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THE BLOCKCHAIN ENERGIZER

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K&L Gates Blockchain Energizer – Volume 30

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

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There is a lot of buzz around blockchain technology and its potential to revolutionize a wide range of industries from finance and health care to real estate and supply chain management. Many institutions and companies are forming partnerships to explore how blockchain ledgers and smart contracts can be deployed to manage and share data, create transactional efficiencies, and reduce costs.

While virtual currencies and blockchain technology in the financial services industry have been the subject of significant debate and discussion, blockchain applications that could transform the energy industry have received comparatively less attention. Every other week, the K&L Gates' Blockchain Energizer will highlight emerging issues or stories relating to the use of blockchain technology in the energy space. To subscribe to the Blockchain Energizer newsletter, please click here.

Walmart Patent Application Envisions Blockchain-based Demand Response, Internet-of-Things Ecosystem.

- On June 14, the U.S. Patent & Trademark Office released a patent application from Walmart describing a blockchain-based "method and system for managing demand on an electrical grid." According to Walmart's application, the current system of distributing electricity among energy providers, consumers, and appliances and devices is inefficient and can be improved by better coordination of smart meters and devices. Walmart's application proposes pairing a cryptocurrency with a publicly distributed transaction ledger to manage energy demand across several industry participants.
- Walmart's application has elements of Internet-of-Things ("IoT"), demand response, and cap-and-trade. Regarding IoT, Walmart envisions coordinating the electricity demands of lighting, televisions, heating/cooling, etc., to optimize energy use at the household or individual business level. Managing energy at these individual "networks," each behind a single energy metering device, could be coordinated with other networks and controlled in a way to reduce aggregate demand. Walmart's patent application suggests that a business campus, distribution utility, or other controlling entity could set an energy "cap" for each network, and it's possible that devices or networks could be allowed to trade the headroom beneath their respective caps.
- Walmart's application is currently undergoing examination by the U.S. Patent & Trademark Office. To the extent Walmart proceeds with such an energy management tool, it will likely have to navigate several state-level regulatory and data privacy issues.

Clean Energy Blockchain Network Partners with Silicon Valley Power to Advance California Low Carbon Fuel Standard Goals.

- As discussed in previous issues of the Energizer, some stakeholders have investigated using blockchain to capture the value of California's Low Carbon Fuel Standard ("LCFS"). The LCFS is a credit system that rewards producers of renewable transportation fuels, including those who generate electricity for electric vehicles. Generating LCFS credits and demonstrating compliance with the LCFS scheme takes time and can involve material administrative costs, however.
- Clean Energy Blockchain Network is the U.S.-based partner of Australia's Power Ledger, a prominent blockchain-based platform for peer-to-peer energy transactions. Clean Energy Blockchain announced recently a partnership with Silicon Valley Power ("SVP") to use Power Ledger to track the production and use of renewable energy from SVP's solar and battery storage installations. By using existing metering and software, Clean Energy Blockchain's solution should enable SVP to efficiently track renewable energy from the moment it is produced to the moment it is placed into an electric or hybrid vehicle, without adding additional and unnecessary costs.
- It is also possible that Clean Energy Blockchain's solution could allow the more incremental generation and trading of LCFS credits, which could encourage more market participants and advance California's goal of 1.5 million zero-emission vehicles by 2025.

Hydro-Québec Temporarily Halting Service Requests from Cryptocurrency Miners.

- On June 7, Hydro-Québec, Canada's largest electric utility, announced a second moratorium on electricity requests from cryptocurrency mining operators. According to Hydro-Québec's press release, the moratorium is a "joint response" by the utility and the Québec government to increasing demands from the industry that exceed Hydro-Québec's short and medium-term capacity.
- To address this unprecedented level of demand, the government issued a ministerial order directing Hydro-Québec to cease processing crypto-mining service orders and instructing Régie de l'énergie, the provincial electricity regulator, to "address the conditions governing the sale of electricity" to blockchain-based companies. In devising a new framework for providing electricity to such companies, Régie de l'énergie must consider, among other factors, a rate specific to the blockchain industry, the "possibility of maximizing Hydro-Québec's revenues," and "the winter peak period." Hydro- Québec will propose a selection process to provide electricity to blockchain-based companies.
- Québec has become a popular locale for cryptocurrency miners due to its affordable electricity, which is currently the cheapest in Canada. On average, electricity costs in Québec are lower than the average costs in the United States by one-third. Growing demand for the region's low-cost energy by cryptocurrency miners, however, has strained Hydro-Québec's capacity. This joint response, while aimed at cryptocurrency miners and albeit temporary, appears to apply more broadly, as it covers "electricity consumers using cryptography as applied to blockchain technology." Whether the framework Régie de l'énergie will devise will cast as broad a net remains to be seen.

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