

## Programa de Doctorado Interuniversitario en “Sistemas de Energía Eléctrica”



Convenio de colaboración entre las universidades de Sevilla, País Vasco, Málaga y Politécnica de Cataluña para llevar a cabo, conjuntamente, la organización y desarrollo de las enseñanzas de doctorado en “Sistemas de Energía Eléctrica”

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## Máster Universitario en “Sistemas de Energía Eléctrica”



<http://departamento.us.es/ielectrica/master-see/>



### Seminario

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### **Title:**

“Revisiting Electricity Market Design:  
What the Past 30 Years Taught  
Us What Electricity Systems  
of the Future Need”

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### SEMINARIO

“REVISITING  
ELECTRICITY MARKET  
DESIGN: WHAT THE  
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### **FINANCIA:**

Cátedra Endesa  
de la Universidad de Sevilla

Día: 24 de mayo de 2023

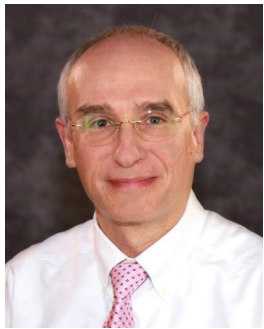
Hora: 17:00H

Aula: Sala Larrañeta

Dpto. Ingeniería Eléctrica  
ETS de Ingeniería  
Universidad de Sevilla



# Title: Revisiting Electricity Market Design: What the Past 30 Years Taught Us What Electricity Systems of the Future Need



[Prof. Antonio J. Conejo](#)



THE OHIO STATE UNIVERSITY

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Integrated Systems Engineering |  
Electrical and Computer Engineering

## Abstract:

The principles underlying the design of restructured electricity markets that are in-use today were developed over three decades ago when power systems were considerably different than they are today. Systems of the past typically relied on large dispatchable thermal generators. This can be contrasted with power systems today, which are experiencing increasing penetrations of weather-dependent renewable energy sources that have limited dispatchability. Additionally, power systems are experiencing growing adoption of distributed energy resources and novel uses of electric energy by end customers, which adds to demand uncertainty and variability. However, these technologies also provide opportunities for more active participation of the demand-side. Given these significant changes in the structure of electric power systems, we are at a unique point at which the assumptions of electricity market design can be re-evaluated. While this re-examination is largely driven by changes in power system structure, we can also rely on lessons learned from the past three decades of market-restructuring experience. In this presentation, we highlight some of the chal-

lenges in designing electricity markets brought about by changes in system structure. We also discuss a number of lessons learned from market designs that have been implemented. We then suggest some important principles that could underlie future reforms of electricity market designs and raise design questions that require further research and examination.

## Biosketch:

Antonio J. Conejo, professor at The Ohio State University, Ohio, received his M.S. from MIT, and his Ph.D. from the Royal Institute of Technology, Sweden. He has published over 240 papers in Web of Science journals and is the author or coauthor of 14 books published by Springer, John Wiley, McGraw-Hill and CRC. He has been the principal investigator of many research projects financed by public agencies and the power industry and has supervised 25 PhD theses. He is an IEEE Fellow, an INFORMS Fellow, an AAAS Fellow, and a former Editor-in-Chief of the IEEE Transactions on Power Systems.