

News Release

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For more information, contact:

Stephanie McCorkle | smccorkle@caiso.com

Gregg Fishman | gfishman@caiso.com

ISO study affirms the grid can reliably integrate a 20% RPS

Grid operator working with stakeholders to implement market changes for renewable integration

FOLSOM, Calif. – Maintaining a diverse fleet of power plants in California and taking advantage of the complementary nature of wind and solar power are two of the findings in a renewables portfolio standard (RPS) integration study recently released by the California Independent System Operator Corporation (ISO).

The ISO and its study partners, including GE Energy Consulting, gained insights about grid dynamics through the “Integration of Renewable Resources—Operational Requirements and Generation Fleet Capability at 20% RPS.” The study assumes California will add 2,246 megawatts of solar and 6,686 megawatts of wind resources by 2012.

Among the findings:

- Green power can swing in output by several thousand megawatts in as little as 20 minutes.
- Wind and solar power can offset each other’s variable output. Wind is often plentiful at night and during early mornings, when the sun is not in full force. On the other hand, solar power generates best on hot, sunny afternoons when the wind often eases up.
- Over-generation resulting from high winds and high hydro can lead to too much power during periods when demand is low, which raises economic and reliability concerns.
- Efficiencies could be gained if there was more participation in the ISO’s new market, which allows the ISO greater dispatch flexibility for meeting real time needs of the grid.
- Flexibility is important and conventional power plants are needed to provide quick “ramp up” and “ramp down” capabilities to compensate for intermittent resources.
- New operational tools for ISO dispatchers are required to stay a step ahead of fluctuations in generation. Advanced weather forecasting tools, for instance, are needed to anticipate variable output.

“This study provides a thorough analysis of the capability of the power grid to effectively manage an oncoming wave of highly intermittent energy resources and confirms the ISO is ready to manage the grid reliably under 20 percent RPS,” said Vice President, Market and Infrastructure Development Keith Casey. “However, the study also affirms the critical role the ISO market and the existing fleet of conventional resources will need to play in balancing the variable output of renewables.”

The ISO and its stakeholders are working collaboratively to support California’s environmental and energy policies transforming the industry. The study, at <http://www.caiso.com/2804/2804d036401f0.pdf> will be presented at a [stakeholder meeting](#) on September 17 and will feed into an ongoing stakeholder process aimed at developing market enhancements to further accommodate renewable power. The ISO Board of Governors will likely vote on the new set of enhancements in early 2011.

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California ISO Media Hotline | 888.516.6397

151 Blue Ravine Road | Folsom, California 95630 | www.caiso.com

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The California ISO operates the state’s wholesale transmission grid, providing open and non-discriminatory access supported by a competitive energy market and comprehensive planning efforts. Partnering with more than 90 client organizations, the ISO is dedicated to the continual development and reliable operation of a modern grid that operates at the least cost to the benefit of consumers. The ISO bulk power market allocates space on transmission lines, maintains operating reserves and matches supply with demand. Recognizing the importance of global climate change, the ISO welcomes new, advanced technologies that will help meet the energy needs of 30 million Californians efficiently and cleanly. The ISO is a nonprofit public benefit corporation.