



*EUCI Presents a Conference on:*

# **WIND ENERGY & POWER MARKETS**

**January 27 - 28, 2003**

**Post-  
Conference  
Workshop**

**“Intermittent Resources:  
from Policy to Programs —  
Integrating Future Wind Capacity  
into the Grid”**

**January 28, 2003**

**Westin Hotel  
Westminster, Colorado**

# WIND ENERGY & POWER MARKETS

January 27 – 28, 2003

## OVERVIEW

Approximately 3,000 MW of wind capacity will be added in the U.S. over the next five years. The Department of Energy's Wind Powering America Initiative seeks to provide 5% of the nation's electricity with wind by 2020. According to the American Wind Energy Association, current growth suggests that wind could account for 6% of U.S. generation with 100,000 MW of installed capacity by 2020. However, in spite of all of the progress that has been made, there are still significant policy, transmission, and market challenges. The Wind Energy & Power Markets Conference will focus precisely on these issues.

The conference will address:

- The development of wind energy power markets
- How wind energy can deliver real value to utilities and to end users
- Wind energy economics
- Transmission interconnection issues
- The impact of RTO's
- Project financing and risk management
- Avian issues in the planning and permitting process
- New technologies

## PROGRAM AGENDA

### MONDAY, JANUARY 27, 2003

Registration and Coffee 7:30 – 8:00 a.m.

#### SESSION I: 8:00 – 10:00 A.M. REGULATORY/POLITICAL PERSPECTIVE

*Session Chair: Dr. Woodrow W. Clark II, Senior Policy Advisor to the Director, Governor's Office of Planning and Research*

“Wind Power and FERC's Standard Market Design”

*Robert E. Gramlich, Economic Advisor to Chairman Wood, FERC*

“Wind Generation – The PUC Perspective”

- Current wind resources in Colorado
- Utility selection of new generation resources
- Gas pricing, and its impact on wind resources
- Improving wind implementation under the current regulatory structure

*Bob Bergman, P.E., Colorado Public Utilities Commission*

“California Energy: From Crisis to Opportunity”

- Deregulation: lessons learned
- Long-term strategy requires diverse energy portfolio
- Clean Energy Plan and Renewable Portfolio Standard
- What needs to happen now?

*Dr. Woodrow W. Clark II, Senior Policy Advisor to the Director, Governor's Office of Planning and Research*

Break 10:00 – 10:15 a.m.

#### SESSION II: 10:15 – 11:00 A.M. SITING AND ENVIRONMENTAL ISSUES

*Session Chair: Dr. Woodrow W. Clark II, Senior Policy Advisor to the Director, Governor's Office of Planning and Research*

“How Avian Issues are Resolved in the Planning and Permitting Process”

- The latest scientific information on risks to birds presented by wind turbines
- Practical mitigation measures to respond to bird and other wildlife concerns
- Post-construction monitoring
- Addressing potential operating risks

*Mike Azeka, Senior Vice President, Sea West Consulting, a division of Sea West Wind Power Inc.*

#### SESSION III: 11:00 A.M. – 3:30 P.M. DEVELOPMENT OF WHOLESALE AND RETAIL MARKETS

*Session Chair: David Hawkins, Manager of Special Projects Engineering, California ISO*

“An Industry Leaders Current View of the Market”  
FPL Energy Representative

“California Wind Generation Program”

Integration of Wind Generation Resources into Markets and Control

- Area Operations at California ISO
- Program development
- Forecasting strategy and technology
- Market issues - net deviations & settlements
- Integration into control area operations
- Operational experience

*David Hawkins, Manager of Special Projects Engineering, California ISO*

“Wholesale Markets for Wind Power—Opportunities and Challenges”

- PPM has aspirations of securing 2,000 megawatts of wind power in the next five to seven years
- Strong public policy support
- Strong market demand
- Wind is a declining cost resource
- Challenges — capital and transmission

*Roby Roberts, Business Developer, PacifiCorp Power Marketing, Inc.*

Group Luncheon 1:00 – 2:00 p.m.

“Impact of Deregulation on Future Wind Energy”

- Effects upon the removal of intermittency penalties from transmission tariffs
- Effects of a nationwide series of RTO's
- Effects from the implementation of standard market rules

*Robert M. Markee, Director of Marketing, Energy Unlimited, Inc.*

“Using Retail Customer Demand to Increase the Market for Wind Energy”

- The economics of wind energy and the retail market
- Understanding end-use customer interest in wind energy
- A case study: how the retail marketing of wind energy led to 200 MW of new wind energy projects in IL and PA
- Toward a national model

*Eric Blank, Executive Vice President and Co-Founder, Community Energy, Inc*

#### SESSION IV: 3:30 – 5:30 P.M. RELIABILITY AND GRID ENHANCEMENT

*Session Chair: Hal Romanowitz, PE, President & COO, Oak Creek Energy Systems, Inc.*

“Transmission Policies and its Impact on Wind Development”

- History
- Current issues
- Future prospects for wind transmission

*Ron Lehr, Western Regional Representative, American Wind Energy Association*

#### “Texas Electricity – Blowing In the Wind”

- What makes Texas an attractive place to site wind generation
- The ERCOT Standard Interconnection Agreement
- Transmission considerations for wind generation
- ERCOT’s wind generation modeling project

*Sam Jones, Executive Vice President and Chief Operating Officer, ERCOT*

#### “Firming Wind Energy”

- Forecasting improves effective coordination
- Methods for firming intermittent wind energy
- Infrastructure utilization and savings
- Ancillary services from firming
- Market rules can incentivize firming

*Hal Romanowitz, PE, President & COO, Oak Creek Energy Systems, Inc.*

#### “U.S. Windpower Project Finance: Challenges and Opportunities”

- Importance of tax credits to financial structure
- Key risk assessment—wind risk and technology risk
- Planning for a different transmission regime

*Michael R. Meyers, Chair, Global Energy, Communications, and Infrastructure, Orrick, Herrington & Sutcliffe LLP*

#### “Financing Wind Energy Projects”

- Stages in financing process
- Principal credit considerations
- Syndication Issues
- Typical terms and conditions
- Financing issues for 2003
- Recent case study

*Hendrik Vroege, Managing Director, Electric Power and Infrastructure Group Fortis Capital Corp.*

## TUESDAY, JANUARY 28, 2003

### SESSION V: 8:00 – 10:00 A.M. PROJECT FINANCING

*Session Chair: Ron Rebenitsch, PE, Manager Member Marketing, Basin Electric Power Cooperative*

#### “Economic Fundamentals of Wind Energy”

- Drivers for wind projects
- Wind Economics 101
- Lessons learned
- Transmission hurdles

*Ron Rebenitsch, PE, Manager Member Marketing, Basin Electric Power Cooperative*

### SESSION VI: 10:15 A.M. – 12:00 NOON NEW TECHNOLOGIES AND THE FUTURE

*Session Chair: Adam Capage, Director, E Source Green Energy Service, Platts*

#### “Making Wind More Cost Effective”

- New turbine and blade technology
- Siting and building lessons
- Wind forecasting advances

*Adam Capage, Director, E Source Green Energy Service, Platts*

#### “What is the Future of Wind Power?”

*Ron Lehr, Western Regional Representative, American Wind Energy Association*

**Break 10:00 – 10:15 a.m.**



## “Intermittent Resources: from Policy to Programs — Integrating Future Wind Capacity into the Grid”

January 28, 2003

## TUESDAY, JANUARY 28, 2003

**Registration and Coffee 1:00 – 1:30 p.m.**

**Workshop Time 1:30 – 5:30 p.m.**

The Workshop focuses on the development of public policy for intermittent resources (e.g. wind, solar and run of the river) that the State of California put together as a collaboration between industry, the CAISO and the Governor’s Office. The rules and tariffs that we forged from 10 months of weekly meetings became the basis for California’s supplying renewable energy to the power grid and were accepted and approved by FERC on 28 March 2002. The Governor subsequently (Sept 02) signed into law a Renewable Portfolio Standard (20% by 2017) that creates a “market” and provides a basis for intermittent resources to be a growing part of the energy supply to the CAISO. Finally, the change in the intermittent rules and tariffs provides the basis for new “hybrid technologies” that might in the future classify renewables as a “base load” energy source.” The workshop will also cover wind generation from a control area operators (California ISO) perspective. These topics include:

- Forecasting of Wind Generation for Forward Markets and For Real-Time Operations
- Impacts on Regulation and Load Following

### WORKSHOP INSTRUCTORS

**Dave Hawkins** is the Manager of Special Projects Engineering in the Operations Division at the California Independent System Operator (Cal-ISO). He joined Cal-ISO at its startup in August of 1997 and is very involved in the operations side of this new entity. His responsibilities include assessment of new technologies, analysis of operating issues, and management of their R&D program. He is also responsible for review of industry policies and standards, and compliance with those standards.

Mr. Hawkins has more than 35 years of experience in the utility industry from Con Edison in NYC, PG&E in California, EPRI and CAISO. He has served on many professional and industry committees and is currently a member of the Western Electricity Coordinating Council Performance Work Group.

He is a Member of the IEEE, a graduate from the University of Michigan in Electrical Engineering and a graduate of Kalamazoo College with a degree in Physics.

**Woodrow W. Clark II, Ph.D.** is the Senior Policy Advisor to the Director in the Governor’s Office of Planning and Research in the State of California. Dr. Clark has been with the Governor’s office since he was appointed by Governor Gray Davis in December 2000. His position has been expanded to include support links for renewable energy and advanced technologies and develop infrastructure implementation through interagency working groups. He is also Co-Chair, Strategies for State Comprehensive Renewable Energy Finance, and coordinates Environmental Justice with local community organizations. His prior experience includes Visiting Professor at Aalborg University, Denmark and Manager of Strategic Planning for the Energy Directorate at Lawrence Livermore National Laboratory and US Department of Energy.

Dr. Clark earned a Ph.D. from University of California, Berkeley in Anthropology/Education.

**Hal Romanowitz** is President & COO of Oak Creek Energy Systems, Inc. He has 18 plus years of wind energy experience. He has developed large turbine Utility Scale wind energy projects since 1989 and has design experience with every important component of a wind turbine. He has extensive experience with Transmission, PPA issues, economic analysis, energy storage, and complex engineering systems.

Hal is a Registered Professional Engineer, Electrical, and Control Systems and has a BSEE from Purdue University, and an MBA from University of California. Hal is the recipient of the AWEA Technical Achievement Award 1991 and was the annual conference Chair in 2001.



## PROCEEDINGS

The proceedings of the Conference and Workshop will be published and one copy will be distributed to each registrant at the conference. Extra copies of the composite proceedings will be available at \$295.00 each.



## HOTEL AND TRANSPORTATION INFORMATION

The Westin Westminster, 10600 Westminister Blvd., Westminister, CO 80020  
Phone: 303-410-5000 or 800-937-8461 (Toll Free), Fax: 303-410-5005,  
<http://www.westin.com>

The conference is being held at The Westin Westminister, in Westminister, Colorado. The hotel is a four diamond, first-class hotel ideally located halfway between Boulder and downtown Denver. Beautiful High Plains

décor draws upon the warmth and beauty of Colorado. Found in the heart of the city promenade, the area is highlighted by shops, theaters, restaurants and the country.

**Reservations:** Call 303-410-5000 or 800-937-8461. All conference attendees are responsible for making their own hotel reservations. Please request the Electric Utility Consultant's room rate when making your reservation.

**Room Rates:** \$149 Single/Double – *This rate expires on January 20, 2003.* Reservations after this date will be on a space available basis and cannot be guaranteed at the conference rate.

**Directions:** The Westin Westminister is located 25 miles from the Denver International Airport.

### From Denver International Airport (DIA) to The Westin Westminister Hotel

- Exit the airport and proceed onto Pena Boulevard.
- Take Pena Boulevard to I-70 West.
- Follow I-70 West to I-25 North.
- Take I-25 North to Highway 36 West otherwise known as the Boulder Turnpike.
- Follow the Boulder Turnpike to Church Ranch Boulevard/104th Avenue.
- Turn East (right) onto 104th Avenue. Make your first left onto Westminister Boulevard. (You will need to change lanes quickly)
- Then made your first right on Promenade Drive South.

**Transportation:** Taxicabs – Taxis from Denver International Airport are available on Level 5.

**Super Shuttle** – 303-370-1300 or  
<http://www.supershuttle.com/htm/cities/dia.htm>

This is a shuttle service from Denver International Airport to the Westin Westminister. No reservation is required upon arrival. You must check in at the Super Shuttle desk in the main terminal (next to car rentals), and the shuttle leaves every hour. The charge is \$18 each way.

### Town Car and Limousine Services

Airport Specialist, Inc. – 303-320-3456 or  
<http://airportspecialists.com/>  
Advantage Limousine Service – 303-421-4300  
or <http://www.limousine-denver.com/>  
Front Range Limousine, Inc. – 303-400-9333  
or <http://www.amikeslimo.com/>

## REGISTRATION

For instant registration, please call (201)784-5389 or fax the Registration Form to (201)767-1928 .

**Register 3, Send 1 Free!!** Any organization wishing to send multiple attendees to these conferences may send 1 FREE for every 3 delegates registered. Please note that all registrations must be made at the same time to qualify.

All cancellations received on or before December 20, 2002, will be subject to a \$195 processing fee. Written cancellations received after this date will create a credit of paid registration fee less \$195 administrative fee. This credit will be good for six months toward any other EUCI conference or publication. In case of conference cancellation, Electric Utility Consultants' liability is limited to refund of the conference registration fee only.

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## REGISTRATION FORM

Wind Energy & Power Markets Conference, January 27-28, 2003: \$1,095,  
**Early Bird Special Before January 17, \$995**

Intermittent Resources: from Policy to Programs - Integrating Future Wind Capacity into the Grid Workshop January 28, 2003: \$595; **Early Bird Special Before January 17, \$545**

Special Discounted Registration Fee for Attending Both Events: \$1545; **Early Bird Special Before January 17, \$1395**

Sorry, I Cannot Attend, But Please Send Me the Proceedings at \$295.00

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Enclosed is a check for \$ \_\_\_\_\_ to cover \_\_\_\_\_ persons

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Company \_\_\_\_\_ Telephone \_\_\_\_\_

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