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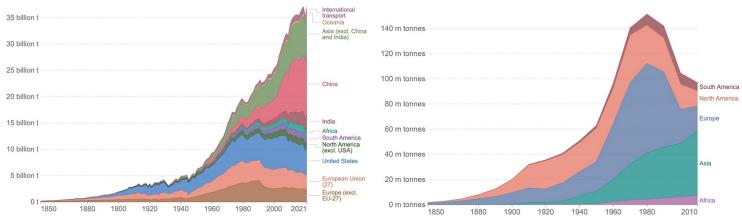
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World of Hurt

Annual CO₂ emissions by world region This measures fossil fuel and industry emissions¹. Land use change is not included



Our World in Data

By Steve Huntoon

Do you remember reading a couple years ago that the worldwide reduction in aerosol emissions¹ would likely double the rate of global warming from what it's been for the past 50 years?



Steve Huntoon

No? Neither do I.

But there it was in *Inside Climate News* in September 2021.² James Hansen, the Paul Revere of global warming since 1988, had a heretical warning. Aerosols have a climate *cooling* effect, and the reduction in aerosols is accelerating global warming. The headline wasn't cryptic: "The Rate of Global Warming During Next 25 Years Could Be Double What it Was in the Previous 50, a Renowned Climate Scientist Warns."³

If you thought this warning of existential threat would have garnered worldwide media attention, you would be wrong. Instead, crickets.

This Summer

So here we are, two years later, setting new heat records. The aerosol cooling effect is diminishing relative to the warming effect of greenhouse gases.

Not that the reduction in aerosols like sulfur dioxide didn't have a benefit. Aerosols are air pollutants estimated to kill several million people worldwide every year (although there are sources of aerosols other than fossil fuel combustion). $\!\!\!^4$

But what we didn't recognize was the doubleedged sword: These same aerosols have been offsetting a lot of the warming effect of GHGs.

What's Going On

Please take a look at the charts above of global carbon dioxide emissions and global sulfur dioxide emissions.⁵ See the difference?

The difference in change between carbon dioxide and aerosol emissions is even more dramatic in places like PJM, as shown by the chart below, where the left axis is carbon dioxide and the right axis is aerosol emissions.⁶

As PJM summarizes: "From 2005 to 2022,

carbon dioxide emission rates fell 37% across PJM's footprint; emission rates for nitrogen oxides are down 87% and sulfur dioxide 95%." Thus, carbon dioxide emissions have fallen less than half as much as aerosol emissions.

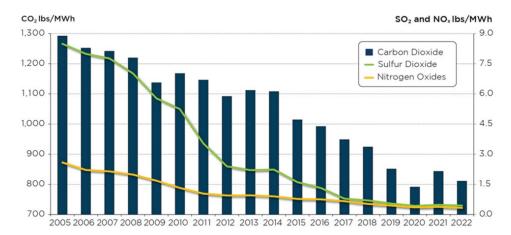
No Good Deed Goes Unpunished

Global sulphur dioxide (SO₂) emissions by world region

Annual sulphur dioxide (SO2) emissions in million tonnes

The cooling effect isn't small. Hansen and his colleagues think the cumulative cooling effect of aerosols has been offsetting about half the cumulative warming effect of GHGs, as the top right chart on the next page from their recent study shows.⁷

If you compare the red lines based on expected warming from paleoclimate and other records with actual warming, there is about a 1- to 1.5-degree Celsius gap in 2022. Hansen and his team attribute the gap to the cooling effect



PJM system average emissions rates | PJM

Counterflow By Steve Huntoon

of aerosols.

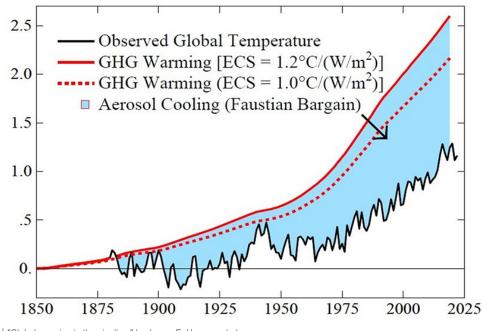
Recent research, analyzing COVID-19 pandemic period data, suggests this even understates the relative effects of GHGs and aerosols on global warming.⁸

The most recent Intergovernmental Panel on Climate Change (IPCC) report does estimate an offsetting effect of aerosols, but it pegs the offset at only a guarter of the otherwise warming effect of GHGs.⁹ As the chart suggests. Hansen and his colleagues think the IPCC has greatly understated the aerosol effect: "Aerosol climate forcing is larger than the recent (AR6) IPCC estimate. Aerosols probably provided a significant climate forcing prior to the Industrial Revolution. We know of no other persuasive explanation for the absence of significant global warming during the past 6,000 years, a period in which the GHG forcing increased 0.5 W/m². Climate models that do not incorporate a growing negative aerosol forcing yield significant warming in that period, a warming that, in fact, did not occur."10

So between Hansen's team and the IPCC – as Clint Eastwood might ask – do you feel lucky?

Wait, It's Worse Than That

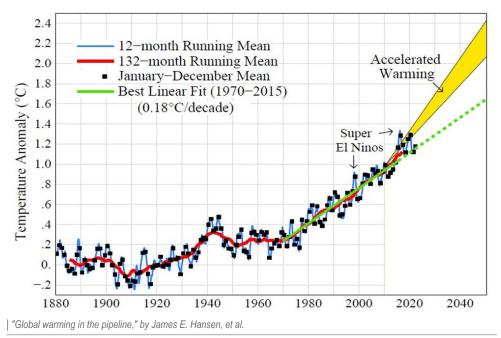
Aerosols have a relatively short duration in the atmosphere (weeks), while GHGs have a relatively long duration (decades). As fossil fuel generation continues to be reduced, the presence of cooling aerosols drops off rapidly while the presence of GHGs continues for decades. So the cooling effect dissipates rapidly while the heating effect persists. As a recent study





says: "A complete phaseout of today's fossil fuel combustion to zero-emission renewables would result in rapid aerosol demasking, while the GHGs linger on."¹¹

Hansen's team projects that the rate of global warming post-2010 has been and will be at least 50% greater than the prior 40-year rate: "Decline of aerosol emissions since 2010 should increase the 1970-2010 global warming rate of 0.18 C per decade to a post-2010 rate of at least 0.27 C per decade."¹²



The chart to the left depics this dire future.¹³

So this summer's heat waves should have come as no surprise.

Wait, It's Even Worse Than That

Hansen's other heretical warning — also largely ignored by major media — is that the conventional scientific wisdom has greatly overstated the time lag between rising temperatures and rising seas. That wisdom is based on models showing gradual sea rise over many centuries. The IPCC's various emission scenarios project sea level rise of no more than 1 meter by 2100.¹⁴

Hansen and colleagues say we need to pay more attention to the paleoclimate record revealing a past in which sea levels rose rapidly, with the prospect for several meters of sea rise over the next 50 to 150 years.¹⁵ There's also conforming evidence from a Greenland ice core as revealed in a new study.¹⁶

Not to minimize other consequences of a hotter climate over the decades to come, but this is the threat of entire coastal cities disappearing. Three hundred twenty million people live less than 5 meters above sea level.¹⁷

This isn't about adaptation; this is the end of the world as we know it. And no, to riff on R.E.M.,¹⁸ I don't feel fine.

Now What?

The response by most climatologists appears to be two-fold: (1) reducing aerosols is worth

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Counterflow By Steve Huntoon

it because the reduced air pollution saves lives, and (2) even if Hansen and colleagues are right, it just means we need to do more to decarbonize faster rather than distract from that mission.

Re. response 1: Yes, aerosols are a form of air pollution that causes several million deaths per year. But that doesn't explain why non-toxic aerosols like sand can't replace toxic aerosols as discussed more below.

Re. response 2: Worldwide decarbonization isn't going to happen any time soon, if ever.¹⁹ The "A" in Plan A could stand for "Ain't happening." I've discussed the prospect, or lack thereof, of worldwide decarbonization before, with references to that and othering sobering news in the footnote.²⁰ And here's a recent data point from Pew Research: Only 31% of Americans support a full phaseout of fossil fuels;²¹ you can imagine what that number is for the rest of the world.

And it's probably too late for Plan A anyway. Hansen offers this somber reality (buried in a paragraph on page 45 of the recent study): "Phasedown of emissions cannot restore Earth's energy balance within less than several decades, which is too slow to prevent grievous escalation of climate impacts and probably too slow to avoid locking in loss of the West Antarctic ice sheet and sea level rise of several meters."

It's baked in, figuratively and literally.²²

Plan B

As I wrote last year, we need a Plan B: putting aerosols back into the atmosphere,²³ at least to get back to the cooling effect we've had before, and to buy us time for decarbonization to occur and to be impactful.

The best candidate may be non-toxic sand added to the stratosphere (with longer duration than the short-duration aerosols in our closein troposphere).

This isn't just neophyte Steve Huntoon talking. This is Hansen talking: "A promising approach to overcome humanity's harmful geotransformation of Earth is temporary solar radiation management (SRM). ... An example of SRM is injection of atmospheric aerosols at high southern latitudes, which global simulations suggest would cool the Southern Ocean at depth and limit melting of Antarctic ice shelves."²⁴

To climate purists who reject this as humans messing with the environment, what do they think we humans have been doing for millennia? We need to focus on what's best for our species, our children and their children.

And to the objection that the world's nations wouldn't agree on what specific geoengineering should be done, is it more likely that there will be worldwide agreement on rapid elimination of GHGs and who pays for it, assuming the requisite technologies even exist at feasible cost? As Aerosmith said, dream on.²⁵

Isn't It Ironic

It's ironic that what we thought was an unadulterated good — reducing aerosol emissions — has a dark side. I'll give Alanis Morissette the last word about what we might (or might not) do about it:²⁶

It's the good advice that you just didn't take And who would've thought ... it figures.

¹ Principally sulfur dioxide (SO2) and nitrogen oxides (NOx) – the latter of which is not to be confused with nitrous oxide (N2O), which is a greenhouse gas.

² https://insideclimatenews.org/news/15092021/global-warming-james-hansen-aerosols/.

³ The net cooling effect of aerosols has been known for some time, as reported by Scientific American in 2018, https://www.scientificamerican.com/article/cleaning-up-air-pollution-may-strengthen-globalwarming/, but the Hansen warning was specific in magnitude and timing of impact.

⁴ https://www.who.int/en/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health; https://www.washingtonpost.com/business/energy/2023/03/27/climate-change-how-cleaning-up-pollution-may-heat-the-planet/dd7496b0-ccdc-11ed-8907-156f0390d081_story.html.

⁵ https://ourworldindata.org/co2-emissions (setting start year at 1850 to track with SO2 chart); https://ourworldindata.org/grapher/so-emissions-by-world-region-in-million-tonnes.

⁶ https://insidelines.pjm.com/annual-study-shows-decrease-in-average-emission-rates-for-pjm-footprint/.

⁷ https://arxiv.org/ftp/arxiv/papers/2212/2212.04474.pdf, Figure 13.

⁸ https://www.nature.com/articles/s41612-023-00367-6.pdf.

⁹ https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf, page 43, comparing 1.5 C of GHG warming effect with 0.4 degrees of offsetting principally aerosol cooling effect.

10 https://arxiv.org/ftp/arxiv/papers/2212/2212.04474.pdf, page 39.

¹¹ https://www.nature.com/articles/s41612-023-00367-6.pdf.

12 https://arxiv.org/ftp/arxiv/papers/2212/2212.04474.pdf, page 1.

¹³ https://arxiv.org/ftp/arxiv/papers/2212/2212.04474.pdf, Figure 25.

¹⁴ https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_LongerReport.pdf, page 45.

¹⁵ https://acp.copernicus.org/articles/16/3761/2016/acp-16-3761-2016.pdf.

¹⁶ https://www.cnn.com/2023/07/20/world/greenland-ice-sheet-melt-sea-level-rise-climate/index.html; https://www.nytimes.com/2023/07/21/science/climate-greenland-ice-sheet.html.

¹⁷ That's 4.1% of the world's population of 7.9 billion. https://data.worldbank.org/indicator/EN.POP.EL5M.ZS. Six hundred million live less than 10 meters above sea level. https://www.un.org/sustainablede-velopment/wp-content/uploads/2017/05/Ocean-fact-sheet-package.pdf.

18 https://www.youtube.com/watch?v=wa43FNUdpU8

¹⁹ https://energy-counsel.com/wp-content/uploads/2022/05/We-are-Going-to-Need-a-Plan-B-RTO-Insider-5-10-22.pdf. And the prospects aren't improving in terms of international collaboration and funding, https://www.reuters.com/business/environment/bonn-climate-talks-prepare-cop28-summit-end-with-little-show-2023-06-16/ or in resources like offshore wind, https://www.wsj.com/articles/ wind-industry-hits-rough-seas-as-problems-mount-5490403a?mod=Searchresults_pos1&page=1, and long-duration storage, https://www.canarymedia.com/articles/long-duration-energy-storage/is-azelios-abrupt-bankruptcy-a-bad-omen-for-long-duration-energy-storage.

²⁰ Response 2 also evokes the punchline to that joke about economists: assume a can opener.

²¹ https://www.pewresearch.org/science/2023/06/28/majorities-of-americans-prioritize-renewable-energy-back-steps-to-address-climate-change/.

²² For more on this, https://arxiv.org/ftp/arxiv/papers/2212/2212.04474.pdf, Figure 28 and pages 42-43.

²³ https://energy-counsel.com/wp-content/uploads/2022/05/We-are-Going-to-Need-a-Plan-B-RTO-Insider-5-10-22.pdf.

²⁴ https://arxiv.org/ftp/arxiv/papers/2212/2212.04474.pdf, page 46.

²⁵ https://www.voutube.com/watch?v=sZfZ8uWaO

²⁶ https://www.youtube.com/watch?v=Jne9t8sHpUc



The IRA at 1: Implementing at Speed and Scale Remains Key Challenge

As Benefits Roll to Red States, Repeal of the Law Increasingly Unlikely

By K Kaufmann

As the Inflation Reduction Act begins its second year of implementation, one of the key measures of the law's success is the wave of new clean technology manufacturing plants and investment dollars going to districts with Republican members in Congress, according to Jason Grumet, CEO of the American Clean Power Association (ACP).

"The vast majority of the benefits are going to states that tend to be governed by conservatives," Grumet said during a webinar Aug. 14 reviewing the IRA's first year. With ACP tracking more than \$270 billion in private sector investments announced in the past year, about 80% of that money is going to districts with Republican lawmakers in Congress, while 60% of the manufacturing plants also are going into Republican-held districts, he said.

"And so, I think what we're going to see is that the polarization that has been driving so much of the energy and climate debate is going to really start to settle out as it becomes clear that this is American energy and American resources and American communities and American jobs," Grumet said.

Grumet and other industry leaders on the panel agreed the investments and jobs flowing into red states make it increasingly unlikely Republicans in Congress will try to claw back any of the \$370 billion in clean energy funds in the law.

"The reality is, at the ground level, [the IRA] was not an issue in the 2022 election," said Gregory Wetstone, CEO of the American Council on Renewable Energy (ACORE), which sponsored the event. "The best way to make sure [repeal] doesn't happen ... is to see the law carried out."

Republican lawmakers would be at pains to "turn back the clock and close down this new manufacturing facility in [their] district," Wetstone said. "I don't think it's going to happen.... It would be extremely difficult politically."

But the IRA has been a political flashpoint almost from the start. The law was passed in the House of Representatives and Senate on straight party-line votes (with Vice President Kamala Harris breaking the tie in the Senate), following intense, behind-closed-doors negotiations between the White House and Sen. Joe Manchin (D-W.Va.). The law was passed as a



One year ago: President Joe Biden signs the Inflation Reduction Act on Aug. 16, 2022. The law has catalyzed a surge of new clean technology manufacturing across the U.S. | *The White House*

budget reconciliation measure, meaning it only needed a simple majority in both houses.

The incentives in the law range from the \$7,500 tax credit for electric vehicles, to a 10-year extension of the 30% investment tax credit (ITC) for solar and other clean technologies, to \$8.5 billion for consumer rebates for energy-efficient appliances and home upgrades.

A *recent report* from ACP counted 83 announcements for new cleantech manufacturing facilities across the country, expected to create an estimated 30,000 jobs. New clean energy projects totaling close to 185,000 MW also have been announced, the report said. (See *American Clean Power Tallies Potential Impact of IRA at \$270B.*)

The ITC was a key provision for the solar industry, said Abigail Ross Hopper, CEO of the Solar Energy Industries Association.

Noting that the industry has had to contend with the uncertainty of previous one- and twoyear extensions of the credit, Hopper said, "to have a 10-year runway has really been quite a revelation. This first year, there's been a level of relief and optimism and long-term planning that at times felt a bit elusive." The tax credits also are structured to advance certain policy initiatives, such as bonus credits for projects with prevailing wage agreements and registered apprenticeship programs, or for using materials that meet domestic content requirements.

Such provisions forge "a direct connection between policy outcomes and investment decisions," Hopper said. "So, we're seeing projects really driving toward particular geographies; particular materials; in particular communities. That sort of linking ... means that there will be a much greater likelihood that the investments are going to be built and the money spent in areas that perhaps in the past have not seen the benefits of this kind of investment."

Public Awareness vs. Results

But implementation of the IRA has not been smooth or easy. Manchin has broken with the White House over the Treasury Department's guidance on domestic content requirements for certain tax credits that he says do not follow the letter of the law.

Treasury still is working its way through the guidelines it must issue for tax credits and other provisions in the law. A *page* on the Internal Revenue Service website, last updated Aug. 14, lists 27 notices the agency has issued to

W

date on the various provisions of the law.

Public awareness of the law and its benefits for consumers is another ongoing challenge, with significant political implications for President Joe Biden heading into next year's presidential election. A *recent poll* from George Mason University found that four out of 10 registered voters said they knew nothing about the IRA, while six in 10 said they knew "a little."

But Heather O'Neill, CEO of Advanced Energy United, said knowing the name of the law may be less important than seeing and experiencing its results. "What we want are benefits," she said. "We want steel in the ground. We want new projects, new products, new manufacturing, new economic development and new ability for consumers to purchase these products and goods and services."

The bigger roadblocks for implementation are well known, Grumet said: transmission, permitting and workforce development and the politics surrounding those issues. But he views the challenge as a critical opportunity for the industry.

"The fact that we are now confronting these fundamental, big-term structural challenges to scaling clean energy is great news, right? Because we're not going to have any version of a sustainable climate economy or national security picture if we don't make a profound transition in our energy system, which I don't think very many people have appreciated the scale of in terms of those challenges," he said.

Wetstone agreed, saying the issues arising out of implementation of the IRA are "a result of trying to get something done really rapidly, which is the pace we need to go to address the climate crisis. So, I actually think it's a very good thing that we're being forced to come to grips with all this."

He and the other panelists agreed that while a deal on permitting is possible this year, finding a spark to trigger bipartisan cooperation and action is less likely.

"There's no committee that has the jurisdiction to put the pieces together that are necessary for a politically viable outcome," Grumet said. "So, the only way we're going to get a deal through this divided Congress is if there was ... support for transmission, particularly interregional transmission."

Making the profound changes ahead also means the clean energy industry has to rethink its role in the mainstream energy system, he said.

"If we're going to be honest about what this transition looks like, we have to embrace where we are today, which means we have to be part of the energy sector; not the renewable power sector, not the clean power sector, [but] the energy sector. ... We think we've got the best technologies. Give us fair competition based on economics and security and climate change, [and] clean power is going to win. We're going to win on the merits, and we're going to win in a collaborative environment."

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DOE: IRA, IIJA Could Add 475 GW of New Solar to US Grid by 2030

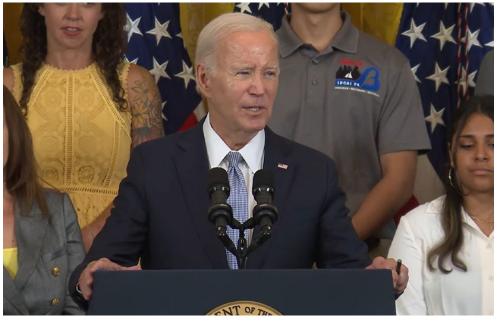
Acts Could Reduce Energy Bills, Oil Imports, Greenhouse Gas Emissions

By K Kaufmann

By 2030, the combined impact of the Inflation Reduction Act and Infrastructure Investment and Jobs Act could add up to 475 GW of new solar and 250 GW of new wind power to the U.S. electric grid, according to a *new report* from the Department of Energy.

Released on the first anniversary of the IRA's enactment, the report looks at the combined impacts of the two laws across a range of key economic and climate measures from 2022 to 2030. Top line figures include:

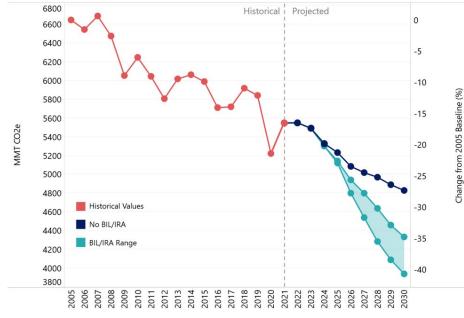
- electric bill savings for U.S. families of \$27 billion to \$38 billion, and a 13 to 15% reduction in commercial electricity bills for American businesses;
- a cut in U.S. oil imports of 44 to 59%, which would also cut spending on imported oil by 13 to 22%;
- an increase in clean energy including nuclear, hydropower, geothermal and fossil fuels with carbon capture – on the U.S. grid from 42% in 2022 to 72 to 81% by 2030;
- sales of zero-emission vehicles rising from 8% of total car sales today to 49 to 65% by 2030; and



President Joe Biden celebrates the first anniversary of the Inflation Reduction Act at the White House. | The White House

• a 35 to 41% drop in greenhouse gas emissions over 2005 levels versus a projected 27% decrease without the two laws.

The mostly rosy picture of the laws' impact is



Net Greenhouse Gas Emissions

The combined impacts of the IRA and IIJA are expected to cut U.S. greenhouse gas emissions 35 to 41% over 2005 levels by 2030. Without the laws, emissions would drop 27%. | DOE

based on new modeling by DOE incorporating the potential effects of the IRA and IIJA into its National Energy Modeling System, with scenarios projecting "moderate" and "advanced" uptake of the laws' provisions. However, looking at the report's *technical documentation*, it is unclear if the new modeling takes into account ongoing challenges to clean energy deployment — specifically, permitting, interconnection and transmission.

Still, President Joe Biden pointed to many of the figures as he celebrated one year of the IRA being law at the White House on Wednesday, calling the law "one of the biggest drivers of jobs and economic growth this country has ever seen."

Biden said the tax credits in the law will break the clean energy industry's long dependence on China for a range of equipment, drawing manufacturing and supply chains back to the U.S. "We're bringing critical supply chains and technologies home for electric vehicle batteries, solar panels, wind turbines [and] critical minerals."

A White House *fact sheet*, also released Wednesday, pegged new clean energy manufacturing investments since the IRA was signed at \$110 billion, including \$70 billion in the EV supply chain and \$10 billion in solar manufacturing.

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Biden also hailed the IRA and IIJA's \$50 billion in investments for energy resilience.

"These laws support important priorities, from addressing historic drought on the Colorado River Basin ... [to] responding to coastal erosion [and] sea-level rise in the Gulf of Mexico and helping reduce the effects of extreme heat by investing nearly \$1.5 billion to plant trees and expand community parks," Biden said.

Speaking before the president, Scott Strazik – CEO of GE Vernova, General Electric's clean energy spinoff – also praised the IRA, saying the law "is working to drive action on climate change, energy security, manufacturing jobs and American competitiveness."

In Schenectady, N.Y., where GE was founded, "we've invested \$50 million this year, [and] 200 new union jobs, to create the first 6-MW wind turbine in the U.S.," Strazik said.

Manchin Missing

Absent from the packed room at the White House – and the president's speech – was Sen. Joe Manchin (D-W.Va.), who played a critical role in forging final compromises on the law last year. Biden recognized his work at the IRA signing, handing him the pen he used to sign the law and shaking his hand.

A year later, Manchin and the White House are at odds over implementation of the law. The West Virginian has said the IRA is primarily an energy security law, and he has criticized the Biden administration's efforts to roll it out as a clean energy and climate initiative.

In a *statement* released Wednesday, Manchin recognized the benefits his state has received from the law, including major investments from long-duration battery startup Form Energy and Berkshire Hathaway subsidiary BHE Renewables.

While praising the law for "putting the interests of Americans and West Virginians first," he pledged to "push back on those who seek to undermine this significant legislation for their respective political [agendas], and that begins



The president spoke to a packed room of supporters. | The White House

with my unrelenting fight against the Biden administration's efforts to implement the IRA as a radical climate agenda instead of implementing the IRA that was passed into law."

When asked about Manchin's criticism during a press briefing Wednesday, White House senior adviser John Podesta sought to downplay the situation as a matter of interpretation.

"We're trying to implement it based on what the Congress passed, the law that was written," Podesta said. "Now he has disagreed a little bit with some of those interpretations, but I think we are operating in good faith to get guidance out as quickly as possible so that these people have the confidence that they can make these long-term, 10-year investments that are included in the act."

Stronger criticism came from Rep. Cathy Mc-Morris Rodgers (R-Wash.), chair of the House Energy and Commerce Committee, who framed the IRA as "a reckless tax-and-spending spree."

"One year later, inflation has risen an additional 3%, and people are still paying higher costs to feed their families, keep the lights on and fill up their gas tanks than when President Biden took office," McMorris Rodgers said. "His disastrous agenda has led innovators to stop research into new, potentially lifesaving treatments and cures, while also increasing our reliance on China."

But both Podesta and Biden noted that Republican opposition to the law has been tempered by the clean energy investments and jobs the law has brought to their states.

"Once those investments happen, once those jobs are created, once those people are at work in red districts, purple districts, blue districts, it's very hard to walk away from that," Podesta said.

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CEC: Calif. Renewable Use Rose Sharply in Past Decade





California, Australia Forge Climate Pact



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NRC Eases Emergency Preparedness Rules for SMRs

Radiation Leaks Would be Smaller, Less Likely than at Older, Larger Reactors

By John Cropley

The U.S. Nuclear Regulatory Commission has moved to ease some of the crisis requirements for small modular reactors, potentially eliminating the emergency preparedness zones currently required near most nuclear reactors.

The long-running process (NRC-2015-0225) was approved Aug. 14 by the four sitting commissioners.

The final rule — "Emergency Preparedness for Small Modular Reactors and Other New Technologies" — next goes to the Office of Management and Budget for review and subsequent publication in the Federal Register.

It will take effect 30 days after publication, which NRC staff estimates will be somewhere between mid-November and mid-January.

NRC will simultaneously issue "Performance-Based Emergency Preparedness for Small Modular Reactors, Non-Light-Water Reactors and Non-Power Production or Utilization Facilities."

NRC said in a *news release* that the rule's framework is based on technology and consequences.

Specifically, the technology in the new generation of SMRs is expected to be improved from the older reactors in use across the nation. And the consequences of an accident with a small reactor are potentially less severe than with a large reactor.

The rule gives applicants a scalable method to determine the size of the emergency planning zone surrounding their proposed facility – or to not even create such a zone – and develop a performance-based emergency preparedness program rather than the off-site radiological emergency planning requirements now in effect.

The new rule excludes fuel cycle facilities; currently operating research and test reactors; and large light-water reactors —those licensed to produce greater than 1 GW of thermal power.

Advanced SMRs are viewed as a potentially significant part of the clean energy transition, providing the emissions-free benefits of wind and solar generation with a much more stable power output, not reliant on variable wind or sunshine.



Maintenance and refueling is performed at the Idaho National Laboratory's advanced test reactor. | *Idaho National Laboratory*

But to achieve widespread adoption, SMR technology will need to be perfected and be economical.

To achieve widespread acceptance, SMRs will need to win over people concerned that commercial nuclear fission carries health and safety risks.

Along these lines, the Union of Concerned Scientists criticized the NRC vote.

"Past natural and human-made disasters have taught us that having a robust and workable emergency plan in place is the key to minimizing human suffering and loss of life if the unthinkable happens. The NRC's reckless decision today flies in the face of that experience," said Edwin Lyman, director of nuclear power safety at the organization.

Stakeholders, the public and other government agencies submitted numerous comments in favor of and against the proposed rule as it was being finalized, and some NRC commissioners echoed some of the concerns in their own comments leading up to last week's vote. All four voted to approve, though Bradley Crowell registered disapproval of some aspects.

He commented: "We should recognize the collective lack of operating experience with these new technologies" and strike a better balance between easing their commercialization and adequately preparing for emergencies that involve them.

Commenters including the Federal Emergency Management Agency raised the same concern, Crowell said, adding: "I do not believe the draft final rule adequately reflects the concerns from these key stakeholders."

He also said the frequency of emergency preparedness drills should be specified, given that the jurisdictions hosting SMRs may have no experiences with radiological emergencies.

Jeffrey Baran's term on the commission recently ended, but not before he submitted comments.

Like Crowell, he raised concerns about emergency planning zones not extending beyond the gates of a reactor facility:

"Unlike a 5-mile or even 2-mile EPZ, a site boundary EPZ would not require dedicated offsite radiological emergency planning, and FEMA would have no role in evaluating the adequacy of a site's emergency plans. With a site boundary EPZ, emergency responders would be left with all-hazards planning. While the NRC staff believes that all-hazards planning would be sufficient, FEMA and state emergency response agencies are not convinced."

NRC Chair Christopher Hanson wrote that proposed rules do not preclude the emergency preparedness measures some commenters sought.

But it makes sense to have a flexible approach to SMR safety regulations, he said, because while SMRs are likely to be greatly variable in design and risk factor, they will have smaller reactor core, lower radionuclide inventories and smaller/slower fission product releases in the event of an accident — all of which would reduce risk to surrounding areas.

Hanson said NRC must be careful not to overstep its regulatory powers, but state and local entities can choose to implement safety plans of their own, and other federal agencies can support them.

Commissioner David Wright wrote: "Even if a determination is made that a formal offsite EP program is not required, the rule still requires that licensees maintain emergency plans that establish contacts, arrangements and procedures for coordination with offsite response organizations."

Commissioner Annie Caputo said the rule is in line with congressional direction in the Nuclear Energy Innovation and Modernization Act, and will ensure decisions are objective, unbiased, scientific and protective of public health and safety.

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FERC Rules on 4 Issues from Tri-State Rate Filing

By Tom Kleckner

FERC last week affirmed in part and reversed in part four disputes arising from Tri-State Generation and Transmission Association's first jurisdictional rate filing before the commission in 2019 (*ER20-676*).

The issues were set aside from a settlement approved by the commission in August 2021. (See FERC Approves Tri-State's 1st Major Rate Case.)

Before the year was up, FERC directed further hearing procedures on the four reserved issues related to wholesale power service rates for Tri-State's 43 members. The presiding judge issued an *initial decision* in May 2022.

The commission agreed with the judge's decision on the first reserved issue that Tri-State is subject to FERC Order 888's functional unbundling requirements.

It also affirmed in part and reversed in part the initial decision on the third reserved issue, which determined whether Tri-State can apply a transmission demand charge to member United Power's storage resources. FERC agreed that United Power must pay the charge based on gross load and that Tri-State must reimburse the cooperative for overcharges.

However, it reversed some of the determinations describing how Tri-State must calculate the appropriate reimbursements and refunds and the judge's finding that United Power doesn't need to pay a late charge for not meeting the payment's deadline.

FERC reversed in part and affirmed in part initial decisions in the other two reserved issues: Tri-State's cost-allocation standards applicable to certain costs, and whether the G&T's community solar program is just, reasonable, unduly discriminatory and/or preferential in applying a \$0 add-back charge to program's projects.

The commission disagreed with the decision that Tri-State must apply an any-degree-ofintegration test and the seven-factor Mansfield test (a case-by-case analysis of local distribution's indicators) to determine cost allocation. It said that the tests are applicable standards



Tri-State's headquarters in Westminster, Colo. | © RTO Insider LLC

but are not necessarily the exclusive means for determining appropriate cost allocation.

FERC also agreed Tri-State's application of the add-back charge to load served by community solar projects is inappropriate. However, it found the charge to be unjust and unreasonable, rather than unduly discriminatory as the judge had decided.

The commission gave Tri-State 45 days to make a compliance filing outlining how it will reimburse United Power for overcharges in one of the reserved issues. ■

National/Federal news from our other channels	
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SERC Devotes Webinar to Physical Security Risks, Awareness	ERO Insider

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Berkeley Lab Reports 25% Increase in Hybrid Solar-Storage Plants

By John Cropley

More hybrid power plants are being built in the U.S., the Lawrence Berkeley National Laboratory said Wednesday, and almost all of them combine photovoltaic generation with storage.

In the *annual update* of its data compilation, Berkeley said the number of hybrid facilities increased 25% in 2022. At the end of the year, it counted 374 hybrid plants with a nameplate capacity greater than 1 MW operating nationwide. Combined capacity was nearly 41 GW of generation and 5.4 GW/15.2 GWh of storage – increases of 15%, 69% and 88%, respectively, from a year earlier.

"Hybrid Power Plants – Status of Operating and Proposed Plants, 2023 Edition" is available on Berkeley's website; the *full presentation* includes two case studies.

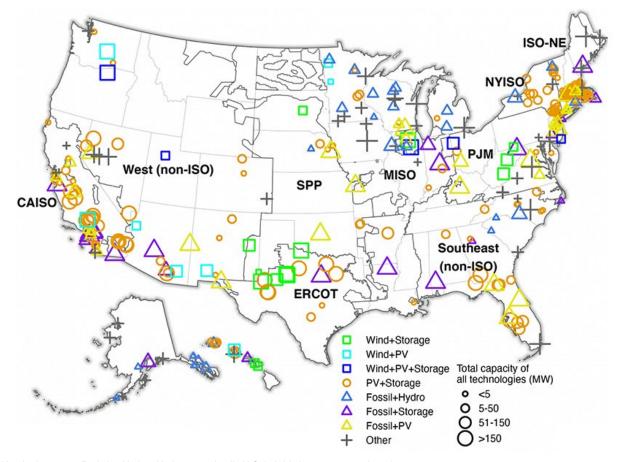
Also available is "*Batteries Included*," a shorter summary of key takeaways from the 2023 report. Among the findings:

- Solar-battery hybrids are the most common configuration, accounting for 213 of the total 374 plants and 59 of the 62 added in 2022.
- The other common configurations are fossil-solar (35), fossil-storage (26) and fossil-hydro (26).
- Hybrid configurations reflect their primary use cases – the relatively high average storage ratio and duration of solar-storage plants suggests the storage is providing resource capacity and energy arbitrage, while the low average storage ratio and duration of wind-storage plants suggest they are targeting ancillary services markets.
- Interconnection queue data show continued strong developer interest in hybridization: There were 51% more hybrid plants with 59% more generating capacity in queues nationwide at the end of 2022 than at the end of 2021. In one example, 97% of solar and 45% of wind in the CAISO queue were

proposed as hybrids.

- The Inflation Reduction Act provided standalone storage with access to the investment tax credit for the first time, reducing some of the impetus for hybrid configuration, but that did not take effect until 2023, and Berkeley did not see any impact in the 2022 data.
- The capacity contribution of hybrids varies but is not equal to the sum of their parts; hybrids often share components such as inverters or interconnections, which can limit their output, as can operational constraints such as charging the storage only from the generator.

Berkeley concluded by saying "more research is needed to understand the full capability of hybrid projects. [Our] ongoing work focuses on themes of hybrid valuation, market rule development and customer resilience opportunities. The end goal of this research is to support private- and public-sector decision-making related to hybrid power deployment."



A map created by the Lawrence Berkeley National Laboratory details U.S. hybrid clean-energy projects | Lawrence Berkeley National Laboratory

ERCOT News



Population Growth Fuels ERCOT's Record Demand

Grid Operator Calls for Voluntary Conservation, Reserves Dwindle

By Tom Kleckner

At some point last year Texas welcomed its 30 millionth resident, making it only the second state to reach that milestone behind California with its population of 39 million.

The U.S. Census Bureau *said* earlier this year that Texas added more than 9 million residents from 2000 to 2020, a 43% increase and more than any other state, and almost 3 million more than Florida, the next largest-growing state. The Bureau said Texas is the fourth-fastest growing state, with 11 of its 254 counties more than doubling their population during that same period.

ERCOT's load growth has also exploded during that time. Peak demand, which was 57.61 GW in 2000, hit 85.44 GW this summer, a 48% increase.

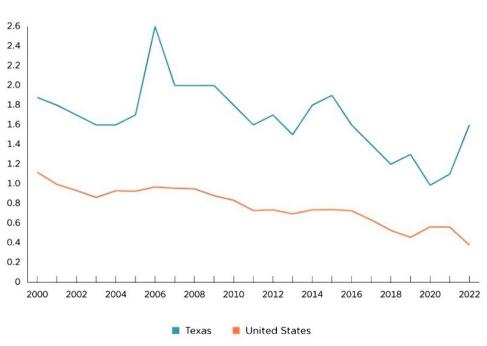
The grid operator's Independent Market Monitor says that average load grew 9.5% from 2021 to last year, with average load increasing more than the peak load in all four weather zones.

"That really is a massive load growth," Carrie Bivens, the IMM's director, said Wednesday while reviewing the monitor's 2022 State of the Market *report* during a Gulf Coast Power Association webinar.

Bivens said ERCOT's West and South zones were the biggest drivers of that growth.

"A lot of that has to do with greater industrial activity and oil and gas exploration, as well as just population growth," she said. "There's a lot of people who are moving to Texas, and that's increasing the load."

ERCOT says it has set 10 *peak demand records* this summer, one of the most brutal in recent memory. It set 11 records last summer, the high coming in July when it exceeded 80 GW



Texas' population is exploding, especially when compared to the nation as a whole. | U.S. Census Bureau

for the first time at 80.15 GW. That broke the previous record of 74.82 GW that had stood since 2019.

Average peak demand has surpassed 80 GW 156 times this summer, bettering last year's peak 146 times. A cool front slightly lowered temperatures that resulted in a peak of 79.98 GW on Aug. 15, the first time ERCOT has seen a peak below 80 GW since July 29.

Having already issued the year's fourth weather watch that was extended twice into Friday, ERCOT took it a step further Thursday by *calling* for voluntary conservation. It asked Texans to reduce their electricity usage until 8 p.m. "if safe to do so," alluding to the return of extreme temperatures, forecasted high demand and lower reserves. The grid operator said it was not experiencing emergency conditions. "Voluntary conservation is a widely used industry tool that can help lower demand for a specific period of peak demand time," it said.

ERCOT's cushion of operating reserves dipped below 5 GW as demand approached 85 GW during the afternoon. About 6 GW of thermal resources were offline. Just before 5:30 p.m., solar resources, the workhorse resource during afternoons this summer, were providing nearly 11 GW of energy, almost as much as the 12.2 GW from coal and lignite units.

Bivens said about 9.7 GW of new generation resources came online last year. Wind accounted for 4 GW and solar for 3 GW; another 1.7 GW of energy storage resources also came online, with gas providing the rest. ■

West news from our other channels



Wash. Raises \$62.5M from Cap-and-trade Reserve Auction



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BOEM IDs Oregon Wind Energy Areas

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ERCOT News



Texas Seeking Lead Role in Nuclear SMRs

Abbott Orders PUC to Evaluate Reactors' Integration into ERCOT

By Tom Kleckner

Texas Gov. Greg Abbott last week directed the state's Public Utility Commission to create a working group to study and provide recommendations that will "position Texas as the national leader on advanced nuclear energy."

In a Wednesday *letter* to interim PUC Chair Kathleen Jackson, Abbott wrote that Texas should consider nuclear energy and all other forms of dispatchable power to ensure a reliable grid. He said the PUC should evaluate advanced nuclear reactors to determine whether "they can provide safe, reliable and affordable power."

"Nuclear energy is a proven, reliable and dispatchable generation resource. It will become ever more critical as Texas' need for reliable power continues to grow," Abbott said. "The state of Texas must plan now to best harness these new advanced technologies and ensure the future of the Texas grid."

ERCOT, the grid operator for about 90% of Texas, has seen peak demand increase by more than 14% in the last four years as its population and industrial growth have boomed. It has set 21 peak demand records during the past two summers. (See related story, *Population Growth Fuels ERCOT's Record Demand.*)

Abbott directed the working group to consider all potential financial incentives, determine nuclear-specific changes to the ERCOT market, identify any federal or state regulatory hurdles to development and analyze how Texas can streamline and accelerate permitting for building advanced nuclear reactors.

He also asked that PUC Commissioner Jimmy Glotfelty lead the group and that it coordinate with ERCOT to begin addressing the technical challenges of incorporating advanced nuclear technology.

Glotfelty agreed that Texas will need to "harness every source of dispatchable power" as the state's population continues to multiply.

"The nuclear industry is ripe with technological advancement, and through collaboration with our state's top-tier universities, it has great potential for growth in Texas," he said in a statement provided by the PUC.

Texas already has more than 5 GW of conventional nuclear capacity in the South Texas Project and Comanche Peak plants. The four units came online between 1987 and 1994.

"I think that small modular reactors [SMRs] are very exciting and an important piece of the decarbonization puzzle for 2035 and beyond, especially if we use them to replace aging coal and gas plants. I would like to see more of them gain traction," Michael Webber, a professor at the University of Texas at Austin leading clean energy technology research, told *RTO Insider*. But "they don't really help us with the immediate need for power in the next five years, which is what Gov. Abbott called for," he added.

Abbott made the announcement during a public fireside chat Wednesday with Dow CEO Jim Fitterling and X-energy CEO Clay Sell before about 70 attendees on the UT Austin campus.

The two companies *said* they had selected Dow's UCC Seadrift Operations manufacturing site along the Texas Gulf Coast for a proposed advanced SMR project. They plan to install four 80-MW X-energy high-temperature gas reactor technology at the site by the end of this decade.

The companies will have to submit construction permit applications to the Nuclear Regulatory Commission. Construction on the project is planned to begin in 2026.

The NRC has approved only one small modular model, NuScale's SMR water reactor. The 70-MW unit *costs* about \$9 billion. X-energy says its design reduces costs by using off-the-shelf components manufactured and shipped to the sites.

The commission will soon file *a new rule and regulatory guide* for SMRs' emergency preparedness requirements that it says will help their licensing. (See related story, *NRC Eases Emergency Preparedness Rules for SMRs.*)

The Department of Energy has named Dow a sub-awardee under X-energy's Advanced Reactor Demonstration Program Cooperative Agreement. The agreement provides for up to \$50 million in engineering work, with half funded by Dow.

Abbott touted the state's new tax-abatement program passed by the Texas Legislature this year as a tool to incentivize similar projects.

 August 29 - 31, 2023
 Austin, TX

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 Austin, TX





MISO News



III. Gov. Vetoes Downstate ROFR for MISO Regional Tx Projects

By Amanda Durish Cook

Illinois Gov. J.B. Pritzker (D) on Wednesday vetoed a measure that would have allowed incumbent downstate utilities – particularly Ameren Illinois – exclusive rights to build regional MISO transmission lines.

The governor issued an amendatory veto to HB 3445, striking out the right of first refusal (ROFR) piece of the legislation and letting other portions stand, including an adjustment making on-site solar grants more available to schools, an amendment requiring the Illinois Power Agency to conduct more comprehensive policy studies and a requirement that renewable energy developers be more responsible for drainage system issues stemming from their projects.

State lawmakers have the option to let the governor's decision stand through either acceptance or nonaction or override the veto to pass the bill in its entirety.

Pritzker's office said the ROFR "will raise costs for rate payers by giving incumbent utility providers in the MISO region a monopoly over new transmission lines."

"Eliminating competition will cause rates to increase in the MISO region, where there is currently over \$3.6 billion in planned transmission construction in the Ameren service territory. Without competition, Ameren ratepayers will pay for these transmission projects at a much higher cost, putting corporate profits over consumers." Pritzker said.

MISO executives have said they were monitoring developments around the measure and how it could affect competitively bid projects in its first, \$10.3 billion long-range transmission plan (LRTP) portfolio. (See "ROFR Developments May Complicate LRTP Planning," *MISO Modeling Line Options for 2nd LRTP Portfolio.*)

MISO has seen a flurry of ROFR law activity in its footprint since it approved the first LRTP portfolio last year. The grid operator has a goal to approve another multi-billion-dollar LRTP aimed again at its Midwest region next year.

The Electricity Transmission Competition Coalition (ETCC) welcomed news of the veto, saying the ROFR would have squelched competition and stymied innovation.

"By vetoing the ROFR provision, Gov. Pritzker has powerfully stood up against utility monopoly interests and shown that he is on the side



Ameren Illinois Rivers Transmission Project | Hanson Professional Services

of consumers and backs lower electricity prices," ETCC Chair Paul Cicio said in a statement. "The ROFR was anti-competitive, anti-consumer, inflationary and Illinois families and businesses would have paid higher electricity prices for decades to come."

The ETCC said *data* from the U.S. Energy Information Administration ranks Illinois the 13th highest in the nation for electricity rates.

Bill sponsor Rep. Larry Walsh Jr. (D-Elwood) has vowed to file for an override and pass the bill over the governor's opposition during the legislature's veto session beginning in October. Walsh told *Capitol News Illinois* that he believes a ROFR will ensure Illinois labor unions are employed for the projects under Illinois' worker protections. He said the bill will give the state more oversight over transmission line construction, rather than dealing with out-ofstate developers.

Ameren Transmission Co. of Illinois similarly characterized the ROFR as a "labor proposal" that would "enable much-needed electric transmission capacity to be quickly and cost effectively placed into service."

"Unfortunately, [the] veto will result in unnecessary delays in construction that increase costs for downstate energy customers and put the benefits of the clean energy transition at risk," Shawn Schukar, president of Ameren Transmission Co. of Illinois, said in an email to *RTO Insider* "To do it fast and do it right, with accountability for results, these projects should be managed by trusted local energy companies with a proven track record of success, who already competitively bid the projects with local contractors and union workers."

Pritzker Takes New Nuclear Off the Table

Last week, Pritzker also vetoed *SB76*, which would have lifted Illinois' moratorium on new nuclear reactors. The state in 1987 prohibited construction of new nuclear facilities in the absence of a permanent solution for storing nuclear waste. The bill would have allowed the development of the first small modular reactors in the state.

Pritzker said he vetoed the bill because it contained a vague and "overly broad definition of advanced reactors," which might "open the door to the proliferation of large-scale nuclear reactors that are so costly to build that they will cause exorbitant ratepayer-funded bailouts."

The governor also said the bill didn't provide regulatory protections for Illinois residents who would reside and work near new reactors.

Walsh, a sponsor of that bill, again criticized the governor's veto, saying that nuclear energy must factor into the clean energy transition. He said Illinois lost an "opportunity to allow new, safe and efficient reactors to be a tool in our energy toolbox."



MISO Members Approach Revised NIETCs with Hope, Caution

Stakeholders Concerned About Finances, Primacy, Scope

By Amanda Durish Cook

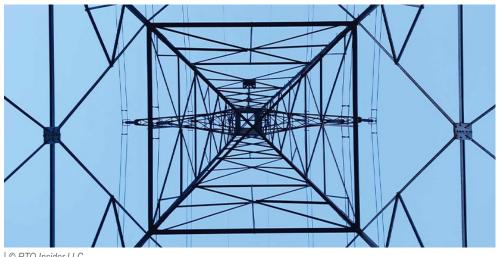
MISO members were both apprehensive and hopeful last week over the Department of Energy's new plan to designate National Interest Electric Transmission Corridors (NIETCs) to spur transmission expansion.

DOE in May issued a notice of intent that it might unroll a new process to designate NIETCs, which would fast-track permitting and financing for transmission projects under development. (See States, RTOs Caution DOE on Transmission Corridors.)

MISO Advisory Committee members discussed the topic at their teleconference Wednesday. The Union of Concerned Scientists' Sam Gomberg said the Environmental sector believes the rule will "expand and accelerate" the building of a system that is prepared for future needs. He also said the rule seems "responsive to past failures" of the federal government to involve itself in transmission siting.

Wisconsin Public Service Commissioner Tyler Huebner said MISO state regulators are split over the proposed rule, with some enthusiastic over how it could spur lines that span multiple planning regions but others saying such a process would be administratively burdensome and a means to subvert existing state routing authority.

During an Organization of MISO States meeting Aug. 14, Texas Public Utility Commissioner Lori Cobos said Texas is "concerned, very concerned" over DOE potentially nominating



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corridor projects that ratepayers will finance.

"What we don't want this to become is an adversarial process," Gomberg said, adding that DOE should recognize states' primacy in permitting and siting.

MISO Transmission Owners representative Stacy Herbert said DOE should make sure its designation process "does not interfere with, but rather complements" regional and interregional transmission planning.

Huebner said some MISO state regulators believe NIETCs will be key to getting interregional lines built.

"We think this might be the best value add of the process," he said.

Huebner said the DOE could invite states to propose NIETCs locations. He said if multiple states propose adjacent locations, that could build toward larger, national designations.

Gomberg said he worried the federal government would use its new permitting authority too little.

"I'm going to be blunt here: I'm not convinced that FERC has the guts to move forward with anything but the most egregious needs on the system," he said.

Gomberg also said while members of the Environmental sector aren't expecting the federal government to be the architects of a "grand national grid" through its authority, there are going to be clear opportunities for corridors.





NY Creates Coordinated Grid Planning Process

Move Supports Transmission Expansion to Meet Clean Energy Goals

By John Cropley

The New York Public Service Commission approved the state's first-ever Coordinated Grid Planning Process (CGPP) on Thursday, 39 months after it ordered the state's utilities to begin the process (20-E-0197).

The move is designed to increase transmission and distribution capacity — while controlling costs and speeding up the process — as New York ramps up its production and consumption of electricity to meet its emission-reduction goals.

The utilities in November 2020 submitted their initial response, which the PSC deemed inadequate in September 2021. The utilities submitted a proposal in December 2021, then held nine technical conferences before submitting their final proposal in December 2022.

Stakeholder response this year was lukewarm at best and loaded with suggestions for changes. (See NY Utilities' Proposed Grid Planning Process Gets Tepid Reaction.) The version of the CGPP approved in Thursday's order incorporates numerous modifications based on stakeholder comments and Department of Public Service staff suggestions. More modifications are expected, informed by experience gained once the first CGPP cycle begins next month.

It is the first time the PSC has initiated a long-term, coordinated, statewide planning process. Its focus is supporting the state's landmark Climate Leadership and Community Protection Act (CLCPA) of 2019, which calls for 70% renewable energy by 2030 and a zero-emission grid by 2040.

The plan lays out a two-year, six-stage process to be conducted by the investor-owned utilities and the Long Island Power Authority, culminating in a report and system investment recommendations for PSC consideration. After the PSC responds, another study cycle will begin.

The two-year time frame is one of the modifications; as proposed, the CGPP would have operated on three-year cycles. That would have been too slow to support the CLCPA, the PSC said. NYISO also generally does its planning on a two-year cycle. A stakeholder group called the Energy Policy Planning Advisory Council (EPPAC) will inform but not control the process. Thursday's order specifies that DPS staff will choose the EPPAC's members, have a significant role in managing it and make decisions necessary to advance the process if the EPPAC cannot reach a consensus on giving direction to planning entities.

The Advanced Technology Working Group — which is focused on dynamic line ratings, power flow control and energy storage — will support the CGPP by scouting for solutions to constraints as they are identified. ■



Transmission lines near Niagara Falls are shown. The New York Public Service Commission has adopted a coordinated grid planning process to expedite expansion of transmission capacity. | *Shutterstock*



2023 FUELS CONFERENCE

The University of Massachusetts Club One Beacon Street, Boston, MA Monday, September 18, 2023 | 8 am to 5 pm Networking Reception to Follow





September 29, 2023

FULL AGENDA/REGISTRATION HERE



NYISO Business Issues Committee Briefs

July Market Performance

NYISO Senior Vice President Rana Mukerji on Wednesday *presented* the July operations report to the Business Issues Committee, saying it was a "quiet month" and that July's average energy costs were down 54% compared to last year.

July's higher average temperatures increased locational-based marginal prices compared to June, but the 76.7% year-over-year decline in average fuel prices means prices are much more stable.

Working Capital Fund Rebalance

The BIC also voted to recommend that tariff revisions presented by NYISO related to rebalancing the ISO's working capital fund be approved by the Management Committee on Aug. 30.

NYISO is required to maintain a working capital fund that rebalances its coffers, either by refunding or charging customers based on their market contribution, and the ISO proposed to increase the frequency of this rebalancing to semiannual, as well as use a six-month lookback period in its calculations, rather than a whole year.

The ISO argues that its proposals will make customers' bills or refunds more accurate, shorten the time it will take for customers to receive either their bills or refunds and enable customers to obtain interest distributions twice a year.

NYISO expects the MC will vote to recommend that the board approve the proposed revisions, and it anticipates filing the revisions with FERC in October.

Staff Shakeup

NYISO told the BIC that Mike DeSocio, director of market design at NYISO, is leaving his position at the end of the month to become an energy consultant.

DeSocio has been with NYISO for 23 years and will be replaced by Shaun Johnson, director of market mitigation and analysis at the ISO.

Johnson previously led the market design team



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for roughly a decade, during which he helped shepherd broader regional market initiatives that enabled the design of current markets, according to NYISO staff. ■

John Norris

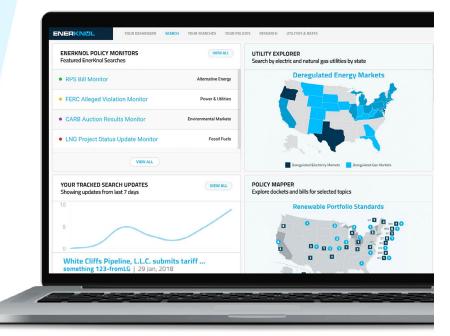
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NYPSC Seeks FERC Rehearing on NYISO's 17-Year Amortization

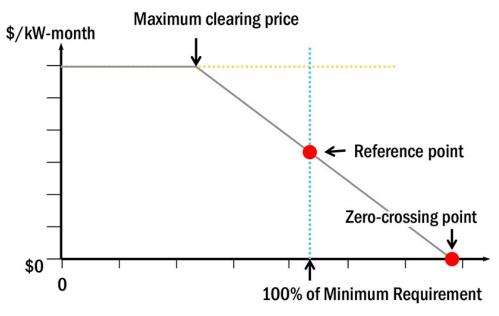
The New York Public Service Commission last week asked FERC to rehear its order approving NYISO's proposal to use a 17-year amortization period in the ISO's capacity auction demand curves (*ER21-502*).

The PSC said its rehearing request is supported by points it made last month in a petition urging the D.C. Circuit Court of Appeals to review FERC's decision to allow the ISO to reduce the 20-year amortization period — the assumed time that a hypothetical gas-fired peaking plant will remain operational — to 17 years. (See DC Circuit Asked Again to Rule on NYISO's 17-Year Amortization.)

NYISO proposed the changes in response to legislation that set strict net-zero standards for fossil fuel plants, reducing their operational lives, but the PSC said the move will hurt consumers and "cause an increase in over \$100 million in unhedged capacity costs for the state."

The PSC noted that FERC's letter order accepting the amortization proposal departed from precedent because the commission accepted the NYISO plan without explanation after having rejected it twice previously.

The FERC-approved demand curves became effective in July, prompting the PSC to seek a quick ruling because the use of the new amortization period in auctions "will wrongfully increase by hundreds of millions of dollars



ICAP demand curve slope | NYISO

per year the wholesale electricity rates paid by New York ratepayers between July 2023 and March 2025."

The PSC also contended that NYISO's proposal is speculative, basing current demand curves on technologies that are either not yet in development or may never exist, highlighting how previous rulings wrote that state legislation "does not require that all existing fossil fuel generators retire by no later than 2040 to satisfy the 2040 zero-emission requirement."

NYISO implemented the 17-year amortization period as part of its demand curve reset to adjust market demand assumptions for upcoming capability years.

- John Norris





NYISO: Software Upgrades for DER Participation to be Ready Next Month

By John Norris

NYISO told FERC on Thursday the software development and testing necessary to implement its distributed energy resource participation model will be ready by Sept. 1 (*ER23-2040*).

The ISO had requested an effective date of Dec. 15 for the revisions it had submitted in June, later than it thought necessary but proposed "out of an abundance of caution."

"Prompt commission action will enable DER and aggregations to begin enrolling in the NYISO's markets by the end of 2023," the ISO said in *response* to FERC staff's deficiency letter, which sought more information on the proposal. (See FERC Seeks More Info on NYISO DER Aggregation Proposal.)

FERC had approved NYISO's participation model in 2020, but the ISO proposed modifications this year to better align the model with its new software and ease the burden on staff. Among those changes was a controversial 10-kW minimum for DERs in an aggregation to participate. The commission directed the ISO to explain how it had come to

the 10-kW figure.

NYISO said it had become apparent that the new manual processes developed to enroll and track DER and aggregations "would be unmanageable with a high volume of DER penetration." It said it analyzed enrollments in its existing Emergency Demand Response Program and Special Case Resource program as comparable proxies to the DER participation model. Of the 9,814 resources in the two programs as of July 1, 6,475 are less than 10 kW, it said. At a combined 7.3 MW, they represent just 0.58% of the programs' total capability.

"NYISO does not currently have sufficient resources to timely and efficiently administer the monthly enrollment processes required for the DER and aggregation participation model if several thousand end-use customers seek to enroll in the markets at once," the ISO wrote. "The costs associated with building the infrastructure to enable such participation include more staff, more software and the development of new market rules that will result in less oversight of small DER."

FERC also asked NYISO to explain what it con-

siders a DER "material modification," address its proposed DER metering and telemetry requirements, justify why it will use the lowest cost DER as an aggregation's reference level and explain why it would eliminate locational-based marginal pricing and bid-based reference levels for aggregations.

NYISO said a material modification constitutes "any change to the physical and operating characteristics of the DER" and included nearly 40 examples that would trigger a review, including a change of address, ownership or capability.

The ISO also responded that its metering rules ensure consistency among similar resources and do not give one participation model, whether aggregation or standalone, an undue advantage.

Additionally, NYISO justified its reference levels revisions by claiming the proposals will help the ISO better understand aggregation market and bidding behaviors, as the lowest-cost DER level incentivizes aggregations to be available more often, while switching to cost-based references will allow the ISO to better study relevant financial data.

July 2023 EDRP and SCR Program Enrollment Data			
Range	Number of Resources	Total Capability (Declared Value) (MW)	
$1 - 9 \ kW^{47}$	6,475	7.3	
10 – 99 kW	1,835	82.8	
100 – 499 kW	1,181	254.9	
500 – 999 kW	175	119.8	
1,000 – 4,999 kW	122	228.3	
5,000 – 9,999 kW	9	60.9	
10,000 kW+	17	500.0	
Total	9,814	1254.0	

NYISO July 2023 emergency demand response and special case resource enrollment data | NYISO



PJM Stakeholders Finalize CIFP Proposals Ahead of Vote

By Devin Leith-Yessian

PJM and stakeholders have finalized their Critical Issue Fast Path (CIFP) proposals and posted executive summaries detailing how their packages would redesign the capacity market if approved by the Board of Managers.

The proposals will be presented to the board during the CIFP Stage 4 meeting on Wednesday, followed by a special Members Committee meeting in which stakeholders will vote on recommending packages to the board. The board *letter* initiating the CIFP process stated its intention to direct PJM to make a FERC filing in October with a slate of capacity market changes to be informed by stakeholders' recommended proposals.

The 20 proposals on the table largely fall into three camps: PJM's two proposals and variants building off it from Constellation, Buckeye, Vistra, LS Power and the Consumer Advocates of the PJM States (CAPS); the Independent Market Monitor's Sustainable Capacity Market (SCM) design and variants from Daymark/ East Kentucky Power Cooperative (EKPC) and American Municipal Power (AMP)/ J-Power; and an annual market with two capacity products designed by Leeward Energy and American Electric Power (AEP).

PJM Adds Annual Auction Design Proposal

Following stakeholder feedback that its seasonal capacity market design may need additional development, PJM added a second proposal retaining the annual Base Residual Auction (BRA) structure, while including all other changes in its original proposal. Both *options* will be voted on Wednesday. (See PJM Updates Proposal as CIFP Nears End.)

The seasonal design would allow generators to submit a "menu" of offers, with summer, winter and annual components. Seasonal offers would include the incremental costs to deliver capacity for that period, while the annual offer would be based on costs that could be avoided if the resource were to be committed for the full year. Resources would have separate accreditations for each season. Variable resource rate (VRR) demand curves would be created for each season and calibrated to allow the reference resource to recover its full annual costs in one season if the other season clears at zero.

Both the annual and seasonal proposals would include correlated outages, ambient de-rates and other availability risks in resource accreditation and all resources, except for energy efficiency, would be accredited under a marginal effective load carrying capability (ELCC) approach.

PJM's proposals would shift to expected unserved energy (EUE), which aims to measure the breadth of an outage both in duration and number of megawatts shed, as the reliability metric instead of loss of load expectation (LOLE), which tallies the number of outages experienced. Marginal effective load carrying capability (ELCC) would be used for the accreditation of all capacity resources, except for energy efficiency.

The option for retroactive replacement of capacity obligations after a performance assessment interval (PAI) would be eliminat-



PJM's Walter Graf presents the RTO's Critical Issue Fast Path proposal on Aug. 14. | © RTO Insider LLC

ed and the proposals would create a market where resources can trade hourly obligations prior to the day-ahead market.

Generators would have the option of using a default capacity performance quantified risk (CPQR) calculation to represent the risk they take on as a capacity resource.

Several Stakeholders Propose Variants of PJM Proposals

Three proposals — from the Monitor, Daymark/EKPC and AMP/J-Power — focus on the capacity performance (CP) non-performance penalty charge rate and the annual stop-loss limit. The three would redefine both parameters to be based on the annual BRA clearing price, rather than the net cost of new entry (CONE). Since their effect is the same, they will be combined in Wednesday's voting.

The penalty rate and stop-loss were two of the three changes to the CP structure the MC recommended changing in a May vote. However, the Board of Managers directed PJM to file changes to the triggers initiating a PAI, which defines when a generator can be penalized for not meeting its capacity obligations. (See FERC Approves PJM Change to Emergency Triggers.)

In addition to changing the penalty and stoploss to the capacity clearing price, Buckeye Power *recommended* that all capacity resources be required to offer into the energy market, provide hourly operating parameters and real-time telemetry, and have a fuel cost policy if their capacity offer is above zero. The company offered two variants of its proposals, including PJM's seasonal and annual designs and the bulk of their other components.

Buckeye stated that PJM's report on the December 2022 winter storm showed that the RTO lacks insight into the amount of curtailment it will receive from demand response (DR) resources and additional provisions are needed to ensure it can deliver on its capacity obligations. Either firm-service level (FSL) or guaranteed load-drop (GLD) would be required for DR to participate in the capacity market. Intermittent and DR resources would retain their exception from the requirement that generators offer into the capacity market.

Constellation's two *proposals* mirror the bulk of PJM's annual and seasonal capacity options, but change the risk modeling to use 50 years of historical weather data, rather than 30 years and would use a "prompt auction" time-line with six to 12 months between the auction

and delivery year. The proposals also include a commitment to open a stakeholder process to consider additional changes to the energy and ancillary services (E&AS) markets.

PJM had proposed to use 50 years of weather data in previous iterations of its proposal, but arrived at the conclusion that an adjustment for warming temperatures would be needed past 30 years. After presenting multiple versions of how such an adjustment could be done, PJM decided to start its weather lookback with data from 1993 with no adjustment. The Constellation proposal would not include a climate change adjustment.

While it's supportive of a more granular capacity market design in the future, Vistra's executive summary argued that additional work is needed on a seasonal design before the company can support filing changes with FERC. Its proposal is based on PJM's annual auction proposal, but with several modifications including retaining the ability for generation owners to retroactively substitute capacity obligations after a PAI, changing the default CPQR calculation and holding off on expanding the ELCC construct to all resources to the 2026/27 BRA to allow for more refining.

Vistra's *proposal* would retain the penalty rate and stop-loss based on net CONE, arguing that using auction clearing prices to determine the penalties would reduce the incentive for resources to perform during an emergency. Eligibility for bonus payments to generators that overperform during a PAI would include all resources that are eligible to participate in capacity auctions, including those that do not clear. PJM's proposal would tighten eligibility to only cleared capacity resources, which Vistra argued would reduce the incentive to perform.

The proposal includes PJM's testing requirements, but states PJM should account for market and operating conditions when scheduling tests to avoid creating "testing traps" where a generator that would meet its obligations under real-world conditions nonetheless fails the test. It recommends testing take into account the gas pipeline nomination cycle, arguing that many resources would not procure fuel when system conditions do not indicate they will be dispatched.

The company's proposal also calls for a stakeholder process to be initiated looking at improving accreditation for thermal resources, including marginal ELCC or alternatives, and a second CIFP process with the goal of "developing a framework that protects both consumers and market participants alike from

market power, but allows resources to employ their best commercial judgement in submitting offers into the market."

The consumer advocates' *proposal* supports PJM's seasonal model, but opposes calibrating the demand curves to allow full annual cost recovery in one season, arguing that could lead to a doubling of capacity payments. It also opposes removing the capacity benefit of ties (CBOT) from the balancing ratio, a proposition it calls "overly conservative" and not in line with the probabilistic manner in which the value of generation resources is viewed.

Removing CPQR from the calculation of resources' avoidable cost rate (ACR) also raises market power mitigation concerns and leads to uncompetitive auctions. It recommends leaving CPQR as a component of ACR so that risks can be offset by net E&AS revenues.

"It is unlikely that any consumer advocate office could support such a significant change in PJM's philosophies. The consumer advocates have always strongly supported competitive wholesale markets and see the competitive construct focus as a pillar by which PJM stands upon," the CAPS executive summary states.

The proposal also includes changing the distribution of CP bonus payments to include a share going to consumers to reimburse them for the capacity that was not delivered by resources not meeting their obligations.

LS Power based its *proposal* off PJM's annual capacity package, arguing the seasonal design has not been adequately vetted, modeled and back-cast. It would substitute the marginal ELCC accreditation for thermal resources with an equivalent unavailability factor-weighted approach, which reduces accreditation for any historical shortfall in performance. Capacity offers would be similar to the energy market, with generators offering market-based and cost-based offers. The marginal offer would be subject to the Monitor market power test and would be mitigated to the cost-based offer if it fails and the auction re-run until the marginal offer does not fail the market power test.

Fixed resource requirement (FRR) entities would be required to meet their own capacity needs, as well as the average percentage that the BRA has cleared above the installed reserve margin in the prior five years. The proposal also retains retroactive replacement transactions for generators and status quo eligibility for CP bonus distribution.

The LS proposal would change the CP penalty charge rate to be based on the BRA clearing price but leave the annual stop-loss based on

net CONE. The company offered a second proposal identical to its first but leaving the status quo charge rate in place.

Monitor Proposes Hourly Model with Annual Pricing

The Monitor's *proposal* would create a forward capacity market where committed resources are paid for the capacity they're available to provide in each hour of the year based on a single annual clearing price.

Resources would be cleared based on their expected hourly availability, which is based on historical data including outage correlations with temperatures and weather.

Resources would be tested at least twice each year, once each in the summer and winter, and if they fail to start then or when dispatched they would forfeit all capacity revenues going back to the last time they started and reached their full installed capacity (ICAP) and going forward until they successfully start and ramp up to their ICAP. The Monitor's executive summary argued that the model would incentivize resources to mitigate their risk by ensuring they're able to start at any time of the year and to self-schedule their generators periodically to both self-test and to limit the potential lost revenue if they fail a test.

All resources, including intermittent and storage, would be subject to the requirement that resources offer into the capacity market, which the Monitor argued is imperative to ensure access to transmission capability is not withheld, as intermittents make up an increasing share of the PJM fleet. Resources' obligation would be based on their availablity in each hour and they would be paid when they're available according to their obligation, which the Monitor argued means that intermittents would not be penalized for not being available when they couldn't produce energy.

Without penalties for nonperformance, the proposal would eliminate the CP construct and its bonuses and penalties, which the Monitor said fail to provide functional incentives outside of PAIs and potentially can increase the likelihood of emergency conditions. The high penalty rates also create a corresponding relationship with the CPQR component in generators' offers, increasing clearing prices.

"This impact illustrates the circular logic of the CP model. The CP model creates arbitrarily high penalty rates which affect CPQR which increase the ACR market seller offer caps ... Under the SCM approach, the arbitrary and extreme penalties would be eliminated and therefore the impact on CPQR and the impact

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on capacity market clearing prices would be eliminated," the Monitor's executive summary states.

Stakeholder Hourly Capacity Proposals

The joint EKPC and Daymark *proposal* also would clear capacity to meet firm load in each hour of the delivery year with locational deliverability constraints, but would bifurcate the product into base capacity (BC), which would be hourly expected load plus the reserve margin, and emergency capacity, which is aimed at meeting hourly load during emergency conditions with modeling of extreme weather and fuel delivery force majeure. Resources could take either an EC or a BC position in capacity auctions, but not both.

Emergency capacity resources would be required to demonstrate they can operate under extreme temperatures and humidity, akin to the enhanced winterization concept in PJM's proposal, show they have the financial ability to absorb non-performance penalties and have verifiable firm fuel. It would be procured in tranches and committed for three-year intervals.

Base capacity would be considered to have

met its obligation if it offers committed capacity into the day-ahead and real-time markets, while EC would be considered to have not met its obligation if it's unavailable during a dispatch day where emergency conditions are present. A non-performing EC resource would be subject to a penalty of the daily capacity rate multiplied by 120 and its unforced capacity. If it's unavailable three times during a three-year interval, it would be removed from the roster of EC resources for the remainder of the period.

The third joint EKPC and Daymark proposal would combine PJM's risk modeling component, eliminate CP penalties and use the Monitor's hourly method of measuring and compensating capacity.

Taken together, the three joint AMP and J-Power *proposals* would create a two-phased transition to a modified version of the Monitor's SCM. The transitional phase would include the proposed shift to a CP penalty and stop-loss based on capacity clearing prices, as well as changes to the balancing ratio to include net exports and applying the same penalties to FRR resources that generators participating in PJM's Reliability Pricing Model face. The option of using physical penalty commitments also would be eliminated for FRR entities.

The proposal for the second phase would revise the SCM to have a two-year procurement horizon with two Incremental Auctions (IAs) and no exceptions to the requirement that capacity resources offer into the energy market.

Leeward and AES Propose Four-plus Season Market

A *proposal* from Leeward and AES, jointly made as the capacity coalition, would create a capacity market with at least four seasonal and four intervals for each day of the delivery year. The auction structure would follow the status quo for establishing clearing prices, but would have separate accreditation for their expected output for each seasonal and daily interval. All resources would be subject to the must-offer requirement into the capacity market once the new market structure has been established.

Rather than being designed for implementation in coming auctions, like other proposals, the coalition's proposal recommends rollout in the 2030-31 delivery year. The proposal calls for an additional CIFP-like process to create more detailed rules for the new structure.

PJM MRC/MC Preview

Below is a summary of the agenda items scheduled to be brought to a vote at the PJM Members Committee special meeting Wednesday and Markets and Reliability Committee meeting Thursday. Each item is listed by agenda number, description and projected time of discussion, followed by a summary of the issue and links to prior coverage in *RTO Insider*.

RTO Insider will be covering the discussions and votes. See next week's newsletter for a full report.

Members Committee

Endorsements (2:10-5:00)

Stakeholders will discuss and vote on 20 proposals Wednesday, considering packages that seek to overhaul the PJM capacity market through the critical issue fast path process (CIFP) *initiated* by the board in February. Voting will not follow the MC's usual truncated protocol — in which voting ceases after a package garners sector-weighted support — and stakeholders instead will vote on each proposal in turn. The committee's support of the packages will serve as recommendations to the PJM Board of Managers, indicating how the membership feels the board should proceed in its aim of directing PJM to make a FERC filing with changes to the capacity market in October.

Markets and Reliability Committee

Consent Agenda (9:05-9:10)

B. Endorse proposed *revisions* to Manual 13: Emergency Operations to address requirements in NERC's EOP-011 standard.

Endorsements (9:10-9:50)

1. Enhancements to Deactivation Rules Issue Charge (9:10-9:50)

PJM's Paul McGlynn will *present* a problem statement and proposed issue charge, drafted in conjunction with the Independent Market Monitor, seeking to initiate a stakeholder discussion looking at PJM's generation deactivation process. The proposed scope includes potentially increasing the deadline for generators to notify PJM of their plans to deactivate, the compensation level for generation owners that agree to continue operating their resources through reliability-must-run contracts and the triggers for offers a generator such a contract. (See "PJM and Monitor Present Generation Deactivation Issue Charge," *PJM MRC/MC Briefs: July 26, 2023.*)

The committee will be asked to approve the proposed issue charge.

2. Peak Market Activity (9:50-10:15)

PJM's Yong Hu will *present* a proposal and corresponding tariff revisions addressing peak market activity credit requirements. The language was endorsed by the Risk Management Committee.

The committee will be asked to endorse the proposed solution and corresponding tariff revisions.

Issue Tracking: Peak Market Activity Credit Requirement



DC Circuit Affirms FERC Order on PJM MSOC

Electric Groups Petition Court to Overturn

By Devin Leith-Yessian

The D.C. Circuit Court of Appeals last week upheld FERC's 2021 order reworking PJM's market seller offer cap (MSOC) to replace the default offer cap with a unit-specific review process (21-1214).

The decision, issued Aug. 15, overrules challenges from a series of generation companies arguing that the order deprived them of their right to set their own rates, didn't allow for a full accounting of the financial risks that come with a capacity obligation and didn't adequately explain why it eliminated the default offer cap instead of modifying it. (See Judges Skeptical of Capacity Sellers in PJM Offer Cap Dispute.)

The order was focused on increasing the instances in which generators' offers will be subject to unit-specific review to determine if market power mitigation is necessary, particularly in the case of the marginal resource clearing the capacity market. With the default offer cap in place, as much as 99% of offers fell below the cap and were determined to not require mitigation, a rate the commission determined was too high (*EL19-47*).

The component the commission believed to be behind the high offer cap was the number of performance assessment intervals (PAI) a generator could expect to face on average per year. The order establishing the capacity performance (CP) construct pegged the anticipated number of intervals at 360 each year. However, in a complaint arguing that the offer cap was too high, the Independent Market Monitor said the subsequent four years saw 24 intervals. (See FERC Backs PJM IMM on Market Power Claim.)

Instead of basing when an offer is subject to unit-specific review on whether the marginal cost of taking on a capacity obligation — the resource's avoidable-cost rate (ACR) — exceeded the amount it expected to earn during PAIs, the commission's 2021 order eliminated the default offer cap with unit-specific review of resources' ACRs.

The court disagreed with the generators that they could not set their own rates under the new paradigm, finding that capacity auction offers are not rates, as they are submitted to PJM, rather than filed with FERC, and are confidential rather than public. Although the Monitor can suggest an alternative offer for PJM to consider, the RTO still holds the "prima-



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ry role" in selecting an offer, the ruling states, and generators also can appeal to FERC if they disagree with the selection.

"To summarize the interaction, suppliers can submit their offers to PJM regardless of the Independent Market Monitor's views, then ask the commission to referee if a dispute persists. As such, the current tariff and September 2021 order make quite clear that suppliers do not play second fiddle when their proposed offers deviate from that of the Independent Market Monitor," the ruling states.

The court also sided with the commission in finding that generators retain flexibility when accounting for the risks that come with taking on a capacity obligation. Past orders have made clear that costs that also would be incurred if the generator participated only in the energy market cannot be included in capacity offers and that by not outlining an "exhaustive" list of all costs that could be included in the ACR, the order does provide flexibility.

The generators' arguments that alternatives to eliminating the default offer cap had not been given due weight by the commission also were denied. The court pointed to FERC's argument in its 2021 order stating that while alternatives would have recalibrated the cap, they still would have resulted in a value so high that only a small number of offers would be subject to review and therefore would not have resolved the issue.

While it did not join in the appeal to the court, PJM filed a request for FERC to rehear its order arguing that unit-specific review of all resources could lead to over-mitigation of capacity resources. (See PJM Requests Rehearing of MSOC Change.)

"The harm of over-mitigation under a unitspecific ACR approach is real and will inhibit the ability of capacity market sellers to base their offers on their respective cost estimates and assumptions about what is likely to occur three years in the future," PJM said in its filing. "This is because each capacity market seller's evaluation of risk relating to actual costs and revenues varies for various resources ... and it is not appropriate for PJM or the Market Monitor to substitute their assessment of the risks for the capacity market seller's demonstrable assessment of the risks."

EPSA Says MSOC Structure Threatens Reliability

In a *statement* released Aug. 15, the Electric Power Supply Association (EPSA) argued that the ruling leaves intact a capacity market that interferes with generators' ability to earn an adequate return on their investments needed to service the grid reliably. The association joined Vistra, Constellation, LS Power, Calpine, Talen Energy and the PJM Power Providers Group in petitioning the court to overturn the commission's order.

"The changes approved by the court to PJM capacity offers undermine the ability of private investors and developers to assume risk and earn an adequate return — jeopardizing PJM's ability to procure sufficient generation to meet anticipated demand in today's challenging landscape," EPSA President Todd Snitchler said. "This decision from the court adds urgency to the Board-directed stakeholder process underway at PJM to develop reforms that substantially address the flaws in the capacity market — the vehicle by which the RTO ensures resource adequacy and system reliability."

He noted PJM has raised alarms that the expected pace of resource retirements may exceed new resources coming online and threaten reliability, a dynamic he said will be exacerbated by the design of the capacity market.

"Now more than ever, with at least 40 GW of generation flagged by PJM for being at risk of retirement without sufficient replacement, it is critical that the resources needed for reliability have adequate incentives to stay running," he said. "Yet FERC and PJM are once again making it harder for markets to procure much needed resources rather than enable greater participation of resources that provide reliability."



NCUC Approves Duke's Performance-based Rates

By James Downing

The North Carolina Utilities Commission (NCUC) on Friday approved Duke Energy Progress' latest rate case, which includes "performance-based regulation" meant to help achieve the state's environmental policies.

Gov. Roy Cooper (D) signed HB 951 into law in October 2021, which required the utility to implement performance-based regulation. The law defined that as "an alternative rate-making approach that includes decoupling, one or more performance incentive mechanisms and a multiyear rate plan, including an earningssharing mechanism (ESM), or such other alternative regulatory mechanisms."

The law recognizes that traditional ratemaking no longer works well because utilities are shifting from making larger and more infrequent investments (such as large-scale power plants) to smaller, more frequent investments such as grid improvements and distributed energy resources, the utility said in its initial application.

Duke Energy Progress told the NCUC that it took a conservative approach on its first application for performance-based regulation (PBR) so it could gain experience from its implementation. DEP serves 1.7 million customers in the Carolinas. The firm's other utility in the state, the larger Duke Energy Carolinas, has a pending application to implement PBR.

The new rate mechanism represents a "fairly significant departure" from how the state has regulated its utilities for decades, Friday's order said. Specifically, the new law approved four new concepts in retail rate regulation.

First, the multiyear rate plan means DEP has

its rates set for several years, with periodic changes in base rates that do not require an additional rate application. Second, utilities including DEP can use a decoupling mechanism for its residential customers. Third, the ESM allows utilities to decide to file a new rate case when their weather-normalized earnings fall below the authorized rate of return and requires them to refund customers on excess weather-normalized revenue, plus 50 basis points.

The fourth major change is the performance incentive mechanism that links rates with performance in targeted areas consistent with public policies. DEP can earn extra money for doing well under the PIMs, or it could face penalties that go back to customers if it does poorly.

The PIMs are designed to increase the number of customers on time-differentiated rates, raise the number of net-metered interconnections, encourage the interconnection of utility scale generation above DEP's targets and help large commercial and industrial customers achieve decarbonization goals.

The order drew partial dissents from four of the seven NCUC commissioners. Chair Charlotte Mitchell dissented in part and was joined by Commissioner Kimberly Duffley in full and Commissioner Karen Kemerait on its findings on DEP's rate of return and recovery of COVID-19 costs. Commissioner Daniel Clodfelter wrote a separate dissent.

The commission approved a rate of return of 9.8%, while Mitchell and her colleagues would have approved 10%, reasoning that the costs of borrowing money have risen significantly and DEP risks a potential ratings downgrade at

the lower level, which would cost customers. It could force the utility to cut costs to maintain its rating.

"Given the dynamics of the electric system, including changes in the generating mix, as well as the increasingly extreme summer and winter weather in North Carolina, now is not the time to put DEP in a position to cut to the extent that could impair the reliable operation of the system," Mitchell said in the dissent.

COVID expenses include costs from having a moratorium on disconnections during the pandemic, which led to bad debt and other costs, as well as costs incurred by DEP and its employees to maintain the grid during the pandemic. Mitchell would have allowed DEP to collect additional funds, and, in her dissent, argued the majority decision is not good for the firm's financial ratings.

Clodfelter's dissent focused in part on the PIMs, arguing the commission should have adopted ones that encourage DEP to cut costs in order to offset upward pressures on rates, and to encourage the utility to finish projects early or under budget. He noted the law gave the NCUC and stakeholders little time to implement the first rates and argued they should prepare well for the next rate case in a few years.

Duke said it was reviewing the order and that the multiyear rate plan approved by the NCUC would strengthen the electricity grid while facilitating a cleaner energy future.

"We believe this is a constructive outcome that enables Duke Energy to maintain strong progress toward building a cleaner, more reliable energy future for our North Carolina customers," the firm said in a statement. ■



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SPP News



SPP Awards NextEra 3rd Competitive Project

Board Endorses New Mexico Upgrade's NTC After 3-week Pause

By Tom Kleckner

Three weeks after it was unable to agree on a recommended developer for a competitive upgrade in New Mexico, SPP's Board of Directors regrouped Aug. 15 and endorsed an industry expert panel's *initial direction*.

Following a brief virtual discussion, the board approved a notification to construct award to NextEra Energy Transmission (NEET) Southwest as the Crossroads-Hobbs-Roadrunner transmission project's designated transmission owner.

Xcel Energy subsidiary Southwestern Public Service (SPS), the incumbent transmission provider, was selected as the upgrade's alternative designated TO.

NEET Southwest's bid came in at \$291.6 million to build the proposed 90.5- and 44.5mile, 345-kV lines to connect the Crossroads, Hobbs and Roadrunner substations. SPS' bid came in at \$220 million.

NEET Southwest and SPS were the only entities to submit proposals. A third proposal that came in at \$282.7 million is thought to be NEET Southwest's; according to the IEP's report, the two proposals were similar, but the SPS bid offered a construction schedule of one year, half as much as the other two.

"No explanation, method or means was provided in the proposal to support the indicated timeframe to construct," the IEP said of the SPS bid.

The board failed to reach a decision during last month's board meeting in St. Paul, Minn., when some of the directors were unable to get satisfactory answers from the IEP on the cost and timelines of the winning bid. The board rejected the panel's recommendation after the Members Committee's straw ballot gained only three votes in favor. (See SPP Board Rejects Recommended Competitive Project.)

The Members Committee's straw vote passed in a 10-7 vote. The committee also approved SPS as the alternate DTO 10-2, with five abstentions.

Larry Altenbaumer, one of the more vocal directors during the



SPP Director Larry Altenbaumer | © RTO Insider LLC



The IEP's Mike Jacobs (left) and William Steele during the July board meeting | © RTO Insider LLC

July discussion, supported the IEP's recommendation during last week's call.

"As a board member, I don't have the credentials or the analytic ability to independently develop my own recommendation, and I don't think it is either the job of me as a board member or the IEP to try to resolve deficiencies in terms of proposals that are submitted," he said.

"I remain a very strong supporter of the competitive process. but in the end, my conclusion is that the shortfalls we have in this particular process were largely shortfalls in terms of what had been submitted by proposals," Altenbaumer said.

He said he still was unsatisfied with the panel's response to one of 10 questions the directors asked the industry experts. Asked to explain who the panel would have recommended had the scores been the same, the IEP acknowl-edged the scores were very close.

"Therefore, the essence of this question was discussed in the selection of the proposals," the panel wrote. "The IEP concluded that based on the review of factual information in the proposals as described in the IEP report, the IEP made and stands by its recommendation as stated in the IEP report."

Altenbaumer said he planned to suggest additional considerations "that I think can further strengthen what is already a very high-quality and comprehensive competitive bid process."

SPP will review its competitive transmission owner selection process, required under FERC Order 1000, for potential improvements. The grid operator has done the same thing after the four previous IEP panels.

NEET Southwest has been awarded SPP's last three competitive projects, including Wolf Creek-Blackberry in Kansas and Missouri and Minco-Draper in Oklahoma. (See "Expert Panel Awards Competitive Project to NextEra Energy Transmission," SPP Board of Directors/Members Committee Briefs: Oct. 26, 2021 and SPP Board of Directors/Markets Committee Briefs: April 26, 2022.)

The IEP was seated last August to evaluate anonymous bids for the project. The upgrade, initially estimated to cost \$376.3 million, was proposed by SPS as an alternative to a previously identified project in the 2021 Integrated Transmission Plan. (See SPP Board of Directors/ Members Committee Briefs: July 26, 2022.)

Company Briefs

First Solar: Audit Found Forced Labor in Malaysian Factory



First Solar last week said that an audit had found that migrant workers in its operations in Malaysia were victims of forced labor.

The independent audit, which was included in a corporate sustainability report, found that four subcontractors in Malaysia had charged the workers recruitment fees in their home countries and withheld their pay and passports. The company said it is requiring the subcontractors to change how they treat workers and agree to periodic reviews to ensure that they are no longer using forced labor.

First Solar said it was making the audit public in part to raise awareness of the kinds of practices it discovered.

More: The New York Times

AEP Completes Sale of Unregulated Renewable Assets

American Electric Power last week an-



nounced it has completed the sale of its 1,365-MW unregulated, contracted

renewables portfolio to IRG Acquisition Holdings, a partnership owned by Invenergy, CDPQ and funds managed by Blackstone Infrastructure, at a value of \$1.5 billion including project debt. AEP will net about \$1.2 billion in cash after the deal.

AEP signed an agreement to sell the assets in February and obtained approval from FERC, clearance from the Committee on Foreign Investment, and approvals under applicable competition laws.

The portfolio includes 14 projects representing 1,200 MW of wind and 165 MW of solar in 11 states.

More: AEP

EEI Board Names Brouillette President, CEO

The Edison Electric Institute last week announced that Dan Brouillette has been selected as EEI's president and CEO, effective Oct. 1. Brouillette currently serves as president of Sempra Infrastructure. Prior to joining Sempra, Brouillette served as the 15th Secretary of Energy.

Brouillette will succeed Tom Kuhn, who previously announced plans to step down on Dec. 31.

More: EEI

Nikola Recalls Battery-electric Semitrucks Following Fire

Nikola last week announced a recall of all the battery-electric semitrucks it has made to date (209 in total) after an investigation into a recent fire found a flaw.

Nikola said a third-party investigation found that a coolant leak inside a battery pack was likely responsible for a fire in a truck parked at the company's Phoenix headquarters on June 23. A second truck used by the company's engineering team had a similar malfunction on Aug. 10.

Shares fell more than 6% following the report.

More: CNBC

Federal Briefs

DoD Blocks North Carolina Offshore Wind Leases

Two offshore wind sites off the coast of North Carolina that the Bureau of Ocean Energy Management recently selected as lease areas will no longer be leased following objections from the Department of Defense.

A 2022 report from the National Academies of Sciences, Engineering and Medicine found that offshore wind turbines can interfere with radar systems. Colonel Quaid H. Quadri, Jr., the commander of the 169th Fighter Wing, South Carolina Air National Guard, also warned of the potential for tall turbines to restrict supersonic flights and severely limit air combat training.

More: The Carolina Journal

DOE: Energy Jobs Have Increased in 95% of US Counties

The Department of Energy last week released county-level data on energy employment across the U.S. that found that



jobs grew in 95% of counties between 2021 and 2022.

Solar jobs increased in the largest number of counties

of any electric power generation technology, growing in 74%.

The county-level data provides employment numbers for a range of energy technologies in every county of the U.S. Data is reported for five energy sectors: electric power generation; transmission, distribution and storage; fuels; energy efficiency; and motor vehicles and component parts.

More: Energy.gov

DOE Awards VT \$1.5M for Hydrogen Storage Project



Virginia Tech was recently awarded \$1.5 million from the DOE to study the

potential for storing hydrogen underground in depleted Appalachian gas fields.

The grant, which Virginia Tech will combine with \$375,000 in non-DOE funding for a total of \$1.875 million, was part of \$34 million in grants awarded to 19 projects that intend "to make clean hydrogen a more available and affordable fuel for electricity generation, industrial decarbonization and transportation," according to a DOE news release.

More: Cardinal News



State Briefs

ALABAMA

Alabama Power Abandons Planned Hydro Facility

Alabama Power last week announced it has dropped its plans for a 1,600-MW pumped storage hydroelectric facility on Chandler Mountain.

The news came 48 hours after two members of the Public Service Commission released statements indicating they would oppose the plan.

Opponents contended that the clearing of forested land on Chandler Mountain would impact wildlife habitats; that both water quality for adjacent residents and habitats downstream would be threatened by erosion and sediment from construction; and that residents might be driven from their homes as Alabama Power sought property for the project.

More: The Gadsden Times

CALIFORNIA

SoCalGas to Pay \$175k over Claims of 'Renewable' Natural Gas



Attorney General Rob Bonta last week Southern California

Gas will pay \$175,000 in penalties for misleading consumers about the environmental attributes of natural gas.

Bonta said the settlement is in connection with "numerous unqualified environmental marketing claims" the utility made in 2019 that natural gas is "renewable." Such claims are misleading because most natural gas is not renewable, but rather is derived from fossil fuels.

More: The Orange County Register

State Water Board Approves Plan to Keep NatGas Plants Running

The State Water Resources Control Board last week approved Gov. Gavin Newsom's (D) plan to keep the Ormond Beach, Long Beach and Huntington Beach natural gas plants online through 2026, rather than closing them this year, to help with demand during extreme heat events.

The facilities will only be used when forecasts project major surges in demand.

On Aug. 9, the Energy Commission also agreed to keep the plants running for reliability.

More: POLITICO, RTO Insider

COLORADO

Xcel Rate Increase to Begin in September



The Public Utilities Commission and

Xcel Energy reached a settlement agreement last week that will see the average residential bill increase by about \$4 (4.4%).

Xcel filed for a \$312 million rate hike in 2022, but will only see \$96 million following the settlement. It follows a \$182 million rate increase from April 2022, which raised the average bill \$5.24 a month.

More: The Colorado Sun

LOUISIANA

PSC to Ask Utilities to Pause Shutoffs in Extreme Heat

The Public Service Commission last week asked all utilities to pause shutoffs and refrain from disconnecting residents' power while they are forced to shelter from extreme heat conditions.



Gov. John Bel Edwards (D) declared a state of emergency on Aug. 11, citing the National Weather Service's record number of excessive heat warnings

with temperatures in the 100s since June 27 and

drought conditions in much of the state. The emergency order will remain in effect until Sept. 9 unless Edwards terminates it sooner.

More: Louisiana Illuminator

MONTANA

Youth Enviro Activists Prevail in **Climate Change Trial**

Young environmental activists scored what experts described as a ground-breaking legal victory last week when a judge said state agencies were violating their constitutional right to a clean and healthful environment by allowing fossil fuel development.

District Court Judge Kathy Seeley found the policy the state uses in evaluating requests for fossil fuel permits, which does not allow agencies to look at greenhouse gas emissions, is unconstitutional. It is the first time a U.S. court has ruled against a government for violating a constitutional right based on climate change.

Seeley said the state's attorneys failed to give a compelling reason for why they were not evaluating greenhouse emissions, rejected the notion that Montana's emissions are insignificant and noted that renewable power is "technically feasible and economically beneficial," citing testimony from the trial indicating Montana could replace 80% of existing fossil fuel energy by 2030.

More: The Associated Press

NEBRASKA

OPPD Board Approves \$2B Expansion

The Omaha Public Power District board last week voted 8-0 to move forward with a \$2 billion expansion that will nearly double the utility's generating capacity over the next decade.

Officials said the expansion is needed to meet unprecedented growth in demand expected in the utility's 13-county service territory. Energy consumption by all customers is expected to increase by 70% by 2032. To meet the demand, OPPD will add a fleet of new generation plants, mostly renewable, with some natural gas.

OPPD projected that the plan will require a 10% increase in rates, which will be phased in over four years beginning in 2027.

More: Omaha World-Herald

NORTH CAROLINA

Duke Energy Announces Asheville Solar Facility



Duke Energy last week announced plans for a 9.5-MW

solar facility at its Asheville Plant near Lake Julian.

Construction is slated to begin in 2025 and be done by 2026.

The company aims to add more than 1,400 MW of solar to the state's grid in total, which will be provided through 20 to 30 facilities it hopes to contract by the

end of 2023.

More: Asheville Citizen Times

Duke Energy Files Carbon Plan 2.0

Duke Energy last week filed updated plans for meeting growing demand and reducing fossil fuel use.

Among other things, the \$90 billion plan calls for the building of more gas-fired plants by 2031, small nuclear plants at the Belews Creek coal plant and another site to be named later, closing its remaining coal-fired plants by 2035, adding more renewables and battery storage and expanding the Bad Creek hydroelectric dam in South Carolina.

More: WFAE

TEXAS

AG: Counties Don't Have Power to Ban Solar Farms

Provisional Attorney General Angela Colmenero last week told the residents of Franklin County, who have been fighting solar proposals, that state law doesn't give county governments specific authority to ban the development of solar farms. County residents pushed county commissioners last year to impose a 180-day moratorium on commercial solar development, which the county attorney warned would not be enforceable. The commissioners later rescinded it, and the county attorney in February asked the attorney general's office to review whether they had the power to enforce such a ban. However, an attorney for the residents believes a moratorium could still be enforced if it were properly drafted.

More: The Texas Tribune

WASHINGTON

Yakima County Extends Solar Moratorium

Yakima County commissioners last week voted unanimously to extend a moratorium prohibiting the establishment and operation of moderate- or large-scale solar facilities by six months.

By extending the moratorium through Feb. 15, 2024, planning officials said the issues surrounding solar farms can be studied by the Planning Commission over the next few months, then considered by the Board of Commissioners in January and February.

The moratorium was first enacted in July 2022.

More: Yakima Herald-Republic

WEST VIRGINIA

PSC Selects Auditors to Investigate FirstEnergy Subsidiaries

FirstEnergy The Public Service Commission last week moved forward with an audit into the lobbying expenses and activities of Monongahela Power and Potomac Edison that are tied to an Ohio bribery scandal involving their parent company FirstEnergy.

In a joint staff memorandum, PSC staff recommended that Van Reen Accounting, LLC be approved to perform the audit. The firm will be paid up to \$122,000, with hourly rates capped at \$250. The firm was the only one to respond to a request for proposals.

The audit will delve into the companies' costs related to certain "lobbying and image building activities that result in charges included on the companies' books" potentially tied to the passage of House Bill 6 in 2019. The audit will go as far back as 2015.

More: West Virginia Watch



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