IEEE Power & Energy Society (PES) Singapore Chapter
Distinguished Lecture

Presenter: Professor Nando Ochoa Pizzali, The University of Melbourne, Australia

Biography:

Luis(Nando) Ochoa is Professor of Smart Grids and Power Systems at The University of Melbourne, Australia and part-time Professor of Smart Grids at The University of Manchester, UK. His expertise in network integration of distributed energy resources (DER) and his extensive portfolio of industrial and academic projects have led to 160+ publications, 60+ technical reports, and two patents, one filed by Psymetrix Ltd (now part of GE) and one filed by The University of Melbourne. Prof Ochoa is an IEEE PES Distinguished Lecturer and is also Editorial Board Member of the IEEE Power and Energy Magazine. Prof Ochoa is an IEEE Senior Member since 2012. He holds a Bachelor's degree in Mechanical and Electrical Engineering from UNI (Peru), and a Research MSc and a PhD in Electrical Power Engineering, both from UNESP Ilha Solteira (Brazil). More info: https://sites.google.com/view/luisfochoa/

Title 1: Increasing the PV Hosting Capacity of Distribution Networks - The Role of Smart Inverter and Storage

Abstract

Electric distribution companies in many countries around the world are finding it challenging to allow residential customers to continue to install photovoltaic (PV) systems due to the potential technical impacts resulting from high penetrations. To remove these barriers, speed up connection times, and reduce costs, it is crucial for distribution companies to increase the PV hosting capacity of their low and medium voltage networks. Adequately exploiting the capabilities of smart inverters and residential battery energy storage systems will be key.

This talk will present and discuss different aspects required to assess the residential PV hosting capacity of distribution networks. Furthermore, it will explain and demonstrate the benefits but also the potential challenges from exploiting the capabilities of smart inverters (such as Volt-Watt and Volt-var) and residential storage systems to increase hosting capacity. Real case studies from Australia will be used to demonstrate the quantification of PV hosting capacity considering potential strategies to make the most of smart inverters and storage.

Title 2: Intelligent Control of Electric Vehicles: Lessons Learned from the Largest UK EV Trial

Abstract

The increasing adoption of electric vehicles will pose significant technical and economic challenges on distribution networks. Medium and low voltage circuits, traditionally designed to have no or limited controllability (and hence are largely unmonitored), will become the bottlenecks and therefore understanding the required Smart Grid capabilities is critical to ensure the electrification of our transport.

This talk will present the large-scale trial "My Electric Avenue" in which a new technology is used to manage the charging points of EVs in a given residential LV feeder to avoid technical issues. As part of this project more than 200 EVs were monitored for over a year to understand usage patterns. The talk will provide an overview of the implementation aspects, the control algorithm, the corresponding benefits, and the potential impacts on EV users.

Organized By: IEEE Power & Energy Society (PES) Singapore Chapter and Nanyang Technological University (NTU).

Venue: Executive Seminar Room (S2.2-B2-53), School of EEE, Nanyang Technological University, http://maps.ntu.edu.sg/maps#q:s2.2-b2-53

Date: 9th March 2020.

Time: 09:30 - 12:30

Refreshments: Light refreshments are available after the lecture.

Registration is mandatory therefore visit: https://forms.gle/mHin5BD96fN1aPZy5. Registration fees are subjected for attendees: Academia - $50, Industry - $100, and students -$10.

PDU credits will be awarded to attendees with PE credential provided in the registration form.