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## Renewable Power and Energy Conservation Reign on Earth Day

Electricity forecasts released at media open house for new power grid control center

FOLSOM, Calif.--(BUSINESS WIRE)--Earth Day 2011 marks a new era in California's power industry as record amounts of renewable energy are tracked on screens at a new advanced control center designed to reliably operate a greener grid.

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Wind production this week hit a new peak of 2,432 megawatts (MW), outpacing last year's peak of 1,915 MW. It symbolizes the beginning of an important shift in the state's power mix.

California Independent System Operator Corporation (ISO) Chief Operating Officer Steve Berberich and California Energy Commission Chair Dr. Robert Weisenmiller held an Earth Day event today at the new ISO control center to draw attention to the changing electricity landscape.

“Diverse resources are bringing new grid dynamics that require sophisticated reliability management tools,” said ISO's Berberich. “It is one of the reasons we built a modernized control center to help us maintain reliability as California integrates the largest portfolio of renewable power in the country—now set at 33% by 2020.”

Summer assessments for the ISO ([report link](#)) and the Energy Commission ([report link](#)) were released at today's event. The supply and demand forecasts projects adequate supply to handle a broad range of operating conditions.

“This projection for this summer’s electricity demand is very promising for California,” said Energy Commission Chair Dr. Weisenmiller. “Even if we experience hotter than average summer temperatures, California is expected to have more than ample electricity supplies to meet the peak demand. Of course, the best strategy for Californians to save money, energy, and reduce greenhouse gas emissions is to use energy wisely,” added Weisenmiller.

Peak demand on the ISO grid is expected to reach 47,814 MW, which is 687 MW more than the actual peak of 47,127 MW set in 2010. The 1.5% increase represents a modest economic recovery, leading both the ISO and the CEC to encourage energy conservation on hot days.

An estimated 2,357 MW of demand response and interruptible load programs will be available to the ISO to deploy this summer. These “negawatts” can offset the need for new generation and counterbalance the variable output of renewable resources.

The probability of rotating power outages is less than 1%, assuming moderate levels of imported power. California gets a quarter of its daily electricity needs met from imports. Under normal peak demand conditions, operating reserve margins are projected to be greater than the 15% resource adequacy requirements, which is set by state utility regulators.

By September 2011, the Energy Commission states that 846 MW of the state's electric generation capacity will be retired. Most of the retirements are facilities using seawater for power plant cooling. New generation capacity added by the end of September 2011 is expected to be about 1,158 MW, with 893 MW of the new generation provided by renewable energy resources.

Record-high level of wind comes as the California snowpack reaches 160% of historical average. The heavy snow inventory, combined with warm temperatures, could lead to fast stream flows that fuel a glut in hydroelectricity. These “over generation” conditions in off-peak hours can affect reliability and require the ISO to send quick signals for power plants to “back down” — sometimes even paying generators last minute to reduce output. Flexible on/off ramping capability is critical in making sure megawatts do not overload the grid.

New geospatial technology and advanced visualization capabilities in the control center will help operators stay one step ahead of nature. With the first dedicated renewables-only dispatch desk in North America, the ISO is better prepared to anticipate swings in wind and solar production, ahead of when it contributes to over or under generating conditions.

The control center itself is a mini-power plant, with rooftop photovoltaic (PV) panels that help generate, along with carport PV, about 750 kilowatts to serve the facility's energy needs. The soon-to-be LEED-rated campus exemplifies California's commitment to the environment by demonstrating in energy savings created by a sustainable building design.