



*IEEE PES Singapore Chapter Co-sponsor Seminar:*

## ***“Virtual Power Plant for a Low-Carbon Power System: Key Technologies and Applications in China”***



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**Date: 26<sup>th</sup> July 2023 (Wednesday)**

**Time: 1:30 pm - 2:30 pm (SGT)**

**Venue: [EEE Executive Seminar Rm \(S2.2-B2-53\), Nanyang Technological University, Singapore.](#)**

**Abstract:** High penetration of renewable energy will inevitably bring about a major change in the secure and economic operation of the power system. VPP can improve renewable energy accommodation and provide powerful support for the new power system construction. This talk will focus on aggregation and coordination technologies of the VPP under uncertainty. First, a feasible region projection method will be introduced to integrate DERs into the transmission-level operation efficiently. An optimal virtual battery model is developed to incorporate inter-temporal constraints in the aggregation of DERs. Second, uncertainty mitigation technology will be introduced for the aggregation. A robust feasible region method is proposed for the uncertainty-immunized aggregation of DERs. Finally, some pilot projects and applications of the VPP in China will be analyzed.

**Speaker:** Haiwang Zhong received the B.S. and Ph.D. degrees in Electrical Engineering from Tsinghua University, where he is currently an Associate Professor. He was a recipient of the ProSPER.Net Young Scientist Award in 2014, the Outstanding Post-Doctor of Tsinghua University. He currently serves as a Subject Editor for CSEE Journal of Power and Energy Systems. His research interests include power system operations & planning, electricity markets.