Monthly Retail Choice Regulatory Bulletin

CALPINE ENERGY SOLUTIONS

July 2024

Executive Summary & Introduction

1. In a momentous ruling, the U.S. Supreme court overturned the Chevron doctrine in Loper v. Raimondo, ruling in favor of judicial interpretation, enabling courts to strike down agency rules much more easily. The Supreme Court also temporarily blocked the enforcement of EPA's 'good neighbor' rule while challenges to the rule are resolved in the lower courts.
2. The Bank of America Institute reports that the rise in AI and the onshoring of manufacturing may mean decades of power demand growth.
3. Ten Northeast states have signed a memorandum of understanding to work jointly on the planning and development of transmission infrastructure.
4. A Vineyard Wind 1 turbine blade suffered catastrophic failure, scattering fiberglass debris in the ocean near Nantucket Island, resulting in suspension of construction and operation of the 800-MW offshore wind farm.
5. The New York PSC and NYSERDA have reported that the state will fail to meet its statutory target of 70% renewable electricity by 2030 as mandated by the Climate Leadership and Community Protection Act.
6. According to the Clean Air Task Force, an environmental advocacy group, clean hydrogen has a cost problem and will only have a limited role in power sector decarbonization.
7. The California Attorney General has determined that RECs are not captured by Assembly Bill 1305's definition of voluntary carbon offset as it relates to Voluntary Carbon Market Disclosures.

1.1 Assessment Approach

Our analysis of the Regulatory risk(s) to our customers is summarized in the rating(s) categories defined below:

Potential Financial Impact to Customer(s):

Symbol	Description
$+	Signifies potential increase in costs
$-	Signifies potential decrease in costs

Magnitude of Risk to Customer(s):

Symbol	Description	Description
	Major Impact	Represents a regulatory or policy change that is in the process of being enacted by Regulators (i.e., PUC, ISO, FERC, EDC) and is expected to result in a meaningful increase in cost(s) to load; likely require immediate action.
	Medium Impact	Represents a regulatory or policy change that is in the proposal process and being sponsored by one or more ISO stakeholders. Most of these Risk's will likely be elevated to RED. Medium Impact issues will require involvement but we expect to have time to coordinate load on these type(s) of issues.
	Actively Monitor	Represents a regulatory or policy discussions or trends that may evolve to either RED or ORANGE categories. No immediate action item for load.
	For Your Information	Industry developments or information, while not directly impacting the customer, may be of interest or import to the customer.

2.0 Overall Assessment

We have identified various issues that coalesce with the ratings categories described above. Notwithstanding, these are the Regulatory or Policy issues we consider extremely relevant to our retail customers*. With respect to this Bulletin, the six categories which appear to represent the most significant impacts to retail customers are identified below and categorized according to ISO:

*Where appropriate, we have provided links to articles and other relevant information for reference purposes.

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2.1 Policy

Issue#	Rating	Issue	Impact	Action/Result
2.1a U.S.	$-	**The U.S. Supreme Court, in a 6-3 decision, overturned the Chevron doctrine in *Loper Bright Enterprises et.al. v. Raimondo, Secretary of Commerce, et.al.*, stating that the courts may not defer to an agency interpretation of the law simply because a statute is ambiguous.** W&C: U.S. Supreme Court strikes down Chevron Doctrine	The ruling, which overruled the 1984 decision in *Chevron v. Natural Resources Defense Council* that gave way to the doctrine, required federal courts to give deference to agencies' reasonable interpretation of ambiguous statutes. The Court tossed out the Chevron doctrine in favor of judicial interpretation, enabling courts to strike down agency rules much more easily.	**The ruling will have massive implications for law enforcement by agencies such as the EPA and the U.S. Department of Labor, because industry's interpretation of the law will now be viewed on par with the agency's. As a result, agency action will be under greater scrutiny, and the regulated community will have more opportunity to challenge agency rules.** *See Sec. 2.1a of our May Regulatory Bulletin for more on the National Rural Electric Cooperative Association proposal to stay the EPA rule.*
2.1b U.S.	$-	**The U.S. Supreme Court, in a 5-4 decision, has temporarily blocked the enforcement of EPA's 'good neighbor' rule while challenges to the rule are resolved in the U.S. Court of Appeals for the D.C. Circuit, granting a request from three states, several companies and trade associations.** The Supreme Court granted "emergency relief", saying that the EPA failed to explain itself sufficiently to comments and that its rule was arbitrary. SCOTUSblog: Supreme Court blocks EPA's 'Good Neighbor' air pollution rule	EPA finalized the rule in 2023, with 23 states covered by it, requiring power plants without NOx emission reduction equipment to install it and to run them during the ozone season to protect downwind areas. The good neighbor rule has been challenged by 11 states at the D.C. Circuit, where the states' argued that EPA does not have the authority to impose such undue regulatory burdens on states. The National Mining Association said the rule is unlawful and an excessive overreach.	The National Rural Electric Cooperative Association (NRECA) said that the implementation of the rule would have led to the early retirement of 32 GW of coal plants as early as 2026, further jeopardizing the reliability of the already stressed electric grid. *See our March 2023 Regulatory Bulletin, Sec. 2.1a for more on the 'good neighbor' rule.*

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2.1 Policy

Issue#	Rating	Issue	Impact	Action/Result
2.1c NYISO	 **$+**	**According to a joint report by the New York PSC and NYSERDA, the state will fail to meet its statutory target of 70% renewable electricity by 2030 as mandated by the Climate Leadership and Community Protection Act and will push the target to 2033 or 2035.** The report placed blame on the decimation of New York's renewable plans after developers backed out of contracts amid record inflation and rising costs. The majority of the contracts were canceled by developers after the PSC rejected their requests for higher subsidies *(see our April 2024 Regulatory Bulletin, Sec. 2.2d).* The report also highlighted the stresses on the electric grid due to rising electricity demand driven by growth in manufacturing such as green hydrogen production, cryptocurrency mining and chip production. The NYISO has warned that under such high demand there may not be enough electricity available to meet peak electricity needs within the next decade. Politico: New York likely to miss 70 percent renewable target	Other updates in the report include: • Eleven of the 56 large-scale renewables under contract are now operational; • The state will also reassess the 100% renewables by 2040 target; • There is no extension of the 9 GW offshore wind by 2035 target. Instead, NYSERDA wants authority to procure more than 9 GW and to extend the allowable OREC contract term to 30 years. Meeting the delayed 2033 target requires deploying 6 GW of offshore wind by that time. The state currently has a single OSW project contracted by LIPA and two others in progress. • The 6 GW solar target by 2025 has been achieved. The state wants to increase the target to 10 GW by 2030;	• The state will miss other 2025 goals for energy efficiency and energy storage *(see our June Regulatory Bulletin, Sec. 2.2e for more on PSC's approval for the state to achieve 6 GW of energy storage by 2030)*; • The report recommends the PSC increase the amount of large onshore wind and solar procured by NYSERDA every year and to extend RFPs through 2029. • The report also suggests controversial options including allowing utilities to build new renewables and increased transmission planning with designated areas for renewable generation. New York's 70% renewable mandate is a key target of the CLCPA law, passed by the Democratic Legislature and then-Gov. Cuomo in 2019, putting at risk much of the law's other emissions reduction goals. Thus begins the roll back of the much-touted, nation-leading climate law.

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2.1 Policy

Issue#	Rating	Issue	Impact	Action/Result
2.1d CAISO	$-	**As described in more detail in the November 2023 Regulatory Bulletin, Governor Newsom signed Assembly Bill 1305 (Gabriel) - Voluntary Carbon Market Disclosures.** As a reminder: Starting January 1, 2024, an entity that sells voluntary carbon offsets within California, or an entity that purchases or uses voluntary carbon offsets, or an entity that makes claims regarding the achievement of net zero emissions shall disclose on the entity's website certain prescribed information pertaining to its product and or GHG-emissions claims.	Unfortunately, the definition of voluntary carbon offset embodied in AB 1305 was sufficiently vague that renewable energy credits (RECs) could have been considered a voluntary carbon offset. Entities buy and sell RECs for many purposes beyond state renewable energy procurement standards, commonly referred to as RPS. If AB 1305's definition of voluntary carbon offset included voluntary REC sales and purchases and the claims entities make thereafter, it would have created a new layer of administrative burden on California businesses as well as creating litigation risk associated with the inevitable reporting errors.	In an effort to get better clarity around the REC issue, earlier this year the Alliance for Retail Energy Markets (AReM) approached the state's Attorney General (AG) for an opinion. **At the end of July the AG determined that RECs are NOT captured by AB 1305's definition of voluntary carbon offset, which is an outcome that Calpine Solutions advocated.** Please contact your Calpine sales representative to obtain additional information.

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2.2 Capacity / System Reliability

Issue#	Rating	Issue	Impact	Action/Result
2.2a U.S.	 **$+**	**In the report titled Powering the Revolution, the Bank of America Institute (BAI) stated the rise in AI and the onshoring of manufacturing may mean decades of power demand growth.** BAI believes AI computing will ***require an additional 18 GW to 28 GW of generation capacity by 2026***. According to the Electric Power Research Institute (EPRI), data centers could consume 9% of the U.S. electricity generation by 2030, double what it is today, driven by the rise in AI queries which require about ten times the electricity of traditional internet searches.	Additionally, electric vehicles and heat pumps are driving consumer electricity demand higher, while industrial onshoring driven in part by the Inflation Reduction Act and CHIPS Act is raising U.S. manufacturing capacity and its demand for electricity. **As a result, investment in new generation capacity and distribution infrastructure "will need to be sustained."**	**U.S. electricity demand stagnated over the last decade, but the DOE says that some grid operators are now expecting annual demand growth of 5% to 6%.** *See Sec. 2.2b of our April 2024 Regulatory Bulletin for more on utilities' projections of load growth.* The year-over-year inflation rate for U.S. electricity prices reached 5.9% in May, up from 3.8% in January.

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2.2 Capacity / System Reliability

Issue#	Rating	Issue	Impact	Action/Result
2.2b ISO-NE	$+	**A Vineyard Wind 1 turbine blade suffered catastrophic failure, scattering fiberglass debris in the ocean near Nantucket Island, MA, resulting in the U.S. Bureau of Safety and Environmental Enforcement (BSEE) issuing a suspension order halting construction and operation at the 800-MW offshore wind farm.** A significant part of the GE Vernova blade, reaching 107 meters, or nearly the length of a football field, detached from the turbine. 	Vineyard Wind hopes to collect fiberglass pieces from the site, as well as a large piece of debris under water. Nantucket Island has advised locals to wear footwear on the beach and not bring their pets, as the fiberglass pieces have washed up ashore (see photo below). GE Vernova has told Nantucket residents that the failed blade does not contain PFAS chemicals, and that only the add-on equipment at the root end of the blade does.	Vineyard Wind 1 is a joint venture between Avangrid and Copenhagen Infrastructure Partners that began delivering power onto the New England grid in January. GE Vernova has installed 24 of the sixty-two 12 - to 15-MW turbines thus far. GE Vernova officials have identified the cause of the blade failure to a *"manufacturing deviation,"* specifically *"insufficient bonding,"* and assured residents that *"there is no indication of an engineering design flaw in the blade."* Reuters: Faulty manufacturing blamed for Vineyard Wind offshore blade failure

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2.3 Transmission

Issue#	Rating	Issue	Impact	Action/Result
2.3a North-east	$+	**Ten Northeast states—*Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont,* after working with the DOE, signed a memorandum of understanding to work jointly on the planning and development of "robust interregional transmission infrastructure."** The effort has been dubbed the Northeast States Collaborative on Interregional Transmission. Mass.gov Press Release	The states agreed to share technical data, solicitation guidance, regulatory updates, strategic plans, project status reports, and research findings. **The MOU does not include cost-sharing provisions, specifying that each state is responsible for its own costs.**	One of the group's main objectives is to "promote the development of interregional transmission projects for offshore wind." Massachusetts, Connecticut and Rhode Island are jointly deploying 9 GW of offshore wind by 2030, with the hopes of *saving* ratepayers $630 million per year, while the DOE says the offshore wind industry is at an "inflection point" and poised for "liftoff." *See the catastrophic failure of Vineyard Wind's turbine blade off the coast of Nantucket Island in Sec. 2.2b of this Bulletin.*

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2.6 Industry Development

<table>
<tr><th>Issue#</th><th>Rating</th><th>Issue</th><th>Impact</th><th>Action/Result</th></tr>
<tr>
<td>2.6a
U.S.</td>
<td> 
$+</td>
<td>According to a report by the Clean Air Task Force, an environmental advocacy group, clean hydrogen has a cost problem and will only have a limited role in power sector decarbonization.

Burning electrolytic hydrogen made with clean energy would reduce GHG emissions by 90%, but the cost of doing so far exceeds the cost of other low-carbon baseload generation options, including carbon capture and sequestration and nuclear generation (see table at right).

CATF: dedicated clean hydrogen production likely has a limited role in power sector decarbonization</td>
<td>
<table>
<tr><th>Type of Clean Power</th><th>$/MWh</th></tr>
<tr><td>Burning clean electrolytic hydrogen produced using renewable energy[1]</td><td>$400 to $470</td></tr>
<tr><td>Burning hydrogen derived from natural gas[1]</td><td>$350 to $400</td></tr>
<tr><td>Battery storage (4-hr)</td><td>$150 to $170</td></tr>
<tr><td>Nuclear power</td><td>$130</td></tr>
<tr><td>Pumped hydropower</td><td>$100 to $130</td></tr>
<tr><td>Natural gas-fired Combined Cycle with 90% Carbon Capture and Sequestration</td><td>$70</td></tr>
</table>
The majority of the cost of hydrogen-fired electricity generation stems from the cost of building out dedicated infrastructure for the storage and transportation of hydrogen.

[1]The analysis does not take into account any tax credits or incentives.
</td>
<td>Clean hydrogen could play a role as a form of long-duration storage by using surplus renewable energy to produce hydrogen, thus “storing” excess renewable energy as hydrogen which can be burned later to produce clean energy.

However, given the booming electricity demand and potential generation capacity shortfalls, surplus renewable energy may not be readily available, making hydrogen as long-duration storage a very limited opportunity.

See Sec. 2.2a of this Bulletin for more on the booming electricity demand.</td>
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3.0 Contact Information

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Public/ISO Regulatory Contacts:

- PJM - http://pjm.com/about-pjm/who-we-are/contact-us.aspx
- MISO - https://www.misoenergy.org/AboutUs/ContactUs/Pages/ContactUs.aspx
- NEISO - http://iso-ne.com/contact/contact_us.jsp
- NYISO - http://www.nyiso.com/public/markets_operations/services/customer_support/index.jsp
- ERCOT - http://ercot.com/about/contact/
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- Public Utilities Commission - http://www.naruc.org/commissions/

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