CHAIRE EUROPEAN ELECTRICITY MARKETS
Fondation Paris-Dauphine

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UNIVERSITÉ PARIS

CONFERENCE ON
"NODAL VERSUS ZONAL PRICES" REVISITED: LESSONS FROM THE US EXPERIENCE AND APPLICABILITY TO EUROPE?

Wednesday, 20 November 2019, 9h30 to 14h00
Université Paris-Dauphine, Salle Raymond Aron (2nd Floor), Paris – France

A Conference of the Chaire European Electricity Markets (CEEM)

Overview of the conference

The decarbonisation of the power sector raises new challenges for the organisation of power markets and the interplay with the transmission and distribution networks. The rise of decentralised resources and the development of renewable resources in places with favourable conditions indeed require already create in some countries such as the UK and Germany unscheduled flows and local or regional congestions with significant costs. Even in countries where congestion remains limited today, the anticipated changes in the resources mix and location sheds a new light on the perennial problem of co-optimising the investments and the operation of the network and production resources.

There has been a continuous debate over the past decades on the pros and cons of the two main relevant approaches for power market design, namely zonal versus nodal prices. The theoretical 'first best' approach is to implement nodal prices which reflect the grids operational constraints into power prices. However, implementing such approach is in practice challenging, both in terms of computational issues associated with the sheer complexity of such approaches, but also institutionally. The alternative approach, using a zonal approach and leaving system operators to organise the internal redispatch is easier to implement in practice but the less granular price signals are believed to be less efficient in driving operational and investment decisions.

Whilst the US and some other countries such as Australia and New Zealand have chosen a nodal pricing approach, European electricity markets are based on a zonal approach. More than two decades after liberalisation, both models are facing challenges with the development of variable renewables and decentralised resources. The objective of this conference will be to revisit the old debate on the pros and cons of "Nodal versus Zonal prices" in the context of the ongoing evolution of EU power markets and the associated challenges. These new challenges include:

- The need for price signals that are robust enough to support both efficient operational decisions and investment decisions;
- The need for close to real time and granular price signals in order to reflect scarcity conditions in power prices;
- The issue of liquidity and potential exercise of market power / gaming strategies
- The ongoing process of integrating further and coupling European power markets intraday and balancing markets;
- The development of storage and other flexibility resources requiring inter-temporal optimisation;
- The overlap with other regulatory elements which potential have an impact on locational signals, such as network connection and usage charges, and/or the geographic differentiation of levies and taxes.
- More generally, the prospects for merchant investment in transmission and infrastructure in Europe given the difference in governance and regulation;
- etc.

The objective of the conference will therefore be to discuss the pros and cons of the nodal versus zonal approach, in the light of the lessons from the US and European experience and with a focus on the new challenges for power market design associated with decarbonisation.

The first part of the discussion will review the theoretical benefits and the practical lessons from a number of countries and regions with nodal pricing. We will then discuss the differences in the electricity market design and institutional context between these countries and Europe to identify the prerequisites to a potential applicability to Europe of nodal prices. The final roundtable session will discuss the point of view of the industrial stakeholders. A draft agenda is provided below.

CONFERENCE PROGRAMME

9h00: Welcome coffee

9h15 – 9h30: Conference opening and introduction to key issues – Fabien Roques (Scientific Advisor of the CEEM, Université Paris-Dauphine) and **Jan Horst Keppler** (Scientific Director of the CEEM - Université Paris-Dauphine)

9h30 – 10h30: First session: Nodal versus Zonal Prices: Theoretical Insights on the Pros and Cons of Different Approaches – moderated by Jan Horst Keppler
Thomas-Olivier Léautier | Florence School of Regulation and TSE (confirmed)
Orcun Karaca | ETH (confirmed)
Pär Holmberg | Research Institute of Industrial Economics (IFN), Stockholm (confirmed)
Michael Bucksteeg | University of Duisburg-Essen (invited)

10h30 – 11h00: Coffee break

11h00 – 12h30: Second session: Lessons from International Experience and Key Issues for the Applicability to Europe of Nodal Pricing – moderated by Fabien Roques
Hung-po Chao | PJM (confirmed)
Charles Payement / Sandrine Bortolotti | RTE (confirmed)
Christoph Maurer | Consentec (confirmed)
Philippe Vassilopoulos | EPEX Spot (confirmed)
Dominique Jamme | CRE (invited)

12h30 -13h30: Roundtable discussion with CEEM industrial partners
RTE, EDF, EPEX Spot and Total Direct Energie, **moderated by Jan Horst Keppler** (Scientific Director of the CEEM, Université Paris-Dauphine).

13h30 – Wrap up and close: Fabien Roques (Scientific Advisor of the CEEM, Université Paris-Dauphine)

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