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EBA Annual Meeting 2017

EBA Panel: CPP's Demise not Certain — and it Doesn't Matter Anyway

By Rich Heidorn Jr.

WASHINGTON — The Trump administration may not succeed in killing EPA's Clean Power Plan — and it doesn't matter anyway because the power industry's decarbonization will continue without the rule, speakers told the Energy Bar Association's annual meeting last week.

The Natural Resources Defense Council's David Doniger, utility attorney William M. Bumpers and J.P. Morgan investment

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From left to right: David Doniger, Natural Resources Defense Council; William M. Bumpers, Baker Botts; and Ian C. Connor, J.P. Morgan. | © *RTO Insider*

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NYISO Auction Shows Higher Prices for NYC, Hudson Valley

By Michael Kuser

NYISO's summer 2017 capacity auction results surprised analysts last week with higher-than-expected prices for New York City — up 72 cents year over year to \$11.71/kW-month.

Prices for the Lower Hudson Valley rose even more, jumping \$2.25 to \$10.50/kW-month, while the Rest of State dropped 62 cents to \$3. Long Island was up \$1.50 to \$5.79.

In an April 5 market analysis, UBS Securities analyst Julien Dumoulin-Smith said the results were higher than "we had initially expected as a new, more bearish

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Stakeholders Advance on RIF Proposal

By Robert Mullin

Participants in a West-wide forum created by CAISO to discuss issues related to the Energy Imbalance Market (EIM) want to move quickly to complete an evaluation that will shape the group's future role.

One point of difference has arisen among stakeholders: disagreement over whether the Regional Issues Forum (RIF) should produce its own recommendations on matters affecting the EIM.

RIF members are in "considerable" alignment over what structure and procedures the group should adopt within the EIM's governance framework, according to a draft issue paper detailing members' evaluations.

They also agree they can meet a July deadline to present the EIM's Governing Body with a final proposal outlining the RIF's procedures and responsibilities.

The RIF was established in 2015 as CAISO began its effort to expand its operations into other parts of the West. The forum was conceived under the EIM charter as an informal body to allow stakeholders and the

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Millstone No Dead Weight for Dominion, Say Opponents

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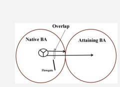

Patton, NYISO Protest PJM Pseudo-Tie Proposal

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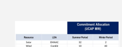

PJM Outlines Aggregation Rules for Upcoming Auction

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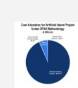

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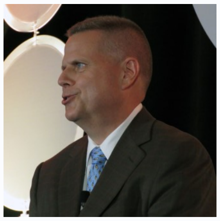
EBA Annual Meeting 2017

Ex-Trump Transition Chief: Energy Efficiency 'Had a Good Run'

By Rich Heidorn Jr.

WASHINGTON — Energy efficiency now accounts for about 1.9 million jobs in the U.S., with double-digit growth projected for 2017.

So how can the Trump administration reconcile its pledge to create jobs with the president's proposed budget cuts to the Energy Department's research programs, which have been credited with helping to improve energy efficiency technologies?



"The EE folks have had a pretty good run for the last eight years and it's time to rebalance a little bit," energy lobbyist **Michael McKenna** told the Energy Bar Association's annual meeting last week.

"You look at the DOE numbers, it tells you everything you need to know. $2.4 billion goes to EE and $670 million goes to the clean coal office and $430 million goes to the nuclear [power] industry [research]," said McKenna, president of MWR Strategies and former lead of President Trump's transition team for the Energy Department. "The vibe is, let's rebalance and to the extent possible take the government out of the equation. You can think that's a good idea or a bad idea. But that's the idea."

(Lowell Ungar, senior policy advisor for the American Council for an Energy-Efficient Economy, cites somewhat different figures for fiscal year 2016. The Office of Energy Efficiency and Renewable Energy received $2,069 billion, but that includes both efficiency and renewables: Nuclear received $986 million, which includes funding for research beyond power plants; fossil fuels — coal, oil, etc. — $632 million.)

"Of course, how much it makes sense to spend in a given area depends on the potential impacts of the technologies, on how developed the industries are and thus able to support their own research, and on DOE's capabilities to manage effective projects in the area," Ungar said.)

McKenna, a registered lobbyist who has represented Southern Co., Koch Industries and GDF SUEZ, resigned from the official transition team last November after Trump announced that no registered lobbyists would be permitted on the "landing teams" that met with agency officials.

McKenna and **Shannon M. Bañaga** — another lobbyist whose role on the official transition team was cut short by Trump's directive — recounted their experiences as members of the transition team and their predictions on the next four years for a luncheon audience. Thomas J. Pyle, president of the Institute for Energy Research and former lead of the Energy transition team, canceled his appearance because of an illness.

"What that really meant was that the lobbyists — I think were two or three of us — got about quadruple the amount of work, and the official transition and Tom Pyle, our colleague, was able to meet with DOE … and those of us unsavory lobbyist-types, we got to meet with the rest of the industry and hear about the issues that" concerned them, she said.

"I can't express to you how many man-hours were put into very specific ideas about what FERC should be working on in the next couple years; what DOE should and shouldn't be working on," said Bañaga, an attorney who worked previously for both FERC and Energy and now serves as TECO Energy's director of federal affairs.

Slow Start

McKenna acknowledged the new administration has been somewhat slow in filling vacancies.

"I know from the outside things look confused," he said. "Truth to be told, it isn't any worse than any other transition. The one thing that [they] had a little trouble with is the switch out from the campaign to post-election. And that has shown up in personnel. We have about 497 appointments throughout the federal government that require Senate confirmation. As of four or five days ago, we had about 43 guys in the queue.

"So we're a little slower than everybody else. It will probably get better as it goes along. But in all fairness, [he] came in with a Supreme Court justice waiting to happen so that absorbed a lot of mindshare."

'Ignore the Circus'

He had advice for those troubled by the Twitter-happy president. "Ignore the circus," he said. "The president is a fellow who's used to being on the camera and in the news and chewing up a lot of mindshare. And the media has not yet figured out that sometimes the best thing to do is just [ignore him]. I come from a large Irish Catholic family, and we have a tendency to say, 'Just give him the nod. Whatever you say, boss.'

"Ignore the circus. Pay attention to what … he actually gets done. And if you think about that, everything that's been done is pretty much everything you would expect that was going to be done. … From the first time he articulated … what he wanted to do on energy, he hasn't wavered a lot. … It's been pretty consistent."

Electric Role in Infrastructure Bill

Responding to an audience question, Bañaga said utilities are unlikely to seek federal funding for capital expenditures in the infrastructure legislation Trump has promised.

"So much of what we [utilities] do is critical infrastructure. From the pipes and wires … we tend to like paying for our own stuff. That's part of the business [model] and I don't think we're going to be very boisterous on saying that we want fed government money for an infrastructure project."

She said the industry would support efforts to increase workforce training in "STEM" fields — science, technology, engineering and mathematics — in the bill and perhaps cybersecurity.

"Depending on what we're asked to protect against and the standards we're going to be held accountable for, cyber and physical security, I think that might be one that gets rolled into an infrastructure package."

"We're going to get infrastructure built," McKenna promised. "The president didn't run on tax reform. He ran on infrastructure. We're going to build infrastructure."

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EBA Annual Meeting 2017

States Acting on Emissions Because Markets Can't Handle Them

By Rory D. Sweeney

From left to right: Kathleen Spees, Brattle Group; Jeffrey Dennis, Akin Gump; David Dardis, Exelon; and Abe Silverman, NRG. | © *RTO Insider*

WASHINGTON — They couldn't agree on much except for this: Today's electricity markets don't handle environmental externalities well because they're not designed to.

That was the rare moment of consensus during an otherwise fractious discussion about the growing pressures of state policy initiatives on FERC-regulated markets at the Energy Bar Association's annual conference last week.

Kathleen Spees of The Brattle Group said that state and provincial actions — such as Ontario's goal of reducing CO_2 emissions by 80% below 1990 levels by 2050 — will "fundamentally change the nature of our resource mix, how plants are built [and] how they're operated."

"Markets today on their own won't achieve that, and so that's why we're seeing states basically taking different policy measures to achieve those objectives," she said. "But my question is, 'Can the markets help to support and achieve those ends?' And I think the answer is, 'they can.' I think it will be hard to get there."

Spees clarified that her perspective was based on economics, rather than the legal issues on which much of the discussion at the two-day conference focused.

Competing with a concurrent session on gas-electric coordination, the panel attracted the majority of attendees, requiring the addition of several rows of extra chairs in the back of the room.

Moderator Jeffrey Dennis, senior counsel with Akin Gump Strauss Hauer & Feld, teed up the discussion by noting that the Supreme Court has ruled that retail and wholesale markets are so intertwined that a state can impact the wholesale market without violating federal jurisdiction. "These markets are not hermetically sealed," he said.

Nick Martin, a manager of environmental policies with Xcel Energy, opened the discussion by explaining how Minnesota requires his company's integrated resource plan to factor in two carbon dioxide externality values: one that represents the potential future impact of carbon regulations on Xcel's system and another that represents the potential future damages from climate change. The first ensures the utility isn't making infrastructure investments without considering the potential impacts to customers of future regulatory costs, while the second takes a broader view.

"Sometimes, those are divergent," Martin said. "These are both values used in planning. Neither of them represents a carbon price that would go directly into wholesale markets at the RTO level."

Xcel is currently seeking regulatory approval to update those externality values, Martin said, but the 2007 regulatory commission order under which the utility operates values carbon emissions between $9 and $34 per short ton. The valuations help determine which planning alternatives are the best fit for Xcel's 15-year outlook.

He contended that the valuations aren't like the zero-emissions credits recently approved in Illinois and New York because they don't impact FERC-regulated electricity markets.

"They won't directly pay a higher price to our nuclear plants, but they will strengthen the rationale for retaining nuclear, retiring coal plants [and] adding renewables," he said.

Exelon's David Dardis later argued on the panel that ZECs also don't impact RTO markets. He pointed to FERC's 2012 ruling regarding the Western Systems Power Pool, which concluded that stated renewable energy credits are separate commodities from capacity and energy (ER12-1144).

"So long as the REC is unbundled or sold independent of wholesale electric energy, the RECs are not payments in connection with wholesale sales and therefore fall under state jurisdiction," Dardis said. "ZECs are clearly sold independent of energy and capacity."

NRG Energy's Abe Silverman disagreed, arguing that the credits intrinsically intrude on FERC's jurisdiction over wholesale ener-

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Ex-Trump Transition Chief: EE 'Had a Good Run'

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What would it include? "Anything that involves concrete," he responded.

Changes at FERC?

Another questioner asked whether FERC was likely to be subject to the Trump requirement that agencies eliminate two regulations for every new one.

"I work in front of a lot of federal agencies like a lot of you do," McKenna said. "The bottom line is, FERC process is, FERC people are the best in the government. So are the [FERC] nominees … going to want to take a hard look at things? Of course. Are they going to wander in knocking things over? I don't think so."

EBA Annual Meeting 2017

Lifeline or Pipedream? Panels Debate Need for More Gas Lines in NE

By Rory D. Sweeney

WASHINGTON — More than three years and thousands of pages of analysis later, there is no consensus on how the electric industry should respond to the January 2014 cold snap that revealed weaknesses in the Eastern Interconnection.

The differences of opinion were on display during a panel discussion on gas-electric coordination at the Energy Bar Association's annual conference on last week.

Nash

Macdara Nash of National Grid and Todd Piczak of Kinder Morgan advocated for additional pipelines in the Northeast U.S., saying they would ensure sufficient gas supplies for generators on high-demand days. David Ismay of the Conservation Law Foundation called for peak shaving and increased gas storage, saying additional pipeline capacity would reduce utilization of existing infrastructure most of the time.

One thing all the panelists agreed on is that natural gas has a place in the region's energy future and that action needs to be taken to better gird the grid against unforeseen events like the polar vortex.

Ismay

"The region should be thinking about what are solutions, what can we do," Nash said. "We think that natural gas is key."

He cautioned that pipelines require an extensive lead time, "so if you believe in the problem [of potential pipeline capacity shortages], the time to act is sooner than later."

Piczak said FERC has made progress on one half of the problem — ordering increased coordination between gas pipelines and gas-fired generators — but hasn't done much to facilitate the other half, which is adding capacity. A major issue, he said, is the need for the commission to develop criteria other than long-term contracts to support a finding of public convenience and necessity.

Piczak's company operates the Tennessee Gas Pipeline, one of the nation's most critical natural gas conduits because it runs from Houston to Boston and crosses two prolific shale gas plays, the Utica and Marcellus in the region of Ohio, Pennsylvania and West Virginia.

Not a Capacity Problem

"This is fundamentally a regulatory problem," he said. "There's not enough gas for the generators when they need it. … It's an important problem, and it's a growing problem."

Ismay said the issue isn't the availability of gas — he said gas was never unavailable, even during the polar vortex — but that constraints and high demand make it prohibitively expensive. A new pipeline would, on average, be about half full half of the year and wouldn't justify the installation costs, he said.

"Instead of a capacity problem … it's a temporal, location-based problem of getting a certain amount of gas to a certain location … on the pipeline system at time of year," he said. "We [will] always have days above the peak, even if we build a new pipeline."

LNG storage has been and should be the solution, he said, along with demand response and energy efficiency to shave

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States Acting on Emissions Because Markets Can't Handle Them

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gy sales. He noted that 95% of the time, all the units needed for wholesale dispatch are receiving a state-promulgated rate different from the FERC-regulated market. NRG has joined in lawsuit challenging the legality of the ZECs. (See NY Legislators Frustrated by Lack of Answers at ZEC Hearing.)

"The fact that the state was trying to engage in the most noble of causes, in this case fighting climate change, does not — at least in my view — escape pre-emption," he said. "What does it mean for FERC to regulate wholesale rates if states take increasingly large amounts of generation out of the market?"

Spees said Ontario is a prime example of what happens when the market is marginalized. The Canadian province has reduced its carbon by more than 6% below 1990 levels through resource- and technology-specific out-of-market contracts — and closing all of the province's coal-fired generation — but Spees said the costs are now escalating.

"It's really turned into a big challenge," she said. "Those do tend to be higher cost. They don't enable that competition and innovation that we really probably want in the system. … [Markets] become much less important to the system and much less valuable in terms of achieving some of these benefits that you can get through competition and innovation."

They can also have unintended consequences of suppressing prices, which can squeeze out other clean technologies. As a result, the province faces a major redesign of its system to re-engage the power of the market, she said.

Silverman said New York's and Illinois' ZECs were an ill-conceived and potentially expensive means of limiting carbon emissions.

"Nobody would remodel their kitchen without getting a couple of bids. Here we have $10 billion of ratepayer capital committed to two states without ever testing it to see if it was actually the least-cost source of carbon abatement," he said. "If all we're doing is relying on ratepayer capital, we'll never get it done. We need that shareholder private capital to come into the market as well.

"If you are terrified of backsliding in year 1, 2 or 3, then … nuclear is probably the best way to go," he said. "But if you're looking at a lifecycle analysis and really thinking about 2050, we need to go not just from coal to gas — which is probably what would happen if the nukes retire — but we need to go from coal to clean, which means FERC really needs to step up and create the kind of markets and really get markets to address the carbon problem."

EBA Annual Meeting 2017

Overheard

WASHINGTON — More than 400 FERC officials, energy lawyers and stakeholders attended the Energy Bar Association's annual meeting last week. Here's some of what we heard.

Energy Efficiency 'Most Expensive' Form of Energy?

David Nemtzow, director of building technologies for the Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE), described energy efficiency as "a Swiss Army knife."

"The benefits are multiple. … For some people and some users and some policymakers, the environmental benefits are central to energy efficiency. For others, it's the economic savings. For others, it's the jobs. It's all the above."

Bill Campbell, general counsel and head of sustainability and structuring for Equilibrium Capital, doesn't agree with those who say that energy efficiency is the cheapest form of energy.

"We say that because we focus on the amount that's paid in incentives. In fact, it's probably the most expensive form of energy on the planet, but that's OK. The reason it's the most expensive form of energy on the planet is that every time you subtract a unit that's saved with energy efficiency, the utility would lose the retail price of that unit. … Recognize that that just establishes the competitive marketplace for efficiency."

Community Solar Gardens Overhyped?

Minnesota attorney **Jeff Paulson**, who represents community solar developers, is

EBA President Robert Weishaar | © *RTO Insider*

bullish on distributed energy. But he has heard the naysayers.

"There is a commissioner in the Midwest, who shall go unnamed, who has referred to community solar gardens as 'the new kale,' because of the rapid growth in popularity, and [because] we're attributing so many … benefits that are supposed to be derived from introducing them on your system," he

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Lifeline or Pipedream? Panels Debate Need for More Gas Lines in NE

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peak demand. He pointed out that while Massachusetts' electricity rates are the fifth highest in the country, customers' bills are the 31st lowest on average.

A study of future energy needs in the Bay State, conducted by Analysis Group for the state attorney general, found that, in a business-as-usual scenario, there will be no reliability concerns out to 2030, he said. Moving forward, energy storage, increased pipeline compression, additional pipeline loops and developing targeted markets will address remaining issues.

"If we understand the problem of temporal availability, let's create a market for it," Ismay said. "There is a role for natural gas in 2050, but it's not very big. … It doesn't run very much in the future."

With natural gas already occupying 40% of installed generation and providing 50% of the electrons in New England, "our bridge is built" to a low-carbon future, Ismay said.

Discussion attendees pushed back on some of Ismay's arguments, noting the Massachusetts study assumed best-case, "blue skies" scenarios and that adding localized LNG storage to gas-fired units raises their bid prices to levels comparable with coal-fired units.

"Another important thing to recognize about LNG solutions is you still have to get the gas from the LNG facility to where it's needed," Piczak said. "It's not as easy as just to say, 'Let's put some LNG in a tank,' and it's going to be available."

NRDC, J.P. Morgan Skeptical of Pipeline Need

At the EBA's general session last week, J.P. Morgan's Ian C. Connor, and David Doniger of the Natural Resources Defense Council, also expressed skepticism over the need for additional pipelines.

Connor, global co-head of J.P. Morgan's power & utility group, noted that renewables are supplanting a lot of retired coal capacity.

"I think you're going to see significantly less gas [generation] build than people believe," he said. "These [combined cycle gas turbines]: Yes there are a few being built between now and 2020. After 2020, right now no one really thinks any more CCGTs are getting built. So how many more pipelines are you really going to need to build? I think it's a lot less."

Doniger, director of NRDC's Climate & Clean Air program, said the rise of renewables and flat electric demand should prompt FERC to look more skeptically at the need for new pipelines.

"Are we building gas pipelines in order to stimulate the development of new gas power plants or is there really a need?" Doniger asked. "If you look at the system more systematically … efficiency, renewables and some of the other options can [replace] extensions of the gas pipelines and the natural gas infrastructure. The FERC process for evaluating new pipeline applications doesn't ask all those questions and [it] should."

Rich Heidorn Jr. contributed to this article.

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Overheard

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said. "Maybe some of the talk about community solar gardens is a little hyperbolic. But that doesn't mean — like kale — that there aren't some benefits to still be derived.

"It's a tough market out there right now [for developers] trying to do avoided-cost deals or trying to do utility-scale [projects] in states that are not favorably inclined toward that. This is a huge market opportunity."

Paulson said he's been frustrated with the pace of Minnesota regulators' actions on community solar.

"There's a lot of good things being done [in Minnesota]. There were [also] a lot of disputes. There was a lot of process," he said. "I will say that 18 months into that regulatory process I was sitting at the table in front of the commission just screaming for them to shut the heck up and stop trying to make this program perfect. Get it defined. Let us get out in the field and start building projects and getting the financing."

Incoming EBA President Calls for 'Civility'

Robert Weishaar was elected as the EBA's new president, succeeding Emma Hand. In lunchtime comments after the transition, Weishaar praised Hand for making "diversity and inclusion a focal point" of her term as president. He pledged to continue the work of Hand and President-elect Matthew Rudolphi, who led a task force that developed what he called the "strong diversity and inclusion initiatives" adopted by the EBA.

"EBA remains dedicated to the value of diverse perspectives," said Weishaar, an attorney with McNees Wallace & Nurick who represents industrial consumers and owners of cogeneration facilities. "While not losing sight of that core value, we need to focus on another. The current dynamics of our profession and the challenges currently facing our country also demand a recommitment by all EBA members to collegiality and civility in our profession and in our day-to-day [actions]."

— Rich Heidorn Jr.

EBA Panel: CPP's Demise not Certain

Continued from page 1

banker Ian C. Connor gave a general session audience their predictions on how the power industry will respond to President Trump's March 28 executive order directing EPA to undo the CPP.

Here's a summary of what the EBA audience heard.

NRDC: The 'Trumpocene' Era Won't Last

David Doniger, director of the NRDC's Climate and Clean Air program, said that most of the players in the electric industry have adjusted to the CPP's goals and are unlikely to reduce decarbonization efforts because of Trump's executive order. (See *Trump Order Begins Perilous Attempt to Undo Clean Power Plan*.)

"We're now entering what I've started to call the 'Trumpocene' which … I hope [will be] a very short geological era with a maximum life of four years," Doniger said. "Many people in the industry have to be thinking, 'How long is the Trumpocene? Do I change my plans because of this coal industry- and ideologue-driven executive order and attempt to roll back the Clean Power Plan? Do I bet that that will succeed?'

"Because executive orders don't actually do it," he continued. "When it comes to changing rules that have been adopted under the Clean Air Act … you can't tear the building down except by using the same rulemaking methods and procedures that it took to build the building up. So what's begun here last week is a long slog of rulemaking process that may or may not produce the scrapping of the Clean Power Plan … and if he does that, it may or may not withstand judicial scrutiny."

Doniger said CPP opponents may fail because they use unrealistic data in support of their case, noting the study contracted by CPP opponents that estimated the cost of compliance at $39 billion, about five times EPA's estimate. He also noted the president's executive order requiring changes to the calculation of the social cost of carbon.

"So they're going to walk into court with an arbitrarily high-cost estimate and an arbitrarily low-benefits estimate. And they're going to lose. So the CPP ain't dead yet.

"So if you're an executive or an adviser to an executive and think, 'Well I really do think climate change is a real problem' … and you're making investment decisions that have a 20-year life or more, do we bet that over those 20 years that the Trumpocene will continue? No. I don't think that's a good bet.

"We hear … from companies and state regulators … that they are continuing to plan on the trend of decarbonization — at least that much of it which is supported by market forces. This is based on the anticipation [that] either the repeal plans won't actually succeed — like say, for example, the immigration plan or the health care plan — or that they will be a mere blip because the next president will return to a path that's more reality-based."

Doniger said industry trends favoring low-carbon resources need to be buttressed by government policies.

"I think the markets are running in the right direction. Obviously technology is running in the right direction. But you really can't foresee that they would make the deep decarbonization in the time frame we need," he said. "So we need some form of policy. … To paraphrase Donald Rumsfeld: 'You fight climate change with the Clean Air Act you have, not the one you wish you had.'"

Utility Attorney: CPP Would Be Ineffective

Baker Botts attorney **William M. Bumpers**, who has represented utilities including Southwestern Public Service, Reliant Energy and Entergy, said although he is a strong advocate of reducing carbon emissions, he is not a fan of the CPP.

"I *really* didn't like the Clean Power Plan for a host of reasons. One is that I think it was going to be largely ineffective," he said. "Fifty percent of the reductions they were

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EBA Panel: CPP's Demise not Certain — and it Doesn't Matter Anyway

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claiming credit for had already been achieved by the industry with no particular help from the federal government."

Bumpers also said EPA's regulatory approach "was sort of a square peg, round hole problem."

"When they overlay basically three different types of emissions trading — most of which wreak havoc with each other — my own view is it was going to create one of the largest bureaucratic messes with regulatory overreach that was going to create more ossified limitations on the development in the industry than it was going to help."

Bumpers said he would like to see a ruling by the D.C. Circuit Court, which heard arguments on state challenges alleging EPA overstepped its authority in September. The Supreme Court stayed the rule pending resolution of the challenges. (See Analysis: No Knock Out Blow for Clean Power Plan Foes in Court Arguments.)

"In some ways, I think the industry would benefit from having the D.C. Circuit rule because [there are] elements of that plan that the D.C. Circuit would probably strike down — maybe whole large portions of it."

Bumpers said he represented utilities before EPA in an effort to improve the plan before the final rule was released in August 2015. "We … succeeded to some extent, but [the plan] ended up in bad shape and I ended up representing five companies as part of a challenge," he said. "I represented probably 20 other companies who were equally as involved who in the end said, 'We don't care because it doesn't affect us. It really doesn't change our business plan one iota.'

"What it would have done is really substantially affected a handful of states and had no effect on most of the rest. It just didn't make sense to me."

Bumpers said his clients would like "a very state-oriented, federalist approach in which states have the opportunity to deploy the resources at their hand based on their resource mix to try to address climate change, and make it less of a nationwide, one-size-fits-all trading program but allow states to tailor their own programs."

He criticized moves by Trump and congressional Republicans to roll back Obama administration efforts to limit methane emissions from natural gas production. "The path forward is going to result in a whole lot of new natural gas [generation]. … That's what's driving coal plants out of business, [and] it's helping to reduce our carbon footprint within the industry. But if [at] the same time we don't have rigorous oversight of the drilling and production facilities to reduce methane, we will have shot ourselves in the foot.

"At best, [the CPP] was going to accelerate where the CPP wants us to go by a couple of years. And at this point — given the stay — if it were reinstated, I don't think it would do anything, assuming there's a delayed implementation schedule."

J.P. Morgan: Industry to Decarbonize with or Without CPP

Ian C. Connor, global co-head of J.P. Morgan's Power & Utility Group, largely agreed with Bumpers' position on the CPP.

"I think that the CPP — whatever its noble objectives — it's relatively irrelevant whether or not it's enforced. … I have little doubt, consistent with what Bill said, that the industry will materially decarbonize and outstrip what the CPP is trying to do."

Connor said the CPP could actually limit options for controlling carbon emissions in the future.

"At a time of rapid change, I think you want to make sure that you keep absolute optionality," he said. He noted that although the U.S. did not sign the 1997 Kyoto protocol, it has still reduced carbon emissions since then — in part because of improvements in gas drilling practices and increased energy efficiency.

The U.S. has "actually outperformed most of the signatories of Kyoto. It's also outstripped the Waxman-Markey objectives as well," he said, referring to the cap-and-trade bill that faltered in Congress in 2009. "That's largely driven by technology. Going back to 1997 … no one had any idea the shale revolution was coming."

The drop in the costs of natural gas has eroded coal's share of the generation mix. And now, renewables' dramatic cost reductions are providing competition to gas.

"Today, renewables on a levelized cost basis — wind and solar — are cheaper than an efficient [combined cycle] natural gas plant. And all of these are materially cheaper than coal," he said.

"To give you an idea of how [quickly] things are moving … six months ago we were talking about a [power purchase agreement] being signed for wind at $20/MWh. … That's shockingly low. Today it's $15 to $17/MWh. So in six months the cost of wind has declined 15 to 25%."

Nuclear not Coming Back

Bumpers and Connors also agreed in their gloomy view of nuclear power's role in a low-carbon future.

"Nuclear is not coming back," Bumpers said. "Nobody can afford the balance sheet risk associated with a nuclear plant. So unless we get some super cheap, modular technology, I don't see that happening."

Connor noted the cost overruns at plants being built for Southern Co. and SCANA and the bankruptcy filing by Westinghouse, the main builder of the plants.

"It's really hard to go in to your regulators or anyone else and say 'I need to build this thing if the levelized cost is way up here and wind and solar are way down here and gas is down here.' You can't make the argument anymore."

"I think that the CPP — whatever its noble objectives — it's relatively irrelevant whether or not it's enforced. ... I have little doubt ... that the industry will materially decarbonize and outstrip what the CPP is trying to do."

Ian C. Connor, J.P. Morgan

CAISO News

EIM Charter Changes Would Give Governing Body More Power

By Robert Mullin

CAISO management is proposing to amend the Western Energy Imbalance Market (EIM) charter to explicitly provide the market's Governing Body with a voice in any future governance changes.

Other charter changes currently under review would give the Governing Body the first — and, in most cases, the last — word on its relationship with two increasingly important stakeholder groups.

The proposed changes were drafted at the request of Governing Body Chair Kristine Schmidt, who wanted more clarity on the body's role in modifying the charter.

Originally approved by CAISO's Board of Governors, the EIM's charter sets out the mission of the Governing Body and details the authority delegated to it by the board over EIM market rules and administration.

The charter currently stipulates that any "substantive changes" to the charter must be approved by the board, as required under the CAISO Tariff. "The role of the EIM Governing Body in considering proposed changes, however, is not specifically addressed," Roger Collanton, the ISO's general counsel, noted in a memo addressed to the Governing Body.

Under the proposed revisions, any substantive modifications to the charter would first be presented to the Governing Body for its "advisory" input — similar to the role body members play with respect to ISO market rule changes that also affect the EIM. (See *EIM Leaders OK Governance 'Guidance' Proposal*.)

CAISO management also seeks to extend the authority of the Governing Body over sections of the charter dealing with the EIM's Body of State Regulators (BOSR) and Regional Issues Forum (RIF), two West-wide groups established by the ISO to monitor and provide feedback on the EIM's activities.

The proposal would allow the Governing Body to initiate any modifications to those areas of the charter. Approved changes would then be placed on the consent agenda of the board, translating into "a decisional process similar to the one that is used for proposed tariff amendments that fall within the primary authority of the EIM Governing Body," Collanton's memo said.

The board would reserve the right to consider — and reject — any proposed changes outside its consent agenda, but "this full consideration will occur only if the board affirmatively decides to take up the issue," according to the memo.

Other proposed amendments to the charter detail how ISO staff will support the work of the BOSR and RIF, including coordination of meetings, assistance with stakeholder communication and reimbursing state regulators' staff for travel to attend meetings. RIF members expressed a need for staff support during a Feb. 28 joint meeting with the Governing Body. (See *Western Stakeholders Support Continuing Regional EIM Forum*.)

CAISO will seek Governing Body endorsement for the charter amendments at a future meeting of the body.

PacifiCorp IRP Sees More Renewables, Less Coal

By Robert Mullin

PacifiCorp has released a 20-year plan that commits the utility to increased investment in renewable resources and energy efficiency while sharply reducing reliance on the coal-fired generation that currently produces more than half the company's electricity output.

The 2017 Integrated Resource Plan — filed this week with utility commissions in PacifiCorp's six-state territory — spells out $3.5 billion in capital spending focused on new renewables, upgrades to the company's existing wind fleet and the construction of a 140-mile segment of the Gateway West transmission project in Wyoming.

Windy Flats in Klickitat County, Wash. | *© RTO Insider*

The 500-kV line, slated to be in service by the end of 2020, would advance the company's strategy for tapping new wind development in Wyoming. While the first segment is intended to serve PacifiCorp ratepayers, other portions of Gateway West are designed to facilitate the flow of wind energy into California, where utilities are required to serve 50% of their load with renewables by 2030.

Under the IRP, PacifiCorp would complete construction of 1,100 MW of new wind generation, mostly in Wyoming, by 2020 to take advantage of federal production tax credits. The company would also squeeze out an additional 905 MW of renewable capacity by upgrading its existing wind fleet with larger blades and new technology.

PacifiCorp currently owns or contracts for

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CAISO NEWS

Stakeholders Advance on Western Regional Forum Proposal

Continued from page 1

public to discuss wide-ranging issues related to the West's only real-time energy market.

Five Sectors

The forum is organized along five industry sectors: independent power producers and power marketers; transmission-owning utilities; publicly owned utilities; consumer advocates; and balancing areas neighboring the EIM. Each sector appoints two liaisons as representatives.

The EIM charter calls for the Governing Body and stakeholders to begin re-evaluating the continued existence of the RIF this month.

During a Feb. 28 joint meeting of the Governing Body and RIF, a consensus emerged that the RIF should be preserved. (See *Western Stakeholders Support Continuing Regional Forum*.)

But one "existential" question arose, according to Governing Body Vice Chair Doug Howe: What's the RIF's purpose?

Stakeholders and their liaisons are still seeking to develop an answer.

The issue paper notes that the RIF's operating guide "is limited in detail" but "clearly contemplates the possibility of the

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PacifiCorp IRP Sees More Renewables, Less Coal

Continued from page 9

more than 2,300 MW of wind resources.

Between 2028 and 2036, the company plans to add another 859 MW of wind and build 1,040 MW of new solar capacity.

"These investments will significantly increase the amount of clean renewable energy serving customers and reduce costs at the same time," Stefan Bird, president and CEO of Pacific Power, the PacifiCorp subsidiary that serves Oregon, Washington and California, said in a statement.

The plan calls for retiring 3,650 MW in coal-fired capacity by 2036 to avoid spending on equipment to comply with EPA's Regional Haze rules. An Oregon law passed last year that will prohibit the state's utilities from importing coal-fired power by 2030 also was a factor in the early retirements of the Craig, Jim Bridger, Hayden, Huntington and Naughton coal units located in the inland West. A rollback of EPA's Clean Power Plan is unlikely to affect the company's plans, it said.

"This early closure assumption was considered in PacifiCorp's Regional Haze compliance analysis to account for changes in market conditions, characterized by reduced loads and wholesale power prices," the IRP said.

By the end of the planning horizon, coal would represent 31% of the company's resource portfolio, compared with almost 60% today.

The plan foresees the company building 1,313 MW of new natural gas-fired capacity, down 1,540 MW from the 2015 IRP estimate.

"Reduced loads, ongoing investment in energy efficiency programs and increased renewables reduce the need for new natural gas resources in the 2017 IRP," the company said.

PacifiCorp expects energy efficiency to offset 88% of forecasted load growth over the next 10 years.

Stagnant loads and energy efficiency programs also caused the company to reduce its projections for wholesale power purchases through 2027 relative to a 2015 IRP update released last year, despite relatively low forward prices. Wholesale market purchases are expected to increase in 2028 in concert with the company's coal retirements.

PacifiCorp said it developed the 2017 IRP through a process that included input from "an active and diverse group of stakeholders, including advocacy groups, regulatory staff and other interested parties." The company completed the plan after meeting with stakeholders in five states and hosting seven public meetings.

The company delivers power to about 1.8 million customers in California, Idaho, Oregon, Utah, Washington and Wyoming through its Pacific Power and Rocky Mountain Power subsidiaries. It was the first utility in the West to join CAISO's Energy Imbalance Market and in 2015 signed a memorandum of understanding to explore becoming a full member of the ISO.

CAISO NEWS

Stakeholders Advance on Western Regional Forum Proposal

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RIF providing recommendation or written work products on issues.” The guide also allows the group to establish a procedure to express a common position.

“Of all the issues that we got written comments on, the issue that the RIF acting through the liaisons should produce written opinions or recommendations on market design issues was clearly the one in which we got the most disparate comments.”

Tony Braun, RIF Chair

Braun

“Of all the issues that we got written comments on, the issue that the RIF acting through the liaisons should produce written opinions or recommendations on market design issues was clearly the one in which we got the most disparate comments,” RIF Chair Tony Braun said during an April 7 call to discuss the issue paper.

Powerex opposes the RIF making any formal recommendations, contending that the group’s membership is limited and does not represent the market as a whole. The company wants the RIF to be opened up to a larger number of sectors.

“We think that the current sector definitions are fairly inclusive,” Braun said, speaking on behalf of the liaisons, adding that “if there are additional improvements we need to make in that regard, we certainly would encourage comments.”

Disagreement over RIF Work Products

PacifiCorp, the EIM’s first member, said the RIF should only produce summaries of stakeholder discussions and comments on particular issues, while Portland General Electric thinks that positions should be communicated only by individual stakeholders or “voluntary alignments” of sectors.

Both the California Municipal Utilities Association and Puget Sound Energy recommend maintaining the option of generating written opinions, but only under “detailed” procedures setting out how to produce the papers and capture majority and minority positions. The Natural Resources Defense Council, Public Generating Pool (PGP), Western Resources Advocates and the EIM’s Body of State Regulators (BOSR) largely backed that view.

While the liaisons acknowledged that producing position papers would increase the RIF’s workload and change the character of the group’s meetings, Braun said they wanted to retain the option of producing written work.

“We've created … a trigger whereby written work products would be triggered by specific requests,” Braun said. “The requests would come from the EIM governance structure and also would come with a host of procedures that would need to occur.”

Therese Hampton, a liaison from PGP, pointed out that stakeholders generally agreed that the RIF should continue to meet three times a year but reserve the option to convene more frequently if issues warrant — or if requested by the BOSR, the Governing Body or stakeholders. The issue paper suggests that RIF meetings be coordinated with those of the Governing Body, a position with strong stakeholder support.

RIF liaison Matt Lecar, principal at Pacific Gas and Electric, pointed out that the liaisons were proposing a quorum provision requiring at least one liaison from each sector to attend each meeting.

Edmonds

Sara Edmonds, general counsel at PacifiCorp Transmission, said the liaisons have so far discerned “no obvious need” for changes to the EIM’s governing charter or the RIF’s operating guidelines.

“We also note that there would be a need for the ISO’s legal department to take a look at the governance documents following the conclusion of this reevaluation process,” Edmonds said.

Stakeholder comments on the proposals set out in the draft issue paper are due May 3.

“We appreciate all the attention and input that we’ve gotten in the RIF meetings,” Braun said. “And we’d greatly encourage stakeholder comment, because we can’t anticipate all the issues in here.”

ERCOT NEWS

Board of Directors Briefs

Reliability Risk Desk Addresses Growing Variable Generation Resources

Wind energy and other renewable resources are providing so much of ERCOT's generation mix that not even the ISO can keep up.

Delivering his CEO report to the Board of Directors, Bill Magness said ERCOT on March 23 had finally reached the 50% wind penetration mark — a percentage he said would have reached 55% had another 1,500 MW of wind energy not been curtailed. (See *ERCOT Reaches 50% Wind Penetration Mark*.)

Not included on the slide, which was produced to meet an earlier board deadline for the April 4 meeting, was ERCOT's latest record for wind generation. That came March 31, when the ISO reported 16,141 MW of wind generation at 8:56 p.m., almost 40% of the total load.

The previous record came last Christmas, when ERCOT saw 16,022 MW of wind generation.

ERCOT has 18,064 MW of installed wind capacity, with just more than 10,000 additional megawatts that have interconnection agreements, according to its latest generator interconnection status report.

The ISO has also seen a rapid increase in solar energy, Magness said, though not at the scale of wind resources. He said ERCOT's solar capacity nearly doubled in 2016; it currently has 556 MW of capacity and another 2,009 MW have interconnection agreements.

To help address the continued increase in variable generation, ERCOT has added a sixth desk in its operations center that is focused on reliability risk. The new desk went live in January and will respond to wind and solar forecasts errors, net load ramps, low inertia and variable ancillary service needs.

"Because of our changing resources, certain things have grown over time to be much bigger issues than they traditionally have been," ERCOT Senior Director of System Operations Dan Woodfin told the board in a separate presentation.

Woodfin was recently honored by the Utility Variable-Generation Integration Group with an award for "sustained leadership" in integrating variable generation. He said reliability risk increases as more renewables are added to the Texas grid.

"We have the same percentage of forecasting error, but the number of [renewable] megawatts in any given hour will be higher," Woodfin said. "We want to assess them in real time, not just quarterly or at the beginning of the year."

"The things we're doing and the investments we're making are just part of the day-to-day business as we adjust to these changes," Magness said.

He said training staff would be a "big priority" the next couple of years. "We're training our operators and giving them as much simulation of the conditions they're seeing on the grid they've never seen before. We're taking as much advantage as we can of our operational expertise to prepare for the future."

Higher Capacity Factors Increase Wind Energy's Output

The Independent Market Monitor's report picked up on the renewables discussion, with Director Beth Garza highlighting wind energy's growing share of ERCOT's fuel mix. Wind produced 15% of ERCOT's power last year, up from 3% in 2007. Coal has seen its fuel share drop from a high of 40% in 2010 to a low of 28% in 2015, while gas has ranged from 38 to 48%.

"More wind is displacing some of the fossil fuels as the price disparities between gas and coal change through time," Garza said.

She attributed much of the growth to wind energy's higher capacity factors, a "reflection of improving and increasing technology." Garza said the Monitor is also seeing an increase in installations on the Gulf of Mexico because the "wind output coincides more with load requirements" peaking in the afternoon.

Raising the question as to whether coal is "on the way out," Garza pointed out that ERCOT's coal fleet is "vintage."

"What we see with our coal fleet," she said, "is that the bulk of it was installed in the 70s and 80s. It's achieving the end of its economic life as we speak."

Ending Greens Bayou RMR to Save $21.9M

Magness told the board that terminating NRG Texas Power's Greens Bayou Unit 5 reliability-must-run contract early will save the ERCOT market $21.9 million. He credited efforts made by staff and stakeholders to change protocols and criteria for reviewing RMR contracts, saying they "clearly had a big impact and allowed us to make this change."

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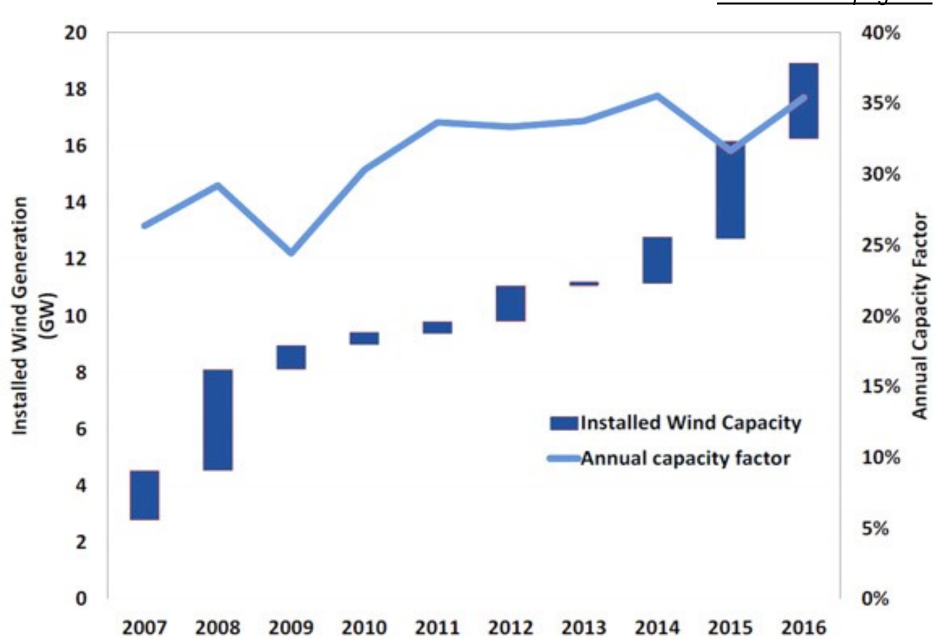

Installed wind generation vs. annual capacity factor | *ERCOT*

ERCOT NEWS

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He also pointed to the Public Utility Commission of Texas' RMR rulemaking, which is currently open to comments. The rule changes include requiring board approval of RMR contracts and adjusting the notice requirements and complaint timeline applicable to suspending a resource's operation. (See "PUC Approves ERS, RMR Rulemakings," *Texas PUC Briefs*.)

The Greens Bayou RMR contract was approved last June and scheduled to last through June 2018. It was expected to cost the market more than $58 million, but that number was revised down to $43.9 million in February. Instead, the early termination means ERCOT will only have made $22.1 million in standby payments to NRG at $3,185/hour during on-peak hours for the Houston-area plant.

ERCOT announced the contract's termination in February. It said studies using new criteria indicated the unit would not be needed for transmission system reliability after Exelon's 1,148-MW Colorado Bend II Generating Station in nearby Wharton County becomes operational in June. (See *ERCOT Ending Greens Bayou RMR May 29*.)

Magness also told the board that ERCOT now declares level 3 energy emergency alerts (EEA3) when operating reserves hit 1,375 MW, as required by NERC reliability standard EOP-011-1.

The ISO's normal operating procedure had been to declare an EEA3 and load shed when reserves fall to 1,000 MW. It has revised its procedures to still go into load shed at 1,000 MW but declare the EEA3 earlier. Staff is drafting a revision request to change the EEA3 trigger in the protocols.

"Our studies have indicated as long as we have sufficient responsive reserves, we're able to maintain and not need to go into load shed until 1,000 MW," Magness said.

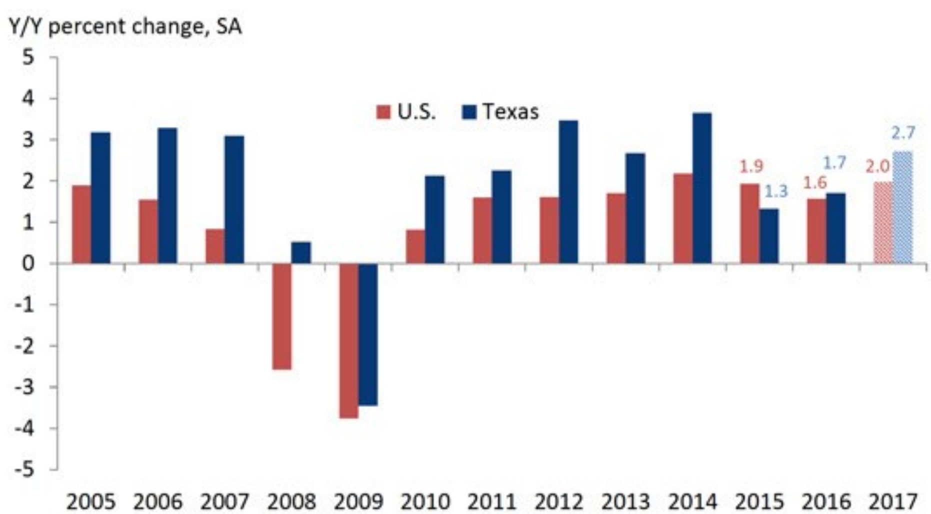
Dallas Fed: Texas Surviving an Oil Bust

Mine Yücel, senior vice president and research director for the Federal Reserve Bank of Dallas, once again delivered an annual report on the Texas economy, saying the state has survived the recent energy bust "with few deep scars."

Yücel pointed to a 2.7% employment growth rate and 54,500 jobs created in the first two months of 2017, this after a 1.7% growth rate and 203,000 new jobs last year. The Fed is projecting a 2.3% growth rate and 280,000 new jobs in Texas this year.

"The worst may be behind us, but of course, we have quite a few risks," Yücel said, alluding to oil prices and the dollar's strength.

Despite a slowdown in the Permian Basin and the rest of the oil patch, Texas still saw more than 210,000 people migrate to the state from July 2015 to July 2016. That was a drop from about 260,000 the year prior and trails Florida nationally, but still outpaces California, New York and Illinois.



Texas vs U.S. job growth. Shaded bar represents February 2017/December 2016 growth, annualized rate.
| *U.S. Bureau of Labor Statistics, Texas Workforce Commission, Federal Reserve Bank of Dallas*

Multi-Interval Real-Time Market

ERCOT Commercial Operations Vice President Kenan Ögelman shared staff's Multi-Interval Real-Time Market (MIRTM) feasibility study with the board, getting little pushback with his recommendation that now is not the right time to implement the market.

Ögelman said the estimated $20 million cost of the market's software would not produce sufficient production cost savings. The Technical Advisory Committee reached the same conclusion last month. (See *ERCOT Technical Advisory Committee Briefs*.)

"The study found there were production cost savings, but that was in the environment of $2 to $3 gas," he said. "Unless you see gas prices driving up, I'm trying to create savings off a very low baseline price."

ERCOT dispatches its market in five-minute intervals. Staff and stakeholders have been discussing potential alternatives under different names (look-ahead security-constrained economic dispatch, multi-interval SCED, etc.) since 2011.

"The question has been, can we improve the market's efficiency and functionality by looking ahead longer than five minutes. At 15 minutes, we were more accurate with the forecast, but we left a lot of resources behind," Ögelman said, referring to fast-responding resources and load resources that currently participate in the real-time market through voluntary self-commitment.

Ögelman said the TAC had assigned the Wholesale Marketing Subcommittee to consider whether real-time co-optimization might be a better solution to pursue. The subcommittee held a preliminary discussion April 5.

"It's been dormant for a while," Ögelman said of the optimization discussions. "There's a need to get everyone up to speed on how it works."

Board Approves 16 Revision Requests

The board's consent agenda, approved unanimously, included 10 nodal protocol

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revision requests (NPRRs) and three revisions to the Planning Guide (PGRRs).

- NPRR776: Aligns protocol language with currently used verbal communication practices between transmission service providers (TSPs), qualified scheduling entities (QSEs) and generation resources. Also identifies new requirements for data that TSPs provide to ERCOT, QSEs and generators. The committee tabled NOGRR167, which aligns the Nodal Operating Guide with NPRR776.
- NPRR799: Requires that TSPs and resource entities — generation and load that can reduce electricity usage or provide ancillary services — submit updates to the outage scheduler within one hour of the facility's outage start or completion.
- NPRR802: Clarifies current settlement practices and protocol language, including how reliability unit commitment resources opting out of RUC settlement are treated in calculating real-time online reserve capacity.
- NPRR804: Clarifies that ERCOT should post both a systemwide network model and a set of station one-line diagrams, and that the model posting does not disclose data about private-use networks.
- NPRR808: Extends the congestion revenue right (CRR) auction process into the third year forward, revises the percentages sold in the auction's long-term sequence and aligns modifying load zones to the timetable.
- NPRR809: Defines the terms "initial energization" and "initial synchronization;" adds a reference to a quarterly stability assessment for interconnecting generation resources when evaluating the need for a generic transmission constraint; and clarifies a resource's requirements prior to initial synchronization.
- NPRR810: Removes the applicability of an RMR's incentive factor to reservation and transportation costs associated with firm-fuel supplies, and accordingly separates costs in the RMR standby payment equation.
- NPRR812: Clarifies short-term system adequacy report language; aligns protocol language with current ERCOT practices and Texas PUC rules for posting resource and load information; and modifies the requirement for posting a RUC initial-conditions report to only include the process as originally intended in NPRR314.
- NPRR813: Requires references to service organization controls for the annual ERCOT market settlement audits.
- NPRR818: Clarifies that the ISO can curtail DC tie loads during a watch, before declaring an emergency condition. (See *ERCOT Stakeholders OK Change to DC Tie Curtailments*.)
- PGRR052: Ensures a new generating unit's operating limits are established by setting a timeline for stability studies following a full interconnection study (FIS), incorporating model data or transmission system changes, not known during the FIS, before a new unit is brought online.
- PGRR054: Clarifies the content, review period and process for posting an FIS' results, and establishes a process for identifying, proposing and implementing solutions to stability issues identified during the FIS.
- PGRR055: Defines the process for revising the Planning Guide to first consider PGRRs at the subcommittee level.

— Tom Kleckner

ISO-NE NEWS

Millstone No Dead Weight for Dominion, Says Opponents' Study

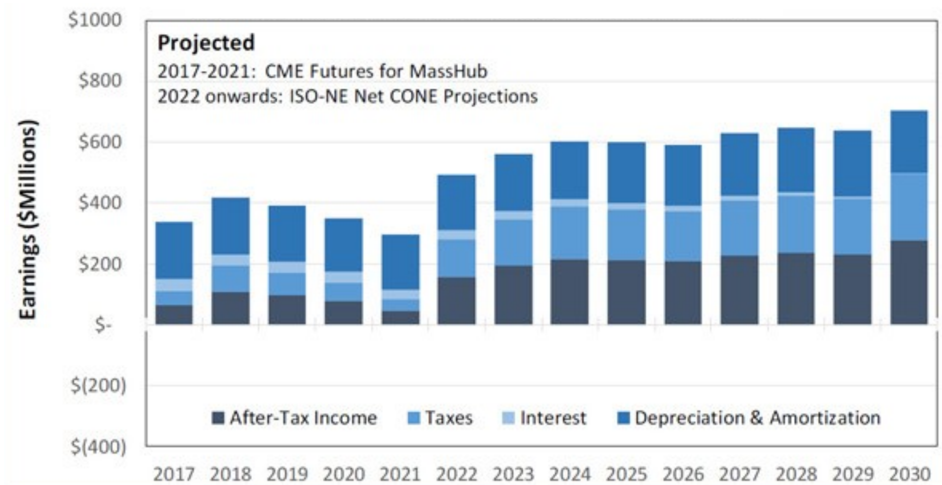
By Michael Kuser

The Millstone nuclear power plant has earned at least $3 billion in profits for Dominion Energy since the company bought it and will likely earn an additional $2.2 billion in after-tax income from now through 2030, according to a study released Wednesday by opponents of legislation that could boost the plant's finances.

The Stop the Millstone Payout coalition commissioned consulting firm Energyzt to analyze the finances of Millstone, for which Dominion does not release profit or loss figures.

The coalition's sponsors include competing New England generators Calpine, Dynegy and NRG Energy, as well as the Electric Power Supply Association, all of whom oppose Connecticut legislation that would allow Millstone to bid into the state procurement process now reserved for renewable energy resources.

Dominion indicated last month that the plant will compete in ISO-NE's Forward Capacity Auction next year, meaning the company expects it to continue operations into at least 2022. Dominion purchased the 2,111-MW facility in 2001 for $1.28 billion.



Millstone Units 2 & 3: projected earnings and EBITDA using CME futures prices | *Energyzt*

(See *Millstone to Enter FCA 12; No Closure Likely Before 2022*.)

Tanya Bodell, executive director of Energyzt, said that if Senate Bill 106 is enacted, "Connecticut ratepayers will be on the hook for $330 million per year, or a 15% increase in their electric rates."

Bodell said that Dominion bought Millstone at an "opportune time" because high natural gas prices increased power prices in New England, enabling the company to earn back the purchase price in five years. The report estimated that Millstone has generated at least a 25% return on equity for Dominion's shareholders.

The analysis used Chicago Mercantile Exchange monthly futures prices to estab-

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Millstone No Dead Weight for Dominion, Says Opponents' Study

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lish base-case energy prices in assessing the financial situation of Millstone through 2021. For the nine years after 2021, she based long-term energy prices on ISO-NE's recent FERC filing for Forward Capacity Market parameters. Under these projections, the report said Millstone can be "anticipated to earn close to $400 million in after-tax income over the next five years, or $80 million per year. Thereafter, ISO-NE's … price projection results in closer to $200 million per year in after-tax income through 2030."

Millstone nuclear plant | *Nuclear Regulatory Commission*

'Gross Assumptions and Preposterous Claims'

The legislation would make Millstone the only eligible nuclear generator in Connecticut's competitive bidding process and award it a five-year contract if its bid is lower than competing renewable resources. The bill sets an annual limit on nuclear energy purchases at 8.3 million MWh, equivalent to half of Millstone's output.

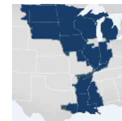
Dominion spokesman Ken Holt blasted the Energyzt report as "loaded with gross assumptions and preposterous claims, with no real data. They say the cost under S.B. 106 would be $85/MW, but the standard offer now is $81. Why would we bid higher when four regulators oversee the bidding, none of them with any incentive to see consumers pay higher rates?"

The study assumed a contract price of $85/MWh based on the cost of large-scale renewables procured in 2016 and estimated Millstone needs to earn $40 to $45/MWh to cover its operating costs and debt payments.

Holt added that Millstone is more expensive to operate than other two-unit nuclear plants because its two units are of different designs. "That means that an operator on one unit cannot work on the other, and that we need to have two separate training programs," he said. "The others can benefit from economies of scale."

EPSA said in a statement on Wednesday that the Energyzt report shows that the "intent and effect of these [legislative efforts are] to distort wholesale markets for all other power suppliers needed to provide reliable, competitively priced electricity."

MISO NEWS



MISO Begins Study on Declining Frequency Response

By Amanda Durish Cook

CARMEL, Ind. — MISO is beginning a study to assess its frequency response performance and identify needed improvements.

In the first half of 2017, MISO will compile system data from major generation loss events for evaluation. The RTO's initial sample of generation loss events are spread evenly across the footprint, although it said data may not be available for some locations.

MISO's frequency response continues to "decline year after year" and while not a pressing problem yet, it is "concerning," Durgesh Manjure, MISO resource adequacy manager, said at an April 6 Reliability Subcommittee (RSC) meeting.

In January, MISO staff asked for stakeholder input on how to address the declining frequency response capability, presenting preliminary simulations showing the system recovering too quickly when compared with real events — an indication of the need to fix governor parameters, officials said. (See *MISO Aims for Improved Frequency Response Modeling*.)

In the latter half of 2017, MISO will run simulations based on collected data and compare results to the actual events. By early 2018, the RTO will use stakeholder input to refine the study models.

Although MISO originally planned to use data from its SCADA system, it now says those measurements "seem inadequate for model validation" because the data are not detailed enough and not synchronized across locations, creating a potential time lag.

Data collected from phasor measurement units (PMUs) might be the better option, because their measurements are detailed and synchronized in real time across the grid, MISO said.

However, Manjure said PMU data may not be available for all of the large generating units. In addition, PMU data is deleted after one year. It "remains to be seen how useful" the PMU data will be, Manjure said.

"Just being able to leverage the PMU data is a work stream in itself," Manjure said. "We're not quite sure which things are going to work … as we start peeling the onion."

RSC Chair Tony Jankowski said he preferred MISO get the most detailed data to begin improving modeling.

Manjure said MISO would present more information on the study at the June RSC meeting.

MISO to Make Up Manitoba Hydro Reserves During Spring Outages

By Amanda Durish Cook

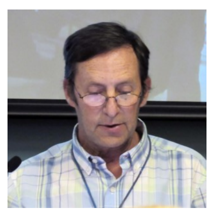
CARMEL, Ind. — Manitoba Hydro will reimburse MISO for providing extra contingency reserves during May, when maintenance outages are expected to reduce transfer capability between the Canadian utility and the RTO.

The MISO/Manitoba Hydro Contingency Reserve Sharing Group has a 2,000-MW contingency reserve requirement, with MISO ordinarily supplying 1,850 MW and Manitoba Hydro responsible for 150 MW.

Although Manitoba Hydro expects bountiful water supplies for May, maintenance outages will reduce the transfer limit between it and MISO below normal minimum cleared energy levels for the month, officials told the April 6 Reliability Subcommittee (RSC) meeting.

Following discussions between MISO staff and the Manitoba Hydro Electric Board, the RTO agreed to clear the utility's share of contingency reserves, resulting in an additional 60 MW of spinning reserves and 90 MW of supplemental reserves.

"Much of the [maintenance] work is on the U.S. side of the border, but the MISO-Manitoba transfer capability will be reduced … during the work," said Steve Swan, MISO senior manager of dispatch and scheduling.



Swan

Swan said Manitoba Hydro will still have reserves but might not be able to supply them because of the outages. "I think rather than saying they have reserves, they'll have water," Swan said.

A Manitoba Hydro representative confirmed the utility will have sufficient water to supply reserves but could encounter difficulties delivering them because of insufficient transmission capacity.

The utility has agreed to reimburse the MISO loads charged for contingency reserves through a miscellaneous charge in settlements for the entire month because transfer capability will be difficult to forecast.

"We will be carrying them for the entire period, and they will be reimbursing us for the entire period," Swan said. "This was the best solution we could come up with."

Manitoba Hydro will post updated limits during maintenance to MISO's OASIS site. Swan said changes to the RTO's clearing requirement will begin April 31.

Stakeholders at the RSC meeting did not appear to have a problem with MISO's plan.

"That's what I think the market is for," RSC Chair Tony Jankowski joked.

At this year's Gulf Coast Power Association MISO South Regional Conference, MISO CEO John Bear said he wished the RTO boasted more hydro power in the footprint and that one of its biggest contingencies is the transmission line connecting it to Manitoba Hydro.

Manitoba's hydro exports to MISO are expected to increase in 2020 when the 500-kV line Great Northern Transmission Line between the province and Minnesota is scheduled to go into service. (See *Manitoba-Minnesota Tx Line Granted Rate Incentives*.)

Belt-Tightening

Manitoba Hydro, which underwent a management restructuring in February, last week began offering voluntary buyouts in an effort to cut 15% of its workforce and save about $60 million, CBC reported. The utility's debts — $13 billion debt as of late 2015 — could increase to $25 billion over the next three years, according to CBC.

MISO NEWS

MISO Stakeholders Question Electric-Gas Info Sharing

By Amanda Durish Cook

MISO Reliability Subcommittee | © *RTO Insider*

CARMEL, Ind. — MISO is preparing nondisclosure agreements and associated Tariff language to share gas usage estimates with pipeline operators, but some stakeholders are voicing reservations about the pilot program.

The RTO says the nondisclosure agreements will be required before staff of pipelines or local distribution companies can view hourly burn estimates based on the day-ahead market clearing. "MISO will not share any information before that signed nondisclosure agreement," Mark Thomas, MISO manager of gas-electric coordination, told the April 6 Reliability Subcommittee meeting.

MISO has lined up three gas system operators for "limited sharing" of day-ahead gas usage profiles in 2017 under the pilot program, an effort to ensure gas-fired generators have fuel when they need it.

The RTO said it will outline the use of the nondisclosure agreements in section 38.9.1 (A) of its Tariff and file the changes with FERC by April 26. Thomas asked for stakeholder comment on the language insertion by April 13.

MISO said it would wait for FERC acceptance before sharing profiles. Thomas said the RTO has not yet determined at what frequency the information would be provided.

Multiple stakeholders voiced apprehension that reliability will be harmed if operators act on partial, estimated data provided by MISO. Subcommittee Chair Tony Jankowski questioned why the RTO would move ahead on the program with what he said was incomplete data based solely on day-ahead market activity.

Phil Van Schaack, MISO gas-electric operations coordinator, reminded stakeholders that the program is a pilot and insisted the sharing of generator start and stop times and estimated burn rates will be helpful. "This is a way to start the exchange of some data," Van Schaack said. "The pipeline operators are excited by this."

Thomas said if the pilot program does result in the sharing of "bad information," MISO will scrap the program.

Indianapolis Power and Light's Lin Franks said that while she is usually "all for" the sharing of information, the pilot program could cause problems. If MISO's information clashes with generator operators' information, they might be in the position of defending their efficiency, she said.

"You're feeding the public frenzy of challenging other people's data, if this becomes public," she said. "This does absolutely nothing for resource adequacy."

MISO said the pilot was authorized by FERC Order 787, which allows RTOs to share nonpublic information with gas operators. Previously, staff has said that the RTO is not attempting to influence generator behavior with the use of hourly profiles. (See *MISO to Continue Gas-Electric Coordination Efforts in 2017*.)

"MISO believes that sharing nonpublic, operational information with gas system operators can increase reliability for both industries," the RTO said in a presentation. "Gas usage profiles, notably in severe operating conditions, will increase fuel assurance and reliability for gas-fired generators and will facilitate lines of communication with gas system operators."

OMS-MISO Survey Moves Ahead with New Calculation

MISO and the Organization of MISO States have begun distributing their annual joint resource adequacy survey with a new calculation method some stakeholders believe is overly conservative.

In addition to counting as available capacity all generation projects with signed interconnection agreements — as in the past — this year's survey will also count 35% of those in the definitive planning phase of the queue, Darrin Landstrom, MISO resource forecasting adviser, said during an April 5 workshop on the survey.

The surveys, which were sent to load-serving entities on March 31, will ask for the queue project number as well as status. Responses are due April 30.

Some MISO stakeholders maintain the 35% estimate is too conservative, resulting in unnecessarily alarming results and exaggerating a possible capacity shortfall. Last month, Resource Adequacy Subcommittee Chair Chris Plante notified the RTO's Board of Directors of the disagreement. (See *Differences Persist over OMS-MISO Survey Improvements* and "OMS-MISO Survey Dispute Revisited," *MISO Advisory Committee Briefs*.)

The surveys continue to use the "high-" and "low-certainty" descriptors, although MISO said it will convert those terms to "committed" and "potential" when the RTO and OMS present results in June.

— Amanda Durish Cook

MISO News

MISO Introduces Distributed Energy Future for 2018 Tx Planning

By Amanda Durish Cook

MISO is recommending the addition of a fourth future to its 2018 transmission planning to reflect localized carbon reduction efforts and battery storage.

In addition to futures for "limited," "continued" and "accelerated" fleet change, the RTO is proposing a distributed and emerging technologies scenario to inform its 2018 Transmission Expansion Plan.

Under the new distributed and emerging technology future, fleet evolution is driven by local and state policies and the adoption of emerging technology. Renewable additions are economically propelled by technological advancements and state renewable portfolio standards. Renewables, which are expected to provide 15% of total MISO energy by 2032, are sited within state jurisdictions for local energy use.

The future also predicts commercial mass production of energy storage devices. MISO envisions that natural gas reliance increases with more electric vehicles on the road, the need to support intermittent renewables and to replace retiring capacity. Natural gas prices stay consistent with long-term forecasts, with the RTO using the NYMEX for the first two years to forecast prices and an average of the U.S. Energy Information Administration and Wood Mackenzie forecasts for the remaining years. MISO also expects a surge in demand-side management programs.

MISO's 2017 futures include an existing fleet future, policy regulations future and an accelerated alternative technologies future. (See *MISO Proposes 3 New MTEP 17 Futures*.)

Staff were hoping to reuse futures in upcoming MTEP planning cycles, but some stakeholders said less emphasis on a policy regulations future might be in order. (See *MISO Stakeholders Seek Review of MTEP Futures Under Trump*.) Using stakeholder feedback, the RTO will now use MTEP 17 definitions as "outlines" for MTEP 18, "but completely refresh forecasts."

"Given trends, low gas price forecasts, member-stated plans and renewable potential, MISO feels it is necessary to consider fleet changes beyond those in the MTEP 17 policy regulation future," the RTO said.

In addition to distributed technology scenario, the 15-year futures for 2018 are:

- A limited fleet change future assumes 8 GW of age-driven coal fleet retirements by 2032. Low demand and low prices for both natural gas and energy curb new energy generation technologies and keep renewable additions limited to current renewable portfolio standards, making up 10% of MISO resources by 2032. The low natural gas prices, however, drive an increase in industrial production along the Gulf Coast in MISO Zone 9.
- A continued fleet change future presumes the rate of fleet evolution remains as it has since about 2005. The assumed 16 GW of coal retirements is based on plant shutdowns at age 55-60, with natural gas additions largely replacing them. New renewable resources continue to exceed RPS requirements and serve 15% of MISO energy by 2032 because of continuing public interest, economics and future policy regulation.
- An accelerated fleet change hinges on a "robust" economy that drives demand and energy production. Natural gas prices rise as a result of demand, and carbon regulations aiming for a 20% reduction from current emissions levels are introduced. Coal retirements would surpass the "continued" future's 16 GW, with natural gas sources stepping up to replace the lost capacity and provide a steady backup to renewable resources, which exceed RPS targets and make up 26% of MISO resources. High gas prices hinder industrial production along the Gulf Coast.

MTEP 2018 Future	Limited Fleet Change	Continued Fleet Change	Distributed & Emerging Technology	Accelerated Fleet Change
Demand and Energy	Low (10/90) High LRZ9 Industrial	Base (50/50)	Base (50/50) + EV *(1.0% Gross)*	High (90/10) Low LRZ9 Industrial
Fuel Prices	Gas: Base -30% Coal: Base -3%	Base	Base	Gas: Base +30% Coal: Base
Demand Side Additions *By Year 2032*	EE: - DSM: 3 GW	EE: 1 GW DSM: 4 GW	EE: 1 GW DSM: 4 GW + 2 GW Storage	EE: 7 GW DSM: 7 GW
Renewed Targets *By Year 2032* *(% Wind and Solar Energy)*	RPS Only 10%	Historical Trends 15%	Historical Trends 15%	Econ Selection 26%
Generation Retirements *By Year 2032*	Useful Life Coal: 8 GW Gas/Oil: 16 GW	Historical Trends Coal: 16 GW Gas/Oil: 16 GW	Historical Trends Coal: 16 GW Gas/Oil: 16 GW	Historical Trends Coal: 16 GW+ Gas/Oil: 16 GW
CO2 Reduction Constraint *From current levels by 2032*	None	None	None	None
Siting Methodology	MTEP Standard	MTEP Standard	Localized (Solar 2/3 local)	MTEP Standard

Proposed MTEP 18 futures | *MISO*

"It's still very early" in the planning process, MISO engineer Stuart Hansen reminded stakeholders at an April 4 special workshop. "I think we've incorporated what makes sense, but we want to hear your ideas."

Hansen said MISO will still model a future federal carbon emissions policy for the 2018 batch of transmission projects in the accelerated fleet change future by modeling 20% additional emissions reductions by 2030. "We know that the [Clean Power Plan] is no longer a hot topic, but to provide an adequate bookend … we'll continue to model federal policy in the accelerated fleet change future."

Some stakeholders expressed appreciation for the fourth future, saying even with the CPP no longer relevant in the near term, MISO will still need to capture a decreasing carbon trend led by economics, local efforts, state policy and corporate initiatives rather than federal policy.

Richard Seide of Apex Clean Energy asked if MISO planned to model utilities' green tariffs and corporate purchasing of renewable power. Ann Benson, of MISO's policy studies group, said the RTO could include renewable types and prices into the futures' expected renewable portfolios.

Sean Brady of Wind on the Wires asked MISO to consider modeling future nuclear plant closings, especially in Illinois. In all MTEP 18 futures, nuclear units are assumed to remain online through their current operating licenses. The RTO also assumes 16 GW of natural gas and oil unit retirements by 2032 across all four futures.

More discussion on MTEP 18 futures development will take place at MISO's monthly Planning Advisory Committee meetings through August.

NYISO News

NYISO Auction Shows Higher Prices for NYC, Hudson Valley

Continued from page 1

demand curve was put into effect alongside weak demand forecasts."

Retirements and New Entry

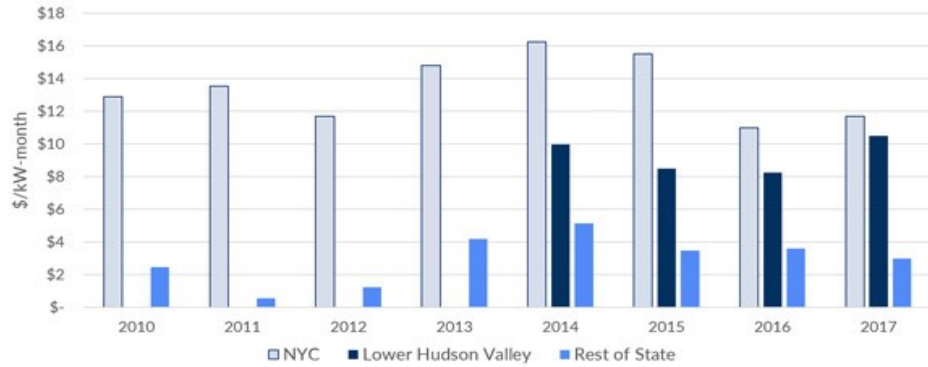
The results indicated that the 312-MW Cayuga coal-fired plant — which is operating under a reliability support services agreement with New York State Electric and Gas that ends in June — cleared the auction. Without higher prices, however, Cayuga Unit 2 could face retirement next year because of environmental upgrades needed to operate past mid-2018, UBS said.

Riesling Power, a company affiliated with The Blackstone Group, purchased Cayuga and the Somerset coal plant outside Buffalo — the only two operating coal-fired plants in the state — last year from a group of bondholders that had purchased them from the bankrupt AES Energy East in 2012. The sale came after New York regulators rejected a request to have ratepayers fund a $102 million conversion of the plant to natural gas. (See *Cayuga Coal Plant in Jeopardy*.)

The higher New York City prices suggested that 79 MW of uprates did not clear, but UBS said it expects prices to drop by $1/kW-month next year because of the uprates and exports from the Bayonne Energy Center, which is adding two new turbines that will boost its capacity from 512 MW to 644 MW. The New Jersey plant is connected to a substation in Brooklyn via a 345-kV transmission line under New York Harbor.

Additional downward pressure on New York capacity prices may come in the future from two new combined cycle gas turbine generators under construction, including the 1,100-MW Cricket Valley plant in Dover, expected to be operational by the first quarter of 2020.

The 650-MW CPV Valley plant has targeted a February 2018 opening, but construction has not yet begun on a 7.8-mile lateral to supply the plant. Millennium Pipeline sued the state Department of Environmental Conservation in December over the department's refusal to issue a required water quality permit and expects a decision



NYISO summer capacity prices ($/kW-month) | *NYISO*

from the D.C. Circuit Court of Appeals in April or May. (See *Pipeline Sues to Force NY to Issue Permit for CPV Plant*.)

One wild card is the 1,242-MW Roseton power plant in the Lower Hudson Valley, which has approval to export 500 MW to New England for the 2018/19 period. Roseton's decision to export or not may depend on "whether a half year capacity obligation for the winter can be established to maximize its position in both markets," UBS said. (See *FERC Sides with ISO-NE in Capacity Dispute with NYISO*.)

UBS said prices are unlikely to rise for the next three years. "With more renewables coming, it is hard to point to much of a bullish prospect on either energy or capacity until Indian Point retirements hit in 2020 and 2021," it said in a March 23 report. (See *NYISO, PSC: No Worries on Replacing Indian Point Capacity*.)

The mothballed 435-MW Dunkirk coal-fired plant near Buffalo has "little chance" of converting to natural gas and returning to the grid, UBS said — a prediction that was strongly denied by NRG spokesman David Gaier.

"UBS doesn't speak for NRG. Our plans are to move the gas addition project forward, as I've said several times since November," Gaier said.

Impact on IPPs

The results were good news for NRG, for which NYISO represents 10% of its fossil-fueled generation. Two other independent power producers, Dynegy (4%) and Calpine (1%) have much lower exposures to the state.

NRG's share price rose from $18.86 to $19.05 following the announcement of the results April 4, but the boost was short-lived and shares closed the week at $18.49.

Pseudo-Tie Feud Intensifies as Patton, NYISO Protest PJM Proposal

By Amanda Durish Cook

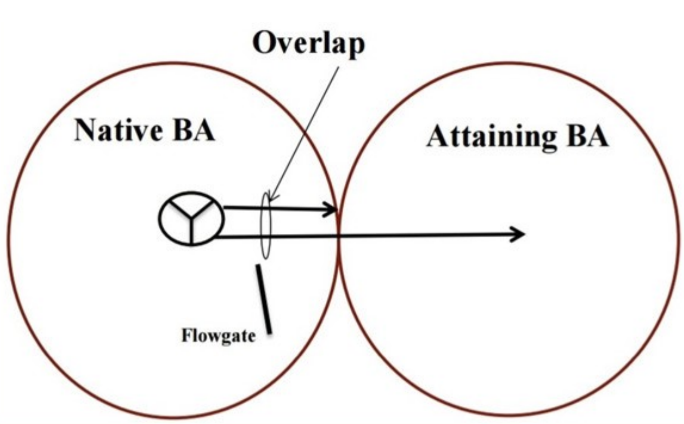
MISO's Independent Market Monitor last week filed a complaint over PJM's pseudo-tie procedure, the latest volley in an increasingly complex debate over the future of the pseudo-tie concept.

Spurred by a recent PJM bid to tighten its pseudo-tie rules, Monitor David Patton filed a Section 206 complaint April 6, claiming that the increasing use of pseudo-ties degrades reliability, hinders efficient dispatch and raises costs. He asked FERC to eliminate PJM's existing pseudo-tie definition (EL17-62).

"PJM has asserted that it has a very broad right to impose requirements on external generators to ensure that their capacity can be delivered reliably and efficiently, but the PJM pseudo-tie practices exceed all reasonable bounds," wrote Patton, whose Potomac Economics firm provides monitoring for MISO and NYISO.

NYISO also took issue with PJM's March 9 FERC filing seeking approval to apply more stringent requirements on external capacity resources serving PJM load. PJM wants the new rules to be effective in time for its May 10 Base Residual Auction (ER17-1138). (See *PJM to Tighten Pseudo-Tie Rules Despite Stakeholder Pushback*.)

In a March 31 protest, the ISO said PJM's proposal — which would allow PJM to commit and dispatch generators directly interconnected to the New York Control Area — "could threaten the reliable operation of the NYCA and disrupt the NYISO-administered markets."



Pseudo-tie congestion | *PJM*

Patton said PJM provides only "scant support" for its new, "arbitrary parameters," and that the filing makes it "impossible for any supplier in MISO that does not currently have a unit pseudo-tied to PJM to meet these requirements to offer capacity in the [Reliability Pricing Model] forward auctions."

If the new rules are implemented, PJM's customers could experience annual capacity cost increases of $500 million to $4 billion, Patton said. The complaint suggested that FERC consider replacing pseudo-ties with a firm capacity delivery procedure, a collaborative approach that Patton and MISO presented last year. (See *PJM Filing Renews MISO Monitor's Call for Pseudo-Tie Elimination*.)

PJM Cries Foul over MISO *Pro Forma*

Meanwhile, PJM and MISO are attempting to settle a disagreement over the Midwestern RTO's stricter pseudo-tie *pro forma* agreement.

The two RTOs are considering adding coordinated pseudo-tie policies to their joint operating agreement "in lieu of MISO being a signatory to PJM's agreement," MISO Senior Director of Regional Operations David Zwergel said during an April 6 Reliability Subcommittee meeting.

Zwergel said the discussions are the result of PJM's March 21 protest of MISO's *pro forma* filing (ER17-1061).

"MISO made this filing without the opportunity for PJM to review, leaving PJM no choice but to file this protest and seek revisions to this agreement through the commission," PJM wrote. It asked FERC to require MISO to "revise any provision of the proposed agreement to the extent it gives MISO unilateral authority to control the implementation, operation, suspension and/or termination of the impacted pseudo-tie, or is inconsistent with the coordinated implementation and operation of pseudo-ties as between MISO and PJM."

PJM said it sought MISO input on the development of its own *pro forma* pseudo-tie agreement but was not granted the same courtesy.

Work Continues on Double-Counting Congestion

In a related matter, the two RTOs last week presented an update to their proposal for eliminating overlapping measurements of congestion related to pseudo-ties.

During an April 7 Joint and Common Market Initiative meeting, the RTOs proposed a revised solution that involves exchanging more congestion information in the day-ahead market and refunding or charging pseudo-tie owners for deviations between day-ahead predictions and real-time numbers.

"The RTOs will coordinate pseudo-tie firm flow entitlement impacts before the day-ahead run so that the congestion and the day-ahead LMPs for the pseudo-tie resources will better reflect actual congestion," the RTOs said.

"We'd be aligning our firm flow entitlement impacts in the day-ahead to reflect what we think the settlement will be in real time," said Kevin Vannoy, MISO director of forward operations planning.

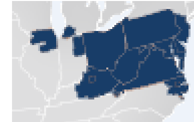
PJM Interregional Coordination Manager Tim Horger said the solution solves the double-counting issue "as best we can" with prices more reflective of the real-time market. "It's not going completely solve congestion, but we're measuring that pseudo-tie impact on every coordinated market-to-market flowgate," he said.

Horger said that the impacts will be brought "in front" of LMPs and pare down "excess congestion" that is usually folded into the pricing, reducing the need for refunds.

PJM and MISO staff have not yet determined which Tariff or JOA changes might be necessary, but Horger said pseudo-tied resources will not have to make any changes. Vannoy said MISO and PJM hope to adjust the market-to-market settlement process in time for a June 1 implementation.

A future phase of MISO and PJM's solution will allow for optional scheduling and settlement of pseudo-tie transactions in the native balancing authority's day-ahead market. In February, MISO and PJM said they would provide congestion rebates in the near term while developing a way to incorporate pseudo-ties in the day-ahead scheduling process by 2018. (See *MISO, PJM Propose Solution to Pseudo-Tie Congestion Problem*.)

PJM NEWS



PJM Outlines Aggregation Rules for Upcoming Capacity Auction

By Rory D. Sweeney

		Commitment Allocation (UCAP MW)	
Resource	LDA	Summer Period	Winter Period
Solar	EMAAC	32	2
Wind	ComEd	10	40
Aggregate	Rest of RTO	42	42

Aggregate resource example | *PJM*

VALLEY FORGE — PJM staff on Friday detailed how the new rules for aggregating seasonal resources will be implemented in May's Base Residual Auction, the first requiring all resources meet tougher Capacity Performance standards.

FERC staff tentatively approved PJM's aggregation proposal March 21, allowing the RTO to relax current rules prohibiting seasonal resources from aggregating across locational deliverability areas (LDA). PJM's plan also creates additional winter capacity interconnection rights (CIRs) and modifies rules for measuring demand response performance in the winter. (See FERC Staff OKs PJM Aggregation, DR Rules; Refunds Possible.)

The May BRA, which will provide capacity for delivery year 2020/21, will only procure resources available year-round, ending PJM's longstanding use of summer-only DR and energy efficiency.

PJM's Pete Langbein, Paul Scheidecker and Jeff Bastian told the Demand Response Subcommittee on Friday that there will be two aggregation categories:

- Commercial aggregation, in which a market seller will match seasonal resources on its own and offer them together as a single year-round capacity resource. All resources must be within a single capacity market seller account.
- Facilitated aggregation, in which seasonal resources offer into the BRA individually and will be grouped with complementary resources by PJM.

Eligible for aggregation will be intermittent generators, energy storage, environmentally limited resources, DR and energy efficiency. Winter resources (November-April) would be matched with summer resources (June-October and the following May).

PJM will clear all annual CP offers, summer-period offers and winter-period offers simultaneously to minimize the cost of satisfying the reliability requirements of the RTO and each modeled LDA. Total cleared summer-period offers must exactly equal total cleared winter-period offers across the entire RTO to ensure coverage for the entire year.

Commercial resources must be submitted to PJM for analysis and approval no later than two weeks before the BRA, or April 26.

When commercial offers are submitted, they must include an explanation of how the aggregation achieves a higher CP ability (measured in unforced capacity megawatts) than the resources individually. PJM will respond with the approved megawatt offer and what LDA the aggregate will be modeled in.

Cleared resources will receive a blend of the clearing prices of the LDAs in which the resources are located, Langbein said. Market sellers are guaranteed that the blend will be at least the resources' cleared offer prices.

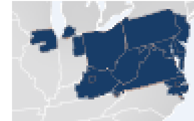
Seasonal resources can be replaced using a "similarly located" resource from any source, whether it's an annual CP resource or an appropriate seasonal one. They can also be replaced in an Incremental Auction but would need to be bought in the same LDA the resource is physically located in.

For commercial aggregates, replacements can be from any LDA but must be available CP resources or cleared CP buy bids. "What you are not able to do is go in and replace the constituent components of your aggregate," Langbein said. "So you can't go in and replace the wind farm, for example, that's part of your commercial aggregate."

Resources' production during performance assessment hours (PAHs) will be netted between all of the resources required to perform during the PAH. Penalties for shortfalls and credits for overperformance will be assessed to the aggregate resource, not individual resources.

NRG Curtailment Solutions' Brian Kauffman asked whether a resource in the same zone as the PAH that is not required, but that performs anyway, would be included as overperformance in the assessment. Bastian confirmed that it would automatically be included in PJM's calculations.

PJM NEWS



Board Restarts Artificial Island Tx Project; Seeks Cost Allocation Fix

By Rory D. Sweeney

> ***"We anticipate this information will still demonstrate the logic supporting an allocation of project costs to beneficiaries located in the Delmarva region..."***
>
> **Andy Ott, PJM CEO**

PJM's Board of Managers on Thursday ordered a resumption of the Artificial Island transmission upgrades but directed the development of alternative cost allocations to address Delmarva peninsula stakeholders who argue they're unfairly on the hook for the vast majority of the $280 million project.

The board suspended work on the controversial project last August following years of stakeholder complaints about how the project was scoped, awarded and had its costs allocated, ordering staff to perform a comprehensive analysis. At a special session of the Transmission Expansion Advisory Committee in March, staff announced some modifications to the scope of the project, but remained supportive of the proposal the board had approved in 2015. (See *PJM Sticks with LS Power on Artificial Island Project*.)

Last April, FERC approved the cost allocation for the project, but in June it said it would consider rehearing requests over whether PJM's use of the solution-based distribution factor (DFAX) cost allocation method is appropriate (EL15-95, ER15-2563). Under the DFAX method, 93% of the costs would be borne by Delmarva Power & Light ratepayers, with all other transmission zones paying less than 1% each.

PJM's signal last month that it would move forward with the project prompted renewed complaints to the board from 12 stakeholders — including the governors of Maryland and Delaware — upset over the cost allocation.

In a letter to stakeholders on Thursday, PJM CEO Andy Ott acknowledged the dispute and called on PJM's transmission owners to come up with a compromise.

"PJM has stated in past Federal Energy Regulatory Commission proceedings and at a Jan. 12, 2016, FERC technical conference that a solution-based power flow formula (the 'DFAX methodology') works fairly and reasonably to identify project beneficiaries for cost allocation purposes in the overwhelming majority of lower-voltage transmission projects considered by the board," Ott wrote. "But we also noted that application of the DFAX methodology can result in cost allocations that seem anomalous in cases where the engineering rationale or need for the particular project is not one driven by power flows. Indeed, PJM has suggested that the Artificial Island project is unique in nature and that application of the DFAX methodology to a stability or short-circuit problem may not yield clear beneficiaries."

TOs, not PJM, Responsible for Cost Allocation

Ott said the Federal Power Act makes the PJM TOs responsible for proposing cost allocation methods and prevents the RTO from imposing alternatives. But he also acknowledged that the cost allocation dispute "is so polarized [that] it threatens to impede PJM in discharging its reliability responsibilities."

As a result, he said, PJM staff "will analyze project beneficiaries from alternate perspectives, including identifying load and the extent of service interruption that could be expected in the case of an uncontrolled stability event at Artificial Island."

"Importantly, we anticipate this information will still demonstrate the logic supporting an allocation of project costs to beneficiaries located in the Delmarva region, along with beneficiaries in one or more neighboring states," he added.

He said the analyses will be available "shortly" and will be referenced in its FERC filing on the project.

The board also used in its decision a whitepaper produced by PJM, which stakeholders have complained was not made available for comment and response prior to the board's decision. Ott said in his letter that the "whitepaper is anticipated for public release in the near future and will offer additional transparency to stakeholders."

In a news release, the board said it directed staff to publish the alternative allocations because it believes "this data could offer insight to, and a basis for, those states, transmission owners and customers that derive benefit from this project to devise a different cost allocation proposal for stability projects such as Artificial Island."

At the special TEAC meeting last month, PJM officials said their review confirmed that LS Power's proposal for a 230-kV line from Artificial Island to a new Silver Run substation in Delaware was the best solution but that the interconnection point should be changed from the Salem nuclear plant to the Hope Creek plant. The analysis also eliminated as unnecessary a static VAR compensator and optical groundwire upgrades.

The revised project assigned $146 million of the project work to LS Power, $132 million to Public Service Electric and Gas, and $2 million to Delmarva Power & Light.

SPP NEWS

Working Groups Vote to Pull SPS Project

Two SPP stakeholder groups have endorsed staff's recommendation to remove a Southwestern Public Service 345-kV line from projects recommended in the 2017 Integrated Transmission Planning 10-year assessment.

The Transmission and Economic Studies working groups met jointly April 3 to vote on staff's re-evaluation of the 90-mile Potter-Tolk transmission line in the Texas Panhandle, one of 14 projects in the 2017 ITP10.

SPP's Board of Directors and Members Committee directed staff in January to further evaluate the transmission line following pushback from SPS, which said it was "the wrong time" for the line. (See "Board Sends $144M Tx Project Back for Re-evaluation," *SPP Board of Directors/ Members Committee Briefs*.)

Staff gathered feedback from members in the West Texas/New Mexico area to determine expectations on resource expansion, load growth, gas prices and avoided reliability projects. A third-party review using more detailed routing assumptions increased the project's $144 million cost estimate to $173 million, identifying a need to lengthen the project from 90 miles to 109.

ITC Holdings abstained from both working group votes, saying it believes "more realistic analysis scenarios" provide support for including the project in the ITP10 portfolio. Golden Spread Electric Cooperative abstained from the ESWG vote, citing positive benefit-cost ratios for the scenarios that included 8.8 GW of additional wind. South Central MCN abstained from the TWG vote over concerns with the re-evaluation process and modeling updates and adjustments.

Separately, the TWG unanimously approved the 2017 ITP near-term assessment, which includes 16 reliability projects at a combined cost of approximately $60 million. The Markets and Operations Policy Committee and board will vote on the near-term ITP and take up the Potter-Tolk recommendation at their April meetings.

MISO Tops $15M in M2M Payments to SPP

MISO has paid SPP a net $15.3 million in market-to-market payments since the two RTOs began M2M activity in March 2015, SPP's Will Ragsdale told the Seams Steering Committee on April 5.

MISO is responsible for seven of the top 10 congested flowgates between the two RTOs, resulting in $12.7 million in M2M payments. SPP has paid MISO $4.3 million for the other three flowgates in the top 10.

SPP's M2M report for February indicates MISO paid just more than $889,950 for 434 hours of binding temporary and permanent flowgates.

MMU Market Report Shows Wind Up, Coal Down

Wind energy accounted for almost a quarter of all energy produced this winter, according to the SPP Market Monitoring Unit's State of the Market report released last week.

Wind generation produced 23% of the footprint's energy this winter (December-February), compared to 18% in 2016 and 15% in 2015. That corresponded with a drop in coal-fueled production, to 52% from nearly 58% in 2015.

The MMU said gas costs continue to rise in the region, with an average of $3.08/ MMBtu at the Panhandle Hub, compared to $1.98/MMBtu in 2016. The rise in gas costs also resulted in increased LMPs; the average real-time LMP went from $17.82/MWh in 2016 to $24.57/MWh, and the average day-ahead LMP went from $18.33/MWh to $24.14/MWh.

— Tom Kleckner

COMPANY BRIEFS

MISO Taps New Info Security Chief


Glitch

MISO last week announced the hiring of Keri Glitch as vice president and chief information security officer. Glitch, the former chief information security officer for Avangrid, will be responsible for "comprehensive information security strategy, execution and operations," the RTO said.

"Safeguarding our information assets is a critical function for our industry and one to which MISO is deeply committed," Chief Information Officer John Goode said in a statement. "We are pleased to have Keri joining MISO to lead our cybersecurity team as we continually focus on our protective strategy and security operations."

Glitch replaces Mark Brooks, who left after just one year in the role to become chief information security officer of PPL. Glitch begins at MISO on May 1.

More: *MISO*

Wabash Valley Constructing Its First Solar Farm in Ind.

Nonprofit electric cooperative Wabash Valley Power Association has started construction on its first solar park in Indiana, a 540-kW, 2,040-panel facility located at the headquarters of Miami-Cass REMC in Peru.

The cooperative is also constructing solar farms in Illinois and Missouri and will be able to distribute 1.8 MW of solar energy to its members when the three farms are complete.

The Indiana farm is Wabash Valley's first project since its board last year approved $6 million to add up to 2.5 MW of solar into its generation portfolio. It is expected to be operational by early fall.

More: *Kokomo Tribune*

Toshiba Fired Westinghouse Chair Days Before Chapter 11 Filing

Two days before Westinghouse Electric filed for Chapter 11, parent company Toshiba fired the U.S. nuclear subsidiary's chairman Danny Roderick.

A Toshiba spokesman said Roderick was replaced by Mamoru Hatazawa, chief of Toshiba's nuclear division, on March 27, and that his role would be temporary.

Additionally, Jeffrey Benjamin, a veteran nuclear engineer responsible for delivering on new power plant projects, also has left, a source familiar with the matter said. According to the Westinghouse website, David Durham, a former GE Hitachi Nuclear Energy executive, who joined Westinghouse in 2015, is now responsible for new projects.

More: *Reuters*

PJM Hires NRG Alum as Deputy General Counsel


O'Hara

PJM last week announced it had named Chris O'Hara as vice president and deputy general counsel to oversee legal support for the RTO's regulatory and commercial activities. O'Hara previously spent 12 years at NRG Energy, culminating in positions as general counsel for the company's two largest business units, Gulf Coast Region and Reliant Energy.

"Chris has extensive in-house and private law firm experience in energy, litigation, regulatory affairs, compliance and other areas relevant to the work we do at PJM," said Vince Duane, senior vice president and general counsel.

More: *PJM*

We Energies Staying the Course on Emissions Reduction

We Energies will stay the course on reducing carbon emissions at its power plants across the upper Midwest notwithstanding President Trump's recent executive order rolling back the Obama administration's Clean Power Plan.

"We have reviewed the executive order and it will not alter our approach," spokeswoman Cathy Schulze said. "Our objective is to balance the delivery of safe, reliable and affordable energy with a commitment to protecting the environment."

In 2016, We Energies vowed to reduce emissions at its plants to 40% below 2005 levels by 2030. In 2005, the company's entire fleet of coal- and natural gas-fired power plants produced roughly 2,330 pounds of carbon dioxide for every megawatt-hour of electricity generated, Schulze said.

More: *The Journal Times*

Mississippi Power Pushes Kemper Start Date to April 30

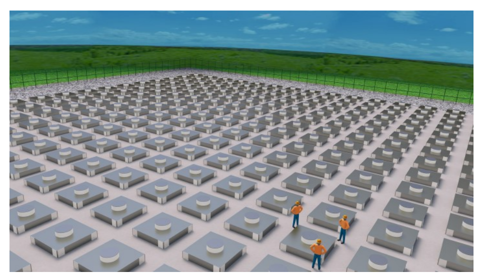
Southern Co. subsidiary Mississippi Power expects its Kemper County power plant to be in service by April 30 — and said it needs another $99 million to finish the $7.2 billion facility.

Mississippi Power said it would absorb $70.2 million in additional costs, which include $45 million related to extending the projected schedule, $15 million for start-up fuel and $10 million for outage work, operational maintenance and improvements. Ratepayers may be asked to pay more than $26 million toward the additional costs and overall could be asked to pay $4.3 billion for Kemper.

In January, Mississippi Power reported tube leaks in a syngas cooler for one of the gasifiers and estimated a mid-March start date.

More: *Sun Herald*; *The Associated Press*

Holtec Submits Application to NRC For Interim Nuke Waste Storage



Holtec International has submitted an application to the U.S. Nuclear Regulatory Commission for a plan to build an interim storage site in New Mexico for spent nuclear fuel.

The HI-STORE Consolidated Interim Storage Facility would store spent fuel in 10,000 subsurface canisters on 288 acres and would be able to hold the entire country's spent fuel backlog. About 4 miles of railroad would need to be built to transport spent fuel to the site.

The company expects NRC to take about

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COMPANY BRIEFS

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two years to grant a license, said Joy Russell, Holtec vice president of corporate business development and communications.

More: *Carlsbad Current-Argus*

Startup Aims to Produce Nuclear Power Without Downsides


Cassidy

The former vice president at Alphabet's X research lab has started a new company that is trying to safely harness nuclear fusion reactions.

Apollo Fusion, started by Mike Cassidy, is "working on revolutionary hybrid reactor technology with fusion power to serve safe, clean and affordable electricity to everyone," according to its website. The startup's nuclear plants are "designed for zero-consequence outcomes to loss of cooling or loss of control scenarios and they cannot melt down," the website states.

The company has an agreement to deliver power to its first international customer.

More: *Bloomberg*

Peabody Emerges From Chapter 11

Peabody Energy has emerged from Chapter 11 protection after one year, having reduced costs and slashed its debt load by more than $5 billion.

The coal producer filed for Chapter 11 protection in April 2016, following other big bankruptcies in the industry including Arch Coal, Alpha Natural Resources, Patriot Coal and Walter Energy.

New shares for Peabody began trading on the New York Stock Exchange last week.

More: *The Associated Press*

Ameren Launches Accelerator For Energy Tech Startups

Ameren has partnered with University of Missouri-St. Louis to launch a startup accelerator that will invest in early-stage energy technology companies.

The energy accelerator will invest in five to seven companies each year, with each company given $100,000 in seed capital for three years. The first class is expected to be announced in July.

Ameren is leaving open the possibility of buying or licensing technologies developed through the program.

More: *St. Louis Business Journal*; *St. Louis Post-Dispatch*

FEDERAL BRIEFS

Global Investment in Renewable Energy Drops in 2016

Notwithstanding falling prices, global investments in renewable energy fell by almost 25% last year to $241.6 billion, compared with $312.2 billion in 2015, according to the United Nations Environment Program.

However, renewable energy capacity additions increased by 8% from 127.5 GW in 2015 to 138.5 GW in 2016.

U.S. investment saw a 10% drop to $46.4 billion because of developers pacing their projects to take advantage of tax credits.

More: *The Associated Press*

US Renewables Jump as Consumption Ticks Up in 2016

Total U.S. energy consumption increased slightly in 2016 compared with 2015, with renewables posting the largest increase.

Solar, wind and hydro made up 91% of the increase in renewable power use. Solar consumption led the way, with more than a 37% jump; wind generation increased nearly 20%; and hydro increased by 7%.

For the third consecutive year, coal consumption declined, this time by 9% to 730 million short tons.

More: *FuelFix*

Senators Bring Bill for Financing Carbon-Capture Projects

Two senators introduced a bill Wednesday that would allow companies to finance carbon-capture projects with tax-exempt bonds issued by state and local governments.

Sens. Michael Bennett (D-Colo.) and Rob Portman (R-Ohio) said the bill could provide incentive for carbon capture technology among energy and industrial firms, which ultimately would help reduce carbon emissions and support the construction sector.

Last year, a bill was introduced to expand research tax credits for the technology, but it didn't receive a hearing.

More: *The Hill*

17 States Try to Stop Trump on Climate Change

A coalition of 17 states led by New York filed a legal challenge Wednesday to the Trump administration's efforts to rescind climate change regulations.


Schneiderman

"The law is clear: The EPA must limit carbon pollution from power plants," New York Attorney General Eric Schneiderman said in a statement announcing the challenge.

The coalition includes California, Connecticut, Delaware, Hawaii, Illinois, Iowa, Maine, Maryland, Massachusetts, Minnesota, New Mexico, Oregon, Rhode Island, Vermont, Virginia and Washington, as well as D.C. and a number of smaller localities.

More: *Reuters*

US Coal Companies Tell Trump To Stay in Paris Agreement

American coal companies, including Cloud Peak Energy and Peabody Energy, have been asking the Trump administration to stay in the Paris Agreement on climate change so that U.S. negotiators can advocate for use of coal in the future global

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energy mix.

Coal industry officials said they want a U.S. seat at the table to ensure a role for low-emission coal-fired power plants and financial support for carbon capture and storage technology. They also want to protect multilateral funding for international coal projects through bodies like the World Bank.

On Wednesday, 26 out of 28 European Union countries said they would not build coal-fired plants after 2020 in order to help countries meet their carbon reduction targets under the agreement.

More: Reuters; InsideClimate News

Trump Team Trying to Stop Chinese from Getting Westinghouse

The Trump administration is trying to prevent Westinghouse Electric's nuclear reactor business from falling into the hands of a buyer linked to China.

Westinghouse filed for Chapter 11 on March 29, and parent company Toshiba is seeking a buyer for the nuclear unit. For years, Chinese entities expressed interested in Westinghouse, and the company has been a repeated target of Chinese espionage.

The Trump administration is contemplating three potential options, a person familiar with the discussions said. They include the government blocking a sale to a Chinese buyer; encouraging an alternative bid from U.S. or friendly foreign investors; or the government investing in Westinghouse directly in return for an equity stake.

More: Bloomberg

Experts Fear Cyberattack Targeting Electric Grid

The threat of a cyberattack on the U.S. power grid is at an "all time high" and is leaving one senior cyber and energy strategist with a "palpable sense of foreboding," according to testimony during a Senate hearing last week.

Hackers have more ways to attack than ever before because of the growing presence of automated technology on the grid, Andrew Bochman, senior cyber and energy strategist at Idaho National Laboratory, testified before the Senate Energy and Natural

PJM's Valley Forge control room | *NERC*

Resources Committee.

Although hackers have never shut down U.S. power, a 2015 attack in Ukraine that caused 225,000 customers to lose power for several hours demonstrates that the risk is real, NERC President Gerry Cauley said.

More: FuelFix

Interior Department Repeals Coal Royalties Rule

In a move that Interior Secretary Ryan Zinke described as ending what the Trump administration sees as a "war on coal," the Interior Department announced last week that it is repealing an Obama-era coal royalties rule.

Since the 1980s, companies could sell their fuel to affiliates and pay royalties on that price, then turn around and sell the coal at higher prices overseas. Under the now-repealed rule, the royalty rate would have been determined at the time the coal is leased, with revenue based on the price paid by an outside entity.

Zinke stated coal royalty rates set under his leadership will be "transparent" and that the taxpayer must be the winner.

More: The Associated Press

Trump to Nominate Dan Brouillette as DOE Deputy

President Trump will nominate former Energy Department official Dan Brouillette to be the department's deputy secretary, the White House announced last week.

Brouillette served under President George W. Bush from 2001 to 2003 at the department, where he was assistant secretary for congressional and intergovernmental affairs. Additionally, he was a member of Louisiana's State Mineral and Energy Board from 2013 to 2016.

After his work in the Bush administration, Brouillette moved on to the House Energy and Commerce Committee as its chief of staff under then-Rep. Billy Tauzin (R-La.), who was the panel's chairman at the time.

More: The Hill

Democratic States Sue Trump over Delayed Energy Efficiency Rules

Ten Democratic state attorneys general along with environmental groups are suing the Trump administration over its decision to put off implementing energy-efficiency standards for consumer products.

The standards — covering items including ceiling fans, walk-in coolers and freezers ▯ were scheduled to go into effect on March 20, but were delayed until Sept. 30 without explanation. Supporters say they would save consumers almost $24 billion on energy bills and reduce carbon dioxide emissions by 292 million tons.

Manufacturers and industry groups are worried the cost of complying with the standards would be too high.

More: The Hill; Bloomberg

Report: More Oversight Needed of Mine Cleanup Funds

The Interior Department's Office of Inspector General has issued a report finding the federal government isn't fulfilling its obligations in overseeing how states are spending funds for cleaning up abandoned coal mines.

Money from the Abandoned Mine Lands fund is supposed to be used primarily for cleaning up and reducing hazards at old coal mines. After cleanup is complete, states can use the money for other purposes, subject to limitations.

The report found Wyoming, Montana and Texas are using significant funds on non-coal projects, while coal cleanup projects are going unfunded. It additionally found Mississippi and Louisiana have spent hundreds of thousands of dollars but have not made any progress on reclamations.

More: The Hill

State Briefs

CONNECTICUT

'Cow Power' Bill Aims to Convert Animal Waste to Bio-Gas

A bill dubbed the "Cow Power" bill in the state Senate would create pilot projects on three registered dairy farms to collect methane from decomposing cow manure and convert it into bio-gas — and revenue.

Farmers in the program would collect the methane using anaerobic digesters, a type of composter, and would, at minimum, be required to use manure as 85% of the waste that goes into the digesters. They could sell the gas or electricity produced by burning the gas to utility companies.

The legislation, sponsored by Democratic Sen. Ted Kennedy Jr., has the unanimous approval of the Joint Committee on the Environment. It would solve the problem of animal waste running into the state's rivers and streams, and ultimately the Long Island Sound, and would also reduce the amount of methane that escapes, Kennedy said.

More: *Public News Service*

INDIANA

House Passes Bill Reducing Net Metering Rates

A bill passed by the House of Representatives last week would eventually reduce net metering reimbursements for solar panel users.

Senate Bill 309, which passed 56-43 on the House floor, would lower the current retail price of roughly 11 cents/kWh that solar panel owners receive for the extra energy they generate to the wholesale rate of 3 cents/kWh, plus a 25% premium. The bill has already passed in the Senate.

The reduction would take effect in five years, with current solar panel owners not subject to a reduction for 30 years.

More: *Indianapolis Business Journal*

KENTUCKY

PUC Approves 7 Small Solar Facilities for Big Rivers

The Public Service Commission has approved an application by Big Rivers Electric to build and operate seven small solar facilities — to be located at schools, parks and other public facilities across its service territory — that would produce a total of 120 kW.

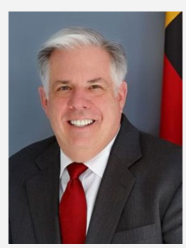
The projects, which are expected to cost $500,000 and have an annual operating cost of about $4,000, would be used to test how well solar energy could be integrated into the grid and to educate the public about solar energy, according to Big Rivers' application.

Big Rivers is hoping to receive a $125,000 grant from the U.S. Department of Agriculture's Rural Energy for America Program and will reconsider whether to proceed if the funds don't come through.

More: *Daily Energy Insider*

MARYLAND

Environmentalists Remain Wary As Gov. Signs Fracking Ban



Hogan

Gov. Larry Hogan last week signed legislation banning fracking, making the state the first where the practice is geologically possible to prohibit it by statute.

New York's fracking ban came via executive order. Vermont legislators enacted a ban, but that state has no significant gas reserves.

Despite Hogan's support of the ban, environmentalists remain wary of the Republican governor, who they say has a mixed record. Hogan last year signed an extension of the Greenhouse Gas Reduction Act, which requires the state to reduce emissions by 40% from 2006 levels by 2030. Environmentalists are now pressing the governor to oppose President Trump's plan to eliminate the $73 million federal contribution to Chesapeake Bay restoration efforts.

More: *The Baltimore Sun*

MISSOURI

Email from Solar Company Official Leads to Bribery Warning

An email sent to legislators by the president of a company that sells solar power equipment has prompted a House attorney to warn lawmakers about bribery attempts.

The email, sent by Serra-Lesa Ivener, the Missouri president for Hog Power Energy, said she is compiling a list of pro-solar lawmakers for campaign donations and asked how they would vote on a bill to impose fees on people who generate their own solar energy. House counsel David Welch warned lawmakers that an offer of a benefit in exchange for their vote on specific legislation is a violation of state bribery laws.

Ivener said she didn't know the rules and hasn't cut any checks, and she doubts that she would now.

More: *The Associated Press*

NEBRASKA

Facebook Building Wind-Powered Data Center

Facebook has announced plans to build a data center in Sarpy County that will be powered by 100% wind energy, largely from new wind farm construction in the state.

The social media giant and the Omaha Public Power District also are partnering to implement a new renewable energy tariff that will allow it and any other utility customers to utilize renewable energy.

The center, which will include two 450,000-square-foot buildings and another 70,000-square-foot office building, is expected to be online as by 2020.

More: *Lincoln Journal Star*

OHIO

Lawmakers Propose Subsidizing 2 Nuclear Plants

Two state legislators have agreed to introduce a bill that would subsidize the Davis-Besse and Perry nuclear power plants by increasing electric rates by up to 5% for FirstEnergy customers in the state.

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STATE BRIEFS

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FirstEnergy said the subsidies are necessary to save the two plants, which make up about 14% of the state's electricity, and that both plants still might be sold even if the subsidies are approved.

The legislation, introduced by Sen. John Eklund and Rep. Anthony DeVitis, would create what FirstEnergy calls a "Zero Emissions Nuclear Resource Program" to recognize the plants' low-carbon footprint. The program would allow utility customers with a nuclear plant in their service territory to reap economic, environmental and fuel diversity benefits in exchange for higher monthly electric bills, FirstEnergy said.

More: *The Blade*; *The Associated Press*

OKLAHOMA

Court Dismisses Suit Seeking Earthquake Remedies

Saying the state's Corporation Commission is the best venue to determine seismicity issues relating to disposal well activities, a federal district court judge in Oklahoma City dismissed a lawsuit against three oil and natural gas producers over repeated earthquakes in the state.

Public Justice filed the suit in February 2016 on behalf of Sierra Club's state chapter against Devon Energy, Chesapeake Energy and New Dominion. SandRidge Energy was later added to the suit, but its involvement was stayed after the company filed for bankruptcy reorganization. The lawsuit wanted the companies to reduce their production wastes and reinforce structures vulnerable to earthquakes. It also asked for an independent earthquake monitoring and prediction center.

Judge Stephen P. Friot said the commission, aided by other agencies and researchers if necessary, is better equipped than the court to resolve the seismicity issues because of its specialization, experience and more flexible procedure.

More: *The Oklahoman*

VERMONT

House Considers Bill Furthering Prospects for Energy Storage

A bill considered Friday in the House Committee on Energy and Technology seeks to further the prospects for energy storage in the state.

Independent Rep. Laura Sibilia introduced the bill, which would require the Department of Public Service to identify opportunities for deploying energy storage, as well as benefits and barriers. It calls for an assessment of potential methods for fostering development of cost-effective energy storage solutions.

The bill, as introduced by Sibilia, additionally calls for the department to look at establishing goals for storage capacity on the grid. But the committee softened that language, she said.

More: *Rutland Herald*

Regulators Approve 20-MW Solar Project, the Largest in State

The state Public Service Board has approved a 20-MW, 82,000-solar panel project that is expected to be the state's largest solar panel installation.

Ranger Solar's Coolidge Solar Project would be situated on 88.5 acres of a 155-acre farm on the Ludlow-Cavendish town line. Construction is expected to begin in 2017.

A spokeswoman for Green Mountain Power said the company is not interested in buying power from the project because the site is out of its service area.

More: *The Associated Press*