

Markets Pricing & Smart Grids

Workshop in Aarhus, January 31, 2013

“Do we have the right market and pricing institutions in place to reach out and to engage the most of us in a smart grid? To motivate the right public and private investments and the daily decisions about production and consumption of electricity?”



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PROGRAM



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9.00 WELCOME
Jakob Pagter, the Alexandra Institute & Ivan Damgård, Aarhus University, Department of Computer Science

9.15 ECOGRID EU – DEMONSTRATION OF A MARKET MODEL FOR INTEGRATION OF FLEXIBLE DEMAND AND DISTRIBUTED GENERATION
Preben Nyeng – Energinet

The European EcoGrid project will demonstrate a real-time market model on Bornholm with the aim of including flexible electricity demand and small-scale generation in the wholesale markets for electricity and balancing power. The market model is designed for the future electricity system with significantly increased needs for energy balancing due to intermittent renewable generation. The presentation will briefly introduce the project and the market model and highlight the impact on the overall market structure, and market roles, in a future widespread implementation.

10.00 THE IMPORTANCE OF MARKET DESIGN AND REGULATION TO A VIRTUAL POWER PLANT (VPP)
Ivan Kristian Pedersen – DONG

DONG Energy has developed Power Hub, a virtual power plant (VPP) capable of delivering energy and reserves from a portfolio of distributed energy generation and consumption assets. Some assets have capabilities to participate in the markets on their own, others have not. The presentation will touch upon the challenges and opportunities for aggregators like the VPP when trying to build a sustainable business for both the commercial operator of the VPP and the asset owners.

10.45 COFFEE/TEA BREAK

11.00 CAN THE DEVELOPMENT OF A SMART GRID INCREASE COMPETITION IN THE RETAIL MARKET FOR ELECTRICITY?
Lauge Rasmussen – Danish Competition and Consumer Authority

The Danish retail market for electricity is to a large extent characterised by weak competition and inert consumers. However, the Danish Competition and Consumer Authority (2011) concludes that there is a large potential for economic benefits through increased innovation, strengthened competition and a more effective use of the resources in the electricity sector through energy savings and an adjustment of flexible electricity consumption to fluctuations in the wholesale electricity price.

Strong competition and active consumers are necessary in order to utilize the potential for economic benefits for society.

The development of a smart grid in Denmark is among other things expected to promote the development of technological products which automatically adjust the flexible part of a household's electricity consumption e.g. dishwashing to a period with an abundant supply of wind generated electricity. These products will also be able to automatically cut all electricity consumption during the night, during vacation, etc.

The technological development will provide the retail companies with a vast opportunity to offer retail consumers a new combination of electricity and smart technological household products which can increase the consumers' comfort, create energy savings etc. Accordingly, the consumers are expected to become more active which will increase companies' incentive to innovate and become more effective.

Thus, the development of a smart grid in Denmark is expected to increase competition in the retail market for electricity.

11.45 CONSUMER FREEDOMS, INTELLIGENT DEMAND RESPONSE, AND THE DISASTER OF RETAIL ELECTRICITY COMPETITION.
David Hirst – Inventor and Consultant

Current Smart Grid concepts all involve consumers losing freedoms, as well as privacy, to what have become in the UK Vertically Integrated Large Energy Companies (or VILES). So far, their only route to profit has been from confusing tariffs and opaque markets, with no discernible gain from innovation, but substantial socialised costs of creating the perception of competition.

Yet the need to influence flexible demand is crucial to balancing variable renewable generation on an electricity system. The past culture of centralised control of despatchable plant no longer works. Flow-cost metering, measuring the cost of electricity with variable, dynamic, future pricing, in conjunction with intelligent autonomous appliances (and electric vehicles) offers an approach that delivers this – without loss of freedoms. Retail competition makes such innovation impossible.

12.30 LUNCH

13.30 GROUP WORK – 2-4 GROUPS WORKING ON QUESTIONS EMERGING FROM MORNING SESSIONS

15.30 WRAP UP IN PLENUM

16.00 DRINKS/SNACKS AND NETWORKING

SPEAKERS



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DAVID HIRST, INVENTOR AND CONSULTANT - KEYNOTE

David Hirst was Central Design Authority for the IT systems for the UK's New Electricity Trading Arrangements (NETA), and has been deeply involved in electricity ever since. He founded RLtec, and invented the technology for fridges to deliver ideal frequency response. He has since left the company and pursues concepts for a sustainable Electricity Supply Industry. Some of his ideas are visible at www.davidhirst.com/electricity.

PREBEN NYENG, ENERGINET.DK

Preben Nyeng is smart grid developer at Energinet.dk. His main tasks are concept development, implementation, and R&D projects with smart grid technologies to reach the Danish smart grid visions. This includes technical as well as market concepts, interacting to utilise distributed energy resources and flexible electricity demand in system balancing and control. His background includes professional experience from the IT business as well as research experience in power systems, and smart grids in particular. His research interests are in the field of smart grid and smart markets, and the related information and communication technology requirements and implementations. He holds an MSc and a PhD degree, both from the Technical University of Denmark.

IVAN KRISTIAN PEDERSEN, DONG

Ivan K. Pedersen has been working in the IT industry for almost 25 years before joining DONG Energy. He is currently a programme manager in the Products & Pricing International in DONG Energy Sales & Distribution. He holds an executive MBA in Innovation and Technology Management from Aalborg University in Denmark. Before joining DONG Energy he spent 10 years implementing and operating complex IT systems at the customer side and 15 years in software companies in various roles as sales manager, product manager, innovation manager and member of executive management. His specialities are customer driven innovation, technology management and marketing, programme management and organisational change. When joining DONG Energy, Ivan K. Pedersen assumed the role of project manager for DONG Energy's VPP project, called Power Hub, which is an integral part of the largest EU funded energy research and demonstration project, Twenties.

LAUGE RASMUSSEN, DANISH COMPETITION AND CONSUMER AUTHORITY

Lauge Rasmussen is a Special Advisor at the Danish Competition and Consumer Authority and holds a MSc in Economics from Copenhagen University. His work primarily focuses on strengthening competition in the Danish electricity and telecommunication sector. He is project manager for the Danish Competition and Consumer Authorities' analysis of the Danish retail market for electricity. One aim of this the analysis is to develop Smart Grid related initiatives which can increase competition in the Danish retail sector for electricity. Before joining the Danish Competition and Consumer Authority, he worked for the Danish Energy Regulatory Authority with economic regulation of the Danish distribution system operators.

IVAN DAMGÅRD

Ivan Bjerre Damgård is a Professor at the Department of Computer Science, Aarhus University.

Read full bio at: www.cs.au.dk

JAKOB PAGTER

Jakob Pagter is Head of Research and Innovation at the Alexandra Institute.

Read full bio at: www.alexandra.dk.

PRACTICAL INFORMATION

Date: January 31, 2013
Time: 9:00 – 16:00
Place: INCUBA Science Park
Aabogade 15
8200 Aarhus N
Lecture room 5510.103
Organiser: CFEM
Registration: auws.au.dk/SmartGrid

