International Advisory Committee:

- Thomas Ackermann (Energynautics, Germany)
- Sigrid Bolik (Repower UK, UK)
- Heiner Brakelmann (*University Duisburg-Essen*, Germany)
- Peter Christensen (*Vestas*, Denmark)
- Ana Estanqueiro (INETI, Portugal)
- Alain Forcione (Hydro Québec, Canada)
- Paul Gardner (GL Garrad Hassan, UK)
- Gregor Giebel (Risø DTU, DK)
- Hannele Holttinen (VTT, Finland)
- Reza Iravani (*University of Toronto*, Canada)
- Lawrence E. Jones (*Alstom Grid*, USA)
- Julija Matevosyan (SKM, UK)
- Antje Orths (*Energinet.dk*, Denmark)
- Charlie Smith (*UWIG*, USA)
- Poul Sørensen (Risø DTU, DK)
- Frans Van Hulle (EWEA, Belgium)

10th International Workshop on

Large-Scale Integration of Wind Power into Power Systems

as well as on

Transmission Networks for Offshore Wind Power Plants

25 - 26 October, 2011 Aarhus, Denmark

Plus Energinet.dk day

ENERGINET DK



Welcome to Aarhus

The International Workshop on Large-Scale Integration of Wind Power into Power Systems as well as on Transmission Networks for Offshore Wind Power Plants is returning to Denmark. We would like to welcome you to its 10th edition, which will be held in Aarhus on **October 25-26, 2011** (Tuesday / Wednesday).

It is integrated into a whole Renewable Energy Week:

■ Sunday, October 23, 2011:

Tutorials for the Solar Integration Workshop

Monday, October 24, 2011:

Option MON1: Solar Integration Workshop

or Option MON2: Tutorials

or Option MON3: Wind Forecasting Workshop

Thursday, October 27, 2011:

Option THU1: ENERGINET.DK-day Transmission, Flexibility, Smartgrid (From strategy to reality -

ENERGINET DK

The Danish TSO shows the roadmap leading to a wind based future)

or Option THU2: Field trip A.1 (Siemens Wind turbine factory, Brande)

Friday, October 28, 2011:

Option FRI1: Field trip A.2 (Siemens Wind turbine factory, Brande)

- or Option FRI2: Field trip B (Energinet.dk onshore construction sites
- of: a) outdoor- plus first indoor substation and b) offshore transformer platform)

WORKSHOP PROGRAM

Program is subject to changes, please check web page for updates: www.windintegrationworkshop.org

Tuesday, October 25, 2011

- Registration
- Opening and Keynote Session
- Country Studies
- Modeling and Wind Farm Control
- Wind Forecasting Issues
- Testing and Validation
- HVDC
- Power System Balancing Issues
- Offshore Grid Connection
- Workshop Dinner

Wednesday, October 26, 20110

- Market Issues
- Future High Penetration Aspects
- Offshore Grid Connection
- Smart Grid and Wind Power
- Modeling and Wind Farm Control
- Frequency Control and Inertia
- Wind Power Plant Aspects
- Panel Discussion / Closing Session



This workshop, the premier conference in its field, will provide an excellent platform for exchanging knowledge and ideas and sharing experiences around wind energy during two days. Presentations are held by invited speakers from companies and leading research institutes as well as by workshop participants (Call for papers).

The workshop provides an international forum to:

- discuss technical and economic issues of the large-scale integration of wind power including the recent advances in transmission technologies (AC and DC)
- discuss project experiences
- discuss innovative ideas and present results from ongoing research
- stimulate interdisciplinary thinking between wind energy and power transmission industries, as well as universities
- identify subjects requiring more research efforts.

A major goal is to maintain the platform developed in recent years for discussing and sharing ideas and knowledge regarding the key issues.

An important part of the workshop will be devoted to in-depth discussions and brainstorming.

On October 23 / October 24 we offer a series of turorials:

■ Tutorials for the Solar Integration Workshop (Sunday, October 23, 2011)

PV Systems and Grid Requirements

(for details of the program see the website of Solar Integration Workshop www.solarintegrationworkshop.org)

■ Tutorials on the Advanced Modeling of Wind Turbines (Monday, October 24, 2011)

Session A - Advanced Modeling of Wind Turbines - Part 1

- 1. Modeling Wind Turbines in Digsilent (1h)
- 2. Modeling Wind Turbines in PSS ®E (1h)
- 3. Validation of Wind Turbine Models (1h)
- 4. Grid Integration Studies Part 1 (1h)
- · Impact on Distribution

Session B - Advanced Modeling of Wind Turbines - Part 2

- 1. Grid Integration Studies Part 2 (1h)
- Impact on Transmission Systems
- · Impact on System Stability
- 2. Wind Turbine Models the Enercon Perspective (1.5h)
- 3. Wind Turbine Models the Vestas Perspective (1.5h)