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Energy Alert

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HYDROSTOR RECEIVES FUNDING FOR UTILITY-SCALE A-CAES FACILITY

On 15 April, Hydrostor announced receipt of nearly US$4 million in funding from Natural Resources Canada's Energy Innovation Program and Sustainable Development Technology to develop a 300-500 megawatt (MW) Advanced Compressed Air Energy Storage (A-CAES) facility. An A-CAES facility uses renewable energy or excess grid energy to compress air that is then funneled into underground caverns, displacing water and creating storage capacity. This process creates heat that is captured and stored to reheat the compressed air when energy demand exceeds supply.

This funding will subsidize design and engineering work at the new facility. The goal is to provide up to 12 hours of long-duration energy storage in Canada. Hydrostar is currently developing a 500 MW A-CAES facility in Southern California to provide on-demand peaking capacity for 12 hours of duration once it becomes operational in 2024.

SOUTHERN UTILITIES RESHUFFLE RENEWABLE ENERGY PRIORITIES

On 30 April, Duke Energy and the Tennessee Valley Authority (TVA) announced shifts in their respective goals to become carbon neutral. In its annual sustainability report, Duke Energy discussed its plan to nearly triple the renewable energy share of its energy mix from 8 percent to 23 percent by 2030 by adding hydroelectric, wind, and solar power in its service territory. Duke Energy also launched a commercial branding initiative designed to help its customers develop and meet their own clean energy goals.

Similarly on 29 April, TVA announced that it may close its remaining coal-fired facilities by 2035 because “it no longer makes economic sense to run them.” TVA is the nation's largest public utility and currently uses an energy mix comprising 14 percent coal power. The shift in policy accelerates coal facility closure by 15 years, shifting focus to the introduction of 10,000 MW of solar power across seven states in the southeast United States by 2035. TVA still must undergo an integrated resource planning process to finalize its new strategy.

PJM SUGGETS MODIFIED MOPR PROVISIONS TO ADDRESS STATE CLEAN ENERGY POLICIES

On 28 April, PJM Interconnection (PJM) suggested modifications to its Reliability Pricing Model Minimum Offer Price Rule (MOPR) to address state policies that promote clean energy resources. The suggestion would amend the MOPR to presume state policies are in “good faith” and are not an exercise of buyer-side market power. The

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presumption could be challenged by third parties. State policies that “target” (i.e., have the effect of replacing the wholesale rate for a FERC-jurisdictional product) or “tether” (i.e., the payment is contingent on clearing the capacity market) are referenced as examples of state policies vulnerable to the MOPR. PJM's initiative would apply to both new and existing generating units.

PJM's actions follow the first of a series of technical conferences organized by FERC held in late March exploring the interaction of state resource choices with wholesale energy capacity markets. PJM will seek comments from stakeholders, including through meetings to be held in May and June. PJM anticipates filing the suggested MOPR modifications with FERC by 16 July.

FERC HOLDS TECHNICAL CONFERENCE ON ELECTRIFICATION AND THE GRID OF THE FUTURE

On 29 April, the Federal Energy Regulatory Commission (FERC) held a technical conference to discuss electrification and the grid of the future. During the conference, FERC Commissioners and stakeholders explored how new technologies and expanded electricity usage will transform the U.S. and how regulators can prepare for an increasingly electrified future. FERC Chairman Richard Glick said that electrification “may be coming at a faster pace than some of us may have thought a few years ago” and will have a “profound” impact “at the state level more directly but even at the federal level.”

During the conference, stakeholders discussed the environmental benefits of electrification. Katherine Hamilton, chair of 38 North Solutions and co-chair of the World Economic Forum's Global Future Council on Clean Electrification, cited a report by the International Renewable Energy Agency that predicts electrification together with renewable energy and energy efficiency could provide 90 percent of the mitigation measures needed to reduce greenhouse gas emissions. Additionally, the US could decarbonize by 70 percent of homes, businesses, and transportation through improved electrification infrastructure. Hamilton also warned that “[a]s we seek to ensure that underserved communities have access to clean energy, we must be intentional and specific in identifying solutions and programs and involve communities in determining their path forward.”

The electricity load could double by 2050. To meet new load demands, generation capacity in all regions would have to double as well. Additionally, as electrification increases, so will transmission spending. Larry Gasteiger, executive director of the trade association WIRES, estimates transmission spending will increase by as much as 50 percent in the 2020s, over the average annual spending of US$15 billion.

Washington Utilities and Transportation Commissioner Ann Rendahl warned that a lack of coordination between local, state, and federal government agencies could result in inefficient investments and conflicting policies, stating that “[w]e need to be able to talk and share and debate like we are today on how best to accelerate electrification and achieve goals and targets we all have.”

FORD INVESTS IN EV BATTERY MANUFACTURER START-UP

On 3 May, Ford announced that it and venture capital firm Volta Energy Technologies will increase their respective investment in electric vehicle battery manufacturer startup Solid Power by US$130 million. Both Ford

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and BMW hope to incorporate Solid Power's solid-state batteries into their next generation vehicle fleets by the end of this decade.

In contrast to lithium-ion batteries that are currently widely used in electric vehicles, solid-state batteries do not use liquid electrolytes. They also are lighter, and have greater energy density than lithium-ion batteries, which advocates claim result in a longer driving range at a lower cost. However, solid-state batteries are more expensive to produce than lithium-ion batteries.

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