



## Power Systems Engineering Research Center

# Integrating Wind Power Efficiently into Electricity Markets Poses New Regulatory Challenges

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PSERC Public Tele-Seminar

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2:00-3:00 p.m. Eastern Time (11:00-12:00 p.m. Pacific)

**Description:** The inherent variability of generation from renewable sources, such as wind and solar power, may 1) increase the operating costs associated with additional ramping requirements, and 2) increase the amount of installed conventional generating capacity needed to maintain the operating reliability of a network. The additional system costs for both of these factors can be mitigated by providing additional services from, for example, controllable loads and storage capacity. This presentation uses a case study to demonstrate that these services are not adequately compensated by typical regulatory practices. As a result, current regulation will not provide the correct economic incentives to ensure that reliability standards are maintained on networks with high penetrations of generation from renewable sources. The proposed solution to this problem is to develop a hierarchical structure for operating and managing networks that will make it easier to control the increased uses of distributed energy resources that are likely to provide many of the new services needed to maintain system reliability in the future. This hierarchical structure will also make it more practical to set the correct economic incentives for providing these services efficiently.

This tele-seminar is based on on-going projects with PSERC and the Consortium for Electric Reliability Technology Solutions.

**Biography:** **Tim Mount** joined the faculty of Cornell University in 1969. He is currently a Professor in the Department of Applied Economics and Management and Cornell's Site Director for PSERC. His research and teaching interests include econometric modeling and policy analysis relating to the use of fuels and electricity and their environmental consequences (acid rain, smog, and climate change). His current research is focused on the restructuring of markets for electricity and the implications for (1) price behavior in auctions for electricity, (2) the rates charged to customers, (3) investment decisions for maintaining system reliability, and (4) the system effects of relying on renewable sources of energy in a low-carbon economy.

### Speaker Contact Information

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**Registration for Webcast Participation:** None required. There is no charge for participating!

### **Assistance**

If you have any questions, please contact Theresa Herr, PSERC's administrative assistant, at 480-965-1643 or [Theresa.Herr@asu.edu](mailto:Theresa.Herr@asu.edu). You can also contact Dennis Ray, PSERC Executive Director, at 608-265-3808 or [djray@engr.wisc.edu](mailto:djray@engr.wisc.edu).

### **PSERC's Tele-Seminar Coordinator**

Shmuel Oren, University of California at Berkeley

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Shmuel welcomes feedback on the tele-seminars and suggestions for future ones.

#### **Related PSERC webinars:**

[Analyzing the System Costs of Wind Variability](#) (09-10, Oct. 6, 2009)

[Contributions of Climate Science to the Electric Power Industry: Forecasting with Lead Times of Hours to Decades](#) (09-04, March 3, 2009)

[Demand Response via Real-Time Pricing to Increase Use of Operational Wind Energy Generators](#) (08-07; May 6, 2008)