



## FERC Quorum Restored as Powelson, Chatterjee Confirmed

By Rich Heidorn Jr.

The Senate on Thursday night confirmed Pennsylvania regulator Robert Powelson and GOP aide Neil Chatterjee to FERC, effectively restoring the quorum the commission lost six months ago.

Confirmation of the two Republican nominees was never in doubt in the GOP-controlled Senate, but their nominations languished for almost two months after the Senate Energy and Natural Resources



Chatterjee (left) and Powelson at their Senate Energy and Natural Resources Committee hearing in June. | © RTO Insider

Committee approved them on a 20-3 vote June 6, as Democrats reportedly held out for an assurance that the Senate would also

move on Democratic nominee Richard Glick.

That hurdle was cleared when the committee **announced** it had scheduled a Sept. 7 confirmation hearing for Glick, general counsel for the Democrats on the panel, and Republican attorney Kevin McIntyre, whom President Trump nominated as chairman. That action came after the White House, which had announced Trump's intent to nominate Glick in late June and McIntyre almost a month ago, formally submitted their nominations to the Senate on Wednes-

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## PJM Stakeholders Envision Additional Capacity Designs

By Rory D. Sweeney

VALLEY FORGE, Pa. — And then there were nine.

Weeks after stakeholders introduced six proposals for redesigning PJM's capacity construct, another three have materialized. Many of the nine are variations on a two-stage auction repricing structure, while others envision vastly different procedures.

All nine were presented and explained at a two-day meeting

last week of the Capacity Construct/Public Policy Senior Task Force, which was created earlier this year to address concerns about state subsidies of generators undermining PJM markets. It has been moving to have an agreement endorsed and filed at FERC by the end of the year. PJM has held several two-day task force meetings to accommodate the depth of discussion stakeholders have demanded for the process. (See [PJM Stakeholders See Capacity Auction Flaws, Offer Solutions.](#))

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## Day-ahead Prices Going Negative in CAISO

By Jason Fordney

Negative day-ahead prices surged in CAISO during the first quarter as combined surpluses of solar and hydroelectric output frequently left the market upside-down.

Prices went negative during 51 hours in the day-ahead market over the three-month period, compared with just three hours in all of last year, the ISO's Department of Market Monitoring said.

"This is something we first just started seeing in this quarter," Senior Analyst Gabe Murtaugh said during a July 31 call to discuss the department's [first-quarter report](#).

Negative prices indicate that the cost to procure wholesale power was at or below \$0/MWh, which happens when there is an oversupply of solar power and other renewables while demand is relatively low.

Negative prices occurred in the

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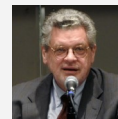
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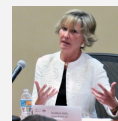
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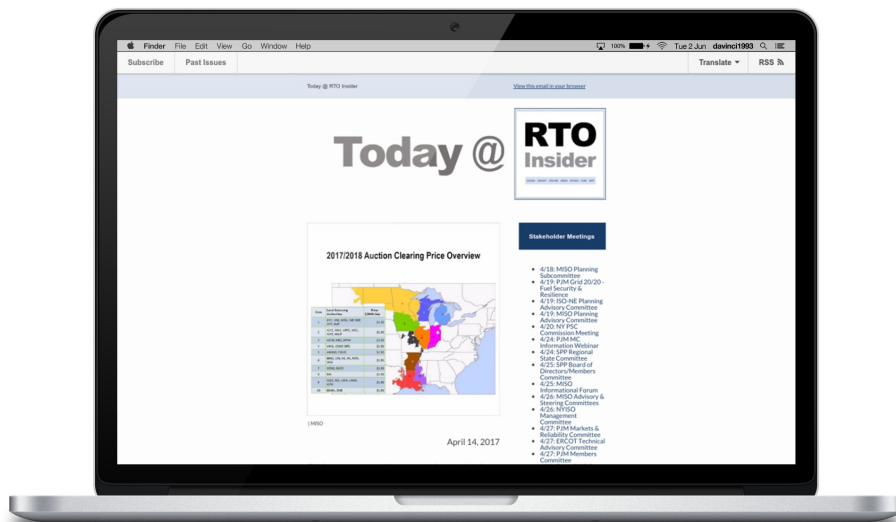
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# COUNTERFLOW

BY STEVE HUNTOON

## Alternative Facts and Global Warming

By Steve Huntoon

Everyone is entitled to their own opinions. But no one is entitled to their own facts.

IMHO, the facts are that climate change is happening, is man-made, and is a threat to mankind. How much of a threat, and how imminent the threat, are things we can talk about.



Huntoon

The big question is what to do about it. There are some who peddle the false hope that we can fix climate change on the cheap.

### No Cheap Fix

No. Climate change is not going to be fixed on the cheap. Sugarcoating the requisite effort isn't doing us any favors.

Which brings us to the widely publicized 2015 claim by four academics from Stanford University's Department of Civil and Environmental Engineering and the Institute of Transportation Studies at the University of California, Berkeley that we can power the entire economy at "low cost" with just wind, water and solar (WWS) resources, using electricity and hydrogen as the delivery systems. The study was led by Stanford's Mark Jacobson, so let's call them the Jacobson Group.<sup>1</sup>

Their vision is not just electric generation powered with WWS resources, mind you: *everything* to be powered with WWS resources as the sole primary sources. Planes, trains and automobiles. Ships. Trucks. Industrial processes. All natural gas facilities — yes, your gas furnace, dryer, water heater and stove<sup>2</sup> — are torn out. All nuclear, gas and coal plants are shut down. Got the idea?

To put this staggering "low-cost" scenario in perspective, past analyses of deep decarbonization (80% reduction) of *only the electric sector* (and keeping nuclear plants) estimate increases of \$23 to \$53/MWh in average retail electric rates by the year 2050.<sup>3</sup> Whether one views a retail price increase of this magnitude as worthwhile can be debated, but it certainly can't be called "low cost."

Two years have gone by since the Jacobson Group paper was published, and thankfully the National Oceanic and Atmospheric Administration's Christopher Clack and 20 others (the Clack Group) have come forward to refute it.<sup>4</sup> The Jacobson Group replied, claiming their analysis was impeccable.<sup>5</sup> And the Clack Group has responded.<sup>6</sup>

Up to this point you may be thinking: "OK I read about this controversy in *The New York Times*, *Washington Post* and/or *The Economist*,<sup>7</sup> and there's probably some truth to each side."

### Simply Wrong

You would be wrong. The Jacobson Group is in the realm of alternative facts. It is simply wrong.

Don't take my word on this. If you have the time and inclination, please read the Clack Group's detailed (and fascinating) "Supplemental Information," available here.<sup>8</sup> And then read the Jacobson Group response, available here.<sup>9</sup> You'll see that the Clack Group demolishes dozens of Jacobson Group claims; the Jacobson Group ignores most of the demolition and offers tweet-like replies for the rest.<sup>10</sup>

Why care? Right and wrong matter because wrong has tragic policy implications.

For example, the Jacobson Group claims that WWS resources can suffice for a low-cost carbon-free future, so it rules out other carbon-free sources like nuclear power. In the case of nuclear power, the Jacobson Group asserts a life-cycle mortality analysis that assumes nuclear wars occur on a 30-year cycle, which they haven't, and that civilian nuclear power somehow sustains military nuclear power, which it doesn't.<sup>11</sup>

The Jacobson Group also claims that all nuclear generation is uneconomic, relying on studies of new nuclear generation costs. As noted earlier, past analyses of electric sector deep decarbonization keep existing nuclear generation, the bulk of which is economic on a going-forward basis even with current low natural gas prices.<sup>12</sup>

### Don't Abandon Energy Efficiency

Here's another tragic policy implication:

Energy efficiency doesn't matter. If WWS resources can supply existing energy demand at low cost, why be more efficient? I've written before about how LED lighting has reduced demand by more megawatt-hours than rooftop solar has generated.<sup>13</sup>

That's how significant energy efficiency can be. Let's not abandon energy efficiency on the false hope that WWS resources can supplant all existing energy resources at low cost.

And how about reversing deforestation, which may be the cheapest way to fight climate change?<sup>14</sup> Or incenting India to take the most inefficient air-conditioning units off the market?<sup>15</sup>

Again, the Jacobson Group implicitly says "don't worry, be happy," we can stop climate change on the cheap with WWS resources.

I'm not going to take up a lot of your valuable time regurgitating the entire Clack Group demolition, but I do want to highlight some of the more outrageous Jacobson Group claims so you have a taste. And I'll do a little demo of my own.

**Aviation.** The Jacobson Group claims that all aviation fuel can be replaced with hydrogen created by electricity from WWS resources. Their support for this is an experimental four-seat airplane that runs on hydrogen.<sup>16</sup>

So ... with a pilot, co-pilot and steward, the plane has room for one passenger. Luggage and toilet not included.

The cruising speed of this plane is 102 mph. I guess commercial airlines — and the U.S. Air Force — will just have to make do with a plane barely faster than a car.<sup>17</sup>

**Hydrogen Production.** Here's a sleight of hand that us electric geeks will understand. Citing themselves, the Jacobson Group claims hydrogen production and storage will cost 4 cents/kwh-to-H2. But the Clack Group points out that this cost is based on a 95% capacity factor, while the capacity factor for hydrogen production in the Jacobson Group model is about 9%.

That means the capital cost for hydrogen production will be 1,000% more than the Jacobson Group claims. The Jacobson Group offers no defense.

**Solar Thermal with Storage.** Wow, another piece of work. The Jacobson Group says we

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# COUNTERFLOW

BY STEVE HUNTOON

## Alternative Facts and Global Warming

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can build massive networks of solar thermal panels that heat up glycol and then pump it underground to storage pools and then make withdrawals as needed. The Jacobson Group cites a residential housing project in Canada that involved 52 homes costing \$134,000 each.<sup>18</sup>

### Not 'Low Cost'

Mind you, that just gets space heating. Air conditioning, hot water, clothes drying, cooking — all extra. Not "low cost"!

The Jacobson Group claims underground thermal energy storage has a capital cost of \$1,320/kW, but, as the Clack Group points out, its cited references don't provide any support. In another paper, the Jacobson Group said it relied on "Lazard's (2014) estimates with 18-hour storage"; that Lazard document says that solar thermal costs more than \$9,000/kW.<sup>19</sup>

And where does the Jacobson Group account for the cost of facilities to convert excess electricity into heated glycol for injecting underground in the storage facili-

ties? There is an assumed conversion capacity that is enormous, but I can't find any associated cost for such capacity in the modeling.

Back to the electric industry we know and love.

*Water/hydropower.* Let's start here with the Clack Group calling out the Jacobson Group's claim that U.S. hydropower capacity can be easily expanded from the current 87 GW to 1,300 GW (not a typo). This issue is the one that got the bulk of media attention.

The Jacobson Group asserted in reply to the Clack Group that it was assuming a feasible increase in capacity at existing hydro facilities.

The reality is that there is very limited hydropower expansion capability. A best-case scenario is an additional 13 GW by 2050, according to the U.S. Department of Energy's recent 407-page study of this subject — *which is hiding in plain sight on the DOE website.*<sup>20</sup>

Yes, the best case is 1% of what the Jacobson Group claims. *One percent.*

And of course we couldn't release the water associated with 1,300 GW of hydropower

without causing massive flooding across the U.S. A minor detail to be sure.

### Fantasy

The Jacobson Group claim is a fantasy.

*Flexible Electric Demand.* In order for the intermittent WWS resources to "work," the Jacobson Group assumes 63% of industrial demand is flexible (totally controllable by system operators within eight-hour windows). We in the electric industry know that despite large economic incentives, only a small percentage of industrial load opts to participate in demand response programs (which involve only demand reduction, not demand increases on command).

In other words the Jacobson Group envisions a paradigm shift in which most industrial load conforms to intermittent resource output rather than the other way around. *Not going to happen at low cost, if at all.*

*Offshore Wind.* All of us in the industry know what a brutal slog it is. After many years there is all of 30 MW off Rhode Island at a cost of \$244/MWh. The Jacobson Group makes the incredible claim that 750 GW can be economically constructed, when the aggregate of all pending offshore proposals is 9.1 GW.<sup>21</sup>

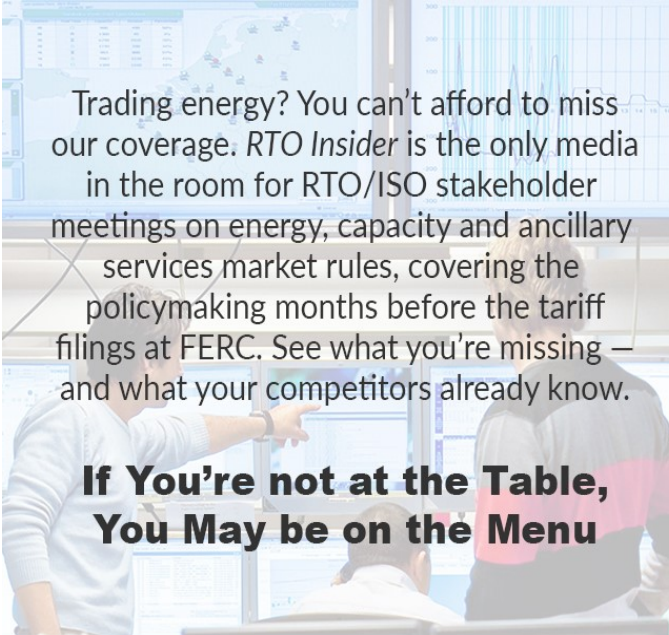
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Contact Marge Gold ([marge.gold@rtoinsider.com](mailto:marge.gold@rtoinsider.com))

# COUNTERFLOW

BY STEVE HUNTOON

## Alternative Facts and Global Warming

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**Electric Transmission.** Despite changing virtually all sources of electric generation, and increasing the maximum electric generation the transmission system must handle by more than 500% from 977 GW to 5,271 GW,<sup>22</sup> the Jacobson Group assumes negligible incremental transmission system costs.

The Clack Group pointed out that the National Renewable Energy Laboratory estimated that a 90% renewable electric supply (just electricity not all other energy sources) would require doubling existing long-distance transmission capacity. That was being polite.

The Jacobson Group simply ignored the staggering cost and staggering siting issues involved with a 500%+ increase in transmission system capability.<sup>23</sup>

**Electric Distribution.** In its critique, the Clack Group left out a huge problem in the Jacobson Group modeling: the electric distribution system. The Jacobson Group's assumptions of net injections from 652 GW of rooftop solar (more than 100 times what currently exists) – and increased electric demand from eliminating retail natural gas, propane and oil use, and from making all cars electric – would require a massive expansion of the distribution system at a staggering cost.<sup>24</sup> How much did the Jacobson

Group allow for that? Zero.

**System Modeling.** Frequency regulation and operating reserves are ignored by the Jacobson Group. Congestion is avoided by assuming unlimited transmission capability. The Clack Group laid out the problems with all this, and the Jacobson Group simply ignored it.

**Cost of Capital/Discount Rate.** Saving the best for last because so much money is involved. The Jacobson Group forecasts a cost per kilowatt-hour of its WWS scenario in 2050 based on a “discount rate” of 3%. The Clack Group rightly points out that the true cost of capital is more than twice that.

The Jacobson Group replies that the 3% “is a well-referenced social discount rate for a social cost analysis of an intergenerational project.” Whatever that may mean, it is irrelevant.<sup>25</sup>

Electric utility customers – which we'll all be for almost all the energy we use – will pay the weighted average cost of capital of those utilities, which right now is about 7.4% plus an income-tax allowance.<sup>26</sup>

Because virtually all WWS resource costs are capital costs, this element by itself means that the overall cost of the Jacobson Group vision will be 200 to 300% more than it claims (and before correcting for everything else discussed earlier).

Bottom line, the Jacobson Group's analysis is deeply flawed. It would be a terrible mistake to base public policy on any of its claims.

Steve Huntoon is a former president of the Energy Bar Association, with 30 years of experience advising and representing energy companies and institutions. He received a B.A. in economics and a J.D. from the University of Virginia. He is the principal in Energy Counsel, LLP, [www.energy-counsel.com](http://www.energy-counsel.com).

<sup>1</sup><https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4679003/>

<sup>2</sup>On the subject of stoves, I know a lot of cooks who will give up gas cooking when their frying pan is pried from their cold dead fingers. Don't get them started.

<sup>3</sup><http://www.nrel.gov/docs/fy13osti/52409-ES.pdf> (Table ES-10 on page 28). NREL has a fascinating future scenarios viewer [here](http://www.nrel.gov/docs/fy13osti/52409-ES.pdf). Other modeling is more optimistic, projecting no increase in electricity costs from 80% decarbonization, <http://www.nature.com/nclimate/journal/v6/n5/full/nclimate2921.html>.

<sup>4</sup><https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5495221/>. Christopher Clack is now the CEO of Vibrant Clean Energy.

<sup>5</sup><http://web.stanford.edu/group/efmh/jacobson/Articles/I/CombiningRenew/PNASReplyClack.pdf>

<sup>6</sup><https://www.dropbox.com/s/n8oxg2xykc8j3dx/ReplyResponse.pdf>

<sup>7</sup><https://www.nytimes.com/2017/06/20/business/energy-environment/renewable-energy-national-academy-matt-jacobson.html>; [https://www.washingtonpost.com/news/energy-environment/wp/2017/06/19/a-bitter-scientific-debate-just-erupted-over-the-future-of-the-u-s-electric-grid/?utm\\_term=.7587c607d0d0](https://www.washingtonpost.com/news/energy-environment/wp/2017/06/19/a-bitter-scientific-debate-just-erupted-over-the-future-of-the-u-s-electric-grid/?utm_term=.7587c607d0d0); <https://www.economist.com/news/finance-and-economics/21725011-transition-away-fossil-fuels-necessary-it-will-not-be-painless-can>

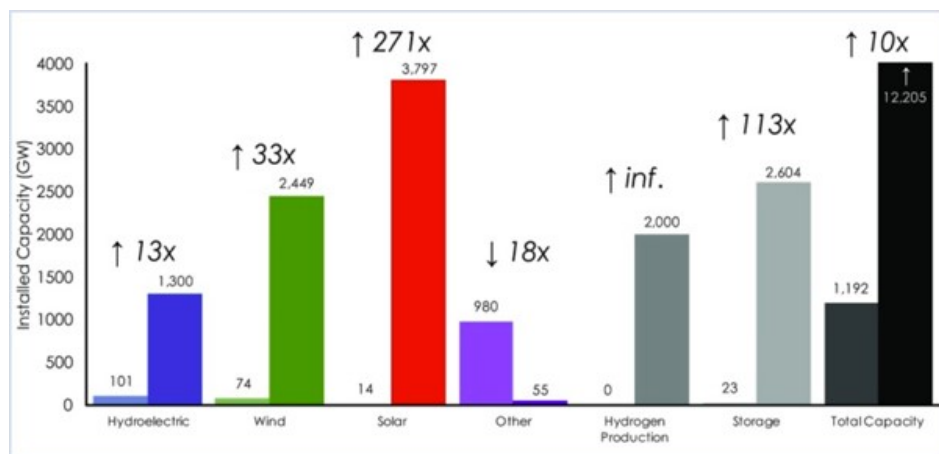
<sup>8</sup><http://www.pnas.org/lookup/suppl/doi:10.1073/pnas.1610381114/-/DCSupplemental>

<sup>9</sup><http://web.stanford.edu/group/efmh/jacobson/Articles/I/CombiningRenew/PNASReplyClack.pdf>

<sup>10</sup>Oh, and in the media making *ad hominem* attacks on Clack Group contributors such as having “conflicts of interests” to favor other energy resources. These attacks on distinguished academics and scientists are utterly without merit.

<sup>11</sup>But to play out this assumption of periodic nuclear wars *ad absurdum*, they would cause global cooling offsetting to a greater or lesser extent than global warming. So the Jacobson Group's own assumption about nuclear wars is inconsistent with the need to battle global warming. What an intellectual mess.

<sup>12</sup>“In 2016, approximately three quarters of [PJM] nuclear plants covered 100% or more of going forward costs.” [http://monitoringanalytics.com/reports/Reports/2017/IMM\\_Post\\_Technical\\_Conf\\_Comments\\_Docket\\_No\\_AD17-11\\_20170622.pdf](http://monitoringanalytics.com/reports/Reports/2017/IMM_Post_Technical_Conf_Comments_Docket_No_AD17-11_20170622.pdf) (page 3).



Installed capacity values for 2015 (left column in each pair) and those used in the Jacobson studies (right column in each pair). The 100% wind, solar and hydroelectric studies propose installing technologies at a scale equivalent to or greater than the entire capacity of the existing electricity generation infrastructure. The other category includes coal, natural gas and nuclear, all of which are removed by 2050. | Clack, et al.

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<sup>13</sup> <http://www.energy-counsel.com/docs/LED-Kills-the-Edison-Star-2017-01-24%20RTO-Insider-Individual-Column.pdf>

<sup>14</sup> [https://www.nytimes.com/2017/07/20/climate/a-cheap-fix-for-climate-change-pay-people-not-to-chop-down-trees-uganda.html?emc=edit\\_ne\\_20170720&nl=evening-briefing&nid=39266840&te=1](https://www.nytimes.com/2017/07/20/climate/a-cheap-fix-for-climate-change-pay-people-not-to-chop-down-trees-uganda.html?emc=edit_ne_20170720&nl=evening-briefing&nid=39266840&te=1)

<sup>15</sup> <https://energysathaas.wordpress.com/2017/07/24/cooling-india/>

<sup>16</sup> <https://phys.org/news/2016-09-world-seater-fuel-cell-plane-germany.html>

<sup>17</sup> I won't get into replacement of gasoline and hybrid cars with all-electric cars because I discussed back in February how much the fundamental economics would have to change before electric cars would be cheaper. <http://www.energy-counsel.com/docs/Electric-Cars-Three-Ugly-Facts-2017-02-14-RTO-Insider-Individual-Column.pdf>. Thankfully a couple obscure studies I cited got much deserved exposure in a *Wall Street Journal* story on July 12, 2017. <https://www.wsj.com/articles/electric-cars-are-the-future-not-so-fast-1499873064>.

<sup>18</sup> [http://www.hme.ca/presentations/Drake\\_Landing\\_Solar\\_Community--AAPT.pdf](http://www.hme.ca/presentations/Drake_Landing_Solar_Community--AAPT.pdf)

<sup>19</sup> [https://www.lazard.com/media/1777/levelized\\_cost\\_of\\_energy\\_-\\_version\\_80.pdf](https://www.lazard.com/media/1777/levelized_cost_of_energy_-_version_80.pdf) (slide 11).

<sup>20</sup> [https://energy.gov/sites/prod/files/2016/10/f33/Hydropower-Vision-10262016\\_0.pdf](https://energy.gov/sites/prod/files/2016/10/f33/Hydropower-Vision-10262016_0.pdf) (pages 1 and 17). This includes installing hydropower capacity at dams without any at present. This study is by advocates of hydropower within DOE, supporting its "Hydropower Vision."

<sup>21</sup> <https://www.wsj.com/articles/plans-for-u-s-wind-farms-run-into-headwinds-1499605200>. It is also worth noting that the Jacobson Group assumes the capital cost of offshore wind is \$3,770/kw, while the real-world costs of the U.S. Wind and Skipjack projects are reported to regulators as \$5,544/kw and \$6,000/kw, respectively. [http://www.offshorewindhub.org/sites/default/files/resources/Order-No.-88192-Case-No.-9431-Offshore-Wind\\_0.pdf](http://www.offshorewindhub.org/sites/default/files/resources/Order-No.-88192-Case-No.-9431-Offshore-Wind_0.pdf). Presumably these are the most economic projects so others would be more costly.

<sup>22</sup> The existing transmission system interconnects 977 GW of resources per NERC's State of Reliability Report 2016, Table 4.1 (removing Canadian resources). The Energy Information Administration reports a slightly larger 1,064 GW of "Net Summer Capacity" in its Electric Power Outlook, Table 4.3.

The Jacobson Group hypothesizes 5,271 GW of off-site energy resources in its "Supporting Information," Table S2 (starting with total of 6,390 GW and removing on-site PV and solar thermal resources). All these resources have to be deliverable under its model because "zero electricity shedding occurs."

<sup>23</sup> A note about the ultimate cost to customers: Regulated cost-of-service rates provide a utility a regulated return based on depreciated original cost of the specific facilities, and a depreciation expense based on that original cost. An essentially new and vastly larger transmission system would entail a utility return on the undepreciated full cost of the new system, and a depreciation expense based on the full cost.

Modeling this transmission system cost, along with the distribution system cost discussed below, is beyond the capability of this writer. But the cost would be staggering.

<sup>24</sup> California utilities already claim to need billions of dollars for new distribution facilities in order to handle a relatively small amount of rooftop solar.

<sup>25</sup> Irrelevant, as in "The Treasure of the Sierra Madre" when Tim Holt says, "Not so far as the crow flies," and Humphrey Bogart replies, "But we ain't crows."

<sup>26</sup> <http://pjm.com/-/media/committees-groups/committees/teac/20160609/20160609-market-efficiency-update.aspx> (slide 17). To the extent WWS resources are provided by merchant companies the cost of capital will tend to be greater than that of regulated utilities.

## If You're not at the Table, You May be on the Menu

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For more information, contact Marge Gold (marge.gold@rtoinsider.com)



# Solar Eclipse Prep Nearly Complete at CAISO

By Robert Mullin

CAISO is nailing down its final preparations for the Aug. 21 solar eclipse, which is expected to take about 5,600 MW of utility-scale and rooftop solar generation off the California grid during morning hours when those resources would typically be ramping up output.

Still, the grid operator expressed confidence in its ability to avoid service outages stemming from the event, despite having to support an upward ramp of about 70 MW/minute heading into the eclipse and a downward ramp of 90 to 100 MW/minute coming out.

“We will ramp up generation to compensate for lost solar production, and there is plenty of capacity to meet need,” the ISO said in a [FAQ](#) published on its website. “It is not unusual for the ISO grid operators to manage ramps this large on certain days.”

CAISO currently has about 10,000 MW of utility-scale solar interconnected into its system, and its typical morning ramps average about 29 MW/minute.

The extra capacity will mostly come from traditional generating resources. (See [CAISO Solar Eclipse Prep Relies on Conventional Mix.](#)) With California’s water levels still relatively high after a wet winter, CAISO expects to have access to about 6,000 MW of flexible hydroelectric capacity in mid-August. The ISO has also been working with gas pipeline companies, utilities and generators to procure additional reserve and regulation capacity, both of which will be needed to grapple with the potential for oversupply and frequency regulation issues after the eclipse, as solar rapidly ramps up its output.

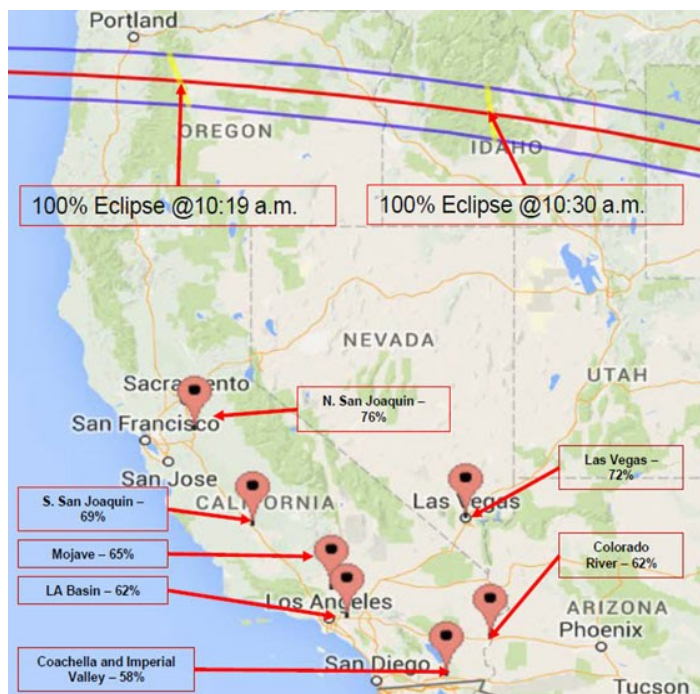
## Tasks Completed

Begun last year, CAISO’s preparations for the eclipse have been extensive.

The ISO said it has consulted with the forecasting team that helped grid operators in Europe prepare for a 2015 eclipse, which especially affected Germany’s 40 GW of installed solar capacity. The ISO has developed its own event-day forecast using Aug. 22, 2016 – also a Monday – as the basis for projecting expected demand the morning of the eclipse. The ISO’s model assumes full sun, no “extraordinary” conservation measures and higher obscuration rates (representing the proportion of the sun obscured by the moon) in Northern California, along with a corresponding loss with rooftop solar output there.

The ISO has also completed a market simulation for the day of the eclipse and conducted “tabletop exercises” and training for real-time grid operators. It has also refined its renewable forecasts – in part by comparing them with third-party forecasts – and coordinated with natural gas companies to plan for increased output from gas-fired power plants.

The grid operator is also working with Western Energy Imbalance



The eclipse will have its greatest impact on solar generation in Northern California, where “obscuration” rates will be more than 75%. | CAISO

Market (EIM) participants to “incorporate eclipse impacts in their power schedules, maintain full operational energy transfers, and collaborate on forecasting.” CAISO expects the eclipse to have some impact on 1,700 to 2,000 MW of solar generation in neighboring EIM areas.

## Still to Come

A week ahead of the eclipse, CAISO plans to “refine” its resource and load forecasts and update market participants about any changes to its reserve needs. Two days before the event, it will hold a conference call with market participants “to facilitate coordination and transparency,” the FAQ said.

Finally, on the morning of the eclipse, the ISO will ensure that its real-time forecasts are transferred into the ISO system in order to prepare generation and optimize the transmission network.

And while the ISO is not expecting the need for conservation measures, it did encourage electricity consumers to keep those measures in mind on the day of the eclipse.

“The ISO predicts the typical consumer will not notice the grid management challenges and balancing strategies,” CAISO said. “However, energy efficiency is always helpful to curb spikes in need for power and to lower consumer electricity bills during times of high demand.”



# CAISO Flex Capacity Effort Targets Increased Variability

By Jason Fordney

CAISO is developing new tools to deal with the variable output from the increasing amount of renewable and non-dispatchable generation on its grid, a development that could bring fundamental changes to California's resource adequacy rules.

The tools are meant to deal with the highly variable output of new wind and solar generation and changes in net load on the CAISO grid. The grid operator must not only properly balance generation and demand, but also avoid reliability violations and accommodate policy objectives such as renewable integration.

"The system is evolving and the challenges are evolving," CAISO Principal of Renewable Generation Clyde Loutan said in a stakeholder call Wednesday. He added that "we are encountering operational challenges on the system that we need to understand."

Through its Flexible Resource Adequacy Criteria and Must Offer Obligations 2 (FRACMOO2) proceeding, the ISO is proposing to introduce new variations of its flexible resource adequacy capacity product, which is intended to increase the ramp rate of the flexible capacity fleet that is becoming more critical to integrating new renewables.

The bulk of the current proposal is designed as short-term modifications to the flexible capacity criteria to emphasize start-up and minimum run times. CAISO is exploring the use of intertie resources but does not yet have a specific proposal. It hopes to have a program in place in time for the 2020 resource adequacy year. A separate initiative will develop a long-term flexible capacity solution and a resource adequacy roadmap in conjunction with the California Public Utilities Commission.

"The proposed short-term solution is unlikely to be sustainable long-term because the forecasted three-hour net load ramps could exceed the available flexible capacity in several years under this proposal without additional enhancements," CAISO said in its revised straw proposal.

The package is designed to address the

changing characteristics of the grid as CAISO requires quicker ramping speeds within shorter time cycles. While the steepest three-hour net load ramp in 2015 was about 10,600 MW, those ramps are projected to reach about 16,800 MW by 2020, with one ISO estimate putting hourly ramps as high as 7,000 MW by that time. New flexible capacity products would be designed to address variability and uncertainty down to five-minute increments.

The proposal is divided into an operational aspect and a capacity procurement workstream, Johannes Pfeifenberger of the Brattle Group said in a presentation during the call. Brattle has been developing a proposal for CAISO's flexible capacity procurement framework. Addressing the issue requires a better understanding of the physical capability of the system and flexible and non-flexible resources, he said.

There was broad opposition to a previous ISO flexible capacity proposal, according to a CAISO presentation. Critics contended that the plan conflated three separate drivers that should be dealt with more independently: curtailment of renewables, risk of generation retirements and maintaining a reliable grid.

During the Aug. 2 call, CAISO officials were asked if they have considered putting more

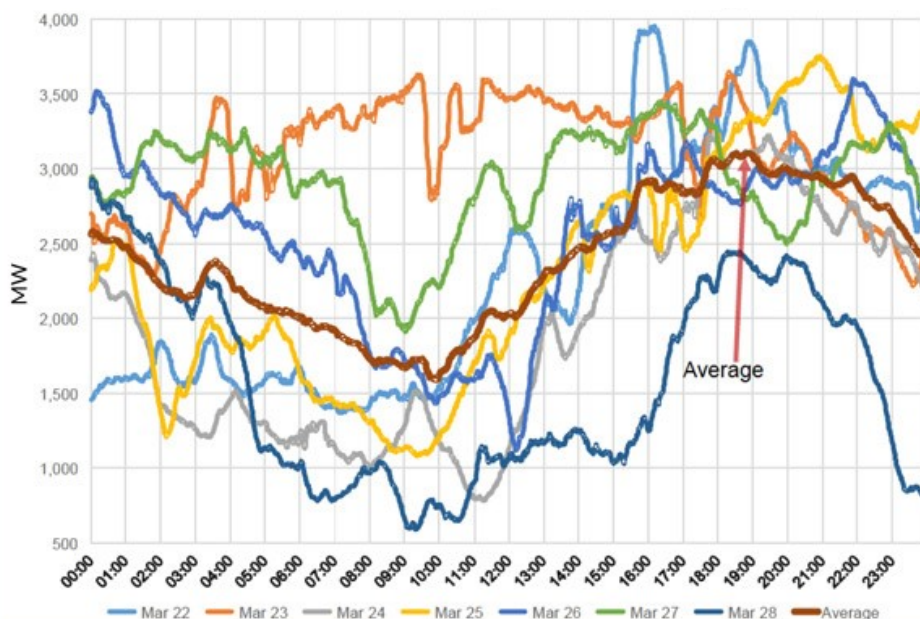
limits on how quickly variable resources are allowed to ramp up or down, as is done in ERCOT.

"We are trying to look at all solutions right now," Loutan said. But ERCOT has different operating characteristics, less non-dispatchable generation and different frequency requirements, he said, noting also that Texas is not interconnected with other regions, unlike California.

CAISO said it has been considering limiting the ramp rate of renewables to manage swings in generation output, but oversupply and minimum load requirements put more focus on flexible resources and start times of flexible capacity resources. The ISO proposed to require a flexible capacity resource have a start-up time of less than 4.5 hours and minimum run time of less than 4.5 hours.

CAISO is accepting comments on FRACMOO2 until Aug. 16, with a draft final proposal planned for December. The initiative also requires coordination with the PUC and other agencies with generation resource adequacy jurisdiction.

The ISO hopes to submit a final product to the Board of Governors next summer, followed by implementation in 2020.



Variance in CAISO wind output, March 22-28, 2017 | CAISO



# CAISO NEWS



## CAISO Developing New Bidding Rules

By Jason Fordney

FOLSOM, Calif. — CAISO is refining market rule changes to more accurately reflect suppliers' costs of producing and dispatching electricity while also increasing their bidding flexibility.

Stakeholders attending an Aug. 3 workshop learned more about recent proposed changes to bidding rules in the ISO's Commitment Cost and Default Energy Bid Enhancements (CCDEBE) initiative. Energy suppliers say that even with improvements over the past

decade, they don't have the bidding flexibility they need to reflect all costs under all conditions.

Based on feedback from market participants, CAISO has acknowledged that its current bidding rules need more flexibility and do not always reflect certain costs, price volatility and "business needs." The rule changes are also designed to incentivize flexible resources that help manage renewable generation when fuel supplies are tight and reduce the risk of not recovering costs for gas and non-gas resource operators.

CAISO is the only organized wholesale electricity market in the U.S. that does not currently support market-based commitment cost bids subject to mitigation, said Cathleen Colbert, senior market design and policy developer at the ISO.

"We wanted to put this out, to get the conversation started and to get feedback," she said at the workshop, where she presented details of the proposal.

Market rules must allow suppliers to submit economic prices based on costs and risk while protecting themselves from structural issues in the market, the ISO said. Mitigated prices must reasonably reflect suppliers' expectations of their costs.

CAISO is proposing to mitigate market-based commitment costs using the "three pivotal supplier" test, which checks for market power by measuring the degree to which a given market relies on just three suppliers — rather than drawing on excess generation from other suppliers — to meet demand. Commitment costs refer to the portion of the supply offer that involves start-up, transition and maintaining minimum load requirements. Suppliers can submit either market-based energy offers or cost-based commitment cost offers. Cost-based offers are subject to a cap that provides only limited flexibility, CAISO said, while market-



The CCDEBE technical working group meets at CAISO headquarters. | © RTO Insider

*Continued on page 10*



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# CAISO NEWS



## CAISO Leads EIM Q2 Benefits, Exports

By Robert Mullin

CAISO hauled in the largest share of the \$39.52 million in benefits produced by the Western Energy Imbalance Market (EIM) during the second quarter, the grid operator said in a [report](#) released last week.

The ISO was also the market’s dominant exporter of energy over the period as California coped with combined surpluses of solar and hydroelectric output on its system after a wet winter.

CAISO took in \$15.49 million in benefits, compared to \$8.81 million for PacifiCorp, \$8.13 million for Arizona Public Service and \$2.47 million for Puget Sound Energy. NV Energy’s estimated \$4.62 million in benefits did not include data for June, which is still pending verification.

The EIM’s total benefits increased by \$8.52 million – or 27% – over the first quarter. (See [CAISO EIM Exports Rise With Spring Report Shows.](#)) That spread will increase with the addition of NVE’s June figures.

The gross benefits represent either cost savings for serving load or increased profits from merchant operations within the EIM’s participating balancing authority areas (BAAs). The market’s ability to reduce curtailments also enables participants to collect renewable energy credits that would not otherwise be issued.

The benefits calculation nets out inter-BAA transfers that were scheduled ahead of the EIM’s 15- and five-minute market runs to avoid attributing contracted flows to the market.

CAISO exported more than 1.11 million MWh of electricity in the EIM’s five-minute market during the quarter, the report shows. Most of that energy was transmitted into NVE’s territory to be wheeled into the PacifiCorp-East area, but APS also absorbed a significant portion. The inclusion of APS and PSE last October greatly increased the transfer capability within the EIM, improving California’s ability to move its solar surpluses into other areas of the West.

That export capability enabled CAISO to avoid curtailing 67,055 MWh of renewable output from April to June, displacing 28,700 metric tons of CO<sub>2</sub> emissions, the report said. The ISO estimates that, since 2015, avoided curtailments from EIM operations have reduced carbon emissions by 204,941 metric tons, the equivalent of removing more than 43,000 passenger cars off the road for a year.

CAISO’s exports are likely to decline sharply this summer as California absorbs more of

its own renewable output in the face of increased summer loads, a pattern seen last year. (See [PacifiCorp Increases Share of EIM Benefit in Q3.](#))

The report also noted the EIM’s impact on the procurement of flexible ramping capacity, which represents resources capable of responding to the variable output of renewable generators.

Because variability can decrease in one BAA at the same time that it’s increasing in another, the EIM enables participants to share flexible resources – allowing each BAA to procure fewer resources than would have been necessary on a standalone basis. These “flexible ramping procurement savings” during the second quarter represented about 39% of what would have been the total requirement of the participating BAAs absent the EIM, the report showed.

The EIM has yielded \$213.24 million in gross benefits since commencing operation in November 2014 with PacifiCorp as its first member.

Region	April	May	June	Total
APS	\$2.87	\$2.54	\$2.72	\$8.13
ISO	\$3.42	\$5.23	\$6.84	\$15.49
NV Energy	\$2.37	\$2.25	*	\$4.62
Pacificorp	\$3.94	\$2.97	\$1.90	\$8.81
PSE	\$1.13	\$0.72	\$0.62	\$2.47
Total	\$13.73	\$13.71	\$12.08	\$39.52

EIM Q2 2017 benefits (\$ millions) | CAISO

## CAISO Developing New Bidding Rules

*Continued from page 9*

based energy offers have a \$1,000/MWh cap and are mitigated when uncompetitive conditions are found.

The CCDEBE program is one of a series of ongoing market updates CAISO is working on to deal with changing conditions on the grid and public policy goals. The ISO plans to end certain temporary measures in a sepa-

rate proceeding on Aliso Canyon gas-electric coordination when the CCDEBE procedures are implemented. (See [CAISO Board Approves Aliso Canyon Rules Package.](#))

The ISO is additionally working to comply with FERC Order 831, which requires that supplier costs are reflected when energy bids rise above \$1,000/MWh. (See [New FERC Rule Will Double RTO Offer Caps.](#)) The federal rule was put in place last November after wholesale power prices spiked during

the winter storms of 2013-2014 and generators said they could not recover their costs.

The system operator posted its [revised CCDEBE proposal](#) on Aug. 2, with comments due Aug. 7. The package is due to go to the Western Energy Imbalance Market (EIM) Governing Body for an advisory vote on Oct. 10 and to the CAISO Board of Governors for approval on Nov. 1.

“People are very eager for us to get this in place a quick as we can in 2018,” CAISO Market Design Manager Brad Cooper said. “Our timeline is very tight.”

# ERCOT NEWS



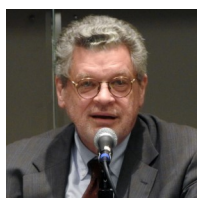
## PUCT Workshop to Address ERCOT Market Improvements

By Tom Kleckner

AUSTIN, Texas — ERCOT’s energy-only market may not be broken, but stakeholders will discuss some fine-tuning at a Public Utility Commission workshop this week.

Market participants have complained about ERCOT’s use of reliability unit commitments, reliability-must-run contracts and other out-of-market actions. The Independent Market Monitor’s most recent State of the Market report made several recommendations on improving price formation. Texas regulators frequently discuss the need for real-time market co-optimization.

And now comes an ERCOT market review by a pair of industry experts on competitive market design, William Hogan and Susan Pope. Hogan, professor of global energy policy at Harvard University’s John F. Kennedy School of Government, is credited with pioneering the design of modern energy-only markets. Pope, the managing director of FTI Consulting, is an expert on economics and



Hogan

price formation in electricity markets.

Their report, “Priorities for the Evolution of an Energy-Only Market in ERCOT,” was commissioned by Calpine and NRG Energy “to inform important policy decisions ... to ensure the sustainability of the ERCOT competitive market” and filed with the commission in May.

On Thursday, Hogan and Pope will present their recommendations during a workshop hosted by PUC staff. They will be joined by Potomac Economics President David Patton, whose firm provides market monitoring services for ERCOT, ISO-NE, MISO and NYISO. All three will participate in a Q&A session with staff, commissioners and other interested parties, while ERCOT staff and the Monitor will discuss progress on the commission’s market co-optimization and price-formation dockets (41837 and 47199).

“Our energy-only market is doing pretty well,” PUCT Commissioner Ken Anderson said during the commission’s most recent open meeting in July. “There are issues that need to be improved or corrected. There are always tweaks.

“I’d like ERCOT and the IMM to be able to comment on the cost estimate and time

implementation,” Anderson said. “[The IMM has] been pushing real-time co-optimization in the time I’ve been here. I’ve been concerned about the price estimate and the time it would take to implement.”

ERCOT’s preliminary estimate is that it will take at least \$40 million and up to five years to implement co-optimization. Staff has also reported to the PUC the numerous actions it has already taken or will to address price formation.

Anderson has called Hogan and Pope’s report a “very interesting read” and “largely complimentary” to the ERCOT market.

“It does point out the challenges resulting from natural gas [generation] and the dramatic expansion of intermittent renewable resources,” Anderson said. “At the heart of the report is a recognition that our market is premised foundationally on proper scarcity pricing.”

The report calls ERCOT’s commitment to price formation as the “single most important principle to get right in the energy-only market structure.”

“However,” Hogan and Pope write, “the existence and emergence of numerous fac-

*Continued on page 12*



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## PUCT Workshop to Address ERCOT Market Improvements

*Continued from page 11*

tors that distort price formation” threaten the ERCOT competitive market “if left unaddressed.”

Hogan and Pope’s review was primarily meant to assess ERCOT’s operating reserve demand curve (ORDC), a PUC-ordered price adder designed to reflect the value of reserves. They concluded that while the ORDC has operated “within the context of its basic design,” it has not been “severely tested,” and scarcity price formation is being “adversely influenced by factors not contemplated by the ORDC.”

Anderson has pointed to an August 2015 event, when “the ORDC adder did not seem to reflect appropriately” a reduction in physical responsive capacity (PRC) — online generation able to quickly respond to system disturbance. He questioned whether the inputs used to calculate the loss-of-load probability should be re-evaluated. (See [ERCOT: No Consensus on Operating Reserve Changes](#).)

During that event, ERCOT operators deployed non-spinning reserves as PRC dropped to 2,371 MW. However, real-time online reserve capacity was 3,629 MW, and

wholesale prices reflected that availability.

Hogan and Pope also say other improvements can be made to ERCOT’s market “to better maintain private market response to energy prices as the driver of resource investment, maintenance expenditure and retirement decisions.”

The energy-only market was supposed to drive investment in generation, but the availability of cheap natural gas and renewable resources has made new coal and nuclear plants uneconomic.

“The stress of these forces has exposed areas where there is a need for adjustments to pricing rules and policies within ERCOT,” Hogan and Pope write.

Their report focuses on three recommendations:

- Improving the ORDC calculation to address “the reliability impacts of changes in the generation supply mix and the price impacts of reliability deployments,” and considering the use of the marginal cost of transmission losses in dispatch and pricing.
- Changes to mitigated offer prices and pricing of transmission constraints to properly set prices when using RUCs or

other reliability actions to relieve transmission constraints. Regionwide and local ORDCs should be included in co-optimized energy and reserves dispatch.

- Considering alternatives to socialized transmission planning, “which, by building new transmission in advance of scarcity developing, fails to provide the opportunity for markets to respond.”

Luminant, the largest generator in the state, opposes the use of marginal losses, saying pricing and dispatch based on marginal losses is inconsistent with transmission-cost policies established by Senate Bill 7, Texas’ 1999 deregulation legislation. Amanda Frazier, the company’s representative to ERCOT’s Technical Advisory Committee, said using the marginal cost of transmission losses could result “in a significant disruption to the market by redistributing revenues from generators in the West and North to generators in Houston.”

Luminant’s opposition is just emblematic of the shareholder discussions taking place within ERCOT.

“Stakeholders have been addressing this, I think, a little too slowly,” Anderson said. “I think we’re probably going to need to pick this up to get the ball moving a little faster.”



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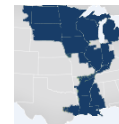
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# Stakeholders Hash out Future of DER at OMS Workshop

By Amanda Durish Cook

MADISON, Wisc. — MISO state regulators and industry officials gathered last week to discuss how the region's electricity sector will accommodate the budding growth of distributed energy resources within the RTO's footprint.

While the outlook of participants at the Organization of MISO States' Aug. 1 DER workshop ranged from cautious to optimistic, nearly all agreed that the industry could be confronting a profound transformation as energy resources become increasingly decentralized.

"DER, this is really just a fad, right? We don't need to concern ourselves with this," joked Wisconsin Public Service Commissioner Mike Huebsch. "In all seriousness, that's what some were saying a few years ago, but it's clearly not a fad."

Missouri Public Service Commission Chairman Daniel Hall said DER is fast becoming a national policy issue.

"We are witnessing technological advances to accommodate the growing demand for DER," he told a crowd of utility executives, regulators, renewable energy advocates and RTO officials at the workshop, sponsored by the Wisconsin Public Utility Institute and the Wisconsin Energy Institute.

"I think of this as potentially the creation of a new industry," said **Suede Kelly**, a partner at the law firm Jenner & Block. DERs and microgrids are introducing electricity to far-flung regions of developing countries, she said.



"Is it going to be as dramatic a change in the U.S.? I don't know yet. Are we going to move to a country of microgrids? Personally, I doubt it — but maybe," Kelly said. "I think most of the decisions that state regulators have to make can fall into three categories: Who's going to be allowed to own them? Who's going to be allowed to dispatch them? How are they going to be compensated?"

Kelly said each state would likely tackle



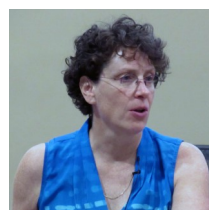
© RTO Insider

these questions on its own.

"We have a lot of time to figure out the dispatch question — who and how and all that," said Mike Bull, director of policy at the Center for Energy and Environment.

Bull said he expects DER owners, rather than regulators, to come forward with policy ideas, noting that regulators are often reactive rather than proactive.

## DER: Enemy — or BFF?



ney.

Azar said states must work together to take the lead on policy issues and set aside regional differences. "It's not surprising that whenever a huge new region comes into MISO, that it's going to take some time to build some trust," she said, referring to the integration of MISO South.

MISO Vice President of System Operations Todd Ramey said DERs could reach 20 GW in the RTO by 2030. MISO underestimated the adoption of customer DERs in its past modeling, he noted, and the RTO's main concern remains forecasting substation-

"DERs are advancing at a pace that I'm not sure any of us grasp," said **Lauren Azar**, a former Wisconsin PSC commissioner, and current energy consultant and attorney.

level requirements as early as possible, anywhere from two or three days to five minutes ahead — a schedule MISO intends to maintain even with the increased penetration of DERs.

When Azar asked if anyone in the audience was surprised at the rate of electric vehicle adoption, she was met with a scattered raising of hands.

"OK, well you guys are more prescient than I am," she said to laughter.

Azar said the grid is remarkable in its dynamism and ever-changing flows. "This year's enemies are next year's BFFs," she said. "As state regulators, you have the luxury of taking the economic long view. You should not be driven by what your utility's dividends are right now."

Azar expressed regret about her 2011 vote against allowing aggregated demand response in Wisconsin and said she now realizes DR strengthens the nation's grid and economy. She advised states against becoming too wrapped up in their own needs to notice what is good for the nation as a whole.

She noted that last year's Notice of Proposed Rulemaking requiring RTOs to remove market barriers for storage and DERs indicates that FERC is inclined to allow for state regulation of aggregated DERs and energy storage above 100 kW. The NOPR is

*Continued on page 14*



# Stakeholders Hash out Future of DER at OMS Workshop

*Continued from page 13*

reminiscent of FERC [Order 719](#), she said.

She advised states to encourage a regulatory structure in which new technologies are allowed to “bubble up” in non-discriminatory fashion and are properly monetized.

## The Elvis Paradox

Tim Noeldner, WPPI Energy vice president of rates and special projects, said his company expects “slow and steady growth” in DERs and will leave a small planning gap for the resources to fill. “We go into the future a little bit short,” he explained.

Entergy Director of Regulatory Research **Andrew Owens** said 4% of New Orleans households with rooftop solar are spread throughout all socioeconomic corners of the city, a result of falling costs and generous tax credits.



“Is that an opportunity or a threat? Right now, we have no grid visibility of it other than locations and zip codes. We can do desktop modeling of it, but it’s not real,” Owens said. He said a mix of policy, pilot projects and partnerships are needed for a steadier transition, and can help scale New Orleans Mayor Mitch Landrieu’s lofty climate action [goal](#) of 255 MW of solar capacity within the city in the next decade, up 215 MW from today.

Owens also cautioned against the simple extrapolation of present DER trends, referring to the “[Elvis Presley Paradox](#),” which he said holds that the number of Elvis impersonators increased from about 30 at the singer’s death in 1977 to around 50,000 by the mid-1990s — a growth rate that would translate into every third person in the world being an Elvis impersonator by now.

At some point, Owens said, there won’t be usable space for solar, and a willing tide of customers will abate.

Former FERC Commissioner Tony Clark, now a senior adviser with law firm Wil-

kinson Barker Knauer, said DERs could affect the future in one of three ways.

“You can make a case that things will look not much different than today — I don’t think that’s the case,” he said. On the other hand, one could assume the “Elon-Musk-on-steroids version of the world takes over,” and electric vehicles are in every garage and residential heaters are able to store energy, making houses self-contained units.

Future reality is likely to be found somewhere in the middle, according to Clark.

“I personally think the most likely scenario is, moving forward, you literally have more power at the edges of the grid and figuratively more power in the hands of the consumers. ... It’s still a network grid, but a more nimble grid,” Clark said. “I’d think that’s the most likely scenario. ... Distribution services will still play an extraordinarily important role.”

University of Wisconsin engineering professor Bob Lasseter, who studies the penetration of DERs, said that microgrids provide the most promising means of integrating substantial amounts of distributed sources. However, a decentralized grid works best autonomously — not micromanaged by grid operators — and spared from extensive communications and controls.

“I believe that this bottom-up model is really going to work,” Lasseter said. “Microgrids are getting killed because there’s too much managing of loads.”

## Supersized Battery

Residential DERs can help grid planners avoid costly transmission projects by lowering demand, said Amy Heart, director of public policy at solar advocacy group Sun-Run. “Imagine having customers excited about rate cases because they’re helping to



Cheryl Mele and Todd Ramey | © RTO Insider

generate savings,” she said.

Kelly said that the electric industry has traditionally rewarded investment because expansion has long been necessary. “Now? Not so much,” she said, adding that the industry needs to find methods to reward avoiding costly investments.



Grid investment is still paramount, Michigan Public Service Chairman **Sally Talberg** said, and new technologies to accommodate DERs could be incorporated into the upgrade of Michigan’s aging infrastructure.

“We’ve got breakers that are 70 years old. ... It’s like driving a car without a steering wheel — and this is not an autonomous car,” Talberg said. She envisioned grid upgrades that accommodate two-way energy flows and the grid itself upgraded to become “a large storage battery.”

## More Visibility, Please

RTO executives, meanwhile, are seeking historical and operating data to plan for DERs.

Resource visibility is the key to modeling grid planning, MISO’s Ramey said. “I need to know where it’s at, what size and dynamic impacts,” he said. “Today, MISO has no role in integration [of DERs], but we need that data to ensure reliability.”

CAISO Manager of Transmission Planning **Jeff Billinton** said DER

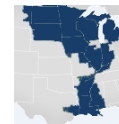
information needs to be incorporated into transmission planning and NERC reliability models years in advance. ERCOT Chief Operating Officer Cheryl Mele said RTOs need to know whether it will be the resources or the distribution companies that will provide production data.

Utility executives are also calling for more DER visibility.

Joe McGovern, Alliant Energy’s director of



*Continued on page 15*



## Stakeholders Hash out Future of DER at OMS Workshop

*Continued from page 14*

electrical engineering, said DER use is no longer a simple issue of interconnection. "It went from an engineering problem to a broader market issue very quickly," he said. Stakeholders, generation owners, customers and developers must be educated on the potential impacts. He said he'd like to see a distribution system that runs like a software platform and is easily accessible.

Commonwealth Edison Director of Energy Policy Chris Foley said his company is giving "a lot of thought to the utility of the future" but is not yet moving to a distribution system operator model in which the utility co-optimizes distributed resources.

### Baked-in Distribution Costs?

Clark said he said he would attempt to make attendees "uncomfortable," reminding them that FERC could intervene and issue regulations for DERs if their growth went unchecked and had an adverse impact on rates.

"Consider me the Scaramucci of the workshop," he joked, referring to the foul-mouthed former White House communica-



Ted Thomas (left) and Tony Clark | © RTO Insider

tions director.

"I thought he was going to cuss like Scaramucci did," Arkansas Public Service Commission Chair Ted Thomas teased.

"That was the Midwestern version," Clark replied.

Noeldner said WPPI supports a retail rate in which distribution costs are built in.

EnerNOC Director of Regulatory Affairs Greg Geller added that DER-owning customers need to reap the financial benefit of the value they are helping to create and suggested attaching a value to "peak shaving," when customers help reduce demand at peak times.

State regulators must recognize the "push and pull" of customers influencing policy, said Tyler Huebner, executive director of

Renew Wisconsin. "What we see is, the worse the net metering policies are [in a state], the bigger rush there is to install storage," Huebner said.

OMS Executive Director Tanya Paslawski said the DER workshop served as a "good starting point" for future discussions within her organization. RTO officials last month asked OMS for policy ideas on a common DER definition and market rules. (See "MISO Asks OMS for DER Ideas," [OMS Issues EE Market Participation Opinion](#).)

"We're not in any emergency situation in MISO — or any RTO for that matter — but this is something that is picking up steam ... and there are a lot of moving parts to consider," Paslawski said.

MISO participants will resume their DER conversation again in September at a full board meeting in which stakeholders will debate DER treatment as a "hot topic" discussion item. The RTO also continues to develop a common definition and market rules for the participation of energy storage in its markets. (See [MISO Rules Must Bend for Storage, Stakeholders Say](#).) MISO's Steering Committee last month voted to approve the creation of an energy storage task force, which will report its findings and discussions back to the committee.

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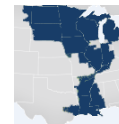
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# Reliability Subcommittee Briefs

## FERC-NERC Reliability Recommendations Non-Binding

Recommendations made by NERC and FERC in a June report on restoring power after the loss of normal communications are guidelines and not likely to become binding, a NERC official said last week.

ReliabilityFirst Corp. Chair John Idzior, one of several experts who prepared the joint FERC-NERC study and [report](#), told the MISO Reliability Subcommittee that utilities are too reliant on supervisory control and data acquisition (SCADA) and energy management systems (EMS) when restoring the bulk power system from a total blackout. (See [NERC: Despite Solid 2016, Grid Threats Remain](#).)

The joint report recommends that entities take five measures to restore power absent SCADA and EMS, which include:

- Improving backup communication measures;
- Planning for extra control room personnel on hand during a restoration without SCADA or EMS;
- Reviewing backup power resource provisions beyond normal battery backups;
- Using other power system analysis tools; and
- Training personnel for situations where SCADA and EMS are unavailable.

Idzior said that the recommendations will not be enforced and will likely not become future NERC reliability requirements.

"It's currently guidance for entities to use as they see fit. There is no follow-up or tracking as a result of these recommendations," Idzior told MISO stakeholders at an Aug. 3 Reliability Subcommittee meeting. "This is more an above-and-beyond. I don't see a push for this being included in reliability standards."

Hwikwon Ham of the Minnesota Public Utilities Commission asked if any entity could enforce the recommendations. RTOs could incorporate the recommendations into their own restoration planning protocols, Idzior responded.

Idzior said the report's findings will be presented to NERC's Operating Committee at future meetings, but the entities that partic-

ipated in the study will remain confidential.

## MISO: Not Enough Solar to Add More Reserves

MISO staff expect the RTO will remain largely unaffected by a possible NERC industry recommendation to procure more operating reserves to cover the widespread loss of solar resources during faults on the power system.

The possible NERC [recommendation](#) stems from an August 2016 event, when 1,200 MW of Southern California solar generation was lost after the Blue Cut wildfire erroneously tripped inverters. (See [CAISO Boosts Reserves After August Event Report](#).) RTOs have until Aug. 31 to respond to NERC's request for solar inverter data and reserve information.

Steve Swan, MISO senior real-time operations engineer, said MISO will solicit data from the three solar farms representing about 170 MW capacity in the RTO's footprint.



Swan

"MISO will be answering for the MISO balancing authority. We're drafting the answer, and it's basically going to say yes and no," Swan said, referring to the fact that the RTO does cover the loss of solar through reserves, but only incidentally because of the relatively small amount of solar participating in the market.

"Eventually, we'll get over 1,700 MW of solar, but that's a ways down the road," Swan said.

MISO is more interested in reviewing the responses from markets in the Western U.S., where solar participation is more prevalent, he said. "There will be some good information coming out of this, but right now, it's not an issue to MISO."

## Dispatch Instruction Pilot Almost Ready

MISO is "very close" to implementing a pilot program that seeks to encourage generating units to more closely follow dispatch in-

structions, Swan said.

Under the program — which was conceived by MISO's Independent Market Monitor, the RTO will send real-time alerts to generators that do not follow dispatch, followed by direct contact from MISO operators notifying unit operators of their non-responsiveness. Before rolling out the pilot, MISO staff will work with the Monitor to eliminate the chance for false positives, which could occur when the RTO binds a transmission constraint, Swan said.

Information collected from each notice will be conveyed to the Monitor to either confirm the lagging response or report system conditions that prevented efficient dispatch.

"The idea is we'll be sending information back to the IMM in every instance," Swan said.

Reliability Subcommittee Chair Tony Janowski asked for MISO to provide a presentation on its current dispatch requirements at the next Steering Committee meeting in October. He also asked for an update on the RTO's effort to tighten its tolerance bands on generators' uninstructed deviations from dispatch orders. MISO in May said the project was in the software development phase after several months of delay. The Monitor has been recommending the project for more than five years. (See [Monitor Again Criticizes MISO's Uninstructed Deviation Rules](#).)

Northern Indiana Public Service Co.'s Bill SeDoris said his company is concerned about the move to tighten dispatch tolerance bands. The new standard is set to go live next spring, and generation owners need to know if the move will affect headroom, he added.

Swan said he would return to the RSC with updates.

## MISO and PJM File JOA Pseudo-Tie Rules

MISO and PJM on Aug. 1 filed changes to their joint operating agreement (JOA) to better manage the RTOs' pseudo-tied resources, MISO's Kim Sperry said.

The filing ([ER17-2220](#)) aims to improve the "administration and coordination of pseudo-ties between MISO and PJM by incorporating into the JOA standard definitions, rules

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# MISO NEWS



## Reliability Subcommittee Briefs

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and responsibilities between the two RTOs,” MISO said. PJM submitted a simultaneous filing to adopt identical changes in its version of the JOA.

The standard rule set makes clear that pseudo-ties must obtain station service according to native balancing authority rules and follow the modeling rules of both the native and attaining balancing authority areas. The rules dictate that only pseudo-tied units – and not the RTOs – are responsible for compensating an attaining balancing authority for failure to deliver energy. Pseudo-tied resources also cannot be directed to serve load in the native balancing authority when the attaining balancing authority requires the unit’s output – unless they are needed to avoid exceeding NERC operating limits in the native balancing authority. (See [MISO, PJM Float Pseudo-Tie](#)

### Coordination Plan.)

Jankowski asked if the filing marked a first in a series of filings to improve MISO and PJM pseudo-tie coordination.

Sperry said that while the RTOs will continue working together into the fall on a separate filing to address the double-counting of pseudo-tie congestion, MISO does not envision another joint filing to amend the RTOs’ administration of pseudo-ties.

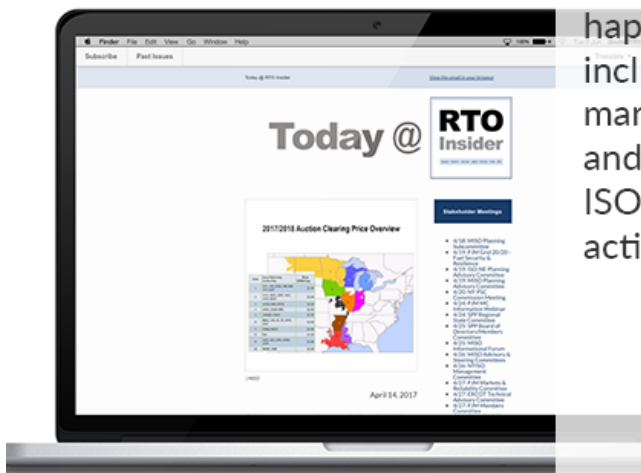
– Amanda Durish Cook



Kim Sperry | © RTO Insider

## If You’re not at the Table, You May be on the Menu

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## Infocast New York Energy REVolution Summit

# New York Sees Storage in Retail and Wholesale Markets

By Michael Kuser

NEW YORK — Energy storage developers and utilities in New York are working with NYISO to establish dual participation of storage in retail and wholesale markets.

The goal is to boost storage growth “to get to the gigawatt level, where just five years ago we were talking about one megawatt,” Martha Symko-Davies said in New York on Thursday.

Symko-Davies, program manager for energy systems integration at the National Renewable Energy Laboratory, headed a panel on storage integration at the Infocast New York Energy REVolution Summit held last week in Times Square.

The panel discussed the industry’s progress since FERC last November issued a Notice of Proposed Rulemaking aimed at knocking down market barriers to storage and distributed energy resources ([RM16-23, AD16-20](#)). (See [FERC Rule Would Boost Energy Storage, DER](#).)

Tim Banach, vice president of development for microgrid developer [GI Energy](#), said that in the past, “there was little to no coordination with the utility around where these projects would be sited and what impacts the projects might have on the utility grid, both beneficial or potentially doing some harm.”

Now GI Energy is working with U.K.-based software developer [Smarter Grid Solutions](#) on storage demonstration projects for Consolidated Edison.

Graham Ault, executive vice president of Smarter Grid, said his company has mainly developed technology to manage DER for utilities. “The same technology as developed for and used by utilities is highly relevant to the owners and operators of fleets of DER, and that is what we as a company are addressing,” Ault said. “The GI Energy-Con Edison project is an excellent example of that.”

Adrienne Lalle, project manager for Reforming the Energy Vision (REV) demonstration projects at Con Ed, said: “We, through our value-stacking goal, are big supporters of dual participation and using the assets for utility grid support and wholesale markets. It enables developers like GI Energy to offer lower-cost storage solutions to us.”



From left to right: Tim Banach, GI Energy; Brian Asparro, Demand Energy Networks; Graham Ault, Smarter Grid Solutions; John Bellacicco, STEM; Adrienne Lalle, Con Edison; Ryan Wartena, GELI; and Dr. Martha Symko-Davies, NREL. | © RTO Insider

### Simple to Understand

Brian Asparro, chief commercial officer of [Demand Energy Networks](#), said technology must be straightforward to win customers. The company, which in January was acquired by Italian energy giant Enel, provides turnkey services for storage and DER.

On a recent project in Brooklyn, the company used its software to reduce demand charges for Con Ed customers and help the utility manage load reduction on its local network. (See [NYPSC Extends Con Ed Demand Program](#).)

And customers also want resiliency so that in the case of an outage, critical elements of a housing or office complex can keep running, Asparro said.

Banach said that it was sometimes a challenge to educate owners of multi-family housing complexes or commercial enterprises — people whose expertise is not energy — on how storage projects were going to affect their energy bills. His company needed to explain “stand-by rates, contract demands and effects to ICAP [installed capacity] tags, so it was a constant requirement to educate.”

Now it’s a simpler real estate transaction between the developer and the host site, which can rely on predictable lease payments, Banach said. “We are now able to participate in wholesale markets and generate additional revenues. Ultimately our hope is to demonstrate that by stacking all these revenues, we can lower the cost of service to the utility for the energy services provided and provide ratepayer benefits through an effective and targeted non-wires alternative,” he said.

Lalle said Con Ed is looking to simplify the

value proposition for the customer by disconnecting the project economics from the customer load profile, bringing the battery in front of the meter but providing a customer with a lease payment for the space.

“So, you get all the benefits of distributed storage,” Lalle said, “but you can add a utility value by directing the location strategically to a network constraint, sizing it a little bit bigger so that we can possibly offset some [transmission and distribution] investment and make the dispatch coincident with the network need as opposed to the customer load profile.”

### Alignment Needed

John Bellacicco, director of Northeast operations at Stem, which focuses on behind-the-meter storage systems, said: “One of the biggest monetizable value streams today for energy storage is demand management, and the best way to get customer participation, especially when we think of REV and how REV wants to bring the customer into it as a prosumer, is to put the energy storage behind the meter and to have the customer participate.”

In front of the meter or behind doesn’t matter to Ryan Wartena, president and co-founder of [Geli](#) (Growing Energy Labs Inc.), an Australian company that develops software and services for storage and microgrid systems.

Wartena said he spent years developing batteries “until I realized that you can give the world an everlasting, almost free, solid-state battery, but no one’s really going to know how to use it. We have to think about batteries as a hard drive, where you can co-

*Continued on page 19*

## Infocast New York Energy REvolution Summit

### New York Seeks to Lead US in Offshore Wind

By Michael Kuser

NEW YORK — New York state wasn't the first out of the gate on offshore wind, but it will be the biggest player if it meets Gov. Andrew Cuomo's 2,400-MW target. State policymakers are embracing offshore wind for its utility-scale generation, its ability to be developed close to the major load centers of New York City and Long Island — and its potential jobs.

"Right now, there are over 300,000 jobs in the offshore wind industry in Europe," Sierra Club Senior New York Representative Lisa Dix said last week when she moderated a panel at the Infocast New York Energy REvolution Summit at Times Square.

The federal government has identified more than 100 GW of offshore wind potential off the Atlantic coast, and the Bureau of Ocean Energy Management has moved forward with the offshore wind lease process in New York and seven other states. The first offshore wind lease for New York, a nearly 80,000-acre site off the Rockaways in Queens, went to Norway-based Statoil last December.

"Offshore wind provides power when it's needed the most, at peak times," Dix said. "And it's at a scale that the state needs not only to fulfill its renewable energy policy goals, but also to help combat climate change, where New York City and Long Island are really on the front lines."

#### State and Stakeholder Support

Chris Wissemann represents the U.S. activities of Germany-based offshore wind developer Innogy, which he characterized as being four times the size of Consolidated Edison and generating enough electricity to serve the entire load of New York state.



Chris Wissemann and Lisa Dix | © RTO Insider

"Long-term, stable policy is what makes this become cost-effective," Wissemann said. "Along those lines is the corollary, which is the four P's: politics-proof purchase program. Look at Cape Wind, several years ago: The minute their benefactor was out of office, they lost their [power purchase agreement]. New Jersey's OSW economic development program was never implemented because of politics."

Cuomo in January called for 2,400 MW of offshore wind projects by 2030, starting with the 90-MW South Fork Project off Montauk, Long Island.

The growing breadth and depth of support for offshore wind is spectacular, but not surprising, said New York Offshore Wind Alliance director Liz Gordon. All the different interest groups don't necessarily have the same reasons to support OSW, she said.

"Environmental groups clearly see clean, reliable offshore wind power as a climate change solution, or at least a mitigation," Gordon said. "Labor in New York state is all-in; they're vocally supporting offshore wind because they see massive job potential — good jobs, quality jobs. That will depend on there being a reliable pipeline of projects and ideally a port or two here in New York."

#### Leasing Moves Forward

Greg Matzat, senior adviser on large-scale

renewables at the New York State Energy Research and Development Authority, said: "New York has the largest goal for offshore wind in the country of 2,400 MW. Massachusetts is behind us at 1,600. But we're the only state that doesn't have enough areas currently leased to support our goal. Massachusetts has more than 1,600 MW [in leased sites] available, so it's really important for us to identify sites that make sense for New York and hopefully work for BOEM too ... so we can move forward with more leases."

The Statoil site has room for about 800 MW, only one-third of New York's target.



**James F. Bennett**, chief of renewable energy programs at BOEM, described the 13 commercial OSW leases contracted so far, extending from Cape Cod to Cape

Hatteras.

"There's at least one off of every state, from Massachusetts to North Carolina, and obviously where the greatest demand would be," Bennett said. "New York is one of these areas, obviously, where that demand is indeed great. In particular for New York, we have the one area that was leased in December of last year to Statoil for \$42 million, which was an incredible milestone for the program. And we also had a sale in North Carolina in March of this year that went for \$9 million to Avangrid. Both of those are indicators that the industry, if it hasn't arrived, it's arriving. We're very optimistic about activities in the future."

According to Bennett, New York has great OSW potential because it has all the factors that make a wind project succeed: wind resources are prime; shallow water off the continental shelf supports seafloor foundations; strong demand that constitutes a good market; and state support.

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### New York Sees Storage in Retail and Wholesale Markets

*Continued from page 18*

optimize, run multiple applications. So that's where our initial intellectual property is."

A developer can do demand charge reduction behind the meter and be available for wholesale participation, which Geli is doing

now in Australia.

"Australia has a different market than the United States does, for they expose wholesale prices to residents," Wartena said.

Wartena emphasized the need for alignment between developers and utilities. "Not just nodal to nodal, but if it's a huge market

price, I'm going to punch out a megawatt right now," he said. "But my local distribution system does not want me to do that. The problem is you're trying to feed the wholesale market from inside the mothership and you've got to use the mothership's pipes, so there has to be that alignment, and that software, and that's a lot of work to get that type of alignment."

## Infocast New York Energy REvolution Summit

### New York Seeks to Lead US in Offshore Wind

*Continued from page 19*

"I don't know if there is a stronger demand than immediately from New York," Bennett said. "All of these leases have occurred with state involvement and state input, and in particular New Jersey and Massachusetts are great examples of states that have put the time and effort into putting the environmental and stakeholder interests together, and that's the lead that New York is following."

NYSERDA is drafting a master plan that will include a plan for transmission to get wind-generated power to shore. "Some of this you'll see in our Public Service Commission filings," said Matzat, "but the master plan will include recommendations on how to move pre-permit forward for OSW and a timeline on how we see this going."

BOEM manages the lease process and step one is planning and analysis to identify a wind-energy area, "which is where we are now in the process for New York," Bennett said. "It's obvious that the biggest one [lease area] is the one to the north, from New York to Nantucket, and right now that probably will include a couple leases off Martha's Vineyard, which went unleased just two years ago, and we expect very high demand for those areas and are looking to 2018 for an auction for that. Beyond that, and we're

always hesitant to get nailed down to a date, but after that we think we're in a position to go forward with another sale in New York."

#### Docks and Dolphins

NYSERDA applies a similar evaluation process to ocean areas and to the shoreline for the ports needed to fabricate the huge turbine blades and host the purpose-built vessels used in building OSW installations. The authority is looking at 75 sites. The turbines off Block Island, which are 6 MW each, stand 600 feet above the water. The turbines NYSEDA is looking at will average 10 MW and approach 700 feet tall, plus their 200-foot foundations.

"We're looking at the whole supply chain, so we're not just looking at New York Harbor and the Port of New York and New Jersey, but we're looking around Long Island and we're looking up the Hudson too," Matzat said.

Certain activities should be done as close to the wind farm as possible, such as staging for assembly, but other parts of the supply chain, such as manufacturing cables or blades, can be done farther away, he said. Most parts cannot be put on a truck and must be put on a ship, so a large part of the supply chain has to be on the water.

"But that doesn't mean you couldn't build up on the Hudson, where there are areas of

labor that might fit a particular part of the supply chain, and bring that down on a barge to an assembly area," Matzat said.

NYSEDA is now conducting public comment sessions, with four for the fishing industry alone this month.

"Another big group that isn't 100% on board with us is the fishing industry, so we've really made a point of reaching out to the fishermen, and we've had a dedicated fishing liaison who just goes around to docks, not just in New York but in other states too, to talk to fishermen and understand their concerns," Matzat said.

The master plan also includes intensive surveys of the shoreline and coast.

The authority has a survey vessel about 15 miles south of New York City doing sediment profiles and sediment samples of the sea bottom over a couple million acres so planners can understand the habitat on the seafloor and what the seafloor is made of, which has environmental as well as construction-planning value.

"I don't believe any state has ever done that in advance of identifying areas for offshore wind," Matzat said. "Usually that's done later by developers."

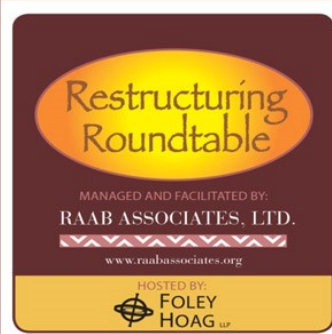
NYSEDA also is conducting a digital aerial wildlife survey, using a plane with high-resolution cameras to photograph more than 12,000 square miles of ocean four times a year over three years. It has already completed the first year.

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## Infocast New York Energy REvolution Summit

# NY DER Question: Deployment or Markets First?

By Michael Kuser

NEW YORK — New York's grid is transitioning from a one-way transmission system to a multidirectional one, and utilities still need time to develop the analytical tools to understand how to deal with distributed energy resources.

That was the assessment of panelists speaking at the Infocast New York Energy REvolution Summit held last week at Times Square.

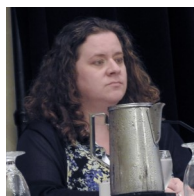


"We are at a very early stage of bringing DERs into what has historically been a passive distribution system," NYISO Senior Manager for Market Design **Michael DeSocio** said

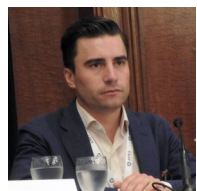
during a panel on the ISO's [DER Roadmap](#), which outlines the grid operator's plans for integrating DER into its ancillary services, capacity and energy markets over the next five years.

"We want to get to a 21st-century grid, but we're still running 20th-century computer systems. We're still running 20th-century metering," DeSocio said.

**Natara G. Feller** of Feller Law Group posed some of the main questions on the topic: "In NYISO's bulk transmission system versus Con Ed's distribution system, how do DER resources impact reliability? How can we shave the peak off the grid? How does this impact the state's requirement for meeting certain capacity standards? What kind of obligations are consumers going to assume, or are they passive obligations where they're not assuming responsibility?"



### Deployment First?



"Are we going to have deployment first, or the markets first?" asked **Chris Rauscher**, director of public policy at Sunrun, the country's largest rooftop solar company. "As my com-

pany and others deploy more storage compared with PVs, are we going to do that in states that already have open access to markets, or are we going to other states that have incentives, for example? And how do we sync all this up together?"

**Ben Pickard**, a distributed energy analyst at National Grid Ventures, which has a strategic partnership with Sunrun, said the development of a DER roadmap comes with the risk that ISO will "overbuild and structure for every contingency at the expense of just trying to get markets going."



DeSocio responded that distribution systems must evolve because they haven't necessarily been designed to deal with all the traffic they will handle with increased DER adoption. The ISO will need enough information to determine whether its own actions create a reliability issue for utilities, which — in turn — are trying to learn how to spot ISO-driven reliability needs on their systems.

Pickard pointed to one outcome of an ISO roadmap that contemplates its system at the sub-nodal level. In such small and specialized cases, he said, "market power becomes a real issue, and you've created all these tiny markets that are quite hard for regulators — it's like a Hydra problem."



ly difficult to forecast some of the values within that value stack. Some of it is intended to be fixed, but then some of those fixed values aren't fixed for the entire length of what the tariff is supposed to be. These are 20- and 25-year projects where some aspects are fixed for only a couple of years and others for even less than that."

### Capacity Factor

Divorcing the market from physics is a recipe for trouble, DeSocio said. If the market creates incentives that don't recognize the

limited capacity on wires — and price signals are faulty — the system is going to get response that it can't handle, he said.

"We have to rethink what is capacity," DeSocio said. "In the wholesale and the retail space, capacity is measured against one hour of one day of one year, and we do that every year. But there's going to be more days to become important and we need to start to think about how we change both the viewpoint and the value of the ICAP [installed capacity] tag. The ICAP tag is how we currently couple the retail rate with the wholesale rate, and so that will be important for the capacity portion of value DER or other retail rate usage of the capacity portion."

NYISO prices energy and reserve use on a five-minute basis, but it doesn't apply that same time-based standard to resources that are asking to sell at the retail rate. Including the time factor would better couple the value of DER with the wholesale market price, according to the ISO.

**Paul A. DeCotis**, a former state planning official now with West Monroe Partners, said the DER pricing challenge could be likened to the early years of co-generation or energy efficiency when "we had difficulty assigning value to the reductions in load or in the kilowatt-hours saved."



"A monthly average LMP does not help me drive or motivate behavior of any sort," DeSocio said. "I smooth it all away, it's gone. The three days a month that I as a grid operator am worried about how I'm going to meet the next megawatt of load, those price signals are gone in a monthly average LMP. As we do that, there's less need for some of these other 'rough justice' or 'fudge factors' in those reads, because now you've exposed the exact time and locality information into the rate itself and the resources that can best fit that need are going to profit the most."

In the longer term — such as over the next 10 years — DER will look a lot like today's demand response space, where those resources become more capable of providing near-term action for real-time reliability, DeSocio said.

# NYISO NEWS



## NYPSC Pushes Ahead with ESCO Investigation

By Michael Kuser

The New York Public Service Commission on Wednesday rebuffed an appeal by a trade group seeking to prevent evidentiary hearings in the commission’s investigation into overcharging by (ESCOs).

The commission rejected separate requests by the Retail Energy Supply Association and Direct Energy Services to halt the evidentiary phase of the proceedings, currently slated to begin in October, although it did grant one appeal.

“For the commission to entertain an interlocutory appeal — an appeal from a judge’s ruling — at this early stage in the evidentiary process of a proceeding is extraordinary, and it’s up to appellants to show extraordinary circumstances to warrant the commission’s intervention at this point,” Administrative Law Judge Julia Bielawski told the PSC. “Here, typically a discovery dispute would not rise to that level. Here, however, one of the arguments presented by the appellants meets that criteria, so the recommendation is for the commission to entertain this appeal.”

Bielawski was citing the appellants’ assertion that a commission requirement to release certain customer data violates uniform business practices, commission policy

and existing contracts.

Commission Chair John B. Rhodes agreed to reverse that one part of the PSC’s May 2017 order while dismissing the other appeals. The commission voted with him.

“The record is clear that certain ESCO customers have paid much more for their energy than necessary,” Rhodes said. “We have cracked down on bad-acting ESCOs, and we have banned ESCOs from serving low-income consumers.

“I’ve been observing the ESCOs using every legal, procedural move that I can imagine — and I’m a regulatory attorney of some years standing — to slow down and limit this proceeding,” Commissioner Gregg C. Sayre said. “I look forward with very great interest to the record now — and may I say, finally — being developed in this case. Even more, I look forward to having an opportunity to make some decisions regarding what appears to be a troubled market.”

A state Supreme Court judge in June ruled that the commission has “the very broadest of powers” to regulate ESCOs and utility rates, especially when seeking to prevent the overcharging of low-income customers. (See [Court Backs NYPSC on Regulating Retail Sales](#).) The court’s Appellate Division last month upheld its conclusion that the commission has authority to cap prices of

ESCOs at utility rates.

### PSC Affirms REV Order

The PSC also ruled against a petition to rehear or reconsider the order adopting a regulatory and policy framework and implementation plan in the Reforming the Energy Vision case, also commonly known as the Track 1 — or REV framework — order.

Assistant Counsel Ted Kelly said, “The Track 1 order applied the general presumption against utility ownership of generation to these distributed energy resources. I identified several limited exceptions to that rule; in particular, one exception provides for utility ownership of [DER] to enable lower- and moderate-income customers to benefit from those resources.”

Several nonprofit organizations had asked the commission to eliminate that exception.

“Utility ownership of DER was one of the most controversial issues in our Track 1 order,” Sayre said. “We made a compromise between always allowing utilities to own DERs and put them in the rate base, or never. I think we made a good compromise.”

The commission also approved a 3-MW solar project by Consolidated Edison in New York City aimed at saving low-income customers money on their utility bills. Con Edison will place the solar panels on rooftops and property owned by the utility.



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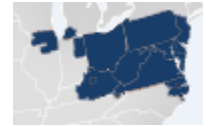
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# PJM Stakeholders Envision Additional Capacity Designs

*Continued from page 1*

The proposals can be broadly categorized among those revamping the entire construct, developing repricing processes that accommodate subsidized units and extending a rule intended to eliminate the impact of subsidies.

The revamp proposals include full-scale redesigns from [American Municipal Power](#) and the [Natural Resources Defense Council](#), and a limited [revision](#) to existing fixed resource requirement (FRR) rules called “Capacity Choice” proposed by John Horstmann of Dayton Power & Light.

The repricing proposals originated from a two-stage auction design by [PJM](#). Many felt it unfairly discriminated against units on the margin in the capacity auction and proposed tweaks that would either reduce capacity awards ([NRG Energy](#)) or reduce the clearing price ([LS Power](#)). Another proposal would trigger repricing only if the clearing price rises to a level that incentivizes new generator construction ([Exelon](#)), while a fourth would calculate the clearing price by removing subsidized offers and scaling the remaining competitive offers to replace the shortfall ([Old Dominion Electric Cooperative](#)).

ODEC’s Mike Cocco said other repricing proposals utilize reference pricing schemes to replace the market offers from subsidized resources but failed to account for what would be corresponding change in the supply stack. ODEC’s proposal was designed to fully synthesize an auction as if subsidized units never existed and competitive units covered the entire demand.

“Once you open that door and decide you’re going to reprice with reconstituted offer prices, you have to open that door all the way,” Cocco said.

Monitoring Analytics, the Independent Market Monitor, proposed an [extension](#) of the existing minimum offer price rule that would require units to undergo analysis every year they receive subsidies without an exemption — requiring them to submit the variables and equation they used to calculate their offer. The Monitor would then review the submissions for competitiveness, much like it now does with fuel-cost policies and cost-based offers. (See [PJM](#)



CCPPSTF meeting underway | © RTO Insider

[Monitor Rejects Fuel-Cost Policies for 1.1% of Units.](#))

“If states want control over their assets, they should reregulate — and that’s fine,” Monitor Joe Bowring said. “If we’re going to have markets, we should have markets.”

James Wilson of Wilson Energy Economics also provided [comments](#) on the redesign proposals, arguing that “markets are not as fragile as some suggest.” With enough lead time, markets have a “substantial ability to absorb incremental/decremental resources with minimal impact on prices,” said Wilson, who consults for the consumer advocates in New Jersey, Pennsylvania, Maryland, Delaware and D.C.

He predicted that the process would settle on “some sort of two-tiered pricing,” for which he has concerns. He also expressed reservations about expanding the MOPR.

The comments found some favor with AMP’s Ed Tatum, who has argued the best solution is to replace reliance on the annual capacity auction with long-term bilateral contracts between generators and load-serving entities.

“With enough notice, the true market would be able to absorb these things,” he said.

He also liked Horstmann’s “Capacity Choice” proposal, which would allow LSEs to determine how they want to fulfill their capacity obligations, either through long-term contracts under the existing fixed resource requirement (FRR) rules, annually through the existing Reliability Pricing Model or some combination of the two extremes.

All current and future subsidized units would be required to choose the FRR option, which would eliminate their potential influence on the RPM auctions. The entity enacting the subsidy would have to elect how it would be funded through its rate base.

“This is kind of a different approach than some of the ones you’ve seen before,” Horstmann said. “As opposed to being told how to manage your capacity obligation, basically what I’m putting on the table here is you get to choose how to manage your capacity obligation.”

He outlined several as-yet unanswered questions but noted that because the structure is largely already approved by FERC, it would require minimal Tariff changes. He said he analyzed the stakeholder proposals to address as many interests as possible but couldn’t include all of them — such as proposals to trigger repricing.

“Clearly it doesn’t accommodate the one that doesn’t think there’s a problem,” he said.

Going forward, PJM plans to distribute a poll to judge stakeholder interest in each of the proposals, including the status quo. The poll results, if emphatic, could determine the CCPPSTF’s ongoing direction and which proposals receive the most attention.

PJM is looking to schedule another meeting on Aug. 17, followed by meetings on Aug. 23, Sept. 11, Sept. 12 (if possible), Sept. 26, Oct. 16, Nov. 1, Nov. 21 and Dec. 11.

## Q2 EARNINGS

# Berkshire Hathaway Energy Earnings up on Solar Rebound

## Bankruptcy Hearing Set for Aug. 21 on Oncor Purchase

By Rich Heidorn Jr.



Berkshire Hathaway Energy reported a \$38 million increase

in earnings for the second quarter over a year earlier, largely because of improved performance of BHE Renewables.

The renewable unit saw net income increase \$39 million due primarily to higher generation at the Solar Star projects, which were hobbled by transformer-related forced outages in 2016. It also benefited from earnings from tax equity investments reaching commercial operation and additional wind and solar capacity placed in service.

BHE Transmission's earnings dropped by \$15 million from lower earnings at AltaLink and BHE U.S. Transmission, which saw low-

er income from Electric Transmission Texas because of new rates that took effect in March.

### Oncor Hearing Set

BHE is awaiting an Aug. 21 U.S. bankruptcy court hearing on its proposed \$9 billion acquisition of Energy Future Holdings' Texas utility Oncor. BHE's bid is being opposed by EFH's largest creditor, Elliott Management, which won an 11-day delay in the hearing after telling the bankruptcy court on July 26 that 10 other investors are interested in joining it in a competing bid. (See PUCT Staff Welcomes Buffett's Oncor Bid: Debtor Miffed.)

Elliott's \$9.3 billion offer values Oncor at \$18.5 billion including debt, exceeding the \$18.1 billion valuation in BHE's all-cash deal.

BHE said July 26 that it supports Oncor's rate settlement with Texas regulators and its agreement to swap \$400 million of assets with Sharyland Utilities. "The rate settlement contemplates a stronger financial structure for Oncor, with more owner-funded equity to fund proposed projects and investments in the grid," BHE said.

Pending approval by Texas regulators, Sharyland would take over 258 miles of 345-kV transmission from Oncor in exchange for Sharyland's distribution network and retail delivery customers. "Oncor will be welcoming thousands of new customers, many of which are located in areas that have seen significant load growth, like the Permian Basin," said Oncor CEO Bob Shapard.

The proposed swap was submitted to the Public Utility Commission of Texas on Friday (Docket No. 47469).

# Duke Seeks to add Solar Following Legislative Victory

By Rory D. Sweeney



Duke Energy executives used Thursday's quarterly earnings call to outline a vision for

expanding its solar generation assets through recently enacted legislation in North Carolina.

The nation's second-largest utility reported earnings of \$686 million (\$0.98/share) in the second quarter on revenue of almost \$5.6 billion, a jump from \$509 million (\$0.74/share) on revenue of \$5.2 billion a year earlier.

Adjusted diluted earnings for the quarter were \$1.01/share, compared with \$1.07/share a year ago.

Duke spent nearly a year fighting for the "Competitive Energy Solutions for North Carolina" plan, which was signed into law by Gov. Roy Cooper (D) on July 27 (House Bill 589). The law establishes competitive bidding for most utility-scale solar projects in the state and allows for utilities to use the state's fuel cost rates to recover cost for facilities contracted under the Public Utility

Regulatory Policies Act. It also reduces mandatory PURPA contracts from 15 years to 10 and places an 18-month moratorium on wind development in the state.

### Pathway for Solar

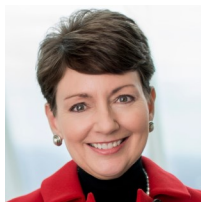
Duke Chairman and CEO Lynn Good praised the legislation for providing the company a pathway to developing almost 900 MW of solar generation and acquiring more. The law includes a commitment from Duke to seek 2,660 MW of new renewable energy by mid-2021. The company is permitted to compete for 30% of that goal and may buy other approved projects to expand its ownership beyond the 30% cap. Without the legislation, Duke would have little control over the projects' development but would be required by PURPA to purchase the power.

"The law also allows for the recovery of costs associated with these projects through a new rider to be established by the

[North Carolina Utilities] Commission. The competitive bidding process will ensure that new renewables are brought on to the system at market-based rates, delivering nearly \$1 billion in savings for our customers over the next decade," Good said. "In our five-year plan, we have something like \$400 million of capital directed towards that type of investment in the Carolinas. So, we do have more investment opportunities than we imagined."

Additionally, company officials argued that proposed rate increases for coal ash disposal will ultimately benefit customers. The company has been dealing for years with issues regarding leakage from ponds used to store residual ash at its coal-fired generators. It has set aside \$500 million for resolving the disposal and contamination issues and has asked for another \$195 million from ratepayers in cases filed with the NCUC in June and July.

If approved, the requests would include recovery for a wastewater treatment facility at the Mayo plant in Roxboro, N.C., and an estimate of ongoing costs for closing the ponds.



Good

Continued on page 25



## Q2 EARNINGS

# Con Ed Q2 Earnings Down; PSC Rules on Subway Outage, Solar Pilot

By Michael Kuser



Consolidated Edison on Thursday reported its second-quarter net income dropped almost one-third from a year ago, mainly reflecting changes in rate

plans and regulatory charges and the impact of weather on revenues from the company's district-energy steam system.

The company posted \$175 million in net income for the quarter (\$0.57/share) on \$2.63 billion in revenue, compared with \$232 million (\$0.78/share) on \$2.79 billion in revenue in 2016.

Adjusted earnings — which exclude the gain on the sale of a solar electric production project, the impairment of a solar electric production investment in 2016 and the mark-to-market impact of the company's Clean Energy Businesses — were virtually equal to last year at \$178 million (\$0.58/share) versus \$179 million (\$0.60/share) in 2016.

The new electric rate plan for Consolidated Edison Company of New York (CECONY) included changes in the timing of recognition of annual revenues between quarters.

Operations and maintenance expenses for CECONY for the second quarter and first half reflect lower pension costs and lower regulatory assessments and fees.

CEO John McAvooy said the company has begun installing smart meters and offering customers new products such as smart air conditioners and Wi-Fi-enabled thermostats.

### NYPSC Actions

The New York Public Service Commission on Aug. 2 approved a pilot 3-MW solar project by CECONY aimed at saving low-income customers money on their utility bills ([16-E-0622](#)). Con Ed will place the solar panels on rooftops and property owned by the utility.

The commission also directed the utility to change the way it tries to collect money from delinquent customers ([16-M-0501](#)). Specifically, Con Ed must propose a process for executing deferred payment agreements and make the company's meter-seizures "much more straightforward," the order said.

"To prevent backsliding, Con Edison is required to provide quarterly updates to commission staff to ensure the new procedures

are being properly executed," PSC Chair John B. Rhodes said.

The Public Utility Law Project of New York had requested that the commission examine the utility's methods of seizing customers' electric or gas meters for unpaid bills, as well as the way it negotiates deferred payment agreements.

The commission also voted to issue an order on Con Ed's response to a power outage April 21 that cut electricity to the Seventh Avenue subway station and led to a loss of the subway signals ([17-E-0428](#)).

Although the order was not immediately available, it is expected to require the company to create a stockpile of emergency generators that could be deployed anywhere in the system within 30 minutes take actions, as laid out in a July 26 letter from Rhodes.

He also said Con Ed would need to replace its aluminum cables with failure-resistant copper cables and install backup electric lines to eliminate single points of failure. It also must analyze power supply and power quality affecting the subway's signal system.

Gov. Andrew Cuomo said last week that power-related issues caused more than 32,000 subway delays in the last year.

## Duke Seeks to add Solar Following Legislative Victory

Continued from page 24

"This approach would allow us to recover our estimated costs as incurred, reducing our financing costs and ultimately benefiting our retail customers," Duke CFO Steve Young said. "If approved, this will build upon the recent third quarter, allowing both [the Duke Energy Carolinas and Duke Energy Progress subsidiaries] to recover costs for coal ash remediation from wholesale customers. We believe this was a prudent approach to managing these expenses and maintaining competitive rates for our customers."

Good also called the transition to electric vehicles "positive" but wasn't overly enthusiastic.

"I think it will grow over time. I don't see it as a step change though in load growth because of all the other factors impacting load, including energy efficiency and other items," she said.

### Misgivings on Wind Ban

In signing HB 589, Cooper criticized the last-minute addition of an 18-month bar on wind development, issuing an executive order to mitigate the effects of the moratorium.

Cooper said he signed the bill because of its importance to the state's "already booming" solar industry. "I strongly oppose the ugly, last-minute, politically motivated wind moratorium," he said. "However, this fragile and hard-fought solar deal will be lost if I veto this legislation and that veto is sus-

tained."

Supporters of the moratorium, which bars approval of new wind farms before the end of 2018, said it was necessary to allow the legislature time to study the impact of wind turbines on the state's military bases.

Cooper's executive order directs the state Department of Environmental Quality "to continue recruiting wind energy investments and to move forward with all of the behind-the-scenes work involved with bringing wind energy projects online, including reviewing permits and conducting pre-application review for prospective sites."

"I want wind energy facilities to come online quickly when this moratorium expires so our economy and our environment can continue to benefit," Cooper said.

## Q2 EARNINGS

# Entergy Q2 Earnings Beat Expectations

By Tom Kleckner



With its merchant nuclear power plants all but part of history, Entergy reported second-quarter earnings Wednesday that almost doubled investor expectations.

The New Orleans-based company said second-quarter profits were \$409.9 million (\$2.27/share), compared with \$567.3 million (\$3.16/share) a year ago. A Zacks Investment Research survey of Wall Street analysts had forecasted earnings of \$1.20/share.

Entergy took a \$152.3 million loss related to its plans to sell or close its five [Entergy](#)

[Wholesale Commodities](#) nuclear plants. (See [Entergy, Consumers Announce Closure of Palisades Nuke](#) and [Entergy to Shut Down Indian Point by 2021.](#))

At the same time, the company has received final regulatory approval to build a pair of nearly identical 990-MW combined cycle gas-fired plants in Louisiana and Texas. The Lake Charles Power Station in Westlake, La., is expected to go online in 2020, while the Montgomery County Power Station near Houston should begin operations in 2021.

"These projects will contribute to our portfolio transformation efforts to replace older, less efficient plants with new generation," Entergy CEO Leo Denault told analysts during a Wednesday earnings call, pointing to state-of-the-art emission controls that cap-

ture and use waste heat to boost generation. "They are an important part of our strategy to meet our voluntary commitment to develop an electric system that is well-positioned to operate in a carbon-constrained economy."

Denault said the two plants are expected to provide Entergy's Louisiana and Texas customers at least \$3 billion in combined net benefits and lower production costs. The plants are also expected to provide thousands of jobs during construction and generate more than \$2 billion in economic activity for their local communities, he said.

Entergy has also amended its application for the proposed New Orleans Power Station, which has encountered opposition from the City Council. Denault said the company has renewed its request for the original 226-MW combustion turbine but also proposed a 128-MW unit as an alternative.

# NRG CEO Hopeful About ZEC Lawsuits, Company Future

By Peter Key



NRG Energy CEO Mauricio Gutierrez said Thursday that his company is optimistic that FERC and U.S. courts will find that the

zero-emission credits (ZECs) being issued to nuclear generators by two states are harmful to the market and consumers.

Speaking during NRG's second-quarter earnings conference call, Gutierrez was also bullish on the company's future as a power generator and retailer, in part because of the location of its generation assets.

Additionally, he said that although the asset sales included in a [transformation plan](#) launched last month may not be completed by the end of the year, he expects the company will be able to announce them all by then.

NRG earned \$99 million (\$0.36/share) from continuing operations during the quarter, after losing \$163 million (\$0.25/share) a year earlier. That beat the Zacks consensus analysts' estimate of a 5-cent/share loss. Both sets of figures excluded the results of GenOn Energy, which [filed for bankruptcy](#) in June and will become the property of its senior noteholders.

NRG's revenue was \$2.7 billion in the most recent quarter, up from \$2.25 billion a year ago, but short of the consensus estimate of \$3.03 billion.

The company is a plaintiff in lawsuits against ZEC programs in Illinois and New York, both of which were dismissed last month. (See [Illinois Zero-Emission Credit Suit Dismissed](#) and [New York ZEC Suit Dismissed.](#)) The subsidies also prompted requests for FERC to extend the minimum offer price rule (MOPR) to existing units.

Initial briefs are due Aug. 28 in the plaintiffs' appeal of the ruling on the Illinois ZECs case, which is pending before the 7th U.S. Circuit Court of Appeals. The plaintiffs plan to ask the 2nd Circuit to review the New York ruling.

When asked why he was so confident that the cases will be ultimately decided in NRG's favor, Gutierrez said, "We think that we have a strong case, and with new FERC commissioners coming in, I think there will be a fresh look, a fresh perspective on the validity of our case and the potential impact that these out-of-market subsidies can have



Gutierrez

in the competitive markets."

Another analyst on the call pointed to continued renewable subsidies while, outside Texas, load growth in NRG's markets is flat. He asked if those developments concerned Gutierrez, as NRG will be left with a generation portfolio without renewables once the company finishes its planned asset sales.

Gutierrez said NRG would have a chance to rebalance its portfolio once its transformation process is completed and that its "generation is within the load pocket of the Chicago area, New York City or southwest Connecticut, and that these assets benefit significantly from capacity prices that have been very robust and continue to be robust as far as 2020 [or] 2021."

As for NRG's retail business, Gutierrez said the company has looked at best practices in other retail industries for ideas and concluded that it should build up its information technology infrastructure and analytics.

"So the way I characterize this effort is, in the last three years, we grew our business roughly by \$200 million," he said. "What we're saying is that in the next three years, we are going to grow it by \$200 million."

[Editor's note: Quotes from conference call courtesy of [Seeking Alpha](#).]

## Q2 EARNINGS

# Exelon Confident on ZECs; Will Seek PJM Changes

By Rich Heidorn Jr.



**Exelon**

Exelon officials said Wednesday they will press PJM to

enact rule changes boosting off-peak prices and are confident nuclear subsidies in New York and Illinois will survive court challenges.

The comments came as Exelon reported second-quarter earnings of \$80 million (\$0.09/share), a drop from \$267 million (\$0.29/share) a year earlier, as its generation division saw a \$250 million loss.

Adjusted operating earnings for the quarter were \$509 million (\$0.54/share), down from \$604 million (\$0.65/share) in 2016, reflecting the end of the reliability support services agreement for its R.E. Ginna nuclear plant in New York, increased nuclear outage days and lower realized energy prices. Those negatives were partially offset by rate increases that boosted utility earnings and zero-emission credit revenue (\$0.05/share) for the Ginna, Nine Mile Point and James A. FitzPatrick nuclear plants beginning April 1.

Joe Dominguez, executive vice president of governmental and regulatory affairs and public policy, said federal district court rulings rejecting challenges to the New York and Illinois ZEC cases suggested opponents will have a difficult time prevailing on appeal.

"The district court decided these cases at a very preliminary stage, whereas a legal matter the courts had to assume all the facts that the plaintiffs pled were accurate. Those facts were not accurate, but even under the plaintiffs' versions of the case, the courts found that they had no legal claim whatsoever," Dominguez said. "In both decisions, the district courts rejected the entire waterfront of the plaintiffs' claims beyond the ... procedural issues. That speaks to how high a hill they will need to climb on appeal to reverse those decisions."

David Gaier, spokesman for plaintiff NRG Energy disagreed. "We don't think we're down for the count at all," he said.

Initial briefs are due Aug. 28 in the plaintiffs' appeal of the ruling on the Illinois ZECs,

pending before the 7th U.S. Circuit Court of Appeals. The plaintiffs plan to ask the 2nd Circuit Court to review the New York ruling.

### Lobbying Position Improved

Dominguez said the court rulings have helped Exelon's lobbying posture in other states considering ZEC-type programs. He said opposing lobbyists have cited the legal questions as risks for policymakers, saying "Why would you take a tough vote on this only to have it overturned in the courts? These decisions resolve that issue."

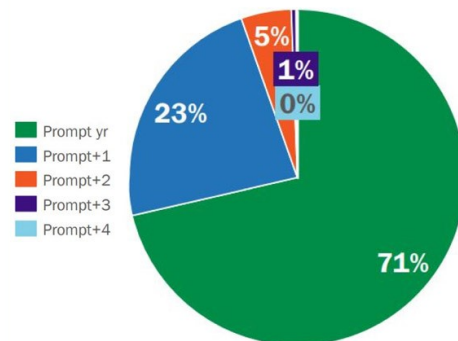
CEO Chris Crane said "we remain hopeful" that Pennsylvania officials will enact similar subsidies to prevent the closure of Three Mile Island. (See [Seeking Subsidy, Exelon Threatens to Close Three Mile Island.](#))

Dominguez said, however, that pricing carbon emissions in the wholesale markets would be preferable to ZECs. "It's more clear to us now than ever that federal wholesale markets need to evolve to fully incorporate attributes like resiliency, fuel diversity and the environmental qualities of the generation resources. If the markets don't evolve, then the markets are going to have a diminished role in energy policy going forward. We are committed [to markets] but the markets should be well-functioning. Our commitment to markets only extends so far as it provides the best outcomes for our customers."

Dominguez said the company was heartened by PJM's plan for energy market changes that would allow baseload generators such as nuclear plants to set clearing prices in off-peak hours. The RTO has said it will file the changes with FERC by the first quarter of 2018, with implementation targeted by summer 2018. "We are going to push very hard to make sure that happens," promised Dominguez, who said the changes should increase off-peak energy prices and reduce capacity prices. (See [RTOs to Congress: Don't Lose Faith in Markets.](#))

### Not Considering GenCo Spin-off

Crane said that although Exelon believes it is undervalued by Wall Street, it is not considering spinning off its generating unit



PJM West forward trading volumes, July 2017 | Exelon

into a separate company. He cited the "synergies" between its generation fleet and its distribution utilities. Exelon noted that all its utilities scored in the top quartile of the Customer Average Interruption Duration Index and that Baltimore Gas and Electric and Commonwealth Edison achieved their best-ever System Average Interruption Frequency Index scores.

"We are differentiating ourselves from any other merchant generator in the business. [We have] strong balance sheets, a different class of assets, very well run and fairly matched to our load books. So, we like where we're at and wouldn't speculate on anything else," he said. We "really can see the value creation and want the market to recognize it as we do execute on what we say."

CFO Jack Thayer told analysts Exelon believes future power prices will be higher than suggested by forward curves, whose liquidity has declined over the past year. Trades for 2020 and beyond represent only 6% of the futures volume at the PJM West hub on the ICE and NASDAQ exchanges, he said.

"We would note that our fundamentals group has a more constructive view on power markets than these illiquid forward curves suggest, but we appreciate that there is perceived safety in using the forwards," he told the stock analysts on the call. "However, when running your numbers, we would just encourage you all to appreciate what is underpinning those forward prices."

## Q2 EARNINGS

# OGE, CenterPoint Earnings Calls Focus on Enable Midstream

By Tom Kleckner

CenterPoint Energy and OGE Energy both reported positive earnings Thursday, but company officials spent much of their time during conference calls with analysts discussing their gas-gathering and processing joint venture, [Enable Midstream](#).

CenterPoint executives had promised an update during its call on efforts to sell or spin off its 54.1% share of the partnership. Instead, they could only say that a spinoff is no longer being considered because it would result in undesired credit metrics for the company. (See [OGE Anticipates Legislative Review of Oklahoma Regulators](#).)

"I'm hesitant to give another date in the future when hopefully this will be closed out," CEO Scott Prochazka told analysts. "We hope to move this to conclusion pretty quickly."

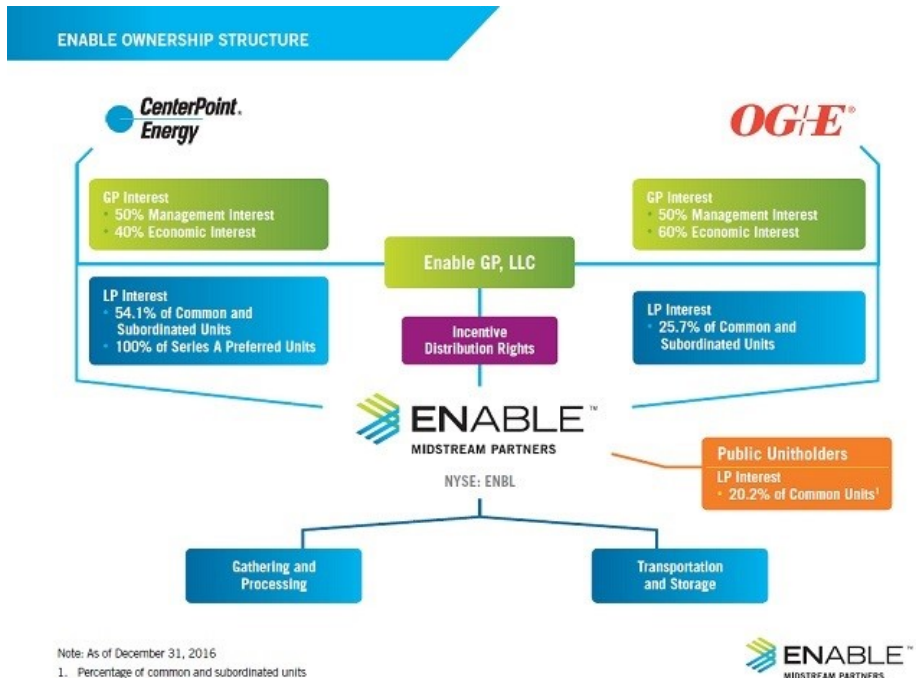
CenterPoint said multiple parties are conducting due diligence to potentially acquire shares of Enable but would not comment on the status. The Houston-based company last month extended another right of first offer to OGE.

"We would like to reduce our exposure to the oil and gas sector," Prochazka said. "If we're not able to affect an outright sale, we would like to lighten our ownership through a public sale."

The process of "diluting" CenterPoint's ownership share has been ongoing since last year.

"It's admittedly taken longer than suspected," CenterPoint CFO Bill Rogers said. "We took some time to get confidence in the forecasts over multiple years that we could then present to multiple buyers. Any potential purchaser wants to get comfortable with their partner."

"My view is we're both aligned around wanting Enable to do well," OGE CEO Sean Trauschke said during the Oklahoma City-based company's earnings call, which preceded CenterPoint's. "We continue to be pleased with its performance. Enable is doing everything it was set up to do, and there is significant untapped value in this business, and we are excited for what the



future holds."

OGE holds a 25.7% limited-partnership interest and a 50% management interest in Enable.

Trauschke said OGE has received about \$70 million in distributions from Enable this year and noted the company recently announced a second-quarter distribution of \$35 million.

Formed in 2013, Enable's assets include about 12,900 miles of gathering pipelines, 14 major processing plants with 2.5 Bcfd of processing capacity, 7,800 miles of interstate pipelines, 2,200 miles of intrastate pipelines and eight storage facilities with 85 Bcf of storage capacity.

Enable was trading at \$15.42/share Friday, up just over 20% in the last year.

### Q2 Earnings Beat Investors' Expectations

Quarterly earnings at both OGE and CenterPoint exceeded investors' expectations.

OGE said lower operating expenses resulted in net income of \$104.8 million (\$0.52/share), up from \$72 million (\$0.35/share) a

year ago. Analysts surveyed by Zacks Investment Research had predicted earnings of 47 cents/share.

OGE expects full-year earnings to be between \$1.93 and \$2.09/share.

Investors reacted to the news Thursday by pushing OGE's share prices up 66 cents to \$36.01 in after-hours trading. The stock is up 15.4% in the last year.

"I'm proud we aren't talking about surprises: surprises like delays, cost overruns," Trauschke said. "Quite simply, we're getting things done in an environment where we don't necessarily control variables like the weather or actions of others."

CenterPoint reported net income of \$125 million (\$0.29/share), up from \$73 million (\$0.17/share) last year. The company attributed the good news to rate increases and customer growth.

Zacks' analyst survey had projected earnings of 21 cents/share.

CenterPoint shares gained 83 cents Thursday, finishing at \$28.47 after the market closed.

## Q2 EARNINGS

# Va. Data Centers, Residential Growth Boost Dominion Demand

By Rich Heidorn Jr.



Data centers and residential customer growth are driving increased electric

demand for Dominion Energy in Virginia, with weather normalized sales up about 2% for the first half of the year.

New customer connections in the first six months jumped 7% over 2016, and the company connected five new data centers between April and June, company officials said in their second-quarter earnings call Wednesday.

CEO Thomas Farrell said an anticipated increase in federal defense spending under the Trump administration would “provide strong support for the Virginia economy, which is the largest recipient of defense dollars in the nation.”

“All of these factors support our expectation that annual electric sales growth of at least 1% will continue,” Farrell added.

The company reported second-quarter earnings of \$390 million (\$0.62/share), a drop from last year’s \$452 million (\$0.73/share). Operating earnings for the quarter were \$421 million (\$0.67/share) versus \$441 million (\$0.71/share) for 2016. The main difference between reported and operating earnings were costs related to Dominion’s acquisition of Questar.

Operating revenue was \$2.81 billion, up 8% from almost \$2.6 billion a year earlier. The company is predicting earnings growth of at least 10% in 2018.

Transmission spending will contribute to that growth. Dominion added \$327 million in transmission assets in the first half of the year, and the company plans to invest \$800 million in transmission annually for at least the next decade.

### Extensions for Va. Nukes, Subsidy for Millstone Sought

Farrell said company officials are “working very hard” to win financial support from Connecticut lawmakers for its Millstone nuclear plant. He did not respond to an analyst’s question on whether the company

would share Millstone’s financials to rebut criticism that the plant is already profitable and doesn’t need assistance.

However, he said the company will participate in the study ordered by Gov. Dannel Malloy last month. The state’s Department of Energy and Environment and Public Utilities Regulatory Authority are to report to the legislature on the plant’s financials in January 2018. (See [CT Gov Orders Financial Analysis of Millstone Plant.](#))

Paul D. Koonce, CEO of Dominion’s Power Generation Group, said that the timing of legislative action depends on the resolution of the Connecticut budget, which he hopes lawmakers will complete by Labor Day.

Meanwhile, the company has begun the process for winning license extensions for its North Anna and Surry nuclear plants in Virginia. Officials said state legislation will allow the company to recover through a rate rider the costs of extending the plants’ lives, which could be as much as \$4 billion.

Company officials also provided updates on several projects:

- Farrell reiterated the company’s plans to add as much as 2,000 MW of offshore wind if two test offshore wind turbines planned for 26 miles off Virginia Beach “demonstrate that they work well in these waters and produce the kind of capacity that we expect.” (See [Dominion Plans 12-MW Offshore Wind Project, 2nd in US.](#))
- The Cove Point Liquefaction Project is 95% complete, on target for the beginning of commercial service later this year.
- Construction of the Atlantic Coast



Cove Point Liquefaction Project | Dominion

Pipeline project should begin in November, assuming FERC restores its quorum by the end of September. “There’s certainly some vocal opposition in some isolated localities, but overall, folks in Virginia support the pipeline as they do in West Virginia [and] North Carolina, and we expect to get all the necessary permits later this fall,” Farrell said. Dominion won’t discuss potential expansion of the pipeline until it has the FERC permit in hand, he said.

- The 1,588-MW Greensville County combined cycle plant is almost half complete and is on time and on budget with commercial operations expected late 2018.
- The company said it expects to select sites later this year for one or more pumped-storage facilities in Southwest Virginia. The General Assembly approved recovery of the facilities’ costs through a rider.

### Solar

The company said data centers, military installations and the state government are driving demand for renewables. Three facilities totaling 119 MW went into commercial operation in the second quarter. In total, the company expects to add 438 MW of solar this year and another 200 MW by the end of 2018, bringing its total to 1,800 MW. The company’s integrated resource plan calls for up to 5,000 MW of solar by 2032.

“Solar uses a lot of land, and that’s beginning to become obvious to people as maybe not quite as obvious to folks in the West, where vacant land is abundant,” Farrell said. “So we’re exploring all of our options to meet our customers’ demands for decades to come. That’s part of why we’re looking at the relicensing of North Anna and Surry as well, and pump storage in the Virginia mountains.”

On Thursday, the company announced it has acquired two 5-MW solar facilities and plans to purchase two other solar farms totaling 10 MW later in the third quarter from Strata Solar, of Chapel Hill, N.C.

[Editor’s note: Quotes from the earnings call are according to a [transcript](#) by Seeking Alpha.]

## Q2 EARNINGS

# PPL: No Load Growth in Sight for US Operations

By Rory D. Sweeney



PPL is maintaining a flat demand outlook for its U.S. service territories through 2020, company executives said during Thursday's quarterly earnings call.

The utility, which operates in Pennsylvania, Kentucky and the U.K., said it is not forecasting load growth in the U.S. through the end of the decade. Its previous business plan assumed 0.5 to 1% annual load growth.

Chairman and CEO Bill Spence said the company's Pennsylvania utility may ask regulators for a rate true-up based on volume. He said there was no "near-term concern" for its Kentucky operations.

"I think the best tool for us to deal with demand, which is flat, is our forward rate

years," added Victor Staffieri, CEO of PPL's LG&E and KU. "So, we take that into account every time we file [a rate case]. You all know we've been filing every two years and so I would expect that would be the best way for us to capture any changes in the ... demand."

The company posted a profit of \$292 million (\$0.43/share) in the second quarter, compared with \$483 million (\$0.71/share) a year ago. The decline was primarily driven by lower foreign currency exchange rates, company executives said.

Earnings from ongoing operations were \$356 million (\$0.52/share), compared with \$380 million (\$0.56/share) a year ago.

The company reduced its expected annual earnings from its regulated Kentucky utilities by 2 cents/share, attributing the drop to lower electricity sales because of mild weather. For the year, which included

Kentucky's warmest February on record, the company said weather in the U.S. has negatively impacted its results by about 3 cents/share.

However, the company remains confident in its 2017 earnings forecast of \$2.05 to \$2.25/share, a 5 to 6% compound annual growth in earnings per share and a 4% growth in dividends through 2020.

The British pound, which fell from about \$1.48 to as low as \$1.20 following the U.K.'s vote in June 2016 to leave the European Union, has since rebounded to about \$1.30. The company said it can reach the low end of its projected EPS even if the pound hits parity with the dollar.

"We're executing very well on our low-risk business plans," Spence said.

*[Editor's note: Quotes from conference call courtesy of Seeking Alpha.]*

# NiSource Blames Debt Refinance Fee for Q2 Loss



NiSource lost \$44.3 million (\$0.14/share) in the second quarter, with company officials pinning the sagging earnings on an expensive debt-related charge.

The Merrillville, Ind.-based parent of Northern Indiana Public Service Co. and Columbia Gas took a \$111.5 million charge on early extinguishment of higher-coupon, long-term debt. However, CEO Joseph Hamrock said the charge, incurred for refinancing \$990.7 million in debt, will be offset in the long term. The refinance will "result in significant interest expense savings over the next several years," Hamrock said during an Aug. 2 earnings call.



NiSource headquarters | NiSource

NiSource reported \$167 million in net income from continuing operations for the first six months of this year, compared with \$215.6 million in the first half of 2016.

CFO Donald Brown said NiSource currently carries \$7.9 billion in debt, with a 13-year weighted average maturity for long-term

debt and a 5.4% average interest rate.

"It's worth mentioning that our credit ratings at the three major agencies are investment-grade. Standard & Poor's rates NiSource at BBB+, Moody's at Baa2 and Fitch at BBB — all with stable outlook. Going forward, our financial foundation is solid and poised for continued growth," Brown said.

Hamrock said NiSource plans to invest \$1.6 billion to \$1.8 billion annually in utility infrastructure programs from 2018 through 2020, part of more than \$30 billion in long-term investment opportunities the company has identified. (See [NiSource Pegs Q1 Success on Infrastructure Investments](#).)

— Amanda Durish Cook

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## COMPANY BRIEFS

### South Carolina Officials Outraged After Nuke Cancellation



South Carolina legislators told workers fired from the recently canceled V.C. Summer Nuclear Station that they would overhaul the regulatory process that led to the multimillion-dollar debacle, while the state's Public Service Commission told developer SCANA that it was "blindsided" by the news.

"This is going to shatter lives, hopes and dreams in Fairfield County and in the state of South Carolina," PSC Chair Swain Whitfield said.

SCANA told the commission its preferred option of completing just one of the two proposed reactors at the plant would have cost \$12.9 billion, less than the \$14 billion regulators originally approved more than a year ago. But SCANA's partner on the project, Santee Cooper, decided to proceed with neither of the two units. The company was unable to find a partner on the project, whose costs have now ballooned to \$18 billion.

More: [Charlotte Business Journal](#); [Associated Press](#)

### Southern Estimates \$25B Tab for Completing Plant Vogtle



Southern Co. released an estimate Wednesday calculating the overall cost for completing Plant Vogtle at more than \$25 billion, with the plant's two nuclear reactors being operational in February 2021 and February 2022, at earliest.

When Southern first proposed building the two reactors in 2008, it calculated the entire project would cost \$14 billion.

Southern plans to make a recommendation to Georgia regulators later this month

regarding whether it will proceed with the project.

More: [Fox Business](#)

### Southern to Absorb \$2.8B More in Kemper Losses

**SOUTHERN COMPANY** Southern Co. said Wednesday it would absorb an additional \$2.8 billion in losses from the Kemper power plant's lignite coal operation — bringing the total losses to nearly \$6 billion.

Meanwhile, Southern subsidiary Mississippi Power is still in negotiations with regulators after the Mississippi Public Service Commission's order to suspend the plant's lignite coal gasification operation.

Losses recorded through May 2017 were \$3.07 billion, according to a statement from Mississippi Power.

More: [The Meridian Star](#)

### Dominion to Refund \$11M to Overbilled Customers in Va.

Dominion Energy will refund more than \$11 million that it overcharged about 24,000 commercial customers in Virginia under a plan approved by the State Corporation Commission in late July.

The overcharges occurred between 2013 and 2016 when meter readers failed to reset meters each month to track peak demand. Customers who can show they were overcharged before 2013 also are eligible for a refund.

In addition to refunding the overcharges, Dominion will pay interest plus a 5% "good will" credit.

More: [The Associated Press](#)

### SMECO Asks Maryland PSC to Lower Rates

**SMECO** Southern Maryland Electric Cooperative has asked the Maryland Public Service Commission to reduce its distribution services charges.

If its request is approved, SMECO expects the rates to go into effect next February and that customers would save \$1.85 million per year.

The utility said the lower rates are the result

of a redistribution of its transmission upgrade costs. "The costs for transmission facilities throughout a region are paid for by all the customers within that region, and this sharing of costs will reduce the monthly bill for SMECO's customers," CEO Austin Slater explained.

More: [SMECO](#)

### Parent of Vermont Yankee Suitor Gets Recapitalized



New York-based private equity firm J.F. Lehman & Co. has purchased a majority interest in the parent company of NorthStar Group Services, which is seeking permission to buy and clean up the idled Vermont Yankee nuclear power plant.

The deal was a recapitalization that NorthStar CEO Scott State said "greatly increased" his company's "financial capacity and backing."

NorthStar wants to buy Vermont Yankee by the end of 2018 and has promised to decommission most of the plant's site by the end of 2030, decades sooner than its current owner, Entergy, had planned.

More: [VTDigger](#)

### AES, AimCo Acquire sPower for \$853M

**S-POWER** AES and Alberta Investment Management Co.

last week completed their \$853 million joint acquisition of solar developer sPower from Fir Tree Partners.

sPower owns at least 1.3 GW of operating solar projects in 11 states and has almost 10 GW in development. The purchase, which was announced in February, is the "latest example of a trend away from institutional investment in individual projects and towards investments that bundle a developer, its existing assets and its pipeline into a single package," said Nathan Serota, a Bloomberg analyst.

More: [Bloomberg](#)

# FEDERAL BRIEFS

## Trump Formally Notifies UN of Intent to Leave Paris

The Trump administration sent a formal notice Friday to the United Nations announcing the U.S. intends to leave the Paris Agreement “as soon as it is eligible to do so,” even though the agreement provides that no country can formally announce its intention to pull out until Nov. 4, 2019.

The formal process for withdrawing takes another year, meaning the earliest the U.S. can exit the deal is Nov. 4, 2020 — the day after the next presidential election.

More: [The Hill](#)

## Report: Lithium-ion Batteries to Dominate Energy Storage Markets

The price for lithium-ion batteries will fall below \$200/kWh by 2019, helping to establish them as the battery chemistry of choice in all energy storage markets, according to a new report by IHS Markit.

The report also predicts an acceleration of the 70% cost reduction seen in lithium-ion prices since 2012 will drive global use of energy storage over the next few years.

By 2025, the world’s base of cumulative installed storage capacity will reach 52 GW, up from about 4 GW today. In 2016, 1.3 GW of grid-connected storage were deployed globally. The report forecasts 4.7 GW a year by 2020 and 8.8 GW annually by 2025.

More: [pv magazine](#)

## Perry Being Considered for Homeland Security Secretary

Bloomberg Politics reported that Energy Secretary Rick Perry is among the candidates being considered to replace John Kelly as secretary of Homeland Security, citing three people familiar with the deliberations.



Perry

Kelly became White House chief of staff on July 31, after President Trump fired Reince Preibus.

Perry did not comment on the rumor himself. “Secretary Perry is focused on the important mission of the Department of Energy,” said Robert Haus, DOE director of

public affairs. “He’s honored to be mentioned, but he loves what he’s doing.”

More: [Bloomberg Politics](#)

## Most States Have Adopted Energy Efficiency Policies

Thirty states and D.C. have adopted energy efficiency policies as of July, and seven of those created or updated energy efficiency standards in the past year, according to the Energy Information Administration.

Twenty-four states have adopted energy efficiency resource standards (EERS), which use either financial incentives or non-performance penalties to encourage energy efficiency and reduce electricity sales.

More: [U.S. Energy Information Administration](#)

## DOE Announces Unique \$7.8M Grant Program

The Energy Department’s Energy Efficiency and Renewable Energy Office last week announced a new, yearlong grant program that seeks to reduce barriers between investors and clean energy technology projects in need of funding.

Dubbed “Innovative Pathways,” the program awarded \$7.8 million to 10 different companies, whose projects range from developing a “matching engine” software platform for investors and developers, to enabling charities to fund climate change mitigation technologies.

“Normally when DOE addresses getting technologies to market, we put out calls for proposals for specific technology needs. This is different,” said Johanna Wolfson, director of EERE’s Technology to Market program. “This is really about redesigning the pathway, so that R&D dollars in the future have a better chance of seeing a return.”

More: [Greentech Media](#)

## EPA Urged to Keep Water Pollution Regs at Hearing

About 50 people — including Robert F. Kennedy Jr., president of the Waterkeeper Alliance — spoke during a public hearing last

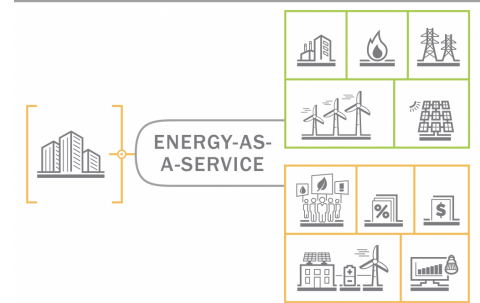
week at EPA headquarters to voice their strong opposition to Administrator Scott Pruitt’s decision to delay implementation of a 2015 rule setting tighter guidelines for power plant wastewater piped into rivers and lakes.

Many of the speakers said they traveled to D.C. for the hearing but expressed doubt their input would change Pruitt’s mind.

Pruitt acted at the behest of electric utilities who petitioned him earlier this year to redraft the rule, which they claim is too costly and burdensome.

More: [Associated Press](#)

## Report: Energy as a Service Market to Top \$220 Billion



*Edison Energy*

The annual global market for the deployment of turnkey energy as a service (EaaS) for commercial and industrial customers is expected to reach \$221.1 billion by 2026, according to a report from Navigant Research.

The EaaS market consists of third-party vendors, utility services companies and potential business model disruptors deploying niche technical, financing or procurement products and services, such as solar PV power purchase agreements, energy services performance contracts and deregulated electricity market retail brokerage services.

“The rise of distributed energy resources and utility business model disruption is giving utility customers new choices in how they reduce their energy use, greenhouse gas emissions, energy spend and risk,” said William Tokash, a senior research analyst with Navigant.

More: [Navigant Research](#)



Wolfson



# STATE BRIEFS

## MAINE

### Legislature Sustains Solar Bill Veto

The Legislature narrowly sustained Gov. Paul LePage's veto of a bill that would have temporarily kept in place current financial incentives for rooftop solar panels.

The veto override easily passed in the Senate, 28-6, but it failed in the House of Representatives, 88-48, falling three votes short of the two-thirds majority needed to override.

The bill initially had strong support in both chambers, but that faded in the House as Republican allies of the governor cast doubt about the bill's impact on electric customers, and even its constitutionality.

More: [Portland Press Herald](#)

## MICHIGAN

### PSC Holding Conference on Building EV Infrastructure

The Public Service Commission is holding a conference in Lansing on Aug. 9 to begin seeking ways to fund and build infrastructure to support electric vehicles.

The conference, which will pull together utilities, automakers, charging companies and clean energy groups, is the outcome of a rate case in which Consumers Energy proposed a \$15 million EV infrastructure plan, which would be the first in the state. The plan was opposed by commission staff, the attorney general, and a charging station developer, and Consumers Energy withdrew it.

Despite being the capital of the U.S. auto industry, the state is one of only 13 without incentives for purchasing EVs and ranks 41st for deploying all forms of alternative fuel vehicles, such as those powered by natural gas, according to Clean Fuels Michigan.

More: [Midwest Energy News](#)

## MINNESOTA

### Xcel Bringing LED Street Lights to Mankato

As part of initiatives by the city of Mankato and Xcel Energy, old-style bulbs in nearly 2,000 of the city's street lights will be

replaced by LED bulbs.

Xcel is converting about 300,000 street lights in its eight-state territory over the next three to four years. Converting all the Xcel-owned lights in Mankato-North Mankato is expected to take a month to five weeks.

More: [Mankato Free Press](#)

## NEBRASKA

### Regulators Block Testimony on Need for Keystone Pipeline's Oil

State regulators notified 25 landowners along the route of TransCanada's proposed Keystone XL pipeline that they will not be allowed to testify that the U.S. does not need the pipeline's oil at hearings this week to approve its route.

The Public Service Commission is charged with weighing whether the pipeline is in the public interest and will consider factors such as jobs, revenues and other issues impacting the local economy. TransCanada argued to the commission that arguments concerning the need for oil are beyond the scope of its consideration.

"There is simply no need for the Keystone XL pipeline based on the current market conditions, which even TransCanada has admitted," said Lorne Stockman, one of the landowners whose testimony was blocked. "It's no wonder they don't want me to testify."

More: [Reuters](#)

## NEW MEXICO

### Farmington Won't Protest PNM's Plan

The city of Farmington has announced that it won't file a protest with the Public Regulation Commission about Public Service Company of New Mexico's (PNM) integrated resource plan.

The plan calls for PNM to pull out of San Juan Generating Station in 2022 and not have any electricity produced by coal after 2031.

The city plans to work with state legislators, Four Corners Economic Development and other San Juan owners to try to keep the plant open after 2022.

More: [Farmington Daily Times](#)

## OHIO

### Lake Erie Wind Farm's Application Ruled Complete

The Power Siting Board has ruled that Lake Erie Wind Development Corp.'s (LEEDCo) application to build wind turbines in the lake is complete and a formal review — including hearings — will soon begin.

Before the review can start, however, LEEDCo's developer, Icebreaker Windpower, must send copies of the application to public libraries and local governments and explain how the public and municipalities can be involved in the case.

The turbines would comprise the world's first freshwater wind farm, a \$126 million demonstration project meant to show the turbines can withstand shifting lake ice and open the door to larger developments.

More: [The Plain Dealer](#)

## RHODE ISLAND

### EV Rebate Program Suspended After Funds Run out

The state's Office of Energy Resources has suspended a program that provided up to \$2,500 in rebates to residents who bought electric cars after funding ran out.

Launched in January 2016, Drive Rhode Island to Vehicle Electrification (DRIVE) provided \$575,000 in incentives to more than 250 customers and increased electric vehicle ownership in the state by 55%. The office said it is working to identify other sources for funding.

More: [Rhode Island Public Radio](#)

## TEXAS

### Iberdrola to Supply Wind Power to Austin

The city of Austin has agreed to purchase wind energy from Iberdrola for 15 years, the company announced.

Iberdrola will build a 200-MW wind farm at the cost of nearly \$300 million between 2018 and 2019. The company will select the wind farm's location over the next few weeks.

More: [Iberdrola](#)

# Day-ahead Prices Going Negative in CAISO

*Continued from page 1*

day-ahead market during about 10% of the hours in the 11 a.m. to 3 p.m. time frame during the first quarter. They also happened more frequently during weekends when electricity loads were lower.

Real-time prices also dipped frequently into negative territory during the quarter, occurring at about 10% of intervals in the 15-minute market and 13% of intervals in the five-minute market.

The negative pricing has become central to the debate around renewables in California, with some arguing that it is the result of a rush to integrate renewables without completely accounting for or understanding their impact on reliability and markets.

CAISO average energy prices decreased sharply in the first quarter, from about \$35/MWh in December 2016 to about \$23/

MWh in March. This coincided with increased renewable output and low loads, the Monitor said. Prices in the 15-minute market are consistently lower than day-ahead prices and moved in about the same direction and magnitude each month.

“On average, five-minute market prices in March were notably low at about \$17/MWh. This was the lowest average monthly five-minute market price during the past several years,” the Monitor said in the report.

CAISO also curtailed more renewable generation in the quarter, rising to a high in March of nearly 6%, compared with peak curtailment less than 3% a year earlier. Renewable curtailment rose above 80,000 MWh in both February and March, compared with less than 60,000 MWh in March 2016, according to ISO data.

During nearly all first-quarter intervals when prices were negative, the market

economically dispatched generation down and CAISO did not have to curtail self-scheduled generation.

Prices at times surged above \$750/MWh at certain times because of generator ramping limitations when solar resources rolled off the system at sunset.

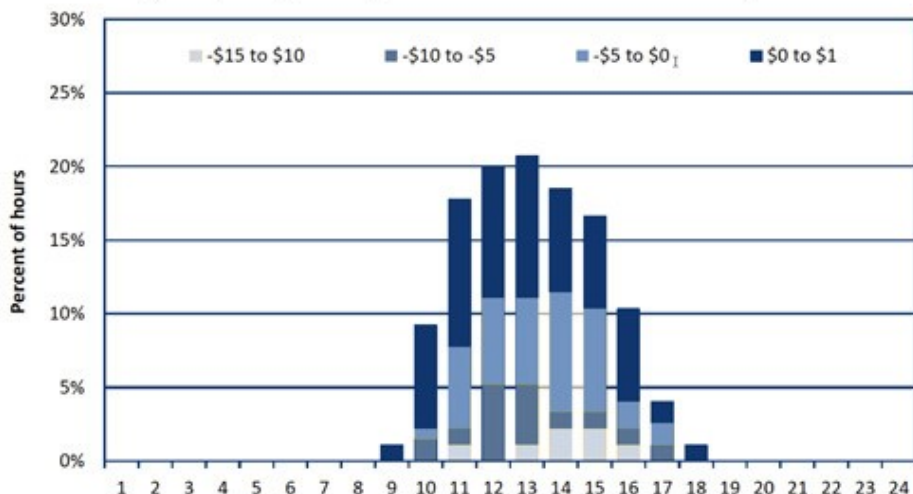
“During these intervals, steep increases in net load exceeded flexible ramping capacity procured through the flexible ramping product and required the power balance constraint to be relaxed because of insufficient available incremental energy,” the Monitor said.

Congestion in the Western Energy Imbalance Market (EIM) continued to isolate PacifiCorp-West (PACW) from CAISO and PacifiCorp-East (PACE), the Monitor said. This drove down prices in PACW and Puget Sound Energy compared with the ISO and the rest of the EIM.

Arizona Public Service and PSE joined the EIM in October 2016, adding new transfer capacity. This reduced congestion between APS, CAISO and PACE, the Monitor said. EIM market prices in the APS area were close to those in NV Energy, PACE and CAISO.

The Monitor earlier this month said that bid limits placed on PacifiCorp, NVE and APS are no longer needed because of increased transfer capacity in the EIM. (See [CAISO Monitor Says EIM Bid Limits No Longer Needed](#).)

The report reiterated the Monitor’s recommendation that the ISO’s congestion revenue rights auction be eliminated and replaced with a market or locational price swaps based on bids for CRRs. (See [CAISO Monitor Proposes End to Revenue Rights Auction](#).) CAISO is in the midst of an initiative to investigate the efficiency of the auction.



Hourly frequency of day-ahead prices | © RTO Insider

# FERC Quorum Restored as Powelson, Chatterjee Confirmed

*Continued from page 1*

day.

## Excitement, then a Nervous Wait

Powelson, a member of the Pennsylvania Public Utility Commission, and Chatterjee, senior energy policy adviser to Senate Majority Leader Mitch McConnell (R-Ky.), were included on the 1 p.m. Senate Executive Calendar Thursday. That set off a flurry of excitement in the offices of energy

lawyers and interest groups with issues before the commission.

Dan Brouillette, who had his confirmation hearing alongside the FERC nominees in May, was confirmed by the Senate as deputy secretary of energy shortly after noon. But doubts that Powelson and Chatterjee would win a vote before the Senate began its August recess grew later in the day. The upper house will not return until Sept. 5.

Sen. Lisa Murkowski (R-Alaska), chairwoman of the Senate energy panel, took the Senate podium at about 6:30 p.m. to request

a vote after a lengthy quorum call — when the Senate remained in session but no action was taking place on the floor. The nominees were confirmed by a unanimous voice vote.

Chatterjee, of Kentucky, will replace Tony Clark, whose term expired last Sept. 30. Powelson is replacing Philip Moeller, whose term expired in October 2015.

Murkowski called Chatterjee “an invaluable asset” to her and her committee staff.

*Continued on page 35*

# FERC Quorum Restored as Powelson, Chatterjee Confirmed

*Continued from page 34*

“Extremely committed and dedicated. And it’s just been a real pleasure to work with him,” Murkowski said on the floor after the vote. “I don’t know Mr. Powelson as well, but having had an opportunity to advance his name before the Energy committee for confirmation too, I know that the ... credentials that he will bring to the commission are greatly appreciated.”

Murkowski said restoring FERC’s quorum was essential to building new energy infrastructure. “In order to proceed with much of this, you have to have the FERC actually operating: Working to review the permits; working through the ratemaking cases. It is substantive work. It is challenging work. It is work that has now been stopped up for months and months. So knowing that FERC will be able to commence its operations again with a quorum is really good news today.”

## Backlog to Clear

Once the two are sworn in, the commission will be able to resume work on the hundreds of contested dockets that have languished since February, when Chairman Norman Bay resigned after Trump named Cheryl LaFleur acting chair. The commission typically does not meet in public in August. Its next open meeting is scheduled for Sept. 20.

With only LaFleur and Commissioner Colette Honorable, the commission lacked the three-member quorum required to issue most significant orders. LaFleur was left alone on the commission when Honorable left once her term expired June 30.

FERC staffers have been able to issue only delegated orders; contested dockets and rulemakings have been at a standstill. As a result, LaFleur said, FERC has issued only a fraction of the 100 commission-authorized orders it averages a month.

Glick would replace Honorable for a term expiring in June 2022. McIntyre would finish Bay’s term and be reappointed for a term expiring June 2023. (See [Trump Names Energy Lawyer McIntyre as FERC Chair.](#))

## Turnover

In an interview in May, LaFleur noted that the four new commissioners will represent the biggest turnover at the commission since at least 1993. LaFleur joined the panel



Pipeline protesters outside Sen. Chuck Schumer’s office last week | *Beyond Extreme Energy*

in July 2010. (See [LaFleur Braces for ‘FERC 2.0’ Under Trump.](#))

In addition to the backlog of routine but contested orders they must clear, the new commissioners also will have to deal with another series of federal-state jurisdictional issues — moves by policymakers in RTO states to subsidize in-state generation. (See [RTO Markets at Crossroads, Hobbled FERC Ponders Options.](#))

The confirmations were greeted with relief by many — but not all — stakeholders.

“Happy day!” tweeted LaFleur. “Very excited to work with new Commissioners Chatterjee and Powelson!”

Edison Electric Institute President Tom Kuhn said Chatterjee and Powelson “bring a wealth of experience and a strong commitment to public service.” Kuhn said EEI’s priorities for FERC are “improving the functioning and price formation in wholesale markets, updating the transmission planning process, streamlining the siting and permitting process, developing predictability for the return on equity (ROE) in order to attract investment, and ensuring reliability and energy grid security.”

“We appreciate the Senate’s action to confirm both Robert Powelson and Neil Chatterjee,” said Jim Matheson, CEO of the National Rural Electric Cooperative Association. “Restoring FERC’s quorum will allow the commission to move forward on

critical co-op issues such as access to a diverse power supply and the certification of natural gas pipelines.”

Advanced Energy Economy said it hoped the new commissioners will be receptive to “an energy system that encourages innovation and allows all technologies to compete fairly in wholesale markets while also respecting the right of states to set policy goals of their own.”

“We believe that market rules should not lock in old technologies at the expense of newer ones that can do more for less,” the group continued in a statement. “With a quorum restored at FERC and two more nominations pending, we look forward to working with the commissioners to remove all barriers to advanced energy technologies competing in wholesale electricity markets.”

Some environmental activists, however, would rather the commission remain unable to approve new interstate gas pipelines. (See [Pipeline Foes Like Hobbled FERC Just the Way it is.](#)) The activist coalition Beyond Extreme Energy said that two dozen protesters blockaded the front door at the D.C. office of Senate Minority Leader Chuck Schumer (D-N.Y.) Thursday, resulting in arrests. The protesters carried a banner asking Schumer to oppose the FERC nominees and the Energy and Natural Resources Act of 2017 (S 1460), which environmentalists have labeled the “Dirty Energy Bill.”

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## If You're not at the Table, You May be on the Menu

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