Workshop on

Modeling and simulation of modern electricity networks

by Vind i Øresund and partners

22 September 2011 at LTH, Lund

Energy systems are in focus in the transformation towards a sustainable society. Important goals on the international level are increasing energy efficiency and shifting to renewable energy sources. The energy infrastructures in general and the electricity network in particular play central roles in this development. Modeling and simulation are increasingly important for planning and operating the electricity networks of today and in the future.

This workshop highlights ongoing development on several related issues:

- Forecasting and modeling of electricity production from renewable sources;
- Control of renewable generation and electric vehicle charging;
- Interaction between electricity market and system operation;
- Simulating electricity networks in real-time.

The workshop is targeted towards anyone interested in state of the art in modeling and simulations of electricity networks. This includes but is not limited to energy researchers, persons in energy-related industry and municipal energy administrators.

Vind i Øresund is a cooperation between Lund University and the Danish Technical University sponsored by the EU Interreg IVa program and aims to support sustainable business in the Øresund region. The project links strong competences in modeling and simulation of renewable energy sources and power systems. Vind i Øresund is described at http://www2.imm.dtu.dk/~jkl/VIND_I_ORESUND/

Workshop and dinner are free, but to plan properly we need you to register no later than **14 September.** Please send an e-mail to Olof.Samuelsson@iea.lth.se indicating your participation in workshop and dinner respectively and if you have special food requirements.

For campus map and other workshop information, see http://www.iea.lth.se/seminars/vio/ You can also call Olof Samuelsson at +46-46-222 75 04.

Interreg IVA
ÖRESUND – KATTEGAT – SKAGERRAK

Workshop program

Workshop venue is room E:1406 in the E-building, LTH, Ole Römers väg 3 in Lund.

9.30 Registration with coffee

9.50 Welcome

10.00 Renewable energy and electric vehicles

Forecasting of wind and solar power production	*H. Madsen, IMM DTU*
Modelling frameworks for renewable energy integration	*A. Ulbig, PSL ETH-Zürich*
Addressing wake effects in wind farms	*D. Madjidian, Aut. control LTH*
Smart charging of electric vehicles	*J. Hu, CET DTU*

12.00 Lunch

13.30 System impact

Electricity market impact on Nordic system frequency	*O. Samuelsson, IEA LTH*
Modelling extreme dependence between electricity markets	*E. Lindström, Mathematical Statistics LTH*
Network model of Continental Europe for GIC analysis	*M. Wik, Neurospace*

15.00 Coffee

15.30 Control

IPSYS - a tool for simulating smart grids	*H. Bindner, Risø-DTU*
Analyzing emergency operation of Malmö in ARISTO	*O. Samuelsson, IEA LTH*
Modeling & control of distribution network using RTDS	*Seung-Tae Cha, CET DTU*

17.00 Closing remarks

18.00 Dinner in downtown Lund