

# WISE

WATERLOO INSTITUTE  
FOR SUSTAINABLE ENERGY



## LECTURE SERIES

FREE ADMISSION | OPEN TO THE PUBLIC

BUILDINGS | CARBON CAPTURE AND STORAGE | FUEL CELLS | NUCLEAR | POLICY | PLANNING  
RENEWABLES | SMART GRID | STORAGE | SUSTAINABLE MOBILITY | SUSTAINABILITY ANALYSES

PRESENTED BY THE WATERLOO INSTITUTE  
FOR SUSTAINABLE ENERGY

**Wednesday October 10, 2018**

**10:30 – 11:30 am**

**CPH 4335**

## SHOW ME YOUR FORECASTS, I'LL SHOW YOU MINE! ARE WE MOVING TOWARDS ENERGY DATA MARKETS?

**Pierre Pinson**, Professor, Centre for Electric Power and Energy (CEE), Electrical Engineering, Technical University of Denmark

Integrating renewable power generation into power systems and electricity markets has revealed the need for advanced analytics in various forms. We are moving towards a number of ICT-enabled disruptive ideas in the electric energy field, triggered by this renewable integration challenge, with inherent variability and uncertainty in throughput, latent dependencies in the weather fields, distributed setups, and more. Through the streams of data that we get today, can then price uncertainty, as well as variability?

A number of mechanisms using proper scoring rules and for cost attributions will be discussed. In parallel, a number of interesting challenges in analytics and markets for demand response will be reviewed, also based on our practical experience with the island of Bornholm. Recent initiatives for the design and deployment of peer-to-peer electricity markets will be presented, covering both theoretical developments and practical experiments.

A peer-to-peer paradigm will allow to localize and "colour" electric energy exchanges (e.g., "I buy solar within 50kms of my house", "I buy from my cousin's farm in Brittany", etc.). In that context, why should we stop with peer-to-peer exchange of energy only and not start trading data? Motivations and expectations from energy data markets will close the talk.

### Biography



Pierre Pinson is a Professor at the Centre for Electric Power and Energy (CEE) of the Technical university of Denmark (DTU, Dept. of Electrical Engineering), also heading a group focusing on Energy Analytics & Markets. His main research interests are centered around the proposal and application of mathematical methods for electricity markets and power systems operations, including forecasting. He has published extensively in some of the leading journals in Meteorology, Power Systems Engineering, Statistics and Operations Research.

In 2019 he will be a Simons Fellow at the University of Cambridge, Isaac Newton Institute ("The mathematics of energy systems"). He is leading a number of initiatives aiming to profoundly rethink electricity markets for future renewable-based power systems and with a more proactive role of consumers.

This focus on consumer-centric and community-driven electricity markets translates into proposals for peer-to-peer energy exchange, from mathematical framework to actual demonstration in Denmark.

**ALL ARE WELCOME!**

**PLEASE REGISTER ON**

**EVENTBRITE**