Reduced Network Modeling of the Western Electricity Coordinating Council (WECC) as a Market Design Prototype

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PSERC Public Webinar
September 6, 2011
2:00-3:00 p.m. Eastern Time (11:00-12:00 p.m. Pacific)

Description
California’s administration, legislature, and energy regulators have adopted aggressive targets for renewable energy which will result in profound changes in markets and system operations as the resource portfolio shifts from heavy reliance on natural gas as a fuel for electric generation to intermittent, often remote, resources. As part of determining workable modeling approaches as changes in market design are considered, this webinar examines the use of a 240-bus model as a realistic test system for the California and WECC market.

Demand response and energy storage technologies are important contributors to the flexibility that will be needed in future markets, and provide an illustration of this analysis. One related issue is the necessary level of detail for modeling unit commitment. The California ISO’s new market structure, launched in 2009, combines advanced unit commitment and dispatch processes with recognition of physical characteristics of the transmission system and generation resources. Another modeling issue has been to anticipate whether market impacts will result from increased use of dynamic transfers (dynamic scheduling and pseudo-ties) to bring renewable resources into the CAISO market. As the CAISO responds by making additional improvements in its unit commitment and dispatch processes, workable test systems will be valuable tools for market design.

Biography
James E. Price, Ph.D., received the B.S. degree from California Institute of Technology, and the M.S. and Ph.D. degrees from Stanford University. He worked for the California Public Utilities Commission, and California Office of Economic Policy, Planning, and Research, in a variety of areas including rate design, market development, and resource planning, before coming to the CAISO. He is currently a Lead Engineering Specialist in the Market and Infrastructure Development Department of the California ISO.
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**Registration for Webinar Participation:** None required. There is no charge for participating!

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**Assistance:** If you have any questions, please call 480-965-1643 or email Theresa.Herr@asu.edu. You can also contact Dennis Ray, PSERC Deputy Director, at 608-265-3808 or djray@engr.wisc.edu.

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