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## K&L Gates Blockchain Energizer – Volume 28

A biweekly update on applications of blockchain technology in the energy industry

By *Buck Endemann, Ben Tejblum, and Dan S. Cohen*

Your *Blockchain Energizer* authors Buck Endemann and Ben Tejblum presented at EUCI's "Blockchain Technology for the Energy Sector" conference on May 8-9 in Houston, Texas. The crowd included existing market participants (utilities, retail suppliers, and regulators) along with new participants looking to leverage blockchain technology to facilitate energy transactions and improve utility operations. During our time in Houston, we found that blockchain discussions are a great way to spur broader conversation on innovation and industry sector change. Recurring themes included how utilities could be incentivized to adopt new technologies (through performance-based regulation or other constructs) while ensuring that they continue to meet their obligation to provide reliable service to all customers. The impact of new and innovative business models on low-income households, under-represented communities, and the unknown impacts on data privacy were important topics, as well.

Looking ahead, several panelists proposed that Europe is the "canary in the coal mine" due to the proliferation of distributed energy technologies and strong commitments to renewable energy. Perhaps not coincidentally, that is where the most energy-related blockchain use cases have taken root, usually with the support of business, regulators, and other state actors. K&L Gates attorneys will continue to monitor these developments and keep you abreast, right here in the *Blockchain Energizer*.

Finally, we are pleased to partner again with EUCI on our "Blockchain Technology Fundamentals: Energy Industry Applications" webinar, to take place on **June 5, 2018**. **Click the link to [register!](#)**

### Centrica and LO3 Partner to Minimize Renewable Energy Curtailment.

- [Centrica](#), the United Kingdom's largest supplier of residential energy, is partnering with [LO3 Energy](#) ("LO3") to initiate a pilot peer-to-peer ("P2P") renewable energy trading program to mitigate the impacts of renewable energy curtailment. Each year, nearly 10% of all renewable energy produced in the United Kingdom is curtailed. This waste may be reduced if consumers can trade small quantities between each other.
- Centrica's program will allow approximately 100 homeowners and 100 businesses in Cornwall, England, to buy and sell renewable energy using Exergy, which is LO3's blockchain-based platform. Centrica's U.S. subsidiary, [Direct Energy](#), is also [testing Exergy](#) for an energy hedging pilot for commercial entities in Texas.
- To maximize the pilot's success, Centrica will provide participants with solar panels, smart meters, monitoring equipment, and batteries. This pilot, which may be the largest blockchain-based energy trading program in the United Kingdom, will begin this year and will conclude in March of 2020. If successful, the pilot could provide a scalable, efficient

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model through which consumers and Centrica can eliminate bottlenecks in renewable energy production and consumption that limit demand and create waste.

- Centrica is investing in blockchain technology for more than just renewable energy curtailment mitigation, however. The pilot program is just one of four projects that make up Centrica's Local Energy Market ("LEM") program. LEM is a series of pilots that will "test the role of distributed generation and storage in supporting local grid flexibility" in southwest England. To date, the company has invested over \$100 million in the LEM program to explore how blockchain can meet these goals.

### PG&E has proposed a Demonstration Project Using Smart Contracts to Generate Low Carbon Fuel Standard Credits.

- For the past several months, [Pacific Gas & Electric](#) ("PG&E") has been developing a proof-of-concept ("POC") [project](#) to track distributed solar generation and create credits for California's Low Carbon Fuel Standard ("LCFS"). Under the LCFS, producers of low-carbon renewable transportation fuels (including renewable-derived electricity used to power electric vehicles) earn compliance credits that can be sold to producers and distributors of conventional transportation fuels.
- Pending approval from the [California Public Utilities Commission](#) PG&E's POC would use a blockchain platform to capture generation data, which would be used as an input for smart LCFS contracts. After PG&E records hourly solar power production from a test site, smart contracts will automatically produce LCFS credits based on predetermined values. These credits will be recorded on the blockchain, creating a transparent, secure, and immutable record. If the project is successful, PG&E has said it will explore other use cases for blockchain and smart contracts.
- Recent changes to California's building code may provide PG&E's demonstration with additional momentum and spur additional use cases. On May 9, the California Energy Commission adopted revised energy efficiency regulations under Title 24 of the California Code of Regulations ("Title 24"). Starting in 2020, Title 24 will require home builders to either install solar panels on new single-family homes (and certain multi-family homes) or connect new homes to a community solar array. According to some analysts, the mandate will generate an additional 222 megawatts of electric power per year and lower a home's long-term heating and cooling costs. Critics argue that the solar mandate will significantly increase housing costs in a state that can ill-afford it.

### The United Nations and Sun Exchange Team up with ElectriCChain to Use Blockchain and Cryptocurrency to Provide Solar Power in Moldova.

- The [United Nations Development Programme](#) ("UNDP"), [Sun Exchange](#), a South African-based solar power marketplace, and [ElectriCChain](#), a blockchain company, are partnering to establish a [solar panel leasing program](#) in Moldova. Under the program, investors will purchase solar panels through Sun Exchange using a cryptocurrency (known as Solar Coin) created by ElectriCChain. Investors will lease their solar panels to the Technical University of Moldova, which will install the panels on university buildings and use the electricity generated from the panels. The plan is for investors to receive Solar Coins once the panels produce electricity.
- Moldova imports nearly two-thirds of its energy and lacks sufficient domestic capital to invest in homegrown renewable energy resources. The program coordinators hope the pilot can provide a viable financial model through which Moldovans can access domestic renewable energy. If successful, the UNDP will expand the pilot to similarly situated

countries in Eastern Europe and Central Asia. As we have [previously reported](#), Sun Exchange has already used its platform to fund several solar projects in South Africa.

- By using a blockchain-based marketplace and a cryptocurrency, the program will reduce transaction settlement times, minimize friction in processing payments and disbursing profits, and will create a secure, immutable ledger of ownership and leasing rights.

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