

Sponsored by Xcel Energy, National Science Foundation and University of Minnesota Department of Electrical and Computer Engineering and the Center for Electric Energy, and IEEE Twin Cities Power Engineering Society (PES)

Workshop on Renewable Energy for Minnesota

McNamara Alumni Center, University of Minnesota, Minneapolis

Friday December 9, 2005

Objectives:

- Discuss renewable energy prospects in Minnesota
- Bring renewable energy curriculum into K-12
- Describe the research being conducted in this field in the Department of Electrical and Computer Engineering (funded by Xcel Energy and the National Science Foundation) and also at the University of Minnesota.

Who should Attend: Everyone concerned with energy, particularly the technical issues, and its impact on the environment and society.

Tentative Schedule:

- 7:30-8:00 **Registration, Coffee and Rolls**
- 8:00-8:30 **Welcome and Introduction**
- Workshop Objectives and Agenda: *Prof. Ned Mohan*, ElectE, U of M
 - Welcoming Remarks: *Prof. Steven Crouch*, Dean – Institute of Technology, U of M
 - Renewable Energy Development Fund: *Michelle Swanson*, Xcel Energy
- 8:30-10:20 **Renewable Energy Overview**
- National Perspective: *Susan Hock*, Director National Renewable Energy Lab (NREL) Center for Electric & Hydrogen Technologies & Systems, Golden, Colorado
 - Lessons From Norway: *Dr. Terje Gjengedal*, VP- STATKRAFT, in-charge of renewable energy projects
 - What is Happening in Minnesota?: *Michael Bull*, Assistant Commissioner, Minnesota Department of Commerce
- 10:20-10:50 **Coffee Break**
- 10:50-11:50 **Wind Energy**
- Present Projects and Potential in Minnesota: *John Dunlop*, American Wind Energy Association
 - Transmission Planning in Minnesota – CapX 2020: *Gordon Pietsch*, Great River Energy
- 11:50-1:00 **Lunch** (buffet lunch provided)
- 1:00-2:30 **Hydrogen and Wind**
- “The Potential and Challenge of a Hydrogen-Electric Economy”: *Rolf Nordstrom*, Director - Upper Midwest Hydrogen Initiative, Great Plains Institute
 - Hydrogen From Wind: *Prof. Lanny Schmidt*, Regents Professor, ChemE, U of M
 - Research in Fuel Cells: *Brad Palmer*, Cummins Power Generation, Fridley, Minnesota
- 2:30-2:45 **Break**
- 2:45 - 3:45 **Biomass**
- Present Status and Potential Resources: *Prof. Robert Elde*, Dean-College of Biological Sci, UMN
 - Bio-Diesel Engines: *Prof. David Kittelson*, MechE, U of M
- 3:45-4:45 **Bringing Renewable Energy Curriculum into K-12 Courses**
- California Experience: *Karen Farrell*, Irvine, CA
 - Group Discussion led by: *Steven Pullar*, Woodbury Math and Science Academy, MN and *Michael Maas*, Eden Prairie High School, MN
- 4:45-5:00 **Suggestions for Next Year’s Workshop and Adjournment**

Posters on Display: Research being conducted in this field in the Department of Electrical and Computer Engineering, funded by Xcel Energy and the National Science Foundation.

Registration Fee: \$45**University of Minnesota Faculty: No Fee (Registration includes free Lunch, No parking)****Student Fee: No Fee (Registration includes free Box Lunch, No parking)**

The registration fee of \$45 includes sessions, materials, lunch, breaks and parking. Park in the University Avenue Ramp (adjacent to the McNamara Alumni Center) and bring your ticket to the registration desk for validation. Students and the University of Minnesota faculty may attend the workshop for free but must provide for their own parking. No refunds are available. You may register by mail, fax, or online using the enclosed registration form. If you are a University of Minnesota faculty member, please indicate so in the box for the Registration Fee.

Location

The McNamara Alumni Center is located at 200 Oak Street SE in Minneapolis, Minnesota (on the Minneapolis campus of the University of Minnesota). For directions visit, www.alumnicenter.umn.edu. Convenient lodging is available at the Radisson University Hotel. Call 612-379-8888 for rates and to make a reservation.

Continuing Education Units (CEUs)

Attendees will earn 7 hours of Continuing Education Units through the College of Continuing Education at the University of Minnesota.

Contact

For registration questions, contact Katie Kjeseth, 612-624-3708, or conferences5@cce.umn.edu
For technical questions, contact Ned Mohan, 612-625-3362, mohan@cce.umn.edu

Web Site: www.ece.umn.edu/groups/wind

URL for online registration: http://register.cce.umn.edu/Course.pl?sect_key=178522