

Name: Wijarn Wangdee



Brief biography:

Wijarn Wangdee is currently a senior researcher at the Center of Excellence in Electrical Power Technology (CEPT), Faculty of Engineering, Chulalongkorn University. He received the B.Eng. from Chulalongkorn University in 1999 and the M.Sc. and Ph.D. from the University of Saskatchewan, Canada, in 2002 and 2005, respectively. He was a senior system planning engineer at BC Hydro and Power Authority, Canada responsible for planning the Metro Vancouver area from 2006 to 2013. In late 2013, he returned to Thailand and worked at the Sirindhorn International Thai-German Graduate School of Engineering (TGGS) where he was an associated professor prior to joining the CEPT in July 2021.

Presentation Topic: Electric Vehicle-Grid Integration

Presentation Summary: Global trends toward decarbonization or carbon neutrality has stimulated a continuously growing use of renewable energy resources and electric vehicles world-wide. As a results, modern power grid is in changing landscape with high penetration of distributed energy resources (DERs) at the grid edge (i.e. near electricity end-users). Electric vehicles are one of the key players for grid edge transformation since they encapsulate all the three DER capabilities (i.e. generator, storage, controllable load) within a single resource. Therefore, integration of EVs with bidirectional power flow capability into power grid can greatly enable grid flexibility services allowing more intermittent renewable energy (solar and wind) to be highly penetrated into the grid. The practical use cases of electric vehicle-grid integration for providing grid flexibility services are presented along with discussions on barriers and concerns to effectively enable the use of EVs to support the future power grid.