



University of Cyprus  
Department of Electrical and  
Computer Engineering



## Department of Electrical and Computer Engineering

### «PV-Rich Communities, Storage, and Flexibility: The Need for Distribution System Operators»

**Prof. Luis (Nando) Ochoa**  
**IEEE PES Distinguished Lecturer**  
**The University of Melbourne, Australia**

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Room 117, Building XΩΔ02

#### **Abstract:**

Australia has seen in the last few years the rapid adoption of residential-scale photovoltaic (PV) systems. Householders and communities are attracted to the benefits from generating their own electricity. Battery storage systems are also becoming attractive as they allow storing excess PV generation during the day to use it later at night. However, PV-rich communities will pose significant technical and economic challenges on distribution networks - but also some opportunities. For this PV-rich future to thrive, more intelligent, flexible electricity networks, also known as Smart Grids, are likely to play an important role. But for Smart Grids to emerge, the traditional Distribution Network Service Provider (DNSP) needs to evolve into an engaged, flexible Distribution System Operator (DSO) in which network elements and participants (consumers, generators, and those that do both) are actively managed to fulfil technical, economic, and environmental objectives. This talk will present and discuss the different challenges of PV-rich communities and the role of storage and other technologies in creating more flexibility at different scales. The Distribution System Operator (DSO) vision, potential future roles, and the perceived challenges to ensure the corresponding transition will also be presented and discussed.

#### **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 low carbon technologies and his extensive portfolio of industrial and academic projects has led to 130+ publications, 50+ technical reports, and one patent filed by Psymetrix Ltd. Prof. Ochoa is an IEEE PES Distinguished Lecturer and has also several leadership roles within IEEE PES, including Member-At-Large of the Governing Board and 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). He is also a Visiting Professor at UNICAMP (Brazil) since 2014.