Electricity Market for Future Active Distribution Network

The development of new market-oriented energy systems and mechanisms for future active distribution systems, to respond to the needs and requirements that the increased penetration of distributed energy resources place on the distribution network.

Competitive advantage

- Expertise in facilitating peer-to-peer electricity trading among energy prosumers in the distribution network
- Collaborative filtering technique-based electricity retail plan recommendation system for smart grid end users

Impact

- The creation of a decentralized, secure, and efficient electricity trading mechanism in the distribution side that will enhance the experience of sharing for end users.

Successful applications

- Multi-agent based electricity trading negotiation framework for prosumers
- Decentralized electricity trading system based on multi-agent intelligence and Blockchain
- The electricity retail plan recommendation system has been tested on the real "Power-to-Choose" retail plan set and Australian "Smart Grid, Smart City" dataset. The testing results prove the efficiency of the system

Capabilities and facilities

- Java Agent Development Environment (JADE)
- PLEXOS, PSS/SINCAL, and Matlab Simulators

More Information

Professor Joe Dong

School of Electrical Engineering and Telecommunications

T: +61 (0) 2 9385 4477
E: Joe.Dong@unsw.edu.au