THE ENERGIZER - VOLUME 53

Date: 4 October 2019

Energy Alert

There is a lot of buzz around blockchain technology, distributed energy resources ("DERs"), microgrids, and other technological innovations in the energy industry. As these innovations develop, energy markets will undergo substantial changes to which consumer and industry participants alike will need to adapt and leverage. Every other week, K&L Gates' The Energizer will highlight emerging issues or stories relating to the use of blockchain technology, DERs, and other innovations driving the energy industry forward. To subscribe to The Energizer newsletter, please click here.

NEC TO USE AMBRI'S LIQUID METAL BATTERY TECHNOLOGY FOR ENERGY STORAGE.

- On September 23, 2019, NEC Energy Solutions ("NEC") and Ambri announced a joint development agreement through which NEC will purchase Ambri cells and liquid metal battery technology to design its energy storage systems. Per the agreement, NEC has committed to purchase a minimum of 200 megawatt hours of Ambri's cells. NEC plans to couple the cells with its own AEROS energy storage operating system to best serve utilities, independent power producers, and project developers.
- Ambri's long-duration cells are based on its patented calcium antimony chemistry. According to Ambri (see here), its long-duration cells can deliver 100 percent depth of discharge cycling ("DoD") performance daily for over 20 years with minimal degradation. Moreover, the cells reduce costs for the entire system, resulting in lowers expenses than alternative storage technologies. Systems built with Ambri's cells also can operate without air conditioning or fire suppression equipment, thereby increasing the system's efficiency while further reducing project cost and maintenance. NEC plans to deploy the cells and liquid metal battery technology for projects that require durations of four hours or more and full DoD cycling is expected on a daily basis.
- The agreement illustrates the power storage industry's continued search for a low-cost, long-life storage alternatives to lithium-ion batteries. Companies are pushing for battery technology innovation to reach the lowest levelized cost of storage with the least amount of degradation because such technology will enable them to increase renewable energy usage and more effectively manage system peak shaving.

THREE NEW RESIDENTIAL BATTERY SYSTEMS UNVEILED AT SPI.

- Three manufacturers displayed new residential battery systems at the annual Solar Power International Conference. Panasonic unveiled its EverVolt system, which features a modular design available in AC and DC-coupled versions, and is compatible with any solar system or inverter and can be scaled down to as little as 5.7 kilowatt hours ("kWh") of energy storage or expanded to 34.2kWh. SunPower, the second

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largest U.S. residential solar power company, released its recently announced Equinox Storage system. By combining the Equinox Solar panels with the Equinox Storage system, Equinox's consumers can access a rated energy capacity of 13 kWh that can be expanded for larger home loads.

- Generac introduced its PWRcell solar storage system, which includes expandable battery pack and electricity-consumption monitoring technologies. The PWRcell is equipped with 8.6-kWh batteries, which can expand to 17.1 kWh. The system also provides homeowners with up to 50 amps and 12 kilowatts ("kW") of surge capacity, enough to start heavy loads such as air conditioners. Once engaged, the PWRcell system provides 8 kW of continuous power. When more power or capacity is needed, additional PWRcell inverters and batteries can be added for up to 34.2 kWh of DC-coupled storage.
- The flurry of residential battery systems demonstrates the growing demand for residential storage solutions. Such solutions can help protect homeowners from scheduled power outages, prolonged wildfire seasons, and unpredictable electricity rates.

TECH GIANT ANNOUNCED NEW RENEWABLE ENERGY PURCHASES.

- Google has recently announced its "biggest corporate purchase of renewable energy in history": a 1,600-megawatts ("MV") to be provided through 18 separate deals. Forty-five percent (or 720 MW) of the 1,600 MW is comprised of solar power to be generated from producers in North and South Carolina, and Texas. The majority of the other 880 MW will be generated by wind and solar power producers in Europe. Through the purchase, Google will increase its portfolio of wind and solar agreements by more than 40 percent.
- Google also announced two new grants to support organizations that purchase renewable energy. According to the company, it will give a $500,000 grant to the Renewable Energy Buyers Alliance in the United States and a 500,000€ grant to RE-Source in Europe. Google believes the grants will "help fund the development of new purchasing models, provide training and resources for consumers, and enable more widespread access to clean power."
- As the largest corporate buyer of renewable energy in the world, Google's recent purchase and grants help set a tone for the technology industry participants that have voiced a commitment to utilizing clean energy. More information about Google's purchase is available here.

POWER LEDGER AND THAI PARTNERS INTRODUCE BLOCKCHAIN-BASED P2P ELECTRICITY TRADING PLATFORM TO SELECT AREAS OF BANGKOK.

- On September 30, 2019, trade press reported that Power Ledger, an Australian blockchain energy company, will expand its business in Thailand. The company utilizes a blockchain-based peer-to-peer energy trading platform to facilitate the purchase/sale of renewable energy. Power Ledger has partnered with BCPG Public Company Limited ("BCPG"), a renewable power business in Thailand, and Thai Digital Energy Development, a joint venture between BCPG and PEA Encom International, to launch a new peer-to-peer energy trading platform for consumers, energy sellers, and prosumers in certain parts of Bangkok.

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- Southeast Asia is predicted to grow to be the fourth-largest consumer of energy by 2030. Development of renewable microgrid technology will help to enable power generation that is more reliable and closer to consumers. By using blockchain, the companies believe they can create a secure and transparent energy trading market that helps distribute electricity efficiently.

COMED AND XAGE TO DEVELOP BLOCKCHAIN SMART GRID TECHNOLOGY.

- On September 23, 2019, Commonwealth Edison Company ("ComEd"), announced a new partnership with Xage Security, Inc. ("Xage") to demonstrate how blockchain technology can enhance the security and efficiency of ComEd's electric transmission and distribution systems.
- According to the press release, the goal of the partnership is to investigate how blockchain technology can facilitate the integration of distributed energy resources, including on-site storage and solar installations, and demand management technologies, in a manner that allows customers to realize sustainability and resilience goals while also guaranteeing the operational integrity of ComEd's system.
- ComEd is hosting a demonstration of the project at its "Grid of the Future Lab." The project will enable Xage and ComEd to test the capacity of Xage's platform to scale to the size necessary to reduce security threats, such as cyberattacks and customer data breaches.

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