

Wind Workshop 2004 (Utility Integration of Wind Power)

University of Minnesota
September 30 - October 1, 2004

Sponsored by:

XcelEnergy
National Science Foundation

Department of Electrical Engineering and the Center for Electric Energy, University of Minnesota

Objective: To bring together the developers, vendors, researchers and interested parties with the objective of discussing progress and technical challenges in harnessing wind energy at a large scale. The theme of this year's workshop is utility integration of wind power.

Who Should Attend: This workshop is open to anyone interested in technical issues related to wind energy, including power utilities, developers, educators, researchers, and vendors.

Optional Tutorial: Principles of Electric Drives for Harnessing Wind Energy

4:00-6:30 p.m., Wednesday Sept 29, 2004 (Room 2-122 Molecular and Cellular Biology)

Based on NSF-sponsored developments at the University of Minnesota, in this tutorial we will examine in simple terms the basic concepts of electro-mechanical energy conversion, and then discuss how ac machines operating at variable speed can be used as generators to feed power into the utility grid through power electronics. Prerequisite: Basic electrical engineering background.

Reference textbook: Electrical Drives: An Integrative Approach, by Ned Mohan (see www.mnpere.com for details). **Instructor:** Prof. Ned Mohan, University of Minnesota

Program:

Thursday Sept 30, 2004

- 8:30-10:00 **Opening Session**
- Welcoming Remarks – Michelle Swanson (XcelEnergy)
 - Agenda – Ned Mohan (University of Minnesota)
 - Potential and Challenges – John Dunlop (American Wind Energy Association)
 - National Renewable Energy Lab's Perspective–Brian Parsons (NREL))
- 10:30-12:00 **Large-Scale Integration of Wind into Utility Systems and Stability Studies**
- Robert Zavadil (EnerNex)
 - System Developers' Perspective – Paul White (Project Resources Corp)
 - Terje Gjengedal – Grid Codes in Europe (VP – Statkraft, Norway)
 - Perspectives from Denmark: Prof. Frede Blaabjerg (U of Aalborg, Denmark)
- 1:15-2:00 **Harnessing of Wind Energy from Manufacturers' Perspective**
- GE Wind – Mark Eilers
 - Vestas America– Jesper Michaelsen
- 2:00-2:45 **Wind Forecasting and State Efforts**
- Mark Ahlstrom (WindLogics)
 - Jeff Haase (MN Dept of Commerce)
- 3:15- 5:30 **Brainstorming Session: Possibilities and Challenges** Panelists: Beth Sohlt - Chair (Wind on the Wires), Mark McGree (Xcel), Tim Rogelstad (Otter Tail Power), Bill Grant (Izaak Walton League), David Duebner (MISO), Mark Rathbun (GRE), Frank Greb (Alliant Energy WindConnect)

Friday Oct 1, 2004

8:30-9:30

Wind-Related Research at the University of Minnesota

- Minimizing Torque Pulsation under Utility Unbalance and Providing Voltage Support
- Inertial Energy Storage Research to make Wind Power Dispatchable

10:00-12:00

Poster Session

- Invited Papers on Relevant Developments, Specifications, Standards, and Research. This session will be very informative, providing a chance for in-depth interaction with the presenters.

Deadline: None, but please register as soon as possible for our planning purposes.

Poster Exhibits:

We invite individuals and companies to exhibit poster materials relevant to this audience. The posters will be on display on Friday, October 1 from 10:00 a.m. to noon. If you have questions about posters or would like to exhibit, contact Ned Mohan, 612-625-3362, mohan@ece.umn.edu.

CEUs:

Participants attending the tutorial will receive 0.25 CEUs. Participants attending the workshop will receive 0.9 CEUs. One CEU (1.0) is defined as 10 contact hours of participation in an organized continuing education experience under responsible sponsorship, capable direction and qualified instruction.

Location & Accommodations:

Both the tutorial and workshop will be held on the Minneapolis campus of the University of Minnesota.

The optional tutorial, September 29, 2004 will be held in room 2-122 Molecular Cellular Biology.

The workshop, September 30 – October 1 will be held in the Coffman Memorial Union Theater and Great Hall. Coffman Memorial Union is located at 300 Washington Avenue SE on the Minneapolis Campus of the University of Minnesota.

Hotel accommodations are available by contacting one of the hotels listed below. Mention you are attending a University of Minnesota workshop to receive their University rate.

Radisson Hotel Metrodome: 612-379-8888
615 Washington Avenue SE, Minneapolis
Approximate one block from campus

Days Inn: 612-623-3999
2407 University Avenue SE, Minneapolis
Approximately 3 blocks from campus

Econo Lodge: 612-331-6000
2500 University Avenue SE, Minneapolis
Approximately 4 blocks from campus

Contact:

For registration questions, contact: Kay Syme, 612-624-4938, conferences4@cce.umn.edu

For technical questions, contact: Ned Mohan, 612-625-3362, mohan@ece.umn.edu