# St john s grid-scale energy storage

St john s grid-scale energy storage

How can U.S. transmission grids and wholesale energy markets adapt to the gigawatts of energy storage coming online over the next decade?In the near future, the scale of the batteries serving U.S. power grids is set to explode, increasing fromabout 1.5 gigawatts todayto tens or hundreds of gigawatts by 2030. These batteries will play a vital role in shifting intermittent wind and solar power from when it’s produced to when it’s needed and serving broader grid services needs on an increasingly decarbonizing grid.

But as a resource that can both absorb and discharge energy at a moment’s notice, batteries are verydifferent from both dispatchable generatorsand intermittent wind and solar farms. That requiresnewtechnical and economic systems for managing and valuing them — and the grid operatorsthat run wholesale electricity markets serving about two-thirds of the countryare struggling to make those changes to keep up with the pace of growth.

That’s one of the key takeaways from last week’s Energy Storage Associationpolicy forum, where representatives of the country’sregional transmission organizations (RTOs) and independent system operators (ISOs) joined storage industry groups and regulators to describe their work on energy storage integration.

Richard Glick, thenewly named chairof the Federal Energy Regulatory Commission, which regulates ISOs and RTOs, noted that storage is one of several new technologies facing barriers to full market participation that FERC is trying to eliminate.

“I think the commission has done a pretty good job on that over the past half-decade or so,” the Democrat said.FERC Order 841has led to major new opportunities for energy storage to participate in wholesale energy, capacity and ancillary services markets, albeit at different paces and in different ways across ISOs and RTOs.FERC Order 2222sets a similar path for distributed energy resources, including aggregated batteries.

At the same time, “renewable energy generators see storage as a very important partner,” he said, as wind and solar projects add batteries to firm and shift their power output to meet grid demands. These hybridresources now make up about two-thirds of all solar projects in the interconnection queue of California grid operator CAISOand constitutea rising share of clean energy projects across other markets. DevelopersincludingEDF Renewables,Enel,NextEra Energy, LS Powerand many others are increasingly combining renewables and batteries in multiple states.

Gregory Cook, California ISO’s executive director of market and infrastructure, highlighted the work underway to integrate these novel combinations into its interconnection and market structures. CAISO expects its roughly 550 megawatts of energy storage will rise to 1,750 MW by this summerand to 3,300 MW in the

next few years.

California’s rolling blackouts last August has led state regulators to push toaccelerate battery deployments, and“much of that new storage is going to be in the form of hybrid resources, where we’re seeing storage added to existing solar sites.” Beyond allowing multiple resources to connect at a single point, pairing batteries with solar allows them to access federal tax creditsthat are, as yet, unavailable to standalone storage.

Other ISOs are seeing similar patterns, if at lower volumes. Manu Asthana, CEO of mid-Atlantic grid operator PJM, noted that of the 145 gigawatts of generation in its interconnection queue, 92 percent issolar, wind, batteries or hybrid resources. That includes about 15 GW of standalone storage and another 18 GW of hybrid storage.

Renuka Chatterjee, executive director of system operations for theMidcontinent Independent System Operator, reported about4 GW of standalone storage and 5 GW of hybrid resources, much of it linked to solar. Bruce Rew, senior vice president of operations for the Southwest Power Pool, cited about 6 GWof hybrid storage and 3 GWof standalone batteries.

But renewable and storage developers are running into problems with how grid operators’ interconnection and market rules manage hybrids.FERC’stechnical conference on hybrid resourceslast summer raised “significant and substantial concerns,” he said, adding,“we’re going to take a serious and...long look at the responses we received.”

The root of these problems,according to a2019 paperfromGrid Strategies’Rob Gramlich and Michael Gogginand Energy Storage Association interim CEO Jason Burwen, “is that present market rules will represent them as deviations from existing resource types.”

Contact us for free full report

Web: https://sumthingtasty.co.za/contact-us/
Email: energystorage2000@gmail.com
WhatsApp: 8613816583346