



Join us for our lunch session on
Friday June 3, 2022, at Noon 12 pm PDT

Live stream Seattle Washington

Blockchain Transactive Energy and the Electric Grid



Transactive energy was originally proposed as an alternative to the traditional optimal control-based mechanisms for balancing supply and demand in the grid. The proposal was based on a grid architecture scenario where the grid becomes more and more decentralized, with hundreds of thousands of DERs and millions of flexible loads, making the solution of the optimal control problem increasingly intractable. Market-mechanisms such as transactive energy have been successful in many areas in balancing supply and demand, and market-mechanisms have been a pillar of the wholesale power market since the 1990s. While the original concept was premised on using a centralized database, decentralized ledgers such as blockchains provide an even better base, since they can accommodate additional participants in the business ecosystem such as aggregators while building trust between the ecosystem participants. In addition, they can be deployed in a decentralized fashion down to a single building or small community solar deployment, a deployment architecture that is well-suited to the decentralized nature of DERs and flexible loads. In this talk, we'll briefly review the history of blockchain transactive energy (BCTE), discuss the three basic technologies underlying blockchain and distributed ledgers, and then explore some BCTE use cases that are being or could be deployed today.

Register at: <https://events.vtools.ieee.org/m/315183>

Mike Brisbois | 708.668.5488 | mike.brisbois@ieee.org



Dr. James Kempf graduated from University of Arizona with a Ph.D. in Systems Engineering in 1984 and immediately went to work in Silicon Valley. Since then, he has worked for a variety of large tech companies, including Sun Microsystems, NTT Docomo, Ericsson, Equinix, and VMWare, mostly in research, on operating system, networking, cloud, and blockchain. Dr. Kempf started part time consulting with renewable energy startups on cloud computing and networking technology in 2016, and was an advisor to PV Complete, Extensible Energy and other cleantech startups at the Powerhouse Solar Incubator in Oakland from 2016-2019. He has served on the

Dr. James Kempf

Powerhouse Fund technical due diligence team and the Powerhouse Connector team, connecting with startups looking for help with cloud and networking issues for the DOE America's Solar Prize. In 2020, Dr. Kempf started full time consulting for companies working on ICT systems for building decarbonization and renewable energy and has consulted for Extensible Energy and Community Energy Labs. He is also a volunteer with the IEEE Blockchain Transactive Energy task force since 2019 and was a member of the team that coauthored the task force's whitepaper. Dr. Kempf is the holder of 26 patents, the author of 56 technical papers, 3 books, and most recently one of four co-authors of "Digitalization of Power Markets and Systems Using Energy Informatics" published by Springer in 2021.

Register at: <https://events.vtools.ieee.org/m/315183>

