NextEra-Oncor Deal*.)

NextEra has proposed buying Oncor for $18.7 billion.

According to the letter, "NextEra is not entitled to a termination fee under the merger agreement if NextEra Energy terminates the merger agreement because the commission either approves the merger agreement transaction with 'burdensome conditions' … or does not approve the merger agreement transaction."

NextEra and EFH said the termination fee would be triggered only if EFH or Energy Future Intermediate Holding Co., Oncor's direct parent, terminate the merger agreement. The companies wrote they "would like to make clear that, in any event, NextEra will not seek to collect any portion of the termination fee contemplated by the merger agreement in the event it terminates the agreement."

Sontchi opened Monday's hearing by quoting from the transcript of the PUC meeting.

"I believe [the] letter addresses the concerns raised by Commissioner Anderson," Sontchi said. He said any possible triggering of the termination fee is "an issue for the bankruptcy court, and not for the PUCT and ratepayers."

TAC Briefs

Continued from page 10

line and installing a new 100/-50-MVAR static VAR compensator at an estimated cost of $77 million. The project will not require new rights of way, which will help keep the costs down. It is expected to go into service in June 2019.

Committee Deactivates 4 Groups

The TAC's annual structural review resulted in the deactivation of four stakeholder groups, agreements to improve the revision-request process and the incorporation of additional binding documents into ERCOT's protocols and guides.

The committee's leadership agreed to move the Competitive Renewable Energy Zone Task Force, the Future Ancillary Services Team, the Scenario Development Working Group and the Long-Term Study Task Force to ERCOT's inactive groups list.

Stakeholders agreed NPRRs and any accompanying guide revisions will now both require board approval, eliminating the discrepancy in the timing of the approval process. NPRRs have normally been approved at the board level, but guide changes are only endorsed by the TAC.

The committee also agreed to incorporate some of ERCOT's 49 other binding documents — 24 of which have not required frequent changes — into the appropriate guides or protocols, either as new language within existing sections or as appendices.

Additional TAC Endorsements

TAC unanimously approved five NPRRs and one revision to the nodal operating guide (NOGRR) after first agreeing on several refinements to ERCOT's approval process following the committee's annual structural review.

- NPRR755: Allows an entity to register as a data-agent-only qualified scheduling entity (QSE) to connect to ERCOT's wide area network (WAN) as an agent for another QSE without meeting applicable collateral and capitalization requirements.
- NPRR769: Clarifies the alternative-dispute resolution process to note the proceeding is the next level of appeal following ERCOT's denial of verifiable costs. Also clarifies the confidentiality of data submitted in connection with a verifiable-cost appeal.
- NPRR775: Strengthens the limits on fast responding regulation service (FRRS) to address future operational issues. A previous revision (NPRR581) added limits of 65 MW to FRRS up and 35 MW to FRRS down, but it lacked implementation details regarding self-arrangements in the day-ahead market and restrictions on providing the service in real time without a day-ahead award.
- NPRR781: Addresses the market's growing use of advanced metering systems (AMS) by updating protocol language to clarify purpose and definitions, update processes and methodologies and remove outdated ones.
- NPRR789: Requires ERCOT to publish all of its mid-term load forecasts for market participants and note which one is currently being used by operations. The ISO currently publishes several forecasts per weather zone, but it only makes one at a time available to the market.
- NOGRR154: Clarifies the WAN's installation requirements, allows a QSE to designate an agent in order to connect to the WAN and requires ERCOT and its market participants to use the network to exchange resource-specific XML data.

— Tom Kleckner

New England Electricity Restructuring Roundtable

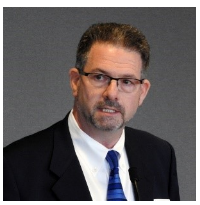
New England Conference Considers Carbon Pricing, State Procurement

By William Opalka

RTO Insider

BOSTON — New England stakeholders are considering a future market design that could include a price on carbon and a two-tiered capacity market to accommodate state clean energy procurement.

Raab Associates' 151st New England Electricity Restructuring Roundtable on Friday discussed the New England Power Pool's effort to reimagine the market, dubbed Integrating Markets and Public Policy (IMAPP).



The initiative comes out of a recognition that the six New England states' aggressive climate goals don't align with competitive market structures, said NEPOOL Chairman **Joel Gordon**.

"The intent is to use the most efficient set of resources using the discipline of competition," Gordon said. "If it's successful, it's going to fundamentally change how power markets work." (See *Q&A: NEPOOL Chair on Redesigning Market Rules for Low-Carbon Future*.)

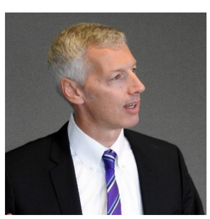
In a series of ongoing meetings, NEPOOL hopes to develop a framework document by the end of the year that could lead to further discussions in 2017 and eventual changes to the ISO-NE Tariff.

"A concern we have is the scale and scope of what [the states] are doing [with procuring carbon-free energy] that the scale is so large that there's a fundamental risk to the markets that we have," he added.

The first challenge is defining the policies — economic development, fuel independence and fuel diversity — and then deciding how much clean energy would be needed to achieve them, given the preferences of the individual states. Next comes market rules that promote the overall policy objectives. Finally, cost allocation among the various constituencies must be decided.

Gordon said 15 proposals have been made in the IMAPP process, which can generally be categorized in "three buckets."

- A carbon adder would be technology-neutral and provide market signals to both supply and demand while also creating a revenue stream for the states.
- States' long-term power purchase agreements for clean energy would support the development of new resources but also support existing generation. "It would be up to the states to decide what they want to procure," Gordon said.
- A second tier to the capacity market would enable states to procure resources while protecting price formation in the Forward Capacity Market. "This is a mechanism that could help to incorporate those solicitations into the current market design without undermining the existing market," Gordon said.



Robert Ethier, vice president of market operations for ISO-NE, said he could see a hybrid design eventually occurring.

"They're not mutually exclusive. Conceptually, you could do all three, and some think that's where we'll end up," he said.

Ethier said economists agree that a carbon price is the most efficient means to send market signals and achieve climate goals. "I've also been around long enough to know this is probably the least likely of the three to happen," he added.

But there are other circumstances that will create challenges in the shorter term as the rules evolve.

Low energy prices, even during the recently concluded hot summer, were more than a function of cheap natural gas, he said. The addition of wind and behind-the-meter solar can depress energy prices, which has implications for the capacity market.

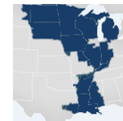
"What that means is the resources that we need when the wind isn't blowing or sun isn't shining are earning hardly anything to meet their capital costs, operating costs, so they're just breaking even," Ethier said. "So that puts more pressure on the capacity market to provide the revenue so they're able to stay around when we need them."

The capacity market is also pressured by renewable resources, which benefit from government subsidies like the federal production and investment tax credits, and state renewable portfolio standards, as well as long-term contracts through state-sponsored procurement.

But **Katie Dykes**, deputy commissioner at the Connecticut Department of Energy and Environmental Protection, said those state policies are needed to encourage clean energy development until market structures are in place.

"Is there a better mousetrap than the states doing procurements?" she asked. "In the near term we have to continue with it, but we're very open and interested in other ways that we could come up with."

MISO News



MISO, IPPs Ask FERC to Reject Customers' Bid to Redo Capacity Auction

By Amanda Durish Cook

MISO and independent power producers asked FERC on Wednesday to dismiss a complaint by transmission customers seeking to overturn the results of the RTO's 2016/17 Planning Resource Auction (PRA).

The Sept. 8 complaint by the Coalition of MISO Transmission Customers claims MISO misapplied its Tariff, causing the South-North transfer limit to bind sooner that it should have, driving up prices in MISO North (EL16-112).

Prices in Zone 1 cleared at $19.72/MW-day and Zones 2, 3, 4, 5, 6 and 7 each cleared at $72/MW-day after MISO limited capacity imports from MISO South to 876 MW. MISO South cleared at $2.99/MW-day. (See *MISO's 4th Capacity Auction Results in Disparity*.)

On Wednesday, MISO responded to the complaint, saying it is a "several-month-late challenge … and fails to demonstrate any Tariff violation." MISO said it calculated the constraint properly and that the coalition raised no objections when the results were shared with stakeholders nearly a month before the auction.

The Independent Market Monitor filed comments backing MISO, saying the customers failed "to identify a single provision of the Tariff that MISO failed to abide by when MISO calculated" the constraint.

The Electric Power Supply Association filed a protest saying the complaint should be dismissed because it is based solely on the 2016/17 PRA results. "The [coalition] has not demonstrated any violation or wrong-doing as required under FERC Rule 206 that would support its request to unwind the results of the 2016/17 PRA," the group wrote.

Dynegy also called for FERC to reject the complaint, which it said "ignores express provisions of the Tariff and the settlement" between MISO and SPP over the transfer limit.

Illinois Attorney General Lisa Madigan filed comments supporting the complaint. Eight state regulatory bodies are among the more than 35 intervenors as of this week. The Organization of MISO States also filed to intervene.

"In addition to being based on a faulty legal premise, the complaint raises more problems than it alleges to solve. It also requires the assumption that market participants will act against their own economic interest in scheduling transmission."

MISO

Excess Capacity Trapped?

The complaint was filed by McNees Wallace & Nurick, which represents industrial customers. The coalition said it is an *ad hoc* association of large industrial customers that consume more than 8 billion kWh of electricity annually.

The customers claim Entergy's territories in Zones 8, 9 and 10 had excess capacity, but MISO's transfer limit caused it to become trapped in the South, leading to the higher prices in the Northern zones. They argue the limit should have been increased by at least 206 MW, which would have led to north prices clearing at just $20/MW-day.

The coalition asked FERC to reset Northern clearing prices to $20/MW-day and order MISO to issue refunds from June 1, the beginning of the planning year. The customers also asked that FERC conduct an audit of the Monitor's approval of offers in the PRA, alleging that the Monitor did not rein in unreasonably high going-forward costs.

Currently, MISO subtracts firm reservations from the 2,500-MW South-North limit negotiated with SPP. The customers argue those firm reservations are never going to be used in full.

"The firm transmission service reservations of 1,624 MW that MISO deducted from the available system capacity usage of 2,500 MW do not reflect actual power transfers from the MISO South to MISO Midwest region. Rather, the deductions reflect firm service that MISO has agreed to provide NRG Energy Inc. in order to allow NRG capacity resources located in the MISO South region to qualify as a capacity resource in PJM," the complaint said. "There is no evidence that NRG is, in fact, using this firm transmission reservation during the 2016/17 planning year to actually flow energy from MISO South to MISO Midwest in such a way that NRG's full transmission reservation should be deducted from the 2,500-MW total."

The complainants say MISO "overstates the impact of firm transmission reservations" and does not consider "the actual or reasonably likely use of the firm transmission reservation." The customers said the transfer limit problem was recognized in the Monitor's 2015 State of the Market report.

In its own filing Wednesday, NRG said that while "the MISO Tariff should expressly address how internal transmission constraints should be modeled, there is no evidence that MISO violated its existing Tariff." If the commission grants the coalition's request for relief, NRG said, it should require MISO to calculate the sub-regional constraints by only deducting pseudo-ties from the 2,500-MW limit.

The coalition asked FERC to fast-track its complaint, saying it wants a decision in time to implement changes before next year's PRA.

Changes Being Discussed

MISO is already considering adjusting the South-North transfer limit in planning for next year's auction. A draft proposal on the 2017/18 sub-regional limit is on the agenda for the Oct. 5 Resource Adequacy Subcommittee meeting. (See *MISO Sees Nov. 1 Filing on Forward Auction; Simulation Shows Price Disparities*.) The RTO is also considering a study on the benefits of expanding flows on the constrained transmission interface, including building its own transmission to link the regions. (See *MISO Proposes Study to Measure Benefits of New North-South Tx*.)

In its response to FERC, MISO said the "complaint raises more problems than it alleges to solve."

"It also requires the assumption that market participants will act against their own economic interest in scheduling transmission," the RTO said.

MISO NEWS

7 Sites Eyed for MISO-PJM Targeted Market Efficiency Projects

By Amanda Durish Cook

MISO and PJM have nearly completed their work on joint operating agreement and tariff language to create the new targeted market efficiency project (TMEP) type, and the RTOs have singled out seven congestion-relieving candidate projects.

Four of the possible TMEPs are located at flowgates in Indiana, while one is in northern Illinois, one is on the southeastern Michigan-Ohio border and another is in central Ohio. The projects, produced from a joint RTO analysis that originally studied 12 candidates, range from 138 kV to 345 kV with total costs of $19 million and benefits of $117 million:

- The Burnham-Munster 345-kV project on the northern Illinois-Indiana border:
  - ◊ Benefit-cost ratio: $32 million/$6.5 million
  - ◊ Cost allocation: PJM 88%/MISO 12%
- The Bayshore-Monroe 345-kV project on the southeastern Michigan-Ohio border:
  - ◊ $17 million/$1 million
  - ◊ PJM 89%/MISO 11%
- The Michigan City–Bosserman 138-kV project in northern Indiana:
  - ◊ $29.6 million/$2.3 million
  - ◊ PJM 90%/MISO 10%
- The Reynolds-Magnetation 138-kV project in north-central Indiana:

Letter	Flowgate
A	Burnham – Muster 345 kV
B	Bayshore – Monroe 345 kV
C	Michigan City – Bosserman 138 kV
D	Reynolds – Magnetation 138 kV
E	Roxana – Praxair 138 kV
F	Klondike – Purdue 138 kV
G	Braidwood – East Frankfort 345 kV
H	Marysville – Tangy 345 kV
I	Michigan City – Trail Creek 138 kV
J	Munster 345/138 kV
K	Tippecanoe – Lafayette South 138 kV
L	Batesville – Hubble 138 kV

Twelve flowgate projects were initially considered in MISO and PJM's TMEP analysis. | *MISO, PJM*

Continued on page 19

FERC Cuts MISO Transmission Owners' ROE to 10.32%

By Amanda Durish Cook

MISO transmission owners will be taking a pay cut, as FERC ordered their 12.38% return on equity reduced by more than 2 percentage points.

The Wednesday order (EL14-12-002) affirms an administrative law judge's initial decision in December. The TOs will now receive a 10.32% ROE. With incentives, the rate is not to exceed 11.35%. The previous 12.38% rate had been untouched since 2002.

The decision affects more than 20 TOs, which FERC said must issue refunds, with interest, from Nov. 12, 2013, through Feb. 11, 2015.

The companies are ALLETE, Ameren, Cleco Power, Duke Energy, Entergy, Indianapolis Power & Light, ITC Holdings, MidAmerican Energy, Montana-Dakota Utilities, Northern Indiana Public Service Co., Northern States Power, Otter Tail Power, Southern Indiana Gas & Electric Co. and their affiliates. The order puts American Transmission Co. back on an equal footing with other MISO TOs; the company was operating at a 12.2% ROE.

Minnesota officials have estimated the cut will save ratepayers in the 15-state MISO footprint $200 million a year.

The commission said the 10.32% rate "represents the midpoint of the upper half of the zone of reasonableness" of 7.23 to 11.35%.

Setting the rate nearer the "midpoint of the zone of reasonableness [at 9.29%] could impair investment in transmission" and put MISO Transmission Expansion Plan investments at risk, the commission said.

"There is record evidence that a decrease in ROE of that magnitude — a 309-basis-point reduction from 12.38% to 9.29% — could undermine the ability of MISO TOs to attract capital for new investment in electric transmission," FERC said.

A 9.29% ROE would also have been lower than all of the state-authorized rates of integrated electric utilities.

Challenge Filed in 2013

MISO's major industrial customers challenged the region's transmission rate in 2013, requesting it be cut to 9.15%.

FERC arrived at the new rate using a discounted cash flow model that analyzed about 40 similar companies with the same range of credit as the MISO TOs over six months. The commission said the midpoint of the zone of reasonableness was adjusted upward because of "unusual capital market conditions" attributed to temporarily low interest rates, historically low bond yields and the Federal Reserve holding record high bond amounts during the study period.

FERC said a "mechanical application" of the discounted cash flow model would fail to meet capital attraction standards under the *Hope and Bluefield* fair return standard. The commission adopted the two-step discounted cash flow method for setting ROEs in 2014's Opinion 531. (See *FERC Splits over ROE*.)

A witness for the TOs had presented a capital asset pricing analysis that produced an ROE range of 7.50 to 12.61%, with a midpoint value of 10.06%. FERC said the analysis, along with expected earnings and risk premium analyses supplied by the TOs, persuaded it that a higher midpoint on its own range — produced under the discounted cash flow analysis — was in order.

FERC also dismissed protests that it had not provided evidence to support its north-of-the-midpoint decision, saying it had "discretion to use its judgment in weighing factors specific to a given proceeding to determine where within the zone of reasonableness the final base ROE should be placed."

The commission also declined transmission customers' request to reduce the base rates of utilities with 55% equity by 20 basis points.

MISO NEWS

MISO Ponders Changes to Behind-the-Meter Generation Rules

By Amanda Durish Cook

"Things might be unclear in the Tariff right now. In this meeting and meetings going forward, we'd like to clarify what's required to make changes to the Business Practice Manuals if necessary."

Neil Shah, MISO

CARMEL, Ind. — MISO began working with stakeholders to refine its behind-the-meter generation procedures last week with a special meeting at which it dropped hints on changes it might seek.

"We have a few ideas, but we want to hear from you," System Support Resource Planning Manager Neil Shah said in opening the meeting.

"We do realize that [behind-the-meter generation] does span across several MISO processes," MISO Director of Market Engineering Kim Sperry told stakeholders. "Our goal is to work with you on what the next steps should be."

MISO staff said BTM generation could be incorporated into transmission planning, modeling and retirement notifications and questioned whether interconnection requirements need updating.

The RTO currently defines BTM generation as load-serving resources located behind a commercial pricing node.

Shah said some — but not all — BTM generation load data is captured when load-serving entities or transmission owners submit load information for planning models.

MISO's Transmission Expansion Plan (MTEP) studies model generators with interconnection agreements, designated legacy network resources of MISO member utilities and all generators with long-term firm point-to-point service.

Neil Shah | © *RTO Insider*

Eric Swanson, MISO modeling adviser, said all BTM generators greater than 5 MW and directly connected to MISO transmission are modeled. He said the effort to model all BTM generation could "exceed the benefit." Swanson said if BTM generation is modeled, it would need to be registered as either a Type II demand response resource (DRR) or under a pricing node of a load zone or a DRR Type I.

Director of Planning Jeff Webb asked if BTM generation should be subjected to retirement studies. Webb said the RTO has about 6,000 MW of BTM generation and said it would be a problem only if it all retired simultaneously. "Perhaps we ought to treat it like a load addition," he said of the retirement study process. "If generation can go off-grid and we don't look at the impacts, is that okay?"

MISO also wants to know if changes are needed in how it registers BTM generation.

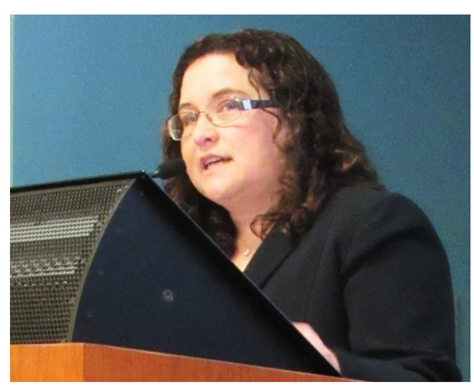
Currently, if BTM generation wishes to register as a load-modifying resource, it must submit to an annual generator test and registration and get assigned to a commercial pricing node. It must be able to respond in emergencies with a minimum 12-hour notice, be available five times during the summer and run for at least four hours. It also must submit its status daily to MISO.

Shah said if BTM generation wants to become a capacity resource, it needs an energy resource interconnection service (ERIS) or network resource interconnection service (NRIS) with firm transmission service. If the resource isn't already connected to the MISO transmission system, it must enter the interconnection queue to obtain NRIS.

Indianapolis Power and Light's Lin Franks said requiring BTM generation to enter the interconnection queue does not make sense when the generation will only serve nearby load. "If it's going to serve load in your own territory, then there is absolutely no need for it to qualify for transmission service because it's not going anywhere," Franks said.

"Things might be unclear in the Tariff right now," Shah told stakeholders. "In this meeting and meetings going forward, we'd like to clarify what's required to make changes to the Business Practice Manuals if necessary. We want to work with you all to be if there needs to be any change."

Justin Stewart of MISO's stakeholder relations unit asked for stakeholder feedback on how definitions and requirements should evolve. He said responses would influence a yet-unannounced follow-up meeting.



Kim Sperry | © *RTO Insider*

NYISO NEWS

Management Committee Briefs

Reliability Needs Assessment Approved; Two Tx Needs Identified

RENSSELAER, N.Y. — The NYISO Reliability Needs Assessment for 2017-2026 identified two transmission security needs beginning next year.

The assessment, which was approved by the Management Committee on Wednesday, identified the risk of thermal overloads on New York State Electric and Gas' Oakdale 345/115-kV transformer in the Binghamton area and the Long Island Power Authority's East Garden City-Valley Stream 138-kV line. Generation resources were deemed adequate in the period.

The Oakdale transformer overload was also mentioned in the 2014 assessment. NYSEG responded with plans for a third Oakdale transformer and reconfiguration of the Oakdale 345-kV substation. However, NYSEG has since updated the in-service date of the improvements from 2018 to the winter of 2021, the report said.

The LIPA 138-kV line has a risk of thermal overloads under N-1-1 conditions. "The power flow on this facility is driven by the combination of LIPA load in western Long Island and the scheduled 300-MW wheel between ConEdison and LIPA," the report said.

Following the NYISO Board of Directors' approval of the assessment, NYSEG and LIPA will be asked to develop solutions for the two transmission needs. If they are not addressed in their updated Local Transmission Owner Plans, the ISO will solicit solutions from developers.

The proposed solutions will be evaluated in the 2016 Comprehensive Reliability Plan. The RNA is the foundation for the reliability plan, which will be adopted next year.

Until upgrades can be completed, "the use of demand response and operating procedures, including load shedding under emergency conditions, may be necessary to maintain reliability during peak load periods," the ISO said.

The biennial RNA process assumed the deactivation of the R.E. Ginna and James A. FitzPatrick nuclear plants. Those potential retirements were announced since the last Comprehensive Reliability Plan in 2014.

The plants, with a combined 1,463 MW, may be saved by the Clean Energy Standard adopted by the state's Public Service Commission in August, which would pay upstate nuclear plants nearly $1 billion for their carbon-free attributes in the first two years of the program.

Systemwide Demand Response Activated

A summer heat wave prompted the first mandatory systemwide DR event in NYISO in three years.

The Aug. 12 event came on the second day of a two-day heat wave, when the peak load was 31,477 MW. NYISO estimated a peak of 32,415 MW if DR had not been activated.

Actual loads were 1,000 MW more than earlier projections for the day and came as neighboring control areas in Ontario and New England were also experiencing high demand. Operating reserves for some time intervals fell below the required 2,620 MW.

The summer's peak was 32,076 MW on Aug. 11.

"The peak represented the third consecutive year that the NYISO peak fell below the 50/50 forecast," said Wes Yeomans, NYISO's operations vice president, who presented the summer 2016 report. The forecasted 50/50 peak was 33,360 MW.

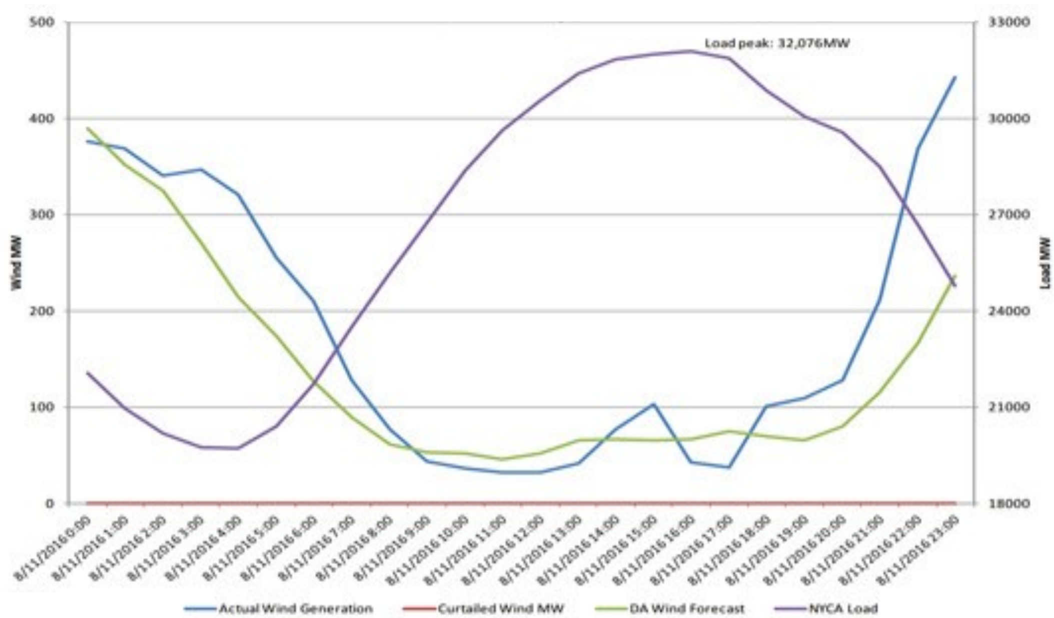
Noteworthy over the two days was the performance of the state's 1,700 MW of wind resources.

On Aug. 11, wind generation was essentially a flat line of about 50 MW from 8 a.m. to 8 p.m. On Aug. 12, as thunderstorm alerts began to move through the state, wind generation topped out at about 600 MW during the afternoon, closely following the rise in demand, which peaked in the 4 p.m. hour.

On July 24, NYISO activated its 21-hour notice for DR for the Lower Hudson Valley, New York City and Long Island, but the ISO did not implement its operation. Rochester Gas & Electric, Con Ed and the New York Power Authority instituted their voluntary DR programs, however.

The last systemwide DR event was during the polar vortex in January 2014 when the voluntary program was activated. The last mandatory DR systemwide event was in July 2013.

— William Opalka



Wind output - Aug. 11, 2016 | *NYISO*

PJM News

MRC/MC Briefs

Members Committee Endorses Revised Fee Hike

The Members Committee approved by acclimation a rate-increase proposal that struck a balance between allowing for cost increases and providing long-term certainty.

Members endorsed the Finance Committee's unanimous recommendation for a composite rate of $0.36/MWh for two years and then a 2.5% annual increase that will result in a rate of $0.41/MWh in 2024. The approved rate schedule creates the lowest projected refunds, explained PJM's Suzanne Daugherty, and allows for future revisions. The ability to install fee escalators later was built in, along with a five-year review.

PJM touted Moody's Investors Service's recent upgrade in the RTO's credit rating, which praised its structure for recovering administrative costs.

"Under stated rates, PJM uses fixed, long-term capped rates for the administrative costs of managing the grid and wholesale electricity markets. Costs are managed within the rates," PJM explained. "Other grid operators automatically pass through their administrative costs to members through formula rates that vary from month-to-month or year-to-year."

PJM noted it has taken on additional responsibilities since the rates were first implemented in 2006, including enhanced physical and cybersecurity, increased planning and analysis related to changing governmental policies and implementation of new technologies.

Assuming timely approval by the PJM Board of Managers and FERC, the rate would take effect on Jan. 1. (See "PJM Eyes Fee Hike," *PJM Markets and Reliability and Members Committees Briefs*.)

Transmission Task Force Halts Most Action in Response to FERC Order

Calling it a "unique situation," PJM's Fran Barrett won approval from the Markets and Reliability Committee to suspend most of the activities of the Transmission Replacement Processes Senior Task Force in response to a recent FERC order.

The Aug. 26 Order to Show Cause calls into question whether PJM transmission owners, per FERC's Order 890, are complying with their local transmission planning obligations, specifically with respect to supplemental projects (EL16-71). (See *FERC Orders PJM TOs to Change Rules on Supplemental Projects*.)

All but the task force's forward-looking work on transmission project costs — which isn't affected by the order — has been suspended.

PJM and the TOs have until Oct. 25 to respond to the FERC order, which opened a Section 206 proceeding. An addendum was also approved that allowed the task force to reconvene in March if FERC, which has no deadline for responding, hasn't acted.

Susan Bruce, who represents the PJM Industrial Customer Coalition, commended the parties involved for maintaining communication during resolution of the issue.

Proposal Chosen for Capacity Release

After months of consideration, the MRC approved the straight-line offer curve PJM proposed for selling back excess capacity in February's third incremental auction for the 2017/18 delivery year. The curve had to compete against several member proposals, but it was ultimately recommended by the Market Implementation Committee on Sept. 14. (See "PJM's Straight-Line Offer Curve Recommended for Capacity Sellback," *PJM Market Implementation Committee Briefs*.)

Members voted over the objections of Market Monitor Joe Bowring, who reiterated his concerns that the RTO is undervaluing the capacity and shouldn't publicly broadcast its asking price. "PJM bought this capacity for a fairly high price. We believe, with reliability and the benefits associated with it, the minimum price should be much higher than you're proposing," he said.

No Objections to Metering Revisions

The MRC approved revisions to Manual 1 to close gaps in understanding between staff and members on metering rules. The proposal had minor edits from previous presentations, but it maintained its basis on solutions recommended by the Metering Task Force. (See "Metering Standards Ready for Stakeholder Vote," *PJM Markets and Reliability Committee Briefs*.)

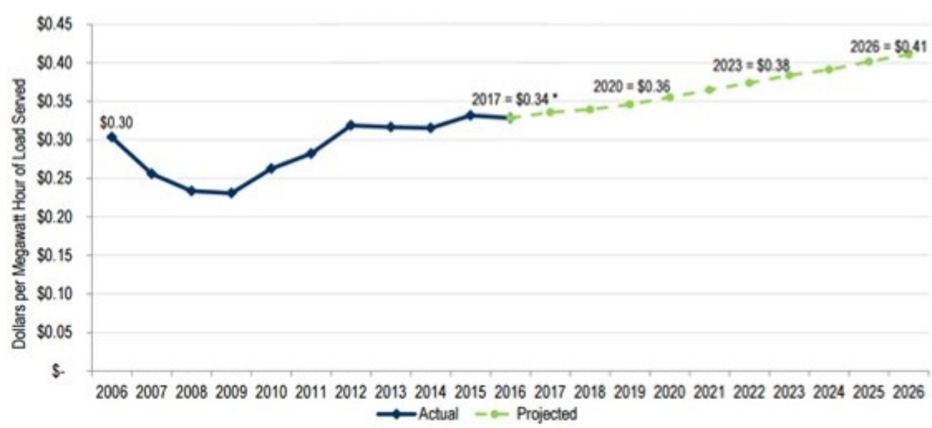
Flexibility for Vendors Approved for Competitive Bidding Rules

A PJM request to revise the Operating Agreement's requirement to use open and competitive bidding when procuring goods or services from a member breezed through both the MRC and MC without objection.

There was some minor concern that the revisions — which exclude certain vendors from PJM's competitive bidding requirements — might eventually allow for awkward conflicts of interest, but PJM assured that the screenings it devised would eliminate the potential.

PJM's solution cribs off an existing provision in the OA that addresses a similar issue in allowing PJM personnel to invest in member companies with a *de minimis* PJM relationship based on a three-part test. To avoid the competitive bidding rules, a company must not:

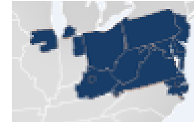
- be considered an electric sector company under the North American Industry Classification System;



Initial 2006-2016 composite net expense rates | *PJM*

Continued on page 18

PJM NEWS



Review of PJM Capacity Market Put on Hold

By Rory D. Sweeney

WILMINGTON, Del. — The coalition of municipal utilities and cooperatives seeking a review of PJM's capacity construct decided last week to make revisions before approaching stakeholders for approval of its problem statement and issue charge.

American Municipal Power's Ed Tatum said the coalition is incorporating feedback from other stakeholders. It plans to present a revised proposal at October's Markets and Reliability Committee meeting.

Tatum conducted an informal poll of the MRC attendees and found about a dozen members willing to say the proposal was too broad. No stakeholders raised their hands when Tatum asked if they believed PJM's capacity construct was immune to the policy changes of its member states.

Stakeholders have previously expressed concern that energy policy decisions made by states — from renewable energy production goals to utility reregulation — might disrupt PJM's complex marketplace.

Delaware Municipal Electric Corp., Old Dominion Electric Cooperative, the PJM Public Power Coalition, the Public Power Association of New Jersey and retailer Direct Energy have signed on as cosponsors of AMP's initiative, which was introduced at the August MRC meeting. (See *Proposal to Revisit PJM Capacity Model Receives Tepid Response*.)

Stakeholders largely applauded withdrawal of the proposal last week, saying it requested too much change too soon. "We haven't even gotten through the transition for [Capacity Performance] yet where we have full CP," said Calpine's David "Scarp" Scarpignato. "It seems premature to be discussing a whole new concept."

> ***"It seems premature to be discussing a whole new concept."***
>
> **David "Scarp" Scarpignato, Calpine**

Susan Bruce, who represents the PJM Industrial Customer Coalition, expressed appreciation for the coalition's willingness to consider other perspectives on the issue. "No one would call us a defender of PJM capacity markets, but at the same time, the idea of additional uncertainty and change … was something, from a business perspective, that was difficult for our clients to get our head around," she said.

Exelon's Jason Barker said his company is unlikely to support redesigning the entire capacity market, likening it to rewriting the U.S. Constitution rather than just individual laws. But he said it could be supportive of "something that's a little more surgical."

"Given the strong push by local, state and federal governments to recognize the environmental impacts of our industry, that seems like something that's ripe for discussion," he said. "That seems like an issue that has not been addressed" by PJM's current system.

Continuing the medical analogy, Marji Philips of Direct Energy argued the issue should be addressed comprehensively rather than in pieces.

"I'm sympathetic to the fact that people thought this was overreaching, but the reality is we are amending CP by small cuts. We were suggesting that we just operate on the patient holistically instead of limb by limb," she said. "I have to say, every one of us is guilty around here of claiming that we want regulatory certainty until a rule is bad for us, and then we want it changed right away, so unfortunately our reality is there is no regulatory certainty."

MRC/MC Briefs

Continued from page 17

- receive more than 0.5% of its gross revenue from PJM; and
- be involved in more than 3% of PJM's total market transactions.

"What we found is that over the years, increasing numbers of nontraditional companies … engaged in activities at PJM as a member, but their focus was on other areas" than participating in the energy markets, explained PJM's Steve Pincus. As examples, he cited office suppliers, such as Target and Walmart, and software companies, such as Microsoft and Siemens.

Responding to stakeholder requests, PJM said it would consider providing a list of the vendors it uses for operations and services as long as it doesn't run afoul of any confidentiality or disclosure rules.

FE's MAIT Receives Needed OA Revisions

FirstEnergy received approval for several Operating Agreement changes that will allow Mid-Atlantic Interstate Transmission, its newly formed transmission subsidiary, to assume the rights and obligations of Metropolitan Edison and Pennsylvania Electric in PJM's Consolidated Transmission Owners Agreement. (See *NJ Opposition Derails FirstEnergy's Tx Reorganization — but not Projects*.)

FE plans to make necessary FERC filings in October with a targeted effective date of Jan. 1. Several "legacy" contracts won't have their interconnection service agreements finalized until later that month.

MRC Endorses Manual Changes

Members unanimously approved the following manual changes:

- Manual 14B & 14C: PJM Region Transmission Planning Process and Generation & Transmission Interconnection Facility Construction. Changes are related to the new equipment energization process.
- Manual 3A: Energy Management System (EMS) Model Updates and Quality Assurance (QA). Adds a new appendix defining a process checklist for energizing new equipment.
- Manual 14B: PJM Region Transmission Planning Process. Makes revisions related to winter temperature ratings.
- Manual 15: Cost Development Guidelines. Developed as part of the periodic review process. The change also was approved by the MC.

— Rory D. Sweeney

PJM NEWS

7 Sites Eyed for TMEPS

Continued from page 14

- ◊ $14.5 million/$150,000
- ◊ PJM 41%/MISO 59%

- The Roxana-Praxair 138-kV project in northeastern Indiana:
  - ◊ $6.5 million/$4.5 million
  - ◊ PJM 24%/MISO 76%
- The Klondike-Purdue 138-kV project in north-central Indiana:
  - ◊ $6 million/$4.2 million
  - ◊ PJM 4%/MISO 96%
- The Marysville-Tangy 345-kV project in central Ohio:
  - ◊ $12 million/"minimal" cost
  - ◊ PJM 98%/MISO 2%

"We're pretty excited about this. This is exactly what we were hoping for," PJM engineer Alex Worcester said during a Sept. 30 meeting of the MISO-PJM Interregional Planning Stakeholder Advisory Committee (IPSAC). "These aren't projects that are just squeaking by; these are very significant cost-benefits."

Worcester also said both RTOs were surprised with how evenly the cost allocation was shared among the total projects.

The RTOs used a joint survey to decide on some details of the TMEP process.

For example, the RTOs will not subtract congestion hedges in calculating project benefits. PJM said not excluding the hedge is "consistent with TMEP goal of simple, efficient metrics easily reproduced by stakeholders." A majority of 27 survey respondents preferred not to include congestion hedges in the benefit calculation.

Worcester said there's nothing to prevent congestion hedges being counted in the regional cost allocation, however.

A majority of 22 respondents supported using the last three years of historical congestion data in benefit calculations. Other stakeholders wanted the highest historical congestion data from two of the past three years used, while others wanted the past two years of congestion data used.

Exelon's Sharon Midgley said the number of respondents seemed "incredibly low." Worcester said there was "a reasonable cross-section of stakeholders" even though more MISO stakeholders responded than PJM stakeholders.

"This is what we're going forward with now. In a couple of years from now, we're open to revisiting this and improving it," Worcester said.

PJM Manager of Interregional Planning Chuck Liebold said that there are internal RTO cost allocation details that need to be fleshed out in the draft JOA and respective tariff language. "But we have everything we need to know for the interregional benefit calculation and cost allocation," Liebold said.

PJM and MISO staff said intra-RTO cost allocation rules are being worked out in PJM's Transmission Owners Agreement-Administrative Committee and MISO's Regional Expansion Criteria and Benefits Working Group.

MISO's Adam Solomon said MISO and PJM will file JOA and tariff changes at the same time. In spite of unfinished cost allocation details, the RTOs plan to file the JOA changes sometime in October and recommend project candidates to their boards by December.

A first draft of the JOA language was released at the July IPSAC. (See *MISO, PJM Unveil JOA Process for 'Targeted' Market Efficiency Projects*.)

SPP NEWS

Z2 Task Force Rejects Waiver Requests

SPP stakeholders have recommended the RTO's leadership reject $114 million in remaining waiver requests for Z2 transmission upgrades.

The Z2 Task Force voted 8-4 Friday with four abstentions to "follow the Tariff" and reject all Group B and C waivers. SPP has calculated that Group B transmission customers (those that SPP said didn't qualify for waivers from paying their Z2 bills) owe $36.9 million in directly assigned upgrade costs and Group C members (who didn't request waivers) owe $77 million.

SPP staff made the same recommendation to the Board of Directors and Markets and Operations Policy Committee in July, but the board did not adopt the recommendation and created the task force to find a "more rounded solution" to a problem that dates back to 2008. (See *Preliminary Z2 Bills Released; Task Force Develops Options for Waiver Requests*.)

The task force reviewed additional data from staff and discussed six options it had developed during its previous meeting. The "follow-the-Tariff" option was a clear favorite, with accepting the waivers and regionalizing the costs drawing half as much support.

The recommendation now moves forward to the MOPC and the board later this month. The task force plans to make itself available to help improve SPP's Z2 processes following the October meetings.

"We're the only RTO that allows third-party impacts to these types of upgrades," said Bill Grant, director of strategic planning for Southwestern Public Service, referring to transmission customers making service requests that affect previous upgrades. "This is a convoluted mess. It's going to cost us money going forward. Now that we've seen it, and how complicated the whole [Z2] process is, why wouldn't we change that?"

Under Attachment Z2 of the SPP Tariff, staff was to assign financial credits and obligations for sponsored upgrades. Years of incorrectly applied credits have complicated the task of trying to accurately compensate project sponsors and claw back money from members who owe debts for the upgrades.

SPP Vice President of Operations Bruce Rew said his staff has held internal discussions on how to improve the Z2 process and developed a couple of alternatives that can be presented in the future.

"One thing that has to be key is that [the process] has to be simpler than it is," Rew said. "We're concerned about how we manage this 10, 20, 30 years from now. It's got to be simpler in terms of what we have, both on our side and on the visibility side, so that you can see it."

In a related matter, FERC on Friday approved SPP's request for Tariff waivers to allow it to offer a payment plan to transmission customers owing Z2 bills (ER16-2330).

SPP Goes Live with New Gas-Day Timelines

SPP's Integrated Marketplace instituted its new FERC-ordered timelines for gas-day nominations Oct. 1.

Phillip Bruich, SPP's director of markets, said the transition went "very smoothly" and thanked market participants for being prepared.

"Our market participants … were well prepared, ready for the changes and able to submit their bids and offers on time the first day," Bruich said. "This is a … step toward better coordination and efficiencies between the electric and gas markets."

The SPP market now closes the day-ahead market at 9:30 a.m. CT and posts the results at 2 p.m., moving the timelines up from 11 a.m. and 4 p.m., respectively. The day-ahead reliability unit commitment reoffer period opens at 2:45 p.m. and closes at 5:15 p.m., a shift from 5 p.m. and 8 p.m., respectively.

The changes are a result of FERC Order 809, which required RTOs to coordinate their day-ahead operations with the natural gas market. The commission says this change will "better ensure the reliable and efficient operations of our interstate natural gas pipelines and our electricity systems."

— Tom Kleckner

COMPANY BRIEFS

More Aliso Canyon Wells Pass Inspections, But Still More to Go

Southern California Gas said more wells at its Aliso Canyon underground storage facility passed safety inspections, but there is still more work to do before natural gas injections can begin. SoCalGas shut the storage facility down after a massive leak spewed methane for almost four months until it was finally capped in February.

Aliso Canyon is the largest of the four facilities owned by SoCalGas' parent company, Sempra Energy. It has 114 wells, and each one must be tested and passed by the state Division of Oil, Gas and Geothermal Resources before the facility can be used again.

More: Reuters

NorthWestern Energy Names Government Affairs Director

David Hoffman has joined NorthWestern Energy as director of government affairs for Montana. He will work with corporate counsel John Alke and Art Noonan on the Montana government affairs team.

Hoffman served in the Montana Legislature before joining the Montana Public Service Commission in 2001. He worked with PPL Montana from 2002 through 2015.

He replaces John Fitzpatrick, who will retire at the end of the year.

More: The Montana Standard

PacifiCorp Files to End Dam Operations

PacifiCorp has filed an application with FERC to transfer its licenses to operate four hydroelectric dams in California and Oregon to the Klamath River Renewal Corp. (KRRC) — a nonprofit corporation whose purpose is to oversee removal of dams on the Klamath River (P-2082-062).

In a separate application, KRRC has asked FERC to approve the decommissioning and removal of the dams, which have a total capacity of 6 MW (P-2082-063). The organization says it will be the largest dam removal project in U.S. history.

The applications were filed pursuant to a settlement agreement earlier this year between PacifiCorp and other parties. If FERC approves the applications, KRRC will oversee dam removals beginning in 2020, while PacifiCorp continues to operate the dams until they are decommissioned.

More: Herald and News; Klamath River Renewal Corp.

Davis-Besse Plant Recovers From Unplanned Outage

First Energy's Davis-Besse nuclear plant returned to full power last week after an unplanned outage that lasted nearly 12 days.

On Sept. 10, rainwater entered the plant's turbine building through an unclosed roof vent during a heavy storm, damaging electrical controls and causing the generator to shut down.

The plant synchronized to the region's electric grid last Thursday, utility spokeswoman Jennifer Young said.

More: The Associated Press

DTE Spending $1.3B For Natural Gas Assets

DTE Energy announced last week its plans to spend $1.3 billion for natural gas assets in Pennsylvania and West Virginia.

DTE will purchase from M3 Midstream all of its Appalachia Gathering System in Pennsylvania and West Virginia and 40% of Stonewall Gas Gathering in West Virginia. The company also will purchase 15% of Stonewall Gas Gathering from Vega Energy Partners.

DTE expects to complete the deals this year.

More: The Associated Press

Decade-Long CAPX2020 Project Finished

Utility officials last week celebrated the completion of the fourth of five legs of the CAPX2020 project, a 345-kV line from Hampton, Minn., to La Crosse, Wis.

The completed sections now span 725 miles across Minnesota, North Dakota, South Dakota and Wisconsin. The final project in eastern South Dakota is scheduled for completion next year.

The project — the largest new transmission development in the Upper Midwest in 40 years — is a collaboration among municipal, cooperative and investor-owned utilities. "It has been unprecedented for 11 utilities of quite varying types to be able to come together under a common purpose and then stay together," said Teresa Mogensen, senior vice president of transmission at Xcel Energy. "Working in cooperation, we were able to do much more together than any one of us could have done individually alone."

More: WPR News; Star Tribune; CapX2020

PSEG Proposes NJ Data Control Center

Public Service Enterprise Group is seeking to build a 74,950-square-foot data center in Bridgewater, N.J., to manage its electric and gas distribution operations.

The proposed center would serve as a backup to PSEG's Newark, N.J., facility and would be located next to a substation built after Superstorm Sandy.

Local officials will review PSEG's proposal on Oct. 6.

More: NJ Advance Media

Competitor Sues SolarCity For Trade Secret Theft

SolarCity is being sued by a competitor who claims the company stole trade secrets pertaining to the development of high-efficiency shingled solar panels.

Cogenra Sola and its majority shareholder, Khosla Ventures, filed suit last week alleging the trade secret theft occurred after a series of meetings between the two companies in 2010 and 2014.

SolarCity issued a statement saying it is "confident the court ultimately will reject Cogenra's claims, which are factually and legally baseless." SolarCity said Cogenra filed its lawsuit after SolarCity discovered earlier in September that a former employee took "highly valuable trade secrets" to SunPower, which acquired Cogenra law year. SolarCity said it filed its own suit against its former employee and SunPower.

More: The Buffalo News

Continued on page 22

COMPANY BRIEFS

Continued from page 21

Duke Acquisition to Aid Transition to Natural Gas

Duke Energy has closed its $4.9 billion purchase of Piedmont Natural Gas, which the utility said is central to its transition from coal- to gas-fired generation.

Since 2008, Duke has reduced coal's share of its generation from about 60% percent to about one-third.

Duke CEO Lynn Good is preparing for the day when coal is no longer part of Duke's business model. "I think we'll still be operating coal in 2030," Good said. "Whether we will be in 2040 I think is a question, or in 2050," she said.

More: *Bloomberg*

PSEG Quietly Enters Retail Energy Business

Public Service Enterprise Group is creating a retail energy business to sell electricity and gas to commercial and industrial customers.

The new unit, called PSEG Energy Solutions, will provide a hedge to PSEG Power, which owns more than 18,000 MW of capacity.

"We remain interested in retail for our defensive purposes — managing basis risk — and not as a significant growth opportunity by any stretch of the imagination," CEO Ralph Izzo said.

More: *NJ Spotlight*

SunPower Uses Drones To Construct Power Plants

Solar cell manufacturer SunPower will use drones and software when it starts construction of new "Oasis" power plants in North America and China during the next several weeks.

The drones will fly over a site to collect data, which the software will use to recommend the best design options.

"Oasis can take advantage of unused irregularly shaped areas and slopes up to 10 degrees to generate up to 60% more energy than conventional technology installed at the same site," CEO Tom Werner said in a press announcement.

More: *ZDNet*

EnerNOC Reducing Staff by 15%

EnerNOC is cutting its global staff by about 15%, shedding more than 200 jobs primarily from its energy software business.

The company is seeking to focus its software business on sectors that are best equipped to use its energy management software, such as manufacturing and commercial real estate.

"We're still committed to [the software] business, but what we need to do is reduce our cost structure significantly in light of where the market is today," CEO Tim Healy said. "We've overbuilt a little bit. We need to recognize that fact."

More: *The Boston Globe*

OGE Energy OKs 10% Dividend Hike

OGE Energy has approved a 10% dividend increase effective with the fourth quarter of 2016.

The increase from $0.275/share to $0.3025 equates to $1.21/share annually.

"We are pleased to reaffirm our commitment to a 10% dividend growth annually through 2019," CEO Sean Trauschke said. "We realize many of our shareholders count on our dividend for income and we are proud to be one of a select group of utilities that has never reduced our dividend since going public in 1947. That is 69 years of consecutive dividend payments."

More: *OGE Energy*

Crestwood to Build, Operate Permian Gas-Gathering System

Crestwood Energy Partners announced last week that it had entered an agreement with SWEPI to build a $180 million natural gas-gathering system in Texas' Permian Basin.

SWEPI agreed to provide 100,000 acres and gathering rights in Loving, Ward and Reeves counties in Texas. Crestwood will own and operate the system, which is projected to be in service by July 2017. Shell, SWEPI's parent company, has the option of buying a 50% equity in the system by September 2017.

More: *Fuel Fix*; *Crestwood*

DTE to Build Natural Gas-Fired Power Plant

St. Clair Power Plant

DTE Energy last week announced plans to build a natural gas-fired power plant in China Township, Mich., near the Belle River.

The new plant will be adjacent to the St. Clair Power Plant, a coal-fired facility that DTE intends to close by 2023. The announcement came in a meeting with St. Clair County officials, who expressed relief that tax revenue would not be lost because of the closure.

The company said it may build several natural gas plants worth between $1 billion and $1.5 billion by 2023, but a spokesman said the St. Clair plant, with a capacity of about 1 GW, is the only one that has been sited so far.

More: *The Times Herald*

FERC Claws Back Reactive Power Payments on Talen Generators

FERC last week approved a settlement reducing Talen Energy's reactive service payments for its generators in the PPL zone of PJM for May through December 2016 by more than $654,000 (ER16-277). The settlement ends a Section 206 proceeding the commission ordered in March to determine whether the reactive power rates were just and reasonable due to the "degradation" of the units' reactive capability compared to the original values used to calculate the proposed rates in 1997.

But in a separate docket, the commission opened a new Section 206 case to determine the reactive rates going forward under Riverstone Holdings' proposed acquisition of Talen (EL16-116).

More: *Riverstone to Acquire Talen in $1.8B Deal*

FEDERAL BRIEFS

FERC Calls Tech Conference on Storage

FERC will hold a technical conference Nov. 9 to determine what RTO rule changes may be required to accommodate electric storage. "The subject of the conference will be the utilization of electric storage resources as transmission assets compensated through transmission rates, for grid support services that are compensated in other ways, and for multiple services," the Sept. 30 order said.

More: *AD16-25*

UN Heritage Monitoring Team Eyeing BC Hydro Project

A United Nations world heritage site monitoring team is taking a closer look at a plan to build a hydro project in British Columbia, concerned about the possible impact on Wood Buffalo National Park and the Peace River in neighboring Alberta.

The team was already examining the effects of two existing dams on the Peace River at the request of the Mikisew Cree First Nation, which says the areas are under threat of development. The U.N. review will now be expanded to include the Site C hydro project, a 1,100-MW project in northeast British Columbia, near Fort St. John.

The tribe is seeking to have the Peace River region declared a world heritage site, and possibly block the dam project. "We're looking for them to list it as endangered so Canada can really take a more proactive means in managing those impacts and activities," said Melody Lepine, a tribe spokesperson.

More: *The Canadian Press*

PennEast Opponents Call For New FERC Review

News that PennEast Pipeline has 33 new changes to the proposed route of the 119-mile pipeline is spurring environmental groups to call for FERC to conduct a new environmental review of the plan.

"These 33 new modifications further demonstrate that the draft [environmental impact statement] released does not even describe, let alone analyze, the pipeline PennEast wants to build," said Maya van Rossum of the Delaware Riverkeeper Network. "FERC needs to go back to the drawing board and issue a new DEIS and hold a new public process, one that includes real public hearings."

A company spokeswoman said most of the changes were proposed in an attempt to minimize the environmental impact of the pipeline. "PennEast views the modifications as being responsive not only to constructive feedback provided by landowners, agencies and other stakeholders, but also to recommendations contained within FERC's draft environmental impact statement."

More: *StateImpact*

NRC Won't Hit Entergy For False Leak Reports

Operators at the Pilgrim Nuclear Power Station allegedly filed two false reports relating to a hydrogen leak, but the Nuclear Regulatory Commission said their regulations don't cover hydrogen leaks, and therefore plant owner Entergy has nothing to worry about from the commission.

A local fire chief said Pilgrim incorrectly claimed that it had notified fire officials about a hydrogen leak, and then filed another false report saying the notification was made a little while later. Plymouth Fire Chief Ed Bradley said those reports are just two more in a series of incorrect or nonexistent notifications.

But the commission said it was going to take no action against Entergy. "We have not identified any regulatory requirement on our part that they do these notifications of hydrogen releases to the fire department," an NRC spokesman said. "As far as the NRC is concerned, that is not a regulatory issue." Bradley said plant officials have promised the communication problem will be rectified.

More: *Old Colony Memorial*

Lobbyists Prominent Among Trump Energy Advisers

Despite his complaints about Washington's "rigged system," Republican presidential nominee Donald Trump is relying on D.C. lobbyists representing utilities and coal, oil and gas companies on his campaign and transition teams, *The Washington Post* reported.

Trump

The head of Trump's energy transition team, Mike Catanzaro, is a former staffer with the Senate Environment and Public Works Committee who later handled government relations for PPL. He is now a partner at the lobbying firm CGCN, which has represented Noble Energy and Talen Energy.

Other Trump advisers include Jeffrey Wood, a partner at Balch & Bingham and a registered lobbyist for Southern Co.

More: *The Washington Post*

Study: Bio-Energy Creates Environmental Tradeoffs

Increased demand for bio-energy as an alternative to fossil fuels is leading to less forested land and less habitat for wildlife, according to a multiyear study by researchers at North Carolina State University and the U.S. Geological Survey.

Tradeoffs that come with bio-energy production include risks to species that rely on a single, mature habitat and exacerbation of habitat loss for species already losing ground to increased urbanization, said researcher Nathan Tarr.

"None of the biomass sources that we looked at were good or bad for all species, nor was a single mix of biomass sources consistently the best or worst for all species," Tarr said.

More: *Coastal Review Online*

Report: Energy Efficiency Key To Cutting Carbon Emissions

Industrial energy efficiency could cut carbon emissions by 175 million tons nationwide in 2030, according to new research by the Alliance for Industrial Efficiency.

"Process efficiency improvements, boiler upgrades, replacing chillers, insulation, even things as simple as lighting," said Jennifer Kefer, executive director of the group. "Our report demonstrates very clearly that one can cut carbon while saving money."

More: *Public News Service*

State Briefs

California and Massachusetts Top List for Energy Efficiency

California and Massachusetts tied for first place in the 2016 State Energy Efficiency Scorecard published by the American Council for an Energy-Efficient Economy. This is the sixth consecutive year that Massachusetts led the nation.

Missouri, Maine and Michigan were the most-improved states, according to the study. The study identified Louisiana, Kansas, South Dakota, Wyoming and North Dakota as the states most in need of improvement.

"States are spurring efficiency investment through advancements in building energy codes, transportation planning and leading by example in their own facilities and fleets. These investments reap large benefits, giving businesses, governments and consumers more control over how and when they use energy," said ACEEE Executive Director Steven Nadel.

More: *ACEEE*

ARIZONA

Utilities: Customers Subsidizing Rooftop Solar Homes

Arizona Public Service and the Salt River Project say that customers who have installed rooftop solar panels on their homes are increasingly burdening those who haven't.

SRP recently told a local newspaper that its "demand charge" of about $50 on rooftop solar customers was necessary because they weren't paying their fair share for the energy they consumed from the grid. APS said 96% of its customers pay more than they should because of state subsidies for rooftop solar installations. The utility is seeking a new rate plan from state regulators.

The solar industry in the state disputes these statements. SolarCity is suing SRP over the extra charge, while groups such as the Arizona Solar Energy Industries Association and Solar Strong America say the utilities are trying to undermine net metering in the state.

More: *Florence Reminder Blade Tribune*

CALIFORNIA

Water District Installing Largest Public Energy Storage System

The Irvine Ranch Water District is installing a 7-MW, 34-MWh energy storage system using Tesla batteries in what is billed as the largest network of energy storage systems at a public water agency in the U.S.

Irvine Ranch is working with Advanced Microgrid Solutions to install the battery storage system at three water treatment plants, a deep aquifer treatment system, a desalinization plant and six large pumping stations. The district decided on the system after regulators called on utilities and municipalities to install systems to provide power in the event of service interruptions.

"In a region challenged by the closure of the San Onofre Nuclear Generating Station," Irvine Ranch said. The project will allow it to reduce demand from the grid when requested by the utility without curtailing water treatment operations.

More: *Irvine Ranch Water District*

PG&E Responds to Public Comments on Diablo Canyon

Pacific Gas and Electric last week filed a response to public comments submitted to the Public Utilities Commission on its plan to retire its Diablo Canyon nuclear plant in 2025.

"We fully understand that elements of the joint proposal reflect important issues for the state and PG&E's customers," PG&E Electric President Geisha Williams said in a statement. "The near decade-long period ahead of us provides the time to plan and replace Diablo Canyon's energy with new [greenhouse gas]-free replacement resources."

The company, which reached a settlement over the plan with employees and environmental groups in August, said it did not expect rates to increase as a result of the closure.

More: *PG&E*

Brown Signs EE, PUC Transparency Bills

Gov. Jerry Brown signed a bill last week that requires participants in energy efficiency programs for heating and air conditioning to provide proof that their equipment has been properly installed.

"Research shows that many of these projects are not being installed correctly, meaning customers aren't receiving the energy efficiency savings they paid for and could even be dealing with a significant safety hazard," said State Sen. Lois Wolk, the bill's sponsor. Wolk said the bill would also help the state meet its goals to combat climate change.

Brown also signed a package of bills designed to increase transparency and public participation in Public Utilities Commission hearings and proceedings. The bills were written after the deadly explosion of a Pacific Gas and Electric natural gas pipeline revealed off-the-record, private communications between the commission and the companies it regulates.

More: *Daily Democrat*; *San Francisco Chronicle*

CEC: NRG Plant Design Change May Delay Approval

Construction of a proposed NRG Energy power plant in Oxnard may be delayed after the company made some changes to its design, the state Energy Commission said at a public hearing last week.

NRG decided to change how the plant's water discharge is routed. The commission said that means it will require more data from the company before it can give final approval to the plant, which has been sited at a local beach. A final staff report was expected by Oct. 14, but that may need to be pushed back, the commission said.

The plant, called the Puente Project, is intended to replace two aging generators in the area.

More: *Ventura County Star*

ILLINOIS

ICC Approves Ameren Smart Meter Expansion

The Commerce Commission voted unanimously to accept Ameren Illinois' plan to expand the installation of smart meters to its entire service territory.

Currently, just 330,000 of the company's 1.2

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million customers have smart meters installed. Ameren had originally planned to expand to just 62% of its customers, but the utility decided to expand the program once it found that the meters reduced outages and saved money for both it and its customers.

The Environmental Defense Fund and the Citizens Utility Board both supported the plan. Installations will be completed by 2019.

More: *Midwest Energy News*

MANITOBA

Former PUB Member: Hydro Customers Facing Giant Rate Hikes

An over-budget transmission project, coupled with increased charges from dam construction, could double rates for Manitoba Hydro customers, according to a former Public Utilities Board member.

Graham Lane, a former PUB chairman and chartered accountant, said mounting debts from the Bipole III transmission line project and the Wuskwatim dam could spur Manitoba Hydro to seek major rate hikes.

"The losses [associated with the projects] are going to be huge," he said. "By my own calculations, by the time it all ends, Hydro will have lost somewhere in the area of $5 billion to $10 billion, and that money will basically have to be covered by the ratepayers."

More: *CBC News*

MARYLAND

State Touts 'Most Stringent' Fracking Regulations

State officials released proposed fracking regulations last week that would ban drilling in three watersheds in Western Maryland and require four layers of steel casing and cement around wells to prevent water, gas and other fluids from migrating.

Environment Secretary Ben H. Grumbles called the proposed regulations "the most stringent" in the country. However, the rules would allow drill sites closer to homes and private wells than proposed by former Gov. Martin O'Malley (D).

The state legislature imposed a moratorium on fracking that is due to expire in October 2017. Environmentalists say they will try next year to make the moratorium permanent.

More: *The Washington Post*

MONTANA

Suspended Solar Payments Lead to FERC Complaint

The Montana Environmental Information Center and Vote Solar filed a complaint with FERC claiming the Public Service Commission violated federal regulations when it suspended payments for energy projects while it reviews standard rates for small solar energy developers.

"That rate has now been taken off the table when projects were in their late stages," said Brian Fadie, clean energy program director for MEIC. "It undercuts solar development in Montana at the moment."

A hearing on new rates could come as early as January, PSC spokesman Eric Sell said.

More: *The Associated Press*

NEBRASKA

Committee Addresses Solar Energy, Financing

Haar

A special legislative committee on climate change is seeking to create a statewide climate action plan — addressing issues such as solar energy and financing energy improvement.

"Some of the public power districts have created their own, what I would say, goals. Nebraska Public Power District, I think their goal is 10%," state Sen. Ken Haar said. The districts' goals "are fairly low compared to what other states are doing that actually have energy standards."

Harr said the committee will issue a report to the Legislature by the end of the year.

More: *Nebraska Radio Network*

NEW YORK

Empire Center Critical of PSC's Clean Energy Standard

The Empire Center for Public Policy has issued a report critical of the Public Service Commission's Clean Energy Standard, passed in August, which calls for 50% of the state's energy needs to come from renewable sources by 2030.

The think tank says that rather than subsidizing renewables, the PSC should set greenhouse emission standards and let utilities figure out how to meet them. The group, which promotes "free-market principles [and] personal responsibility," also maintains that the cost of ramping up renewables will exceed the $2/month rate increase that the commission predicted and that it underestimated the difficulty of switching to solar and wind power.

PSC spokesman Jon Sorensen defended the plan. "Rather than support bold national leadership to combat the very real threat of climate change, this right-wing think tank denies reality and relies on bogus cost assumptions to argue for inaction," Sorensen said in a prepared statement.

More: *Times Union*; *The Empire Center*

Long Island Sees 320% Growth in Solar Energy

Long Island has seen a 320% growth in solar energy over the past four years and just completed its 35,000th solar energy project, Gov. Andrew Cuomo announced.

Long Island, which is part of NY-Sun, the $1 billion initiative launched by Cuomo to advance the solar industry and create jobs, now saves 200,000 tons of carbon emissions per year.

"Clean energy is our future, and Long Island is leading the state in growing our clean tech economy and achieving our climate change goals," Cuomo said.

More: *Gov. Andrew Cuomo*

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STATE BRIEFS

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NORTH CAROLINA

Two Sides Clash over Environmental Justice Reports

State regulators and environmentalists are clashing over reports that say new coal ash landfills at Duke Energy's Sutton Plant in Wilmington and Dan River plant in Eden won't unfairly affect anyone based on age, race, income or language.

The findings were the first two environmental justice reports issued by state regulators since announcing in April that they would start requiring environmental justice reviews before issuing permits.

Therese Vick, a community organizer with the Blue Ridge Environmental Defense League, said the reviews are not worth much because there is no mechanism to deny a permit on environmental justice grounds. "It's an empty process," she said.

More: *WFAE*

Duke Seeks to Build Solar Transmission Line

Duke Energy Progress is seeking to build a new 230-kV transmission line in Bladen County that would connect Innovative Solar's new 40-MW solar power facility in Bladen County to Duke's existing Cumberland to Delco 230-kV transmission line in Bladen County.

In its September application filed with the Utilities Commission, Duke said it will build a 230-kV breaker station adjacent to a new substation that Innovative Solar plans to build adjacent to the Cumberland to Delco 230-kV line.

More: *TransmissionHub*

OHIO

Regulators Approve Natural Gas-Fired Plant

The Power Sitting Board has given approval to Boston-based Advanced Power Services for a $1.1 billion, 1,105-MW natural gas-fired power plant in eastern Ohio.

The plant is expected to begin operating in January 2020.

More: *Columbus Business First*

Kasich Threatens Veto of Any Bill Killing Clean Energy Standards


Kasich

Gov. John Kasich threatened to veto any legislation eliminating standards for renewable energy and energy efficiency, which could be a bad sign for proposals pending in the General Assembly.

Two years ago, Kasich placed a freeze on standards requiring electricity utilities to meet annual benchmarks for renewable energy and to help customers reduce energy use. The freeze will expire soon, and not all lawmakers would like to see it extended.

More: *The Columbus Dispatch*

OREGON

Solar-Project Completion Extended to 2017

Pacific Power announced last week that four solar power projects in central and southern Oregon from which it acquired future renewable energy credits would not be completed until the first quarter of 2017.

The company previously expected the developer, Coronal Development, to complete the projects by year-end.

If Coronal misses its completion date, it is contractually obligated to pay Pacific the difference if it has to buy power at a higher cost on the energy market.

More: *The Bulletin*

PENNSYLVANIA

Drillers, Landowners Dispute Royalty Payment Calculations

A dispute is raging in the state between drillers and landowners, who claim they are being cheated out of royalty payments for gas extracted from their land.

Although a 1979 law mandates a landowner royalty of at least 12.5% of the value of the gas, there are disputes over how the gas should be valued. Landowners contend they are entitled to 12.5% of what the gas sells for, while drillers say the proper calculation is market price, less post-production deductions for transportation and processing.

State lawmakers are scheduled to take up the issue Tuesday with a procedural vote on a bill that would prevent deductions from reducing landowner royalties to below the 12.5% state minimum.

More: *The Associated Press*

Supreme Court Strikes Down Pro-Industry Drilling Law Provisions

The state Supreme Court last week struck down provisions of a 2012 law allowing state utility regulators to punish municipalities financially if they enact drilling rules stricter than state law.

The provisions generally had not been used, but the decision gives municipalities "breathing room" to enact tougher ordinances on the natural gas industry, said Jordan Yeager, an attorney for the Delaware Riverkeeper Network.

The high court also struck down two other provisions of the law. One pertained to a so-called "medical gag" rule; the other was characterized by one justice as illegal eminent domain for a private purpose.

More: *Pittsburgh Tribune-Review*

State's Pipeline Infrastructure not Keeping Pace with Gas Production

The state's 60,000 miles of pipeline infrastructure is not keeping pace with natural gas production, industry leaders said in a conference call last week that addressed future gas pipeline expansion.

Some 25 to 30% of the state's wells do not have full takeaway capacity, said Stephanie Catarino Wissman, executive director of Associated Petroleum Industries of Pennsylvania. The lack of pipeline infrastructure is hurting production from the Marcellus and Utica shales, Wissman said.

More: *Pittsburgh Business Times*

SOUTH DAKOTA

Largest Solar Facility in State Begins Operating

Pierre, state and company officials held a ribbon cutting ceremony last week for the state's largest solar project, which has begun generating

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power under a testing period before it starts feeding the grid Oct. 7.

The $2 million, 1-MW facility is a joint venture between Pierre, Geronimo Energy and Missouri River Energy Services. It is located on about nine acres near the city's airport. The companies chose Pierre because of easy access to a substation and available land that could not be used to grow crops.

With 4,280 panels, the facility only took two months to build, an MRES official said.

More: Capital Journal

VIRGINIA

McAuliffe Rejects Calls To Kill Atlantic Coast Pipeline

Amid protests from residents and environmentalists, Gov. Terry McAuliffe said last week that he lacks the authority to cancel construction of Dominion Resources' Atlantic Coast Pipeline — and wouldn't do so even if he could.

"I as governor do not have the right to call down to the Department of Environmental Quality and say, 'Well I don't like this,'" McAuliffe said on a local radio station. "I cannot deny an air and water permit as governor. I don't have the authority. It's done by statute. If you don't like the regs and they get approved, then you need to talk to the legislature to change the law." But the governor also said he supports the project, arguing that it will create jobs and is a safer alternative to transporting gas by train.

McAuliffe's remarks come as about 150 people attended a public hearing of the Buckingham County Planning Commission to voice to their opposition to the pipeline. Because of the large turnout, the commission extended the public comment period to Oct. 17. The Chesapeake Climate Action Network is also planning a three-day protest outside the Executive Mansion in Richmond.

More: WVTF; Richmond Times-Dispatch

WASHINGTON

Gas Utilities Challenge Emissions-Reduction Rule

The state's big gas utilities are filing legal challenges to a recent Department of Ecology rule that requires about two dozen large industrial emitters of greenhouse gases to reduce their carbon emissions by an average of 1.7% annually.

The rule applies to the state's five oil refineries, Puget Sound Energy gas facilities in Sumas, Longview and Goldendale, and other large emitters, including the Grays Harbor Energy Center in Elma.

"Washington's natural gas utilities believe that reducing greenhouse gas emissions is a matter that needs addressing, but the [Clean Air Rule] is not the solution," Avista said in a statement.

More: Seattle Post-Intelligencer

WEST VIRGINIA

Mayors, Consumer Groups Protest FirstEnergy Plant Sale

More than a dozen groups, including city officials, energy efficiency organizations, natural gas companies and consumer advocates, have sent a letter to the Public Service Commission to protest FirstEnergy's sale of the Pleasants power plant to one of its subsidiaries.

The groups say FirstEnergy is trying to save the money-losing coal plant by selling it to either Mon Power or Potomac Edison, which can get a guaranteed rate of return for the plant's power. They told the PSC the utilities should bid for the lowest cost power, and that FE should have to prove selling the plant to one of the utilities is the most affordable option for consumers.

More: Charleston Gazette-Mail

Fitch Downgrades State's Credit Rating

Fitch downgraded the state's credit rating from AA+ to AA, citing the failing coal industry and a slump in profitability from natural gas.

The agency did note the growth in the service, transportation and warehousing industries, but they were not enough to buoy the state's economy, which still relies heavily on coal. The state is also steadily losing its population to other states, Fitch said.

"We must work continually to diversify our economy through projects like the Hobet mine site redevelopment, while also maintaining a balanced, smart budget without irresponsible cuts to critical programs," Gov. Earl Ray Tomblin said.

More: West Virginia MetroNews

WYOMING

Legislative Committee Kills Wind Production Tax Increase

A state legislative committee voted down a proposed increase on the state's wind energy production tax, the only such tax in the country.

The legislature has been seeking a way to close a multimillion-dollar budget shortfall, caused in part by a decline in revenue from the fossil fuel industries. But after hearing five hours of testimony from wind companies and local communities, the committee voted against moving forward a bill that would have raised the wind tax from $1/MWh to $3. Everyone who spoke at the hearing on the bill was against it.

Rep. Michael Madden, a committee co-chair, supported the bill, pointing to a new wind project that would have raised $40 million alone. The state is facing a gap of $200 million. "I don't know what we're going to do now," Madden said.

More: Los Angeles Times

ERCOT, SPP Collaborate to Improve Open Source Visualization Tool

Continued from page 1

"Our experience … is a great illustration of a new way of thinking, both about the relationships between technology and grid reliability and between independent grid operators like ERCOT and SPP," said Cody Parker, SPP's supervisor of operations support. "The adoption rate of users has been tremendous. It's been clear that the … user-friendliness of the tool, the performance and responsiveness of the tool … those aspects have won over all the operators."

Mike Legatt | *ERCOT*

Seeing the 'Big Picture'

The system is named in honor of its creator, ERCOT's Gary Macomber, a human factors engineer who died in August 2008, a few weeks before his first map became a production-level tool.

"Gary was really an incredible guy. He could see the big picture," Legatt said. "This was the one [project] he was really excited about, because it's pulling together disparate data from people who gather it. By doing all that work for the operators, it gives them more time and more mental bandwidth to be solving these problems."

"It's opened up a whole new visualization framework without having to go through the physical process of drawing things pixel by pixel," said SPP senior engineer Jeff Parker (no relation to Cody). "We've been able to use modern graphics-rendering capabilities built into it, instead of the old style of manually drawing everything."

Legatt was behind the code for the map's first version. However, he's quick to say it's the control room operators who developed the map.

"It's all the users — operators, engineers and other groups within our organization — that have really defined how the tool grew and developed into what it is today," he said.

In 2013, ERCOT released the code to the open source community for adoption by other users, such as governments, utilities and emergency responders who could benefit from improved situational awareness. The code has also been picked up by power-flow engineering students.

That led to version 2.0, which has an improved graphical user interface, among other upgrades.

Legatt credits SPP's developers and operators for the new features. SPP staff tailored the tool to aggregate and analyze historical and real-time data from their energy management, markets, weather and other systems. The grid operators said SPP's improvements enable operators to run what-if scenarios to monitor and mitigate congestion and outages.

"They've done some incredible work," Legatt said of SPP. "They are showing things we were already showing, but in a better way. The graphical rendering is much nicer and much faster. It works better in remote-access situations … all thanks to Cody and his team."

Human Factors Engineering

Cody Parker and his team became interested in Legatt's work on human performance improvement through mutual industry contacts. Human factors engineering, also known as cognitive ergonomics or user-centered design, combines psychology and engineering.

Parker spent several months talking with Legatt, who has two master's degrees and a doctorate in clinical health and neuropsychology. He recently defended his thesis in pursuit of a second doctorate from the University of Texas at Austin in energy systems engineering.

Once SPP's Integrated Marketplace went live in 2014, Parker and his team were able to devote their full energy to adapting the map for their use.

"Working with Mike Legatt has been an absolute pleasure. It's the key to our success and the ongoing coding," Jeff Parker said. "He brings a whole new layer of ideas and questions … as we implement a requirement."

After Legatt joined ERCOT in 2006, Macomber asked him to sit with ERCOT's operators so he could understand their needs. "It became even more clear why we needed this tool," Legatt said.

ERCOT began using the map's first release in its training exercises in 2009, allowing its operators and those of market participants to visualize system restoration in black-start exercises and other scenarios.

Woody Rickerson, the ISO's vice president of grid planning and operations, says he has seen performance continue to improve in training exercises. "That tells us those operators are even more prepared for success in real-life situations," he said.

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Maxim Power to Pay $8M to Settle Fuel-Switching Case

Maxim Power will pay $8 million to settle a FERC complaint that it manipulated the New England power market in a fuel-switching scheme (IN15-4).

FERC alleged that in July and August 2010, the Canadian company submitted offers for its 181-MW dual-fuel generating station in Pittsfield, Mass., based on fuel oil prices when it actually burned less expensive natural gas. The plant provides voltage support to the ISO-NE market.

Under the consent agreement approved last week with FERC's Office of Enforcement, Maxim agreed to pay a $4 million fine and disgorge another $4 million in earnings to ISO-NE but did not admit guilt.

FERC issued Maxim a $5 million fine in May 2015 and sued the company in U.S. District Court two months later to collect the money. On July 21, 2016, the court rejected Maxim's motion to dismiss the case.

The settlement also closes FERC investigations into allegations that the company gamed ISO-NE market mitigation rules in 2012 and 2013 and that it improperly boosted its generators' outputs during testing in order to collect inflated capacity payments from 2010 to 2013. (See *Maxim to FERC: Prosecute or Drop Probe*.)

FERC Chairman Norman Bay, the former head of the Office of Enforcement, did not participate in the decision approving the settlement.

— William Opalka

ANALYSIS: No Knock Out Blow for Clean Power Plan Foes in Court Arguments

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Emission Limit a 'Lever'

Judges Cornelia T.L. Pillard and Patricia A. Millett also appeared sympathetic to EPA's case.

Pillard asked how the CPP is that different from previous EPA rulemakings, which required coal-fired generators to add equipment such as scrubbers.

Peter D. Keisler, representing industry and labor challengers, said EPA failed to take into account the remaining useful life of coal plants. He insisted EPA's authority is limited to "operation of the source" and doesn't "extend to the investment decisions of the owner."

"The emission limit here is a lever" to force subsidization of renewables, Keisler said. Renewables, he said, are not "sources."

Millett asked whether EPA could force dual-fuel plants to make gas primary. Yes, Keisler responded.

Judge Sri Srinivasan cited the Supreme Court's 2011 ruling in *American Electric Power v. Connecticut*, which he said gave EPA a guide to how to regulate CO_2 from power plants. But Srinivasan also saw a distinction between requiring coal plants to add scrubbers and requiring them to seek aid from other generators.

"The word 'system' is a capacious term," responded Hostetler. He rejected opponents' complaint that the agency was relying on a rarely invoked section of the Clean Air Act.

"You might not use a fire extinguisher until your house is burning down," Hostetler said. "That doesn't mean you shouldn't use it."

> ***"You might not use a fire extinguisher until your house is burning down. That doesn't mean you shouldn't use it."***
>
> **Eric Hostetler, Justice Department**

He also insisted the rule "doesn't require any subsidies," noting other compliance methods such as co-firing with natural gas.

Brown asked several questions but staked no clear position in the arguments. Judge Karen LeCraft Henderson said little and Judge Robert L. Wilkins was silent.

Although the D.C. Circuit's decision is likely to be reviewed by the Supreme Court, its ruling would prevail if the high court — currently shorthanded following the death of Justice Antonin Scalia — deadlocks 4-4.

Mutually Exclusive? Section 111(d) vs. 112

One curious wrinkle in the legal questions concerning the CPP is a drafting error that resulted from the House of Representatives and Senate approving two different versions of Section 111(d) when it amended the Clean Air Act in 1990.

The section has long been used to regulate pollution from existing sources that is not covered under other sections of the CAA.

Opponents say the House's version of the amendment barred EPA from using the section if the agency was already regulating power plant emissions under another section of the CAA. The Senate's version, however, included no such prohibition. The two were never reconciled and President George H.W. Bush signed the revision into law with both amendments.

EPA regulates power plant emissions such as mercury, acid gases and other hazardous air pollutants (HAPs) under Section 112.

Lin said he believes the House version was the "substantive amendment" and the Senate's was a clerical error. But he said the challengers should succeed even if the court decided to give the House and Senate versions equal weight. "The way to reconcile them … is to give both amendments maximum effect," he said.

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ERCOT, SPP Collaborate to Improve Open Source Visualization Tool

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'Eye-Opening' Visit

Cody Parker visited ERCOT during one of the black-start exercises. Seeing the training was "very eye-opening," he said.

Parker and his team took the code back to SPP and, after six months of development, integrated the tool with its other systems. The RTO has been using the map in its operations since March and recently began using it to train all of their operators. Parker's team is now working on making the tool available to SPP's external training department.

"We were able to take the users' feedback and quickly apply it," Parker said. "More often than not, that enhanced development was available for the [next] round of trainers. That was one of the huge advantages of going with the open-source solution."

"The nice thing about using a product we have the source code for is we can go in and make things the way we need to make them work. Using a vendor's tool, we just couldn't go in and make any changes we wanted," said SPP's Tim Van Prooyen, a senior operations programmer and analyst.

One of the tool's other advantages is that its updated rendering makes it easier to run on virtual machines — programs that emulate dedicated hardware.

"Before, you needed a physical machine on each person's desk, but now you can [use] virtual systems without dedicated video graphics cards. Any user can pretty much use it on any machine, remote and on-site," Parker said.

"The only thing we ask is if they find out ways to make it better … to let us know about it," Legatt said. "One of the benefits of open sourcing the map and building these kinds of collaborations is that different parties need different things. So every enhancement they make that flows back to the open-source community benefits everybody else, moving us all to a better place."

"This one project has opened the doors in multiple aspects," Jeff Parker said. "It's been much more of an exchange of ideas beyond the Macomber Map."

Asked what version 3.0 might look like, Legatt promises it will be exciting. "The best thing is this collaboration with SPP. We have proven to ourselves this philosophy works."

The Macomber Map's source code and more information can be found here. Legatt said he and others can provide additional information and training support to help others customize the map to serve their own needs.

ANALYSIS: No Knock Out Blow for Clean Power Plan Foes in Court Arguments

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Brett Kavanaugh is sworn in as a D.C. Circuit Court judge by Supreme Court Justice Anthony Kennedy in 2006, as his wife, Ashley, and President George W. Bush look on. | *The White House*

Judge Kavanaugh sided with the plaintiffs, saying he believed the House amendment applies.

But the other judges who spoke on the matter expressed no support for the opponents' interpretation.

Srinivasan said that if both amendments were considered, EPA would be given the right to regulate under 111(d). "It seems like it's inclusive and not exclusive," he said.

Allison D. Wood, representing the non-state plaintiffs, also insisted the House exclusion should prevail. She said most, if not all, coal plants are already regulated under Section 112.

"Under your theory you can't regulate existing sources [for CO_2] at all," responded Judge Tatel.

"I just don't see the logic of that," added Judge Pillard.

Berman

Justice Department attorney Amanda S. Berman said a "contextual reading is the best reading of this ambiguous text," asking the judges to side with EPA's "reasonable middle course."

Adopting the House version would be a "dramatic downsizing " of 111(d), she said.

"I don't think Congress intended something so drastic," she said, adding that electric generators are already regulated under "at least five sections" of the CAA.

Sean Donohue, representing environmental and public health intervenors, said the plaintiffs' arguments were an attack on the Supreme Court's 2007 ruling in *Massachusetts v. EPA*, in which the court ruled that the CAA applies to CO_2 emissions from automobiles.

The court followed that up in 2011 with its ruling in *American Electric Power v. Connecticut*, in which the court barred common law nuisance complaints over power generators' carbon emissions, saying it was EPA's response to regulate the emissions under section 111(d).

Constitutional Issues

After lunch, the judges returned to hear plaintiffs' constitutional challenge, with petitioners' attorney David Rivkin Jr. complaining that the CPP "commandeers" state officials to implement the rule in violation of states' rights under the separation of powers clause of the 10th Amendment.

Judges Griffith and Tatel challenged Rivkin, with Griffith asking how the CPP differed from any other federal regulation that requires state action.

Tatel, who is blind, said Rivkin's logic would also void the Americans with Disabilities Act. Compliance with the ADA, he said, requires local governments to exercise their police powers to issue building permits for wheelchair ramps and curb cuts.

Harvard University constitutional law professor Lawrence H. Tribe supported Rivkin's argument on behalf of the non-state petitioners. Tribe noted that the Senate had rejected cap-and-trade legislation in 2010. EPA's supporters "are asking you to bail out Congress," he said.

Judge Millett challenged Tribe, appearing sympathetic to EPA's argument that rejecting the CPP would amount to a "bait and switch" after the *AEP* ruling.

Justice department attorney Berman called the CPP "bread and butter cooperative federalism," saying the plaintiffs' arguments would "take down much of the Clean Air Act."

She said there was nothing in the record to suggest the "parade of horribles" opponents have predicted: price spikes, blackouts and jails being forced to release prisoners.

Throughout the afternoon's arguments, only Kavanaugh consistently expressed support for the challengers. Several times, he cited the Supreme Court's 2014 ruling in *Bond v. U.S.*, which he said established limits to the deference granted executive agencies under *Chevron*. The court ruled unanimously that a woman who attempted to poison a romantic rival could not be prosecuted under Section 229 of the Chemical Weapons Convention Implementation Act of 1998. The court said there must be "a clear indication that Congress intended to reach purely local crimes before interpreting Section 229's expansive language in a way that intrudes on the states' police power."

'Notice' Issue

Plaintiffs also complained that EPA failed to provide sufficient notice of its proposal because the final rule, issued in August 2015, included provisions not mentioned in the draft rule a year earlier.

The plan uses two different CO_2 emission rates to define the best system of emission reduction, one for coal-steam and oil-steam plants and a second for natural gas plants. The draft rule had proposed a blended rate. (See *Revised Clean Power Plan Allows More Time, Sets Higher Targets*.)

The final rule also made significant changes in the carbon-reduction targets for some states, increasing them by 27% for Kentucky and 19% for Indiana and West Virginia. (See *Final Clean Power Plan More Suited to Carbon Trading, Experts Say*.)

John Campbell Barker, representing state petitioners, said EPA should be required to withdraw the rule and restart the process, as it did in withdrawing its 2012 draft rule on CO_2 emissions from new electric generators.

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Attorneys leave the D.C. Circuit Court after arguments. | © RTO Insider

The Justice Department's Norman L. Rave said EPA changed the way it calculated state targets because it was "inundated" with comments objecting to state-by-state rates. Critics said the original plan would mean states that had done nothing to curb greenhouse gas emissions would have less stringent rates than those that had already taken action.

Rave said there was no shortage of opportunities to comment on the rule, noting the more than 600 meetings EPA held with stakeholders. The agency said it received more than 4.3 million comments in total.

He also cited the notice of data availability EPA issued between the draft and final rule, which signaled that it was considering factoring in states' ability to tap out-of-state renewable resources to meet their targets. (See *EPA Signals Flexibility on Interim Carbon Targets, Coal-Gas Shift*.)

Rave said the petitioners had failed to clear any of the three tests needed to overturn the rule on notice grounds and had not identified any data they would have offered to EPA had they received more notice.

Record-Based Issues

The final arguments dealt with plaintiffs' claims that EPA failed to demonstrate that its proposed compliance measures are achievable.

F. William Brownell, representing the non-state petitioners, said the agency failed to provide "real-world proof" that generation-shifting will work, saying the CPP envisioned "something entirely different in terms of magnitude and character" than current utility operations under least-cost security-constrained economic dispatch.

He challenged the rule's reliance on combined cycle plants operating at 75% capacity factors, saying only 15% of them currently run that often. He also mocked EPA's projections for the growth in wind generation, saying the agency assumed seven years of growth at the rate seen in 2012, when growth spiked because of the impending expiration of the Production Tax Credit.

Millett said EPA was projecting from existing trends. "They didn't pull these numbers out of thin air," she said.

Wisconsin Solicitor General Misha Tseytlin said the court must determine whether the plan is achievable under the "most adverse circumstances." That means, he said, considering the possibility that California and other states with excess renewables will "lock out" states that need them by setting onerous requirements.

"If that happens, all of EPA's numbers break," he said.

Justice Department attorney Brian Lynk responded that EPA was conservative in "multiple ways" in its projections, citing its assumptions on heat rates and renewable growth.

Millett asked how the agency would respond if the rule was unachievable for some states.

"I have no doubt that EPA would be amenable to consult with that state," Lynk said. And if states were not satisfied with EPA's response, Rave said, "I'm sure there would be an opportunity for them to come to court."

Kevin Poloncarz, representing Calpine and other power companies supporting the rule, said the 75% capacity factor for combined cycle plants was "eminently reasonable."

The reason such dramatic fuel switching hasn't happened in the past, he said, is because the cost of carbon hasn't been included in economic dispatch calculations.

EPA shouldn't be required to take a Balkanized state-by-state approach to regulating the industry, he insisted. "Electricity," he said, "doesn't observe state boundaries."

"It doesn't help that the president said, 'If Congress doesn't act, then I will.'"

Judge Thomas B. Griffith