California ISO
Shaping a Renewed Future

California Independent System Operator Corporation

Karen Edson
VP, Policy and Client Services

November 1, 2011

Mr. Stuart Drown
Executive Director
Little Hoover Commission
925 L Street, Suite 805
Sacramento, CA 95814

RE: California Independent System Operator Corporation Comments on the State's Coordination of Energy-Related Activities

Dear Mr. Drown:

The California Independent System Operator Corporation (ISO) appreciates the Little Hoover Commission's invitation to submit comments regarding coordination among the state's energy-related organizations.

The ISO is a nonprofit, public benefit corporation that manages the flow of electricity across the high-voltage, long-distance power lines that make up 80 percent of California's power grid. As the impartial grid operator, the ISO ensures open access to the wholesale power markets, enabling participation of diverse resources and facilitating the most economical resource mix possible. The ISO also enables equal access to over 25,800 circuit-miles of power lines and ensures enough transmission capacity is available to deliver the power.

The ISO opened its northern and southern California control centers in 1998 after being established by a 1996 state law that restructured the wholesale electricity industry. While utilities, public entities and private developers own the transmission assets, the ISO has operational control over them and redispatches the electric system every five minutes to maximize the efficient use of the transmission system and generation resources. The ISO does this by facilitating nearly 30,000 market transactions every day to ensure enough power is on hand to meet demand as efficiently as possible.

I am pleased to submit the following comments on the coordination of energy policy pursuant to your letter of October 5, 2011, and look forward to working with you as we and other stakeholders pursue California's energy and environmental goals.

Sincerely,

Karen Edson

Karen Edson
Vice President, Policy and Client Services

Cc: Members of the Little Hoover Commission

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1. *The ISO governance structure and reporting relationships with state, regional and federal entities.*

The ISO is led by a five-member Board of Governors with high levels of expertise in the power industry. They are appointed by the Governor, who is advised by a stakeholder search committee, and confirmed by the State Senate. Members are subject to a selection process approved by the Federal Energy Regulatory Commission (FERC) and serve staggered three-year terms. The Board reviews and approves the annual operating and capital budgets, and monitors performance against pre-determined objectives and metrics designed to ensure the organization is ready for managing the grid as technologies evolve and the generation resource mix changes in response to California's renewable policy goals. The Board operates in a transparent manner through bi-monthly public meetings in which they hear directly from stakeholders on major ISO initiatives, and review and approve changes to the ISO's FERC-jurisdictional tariff. The President and Chief Executive Officer reports directly to the Board.

The ISO works closely with the Board on a yearly basis to develop a strategic plan for the organization. The ISO vision for 2020 and beyond drives our strategies as we strive to be a forward-thinking, innovative organization while keeping electric reliability and cost-effectiveness at the forefront of our operations. The strategic plan acknowledges our challenges and defines our goals, and the Board is very much in tune with and actively involved in this process.

The ISO is also the transmission planning authority for its footprint. A core ISO responsibility is to plan, on an annual basis and looking ahead for ten years, the timely and cost-effective upgrading and expansion of the transmission grid it operates. The process is open and transparent and actively engages stakeholder and public input.

The ISO is regulated by FERC, an independent federal agency formed by the Federal Power Act of 1920 that has oversight of the interstate transmission of electricity, as well natural gas and oil (Natural Gas Act of 1938). FERC approves the tariff under which the ISO operates. Additionally, the Western Electricity Coordinating Council, operating under the auspices of the North American Electric Reliability Corporation and FERC, sets and enforces operational standards that assure the reliability of the bulk electric system in the West.

The ISO works cooperatively with the state agencies that are involved in achieving California's environmental and energy goals and mandates. We work on a regular basis with the California Public Utilities Commission, which regulates the state's investor-owned utilities; California Air Resources Board; State Water Resources Control Board and California Energy Commission. These agencies often seek out ISO expertise and analysis.

2. *How the state's environmental goals (i.e., renewable portfolio, climate change, once-through cooling) shape ISO's mission and functions to ensure reliability.*

The ISO is fully committed to aligning its critical role in maintaining electric system reliability with the state's environmental objectives. Below is a brief discussion of the significant work we have underway.

33% Renewables Portfolio Standard

The ISO is proud to have the most sophisticated operational tools in the western grid, including the first renewable dispatch desk in the nation, with sophisticated computer models and displays that allow our operators to track the output of renewable energy throughout our control area in real time. The ISO redispatches its system every five minutes, as opposed to once per hour as is the case with other operators in the western states. As a result, the system adjusts more quickly to variable renewable resources such as wind and solar, and minimizes the back-up generation that must otherwise be available to maintain reliability

The ISO places heavy emphasis on meeting the state's environmental goals in all aspects of its operations. The ISO is constantly analyzing the impact that the 33 percent renewables portfolio standard will have on our operations and grid reliability, and continues to actively study related issues. Over 13,000 megawatts of new solar, wind and other renewable-fueled generation are expected to come on line in the ISO balancing authority in the next few years, resulting in a need for greater flexibility from resources such as thermal generation, demand response, and storage in reaction to the inherent variability of some renewable energy sources. Neighboring balancing authorities face similar increases in variable generation as developers strive to meet contractual on-line dates. This unprecedented surge in development presents practical challenges for each balancing authority to integrate the variable output from renewable resources.

Phase Out of Once-Through Cooling Generation

In 2010, the State Water Resources Control Board (SWRCB) adopted a regulation that would phase out the use of once-through-cooling technology utilizing ocean water. The once-through cooling generation capacity significantly contributes to meeting local reliability requirements and at times provides as much as 80 percent of operating reserves, with an average contribution of 8-14 percent of reserves as well as real-time balancing services. The ISO will publish studies later this year that assess how much generation must remain available in the areas where these plants are located. The work will be incorporated into a report also involving the California Air Resources Board, California Public Utilities Commission, and California Energy Commission. If the report concludes that additional fossil generation is needed, the report will also include recommendations for addressing long-term emission offset availability and other permitting issues.

In addition, the ISO is a member of a technical advisory group called the Statewide Advisory Committee on Cooling Water Intake Structures along with various state agencies including the California Energy Commission and the California Coastal Commission. The advisory committee was established by the SWRCB to ensure that implementation plans and schedules established by the once-through cooling policy are realistic and will not cause disruption to the State's electrical power supply.

California Public Utilities Commission (CPUC) Long-Term Procurement Proceeding

State policy objectives directly affect the quantity and type of generation needed to maintain reliability through the transition to the 33 percent renewables standard and the state's once-through cooling policy. These, in turn, affect long term resource procurement by California load serving entities. One of the objectives of the current Public Utilities Commission long-term procurement proceeding is to quantify the need for new resources to meet resource adequacy over the 2011-2020 planning horizon, including issues related to long-term renewable integration planning and the need for replacement generation to eliminate reliance on the once-through cooled power plants.

In addition to maintaining an adequate reserve margin, the Commission anticipates that system requirements may be driven by the need to: 1) integrate renewable resources; 2) support once-through cooling policy implementation; 3) maintain local reliability; and 4) meet greenhouse gas emission reduction targets. The system need determination is also responsive to Commission assumptions regarding the levels of new energy efficiency and demand response that will be available to meet or reduce future needs.

To assist the Commission in making long term procurement decisions, the ISO conducted a preliminary analysis of system needs in 2020 assuming 33 percent renewable resources and presented the study results during workshops held in the summer and fall of 2010. The ISO then evaluated potential system needs using the resource portfolio assumptions developed by the Commission staff and described in a ruling issued in December, 2010. These study results were submitted as testimony in the long-term procurement proceeding. In its testimony, the ISO highlighted the need for further study using different assumptions about once-through cooling resources, load growth, energy efficiency, demand response and capacity needs in areas of the system with transmission constraints.

3. The ISO's experience working with the Governor's office and other state agencies through formal or informal networks toward helping the state meet its goals.

California's Clean Energy Future (CCEF)

The ISO maintains close working relationships with state agencies and the Governor's office because of our interrelated roles, which reinforces the collaboration it will take to meet the state's energy and environmental policies. In 2010, a collaboration between the California Environmental Protection Agency, California Air Resources Board, California Energy Commission, California Public Utilities Commission and the ISO resulted in an inter-agency plan for addressing the complex array of state policy goals in a manner consistent with maintaining electric system reliability. The policy goals include reducing statewide greenhouse gas emissions to 1990 levels by 2020 and to 20 percent of 1990 levels by 2050, and providing 33 percent of our electricity demand from renewable resources by 2020. The result was a document entitled *California's Clean Energy Future*[1], which describes the state's objectives, identifies the initiatives necessary to achieve them, and establishes a management tool for

[1] http://www.cacleanenergyfuture.org/common/CCEF%20Implementation%20Plan_vFinal_2a.pdf

identifying cross-dependencies and tracking progress. The collaboration between the ISO, the Governor's Office and state agencies is continuing in 2011.

The CCEF roadmap charts policy priorities, goals and milestones for the state's clean energy future, while the implementation plan contains the details of more than 50 newly aligned activities between the five organizations. The plan covers issues such as job training and retraining for the clean energy economy, and coordinated planning for electricity generation, developing enhanced transmission and new distribution requirements. It also looks at strategic and infrastructure opportunities that will accommodate the influx of plug-in hybrid and all-electric cars, and investment in research and development for new technologies related to generation and distribution.

4. The need for governance or organizational changes to help the state meet its goals.

Much has changed since the 2009 introduction of AB 1016, the energy agency reorganization measure sponsored by then-Governor Arnold Schwarzenegger. Most noteworthy is the coordination reflected in *California's Clean Energy Future* noted above. This collaboration and coordination is reflected at both the policy level, described above, and the day-to-day proceeding level. For example, the ISO signed a memorandum of understanding in 2010 with the California Public Utilities Commission providing for coordination of ISO input into that year's CPUC long-term procurement proceeding and CPUC input into the ISO's 2011-2012 transmission planning process. Work is currently underway to strengthen and enhance this process going forward.

The ISO and state agencies have made demonstrable progress in working together on important issues and continue to collaborate and align their processes to meet changing business and regulatory environments.

5. Recommendations for administrative or statutory remedies to align processes.

New technology and analytic tools are important to making implementation of the state's policy objectives as efficient as possible. For the past fourteen years, the California Energy Commission has administered the Public Interest Energy Research (PIER) program, funded through the Public Goods Charge. PIER money supported research and development relating to renewable energy and energy efficiency. Important technological enhancements to electric grid operation and renewable resource integration are being implemented as a result of PIER funding, including advancements in synchrophasor technology, weather forecasting and wind predicting capabilities.

Legislation to extend California's Public Goods Charge recently failed passage in the legislature after considerable debate. The ISO supports a statutory remedy to provide continued funding for important energy research and development.