



STORAGEIQ QUARTERLY SUMMARY – Q4 2020

Customized Energy Solutions (CES) and the U.S. Energy Storage Association (ESA) are pleased to provide the StorageIQ Q4 2020 Quarterly Summary. Subscribers to the CES “StorageIQ” Service receive monthly in-depth reports detailing relevant RTO/ISO actions, rulemaking, key changes, as well as state and regulatory proceedings that impact the energy storage industry. At a fraction of the cost of in-house experts, “StorageIQ” allows you to stay ahead of the curve and capitalize on evolving storage markets. [Find out more](#) about “StorageIQ” today!

NORTHEAST (ISO-NE, NYISO, PJM)

In the fourth quarter of 2020 in ISO-NE, positive developments outweighed the negative ones. On the positive side, ISO-NE stakeholders approved an amended set of FCM Parameters, including a relatively low ORTP for energy storage, lowering barriers to Capacity market entry, and setting up a “jump ball” filing at FERC, which was delayed to 2021. ISO-NE Transmission Owners proposed new load reconstitution rules, which exempt ATRRs, allowing them to continue to provide valuable peak shaving services to utilities. The governors of five New England states sent a letter to ISO-NE calling on it to do more to work with them for a clean energy future and a decarbonized grid. ISO-NE filed a revised compliance plan for Order 841 with FERC, and began discussions on compliance with Order 2222. On the negative side, FERC issued a surprising rejection of ISO-NE’s Energy Security Improvements (ESI) proposal, which would have made significant market design changes including creating a day-ahead reserve market. FERC also issued an order ending the seven-year price lock for new Capacity resources in ISO-NE.

In Massachusetts, the Department of Energy Resource (DOER) released more information on the new Clean Peak Energy Standard (CPS), including stakeholder comments on the draft Guidelines, revised Guidelines, and FAQs. DOER also finalized additional Guidelines for the Solar Massachusetts Renewable Target (SMART) Program, including that for Energy Shared Storage. Utilities filed new SMART and DG Interconnection tariffs with the Department of Public Utilities (DPU).

Elsewhere in New England, the Rhode Island Office of Energy Resources (OER) announced the launch of a new \$1.5 million pilot program that provides incentives for energy storage systems paired with renewable energy. The New Hampshire Public Utilities Commission (PUC) issued a notice opening an investigation into ways to compensate energy storage for avoided T&D costs, including avoided regional and local network service charges, while also participating in wholesale energy markets. In Connecticut, Public Utilities Regulatory Authority (PURA) issued a straw proposal for an Electric Storage Program Design in the Grid Modernization docket.

In NYISO, stakeholders got into the details of the new Co-located Storage Resource (CSR) model. Back in the spring, NYISO introduced its preferred model for paired storage and renewables that fundamentally treats the two as separate units, even if DC coupled. Some stakeholders worried that this CSR model doesn’t allow the design and operational synergies they envisioned if treated as a single resource. In Q4 2020, NYISO completed presenting details that flesh out how CSR’s operate, offer the full capability of the storage and renewable production, while accommodating any limitations of a shared point of interconnection (POI). With the CSR design work complete, the CSR model was approved by stakeholders and NYISO’s board and is slated for implementation work in 2021 with the goal of deployment later in the year. NYISO has also committed to working with stakeholders in 2021 to design a participation model for storage and renewables that are treated as a single resource (aka hybrid). A hybrid model is going to be more work than the CSR because it’s essentially starting from scratch since it cannot largely be represented by either the existing Intermittent Power Resources or Energy Storage Resource (ESR) model.

In CES’s evaluation, NYISO’s CSR model offers a lot of flexibility in design of AC and DC coupled systems focused on REC production and deserves serious consideration. CES is also concerned that the yet to be designed ‘true hybrid’ model

will lose key benefits of being treated as renewable. The main drawback of the CSR is the complexity of the battery's market bids relative to variable renewable production. Developers of solar and storage using as a CSR need to be thoughtful in the relative sizing of the array, battery, inverter capacity and POI.

The NY utilities are gearing up for a second round of bulk storage RFP in Q2 2021, but the utilities have asked the PSC to provide them more latitude to further de-risked the projects for developers. In December, Con Ed announced that it had contracted for a whopping 400 MWh battery in Queens resulting from its 2019 storage bidding rights procurement.

Unsurprisingly, the state has filed for judicial review of several recent FERC Orders related Buyer Side Mitigation (BSM). Similarly, in early January, NYISO also filed for judicial review of FERC's rejection of its proposal to liberalize the tests for BSM determinations for public policy resources, which it still sees as the antidote to potentially of having BSM thrown out by a more liberal FERC later in 2021.

In PJM in Q4, policy developments continued to trend in a positive direction for storage interests, especially as PJM and stakeholders submitted to FERC a major change to the capacity valuation methodology for storage and intermittents. PJM's ELCC filing, if approved by FERC, will likely increase capacity value for Capacity Storage Resources participating in the 2023/2024 Base Residual Auction (BRA). FERC and PJM staff are deliberating, within traditional compliance filing processes, about the final details and deadlines for PJM's ELCC filing. More information on the final structure and function of the ELCC Capacity Market Construct will become available in Q1 2021. Also in Q4, PJM made progress on new rules for Storage-as-Transmission, as the initial proposal details how PJM will evaluate the performance of storage resources as a transmission solution. In addition, PJM has begun efforts to comply with FERC Order 2222, which mandates the facilitation of DERs into ISO/RTO markets.

In Virginia, the State Corporation Commission (SCC) issued rules for the 3,100 MW energy storage target set by the Virginia Clean Economy Act (VCEA). These rules set targets of 275 MW by 2025, and 1,075 MW by 2030, for Investor-Owned Utilities, while requiring that 35% of this procurement capacity must come from non-utilities. Development programs, targets, and procurement processes are among topics that will be reevaluated pending an investigation of barriers by the state's Energy Storage Task Force.

CENTRAL (ERCOT, MISO, SPP)

The fourth quarter of 2020 was comparatively quiet for storage in ERCOT as the core Nodal Protocol Revision Requests (NPRRs) worked their way out of the Battery Energy Storage Task Force (BESTF) through the senior committees. The year ended as expected with the Board approving four critical NPRRs: NPRR 1014, *BESTF-4 Energy Storage Resource Single Model*, NPRR 1026, *BESTF-7 Self-Limiting Facilities*, NPRR 1029, *BESTF-6 DC-Coupled Resources*, and NPRR 1043, *Clarification of NPRR986 Language Related to Wholesale Storage Load*. ERCOT Staff must now get to work reprogramming market systems to reflect not only these Protocol revisions but also nine others for Real-Time Co-Optimization. All of these enhancements are still targeted for a Q2 2024 go-live.

Despite the overall success for storage, there was a bit of contention surrounding Other Binding Document Revision Request (OBDRR) 025, *Clarification for the RRS Limit on Individual Non-Thermal Generation Resources*, which proposes to limit the amount of Responsive Reserve (RRS) Requirement that can be provided by a single, non-thermal resource (ie, storage). Many stakeholders, specifically storage developers, have pushed back on Staff, asserting that the limit is arbitrary, does not reflect the operational realities of most storage platforms, and will negatively impact projects that are already progressing through the interconnection study process.

Moving in to 2021, ERCOT stakeholders will also continue to discuss the role, qualification, and participation rules for behind-the-meter energy storage. An NPRR is expected in Q1.

MISO has formed a Distributed Energy Resources Task Force (DERTF) to examine issues related to FERC Order 2222. The ISO had already commenced discussions on distributed energy resources (DERs) prior to the Order, so a dedicated stakeholder group is expected to focus the conversations and advance the timeline. MISO has stated that FERC Order 2222 does not alter MISO's view of changes required to accommodate distributed resources; the Order only changes (accelerates) the timeline. Staff has been taking a great deal of comments and feedback from stakeholders, with some parties stating the need for a compliance extension from FERC. MISO has also held workshops with distribution system operators to identify integration and operational issues associated with distributed resources participating in the wholesale market.

In line with other RTO for hybrids, the initial processes will have the component units of the parent hybrid resource accredited separately using existing rules, with the total value capped at the Point of Interconnection (POI). MISO has also made positive progress (for developers) on fuel type changes related to surplus interconnection service. The proposal, while limited, would allow project developers to request surplus interconnection service prior to receiving a Generator Interconnection Agreement (GIA).

FERC accepted MISO's Order 841 filing with an implementation date of June 6, 2022. Also relevant to the Commission, a group of MISO stakeholders have petitioned the DC Circuit Court of Appeals to review FERC's March acceptance of MISO's storage-as-transmission Tariff changes.

SPP's policy development for hybrids has exposed bewilderment as to how to simplify the number of factors that that could make expectations for the reliability of hybrids distinct from other types of generators. Stakeholders collectively decided that hybrid resources should utilize the Market Storage Resource (MSR) registration type model; in October, the Markets and Operations Policy Committee (MOPC) voted to approve this recommendation from Market Working Group (MWG). The Supply Adequacy Working Group (SAWG) will continue to work towards an accreditation methodology. Staff is targeting March 2021 for a Hybrid ELCC Whitepaper along with the 2021 Loss-of-Load-Equivalency (LOLE) Study assumptions.

Storage-as-transmission policy development has also seen minor progress across all of the transmission-related issues from the ESR Whitepaper. At the October MOPC, there was unanimous approval for the Regional Tariff Working Group (RTWG) recommendation for Issue Tx7, which states that SPP should not require procurement of transmission service or the payment of Ancillary Service charges associated with the charging activity of ESRs operating as transmission-only assets. Late in Q4, the Operating Reliability Working Group (ORWG) approved three white papers addressing related policy issues: reconciling ESR duration with transmission planning (Tx1), responsibility for charging ESRs serving as a transmission facility (Tx8), and data requirement for ESRs (E6).

On December 8th, FERC issued an order accepting SPP's Order 841 compliance filing (submitted on October 13) with an effective date of August 5, 2021. For Order 2222, SPP legal has been giving overviews of the requirements captured in the Order. Due to the number of items that must be addressed for compliance, Staff created a dedicated Order 2222 Task Force. SPP, along with several other ISOs/RTOs, will likely seek a one-year extension.

WEST (CAISO, EIM)

During the fourth quarter of 2020, West region developments for energy storage progressed despite holiday slowdowns towards the end of the year. In California, both the CAISO and state regulators pushed forward with initiatives related to the role of storage and renewables on the electric grid. The CAISO initiatives most relevant to storage with notable gains during the quarter included Energy Storage and Distributed Energy Resources Phase 4 – Default Energy Bids (ESDER4 – DEB) and Hybrid Resources Phase 2. ESDER4 – DEB, which is establishing DEB for storage market mitigation, was approved late in the quarter by the CAISO Board of Governors. Hybrid Resources Phase 2 was also approved by the Board, but was split into separate tracks for tariff filing, including Phase 2A, to file rules for near-term implementation

for co-located resource deviations from dispatch, and Phase 2B, targeting fall implementation of a variety of other modifications for co-located and hybrid resources. Other activities at the ISO included reviews of the Policy Roadmap and Annual plan, in which the CAISO provided plans to continue many key initiatives, including ones focused on storage, DERs, and hybrid resources. At the same time, preparation for summer 2021 and beyond has also emerged as a front-and-center issue, taking a prominent place alongside Resource Adequacy (RA) Enhancements and local capacity and transmission planning as the CAISO works to ensure no repetition of the August 2020 heatwave emergency. The CAISO also recently provided updates on progress on other initiatives, including work on Order 2222 compliance as well as further delays in Day Ahead Market Enhancements (DAME) and regional expansion of the Day Ahead Market. Meanwhile, during the fourth quarter, FERC accepted the Hybrid Resources Phase 1 tariff revisions and the CAISO's final compliance filing for Order 841.

RA issues were similarly prominent at the CPUC during the fourth quarter. The commission issued both a decision establishing the Reduction Compensation Mechanism (RCM) for storage and preferred resources procured by local entities instead of the Central Procurement Entities (CPEs), and a scoping memo further subdividing remaining RA work into separate tracks—these focused Track 3B.1, Track 3B.2, and Track 4 aim to align RA better with hourly system needs, establish RA values for diverse resource types (including behind-the-meter solar and storage), and adopt of future RA requirement, among addressing other issues. For immediate-term resource needs, a new CPUC Order Instituting Rulemaking (OIR) established a fast-track process to determine actions that can be taken to prevent reliability issues in 2021, including looking at the role of demand-side resources such as storage. In this new proceeding, the CPUC has scoped out steps over the next several months, and a ruling has directed supplemental resource contracting for summers of 2021 and 2022. In the Self-Generation Incentive Program (SGIP), the CPUC authorized funds transfer between budget categories to support certain waitlisted projects, and also opened comments on renewable fuels, including “green hydrogen,” within SGIP. Other activity of note included a Proposed Decision to adopt a variety of tariffs, rates, and rules for microgrid commercialization, and a Decision on Integrated Resource Planning (IRP) backstop procurement. Beyond immediate CPUC actions, outstanding RFPs also have been released for storage and distributed resources, and the CEC has continued to issue grants to storage demonstration projects in the state.

Outside of California, regional activity in the EIM included advisory approvals of several storage-related CAISO proposals, and a new Governing Review Committee straw proposal that would establish more concrete steps to enhance the balance of interests at the body as the reach of the EIM grows regionally. State-specific progress on clean energy and storage moved forward as well following the November election. Highlights included the Arizona Corporation Commission (ACC) approving a revised clean energy standard that now has enough support to avoid being overturned when newly elected commissioners join in January, and Nevada voters providing final approval for the state's renewable portfolio standard in a legally required second vote. These regional actions pave the way for significant storage deployments in the West outside of California in future years.

ABOUT CES

Customized Energy Solutions (CES) is a consulting and services company with over 20 years of diversified experience across North American energy markets. CES's Emerging Technologies group provides a range of products and services to help project developers, investors, technology companies and other clients understand the evolving market rules and value proposition of new energy storage technologies. Combining our practical experience running daily operations of over 300 MW of energy storage facilities and our experience advising clients on policy developments in energy markets provides our team with superior credentials that sets our consulting services apart from other providers.



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Northeast
ISO-NE, NYISO, PJM

Central
MISO, SPP, ERCOT

West
CAISO, EIM

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