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K&L Gates' The Energizer – Volume 52

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

By Buck B. Endemann, Benjamin L. Tejblum, Daniel S. Cohen, Toks A. Arowojolu, Olivia B. Mora, and Abraham F. Johns

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](#).

EDF Renewables Acquires PowerFlex Systems to Boost EV Technology.

- On September 3, 2019, [EDF Renewables](#) (“EDF”) [announced](#) its acquisition of [PowerFlex Systems](#) (“PowerFlex”), a Pasadena-based start-up that will provide EDF technological infrastructure to control the loads that multiple electric vehicles (“EVs”) can withdraw from individual charging stations. By more effectively controlling load management at individual charging stations, EDF will improve its infrastructure’s ability to more efficiently absorb excess daytime solar power, resulting in reduced loads during peak hours. PowerFlex has previously received grants from the [National Science Foundation](#), the [National Renewable Energy Laboratory](#) (“NREL”), the [California Energy Commission](#)’s CalSeed program, and [Southern California Edison](#), among others. PowerFlex is already operating its technology for EV charging stations at [NASA](#)’s Pasadena Jet Propulsion Laboratory and NREL’s National Wind Technology Center, among other places.
- Generally, EV charging station operators can program their stations to set load limits by restricting the number of vehicles charging simultaneously or by managing the rate of charge. PowerFlex’s technology enables charging stations to be plugged into building electrical loads as well as into distributed energy resources (“DERs”) such as solar panels and batteries, thereby allowing operators to manage site loads directly. This greater control enables operators to minimize demand spikes.
- EDF’s acquisition is part of its strategy to develop its DER technology. Recently, EDF established its U.S. Distributed Energy and Storage business unit, which controls 50 percent of a California-based solar panel developer.

DOE Awards \$200,000 to Blockchain Start-Up to Improve Grid Data Integrity.

- On July 12, 2019, the U.S. [Department of Energy](#) (“DOE”) announced a new [grant](#) of funds for companies using blockchain technology as part of a trial to test the ability of blockchain technology to protect the national electricity grid. As part of this trial, TFA Labs, an internet-of-things start-up, will receive \$199,660 through the [Small Business Innovation Research](#)

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grant. [TFA Labs](#) will work with [Factom](#), an early promoter of blockchain technology, to implement Factom's protocol as a tool to promote grid resiliency.

- Factom's protocol, an open source platform for blockchain solutions, is designed to verify the security of devices on a grid using blockchain and cryptography. Specifically, the protocol will use cryptographic signatures to verify data produced at or near the point of data origin, using devices that operate their own blockchain. The technology is already being tested by the U.S. Department of Homeland Security and Bill and Melinda Gates Foundation. The first stage of the trial will last until March 2020. If successful, the DOE may award up to \$1 million to TFA Labs for a second phase.
- By using cryptography and blockchain, Factom may be able to improve the integrity of data communicated to and between devices connected to electric grids because the data communicated will be encrypted and must be validated through an objective consensus protocol. Improving data integrity will improve grid management by ensuring more accurate and widely shared information.

Five States Leading the Charge in DER Integration.

- This week, [GreenTech Media](#) highlighted five states that are leading the charge in integrating DERs into the grid: (1) California; (2) Hawaii; (3) New York; (4) Massachusetts; and (5) Arizona. All of the states, except for Arizona, have enacted a 100 percent clean energy mandate and have developed aggressive policies and initiatives to achieve their goals. For instance, California has implemented laws requiring rooftop solar installations on new residential homes under three stories. Massachusetts has implemented a "Clean Peak Standard," which is designed to ensure that a portion of "peak-hour" electricity is generated from renewable sources.
- GreenTech Media also highlighted some of the challenges that the five states have faced in driving DER growth. For instance, the New York City Fire Department has raised concerns regarding the safety and permitting issues involving the deployment of "certain behind the meter" lithium-ion batteries. More information about the various state initiatives and challenges in driving DER growth is available [here](#).

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