



STORAGEIQ QUARTERLY SUMMARY – Q2 2020

Customized Energy Solutions (CES) and the U.S. Energy Storage Association (ESA) are pleased to provide the StorageIQ Q2 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 (PJM, NYISO, ISO-NE)

In the second quarter of 2020, several efforts to provide more clarity on storage participation in ISO-NE began. Following storage developer protests at FERC and storage resources failing to clear in the most recent ISO-NE Forward Capacity Market (FCM) auction, ISO-NE started work in May on Capacity market offer parameters for new technologies including energy storage. While this was going on, ISO-NE’s External Market Monitor (EMM), Potomac Economics, again recommended reducing the Capacity value for battery storage resources and basing it on contribution to reliability as part of their Annual Assessment of the ISO-NE markets. ISO-NE also began discussing manual and operating procedure changes to metering and telemetering criteria for co-located intermittent generation and storage projects. A full discussion on hybrid resources has not yet begun or been announced. ISO-NE also started work on several long-range studies, including the “Transition to a Future Grid” study and an Economic Study for 2020, that will look at futures with high penetration of renewables and with them energy storage.

In MA, the Department of Energy Resource (DOER) filed emergency regulations on the Solar Massachusetts Renewable Target (SMART) Program, which double the program’s capacity, from 1,600 MW to 3,200MW of solar, and require solar projects larger than 500 kW be co-located with an energy storage system. DOER also filed slightly revised Clean Peak Energy Standard (CPS) regulations with the state legislature. Changes from the March 2020 regulation included increasing the SMART ES Resource Multiplier, grandfathering / exempting from the obligation load served under existing electricity contracts, and increasing the frequency of program reviews from every five years to every four years.

NYISO is on schedule for ‘go-live’ of their Energy Storage Resource (ESR) participation model in late August or September. They presented several minor rule changes to ensure that storage charging is properly reflected in the operational reliability modeling. NYISO also filed changes to Buyer Side Mitigation (BSM) exemption rules that, if approved, should improve the chances that downstate storage projects may gain exemptions and apply to the 2019 Class Year later in the summer. (FERC approvals came in July)

NYISO began a very significant conversation with stakeholders on hybrid storage resources. It proposed a total of four (4) options for the participation, but the discussion of hybrids has highlighted some disconnects between the assumptions that adding storage to a renewable is valuable and the very favorable rules that NYISO and stakeholder put in place years ago for intermittent resources. Their first option, referred to as co-located is where the renewable and storage actual remain separate resources though behind a shared interconnection. The other three (3) closely coupled hybrid options require following dispatch signals which carries substantial downside risks when compared to how intermittent renewables are currently treated today.

The Brattle Group presented a pair of studies, one for NYISO on what the grid may look like in 2040 under the CLCPA mandate for 100% clean electricity and the for NY PSC that examines the current ICAP market with BSM verse four alternative structures. NYISO’s Market Monitor, Potomac Economics, recommends starting ASAP on some substantial market changes that are likely to define new ways energy storage can be paid to helps maintain system reliability.

PJM is barreling towards FERC's October deadline to develop a Capacity valuation methodology to replace the "10-hour rule". Also in Q2 2020, FERC again ruled that PJM must develop a Minimum Offer Price Rule (MOPR) that applies to all new Capacity resources. The outcome of these two simultaneous efforts will have major impacts on the future opportunity for energy storage in PJM's Capacity market. Efforts to better define hybrids and develop rules for Storage-as-Transmission and Emerging Technologies in PJM finally picked up steam towards the end of Q2, however, PJM and stakeholders have a long way to go before finalizing any rules and/or participation models. FERC also provided additional clarity on PJM's Reserve Price Formation filing which, most notably for storage, requires the development of a forward-looking Energy & Ancillary Service (EAS) revenue offsets that will help define the MOPR for Capacity storage. Policy developments in PJM continue to trend in a positive direction and PJM has generally been supportive of efforts from the storage industry to respect the operational capabilities of storage when developing these market rules.

Virginia, which has not been known as a hotbed for storage development, instantly drew the interest of storage developers as the state government passed the Virginia Clean Energy Economy Act (VCEA), which requires utilities, namely Dominion Energy and Appalachian Power, to procure 3,100 MWs of energy storage by 2035. Dominion and Appalachian Power began issuing RFPs for developers in order to comply with this new legislative requirement.

CENTRAL (ERCOT, SPP, MISO)

In ERCOT, the Battery Energy Storage Task Force (BESTF) transitioned many of the core proposed structures for storage from Key Topic & Concepts (KTCs) to Nodal Protocol Revisions Requests (NPRRs). This has required more formality around discussions in the stakeholder process as NPRR approval will lead to firm amendments to the ERCOT Protocols. Much of what was advanced from Q1 was focused on hybrid storage. In Q2, Staff began to tackle other subject matter, some of which dominated many of the BESTF meetings.

Rules regarding the charging of storage during ERCOT system emergencies look to ensure that asset owners / operators are not penalized for subsequent shortage of capability to fulfill obligations to the market. However, these asset owners / operators will still be responsible for the procurement of the needed capability to the market and could leave the storage projects short on expected revenues for the operating day. ERCOT has also made measurable progress on rules for storage for the "single model" era. The associated NPRRs will impact upwards of 15 areas of the Protocols. Finally, a new definition for storage, Integrated Battery Storage System (IBSS), was introduced to the stakeholder process, resulting in lengthy and at times highly technical discourse. IBSS reflects a potential need to broaden the scope of potential technologies and configurations for which storage rules are written.

There was also an acknowledgement of storage in Q2 from the Public Utility Commission of Texas (PUCT). Under Project No. 50475 – Agency Report to the 87th Legislature, Commissioners preliminarily approved the Table of Contents outline for the report; there is a placeholder for "energy storage technologies". The PUCT may not take up storage in 2020, especially given the focus on impacts from COVID-19, but this announcement may signal storage activity in 2021, especially coming out of the next Texas legislative session.

The industry continues to await a decision from FERC on MISO's storage-as-transmission filing. FERC held a technical conference in May that was very much technical in nature, leading to no indication on how the Commission may rule. The conference highlighted a number of questions that remain to be answered for energy storage to provide wires services on the grid.

MISO stakeholders continue to wait for Staff to commence hybrid storage discussions that were deferred from earlier in the year. Storage Capacity accreditation, though, received some unexpected attention when storage became part of planning and resource adequacy discussions that involved Effective Load Carrying Capability (ELCC) as applied to

intermittent resources. Finally, MISO is implementing Business Manual updates for surplus interconnection relevant to Order 845.

In SPP, stakeholders continue to work with Staff on ELCC rules for energy storage. The Electric Storage Resource Steering Committee (ESRSC) has begun to assign issues from SPP's Energy Storage Whitepaper with discussions scheduled to commence in Q3. The SPP stakeholder process is also making preparations to take up storage-as-transmission, though detailed discussions may not take place until FERC rules on MISO's proposed Tariff changes.

WEST (CAISO, EIM)

While the ongoing COVID-19 pandemic and ensuing shutdown of in-person meetings have upended the normal course of energy proceedings across the West, progress on storage continued its forward momentum in Q2 2020. Multiple CAISO initiatives concerning energy storage matured in this quarter, including Energy Storage and Distributed Energy Resources Phase 4 (ESDER 4) and Phase 1 of the Hybrid Resources initiative. While ESDER 4—which is addressing issues such as default energy bids and the creating of a real-time end-of-hour state-of-charge parameter—is scheduled for implementation in fall 2021, Phase 1 of Hybrid Resources—which improves a few aspects of co-located resource market participation among other enhancements—should see implementation as soon as this fall. Furthermore, in late Q2, the postponed implementation of ESDER 3B, which will create a load-consumption/load-shift option for storage operating as demand response, was also brought back to stakeholders for final review prior to tariff filing and fall 2020 implementation. Numerous other proceedings and initiatives with relevance to storage, such as the Resource Adequacy (RA) Enhancements, the Day-Ahead Market Enhancements (DAME), and the Extended Day-Ahead Market (EDAM) initiatives saw further discussion, refinements, and, in some cases, delays throughout Q2. An overarching theme across these initiatives is a recognition of the huge role that storage and hybrid resources will play in the CAISO in years to come as expected interconnection levels go from the MW to GW scale within the next year or two.

Multiple decisions at the CPUC towards the end of Q2 brought major implications for storage as the state prepares to handle a rapidly shifting energy landscape composed of significant amounts of intermittent renewables and limited-duration energy storage, while also attempting to improve resiliency and RA. Notably, a sweeping decision approving multiple aspects of the RA program introduces a better counting methodology for hybrid resources while also placing some limits on storage penetration allowed in certain areas. Also, the approval of a “hybrid” central buyer framework for RA procurement could challenge current procurement practices by cementing the status of PG&E and SCE as the ultimate buyers of RA capacity in their service territories. And a decision approving microgrid and resiliency project acceleration will largely help storage and other resources see faster deployment for resiliency purposes. This regulatory action comes as statewide procurements of clean resources, including storage, continues to rapidly create new opportunities deployments across the state.

Regional activity in the EIM footprint has also followed the lead of California to an extent, as multiple western states and utilities issued procurements or plans to utilize storage in coming years. In particular, all-source procurement plans from PacifiCorp and Integrated Resource Plans filed by Arizona utilities in Q2 place a heavy emphasis on storage. Market discussion at the EIM during Q2 also included review of the CAISO's Hybrid Resources proposal, among other items of relevance to storage. Broadly, the EIM continued to expand in Q2 with the agreement of Xcel – Colorado to join, and Salt River Project and Seattle City Light commencing their participation in the market.

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 270 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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