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Counterflow

By Steve Huntoon

Hydrogen Reality

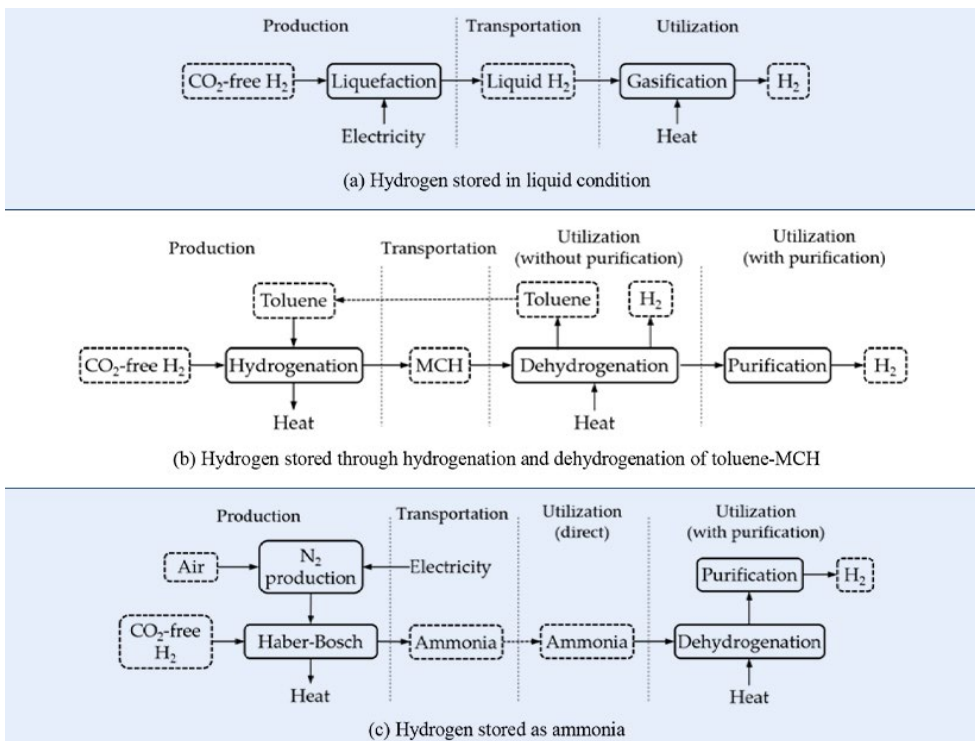
By Steve Huntoon

Hydrogen hasn't gotten this much publicity since the Hindenburg. And never more U.S. taxpayer money, now estimated at \$137 billion over the next 10 years.¹ And of course, federal policymakers waving wands over hydrogen, begging the question posed by The Lovin' Spoonful, "Do You Believe in Magic?"²



Here we'll cover some reality about hydrogen in the electricity sector.

- Hydrogen does not exist on Earth as a stand-alone atom. You have to make it by separating it from a molecule it is part of, like water or a fossil fuel.
- There are different ways of making hydrogen, and each way has been given its own color – nine and counting.³ I'm not going to get into the debates about grey hydrogen (from fossil fuels), blue hydrogen (from fossil fuels with carbon capture), or myriad other colors. Here we'll just talk about pure green hydrogen, from electrolysis of water using green electricity. Basically you use green electricity (from wind, solar, etc.) to separate the hydrogen and oxygen atoms that are in water molecules.
- Green hydrogen electricity is very inefficient. You need a supply of electricity (and ultrapure water⁴) for the electrolysis, a way to store and transport the hydrogen (or an intermediary carrier like ammonia), and then a generator to turn the hydrogen back into electricity. Essentially two round trips.
- The pure energy equivalence between electricity and hydrogen⁵ is 39.4 kWh to produce 1 kg of hydrogen, and the most efficient electrolysis technology is around 80%,⁶ so best case it takes 49.3 kWh to produce 1 kg of hydrogen. That creates the hydrogen. If the green source of electricity costs say \$30/MWh⁷, then with the most efficient electrolysis the hydrogen costs \$37.5/MWh equivalent.
- Now we need to store and transport the hydrogen.⁸ The most efficient storage and transportation method is probably converting hydrogen to ammonia, storing and trans-



Hydrogen routes (production, transportation and utilization) for each storage and transportation method | Muhammad Aziz, Takuya Oda, Takao Kashiwagi

- porting ammonia, and converting ammonia back to hydrogen.⁹ The round-trip efficiency is 34%.¹⁰ So that \$37.50/MWh hydrogen equivalent from the prior paragraph becomes \$110.30/MWh hydrogen equivalent from the ammonia round trip.
- Now we'll use this hydrogen to generate electricity. The most efficient turbine I can find for turning hydrogen back into electricity is the GE turbine 9F.04 in the 1x1 combined cycle configuration at 443 MW, which GE's calculator says would require 22,307 kg/hour,¹¹ which converts on a pure energy basis to 879 MWh,¹² for a conversion loss of 50% (output of 443 MWh divided by input of 879 MWh). So if the cost of the hydrogen input is \$110.30/MWh, the cost of the converted electricity output is \$220.60/MWh. Thus, the initial \$30/MWh electricity supply we started with has a delivered electricity cost of \$220.60/MWh.
- Just so we're clear, \$30/MWh green electricity becomes \$220.60/MWh green electricity, a cost increase of 735%. Put another way, it would take 7 MWh of green electricity at the source to end up with 1 MWh of green electricity delivered to consumers.¹³ So for every 1 MWh used, 6 MWh

- are wasted.
- The foregoing is just about the energy conversion losses. The capital and non-fuel operating costs of the water purifier, electrolyzer, storage, transportation and generation facilities are extra. And those costs are, to use a technical term, ginormous.
- Oh, if you've been following hydrogen news you may note that the analysis I provide here is in terms of end-to-end MWh costs, whereas hydrogen costs are talked about in terms of \$/kg with a moonshot, aka "Hydrogen Shot," objective of getting green hydrogen's current cost of \$4-6/kg down to \$1/kg.¹⁴ I doubt that's realistic but in any event it's largely irrelevant to green hydrogen electricity. The dollar per kg cost is cost at the outlet of the electrolyzer, before the losses and other costs of storage, transportation and generation. What really matters for green hydrogen electricity is the cost per MWh you start with and the cost per MWh you end with.
- By the way, few gas turbine models can burn 100% hydrogen, and many turbine models are limited to hydrogen percentages like 5%, 15% and 30%.¹⁵ Since thousands of gas turbines are supplied by dozens of major

Counterflow

By Steve Huntoon

interstate gas pipelines, it begs the question of how various custom hydrogen-natural gas blends would be mixed, stored and transported across the country. And that still leaves the carbon emissions from the natural gas in the blended stream — if carbon capture were economic for that then it would be economic without using any of the incredibly expensive hydrogen.

11. By the way, blending hydrogen into existing natural gas systems for transportation is unrealistic (as are total conversions). Not only are there many physical incompatibility issues, such as those the National Renewable Energy Laboratory has

described,¹⁶ but hydrogen requires three times the volume for the same energy content as natural gas,¹⁷ so blending hydrogen reduces the amount of energy transported (and stored via line pack).¹⁸ And millions of end-use appliances served by a given pipeline are incompatible with a hydrogen blend above 20-30%¹⁹ which means either: (1) the dominant natural gas supply would continue to create carbon emissions (or be wasted), or (2) there would need to be a one-time total conversion to hydrogen entailing modifications/replacements of all these appliances at the same time. Good luck with those options.

12. And one more thing. Notwithstanding the Department of Energy's claim that its recently announced "hydrogen hubs" will "slash harmful emissions,"²⁰ green hydrogen electricity creates more NOx emissions than natural gas electricity. As much as twice for equivalent energy content.²¹ This does not mesh with public health and environmental justice concerns.

We don't have the money or the time to waste on green hydrogen electricity. ■

Columnist Steve Huntoon, principal of Energy Counsel LLP, and a former president of the Energy Bar Association, has been practicing energy law for more than 30 years.

¹ <https://about.bnef.com/blog/hydrogen-subsidies-skyrocket-to-280-billion-with-us-in-the-lead/>

² <https://www.youtube.com/watch?v=b8qZ4qzDICg>.

³ <https://www.nationalgrid.com/stories/energy-explained/hydrogen-colour-spectrum>

⁴ Electrolysis requires 9 kg of ultrapure water for every kg of hydrogen. A discussion of water supply requirements for electrolysis is here, <https://hydrogentechworld.com/water-treatment-for-green-hydrogen-what-you-need-to-know>.

⁵ <https://www.sciencedirect.com/science/article/pii/S2666821121000880>, section 2.1.

⁶ <https://op.europa.eu/en/publication-detail/-/publication/c4000448-b84d-11eb-8aca-01aa75ed71a1>, Table 2-A. Of note, the most efficient electrolysis technology appears to have the shortest lifetime.

⁷ This sample \$30/MWh is a somewhat optimistic take on the ranges of levelized costs of renewable energy sources presented by Lazard, <https://www.lazard.com/media/20zoovyg/lazards-lcoepus-april-2023.pdf>, slide 3.

⁸ Storage and transportation are necessary because all green electricity that could be used as electricity as generated should not involve hydrogen at all. Projects that would involve diverting grid-connected green electricity generation into hydrogen production, rather than simply consuming the green electricity as generated, make no sense.

⁹ <https://www.sciencedirect.com/science/article/pii/S1876610219308677> (download the pdf for the full article).

¹⁰ Prior source, Figure 1(c) and Table 2.

¹¹ <https://www.ge.com/gas-power/future-of-energy/hydrogen-fueled-gas-turbines/hydrogen-calculator>.

¹² <https://www.sciencedirect.com/science/article/pii/S2666821121000880>, section 2.1 (39.4 kWh per kg).

¹³ There are unusual situations where this analysis may not apply, such as where the green electricity source would otherwise be curtailed and efficient storage like salt caverns is available.

¹⁴ https://liftoff.energy.gov/wp-content/uploads/2023/05/20230321-H2-Pathways-to-Commercial-Liftoff-Webinar-vF_web.pdf

¹⁵ https://www.ge.com/content/dam/gepower-new/global/en_US/downloads/gas-new-site/resources/GEA33861%20Power%20to%20Gas%20-%20Hydrogen%20for%20Power%20Generation.pdf, page 12.

¹⁶ <https://www.nrel.gov/docs/fy23osti/81704.pdf>

¹⁷ https://www.ge.com/content/dam/gepower-new/global/en_US/downloads/gas-new-site/resources/GEA33861%20Power%20to%20Gas%20-%20Hydrogen%20for%20Power%20Generation.pdf, page 10.

¹⁸ <https://www.nrel.gov/docs/fy23osti/81704.pdf>. NREL points out (page 14) that it may be possible to compensate for lower energy content with increased flow via higher pressure, however higher pressure would be inconsistent with the lower pressure likely needed for steel integrity.

¹⁹ NREL study, pages 37-39.

²⁰ <https://www.energy.gov/articles/biden-harris-administration-announces-7-billion-americas-first-clean-hydrogen-hubs-driving>.

²¹ https://www.ge.com/content/dam/gepower-new/global/en_US/downloads/gas-new-site/future-of-energy/hydrogen-for-power-gen-gea34805.pdf, page 14.

FERC/Federal News



Solar Developers Sing Mid-Atlantic Interconnection Blues

Stymied by PJM, Companies Shift Focus to Distribution-level Solutions

By K Kaufmann

BALTIMORE, Md. — Some solar companies in the Mid-Atlantic have stopped looking for sites for utility-scale installations in the region due to the current backlog of renewable energy projects in PJM's interconnection queue, according to Steve Swern, senior director for generator interconnection at Sol Systems, a Washington, D.C.-based developer.

The RTO is not expected to clear that backlog and start reviewing new applications possibly until 2026, Swern said Nov. 16 during a panel discussion on interconnection at the Solar Focus conference hosted by the Chesapeake Solar and Storage Association (CHESSA). "So how do I tell a corporate off-taker that, sure, we can site a project for you to deliver renewable energy in PJM. Is a [commercial operation date] by 2030 OK?"

A regional trade association, CHESSA's members primarily are solar and storage developers in D.C., Maryland and Virginia — all in PJM's 13-state service territory — so for companies like Sol Systems to keep putting steel in the ground, they've had to refocus on projects that

can interconnect to local distribution systems, Swern said.

The company intends to move ahead with projects it already has in the PJM queue, but "is approaching utilities — transmission utilities, distribution utilities — to really push the envelope of how big can we build, what clients can we connect to, without involving the scrutiny, the oversight and the jurisdiction from the RTO," Swern said.

Getting more solar on the grid is a critical issue in D.C., Maryland and Virginia, each of which has set ambitious targets for running their respective electric systems on 100% clean power — by 2032 in D.C., 2035 in Maryland and 2050 for Virginia.

But reaching those goals likely will mean being able to import clean power from PJM. The nation's capital, for example, has minimal generation within its 68 square miles, seven of which are water. PJM has warned Maryland of potential rolling blackouts if one of the state's remaining coal plants, the 1,238-MW Brandon Shores generating station, is taken offline in 2025, as currently planned.

According to figures from PJM, its power mix is

still more than 60% fossil fuels. On the carbon-free side, in 2022, nuclear accounted for about one-third of the RTO's generation fuel mix, but wind and solar together stood at 4.9%. At the same time, solar, wind and storage make up almost all of the over 300 GW of projects in PJM's interconnection queue, as reported by the *Lawrence Berkeley Laboratory*.

The grid operator is working on a Regional Transmission Expansion Plan aimed at adding the capacity needed for new renewables or other power that will replace retiring coal plants. Like Swern, James Mirabile, the principal engineer for interconnection at Baltimore Gas and Electric (BGE), said getting renewables interconnected on distribution systems is an easier lift. In 2022, BGE had 91 projects totaling 139 MW in its interconnection queue, 35 MW of which went online that year. This year, to date, the queue has 87 projects totaling 165 MW and has interconnected 27 GW, he said.

For BGE and other Maryland utilities, the process for getting those projects online is "very highly regulated," Mirabile said, and the state's Public Service Commission has set up an interconnection working group charged with updating the rules.

The most recent update will go into effect Jan. 1, 2024, when all renewable projects will be required to use smart inverters with settings "that include a volt-var curve instead of a fixed power factor," said Mirabile, who is a member of the working group. Such updated settings provide a flexible way for inverters to react dynamically to variations in voltage on the system, which can occur as more renewables come online, Mirabile said in an email to *RTO Insider*.

BGE and four other utilities have submitted the smart inverter settings they will require for projects to the PSC, which approved the *proposed settings* on Nov. 21.

The working group also has sent recommendations to the commission to reform cost allocation for distribution system upgrades, Mirabile said. Traditionally, when a project requires a distribution system upgrade for interconnection, the project developer carries the full cost.

The working group is proposing a model where the project developer is allocated part of the cost, with the remainder "spread across future interconnecting customers," he said. If



Talking interconnection at the Solar Focus conference in Baltimore were (from left) James Mirabile, BGE; Steve Swern, Sol Systems; Bahaa Seireg, ACP, and moderator Stephanie Johnson, CHESSA. | © RTO Insider LLC

FERC/Federal News



approved, the proposed update would be “a major change in the way we price jobs.”

The Aggregation Work-around

The backed-up interconnection queues at PJM and other RTOs and ISOs across the country are rooted in the wave of renewable projects seeking interconnection on systems that were “set up in such a way to not handle a large influx,” Swern said.

Approved in July, FERC’s Order 2023 (RM22-14) is aimed at pushing grid operators toward some basic structural changes, such as doing cluster studies of projects seeking interconnection rather than on a case-by-case basis and attempting to weed out speculative projects by upping financial requirements for developers. (See [FERC Updates Interconnection Queue Process with Order 2023](#).)

But implementation of the order is on hold as FERC considers multiple requests for a rehearing on the rule.

FERC previously approved reforms PJM had proposed to its interconnection process, similar to Order 2023 — cluster studies and stricter financial requirements — which the RTO rolled out in July. According to Susan Buehler, PJM’s chief communications officer, 40,000 MW of projects have been approved but not yet built.

Bahaa Seireg, senior director of energy storage at the American Clean Power (ACP) Association, said utility-scale energy storage projects are caught in the same slow interconnection queues. While an increasing number of states, including Maryland, have set targets for adding

energy storage projects to the grid, Seireg said, it can take five years to work through transmission-level interconnection processes at an RTO or ISO.

In May, Gov. Wes Moore (D) signed a law setting a goal for the state to have 3,000 MW of storage online by the end of 2033.

Seireg sees a possible workaround for the interconnection problem in aggregation that breaks down the traditional divide between distribution and transmission. “Now, you can actually interconnect [solar and storage] to the distribution grid and aggregate resources ... add them to distribution substations, aggregate them and bid them into the wholesale market,” he said.

“That allows for some temporary reprieve from PJM,” he said.

Sol Systems sees another “prime opportunity” for getting projects interconnected quickly at municipal utilities and electric cooperatives. These smaller, nonprofit utilities often are unregulated and “have a lot of flexibility in the decisions they make, in the projects they move forward and how costs are allocated,” Swern said.

He also pointed to grid-enhancing technologies — such as advanced conductors and dynamic line ratings — as another option for maximizing the capacity of existing lines. “These are very low-cost solutions that help give grid operators higher granularity to thermal capacity of wires in a very specific location, [which] allows projects to operate ... at full bore without being curtailed,” he said.

The Information Gap

But the panelists all see major gaps in the information developers need to site and design projects that can get interconnected as quickly as possible.

“Where we see a major stumbling block for interconnection is the quality of data, the existence of the data and the ability to use that to make informed decisions,” Swern said. In some cases, just figuring out where transformers are located means sending out trucks to map an area, he said.

Some utilities now have online “hosting capacity” maps, showing what lines in their service territories have excess capacity, but Swern said, not all maps are created equal. “Some of them just give you a color-coded map; some of them actually allow you to click on the feeder itself and see what’s the ability to connect [distributed energy resources]; some you can get a load profile ... for the past two years,” he said.

At BGE, the best way for a developer to check out the available capacity of distribution lines at a site is to contact Mirabile directly, and he will do a pre-application analysis, he said. It’s reliable but not self-service, he admitted.

Swern sees a more fundamental obstacle to interconnection in the misalignment of “spheres of control ... or jurisdiction.” Federal, state, county and local governments all “have specific targets, mandates, goals for deploying renewables or retiring fossil assets ... and there isn’t a good way to align all of those different things.” ■

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FERC/Federal News



Overheard at CHESSA Solar Focus Conference

Getting to 100% Clean Energy Will be Hard, Uncomfortable but Doable, Speakers Say

By K Kaufmann

BALTIMORE, Md. — Maryland officials like to point out the state now has the country's most ambitious greenhouse gas emissions reduction goal — 60% by 2031 — and is also aiming for 100% clean power by 2035, with 14.5% coming from in-state solar.

Hitting those targets is doable, but hard, they say.

"It's going to be incredibly complicated," said Josh Tulkin, director of the Maryland Sierra Club, speaking at the Solar Focus conference sponsored by the Chesapeake Solar and Storage Association (CHESSA) on Nov. 16. "There's a desire to often say because we have to do it, let's also make it sound super easy. It won't be super easy. We have 100 years of ... using one particular system weighted toward a particular type of power generation."

"There's a lot of hard stuff we've got to face," agreed Del. Lorig Charkoudian (D). "If we roll up our sleeves, we can do it, but it does mean we have to be willing to acknowledge the challenges along the way and be willing to be creative and be willing to sit down a lot of times with folks that we're not usually sitting down with to sort through and find solutions together."

As detailed in panel discussions at the conference, the obstacles to a decarbonized electric system include the siting and permitting problems many solar developers face, Maryland's dependence on out-of-state wholesale power — still about 60% fossil fuels — and the need for grid modernization to interconnect the clean power coming online.

On the plus side are Maryland's Democratic Gov. Wes Moore and Democratic control of both houses in the General Assembly, as well as a new Democratic majority on the state's Public Service Commission.

But, Charkoudian cautioned, having political majorities may not translate into the policies or the market forces the state will need.

"Markets are ... not real things in and of themselves," she said. "They are things we created from policy; so, whatever we want the market to do, we can make the market do. So, if we're saying the market's not working, it's our fault, our policy and results."

The bigger question for Charkoudian is not



At the recent Solar Focus conference, (from left) moderator Charles Washington, BGE; Josh Tulkin, Maryland Sierra Club; Del. Lorig Charkoudian (D); and Kristen Harbeson, Maryland League of Conservation Voters, tackle how the state will achieve its goal of having a 100% clean energy power system by 2035. | © RTO Insider LLC

if, but "how do we get [to 100%]? ... How do we set up the market so there's a regulatory framework that allows us to get there?"

Kristen Harbeson, political director of the Maryland League of Conservation Voters, said that incorporating environmental justice strategies into policymaking from the start will be critical and likely uncomfortable for many. Like Charkoudian, Harbeson called for expanding the stakeholder voices sitting at the tables where legislative and regulatory priorities are set and compromises forged.

"Even if your table is full ... figure out who's not at the table, who needs to be at the table, making sure any community that your project or your effort touches is being engaged," she said.

"If you're comfortable, you're probably not doing it right," Harbeson said. "You need to be ready to be uncomfortable because progress happens in the space between discomfort and sheer panic."

Community Solar

Maryland's Climate Solutions Now Act (CSNA), passed in 2022, set the 60% emissions reduction goal. As mandated in the law, the Department of the Environment will roll out its implementation plan before the end of the year. Speaking at a conference in October, Environment Secretary Serena McIlwain hinted the plan would focus on transportation, buildings and exploring options for expanding renewable energy. (See *Chasing Goals, Facing*

Obstacles at Md. Clean Energy Summit.)

In Maryland, policymakers and project developers appear to be focusing on in-state initiatives, aimed at growing the local solar market, as they wait for PJM to clear its backlog of utility-scale solar and storage projects, which could take until 2026. (See *Solar Developers Sing Mid-Atlantic Interconnection Blues.*)

The state imports about 40% of its power through PJM, according to the *U.S. Energy Information Administration*.

Maryland is behind on its efforts to reach the 14.5% solar target, according to former state Sen. Paul Pinsky, sponsor of the CSNA and now director of the Maryland Energy Administration. The passage of H.B. 908 in April, making Maryland's community solar pilot program permanent, could help the state make up lost ground, he said, speaking at the two-day Solar Focus conference on Nov. 15.

Del. Luke Clippinger (D), a sponsor of H.B. 908, sees the law as a first step. Making the program permanent has raised public interest in community solar, which could in turn lead to "creative opportunities for businesses and nonprofits to come together and work with individual neighborhoods and work with individual communities so that we can expand this program, especially in low- and moderate-income communities across the state," Clippinger said.

The law requires that 40% of the output of

FERC/Federal News



community solar projects in the state goes to low- and moderate-income subscribers.

“The greatest potential for expanding the growth in renewable energy is in our low- and moderate-income population because they don’t generally have the ability to do this otherwise,” he said.

V2G, VPPs and TOU



Del. David Fraser-Hidalgo (D) previews the DRIVE Act, aimed at promoting virtual power plants in Maryland. | © RTO Insider LLC

Looking toward the 2024 legislative session beginning in January, Del. David Fraser-Hidalgo (D) is working on a new bill to promote the development of residential solar and storage, electric vehicle-to-grid (V2G) systems and virtual power plants (VPPs).

The Distributed Renewable Integration and Vehicle Electrification (DRIVE) Act will “encourage the PSC to craft incentives and reduce barriers for consumers hoping to participate in V2G charging and those who wish to

participate in a VPP,” Fraser-Hidalgo said in an email to *RTO Insider*.

The PSC will also be authorized “to identify the most cost-effective way to roll out VPPs in coordination with FERC, PJM and other stakeholders” and to explore the introduction of default time-of-use rates at a future, not-yet-determined date, he said.

With V2G, an electric vehicle’s battery can be tapped to put power on the grid at a time of emergency or high demand. Similarly, VPPs are combinations of distributed energy resources – such as solar and storage – that either can connect to the grid when needed or operate off-grid in emergencies to keep the power on at community centers, hospitals or other critical facilities.

Time-of-use rates provide price signals to consumers to manage their energy use by charging increased rates during times of peak demand and lower rates in off-peak hours.

Previewing the bill at Solar Focus, Fraser-Hidalgo said the DRIVE Act would use a term like “discounted rates” rather than time-of-use. “I think everybody [at the conference] probably knows what time-of-use is ... but when you’re trying to get people to change behavior,

probably something like discounted rates makes a lot more sense.”

The bill aims to address questions about “how do we work with utilities and how do we diversify where we get electricity from, how we store electricity and how we distribute electricity,” he said, while also creating “a lot of resilience and redundancy we currently do not have.”

Charkoudian agrees that distributed resources, like V2G and VPPs, will be “a huge piece” of Maryland’s march to 100% clean energy, but she cautions that policy, regulation, technology and markets have to be aligned. “Storage is a perfect example of the mismatch,” she said.

“Precisely because storage can do so much ... it’s not just generation and it’s not just ancillary services; it’s not just a balancing of load; but [because] it’s all those things ... none of the markets really work for it,” she said.

“We’ve got to find a way to get the conversation happening in a way that allows us to really head in the right direction or else we could have all the technology, all the brilliant people and not get our policies right and miss the opportunity,” she said. ■

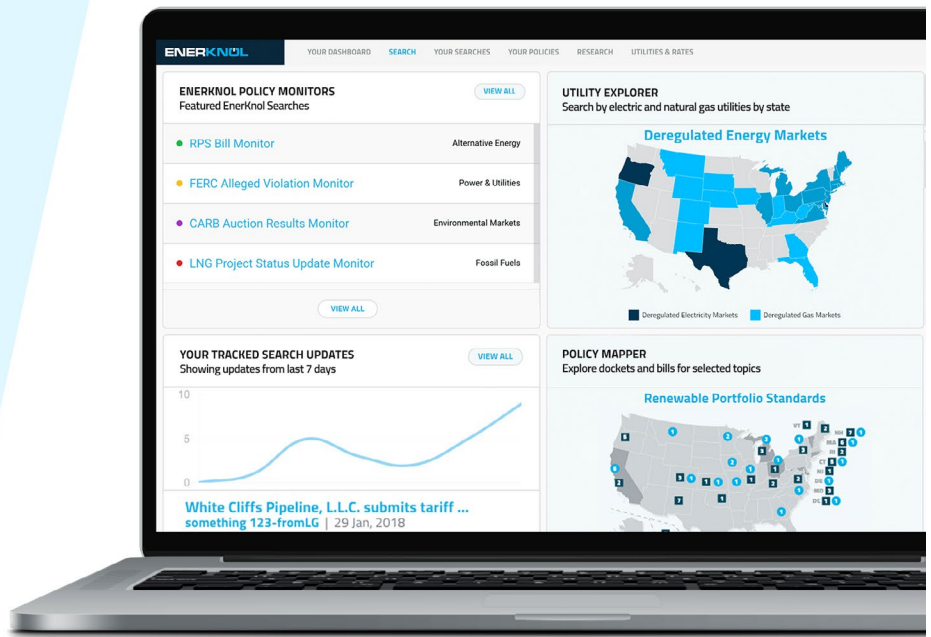
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ERCOT News



Overheard at 20th Texas Energy Summit

Population Growth Increasing State's Demand for Energy

By Tom Kleckner

AUSTIN, Texas — The 20th Texas Energy Summit, organized by the Texas A&M University System's *Energy Systems Laboratory*, again focused on the intersection of air quality and energy, with sessions on energy management, renewable energy, storage, zero-emission fleets, sustainability and resiliency during the Nov. 14-16 event.

Attendees explored policies and programs that improve the environment, advance new technologies, reduce costs and waste, and foster economic development.

Not that Texas needs to foster economic development. It already has the eighth largest economy by GDP in the world (\$2.36 trillion), having passed Italy last year. The state's economy is expected to overtake France's within the decade, Texas Association of Business CEO Glenn Hamer said.

Texas' lax regulatory environment and cheap labor have attracted much of that business. That, in turn, has led to a staggering population increase, putting a strain on the state's infrastructure. [Citing employment data](#) from the state and national sources, Texas says it led all 50 states in job creation over the past 12 months, adding more than 391,000 jobs to a workforce that now numbers a record 15.16 million. The 2.9% growth rate is better than the national average of 1.9%.

"Not only do we have, depending on who you talk to, anywhere from 1,000 to 1,200 people moving to Texas every day, but nobody's bringing water with them or more power," said Kathleen Jackson, interim chair of the Texas Public Utility Commission.

"Customer demand is increasing very quickly. We're seeing industrial growth, huge industrial growth," said Warren Lasher, who opened an eponymous consulting firm when he left ERCOT two years ago.

He chose Samsung's "monster" \$17 billion [semiconductor lab](#) being built in Taylor, not far from ERCOT's lead operations center, as an example of that growth. The 1,200-acre site is twice as large as Samsung's flagship facility in South Korea.

"And then we've got the Tesla [Gigafactory in Austin]. We've got LNG facilities being built along the coast. We've got industrial growth in



From left: Oncor's David Treichler, Cypress Creek's Matthew Crosby and consultant Warren Lasher debate the need for more transmission. | © RTO Insider LLC

the Corpus and Houston ship channel, just between Austin and Dallas. There's an enormous amount of increased industrial demand data centers. "And then if you look down the road, electric vehicles coming online, potentially hydrogen facilities, more LNG facilities."

Lasher, who handled system planning for much of his 17 years at ERCOT, said the answer is more transmission.

Jackson chose a different direction, referring to energy efficiency as "the little black dress."

"It goes with everything," she said, including manufacturing, residential and small business. "So, as we move forward in Texas, I think we're very, very well-positioned to be able to do things here that we can't do anywhere else in the nation or maybe even the world. We're growing, we have a competitive market that actually promotes innovation. I'm really excited about where we are today."

An audience member asked Jackson whether Texas would accept federal funding for a rebate program that compensates Texans who retrofit their homes with energy efficient appliances. Florida, a state that, like Texas, is sometimes allergic to the federal government,

recently rejected the grant and with it, access to \$341 million the Inflation Reduction Act allotted to fund the program.

Jackson paused for a moment before responding to the question.

"I'm advocating for energy efficiency, for demand response and for using the resources that we have," she said. "There are so many things involved in that particular decision as to whether you [think] that particular financing is appropriate for Texas. In my personal viewpoint, we have many resources here already that we can really pull together and we can use to move forward and make a difference."

Continued Focus on Gas Resources

Texas politicians have been focused on dispatchable power from thermal resources since the disastrous and deadly February 2021 winter storm, despite the fact those very resources were unable to access fuel during the event and became part of the problem. This year's legislative session responded with the Texas Energy Fund (TEF), a \$7.2 billion low-interest loan program intended for the development of up to 10 GW of natural gas plants that voters

ERCOT News



approved Nov. 7. (See [2023 Elections Bring Billions for Texas Gas, Dem Wins in Virginia, NJ.](#))



State Sen. Nathan Johnson | © RTO Insider LLC

“There’s a couple of different ways you can approach [dispatchable power]. One is from the demand side and the other is the consumption side,” Democratic State Sen. Nathan Johnson said. “On the demand side, we did what government

often does well, sometimes poorly, and that is subsidize.

“The side that was neglected largely, but not completely, was the demand side. The fastest way to have extra power is to not use it, right? Don’t bake cookies at 5:30 when the grid is about to go down,” he said, alluding to the conservation notices that have become a part of ERCOT’s summer operations.

“We got notes and everybody got mad about it, because we’re so used to having a surplus of electricity,” Johnson said.

Asked why energy conservation isn’t one of the tools in the state’s toolkit, he said, “It’s not politically popular. But to think that the solution would be to spend money making systems more efficient or spend money to reward customers for not losing electricity just doesn’t have the same political punch as the other.”

Johnson did manage to add \$1B to the TEF bill to set up microgrids at critical facilities, such as hospitals and fire states.

“If the grid goes down, you do not want nursing homes, water towers, water treatment facilities, law enforcement, hospitals, grocery stores, you don’t want those things to be without power,” he said. “We’ve created a plan where we’re going to subsidize the purchase by municipal entities and small private businesses that control vital systems to deploy these backup power systems that will give them power for a couple of days while we fix the grid.”

CPS Puts GRIP Grant to Good Use

CPS Energy CEO Rudy Garza celebrated his utility’s award of a \$30 million grant from the U.S. Department of Energy’s Grid Resilience and Innovation Partnerships (GRIP) Program. He said he was proud CPS was the only Texas utility to receive a GRIP grant and one of the largest utility awards nationally. (See [DOE Announces \\$3.46B for Grid Resilience, Improvement Projects.](#))

“Finding revenue that doesn’t have to come from our ratepayers is really, really important to us,” he said, noting the funds will be used to install batteries and solar panels at substations. Garza said CPS has chosen three substations on the east side of the city “where a lot of our low-moderate income customers are.”

“We’re thinking about underserved communi-

ties, we’re thinking about how [energy burdens] customers and how to continue to protect those folks,” Garza said. “We’re going to put this technology there so that in the event that we’re in a load-shed moment, that we’ll be able to keep those particular substations on and learn how to make our systems more resilient. I think we’re going to learn a lot from it and I think it’ll create opportunities for [DOE] going forward.”

He recalled sitting in the DOE offices with San Antonio Mayor Ron Nirenberg and CPS Board of Trustees Chair Janie Martinez Gonzalez. Garza said the trio told the department it was going to improve the substations anyway.

“Partnering with the DOE allows us to bring those costs down and make them more affordable for our customers,” he said. “I think that was a message, quite frankly, that resonated with the Department of Energy.”

Can Transmission ICs Keep Up with Growth?

One thing in Texas’ favor in addressing skyrocketing growth is ERCOT’s ability to quickly interconnect new resources. Whereas the process can take up to 10 years or more in some regions, it can take as little as five or six years in the Lone Star State.

“Unlike other markets, aside from the transmission planning challenges, the interconnection process is tremendously faster and it is also much more [transparent] about when we’re actually going to get online,” Cypress Creek Renewables’ Matthew Crosby said. “We take the risk with [generic transmission constraints] popping up in markets where we might not have anticipated other generation was going to locate, or where load was going to locate. But that’s the risk that we’re willing to take to be able to have more certainty, because that certainty is really valuable for our customers.”

David Treichler, director of strategy and technology for Oncor, said the utility had been spending about \$1 billion a year hooking up new customers. Oncor now is adding between 60,000 and 70,000 new meters every year, with costs approaching \$3.25 billion when 2023 is up.

“We try to get people connected as quickly as possible, but we’re also trying to identify places where we need to build new transmission that will serve the areas that [renewable developers] are looking at,” he said. “We work very collaboratively with the people who are developing generations to try to make sure that we have the lines in the right place.” ■



CPS Energy CEO Rudy Garza (left), with moderator Doug Lewin, Stoic Energy, explains the utility’s future plans. | © RTO Insider LLC

ISO-NE News

ISO-NE Updates Longer-Term Tx Planning Proposal

By Jon Lamson

ISO-NE has provided additional information on the second phase of its Longer-Term Transmission Planning project, which is intended to facilitate transmission investments to meet the states' policy goals.

The *presentation* at the NEPOOL Transmission Committee (TC) on Nov. 21 expanded upon a high-level *overview* of the project at the October TC. (See *ISO-NE Provides More Detail on Order 2023 Compliance*.)

The proposal would enable the New England States Committee on Electricity (NESCOE) to direct ISO-NE to issue a request for proposals (RFP) to address concerns identified in a longer-term transmission study (LTTS). After soliciting proposals, ISO-NE will consider stakeholder input and select a preferred solution to solve the identified issue.

Following ISO-NE's selection of a solution, NESCOE will have 30 days to either accept the default regionalized cost allocation methodology, propose a new methodology or terminate the process.

"If a different cost allocation method is selected, the costs needed to address the reliability and/or market efficiency needs will be regionalized, while the additional costs to address the longer-term needs are subject to the alternative cost allocation methodology," Brent Oberlin of ISO-NE said.

At the October TC meeting, ISO-NE said it's considering assigning some projects to incumbent transmission owners, instead of going



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through the RFP process. However, following mixed feedback from stakeholders, ISO-NE proposes to abandon this aspect of the project.

"The ISO is concerned that further work on this concept will delay the Phase 2 effort and understands NESCOE's interest in establishing this process without delay," Oberlin said.

Oberlin also clarified that the LTTS process will be separate from the RTO's public policy process, which exists to fulfill transmission needs associated with state, federal and local policy requirements.

ISO-NE will respond to feedback and introduce the initial proposed tariff redlines at the Dec. 21 TC. ■

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MISO News

Wisconsin Gas Plant Delayed as Enviros Still Try to Block Project

By Amanda Durish Cook

The timeline for building the Nemadji Trail Energy Center (NTEC) in Wisconsin has been pushed into next year as clean energy groups continue to challenge the need for the planned gas-fired plant.

Minnesota Power, Dairyland Power Cooperative and Basin Electric Power Cooperative filed an *update* with the Public Service Commission of Wisconsin to report that onsite relocation work on the \$700 million plant in Superior, Wis., won't begin until April. Work was originally slated to begin in the third quarter of this year ([9698-CE-100](#)).

The utility and cooperatives now say the 625-MW NTEC won't reach commercial operation until 2028 — not March 2027, as anticipated in the last update in July.

Dairyland said the holdup is a result of permitting, litigation and supply chain delays. In an email to *RTO Insider*, Dairyland spokesperson Katie Thomson said delays could drive up the cost of the project and risk grid reliability.

NTEC still needs a wetland permit from the U.S. Army Corps of Engineers and a stormwater permit from the Wisconsin Department of Natural Resources.

The slowdown comes as the Sierra Club and Clean Wisconsin continue to argue that the plant is harmful and unnecessary.

The two environmental groups this year *asked* the Wisconsin PSC to reopen the docket and rescind its 2020 approval of the plant. They also appealed a 2022 decision on their lawsuit alleging that the PSC failed to consider the full environmental impact of the plant ([2020CV000585](#)).

Last year, Dane County Circuit Judge Jacob Frost upheld the regulators' approval of NTEC and said the PSC followed the law when issuing a certificate of public convenience and necessity, though he acknowledged the "massive impacts a major project of this nature holds for the state."

In its 2020 decision, the Wisconsin PSC concluded that renewable energy combined with battery storage was "not yet capable of replacing a plant of this size."

But the two groups argue that the planned construction of 489 MW in battery projects in Wisconsin will be complete a few years before NTEC is slated to begin running and is enough



Nemadji Trail Energy Center facility rendering | Minnesota Power, Dairyland Power Cooperative and Basin Electric Power Cooperative

to negate the need for the plant.

They also continue to insist that the utility and cooperatives didn't sufficiently analyze alternatives before settling on the gas plant. The groups maintain the cooperatives should instead pursue some of the \$9.7 billion in federal funding available through the Inflation Reduction Act to help rural electric cooperatives transition from fossil fuels to renewable generation.

The groups say customers will be paying to recover the costs for NTEC at least into the 2050s, past the end date of most net-zero carbon pledges.

This year, Clean Wisconsin attorney Brett Korte said the PSC has a chance to reconsider the plant "to protect ratepayers and the environment by recognizing that the energy landscape has fundamentally changed since 2020."

"This plant was always a bad investment, but it would be incredibly unwise to leave so much money on the table and stubbornly stick with fossil fuels that are going to harm communities and the environment in Wisconsin. The new federal funding really is a game changer, and Wisconsin should do everything it can to capitalize on the opportunities it presents," Korte said.

Superior Mayor Jim Paine has changed his

tune on the plant, saying it's no longer needed. In a July letter commenting on a revised supplemental environmental assessment by the Department of Agriculture's Rural Utilities Services, Paine said his "change of heart, mind and spirit" boils down to Dairyland's acquisition of the 503-MW RockGen Energy Center gas plant in 2021, the ramp-up of renewable energy and energy storage, and a belief that the NTEC site is ill-suited for industrial development.

Construction will require the developers to fill in about 20 acres of wetlands on the banks of the Nemadji River. It would also be located near indigenous mass burial grounds.

The Sierra Club said NTEC would be located "at the top of a steep slope with a historically high risk of erosion, potentially causing stormwater runoff." The group pointed out that the utilities estimate they will have to pump almost three million gallons of water daily to operate the plant, close to the total daily water usage of the City of Superior itself.

Four of the Superior City Council's 10 members — Nicholas Ledin, Jenny Van Sickle, Garner Moffat and Ruth Ludwig — also submitted letters of opposition. The council passed a resolution in favor of the plant in 2019.

Dairyland Says Plant is Crucial

Dairyland insists the plant is necessary to fill

MISO News

lulls in renewable energy output, delivering a bridge to a zero-carbon future. It also said the plant could be retrofitted to operate on up to 30% hydrogen.

“Today, there are not commercially available, utility-scale long-term battery storage technologies on the market to meet current and anticipated energy requirements,” Thomson said. “Currently, battery storage simply does not have the ability to replace the 24/7 power generated by power plants. A battery supplies energy measured in hours between charges, whereas a power plant supplies reliable energy for days, weeks or even months when wind and solar are unable to meet the demand for electricity.”

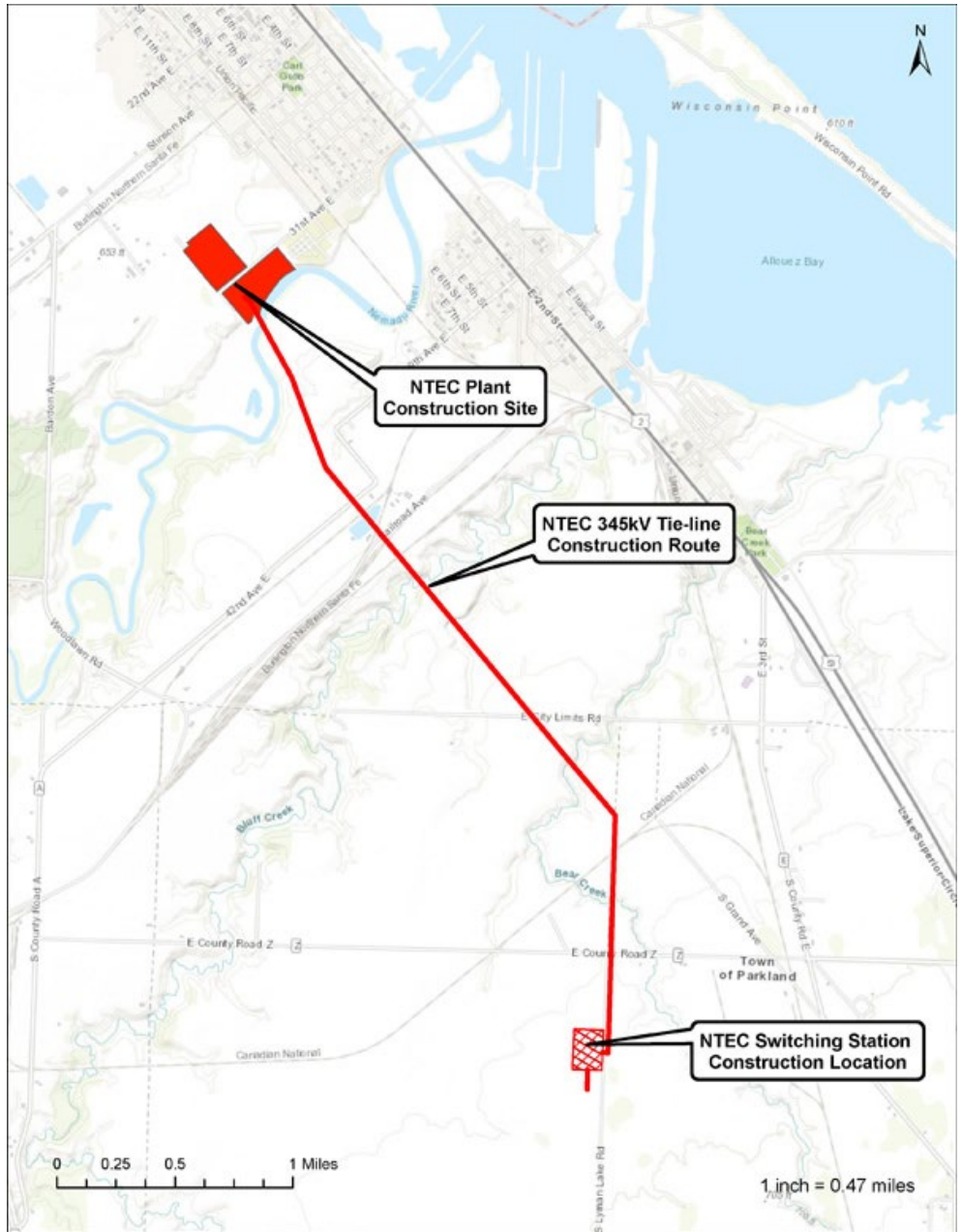
However, Thomson added that Dairyland is “enthusiastic” about batteries and other forms of energy storage and noted the co-op is exploring pumped hydro storage in abandoned mines and was recently awarded a battery storage grant from the Department of Energy.

She said NTEC’s ramping capability will help support Dairyland’s planned portfolio of 12 new wind and solar projects totaling 1.7 GW that could be *funded* under the IRA’s Empowering Rural America program, the same \$9.7 billion program the Sierra Club and Clean Wisconsin urged the cooperatives to pursue.

Thomson said NTEC will dependably supply power at “60% less carbon, 100% less mercury and 97% less other emissions than coal.”

Clean Wisconsin has said rather than reducing emissions, the plant will annually release 3 million tons of carbon pollution into the environment.

The plant would operate as a merchant generator selling power in MISO markets. The RTO last year commented in support of the plant to the Rural Utilities Service, saying it would welcome new gas-fired capacity to bolster resource adequacy in its footprint. (See *MISO Executives Spotlight Fleet Evolution Planning, Risks.*) ■



MISO News

Groups Say Partially Approved LG&E-KU Plan Signals Fleet Transition

Order Allows 1 of 2 New Gas Plants, Solar Additions, Coal Retirements

By Amanda Durish Cook

Community groups are hailing the Kentucky Public Service Commission's decision this month to reject a proposed gas plant from Louisville Gas & Electric and Kentucky Utilities (LG&E-KU) while greenlighting multiple planned solar installations and coal plant retirements.

The Kentucky PSC's order authorized LG&E-KU to build only one of two 640-MW natural gas plants that it proposed in its \$2.1 billion integrated resource plan and allowed the retirements of the coal-fired Mill Creek Units 1 and 2 and three smaller gas-fired units (2022-00402).

The coal retirements total about 600 MW, while the gas unit retirements will subtract about 47 MW from LG&E-KU's portfolio. They will take place from 2024 to 2027.

The commission also denied approval of the companies' requested retirement of KU's coal-fired Ghent Unit 2 and Brown Unit 3, totaling almost 900 MW. It said the retirements should be deferred until it's clearer what new environmental regulations will be enforced.

The new gas plant will be located at LG&E's Mill Creek station. The PSC disallowed LG&E-KU's proposal for a second new natural gas plant at KU's E.W. Brown station.

The PSC also allowed all six of LG&E-KU's proposed solar facilities at a combined 877 MW, a 125-MW battery storage plant and the utilities' 2024-2030 demand-side management plan that includes more than a dozen new energy efficiency programs.

The storage project will be Kentucky's largest utility-scale battery. The commission said the solar facilities will offer "significant savings" to customers and noted the critical role battery storage can play in the resource transition.

Intervenors in the case — Mountain Association, Metropolitan Housing Coalition, Kentucky Solar Energy Society and Kentuckians for the Commonwealth — say that the PSC's ruling is a landmark decision that advances clean energy in a state whose legislature earlier this year enacted a law requiring the commission to review planned fossil-fueled power plant retirements using a presumption that they should remain in operation (SB4).

In a joint press release, the groups said they

were disappointed with the approval of a new natural gas plant and the decision to keep two aging coal plants online. However, they said the order "offers major advances for clean energy in Kentucky and indicates that the PSC is weighing the risks of new and existing fossil fuel plants pose to ratepayers."

"LGE-KU must not ignore this opportunity to ramp up efficiency programs, solar energy and battery storage to make any additional gas plants unnecessary," they said.

"The denial of a \$650 million, 40-year commitment to a risky natural gas plant is a major victory for ratepayers," said Catherine Clement of Kentuckians for the Commonwealth. "And the closure of those old Mill Creek coal units will mean better air quality for the people of Louisville and the surrounding region."

Josh Bills of the Mountain Association said LG&E-KU realizes that the plants are too costly to continue to operate because they require "massive investments to bring them into compliance with air and water quality regulations." He said the Kentucky PSC's order establishes a course for future coal plant retirements and

"importantly" acknowledges that energy efficiency programs and distributed resources can reduce demand enough that the output from the Ghent and Brown units might not need to be replaced with an expensive new gas plant.

Chris Woolery, representing the Mountain Association, agreed that successful energy efficiency programs could shave enough demand to offset the need for a major power plant.

Tony Curtis of the Metropolitan Housing Coalition said his organization is looking forward to assisting LG&E-KU on implementing the new energy efficiency offerings, especially for those who "struggle to pay their bills each month and can really benefit from home energy improvements."

After the PSC's order, PPL — the parent of LG&E-KU — said in a U.S. Securities and Exchange Commission *filing* that the utilities' planned capital investments in new and existing facilities in Kentucky are "materially consistent" with the utilities' original \$2.1 billion plan.

John Crockett, president of LG&E-KU, *said* the utilities are "pleased" that the PSC approved many aspects of the original plan. ■



Mill Creek Generating Station | LG&E-KU

PJM News



NJ Committee Mulls Making 100% Clean Energy by 2035 Law

By Hugh R. Morley

The New Jersey Senate Environment and Energy Committee took testimony last week on a bill that would put into law the state's goal to reach 100% clean energy by 2035, sparking business concerns that the state is overreaching and union fears that it could create jobs outside of the state.

Gov. Phil Murphy (D) put the target into effect by *executive order*, committee Chair Bob Smith (D) said at the start of a hearing on *S2978* on Nov. 20. Murphy's successor could simply change it by enacting their own executive order, said Smith, the sole sponsor of the bill. Making it the state's renewable portfolio standard (RPS) would make it more likely to remain in effect.

"There are no guarantees that the next governor will be as green as the current governor,"

Smith said. "An executive order is only a rule. ... When state government is making decisions about investments, what we should be doing or not doing, you need a guiding principle."

But Ray Cantor, senior lobbyist for the New Jersey Business and Industry Association (NJBIA), said he received the latest version of the bill only four days before and had not had time to analyze the implications. He urged the committee to hold off voting until a later date.

"We have concerns generally with setting artificial deadlines to meet artificial goals in a period of time that may not be practical or implementable," Cantor said. "When you do that, you end up making decisions that may not be the most cost effective, the most technologically feasible and the best public policy. You're driving decisions based on deadlines put in law and not necessarily what's realistic economically or on the ground."

The committee did not vote on the bill at the end of the five-hour hearing, most of it focused on *S2978*. Smith said he would review the testimony and adjust the bill, and the committee would vote on it Dec. 18.

It was one of two Smith-sponsored bills considered, but not voted on by the committee, that could bring sweeping changes to the state's clean energy efforts. The second, *S3992*, would require the New Jersey Board of Public Utilities (BPU) to create a plan to modernize the state's electric transmission and distribution system and would allocate \$300 million to do so. Smith said at the hearing that he does not expect the bill to be ready by the time the legislative session ends in January and that it will be introduced in the next session.

New Clean Energy Certificates

The RPS bill states that New Jersey is on track



A solar array at the Workforce Training Center at Raritan Valley Community College in North Branch, N.J. | *Raritan Valley Community College*

PJM News



to satisfy 75% of its annual energy use with clean energy by 2025 and 84% by 2030. Smith said the bill would help the state reach 100%.

“Rapidly increasing clean electricity generation to achieve 100% of retail sales of electricity in New Jersey by 2035 will help displace fossil-fueled electricity generation and thereby reduce greenhouse gas and co-pollutant emissions,” the bill says.

It outlines a mechanism to reach that goal by creating Clean Electricity Attribute Certificates (CEACs), each of which represents “1 MWh of generation from a clean electricity production facility whose electricity is produced in New Jersey or acquired through the PJM Interconnection.”

Electricity generation providers and suppliers would be certified and “procure and retire” CEACs to meet a set of goals: at least 80% matched by June 1, 2027; 85% by June 1, 2030; and 100% by June 1, 2035. The bill would also allow CEACs to be replaced by clean energy certificates generated by existing state programs, including solar renewable energy certificates, Zero Emission Certificates from nuclear plants and offshore wind Renewable Energy Certificates.

The bill also sets a goal of in-state clean energy sources meeting 65% of New Jersey’s electricity demand, with the remainder supplied from out of state. If the state does not appear ready to reach the 65% target, the bill allows the BPU to “procure additional electricity” out of state.

Investment and Jobs

Jesse Jenkins, an assistant professor and energy systems engineer at Princeton Uni-

versity, said a team he heads had modeled New Jersey’s clean energy plans, including the impact of S2978, and believes it would “help meet our climate goals, and all while maintaining affordability and reliability of New Jersey’s electricity supply.”

“The law would ensure more clean electricity would be generated in-state in 2035 than is generated by all resources — both fossil power plants and clean sources — today,” he said. “That ensures a steadily expanding market for clean energy, investment and jobs in the state. ... We estimate that under the proposed law, New Jersey electricity customers would pay less for their electricity supply and 2035 than we did in 2019.”

The law would support 24,000 jobs building, operating and maintaining electricity generators, including in the solar and offshore wind sectors, Jenkins said. More than 90% of the subsidies provided by state programs would go to generators within New Jersey, supporting investments and jobs in the state, he added.

Jenkins said the bill would also keep the state’s three nuclear plants open and would “not require natural gas plants to retire until clean, reliable replacements are available.” Gas plants could remain open until 2045, so they could be “called upon by the grid operator to meet reliability needs, while substantially reducing their generation overall and therefore their pollution,” he said.

Artificial Deadlines

But NJBIA’s Cantor said he believed gas-powered plants would be used for far more than just providing “reliability” services for when renewables could not cover demand.

He argued that the grid is not ready for the amount of new clean electricity proposed in the bill. And he said NJBIA has concerns that the jobs created may actually be out of the state.

“If we don’t have the infrastructure to be able to hook up to solar developments, we’re really just driving those jobs, money, everything else out of state,” he said.

Jennifer Mancuso, director of government affairs for NJ LECET, a labor management cooperative that is part of the New Jersey Laborers Union (LIUNA), said the organization is also concerned about where the new jobs would go. She said LIUNA agrees with the state’s decarbonization goals but is concerned by the “considerable discretion” the legislation gives the BPU to seek energy out of state if New Jersey does not meet the 65% goal of in-state clean energy production.

Eric Miller, director of New Jersey energy policy for the Natural Resources Defense Council, said the committee should consider the impact of not adopting the legislation and where it would get its energy in that scenario. New Jersey is currently an energy importer and so already relies on out-of-state sources to meet demand, in large part, he argued, because fossil fuel-fired power is more expensive in the state.

“But for policies like this legislation that we’re considering, we would produce even less electricity in New Jersey,” he said. “[In] a purely competitive market, we buy it from PJM, almost every time. The only way to shift that needle back into New Jersey is through policies like this legislation.

“With this legislation, we could be a clean energy powerhouse.” ■

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PJM News



New Jersey Launches OSW Infrastructure Solicitation

BPU, EDA Chiefs Pledge OSW Support After Ørsted Withdrawal

By Hugh R. Morley

New Jersey's Board of Public Utilities launched a new solicitation for offshore wind coastal infrastructure Nov. 17 as the heads of the BPU and the Economic Development Authority reaffirmed the state's commitment to developing OSW projects in the wake of Ørsted's abandonment of its two projects.

The BPU board, with a 4-0 vote, opened a [solicitation](#) for proposals to build a link between future wind projects developed off the Jersey Shore and the onshore substation infrastructure backed at the conclusion of a State Agreement Approach (SAA) solicitation on Oct. 26, 2022. (See [NJ BPU OKs \\$1.07B OSW Transmission Expansion](#).)

The BPU vote opened the new infrastructure solicitation with a submission deadline of April 3, 2024. The agency set out a schedule in which favored proposals would be picked in the third quarter of 2024, with an expected project in-service date of January 2029.

Brushing off Ørsted's withdrawal, BPU President Christine Guhl-Sadovy said at the meeting the agency is "looking forward" to the third solicitation for offshore wind developments and said it had been "our most competitive yet."

"Offshore wind is, and continues to be, the economic development opportunity of a generation and remains a key tool in climate change mitigation," she said. "We remain excited about the prospect for a future generation and transmission solicitations."

Protecting Ratepayers

Gov. Phil Murphy (D) has set a state wind capacity target of 11 GW by 2040, of which the BPU so far has awarded 3,758 MW. The BPU approved its first OSW project, Ørsted's 1,100-MW Ocean Wind 1, in the first solicitation in 2019, and two other projects — the 1,148-MW Ocean Wind 2 project and the 1,510-MW Atlantic Shores project — in the second solicitation, in 2021.

The Atlantic Shores project continues to move ahead. But Ørsted stunned New Jersey officials on Nov. 1 by cancelling its two Ocean Wind projects, saying that cost increases had made the projects untenable. (See [Ørsted Cancels Ocean Wind, Suspends Skipjack](#).)

In the state's third solicitation, the BPU initially required developers submitting bids to include

plans for the construction of infrastructure — known as pre-build infrastructure or PBI — that could tie several projects to the on-land infrastructure. But the board on Oct. 25 split off the offshore infrastructure requirement, saying that such a plan would impose an "unreasonable burden" on ratepayers, and that separating the two elements would create greater competition for the infrastructure projects. (See [NJ Revamps Third Solicitation OSW Connection Plans](#).)

Jim Ferris, deputy director of the BPU's division of clean energy, told the board Nov. 17 that the agency's initial strategy of bundling the project and PBI elements together would have meant the developers would be awarded incentives for the entire package in offshore wind Renewable Energy Certificates.

Staff reviewed the proposals and found they represented an unreasonable burden for New Jersey's ratepayers, he said, and that separating the two has not affected the projects already submitted for the third solicitation.

Servicing Multiple Projects

Four bidders submitted plans for the third solicitation, which could add OSW capacity of between 1.2 GW and 4 GW, and perhaps more, according to the guidance document for the solicitation. (See [NJ Opens Third OSW Solicitation Seeking 4 GW+](#).)

The solicitation, which the BPU released as an [attachment to its order](#), seeks proposals for "all cable vaults, duct banks and related facilities for four (4) separate qualified projects, enabling qualified project developers to install

their cables into the prebuild by pulling them through the completed prebuild infrastructure facilities."

Unlike the first infrastructure solicitation, held under the SAA agreement, the BPU will conduct the new infrastructure solicitation solely with BPU staff rather than in partnership with PJM, but will get "support from PJM, as requested by staff," according to the order. The solicitation adds that it is open to companies that are prequalified through "PJM's planning process to be a Designated Entity."

Optimism for the Future

The state's commitment to offshore wind includes extensive investment in creating infrastructure to support the development of a supply chain and logistics services that can support the projects, including the development of the New Jersey Wind Port on the Delaware River.

Much of that work has been funded by the EDA, where Chairman Terence "Terry" O'Toole — speaking at the agency's monthly meeting Nov. 16 — called Ørsted's decision "very disappointing and frustrating news." He said that "despite the setback, there continue to be massive opportunities for New Jersey in this new sector and making investments in infrastructure and the manufacturing capacity support."

Tim Sullivan, EDA's CEO, said the agency has "continued optimism" about the sector, in part because "there is so much private capital being invested in the US wind industry, there's so many private sector interests." ■



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Company Briefs

BP Completes \$100M Fowler Ridge Wind Farm Upgrade



BP on Nov. 24 announced that it has completed a \$100 million upgrade to the Fowler Ridge Wind Farm in Benton County, Ind.


BP upgraded 40 turbines while installing 120 blades and 40 nacelles that will generate up to 40% more power.

The replaced blades will be recycled.

More: [NWI.com](https://www.nwi.com)

Federal Briefs

West Coast States Petition Against Gas Pipeline Expansion

 **TC Energy** Oregon, Washington and California on Nov. 18 filed a petition urging FERC to reconsider its approval of TC Energy's methane gas pipeline expansion in the Pacific Northwest.

Washington Gov. Jay Inslee (D) said the project would violate Washington's environmental laws and would hurt consumers. The challenge comes after FERC approved the company's plans for the pipeline in late October. TC Energy said the expansion of 150 million cubic feet per day is necessary to meet growing demand.

FERC has until Dec. 22 to respond to the petitions.

More: [KOIN](https://www.koin.com)

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- **Commissioner**
Gov. Regulator

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State Briefs

CALIFORNIA

Supreme Court: PG&E Can't be Sued over PSPS



The state's Supreme Court on Nov. 20 ruled that Pacific Gas & Electric customers cannot sue the utility for losses incurred during public

safety power shutoffs designed to protect the public from wildfires.

Such litigation would interfere with the Public Utilities Commission's "comprehensive regulatory and supervisory authority" over such safety shutoffs and is therefore barred under state law, Justice Goodwin Liu wrote in a unanimous decision.

The ruling stems from a separate federal case in which plaintiff Anthony Gantner accused PG&E of harming him and other customers by repeatedly shutting off power to reduce wildfire risk during extreme weather conditions in the fall of 2019.

More: [Los Angeles Times](https://www.losangelestimes.com)

ILLINOIS

Wolf Carbon Solutions Withdraws CO2 Pipeline, Intends to Refile

Wolf Carbon Solutions on Nov. 20 said it plans to refile its plans to build a 260-mile carbon dioxide pipeline to transport gas from Iowa to storage underground in Decatur, Ill.

Wolf had previously announced the withdrawal of the pipeline proposal, known as the Mt. Simon Hub, after it was criticized by an engineer employed by the Commerce Commission. Wolf also said it planned to refile plans with the commission in early 2024.

More: [Herald&Review](https://www.heraldandreview.com)

IOWA

Utilities Board Approves Goldfinch Solar Project

The Utilities Board Nov. on 16 granted a Certificate of Public Convenience to the 200-MW Goldfinch Solar Project.

The order authorizes the construction and

eventual operation of a solar array, set to be installed on rented farmland in Washington County.

Construction is slated to begin in April 2024 and wrap up in 2025.

More: [Southeast Iowa Union](https://www.southeastiowaunion.com)

MONTANA

Coal Mine Expansion Permit Vacated by Supreme Court

The state Supreme Court on Nov. 22 vacated a permit for an expansion of the Rosebud Mine.

Justices remanded to the Board of Environmental Review several issues the court concluded were mishandled, including the board's decision that a mine's cumulative damage to water quality could not be considered when issuing new permits. At issue is the mine's damage to the upper East Fork of Armell's Creek, part of a watershed draining into the Yellowstone River.

In 2015, the state's Department of Environmental Quality concluded that Westmo-

reland had in its proposed mine expansion prevented material damage to the creek and approved the mine expansion plan.

More: [Billings Gazette](#)

NEW YORK

Con Edison Ends Westchester County Gas Moratorium



Consolidated Edison is set to end a natural

gas moratorium affecting most of Westchester County in December, according to an announcement reported by the *Builders Institute*. The moratorium on gas installations, which did not affect existing users, began in March 2019 as demand outpaced supply.

That issue has been mitigated, according to the company. Supply has been increased by a pipeline project, while Con Ed forecast lower demand in a letter to the Public Service Commission.

More: [TheRealDeal](#)

OKLAHOMA

Corporation Commission Approves PSO Rate Increase

The state Corporation Commission on Nov.

21 adopted a 2.5% cap on a residential rate increase for Public Service Company of Oklahoma customers.

The cap is expected to reduce the planned increase for PSO's average residential customer from \$5.35/month to \$3.57/month. However, some argued that the revised order would shift utility costs to commercial customers.

More: [The Oklahoman](#)

PENNSYLVANIA

Gov. Shapiro Appeals Court's RGGI Decisions



Gov. **Josh Shapiro's** (D) office said Nov. 21 that it has appealed two Commonwealth Court decisions that struck down the state's participation in the Regional Greenhouse Gas Initiative.

In a statement, Shapiro's administration said the Commonwealth Court decisions on RGGI were "limited to questions of executive authority, and our administration must appeal in order to protect that important authority for this administration and all future governors." Still, the administration made it clear that the appeal is not a pledge to keep

the state in the initiative.

The state Supreme Court must take up the appeal.

More: [Spotlight PA](#)

VERMONT

Burlington Council Backs District Energy Plan, Carbon Fee



The Burlington City Council on Nov. 20 passed a plan to build a \$42 million steam

pipeline that will help the University of Vermont Medical Center cut its natural gas use, as well as a carbon-impact fee that will assess penalties on new or updated buildings that are heated with fossil fuels instead of renewable options.

The district energy project would funnel steam from wood-fired boilers at the McNeil Generating Station through an underground pipe to the hospital. The hospital would use the steam in its existing steam-heating system, bypassing its natural gas boilers and cutting its fossil fuel usage by 90% or more.

The moves are key pieces in the city's plan to eliminate fossil fuel use in buildings by 2030, which will require installing electric or other renewable heating systems.

More: [Seven Days Vermont](#)

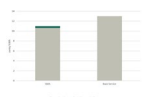
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