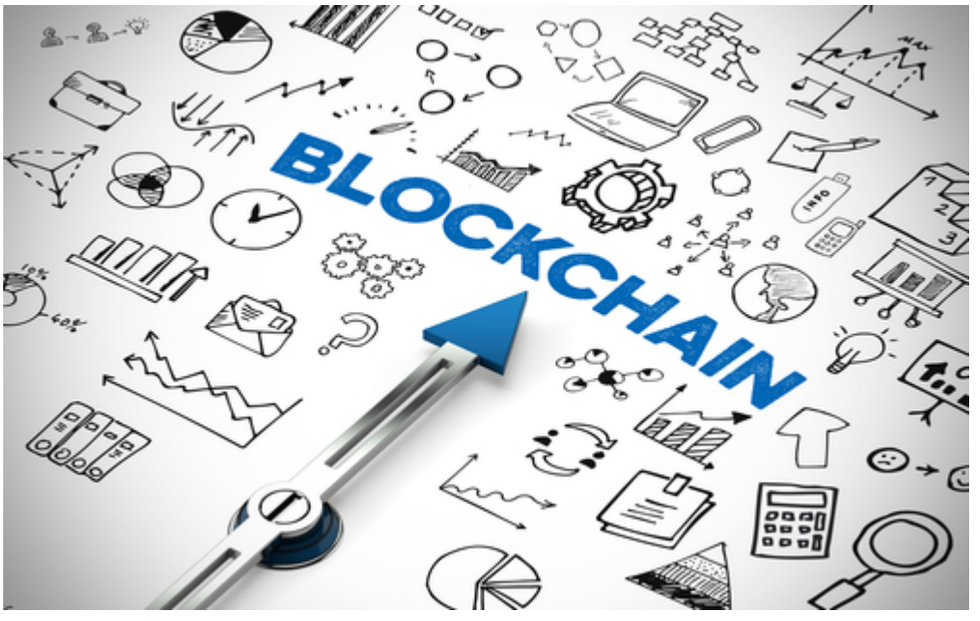
PowerUpLegal
ENERGY LAWYERS ON DEMAND

POWER UP BLOCKCHAIN

a weekly briefing on blockchain & energy innovation & regulation
US & global coverage



IN THIS ISSUE:

Around the Block: A Brief Survey of Blockchain Innovations Across Industries
From paying electric bills to tracking food delivery to pinpointing counterfeit medications, blockchain continues to power exciting innovation across different industries, with some of the most familiar consumer companies like Walmart and Amazon leading the charge. Read More...

Muni Uses Blockchain to Track EV Carbon Credits
To date, many munis have been blocked from participating in California's emerging low carbon fuel standard electric vehicle credit market due to the complexity of managing programs and complying with complicated administrative rules. Now, blockchain is helping to unblock EV carbon markets for one California municipal utility. Read More..

Blockchain Takes Off in the Offshore Drilling Industry
Want to drill down on how the offshore drilling industry is employing blockchain? Read More...

Using Blockchain to Bring Power to the People
What if you could buy an electric car with electric supply already included, or donate solar power from your rooftop directly to your local school system? Today, these transactions aren't possible since power must flow through utilities, but blockchain innovations could enable every consumer to become its own "you-utility." Read More...

Around the Block: A Brief Survey of Blockchain Innovations Across Industries

From paying electric bills to tracking food delivery to pinpointing counterfeit medications, blockchain continues to power exciting innovation across different industries, with some of the most familiar corporate names like Walmart, Amazon, IBM, Nestlé and Big-Pharma company Merck -- just to name a few -- leading the charge. Here's a quick round-up.

Superstore Giant Betting on Blockchain Business Innovations
Walmart, the world's largest earning company known for shopping bargains, is betting on blockchain to reduce electric costs, improve efficiencies and stake a claim in the healthcare market -- as demonstrated by three recent block-chain related patents recently granted by the USPTO.

One patent focuses on allowing households to manage paying electricity bills through cryptocurrency on a public blockchain where users will have the option to pay a capped amount of cryptocurrency up front that will be issued to a device/appliance so a user can buy the right amount of energy for a specific period. Since it will be listed publicly on a ledger, energy providers can see how much energy to allocate to each household based on their needs and any leftover energy can be recycled into the next period.

The second patent revolves around Walmart's increasing interest in healthcare (also in talks to buy Humana Health Insurance); it involves storing critical, emergency medical records (EMR) on a distributed blockchain ledger used in emergency situations when a patient might be unresponsive. Three devices are needed: a wearable object, such as a bracelet, that functions as local storage for a public key; a biometric scanner used to obtain a patient's biometric signature, such as a fingerprint or eye scan thus obtaining the private key (unique to each user); and an RFID scanner that is used to scan the wearable device by paramedics/responders. To protect a person's privacy, both keys are required before a system allows access to the patient's EMR.

Lastly, the third patent will be for a system using cryptographic keys stored on a blockchain to help users control or limit access to a real or virtual space. Walmart also has in the works two other patent applications for blockchain powered system platforms specific for vendor payment records encrypting and dividing payments for products and services, and digital shopping, also using blockchain to encrypt payment data.

Besides Walmart, IBM and Cisco have also received approval for their own patent applications. IBM has been approved for “systems and methods for preventing vulnerabilities in a blockchain” and Cisco has been given the go ahead for its Trust Enabled Decentralized Asset Tracking System for Supply Chain and Automated Inventory Management. Cryptovest, PYMNTS

Amazon Primes Blockchain-As-A-Service

Amazon, a Walmart rival, has also announced a new blockchain initiative through its Amazon Web Services (AWS). AWS has plans to become one of a few leaping tech companies providing blockchain-as-a-service (BaaS); others include IBM, HP, Oracle, and Microsoft (one of the first). The goal is to provide a way for enterprise customers to test out new blockchain technology without the capital costs or risk of developing in house. AWS plans to diversify itself from the other cloud services by changing its look and function. They’re partnered with Kaleido, a new blockchain business cloud service for enterprises, to offer its cloud services that can host an open-source blockchain platform. This open-source platform is based on the sophisticated platform of the Enterprise Ethereum Alliance, a nonprofit organization consisting of 500 companies and tech development startup members that, together, have created a standard for enabling peer-to-peer decentralized networks explicitly for automating corporate transactions. This will make Kaleido the first managed blockchain BaaS available on AWS.

A key goal is making this new platform easy to use since blockchain technology is still relatively new and uncertain. As the founder of Kaleido, Steve Cerveny, explains, "We designed the Kaleido platform from scratch with new user experiences and tools to radically simplify the entire enterprise journey." BaaS has been an attractive option for this reason. However, the downside to BaaS offerings is that it takes away the peer-to-peer network controlled by its users, which is part of what made blockchain so attractive to use. Either way, AWS will now add this to its other blockchain development projects. The avilabliity of blockchain developer templates based on Ethereum and Hyperledger, the most popular open-source blockchain platforms, is making Amazon’s BaaS well positioned for wide-spread adoption because many developers and enterprises are already using its AWS cloud service. IBM has also joined the BaaS space, launching a number of pilot projects with companies in the supply chain and financial services industries. Lexology

No More Bad Apples: Blockchain Tracking Food Supply from Field to Fork

Food companies are currently required to record only a few steps of the journey in the food supply chain, from field to factory to fork. Now, ten of the world’s biggest companies have started a new initiative called the Food Trust: a group that includes brand-name competitor giants like Nestlé, Dole Food Co., Kroger Co., McCormick and Co., Tyson Foods Inc., Walmart, and a few others. Food Trust is building a new blockchain to reinvent how the food industry tracks its products globally. With all companies working cohesively, the blockchain record keeper will govern transactions, preserving one consistent history, and eliminating costs. Unfortunately, the Food Trust project is still in the R&D stage, making it too late to figure out the cause of the E. coli riddled romaine lettuce that affected almost 200 people in 35 states. However, once complete, it will be able to quickly identify and handle these kinds of issues, eliminating much of the investigative work the FDA conducts when an illness or outbreak occurs.

In one blockchain test last year, a team was able to trace a batch of mangoes from the original orchard in Mexico to a Walmart store in only 2.2 seconds, proving the system to be much more efficient and reliable when compared to the current paper trail system that takes days to do the same thing. A major goal is decreasing the amount of broad recalls

made when one bad apple affects the whole batch, thus reducing risks to consumers. The blockchain currently stores the data of one million items in about 50 food categories. While some farmers and pickers don't retain electronic records, Food Trust offers a mobile app which allows them to enter data as quickly as possible onto the blockchain. Nestlé is currently working with Food Trust partners to build integration tools to help with technologies such as barcodes and proprietary software and combat other challengers. While it will take a few more years to perfect, this type of blockchain technology aims to curb outbreaks in the future. WSJ

Pharma Fights Fakes By Using Blockchain to Stop Counterfeit Meds

Merck & Co. Inc., a pharmaceuticals firm and member of the Enterprise Ethereum Alliance, has applied for a patent to use blockchain as a method to store location coordinate information about a single product, such as pharmaceutical drugs, and then receive tracking updates as it moves through the supply chain. The ledger would also be able to store information verifying the authenticity of the product. The big objective is to eliminate counterfeit goods on a larger scale by using blockchain's high data integrity, which essentially makes the data impossible to manipulate or erase. This system will work in addition to its current internal process for eliminating fake goods. Associate Director of Applied Technology at Merck, Nishan Kulatilaka, predicts the public will be seeing pharmaceutical blockchains within the next five years, as healthcare is the second biggest industry to adopt blockchain technology. Coindesk, Cryptodisrupt

---

Muni Uses Blockchain to Track EV Carbon Credits

Australian energy blockchain startup, Power Ledger, and its North American partner, Clean Energy Blockchain Network, are partnering with municipal utility, Silicon Valley Power (SVP), in a carbon credit project that aims to use blockchain to create a digital record of Low Carbon Fuel Standard (LCFS) transactions. The project has two main goals: (1) to track the production and use of energy at the solar PV and battery equipped parking garage in Santa Clara and (2) to "digitize" those electric vehicle (EV) charging transactions to help the utility earn credits under California Air Resource Board's (CARB) LCFS.

LCFS offers EV fleet owners or EV charging network operators a way to sell credits to fossil fuel refiners, as long as they are able to handle the administrative costs and accounting challenges of adhering to its rules. However, because the accounting process for earning credits is extremely complicated, only the big three investor-owned utilities have been able to use it. That's where the digitization part of this project comes into play – to replace that process with Power Ledger's "transparent, auditable and automated record of energy generation, storage, and consumption."

CARB is interested in creating an "enhanced credit, where if you can show the energy used to charge the EV came from a clean source, they're wililng to provide some percentage increase in the credit." The current LCFS doesn't differentiate between sources of electricity used to charge EVs. But by tracking the solar PV and batteries in the parking garage, Power Ledger will be able to align how many kilowatts of electricity are being generated, stored, and dispatched with EV charging in real time, making CARB's goal possible.
GreenTechMedia, NewsBTC

Blockchain Takes Off in the Offshore Drilling Industry

Diamond Offshore Drilling, Inc. recently announced the launch of its Blockchain Drilling Service. The service facilitates 24/7 access to well construction activities

and progress, reduces the total cost of ownership, and is scalable and adaptable, enabling the deployment of customized modules for comprehensive planning, tracking and reporting of the well construction value chain. This is a cloud-based platform, consisting of five modules to drive efficiencies and eliminate waste: (1) supply chain and logistics manager, (2) well planner, (3) spend monitor, (4) dynamic critical path, and (5) performance tracker. The modules can be adapted to customer needs for individual or multi-well campaigns. The service will be implemented on all Diamond Offshore's rigs, creating the industry's first "Blockchain Ready Rig" fleet. **JWN Energy**, **PR Newswire**

Enosi Brings Power to the People Through Blockchain

Seeking to power innovation in consumer energy markets, the Enosi Foundation has developed the Enosi Platform which will offer consumers a way to manage their electricity prices, generation and usage online with smart contracts. Steve Hoy, CEO of the Enosi Foundation hopes that the platform will take over the role that large energy retailers perform - such as buying and selling energy from wholesalers to consumer - and allow end users to directly control energy use. Enosi apps could be employed for variety of uses - such as enabling electric vehicle companies to bundle electric supply with a vehicle sale or to allow consumers to sell or donate energy to one another. Enosi is preparing to launch an ICO campaign and sell a JOUL token to raise funds for additional development. **CDOT Trends**

Meet the PowerUp Blockchain Team:

Editor - Carolyn Elefant, founder of PowerUp Legal and Law Offices of Carolyn Elefant is a seasoned energy regulatory attorney who practices at the intersection of regulation and innovation in the energy and legal tech sectors.

Writers and Curators - Elizabeth Ionescu and Emma Murchison are 2018 summer associates with the Law Offices of Carolyn Elefant and are rising third-year law students at George Washington University Law School in Washington D.C.

ELIZABETH IONESCU

EMMA MURCHISON

Need an expert to research energy innovations or help your company strategize new business or develop a regulatory policy? Contact PowerUpLegal at info@poweruplegal.com or submit a request and we can provide an attorney or policy specialist to assist.