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K&L Gates' The Energizer – Volume 59

A biweekly update on blockchain technology applications, distributed energy resources, and other innovative technologies in the energy sector.

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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](#).

IBM Tests Seawater-Based Battery Technology

- [IBM Research](#) (“IBM”) [announced](#) in December that it tested a new battery that uses three proprietary materials extracted from seawater and hopes to have a functioning prototype within the year. With this new technology, IBM plans to create a battery that functions without the use of heavy metals or difficult-to-source minerals. According to IBM, these materials may be more sustainable than traditional alternatives.
- IBM also believes that the batteries have performed more efficiently than the traditional lithium-ion batteries that currently dominate the battery market. Preliminary testing demonstrated that IBM's battery can be manufactured more cheaply than lithium-ion batteries and are less flammable. Moreover, they reduce charging time and provide a higher energy density than lithium-ion batteries.
- IBM has partnered with [Mercedes-Benz Research and Development North America](#), battery-electrolyte supplier [Central Glass](#), and battery manufacturer [Sidus Energy](#) to begin testing for commercial development.

Power Ledger Buys Solar Project to Initiate Blockchain-Based Energy Auditing

- Last week, [Power Ledger](#) [announced](#) its purchase of a 250 kilowatt (“kW”) photovoltaic (“PV”) system in Maddington, Australia, under a 20-year power purchase agreement with [Perdaman Advanced Energy](#). Power Ledger purchased the system to integrate its new blockchain-based energy data management and settlement system, called PPA Vision. PPA Vision will account for the renewable energy produced by the PV system and create an “audit trail for energy generated, energy bought from the grid, energy consumed and energy dispatched on the grid.”
- Power Ledger designed PPA Vision to improve the accuracy of traditional metering and billing systems. According to Power Ledger, its technology “prevents loss of revenue and overcharging simultaneously,” according to Jemma Green, Power Ledger's Co-Founder

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and Executive Chairman. The system is meant to allow generators to customize energy tracking and trading software to meet the needs of regulators, local municipalities, and businesses to attain renewable energy targets.

- By creating an audit trail and facilitating customizable energy tracking and trading tools, the company anticipates that PPA Vision will facilitate increased visibility into renewable energy sales. The new system also furthers Australia's goals of using clean energy sources, which account for 21 percent of Australia's total electricity generation.
- Power Ledger also provides a suite of products for energy trading and renewable energy credit markets. The company's ultimate goal is to use blockchain to enable autonomous management and settlement of the generating, trading, and consumption of energy.

U.S. Department of Energy Announces Energy Storage Grand Challenge

- On January 8, 2020, the U.S. Department of Energy ("DOE") announced the launch of the [Energy Storage Grand Challenge \(the "Grand Challenge"\)](#), a program aimed to accelerate the commercial development and use of next-generation energy storage technologies. The Grand Challenge envisions the United States becoming a global leader in energy storage utilization and exports, and is geared toward establishing a secure domestic manufacturing supply chain that is independent of foreign sources of critical materials by 2030.
- The Grand Challenge will use a suite of research and development funding opportunities, prizes, partnerships, and other programs to reach goals relating to technology development and transfer, public policy and valuation, manufacturing and supply chain, and workforce training. The program builds on the \$158 million Advanced Energy Storage Initiative announced in President Trump's Fiscal Year 2020 budget request.
- The DOE will soon release requests for information asking for stakeholder feedback on the key questions and issues the initiative seeks to address. In the coming weeks, the DOE will host a series of workshops with stakeholders to share information about storage technologies, learn more about barriers to deployment, and shape the work that will bring these technologies to market. These workshops will inform the roadmap for research and development into storage technologies moving towards 2030.

Great Plains Region Electricity Cooperatives Shift Focus to Renewable Energy Generation

- On January 15, 2020, the [Tri-State Generation and Transmission Association](#) ("Tri-State") and [Sunflower Electric Power Corporation](#) ("Sunflower") abandoned plans for a \$2.8 billion coal plant expansion in Holcomb, Kansas. Tri-State has withdrawn from the expansion plan and Sunflower announced that they will allow the air-operating permit for the coal plant expansion to lapse in March 2020. Tri-State and Sunflower made their decision despite a favorable ruling from the Kansas Supreme Court that would have allowed construction to proceed.
- Tri-State provides electricity to Colorado, Nebraska, New Mexico, and Wyoming. Its decision to withdraw from the coal plant expansion is part of its strategy to increase renewable fuel-based electricity generation across the states it serves. To that end, Tri-State unveiled its [Responsible Energy Plan](#) ("REP") in conjunction with its withdrawal from the Holcomb project. The REP outlines the end of the co-op's reliance on coal-fired energy in New Mexico by the end of 2020 and in Colorado by 2030, replacing three coal facilities with wind and solar generation facilities across the two states. Tri-State also plans to retire the Colowyo Coal mine by 2030.

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- By 2024, the REP plans for Tri-State to have one gigawatt of wind and solar resources online, composing 50 percent of its total energy portfolio.

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