California Independent
System Operator Corporation

Memorandum

To: ISO Board of Governors

From: Stephen Rutty, Manager, Grid Assets
Dennis Peters, Manager, External Affairs
Karen Edson, Vice President of External Affairs

Date: July 1, 2008

Re: **Decision on Generator Interconnection Process Reform Proposal**

This memorandum requires Board action.

Executive Summary

California is at the forefront of a global challenge to reduce dependence on fossil fuels and greenhouse gas emissions. A central component of the state's multi-faceted effort to achieve these objectives is the adoption of a 20% Renewable Portfolio Standard (RPS), consideration of increasing the RPS to 33%, and adoption of a required reduction of greenhouse gas emissions to 1990 levels by 2020. Generators have responded vigorously. Today, 361 interconnection requests totaling more than 105,000 MW are pending in the CAISO interconnection study process. Of these, over 68,000 MW are from renewable resources. These requests far exceed the historic peak demand of 50,270 MW for the entire CAISO Balancing Authority Area and also exceed the ability of current CAISO interconnection procedures to efficiently process the requests.

CAISO administers the interconnection process in coordination with Participating Transmission Owners (PTOs) under largely *pro forma* procedures prescribed by the Federal Energy Regulatory Commission (FERC). The purpose is to ensure the safe and non-discriminatory interconnection of new generation to the CAISO Controlled Grid. The procedures call for evaluating the needs of each interconnection request in the order received, i.e., a serial study approach, and impose the cost of needed transmission upgrades on the first project that triggers a need for new facilities. At the same time, if a project ahead of others in the interconnection "queue" drops out and the change impacts others in line, the CAISO must restudy the affected projects. In addition, an application fee of only $10,000 contributes to the number of interconnection requests, as do milestones that fail to provide a measure of commercial vitality.

The CAISO developed the Generator Interconnection Process Reform (GIPR) proposal to address these issues. The GIPR resolves the source of the backlog and other procedural flaws by increasing the financial commitment necessary for project developers to enter and progress through the interconnection process, studying projects with related system impacts in groups, and providing for pro-rata allocation of transmission upgrades across grouped projects. With these and other changes, CAISO will have greater confidence that the projects being studied are commercially viable and will be able to study projects more efficiently. At the same time, project developers will have greater certainty about the timing of interconnection studies and their share of interconnection costs.

More specifically, the GIPR proposes to achieve these objectives by:

1. **Expediting Consideration of a Manageable Number of "Late Stage" Interconnection Requests Under Current Rules**. The GIPR, in conjunction with the CAISO's Waiver Petition filed with FERC on May 15, 2008, as discussed below, will allow the CAISO and PTOs to narrow the number of interconnection requests subject to the current serial study approach to a manageable set of "late stage" interconnection requests.[1] By focusing their resources on this more limited serial study group, the CAISO and PTOs will be able to accelerate evaluation of approximately 90 interconnection requests, totaling over 23,000 MW, including over 12,000 MW of renewable resources. The CAISO anticipates substantially completing the interconnection process by October 2008 for these late stage interconnection requests and thereby facilitate the timely interconnection of generation projects that include those with existing and pending power purchase agreements and those seeking interconnection to approved portions of the Tehachapi Transmission Project.

2. **Adopting a More Efficient Group Study Approach**. The GIPR replaces the CAISO's current serial study approach with a more efficient "group study" or "clustering" approach for pending and future interconnection requests. By utilizing group studies, the CAISO and PTOs can more expeditiously evaluate the large volume of interconnection requests to clear the backlog by calendar year 2010, which is likely several years earlier than under the serial study approach.

3. **Imposing Greater Developer Commitment to Reduce the Number of Pending and Future Interconnection Requests.** The GIPR seeks to reduce the backlog and encourage interconnection requests that more closely resemble system needs by increasing the level of developer financial commitment to participate in the interconnection process. The GIPR requires greater upfront payments from project developers to initiate the interconnection process as well as creates additional financial exposure for withdrawal of the project from the process prior to the new generating facility becoming operational. Under the current process, the project developer can suspend its project and avoid financing any network upgrades during the period of suspension. The GIPR eliminates this possibility. However, a fundamental challenge posed by the reform process was to avoid dampening legitimate generation development that could result from increasing the financial commitment of interconnection customers without accounting for the inherent and inevitable uncertainty of generation development. Through the stakeholder process, the CAISO addressed this risk by incorporating various "off-ramps" that allow interconnection customers to exit the process and thereby mitigate their financial exposure.

4. **Facilitating Investment by Providing Process and Cost Certainty**. The GIPR corrects inefficiencies in the serial study process by providing developers with greater certainty with respect to study timelines and their ultimate responsibility to finance needed transmission upgrades. Unlike the current approach, where cost responsibility may change, even after the execution of an interconnection agreement,

[1] On March 20, 2008, FERC issued an order providing transmission providers guidance regarding revisions to their interconnection procedures. In that order, FERC admonished that reforms affecting pending interconnection requests in "later stages of the process create special circumstances that require careful consideration" because of the greater potential for such reforms to "significantly disrupt" activities taken by late stage interconnection requests in reliance on the existing process. (See "Order on Technical Conference," *Interconnection Queuing Practices*, 122 FERC ¶61,252 (2008) (March 20 Order).)

depending on decisions made by other interconnection customers, generation developers will be assigned a maximum cost assignment that will not vary whether or not other projects withdraw.

5. **Promoting Greater Efficiency in Transmission Planning.** Under the current interconnection process, transmission upgrades needed for interconnection are identified, in large part, independently from transmission upgrades developed through the CAISO's annual transmission planning process. The GIPR enhances coordination between the CAISO's transmission planning process and interconnection needs.

The GIPR was the subject of a March 2008 briefing to the Board and this memorandum builds from that prior briefing by addressing in greater detail the foregoing issues. In particular, this memorandum will describe (1) the current interconnection queue and the problems that prompted the reform effort; (2) a summary of the GIPR and how its elements achieve the stated objectives; and (3) other salient GIPR elements of particular interest. It also includes a motion requesting Board approval of the GIPR and authorizing CAISO management to prepare tariff language consistent with the GIPR for FERC review.

Finally, the memorandum includes two attachments: (1) Attachment A – schedule of stakeholder activities and (2) Attachment B – response to stakeholder comments.

MOTION

Moved, that the ISO Board of Governors approves the Generation Interconnection Process Reform (GIPR) proposal as outlined in the memorandum dated July 1, 2008 and related attachments; and

Moved, that the ISO Board of Governors authorizes Management to make all the necessary and appropriate filings with the Federal Energy Regulatory Commission to implement the GIPR proposal.

1. Background

A. Challenges Affecting the CAISO's Current Interconnection Procedures

The foundation of the CAISO's current generation interconnection process was established by FERC in Order No. 2003 and its progeny. The Order No. 2003 interconnection procedures used by the CAISO and other transmission providers across the country have been successful in assuring open transmission access for new generation resources. However, several factors, largely unanticipated at the time of Order No. 2003's adoption, have imposed significant challenges to the efficiency of the present interconnection study approach. The most notable of these is the, proliferation of interconnection requests for renewable generation in transmission constrained areas. The large number of requests and high level of capacity in the interconnection queue have overwhelmed available resources, led to delays and frustration with the study process, and exposed, or reinforced, fundamental deficiencies in the current serial or "first-in, first-out" study approach. Other ISOs and RTOs with significant renewable generation potential within their footprints are experiencing similar burdens on their interconnection processes.

The delays and uncertainties arise because of the general interdependence or incremental nature of each project's serial interconnection study. Under the current process, a project's system impacts and transmission upgrade requirements build from those identified for projects higher in the queue. Thus, when a project higher

in the queue drops out, all projects with a lower queue position must generally be restudied, which takes time and frequently changes the scope and cost of transmission upgrades assigned to the restudied project. The costs change because the upgrades needed to interconnect the higher queued project are now assigned to the next interconnection project that triggers the need for the upgrades.

Under such circumstances, and given the "lumpy" nature of transmission investment, a single interconnection request is often assigned significant costs for transmission upgrades that will also benefit other lower queued projects. This creates an incentive for projects to withdraw or suspend their expected on-line date. The frequency of restudies leads to long processing time for individual projects and to changing, and therefore uncertain, potential cost exposure for project developers.

In response to the concerns raised by the CAISO and others, FERC directed the CAISO and other transmission providers in its March 20 Order to engage in a stakeholder process to evaluate possible interconnection reforms for a potential late spring filing with FERC. The GIPR represents CAISO compliance with FERC's directive.

B. CAISO Tariff Waiver Filing to Facilitate GIPR Implementation

On May 15, 2008, the CAISO filed with FERC a petition for a one-time waiver of limited provisions of the existing CAISO tariff governing generator interconnection (Waiver Petition). The central purpose of the Waiver Petition was to temporarily suspend interconnection study obligations and timelines with respect to specific pending and future interconnection requests. Although the scope of the Waiver Petition was narrow, it engendered significant controversy because it operated as a precursor to dividing pending interconnection requests into two groups – a "serial study group," as noted above, which would be processed under the existing procedures and financial rules and a "Transition Cluster," which would be subject to the temporary suspension and subsequently the new GIPR requirements.

The Waiver Petition was therefore structured to achieve two goals. First, the creation of the serial study group complied with FERC guidance in its March 20 Order. In that order, FERC cautioned that reforms affecting pending interconnection requests in "later stages of the process create special circumstances that require careful consideration" because of the greater potential for such reforms to "significantly disrupt" activities taken by late stage interconnection requests in reliance on the existing process. The CAISO elected to define late stage interconnection requests and therefore the serial study group as those interconnection requests that either (1) had met specific advanced milestones in the current LGIP interconnection study process, (2) had a power purchase agreement approved, or pending approval, by the CPUC or Local Regulatory Authority, or (3) were next in queue order to interconnect to any transmission project that has received land use approvals from any local, state, or federal entity, as applicable, up to the capacity studied by the CAISO.

Second, a core objective of the GIPR is to clear the existing backlog of interconnection requests. By suspending the interconnection requests in the Transition Cluster, the CAISO and its PTOs could focus resource on completing studies for those interconnection requests in the serial study group and, equally important, ensure that the GIPR procedures applied to the maximum number of pending interconnection requests. At this time, FERC has not ruled on the Waiver Petition, but the CAISO anticipates a ruling prior to the Board meeting.

2. General Description of the GIPR

The CAISO has improved the interconnection process by incorporating into the GIPR several key features, including:

- Organizing the timing of interconnection requests by using pre-determined Queue Cluster Windows
- Studying electrically related interconnection requests as a group and identifying transmission upgrades needed for interconnection in coordination with the CAISO's transmission planning process
- Providing developers with financial certainty by establishing a "cap" on transmission cost responsibility
- Promoting commercially viable projects by increasing developer financial commitment, while accommodating development uncertainty

A. Study Process Improvements – Queue Cluster Windows and Grouping

The GIPR abandons a project-by-project study approach in favor of studies that group together electrically related proposed generation projects that submit their interconnection requests during two "Queue Cluster Windows" that occur during two preset four month periods each calendar year. Under the GIPR, the CAISO will perform two studies, rather than the current three studies - Phase I Interconnection Studies and Phase II Interconnection Studies.

The Phase I Interconnection Study will serve to preliminarily identify Network Upgrades and Interconnection Facilities needed for all interconnection requests submitted during the Queue Cluster Window to safely interconnect to the CAISO Controlled Grid. CAISO conducts the Phase I Interconnection Study to establish the basis to assign to each individual interconnection customer cost responsibility for the needed facilities. However, unlike the serial study approach where all costs were assigned to the project that triggered the need for the upgrade and could change over time if a higher queued project withdrew, under the Phase I Interconnection Study, costs will be allocated to interconnection customers on a more equitable basis and that cost responsibility will remain unchanged regardless decisions by other interconnection customers to withdraw or not. For Reliability Network Upgrade, which are those basic upgrades needed solely to ensure the integrity of the grid, the costs will be assigned pro rata to each interconnection customer based the size of the proposed generating facility. For Delivery Network Upgrades, which are upgrades needed to remove transmission constraints under peak load conditions, the costs are assigned based on the electrical impact each proposed new generating facility will have on the new transmission upgrade.

The Phase II Interconnection Study, which develops and plans the actual network transmission upgrades necessary to accommodate the interconnection requests, is coordinated with the CAISO's transmission planning process. By coordinating interconnection with transmission planning, the CAISO promotes better integration between interconnection processes and general transmission planning in an effort to identify transmission investment that meets multiple system needs, such as reliably serving load and interconnecting generation.

B. Balances Additional Developer Financial Commitment with Cost Certainty

The CAISO seeks to correct distortions impairing the existing process that result from the low barriers to queue entry and the ability for customers to keep a queue position with little or no effort toward achievement of meaningful milestones. The GIPR proposes to address these defects by increasing financial commitments and consequences throughout the interconnection process in an effort to realize more realistic outcomes that match system needs. In exchange, the GIPR Interconnection Phase I Study establishes a "cap" on the interconnection customer's financial commitment. By establishing a cost cap, the GIPR addresses the cost uncertainty that has resulted from restudies under the serial study approach. The cost certainty provided by the GIPR is intended to enhance developer investment decisions and facilitate project financing. Only interconnection customers that accept their cost responsibility assigned through the Phase I Interconnection

Study by posting specified financial security will be allowed to proceed to the Phase II Interconnection Study. The Phase II Interconnection Study identifies the actual transmission upgrades needed to interconnect the interconnection requests. . Because the specific additional developer commitments have been the source of considerable stakeholder discussion, they are set forth below.

- Advance and increase study deposits. The interconnection customer must make a $250,000 deposit to cover costs of processing the request and conducting studies. Under the current three study process, the aggregate study deposits total $170,000. Presently, interconnection customers are responsible only for actual costs incurred. In contrast, portions of the GIPR study deposits become non-refundable as the process moves forward. However, upon execution of an Interconnection Agreement (IA), the deposit net any administrative and study costs incurred will be fully refunded. The purpose of the financial consequences embedded in the GIPR study deposit structure is to focus developers on their most promising opportunities.

    - In response to stakeholder comments, the CAISO will allow projects of less than 20 MW, but still subject to the GIPR, and capacity increases to existing generating facilities of less than 20 MW to submit a reduced study deposit of $100,000.

    - Several stakeholders claimed that the proposed general study deposit amount discriminated against small developers or projects and would thereby inhibit healthy competition. An alternative proposal was to establish "tiered" deposits depending on the size of the generator. While the CAISO has accommodated certain small projects, as noted above, the CAISO elected not to follow this approach for several reasons. First, the CAISO has not identified a correlation between the size of the project and its study costs. Second, information from other regulatory entities indicates that the deposit amount is reasonable given the financial resources available to most viable developers.

- Advance the requirement for proof of Site Control or submission of an increased deposit in lieu of Site Control. Currently, if an interconnection customer does not demonstrate proof of site control with its application, it may post a deposit of $10,000. The GIPR increases that deposit to $250,000. This amount would be refundable upon proof of site control or if the interconnection customer withdraws.

- Posting of Security and Schedule for Non-refundability. Under current interconnection rules, an interconnection customer is not required to provide financing for transmission upgrades associated with its project until construction of those facilities begins in accordance with a schedule set forth in the interconnection agreement; however, the interconnection customer may suspend construction activity for up to three (3) years. To the extent the transmission upgrades are Network Upgrades, the interconnection customer will be entitled to reimbursement from the PTO of those costs over a five (5) year period once the generating facility comes online. The PTO then recovers those costs through the CAISO's Access Charge assessed to load within the CAISO Balancing Authority Area. The GIPR changes the current rules by requiring the interconnection customer to post security in an amount equal to 20% of the total cost responsibility of the estimated cost of Network Upgrades and Interconnection Facilities determined by the Phase I Interconnection Study. The remaining 80% of the estimated costs must be posted within six (6) months following the conclusion of the Phase II Interconnection Study. Over time, a portion of the posted security becomes non-refundable, except as described below.

- Use of Other Study Limitations: To the extent these revisions to the financial requirements for interconnection are insufficient to reduce the studied projects to a reasonable quantity of capacity, the CAISO intends to utilize information produced by the Renewable Energy Transmission Initiative (RETI) to properly limit development assumptions. RETI is a collaborative study effort among California stakeholders, including the CAISO, that will identify and quantify the development potential of "competitive renewable energy zones." The purpose of using the RETI information is to ensure that the CAISO's analytical tools will produce results that provide optimal transmission systems, and that the cost outcomes of the interconnection studies better reflect the size of the network upgrades likely to be necessary to access the developable quantity of capacity in particular renewable energy regions.

To the extent security or deposits provided by interconnection customers are surrendered to the CAISO under the foregoing, the CAISO intends to distribute any such proceeds to Scheduling Coordinators in a manner similar to the disposition of penalties collected by the CAISO for violations of its Enforcement Protocols under Section 37 of the CAISO Tariff. In general, Scheduling Coordinators will receive amounts in proportion to their contribution to the Grid Management Charge. Several stakeholders suggested that the interconnection customer originally responsible for the surrendered funds should receive Merchant Transmission Congestion Revenue Rights. However, given that the proceeds of any surrendered security or deposits are not going directly to finance transmission investment, the CAISO has not incorporated this element into the GIPR.

- **Addressing Development Risk**

As noted above, the CAISO recognized that the potential to chill legitimate generation development could occur if the increased financial commitments incorporated in the GIPR failed to acknowledge the inherent uncertainty of project development. Much of this uncertainty results from processes that are independent of the CAISO's interconnection procedures and even outside the control of developers. The most significant of these processes involve load serving entity procurement cycles and solicitations and land using permitting proceedings. The GIPR accounts for uncertainty from such factors and moderates developer risk by allowing for specific off-ramps at several points in the interconnection process.

- Recovery of Unused Study Deposits. While study deposits are generally non-refundable, a project that withdraws from the process within 30 days of the initial meeting to discuss the viability of the project may recovery its full deposit less actual costs. In addition, the full amount of the deposit becomes non-refundable only after the results of the Phase I Interconnection Study are communicated to the interconnection customer. Prior to that time, only $100,000 of the deposit is at risk. Thus, the GIPR includes incentives for interconnection customers to closely scrutinize the quality of a particular project throughout the study process.

- Refundability of Security. As noted above, interconnection customers must post 20% of their assigned costs of Network Upgrades and Interconnection Facilities prior to the Phase II Interconnection Study and 100% of such costs within six months after the conclusion of the Phase II Interconnection Study. This structure is intended to balance the goal of increasing the financial commitment of developers to encourage realistic participation in the interconnection process with the inherent uncertainties of project development. The staggered posting requirement was incorporated into the GIPR by stakeholders to facilitate the ability of interconnection customers to obtain financing as well as to defer such financial commitment until after the interconnection customer may have a better understanding of the outcome of pending request for offers or other licensing proceedings. Moreover, the GIPR has proposed refunding a portion of the posted amounts upon the occurrence of specified events outside the interconnection customer's control, such as the denial of a CEC license, the inability to obtain an

accepted power purchase agreement, or an unanticipated increase in the cost of Interconnection Facilities based on transmission planning outcomes.

C. Other Areas of Interest

In order to prepare the Board for issues that may arise from stakeholder comments, the CAISO addresses several other topics at issue during the stakeholder process.

- **Accelerated Study Process**

Several stakeholders advocated that the CAISO have the ability to accelerate certain projects through the interconnection process under pre-defined circumstances. In other words, an interconnection request that is entitled to acceleration would not have to wait for the outcome of the grouped Phase I and Phase II Interconnection Studies, but rather could proceed to be studied individually on an independent timeframe. GIPR incorporates this concept. The goal is to allow interconnection requests that are independent of others, and therefore not part of a group study, or those that seek to interconnect to available transmission approved by the CAISO and appropriate state agencies, to proceed through the interconnection process in a manner that ensure the project will achieve its desired online date . In this regard, the CAISO believes that the GIPR timelines generally ensure timely interconnection. Accordingly, to qualify for the accelerated study process, in addition to the above requirements, the interconnection customer would also have to demonstrate that the GIPR timelines cannot accommodate its desired online date.

- **Elimination of Feasibility Study**

Several stakeholders, representing both generation developers and buyers, expressed a desire for some type of preliminary screening assessment information, which would be similar to today's Interconnection Feasibility Study. The proponents anticipate that such an assessment will provide the interconnection customer with interconnection information to assist in project development and also provide LSEs with transmission information to support resource procurement processes.

The CAISO rejected this proposal based on several considerations. First, depending on the definition of the assessment's scope, the impact on CAISO and PTO resources may be significant and potentially affect the ability to meet other, more formal, interconnection timelines associated with the GIPR. Second, FERC has on open proceeding to allow transmission planning and procurement personnel of a utility to exchange information for planning purposes. This would allow the transmission planning side of PTOs to perform studies on behalf of the procurement side of the utility to facilitate requests for offers or other solicitations. In this regard, the CAISO commits in the GIPR to provide updated basecase information to market participants and generation developers during multiple points in the GIPR process in order to allow parties to use current information to assess the feasibility of potential generation projects. By providing current data, the CAISO this will allow evaluation of potential generation projects using as current data

MANAGEMENT RECOMMENDATION

Management recommends that the CAISO Board of Governors authorize final development, and filing with FERC, of CAISO Tariff language consistent with the GIPR proposal described herein. The CAISO and

stakeholders collaborated on developing the GIPR and many, albeit not all, of the objectives and elements of the GIPR are the product of substantial stakeholder input. The CAISO by moving forward with the GIPR will proactively address the existing backlog of interconnection requests and other procedural flaws in the interconnection process. In addition, the GIPR will promote the timely interconnection of new generating capacity from conventional and renewable resources needed to meet future customer demand and to achieve state environmental policy goals.

ATTACHMENT A
Schedule of Stakeholder Activities

The schedule for stakeholder activities and review of the GIPR are as follows:

January 18, 2008 CAISO posts Issues Identification Paper
January 25, 2008 Stakeholder Meeting
January 31, 2008 Stakeholder comments submitted
February 12, 2008 CAISO posts Draft Proposal

February 19, 2008 Stakeholder Meeting
February 26, 2008 Stakeholder comments submitted
February 28, 2008 Stakeholder Conference Call

March 12, 2008 CAISO posts Revised Draft Proposal
March 13, 2008 Stakeholder Conference Call
March 20, 2008 Stakeholder Conference Call
March 26, 2008 CAISO Board of Governors Presentation (informational)
March 27, 2008 Stakeholder Conference Call

April 8, 2008 CAISO announces opening of Cluster Window on June 2, 2008
April 9, 2008 Stakeholder Conference Call
April 21, 2008 Status Report Filed with FERC

May 5, 2008 CAISO posts Revised Draft GIPR Proposal
May 8, 2008 Stakeholder Conference Call
May 15, 2008 CAISO file Waiver Request at FERC
May 21, 2008 CAISO posts Revised Draft GIPR proposal
May 28, 2008 Stakeholder Conference Call
May 30, 2008 CAISO posts draft GIPR Tariff language revisions

June 2, 2008 First GIPR Queue Cluster Window opened
June 6, 2008 Stakeholder comments submitted
June 10, 2008 Stakeholder Meeting
June 17, 2008 Stakeholder GIPR Tariff language comments received
June 19, 2008 Stakeholder Conference Call
June 24-27, 2008 CAISO posts updated GIPR Tariff revisions
July 1, 2008 Stakeholder Meeting re GIPR Tariff language
July 8, 2008 Stakeholder final GIPR Tariff comments due
July 9, 2008 GIPR proposal taken to CAISO Board of Governors
Mid July GIPR tariff language submitted to FERC for approval (if approved by CAISO Board of Governors)