



California ISO
Your Link to Power

Generator Interconnection Procedures

Draft Final Proposal

Prepared for

*Small Generator Interconnection Procedures Stakeholder
Initiative*

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1 EXECUTIVE SUMMARY

This document outlines the ISO proposal to combine the small generator and the large generator interconnection procedures into a single set of generator interconnection procedures (GIP). These procedures include an annual cluster study process for projects of any size, an independent study process for qualifying projects, and maintain, with minor modifications, the existing fast track process for projects less than 2 MW.

The proposed annual cluster study process will be shorter than the current large generator interconnection procedures to maintain the intent behind that the current small generator interconnection process be of a shorter timeframe and streamlined. It will incorporate process improvements based on experience gained since the implementation of the current large generator cluster study process. Moreover, this proposal addresses comments and feedback from ISO and utility engineers about their recent experiences in performing the study work under a large generator cluster process and a small generator serial process, each of which have different timelines. They explain that the system to which the generation projects want to interconnect is essentially one system, and it is increasingly problematic to evaluate and process small and large projects on different tracks. Accordingly, the intent of this proposal is to apply concepts and practices that have increased the efficacy of the large generator process. The concepts and practices have helped to reduce the large generator interconnection backlog and to make individual project studies more meaningful by evaluating interrelated projects together, reducing the actual time it takes to process the increasing number of small generator interconnection requests.

In addition to the process reforms just described, this draft final proposal has options for Energy Only projects to obtain enhanced deliverability status; these projects would have an opportunity to receive some level of deliverability through a deliverability assessment.

The following chart highlights some of the enhancements this draft final proposal offers to the existing interconnection procedures.

Element	Current Processes		Proposed GIP
	SGIP	LGIP	
Study Process	Serial	Cluster	Cluster
Open Request Windows	None	Two	Two
Deliverability Assessment	Not Available	Available	Available
Independent Study Process	Not Available	Not Available	Available
Fast Track	Available	Not Available	Available with enhancements
Study Deposit	Fixed	Fixed	Sliding Scale
Financial Security Postings	None	After Phase I & Phase II	After Phase I and Phase II with reduced amounts for smaller projects

In response to stakeholder comments the ISO has incorporated the following revisions to the Straw Proposal to create this draft final proposal.

Items Revised	Straw Proposal	Draft Final Proposal
Open Request Window	One	Two
Independent Study Process Criteria	Strict criteria for eligibility	Relaxed criteria for qualification
Less than 2 MW Fast Track	Included 10 th screen	Eliminated 10 th screen
Study Deposit Amount	Tiered	Fixed plus volumetric
Cluster Study Timeline		Time added for studies
Independent Study Process Generator Independence determination method	None	Objective test
Deliverability Assessments	Two options	New hybrid option
Financial Security Postings		Posting amounts changed and cap added to second posting to reduce capital outlay by interconnection customers
Transition Plan	Cutoff date of April 1, 2010	Revised cutoff dates

2 INTRODUCTION

The small generator interconnection procedures (SGIP)¹ in ISO Tariff Appendix S set forth the requirements for interconnecting generating facilities no larger than 20 MW to the California ISO controlled grid². The SGIP are intended to be simpler than the large

¹ FERC's Order No. 2006 (issued May 12, 2005) standardized the terms and conditions of open-access interconnection service for small generating facilities. This continued FERC's standardization effort that began for large generators under FERC Order 2003.

² ISO Tariff Appendix S can be accessed on the CAISO website at <http://www.caiso.com/2779/2779894d1b920.pdf>.

generator interconnection procedures (LGIP) and includes a fast track interconnection process for generators of 2MW or less. The ISO's current SGIP follows the historical serial study approach where studies are done one at a time, in the order the applications are received and reviewed for completeness. The overall study process includes the following five steps to facilitate interconnection to the ISO controlled grid: (1) interconnection customer submits interconnection application, (2) ISO or participating transmission owner conducts the feasibility study, (3) ISO or participating transmission owner conducts the system impact study, (4) conducts the facilities study, and (5) interconnection customers completes and executes the small generator interconnection agreement (SGIA) with the ISO and the interconnecting participating transmission owner.³

Since LGIP reform procedures were launched in 2008, the ISO has experienced a significant increase in the number of small generation projects seeking interconnection to the ISO controlled grid under the SGIP, as shown in Figures 1 and 2. The large volume of SGIP interconnection requests presents inherent problems similar to these that precipitate the revisions to the LGIP. A serial process requires projects to be studied one at a time, in succession, such that each successive project is studied based on a transmission system that includes the upgrades required by preceding projects. The time associated with the study process, followed by results meetings, followed by a time period for a project to make decisions on if and how it chooses to proceed, becomes a waiting period for projects that follow in the queue. This time consuming process cannot be significantly shortened by simply inserting more manpower into the process. As the number of projects waiting in the queue increases, the time that later queued projects must wait to be processed becomes unreasonable.

³ The current form of SGIA is ISO Tariff Appendix T, accessible on the ISO's webpage at <http://www.caiso.com/2779/277989701fb40.pdf>.

Figure 1

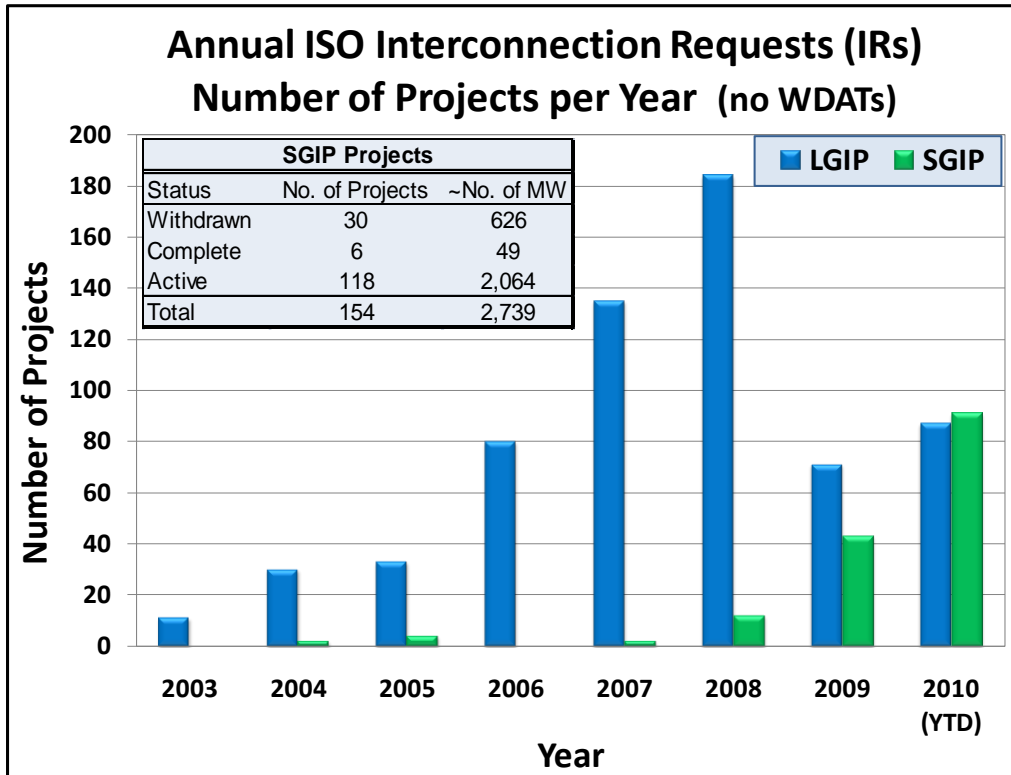
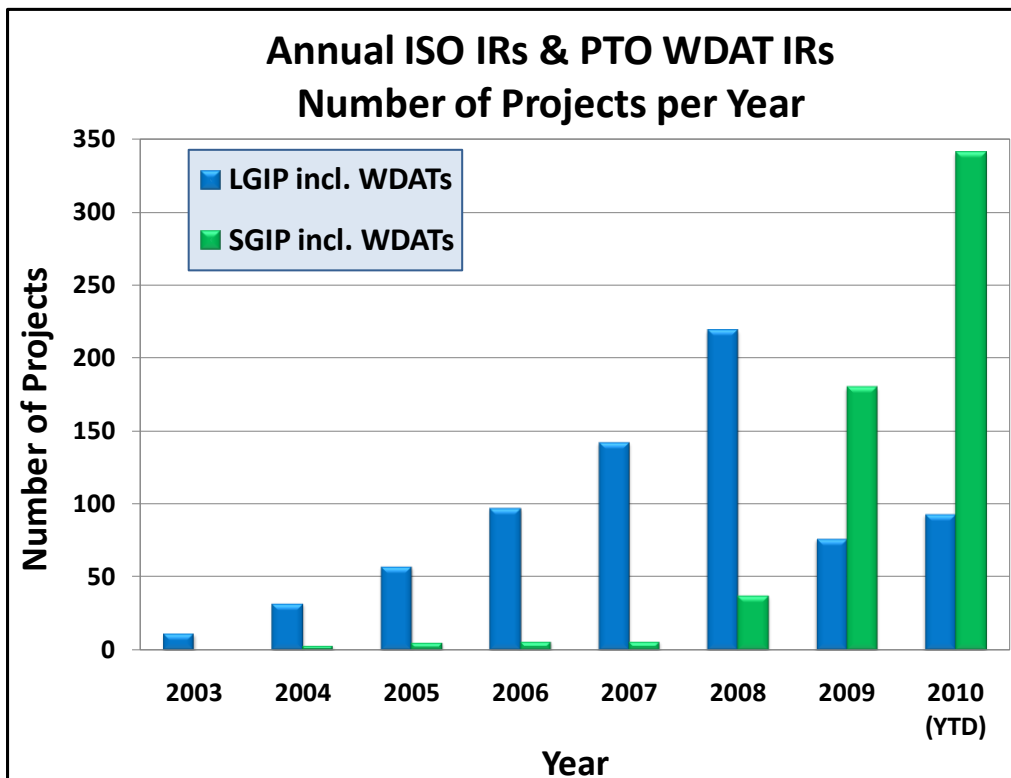


Figure 2



The large number of projects involved in the time-consuming serial approach is not the only issue that presents considerable challenges to the SGIP serial process. The interdependency between the LGIP and the SGIP study processes cause further difficulties that are no less of a challenge to the current interconnection process. The interdependency issue, as explained below, is just as important a driver as the increased volume of interconnection requests and, cannot be improved simply by throwing more people/resources in an effort to solve the problem by “grinding through the studies.” Some key principles to understand regarding the interdependency issue are listed below.

1. Interconnection studies are performed by the ISO and PTOs to determine how best to safely and reliably interconnect new generation resources to the grid.
2. The logic for building the system upgrades needed to interconnect generators, (and reflected in the Interconnection studies) are additive in nature, meaning that the interconnection studies for a given project are build upon base cases of previously studied but not yet constructed transmission facilities—the base case is a snapshot of the system as it will exist on the project’s projected interconnect date –and the analysis determines the incremental system impacts of new generation (i.e. the project at issue and others connecting at the same time). The transmission planner’s job is to evaluate system impacts and design the specific network upgrades and interconnection facilities needed to incorporate the new generation while preserving system operators’ ability to reliably operate the electric system according to NERC/WECC/CAISO Planning Standards.
3. Interconnection studies, in order to be most effective, need to be performed on an aggregate basis to evaluate the collective impact to the grid of all the new generation that is connecting at roughly the same time. This is true regardless of the size of the generation resource interconnecting to the grid.
4. New generation resources, whether they be small (\leq to 20 MW) or large (>20 MW) typically impact the grid in proportion to their MW output. However, there are many exceptions to this general statement. Adding new transmission capability is not a linear exercise (i.e., new transmission capability increases in large, often expensive chunks), and there are many cases where a single, small generator can provide the “tipping point” at which a large, expensive upgrade is required. This is what planners mean when they say that transmission upgrades are “lumpy”; they cannot be precisely sized to the number of generating MW being added. Under a serial interconnection study process, and according to FERC policies, the small generator in this case is 100% responsible for the large upgrade, even though the amount of generation addition to the transmission line may be small compared to the capability provided by the upgrade.
5. If an SGIP project is allocated a large upgrade, the customer can withdraw its application and even re-enter the queue, effectively “passing the buck” to another interconnection customer. Looking at this activity at a higher, aggregator impact, withdrawals such as these have cascading impacts to generators behind it in

queue. This becomes more complex as many customers are making these decisions at different times, and leads to endless restudies that can result in a great waste of planning resources as studies are done and redone to reflect a changing landscape.

6. One of the reasons that the ISO implemented a clustered study approach when it reformed the LGIP was to address many of these points, such as the need to evaluate collective impacts to the grid, to more equitably allocate the financial responsibility for required network upgrades to generators, and avoid costly and wasteful restudies.
7. As long as the SGIP remains a serial process, the ability of planners to accurately study and account for the collective impacts of both LGIP and SGIP requests will be compromised, and customers will have difficulty moving through the interconnection process because timing, costs, and accuracy of their studies will be constantly in flux.

The current ISO interconnection procedures do not take into account the inter-dependency between serially studied SGIP requests and clustered LGIP requests. The interdependencies occur primarily due to timing differences in both the receipt/processing of applications and the performance of the interconnection studies. Under the current two-track system (LGIP and SGIP), the fact that each process has a large number of projects running through the queue all seeking to be interconnected as expeditiously as possible, means that the engineers do not have time to take a step back and perform a holistic evaluation to reconcile and integrate the large generator and small generator study results coming out of each the two processes, without causing significant delays to both the SGIP queue and the LGIP queue

Interconnection customers participating in the SGIP reform effort have expressed desire for quick study results, so they can get on with developing their projects, and for accurate study results, so that they will know their costs and their financing requirements. Unfortunately, these timing differences make it difficult if not impossible to perform either speedy or accurate interconnection studies for SGIP requests because the base cases used in SGIP studies are not likely to reflect the impact of the most recently completed clustered LGIP studies. The clustered LGIP bases cases are updated after every Phase I and Phase II study, or approximately twice a year. If transmission planners believe an SGIP are electrically interrelated to a cluster, and that cluster study is not yet complete and the base case updated, then the choice is either to delay the SGIP study until the cluster study is completed, or provide an SGIP study that is subject to later revision once the cluster study is complete. There are problems with either of these two options. Interconnection customers do not like delays in getting their studies, and so moving forward with assumptions on cluster study conclusions result in increased after-the-fact revisions to true-up cluster assumptions with cluster results may expose the interconnection customer to substantial increases in financial responsibility for upgrades. Since the SGIP are a serial process and provides cost estimates only (i.e. unlike the clustered LGIP process, does not include cost caps on the customer's financing responsibility), the SGIP interconnection customer can be fully exposed to

such increases. As long as the interconnection study processes remain on different bases, the study results will, of necessity, result in delays and cost uncertainty.

This SGIP reform proposal increases by a few months the tariff timeline for SGIP applicants to complete the interconnection study process. In return, the SGIP applicants receive a good-faith, capped estimate of their financial responsibility as soon as (and perhaps sooner) than they would under the serial process (Phase I study is due approximately six months following closing of the application window), with a more refined Phase II study within 16 months of the application window, and with the elimination of after-the-fact revisions due to interactions with LGIP studies. When compared to an open-ended and log jammed serial study process, which offers neither speed nor cost certainty, the clustered study proposal provides certain, tangible benefits over the incumbent process.

This draft final proposal is the latest iteration of the written work product which has accompanied the stakeholder process. This work product began as an issues paper posted on April 1, 2010, was revised to be a straw proposal posted May 26, 2010 and is now presented as a draft final proposal. Due to the extensive changes between the straw proposal and this draft final proposal it proved not feasible to provide this document as a red-line of the straw proposal. However, this draft final proposal will discuss the changes made since the straw proposal due to stakeholder input. The entire stakeholder process through which this document has evolved and the plan for its completion are outlined in Section 6 below.

3 CONCEPTS AND TARIFF DEFINITIONS PERTINENT TO DELIVERABILITY OF GENERATING FACILITIES

The following pertinent definitions are part of the current ISO Tariff, contained within Appendix A (Master Definitions Supplement)

3.1 ENERGY ONLY DELIVERABILITY STATUS

A condition elected by an Interconnection Customer for a Large Generating Facility interconnected with the CAISO Controlled Grid the result of which is that the Interconnection Customer is responsible only for the costs of Reliability Network Upgrades and is not responsible for the costs of Delivery Network Upgrades, but the Large Generating Facility will be deemed to have a Net Qualifying Capacity of zero, and, therefore, cannot be considered to be a Resource Adequacy Resource.

3.2 FULL CAPACITY DELIVERABILITY STATUS

The condition whereby a Large Generating Facility interconnected with the CAISO Controlled Grid, under coincident CAISO Balancing Authority Area peak Demand and a variety of severely stressed system conditions, can deliver the Large Generating

Facility's full output to the aggregate of Load on the CAISO Controlled Grid, consistent with the CAISO's Reliability Criteria and procedures and the CAISO On-Peak Deliverability Assessment.

3.3 DELIVERABILITY ASSESSMENT

An evaluation by the participating transmission owner, CAISO or a third party consultant for the Interconnection Customer to determine a list of facilities, the cost of those facilities, and the time required to construct these facilities, that would ensure a Generating Facility could provide Energy to the CAISO Controlled Grid at peak Load, under a variety of severely stressed conditions, such that the aggregate of Generation in the local area can be delivered to the aggregate of Load on the CAISO Controlled Grid, consistent with the CAISO's reliability criteria and procedures.

4 DRAFT FINAL PROPOSAL

4.1 PROPOSED APPLICATION PROCESS

4.1.1 LESS EMPHASIS ON FACILITY SIZE; SINGLE TARIFF WITH MULTIPLE TRACKS

The application process for generating facilities of any size will be handled in the combined GIP.

- **Cluster Process** – A request to interconnect a generating facility of any size that does not qualify for the independent study process or the fast track process will be studied in the annual cluster. Although there will only be one annual cluster study, there will be two opportunities during the year for an interconnection customer to submit an application and have a scoping meeting. As described in Section 4.2.3 there is an opportunity for Energy Only projects of 20MW or less to waive the Phase I studies and be studied directly in the Phase II studies.
- **Independent Study Process.** As described below in Section 4.3 below, the GIP will include an opportunity for projects meeting certain criteria to be studied independently of the cluster study process.
- **Less than 2 MW Fast Track** - A generating facility no larger than 2MW will continue to have the option to be evaluated under the existing Tariff SGIP fast track process, which is proposed to be retained in the GIP with minor modifications. A project of 2 MW or less that qualifies for the fast track process

will be studied on the fast track timeline.⁴ The one modification that is proposed is to remove the 10th screen that stipulates that ‘no construction of facilities by the participating transmission owner on its own system shall be required to accommodate the small generating facility’.

4.1.2 INTERCONNECTION REQUEST INTAKE & VALIDATION

Cluster Process; Queue Cluster Windows. Two queue cluster window periods (open for one-month) will be opened each year for Interconnection Customers to submit interconnection requests under the GIP, regardless of the MW size of the proposed generating facility. The first window opens three months prior the beginning of that cluster’s Phase I study and a second window opens after the completion of the Phase I study. Specific details concerning the second window are described in Section 4.2.3 below. Since the ISO’s experience thus far with the window period for large generation interconnection requests is that the ISO receives the bulk of requests during the last week of the window, the windows will be shortened from the current four month window to a one month window. The ISO will have ten (10) business days to review all projects to determine if they are valid (i.e. if they contain sufficient information for the ISO to process the request) and to notify those customers who submitted deficient requests as to what is needed to cure the deficiency. The customers will have ten (10) business days to cure any deficiency in its request to remain in the cluster study process.

Independent Study Process (ISP). Applications for projects that qualify for the ISP are not restricted to the window period and can be submitted throughout the year. If the ISO validates the application as qualifying for independent study, the project will be studied in a process that is independent of the standard GIP cluster study process. If the ISO deems that the project applying for the independent study process does not qualify for ISP, it will be moved to the next open application window, or at the customer’s request, will be withdrawn. Some stakeholders proposed that there be specific windows open for ISP applications; however the ISO did not adopt this proposal, since this may result in sub-clusters if multiple projects apply to the same location and make it impossible for these projects as a whole to qualify for the ISP. The ISP will handle projects on a first come first serve basis.

4.1.3 INTERCONNECTION REQUEST REQUIREMENTS FOR ALL PROJECTS

4.1.3.1 Form of Interconnection Request Application

There will be one form of interconnection request application for all projects notwithstanding the MW size of the generating facility proposing to interconnect. The

⁴ See current SGIP Section 2 <http://www.caiso.com/27c3/27c3ecd2556e0.pdf> for discussion of the current Fast Track Process.

application form used will be substantially similar to the current interconnection request application contained in Appendix 1 to the current cluster LGIP (ISO Tariff Appendix Y).

4.1.4 STUDY DEPOSIT AMOUNTS AND/OR PROCESSING FEES

The study deposit for all generating facilities regardless of size will include an initial one-time study deposit of \$50,000 plus \$1,000 per MW of project capacity, up to a maximum of \$250,000 (maximum is reached at a project size of 200 MW). Table 1 below provides examples of various project sizes in terms of MW value and the associated study deposit amounts that will be required. For comparison, the typical SGIP customers pay study costs that are estimated to fall between \$45,000 and \$100,000.

In working group sessions, some stakeholders commented that study deposits should be based on MW size to encourage interconnection customers to more accurately identify the ultimate size of their generating facility (i.e. “right-size”) from the start, which would improve the accuracy of the studies. The ISO final proposal adopts this suggestion; however the study amount is capped at \$250,000 which is the current study fee amount under the existing LGIP. Some stakeholders also suggested that there should be a different study deposit amount for projects that select Energy Only as opposed to Full Capacity. The ISO did not adopt this proposal, as the ISO is of the opinion that increased variations to deposits would compound application errors and would add an unnecessary administrative burden, especially if a customer changes its project from Full Capacity to Energy Only between the Phase I and Phase II studies. Some stakeholders commented that there should be multiple study deposits as the project moves through the process (in order to reduce capital outlay for the customer at the beginning); however a huge benefit of having a single study deposit at the beginning is that it removes the time and administrative effort required to process billing invoices for each study step.

Table 1 – GIP Study Deposit Proposal

Base Fee = \$50,000; Incremental Fee = \$1,000/MW; Cap at \$250,000	
Examples (MW)	Total Deposit
1	\$51,000
5	\$55,000
10	\$60,000
20	\$70,000
50	\$100,000
100	\$150,000
150	\$200,000
200 and greater	\$250,000

These study deposit requirements will be applied to all interconnection requests which are pending before the ISO on the effective date of the ISO tariff amendment implementing the final GIP proposal approved by the ISO Board of Governors

Within 30 days following a FERC order accepting the GIP proposal tariff amendment, the ISO will require customers to forward to the ISO the difference between the new required study deposit and amounts already provided as study deposits. The ISO will deposit all interconnection study deposits in an interest bearing account. The study deposit will be applied to pay for prudent costs incurred by ISO, the participating transmission owners, or third parties, as applicable, to conduct and administer the interconnection studies. (The customer will be invoiced for payment of study costs that exceed the study deposit.)

4.1.5 WITHDRAWAL AND RETURN OF STUDY DEPOSITS.

Should an interconnection customer withdraw its interconnection request, then portions of the interconnection study deposits are refundable, as follows:

- Up to 30 days following the scoping meeting, the CAISO will refund any study deposit amount, including interest, exceeding the actual study and administrative costs.
- After 30 days following the scoping meeting and up to 30 days following the Phase I (or system impact study for projects qualifying for the independent

study process) results meeting the CAISO will refund the difference between the interconnection customer's study deposit including interest, and the greater of (i) the actual study and administrative costs or (ii) one half of the original study deposit up to a maximum of \$100,000.

- After 30 days following the Phase I (or system impact study for projects qualifying for the independent study process) results meeting, the CAISO will refund any amount, including interest, over actual study and administrative costs if the interconnection customer executes a generation interconnection agreement (GIA). However if the interconnection customer withdraws during this timeframe, the deposit is non-refundable.
- Fast Track Projects of Less than 2MW
The processing fee and deposit requirements for fast track projects of less than 2MW will be carried forward from Section 2 of the current ISO Tariff Appendix S. These amounts are a non-refundable processing fee of \$500 and a study deposit not to exceed \$1,000.

4.1.6 REQUIRED TECHNICAL INFORMATION ACCOMPANYING AN INTERCONNECTION REQUEST

The required technical information for all generating facilities will be the same as currently required under the LGIP. (See Appendix 1 to LGIP (Interconnection Request) and Attachment A thereto (Large Generating Facility Data).

4.1.6.1 Site Exclusivity

Cluster Projects. All cluster project interconnection requests must be accompanied by demonstration of project Site Exclusivity or the customer must post a site exclusivity deposit in lieu of site exclusivity. For projects 20MW or less, the deposit amount shall be \$100,000; for projects greater than 20MW, the deposit amount shall be \$250,000. The demonstration of site exclusivity, at a minimum, must be through the commercial operation date (COD) of the new generating facility. The amount of \$100,000 for projects of 20MW or less is less than currently required by the LGIP which requires \$250,000 for all projects. As with the current LGIP, site exclusivity deposits are refundable when the interconnection customer demonstrates site exclusivity or if the interconnection customer withdraws the project.

ISP and Fast Track Projects. All ISP and fast track interconnection requests must show site exclusivity at the time the interconnection request is initially submitted; there will be no option for the customer to submit a deposit in lieu of site exclusivity.

4.2 PROPOSED ANNUAL CLUSTER STUDY PROCESS

Under this draft final proposal, both LGIP and SGIP projects from the same queue cluster window will be combined into a single and unified cluster study process. The cluster study process will consist of a Phase I interconnection study and a Phase II interconnection study, which will be completed within approximately 420 calendar days, which includes 90 calendar days between the Phase I studies and Phase II studies to hold the Phase I interconnection study results meetings and allow time for interconnection customers to post required financial security. It should be noted that this is not significantly different from the current SGIP Tariff timelines which allows 266 business days (approximately 390 calendar days) from the start of the Feasibility Study to the completion Facilities studies. This proposal also provides an option for deliverability that is not available under the current SGIP Tariff. Finally, the current LGIP provision for accelerated Phase II studies will be retained.

4.2.1 PHASE I INTERCONNECTION STUDY

The ISO (with assistance from the participating transmission owner) shall conduct Phase I interconnection studies within approximately 134 calendar days. Within 30 days of completion of the Phase I study, a results meeting will be held among the ISO, participating transmission owner and interconnection customer.

The same Phase I interconnection study scope and cost allocation method currently defined in ISO LGIP Tariff⁵ will apply to the unified Phase I cluster study.

Table 2 – Proposed Annual Cluster Phase I Study Timeline

Line	Phase I Cluster Study	Typical Calendar Days	Timeline (Days)
1	ISO and PTOs develop initial generation groups for initial dispatch assumptions and cost allocation purposes (except for thermal overload and short circuit mitigation)	1	1
2	PTOs develop draft base cases, each representing	15	2-16

⁵ LGIP App Y Sections 6.1 through 6.7.1; see also Attachment A to Agreement for Allocation of Responsibilities with Regard to Large Generator Interconnection Procedures and Interconnection Study Agreements.

	all generation in the queue cluster and deliver to ISO		
3	PTO develops preferred and alternative if applicable, direct interconnection plans, including the need for an Interconnection Grid Substation (IGS).	15	2-16
4	PTO develops draft contingency lists	15	2-16
5	ISO reviews and approves base cases, Direct Interconnection Plans and merges them together, as needed. PTOs update off-peak base cases. ISO reviews and approves contingency lists. PTO needs time to consider ISO proposed changes.	5	17-21
6	ISO provides Deliverability Study results identifying constrained facilities, using summer peak and off-peak base cases and prepares results summary and may propose mitigation plans for PTO review.	15	22-36
7	At the ISO's direction, the PTO performs the off-peak Load Flow and summer peak and off peak Post Transient and Stability analyses and identifies mitigation solutions, as appropriate, and submits draft study results to ISO for review and direction.	15	22-36
8	PTO develops mitigation plans for summer peak and off-peak or supplements ISO proposed mitigation plans for consideration, as appropriate, and submits to ISO for review and direction.	15	37-51
9	ISO retests Deliverability study results with proposed delivery upgrades. PTO reviews and comments on retest results.	5	52-56
10	ISO develops shift factors for cost allocation purposes of all upgrades associated with mitigating thermal overloads.	5	57-61
Short Circuit Duty			

11	ISO to coordinate with other potentially affected facility owners. ⁶	n/a	n/a
12	ISO directs PTO to develop base case and run short circuit analysis.	10	57-66
13	PTO to perform facilities review (Note: possibly for feedback into the power flow and PTO mitigation plans).	10	67-76
14	PTO to prepare draft study results and submits to the ISO for review and direction.	3	77-79
Facility Cost Estimates and Schedules			
15	At the ISO's direction, PTO(s) to prepare cost estimates and schedules for the direct assignment facilities and network upgrades identified in the power flow, short circuit duty, post transient, and stability studies.	78	22-99
Final Report			
16	At the ISO's direction, PTO(s) prepares draft report for impacts in their service territory.	83	22-104
17	ISO compiles all results into a draft report that covers grid impacts, as appropriate. ISO reviews integrated draft report and submits comments, recommendations and direction to the PTO.	10	105-114
18	PTO incorporates ISO's directions, conclusions and recommendations. If ISO conclusions and recommendations conflict with PTO conclusions then ISO and PTO must coordinate to resolve conflicts. Any remaining conflicts must be noted in the final report.	10	115-124
19	PTO submits final draft report to the ISO. The ISO will finalize the report and tender the ISO approved report to the interconnection customer's.		
Final Study Report			

⁶ In accordance with the WECC Short Circuit Duty Procedure

20	ISO provides final approved report to ICs, PTO, and any applicable affected systems.	10	125-134
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4.2.2 PHASE II INTERCONNECTION STUDY

The ISO (with assistance by the participating transmission owner) shall conduct Phase II interconnection studies within approximately 196 calendar days. Within 30 days of completion of the Phase II study, a results meeting will be held among the ISO, participating transmission owner and interconnection customer.

The same Phase II interconnection study scope and cost allocation method currently defined in ISO LGIP Tariff will apply to the unified Phase II cluster study.⁷

Table 3 – Proposed Annual Cluster Phase II Study Timeline

Line	Standard Project Refinement and Facilities Study	Typical Calendar Days	Timeline (Days)
21	PTOs update base cases from Phase I Study line 5 to remove projects that have withdrawn.	10	1-10
22	ISO reviews and approves base cases.	5	11-15
23	ISO and PTOs update studies performed in Phase I lines 6-14 using base cases from line 22. The Category 2 transmission elements from the Revised Transmission Planning Process are considered to address future generation development potential, meet load serving capability, and economic benefit objectives, and phased development and option value of transmission projects to address uncertainty.	75	16-90

⁷ LGIP App Y Section 7; see also Attachment A to Agreement for Allocation of Responsibilities with Regard to Large Generator Interconnection Procedures and Interconnection Study Agreements.

23.1	Large network upgrades will be further evaluated within the Phase 2 transmission study process. The large network upgrades are either (a) consist of new transmission lines requiring new rights of way, are 200 kV or above, and have capital costs of \$50 million or greater, or (b) are 500 kV substation facilities that have capital costs of \$50 million or greater.		
24	PTOs develop draft off-peak and summer peak operating year base cases as appropriate where each case includes all generation in Phase II Study having the same operating date and deliver to ISO.	30	61-90
25	ISO reviews and approves cases from line 24.		
26	At the ISO's direction, the PTOs perform operational studies using cases from line 25 to determine Network Upgrade requirements for each study year and identify any special operational requirements to connect projects in the year of study.	30	91-120
27	At the ISO's direction, the PTOs perform additional operational studies to identify the optimal approach for building out the overall plan of service on a segmented (i.e. building block) basis acknowledging that portions of the overall plan of service may be staged in segments over time.	10	121-130
Final Plan of Service Report Including Facility Costs and Schedules			
28	At the ISO's direction, PTO(s) prepares draft plan of service report. At the ISO direction, PTO(s) to prepare detailed cost estimates and schedules for the direct assignment facilities and network upgrades identified in the overall plan of service and including individual segments.	75	91-165
29	ISO reviews draft plan of service report and submits comments, recommendations and direction to the PTO	10	166-175

30	PTO incorporates ISO directions, conclusions and recommendations. If ISO conclusions and recommendations conflict with PTO conclusions then ISO and PTO must coordinate to resolve conflicts. Any remaining conflicts must be noted in the final report.	21	176-196
31	PTO submits final draft report to the ISO. The ISO will finalize the report.		

4.2.3 ADDITIONAL CLUSTER WINDOW

In addition to the annual cluster study window, proposed for March 1-31 of each year, an additional cluster application window is proposed to be open from September 15 to October 15. This second window is proposed for the following two purposes:

4.2.3.1 *[The First Purpose]* To provide an additional opportunity for interconnection customers to submit a completed interconnection application (including submitting required deposits) and have a scoping meeting to receive feedback without waiting for the annual March window. This additional window was requested by a number of stakeholders. Interconnection requests submitted to this additional window will be processed and validated in accordance to ISO Tariff Appendix Y Section 3.5. The ISO will then establish a date agreeable to the interconnection customer and the applicable participating transmission owner(s) for the scoping meeting. The interconnection requests will be studied in the next annual cluster cycle.

4.2.3.2 *[The Second Purpose]* To create an opportunity for interconnection customer projects that meet certain criteria to waive the Phase I study and proceed directly to Phase II. These projects would be studied in the current study cycle's Phase II study together with other projects moving forward into Phase II study from Phase I study. To qualify for waiver of the Phase I study, the interconnection customer must meet and agree to all of the following criteria:

- The project size is less than or equal to 20 MW.
- The project will be studied as Energy Only in the Phase II study.
- The project demonstrates that the requested commercial operation date (COD) cannot be met if the project is studied in the next annual cluster.
- The project posts two (2) times the minimum security posting requirement for its size before the Phase II study starts.

There will be *no cost cap on network upgrades* for the projects for which the Phase I study is waived. These additional projects will be allocated with their share of the cost in accordance to the cost allocation methodology in the current LGIP tariff.

Again, this feature was added at the request of a number of stakeholders to allow smaller projects to move through the process faster to meet developer timelines.

4.2.4 COORDINATION WITH THE TRANSMISSION PLANNING PROCESS

As proposed in the ISO's recently filed revised Transmission Planning Process (TPP)⁸, beginning with the 2011/2012 transmission planning cycle, the ISO will coordinate the LGIP with the TPP by reviewing the most recent LGIP Phase 2 cluster study results and considering whether to reevaluate network upgrades identified in those results within the comprehensive planning context of the TPP.⁹ Reevaluation in the TPP may result in a cluster study network upgrade being left unchanged, modified, increased in capacity, or possibly even eliminated if the ISO finds that other, more cost-effective transmission elements would fully meet the requirements of the affected interconnection customers while also meeting other transmission needs.

Cluster study network upgrades that may be considered for potential modification in the TPP are ones that:

- Include a new transmission line at or above 200 kV and have capital cost of \$100 million or more; or
- Include a new 500 kV substation that has capital costs of \$100 million or more; or
- Have a capital cost of \$200 million or more.

In approximately June of each planning cycle, the ISO will publish the list of LGIP network upgrades that meet at least one of the above criteria and have been selected by the ISO for reevaluation in the TPP. Any LGIP network upgrades that either do not meet any of the above criteria or for another reason are not selected by the ISO for reevaluation in the TPP may proceed under the LGIP to develop the affected interconnection customer's large generator interconnection agreement (LGIA).

⁸ The ISO filed its revised transmission planning process proposal with the Federal Energy Regulatory Commission on June 4, 2010 and anticipates a ruling from the Commission in early August. The ISO's filing is available at <http://www.caiso.com/27ab/27abcca86d1f0.pdf>.

⁹ Coordination between the GIP and the TPP is specified in Section 4.6 of the draft BPM for the TPP (<http://www.caiso.com/27bf/27bfef5169f30.pdf>).

The results of reevaluation in the TPP of the selected network upgrades will be provided when the ISO posts its draft final comprehensive transmission plan, approximately in late January of the next year. (The comprehensive transmission plan will be presented to the ISO Board of Governors for approval in March and will become final at that point.) There are a few different outcomes that may result from reevaluation in the TPP.

- A network upgrade that is reevaluated in the TPP but not modified in that process may proceed under the LGIP to develop the affected interconnection customer's large generator interconnection agreement (LGIA).
- For a network upgrade that is reevaluated and modified in the TPP (for example, by increasing its capacity or adding additional equipment), the modified network upgrade will typically be included in the affected interconnection customer's LGIA.
- A network upgrade that is reevaluated in the TPP and found not to be needed, because an alternative transmission element has replaced it, will typically not be included in the affected interconnection customer's LGIA, and, instead, the TPP-identified alternative element will be included in the comprehensive transmission plan.

Several parties have asked how an interconnection customer's cost or credit posting responsibilities would be affected by the selection of any of its needed network upgrades for reevaluation in the TPP. In the ISO's June 4 filing of the revised TPP, the ISO acknowledged the importance of this question and explained to the Commission that it would be addressed in a more comprehensive consideration of LGIP issues to begin later this year. The ISO did state in the filing, however, that reevaluation with stakeholders of network upgrades in the TPP *would not increase* any interconnection customer's cost or credit posting responsibilities. The ISO recognizes that more complete policy on this question needs to be developed, but such policy is beyond the scope of the current initiative as well. The ISO will inform stakeholders as soon as it determines a timetable for dealing with this and other LGIP issues later this year.

A chart representing the timeline of the current LGIP and the revised GIP processes along with the revised TPP is provided as Attachment 1. This chart shows key information handoffs between the GIP and the TPP. All transmission projects and elements in the final comprehensive transmission plan resulting from the TPP (which will be posted in late January of each cycle) will be modeled in the base cases that are used to perform the Phase II GIP cluster studies. Then, by approximately late June, results of the Phase II GIP cluster studies will be provided as input to the next TPP cycle. At that time the ISO will select which of the Phase II GIP network upgrades will be further evaluated in phase 2 of the TPP, in accordance with the criteria stated above.

4.3 PROPOSED INDEPENDENT STUDY PROCESS (ISP)

Under the ISP track, the ISO/participating transmission owner will study interconnection requests eligible for ISP treatment independently, in a timely manner, to the extent warranted by Good Utility Practice. Interconnection customers submitting a new application may request to be evaluated for the ISP at any time during the year. The application fees for entering the ISP will be the same as for entering the cluster process.

4.3.1 CRITERIA FOR ISP ELIGIBILITY

Any Energy Only or Full Capacity interconnection request that meets the following criteria will be considered for the ISP:

4.3.1.1 Objective demonstration that the proposed annual cluster timeline will not accommodate the desired COD. This would require a determination that the desired COD is physically and commercially achievable. This would be accomplished by demonstrating at least two of the following:

4.3.1.1.1 The interconnection customer has obtained, or has demonstrated the ability to obtain, all regulatory approvals and permits needed to complete construction in time to meet the project's requested COD;

4.3.1.1.2 The interconnection customer is able to provide, or has demonstrated the ability to obtain, a purchase order for generating equipment specific to the proposed generating facility, or statement signed by an officer or authorized agent of the interconnection customer demonstrating that the Generating Facility has a commitment for the supply of its major generating equipment in time to meet the COD through a purchase agreement that interconnection customer is a party to;

4.3.1.1.3 The interconnection customer can provide reasonable evidence of adequate financing/financial resources to make the initial financial security posting within 30 days of issuance of final study report (SIS or FAS) identifying the cost responsibility of the customer for Reliability and/or Delivery Network Upgrades and to post the second financial security posting within 120 days of issuance of such final study report. This could include evidence that the project has obtained a Power Purchase Agreement.

And;

4.3.1.2 Customer demonstration of Site Exclusivity, and;

- 4.3.1.3 The proposed generation facility is electrically independent of cluster projects. The ISO and participating transmission owner concurrence is required when making such a determination. A method to determine generator independence is proposed in this section.

Extensions of the COD for ISP projects will not be granted except for circumstances out of the control of the interconnection customer. The interconnection customer will be required to pay for network upgrades according to the original Interconnection Agreement schedule.

As in the current LGIP, the ISO may apply to FERC for a waiver to independently study any project, at any phase, to meet an executive or legislative order or to meet a Public Utilities Commission (PUC)/California Energy Commission (CEC) mandated requirement that the generation facility be completed under a timeframe under which the existing cluster study timelines are determined inadequate.

4.3.2 SGIP FAST TRACK (<2MW)

The current SGIP Fast Track processes (for <2MW projects) set forth in SGIP Section 2 will be retained, except for screen #10 defined under Section 2.2.1.10 of the ISO Tariff¹⁰, which is recommended to be removed. It should be noted that, under this fast track process, it is possible to have a determination that the project may not be safely and reliably interconnected, in which case the project must be studied under a study process.¹¹

4.3.3 PROPOSED METHOD TO DETERMINE GENERATOR INDEPENDENCE

Whether a generator is electrically independent or not can be declared, in some cases, simply by inspection (engineering judgment). For example, a generator interconnecting on the same line as the existing cluster project is not electrically independent from that cluster project, while a generator tens of miles and several buses away from the nearest cluster project may be declared as electrically independent.

However, the above engineering judgment may not be so trivial, especially when large size generators are involved. A 500 MW generator, even though 100 miles away, may not be considered as electrically independent from the nearest cluster project, due to the possibility of significant impacts. Or, if more than one ISP project

¹⁰ Section 2.2.2.10 of the ISO Tariff states: "No construction of facilities by the participating transmission owner on its own system shall be required to accommodate the Small Generating Facility".

¹¹ See SGIP section 2.4.

enters the ISO queue in relatively the same geographical area, the lower queued project now must establish its independence not only from the on-going cluster projects but also from the higher queued ISP projects, in order to qualify for ISP. This may not be easy to resolve through engineering judgment.

Therefore, an objective method is necessary to apply on all generation projects that want to be studied under the Independent Study process. The ISO, after consulting with PG&E, SCE and SDG&E, has established the following high-level screening tests to determine whether or not a generation project passes the independence test:

- The project must pass both the tests referenced below in order to qualify for ISP. Failure in any one of the tests will disqualify the project for ISP.
- The tests are for screening purposes only. The available power flow and short circuit base cases that are being used for the ongoing cluster study will be used as starting base cases for these ISP tests.
- The successful project developers, depending upon their project location, may receive additional information from the ISO and the participating transmission owner about field realities such as transmission constraints, stability limitations and system protection issues. This additional information will be provided to help the project developer make a sound decision whether to pursue the ISP route or join the cluster process.

4.3.3.1 FLOW IMPACT TEST

- Identify a substation where the nearest (electrical distance) cluster project is connected, **or** a substation which is significantly impacted by cluster projects and is likely to get aggravated by the ISP project. If more than one ISP project has entered the ISO queue, then the ISO and the participating transmission owner may select more than one substation, as deemed necessary, for test purposes.
- If the incremental power flow on any line connected to the above substation(s) as a result of the ISP project is less than 5% of the generator size or line capacity whichever is lower, the project passes the test. Otherwise it fails. This test is applied on normal system, no contingencies.
- If the aggregate power flow on any line connected to the above substation(s) as a result of the ISP project and higher queued projects (ISP or cluster) is less than 5% of the line capacity, the project passes the test. Likewise, if the aggregate power flow on any line connected to the above substation(s) is greater than 5% of the line capacity but the incremental power flow as a result of the ISP project is less than 1% of

the line capacity, the project still passes the test. If the aggregate power flow on any line connected to the above substation(s) is greater than 5% and the incremental power flow as a result of the ISP project is greater than 1%, then the project fails the test. This test is applied on normal system, no contingencies.

4.3.3.2 SHORT CIRCUIT TEST

If the short circuit contribution from the ISP project at the substation(s) identified in (a) is less than 100 amperes, the project passes the test. Otherwise it fails.

4.3.4 ISP STUDY SCOPE

The ISP will include a System Impact Study (SIS) and a Facilities Study (FAS). The SIS will consist of a short circuit analysis, a stability analysis, a power flow analysis, an assessment of the potential magnitude of financial impacts, if any, on Local Furnishing Bonds¹² and a proposed resolution, and any other studies that are deemed necessary. The SIS shall state the assumptions upon which it is based, state the results of the analyses, and provide the requirement or potential impediments to providing the requested interconnection service, including a preliminary indication of the cost and length of time that would be necessary to correct any problems identified in those analyses and implement the interconnection. The SIS shall provide a list of facilities that are required as a result of the Interconnection Request and non-binding good faith estimates of cost responsibility and time to construct.

The FAS shall specify and estimate the cost, including, if applicable, the cost of remedial measures that address the financial impacts, if any, on Local Furnishing Bonds, of the equipment, engineering, procurement and construction work (including overheads) needed to implement the conclusions of the SIS. The FAS shall also identify (1) the electrical switching configuration of the equipment, including, without limitation, transformer, switchgear, meters, and other station equipment, (2) the nature and estimated cost of the participating transmission owner's Interconnection Facilities and upgrades necessary to accomplish the interconnection, and (3) an estimate of the time required to complete the construction and installation of such facilities or for effecting remedial measures that address the financial impacts, if any, on Local Furnishing Bonds.

¹² Local Furnishing Bonds affect the participating transmission owner, and so assessment of impact on these bonds is largely a matter for evaluation by the participating transmission owner.

The FAS may be waived if the SIS does not identify any Interconnection Facilities and Reliability Network Upgrades.

Full Capacity interconnection requests will have a Deliverability Assessment performed as part of the annual cluster studies. If the Deliverability Assessment identifies any Delivery Network Upgrades that are triggered by the interconnection request, the project will be responsible to pay its portion of the cost. Until the Deliverability Assessment is performed, the project will be considered as Interim-Energy Only.

4.3.5 ISP STUDY TIMELINE

The SIS shall be completed and the results transmitted to the interconnection customer within 90 Business Days after the SIS Agreement (SISA) is executed.

The FAS must be completed within 90 Business Days after the FAS Agreement (FASA) is executed in cases where network upgrades are required. In cases where no network upgrades are necessary and the required facilities are limited to Interconnection Facilities only, the FAS must be completed within 60 Business Days after FASA is executed.

4.4 PROPOSED DELIVERABILITY ASSESSMENTS

The existing SGIP require small projects of 20 MW or less to go through the LGIP if the interconnection customer wants the project to be deliverable, by obtaining Full Capacity. Many projects (both projects that were previously studied for interconnection and have achieved COD and those that are currently in-process under the SGIP) want to be deliverable for Resource Adequacy (RA) counting purposes, but for a variety of reasons have settled for Energy Only through the SGIP. Some projects such as small projects connecting under a participating transmission owner's wholesale distribution access tariff (WDAT) currently do not have a choice to obtain Full Capacity. This draft final proposal provides that, going forward, ISO and WDAT interconnection projects within the typical SGIP size (20 MW or less) will be able to request and obtain Full Capacity without having to be subject to the current LGIP time frame and cost structure. The straw proposal did not address the need for a process to allow previously studied and in-process SGIP projects, and small WDAT projects, and previously studied LGIP Energy Only projects to become deliverable.

4.4.1 STAKEHOLDER DISCUSSION LEADING TO DRAFT FINAL PROPOSAL.

The May 26, 2010 Straw Proposal discussed two basic options for allowing these Energy Only projects to become deliverable:

- Option 1 would perform an annual assessment to allocate available transmission to Energy Only generation for purposes of converting them to Full Capacity if possible without any additional network upgrades. Once a generator received Full Capacity status under Option 1 it would retain that status in a manner consistent with all other Full Capacity generation.

- Option 2 would allow Energy Only generation to request to be converted to Full Capacity using the interconnection study processes. Under this approach the conversion request would be submitted within a cluster window and studied to determine the required network upgrades to make it fully deliverable, and the converting generator would then face the appropriate upgrade cost responsibilities comparable to a new interconnection.

In the May 26, 2010 Straw Proposal the ISO recommended Option 1 because this option would not create a requirement for network upgrades and therefore appears to have no adverse impacts on transmission ratepayers. Transmission upgrades would only be built if the ISO determined through the TPP that transmission ratepayers would benefit sufficiently, for example from reduced congestion costs and increased supply of generation capacity¹³. For this reason, Option 1 is more integrated with the ISO's TPP than Option 2, i.e., any upgrades needed to convert Energy Only generation to Full Capacity would be evaluated with the TPP process. Because Option 1 is the most integrated with the TPP process, it is the simplest solution for the ISO to implement.

An additional point in favor of Option 1 is that, most WDAT generation projects¹⁴, and other generation developed in the ISO balancing authority area but not connecting to the ISO controlled grid do not currently have a process for being tested for deliverability to the aggregate of ISO load. All of this generation can be referred to as Energy Only generation in the ISO Balancing Authority Area (BAA) along with LGIP Energy Only generation. The ISO does not have control of the processes for interconnecting many of these projects, and therefore cannot assign costs to these projects for delivery upgrades, so the only way to allow them to have any deliverability might be through an Option 1 approach based on available transmission capacity. Therefore assessing the deliverability of these projects within the TPP may be the only option.

Some stakeholders have asked; if the ISO should determine that an Energy Only generating facility is not fully deliverable, but it is possible that part of the Energy Only generation output would be deliverable under the study conditions, then would the ISO be willing to make a determination that the generation facility is partially deliverable and allow part of the facility to count towards resource adequacy?

¹³ Generation developers with Energy Only generation can also build transmission facilities necessary to convert their generation to Full Capacity under the merchant transmission provisions of the ISO tariff, and then obtain CRRs for the network capacity added to the ISO system by that at transmission.

¹⁴ WDAT projects greater than 20 MW in the SCE system do have the option to obtain Full Capacity status because SCE has coordinated the study timelines and cost structures for these projects with the ISO's LGIP.

The ISO provided the following response to a related question on the topic of partial deliverability for new generation interconnection applications. The implications for studying partial deliverability are complex, and the current analytical tools do not provide a commensurate level of precision implied by a determination of partial deliverability, because a deliverability analysis for a cluster of newly proposed projects is overlaid upon an analysis of existing and previously studied generators. The deliverability analysis needs to address many data components which are dynamic (such as fluctuations in the dependable capacity of existing generators, and the evolution of the transmission and generation facilities planned to be added or removed from the system). The deliverability study process is designed to produce consistent and repeatable results, and it does as long as the objective is to test the deliverability of a single output level for each interconnection request. If this output level is not deliverable, then specific transmission upgrades are identified to ensure the full deliverability of the generation projects in the study. Because transmission facility upgrades come in discrete sizes, there is certain amount of tolerance for fluctuations in the study results, and most changes to the grid model that occur from one study to the next will not change the study results enough to change the deliverability status of the generation project. However, if the process is expected to produce precise intermediate deliverability levels for each generation project, then the tolerance for fluctuations is eliminated and almost any change to the grid model that occurs from one study to the next will change the intermediate deliverability level of every generation project. This increased complexity impedes the queue process.

As explained in that earlier response, providing precise partial deliverability levels is problematic. However, the ISO recognizes that, for some large generation projects, it may be feasible to establish partial deliverability levels. As such, the ISO proposes that partial deliverability levels could be established in 50 to 100 MW increments. In other words, under a particular set of deliverability study conditions, once a generating facility is found to be partially deliverable, the facility's partial deliverability could be established by rounding down to the nearest 50 to 100 MW increment. Furthermore, allocating partial deliverability levels is a straightforward matter only when transmission upgrades are not under consideration. This is because not all generation projects within a cluster responsible for those upgrades may agree to be fully deliverable or partially deliverable which makes it problematic when selecting the transmission upgrade plan. Therefore, partial deliverability would not be a practical feature to include with Option 2, but it may be feasible to include with Option 1.

In response to the May 26, 2010 Straw Proposal, some stakeholders supported Option 1, some supported Option 2 and some supported both Option 1 and Option 2. There were also many comments that deliverability should only be allocated to generators or purchasing LSEs that formally request deliverability. Stakeholders expressed the need to be able to guarantee their deliverability at any time in the future for changing business reasons or if the deliverability is degraded due to

changing system conditions. Stakeholders also argued that LSE procurement processes would ensure transmission ratepayers would not be adversely impacted by the costs of exorbitant transmission upgrades associated with inefficiently located resource development, presumably because inefficiently located resources would not seek interconnection absent a bilateral contract with an LSE. Stakeholders also requested specific details on implementation of Option 1 and Option 2.

The ISO acknowledges that SGIP customers being processed through a WDAT process did not have the option to choose Full Capacity, and that LSE procurement rules have recently changed such that Full Capacity is a critical attribute in the selection process. Therefore, to address these issues the ISO agrees that going forward, all WDAT customers should be given the option to choose Full Capacity. In addition, there should be an ongoing opportunity for Energy Only generation to obtain some deliverability based on existing available transmission capacity, and a one-time option for previously processed Energy Only generation to obtain Full Capacity in a manner similar to generation entering the interconnection process for the first time. Based on these considerations the ISO now proposes a hybrid option referred to as Option 3.

4.4.2 ISO DELIVERABILITY PROPOSAL - OPTION 3:

- 1) A one-time option during the cluster 4 study process¹⁵ for previously processed LGIP and SGIP under WDAT, LGIP Energy Only, and SGIP generation to obtain Full Capacity in a manner similar to generation entering the interconnection process for the first time. Study deposits would be the same as for projects entering the interconnection process for the first time, but with any prior study deposits the generator paid for currently studied projects would be credited towards the new study. Energy Only projects would need to choose between proceeding as an Energy Only project in the serial group or transition cluster as described in the transition plan (Section 5) or to be transferred into Cluster 4 as a Full Capacity project.
- 2) An annual opportunity for previously processed LGIP and SGIP under WDAT, LGIP Energy Only, SGIP and other Energy Only generation located in the ISO control area to request and obtain Full Capacity using available transmission.

¹⁵ The Cluster 4, Phase I study cycle is expected to be completed in October 2011 and will provide interconnection customers requesting Full Capacity interconnection through Option 3, item (a) with deliverability study results and a funding cost cap. Performing this analysis earlier such as within the Cluster 1 and 2, phase II study would essentially invalidate the Cluster 1 and 2 phase I study results. The network upgrades and associated costs resulting from the phase I study were obtained based on the assumption that only Cluster 1 and 2 resources would connect, and would be insufficient if more resources were added.

Generation greater than 50 MW denied Full Capacity may be allocated partial capacity (aka partial deliverability) status using available transmission.

- 3) Generation projects that want to participate in the annual item (2) process will submit an application along with a flat \$10,000 study fee. Applications would be accepted during the annual interconnection request window starting with the Cluster 5 window beginning around March 2012.
- 4) Generation obtaining deliverability status through item (2) would have a lower deliverability priority in the unexpected circumstance requiring reductions in deliverability (see discussion below).
- 5) For generation assessed through item (2) that were denied Full Capacity, conceptual transmission congestion mitigation plans would be identified and considered in the ISO comprehensive transmission planning process.

4.4.2.1 Discussion for Option 3

The ISO does not agree that we can only rely on LSE procurement processes to protect transmission ratepayers from being subjected to excessive transmission costs that are clearly not justifiable. It would still be possible for a generation project to be developed as an Energy Only generation project and agree to a lower energy price in their contract with the LSE. Then later on they could request Full Capacity in order to sell their capacity for RA. In this hypothetical scenario under the open-ended conversion provision of Option 2 there would be no way to ensure that transmission costs necessary to allow Full Capacity would not be excessive and no way to prevent ratepayers from having to bear those costs. The safest way to protect against this risk would be to choose the Option 1 approach. At the same time, the ISO agrees with stakeholder comments that there is currently a large amount of renewable generation processed under the current tariff with its limitations described above regarding which project may choose Full Capacity. Without a one-time opportunity for these resources to elect to change their status to Full Capacity, their only alternative may be to withdraw from the ISO queue and be processed under the proposed new GIP rules. However, a large amount of renewable projects withdrawing and reentering the queue could delay progress towards meeting the 33% RPS goal, so the ISO proposes a one-time option for previously processed Energy Only generation to obtain Full Capacity in a manner similar to generation entering the interconnection process for the first time. This would occur through the cluster 4 study process, and would require the applicant to take on the same cost and credit posting responsibilities as a new interconnection customer entering the queue. Going forward, all WDAT projects should have the opportunity to elect and obtain Full Capacity when they initially interconnect, so there should not be a significant need in the future to restudy previously studied projects to provide them with Full Capacity.

4.4.2.2 Further Discussion on Implementation Details of Option 3

Some stakeholders commented that previously studied Energy Only projects should be able to be restudied to obtain Full Capacity with reduced study deposits and they

should be able to change their status from Energy Only to Full Capacity between the Phase 1 and Phase 2 studies. The ISO does not support this approach. Delivery upgrades needed for Full Capacity comprise the vast majority of transmission costs and long lead-time transmission projects. Lowering the threshold for previously studied generation projects to enter the study process for Full Capacity could result in the same problems that recent changes to the ISO process were designed to prevent. As such, generation projects electing to take advantage of the proposed one-time option to be restudied for Full Capacity should be treated similarly to generation projects being studied for the first time. However, it is not expected that these restudied projects would be assigned any reliability upgrade costs due to the fact that the transmission requirements for connecting them as Energy Only have already been addressed. Regarding changing from Energy Only to Full Capacity between Phase I and II, this would essentially invalidate the Phase I cluster study results. The network upgrades and associated costs resulting from the Phase I study were obtained based on the assumption that these resources would connect as Energy Only, and would be insufficient with some of these resources changing their status to Full Capacity.

Some stakeholders also requested more details on which Energy Only generation would be allocated Full Capacity based on available, planned transmission system capacity.¹⁶ The ISO accepts the stakeholder recommendation that only Energy Only generation for which the owner or LSE buyer has explicitly requested to be converted to Full Capacity should be eligible to be converted to Full Capacity. It is envisioned that these requests would be accepted during the same time period as the annual cluster study interconnection request window. Then, after allocating planned system transmission capability for purposes of obtaining Full Capacity to generation projects requesting Full Capacity in the Phase 2 study, additional studies would be performed to allocate planned transmission system capability to Energy Only generation projects requesting Full Capacity, if available. The allocation would be as follows.

- If the scope of work for previously planned transmission projects has been changed or if the transmission project was canceled due to construction or permitting issues, then some previously converted Energy Only generation would need to be reassessed. These projects would be reallocated Full Capacity first based on the revised planned transmission system.
- After the allocations are updated in item 1, then allocations would be given to generation projects based on the lowest power transfer distribution factors

¹⁶ It is important to understand that for assessing whether Energy Only generators can be awarded available transmission capacity for deliverability, the ISO can assume only existing transmission and new transmission that has been approved either by being an approved element of an ISO transmission plan or as an element of a signed LGIA.

calculated according to ISO deliverability study procedures in order to maximize the MW of NQC to be allocated. For example, generation project G1 with 100 MW of dependable capacity and a 10% distribution factor would be assigned an NQC of 100 MW; generation project G2 with 100 MW of dependable capacity and a 20% distribution factor would be allocated a partial deliverability NQC of 60 MW; generation project G3 with 100 MW of dependable capacity and a 30% distribution factor would be assigned an NQC of 0 MW. Contracting and then permitting progress would be used as a tie breaker when distribution factors are the same.

- Some stakeholders were also concerned that allocation of available planned transmission for purposes of granting Full Capacity status would increase the possibility that existing generation projects could have their Net Qualified Capacity (NQC) reduced due to future unforeseen degradation of the transmission system. In addition, they argued that generation projects that may have financed transmission upgrades with a five-year refund to obtain their Full Capacity should be given priority over generation projects that were allocated transmission capacity to achieve Full Capacity outside of the interconnection procedures (i.e., through the annual available capacity allocation). The ISO accepts this concern. Although it is unlikely that there will be a need to reduce the NQC of existing Full Capacity generation, if it occurs, then generation that was given Full Capacity outside of the interconnection procedures should be subject to reductions in NQC before reducing NQC of other generation. The ISO envisions adding information to its NQC list to distinguish between two types of Full Capacity generation.

4.5 PROPOSED DATA AVAILABILITY

According to ISO LGIP Tariff Appendix Y, Section 2.3, for each Interconnection Study Cycle, the CAISO, in coordination with applicable participating transmission owner(s), shall publish updated Interconnection Base Case Data, including, as applicable, separate Interconnection Base Case Data for each Group Study to reflect system conditions particular to the Group Study, to a secured section of the CAISO Website: (1) prior to the Phase I Interconnection Study with the Generation reflected in valid Interconnection Requests submitted in the Queue Cluster Window for the Interconnection Study Cycle; (2) after the Phase I Interconnection Study with the Generation reflected in valid Interconnection Requests submitted in the Queue Cluster Window for the Interconnection Study Cycle, and the identified preliminary transmission upgrades or additions, (3) prior to the Phase II Interconnection Study, including all remaining Generation from the Phase I Interconnection Study for the Interconnection Study Cycle; and (4) after the Phase II Interconnection Study, including all remaining Generation from the applicable Phase I Interconnection Study and the identified transmission upgrades and additions for the Interconnection Study Cycle. Interconnection Base Case Data shall not include information subject to the confidentiality provisions in LGIP Section 13.1. The CAISO shall require current and former Interconnection Customers, Market Participants, and electric utility regulatory

agencies within California to sign a CAISO confidentiality agreement and, where the current or former Interconnection Customer or Market Participant is not a member of WECC, or its successor, an appropriate form of agreement with WECC, or its successor, as necessary. All other entities or persons seeking Interconnection Base Case Data must satisfy the foregoing requirements as well all requirements under 18 C.F.R. Section 388.113 for obtaining the release of Critical Energy Infrastructure Information (as that term is defined by FERC).

4.6 INTERCONNECTION FINANCIAL SECURITY POSTINGS

4.6.1 AMOUNT AND TIMING OF POSTINGS FOR PROJECTS UNDER INDEPENDENT STUDY PROCESS

For projects studied under the independent study process, there will be different timing for the first and second postings, while the financial security posting amounts shall be based on the same screens that are used for projects studied under the cluster process. Since the interconnection customer's project analysis is not part of Phase I or Phase II interconnection studies, the interconnection customer's financial postings shall be based on the cost responsibility for the project Reliability Network Upgrades and Delivery Network Upgrades identified in the System Impact Study and the Facility Study.

The posting times shall be as follows: The first financial security posting shall be made within 30 days of the issuance of the final System Impact study report and the second security posting shall be made within 120 days of the issuance of the final Facility study report.

4.6.2 TIMING OF POSTINGS FOR CLUSTER PROJECTS; ADVANCED SECURITY POSTING STRUCTURE IS MAINTAINED.

In general, the same financial security postings of the current LGIP cluster study process are maintained¹⁷. Because the prior-SGIP projects and the prior-LGIP projects will generally be studied together in the same clusters, for cluster projects, the number of postings and the timing for the postings will be a carry-over of the LGIP. The timing of the first security posting requirement is due 90 days after the publication of the final Phase I study report.

4.6.3 POSTING AMOUNTS FOR CLUSTER PROJECTS; STAKEHOLDER DISCUSSION PRECEDING THE FINAL DRAFT PROPOSAL.

There was little significant discussion in the stakeholder process regarding the *timing* for the security postings. Rather, the primary focus of discussion has pertained to the posting *amounts*. In particular, parties have expressed a concern that the \$500,000 minimum posting amounts for the network upgrades under the LGIP process may be too steep for certain smaller projects. This expressed concern has been primarily related to small business entities that sponsor projects

¹⁷ See generally, LGIP (App Y) Section 9.

that have typically been treated under the SGIP process—namely Energy Only projects that are 20MW or less. The financial security posting amounts (also commonly called *deposits* or *security deposits* in discussions) were generally discussed in tandem with the amounts for study deposit fees.

In the written straw proposal, the same amounts LGIP posting amounts were proposed. Some stakeholders suggested taking a volumetric approach, dependent on such things as the amount of MW and whether the project was seeking Full Capacity or Energy Only—in particular, this suggestion came from the some solar and wind interests. Parties had a breakout discussion in a July 6 conference call which was one of the series of topic breakout discussions conducted before the July 8 working group meeting.

The LGIP initial security posting provision already has a volumetric element based on \$20,000 per MW as one of the screens. In the July 8 working group meeting, one member of the ISO team posed for discussion making the following adjustment to the initial posting for projects under 20 MW to fold them into the LGIP structure: keep the first two screens [i) 15% of network upgrades; or ii) \$20,000 per MW], and reduce the “but in no event less than” amount [which is \$500,000 in LGIP]. The ISO team member also proposed placing a dollar cap on the second posting (the 30% posting) for small projects and lowering the minimum amount. Discussions about these proposals touched upon impacts to the customer-applicant, other customers with pending requests and the participating transmission owners, covering the topics of carrying costs for project developers and the risk to finalized plans of service if customer postings did not provide enough “skin in the game” for them to continue on in the late stages of an interconnection cluster.

4.6.4 FINAL PROPOSAL STRUCTURE.

This structure for financial security postings are described below and shown in the Table 4.

The Initial Financial Posting. As indicated in the Table 4, there are modified financial posting amounts for SGIP-sized projects (projects size 20 MW or less), for the network upgrades. For these upgrades, the posting amount is the lesser of i) 15% of the cost responsibility in the Phase I study; or ii) \$20,000 per MW. This provides a proportional (% of total costs) and volumetric approach (\$ per MW), and an inherent built in cap of \$400,000. Finally, for SGIP-sized projects the minimum posting level for network upgrades (*i.e.* the “no less than” amount) has been reduced from \$500,000 to \$50,000. For participating transmission owner’s interconnection facilities, the 20% of cost responsibility has been carried over from LGIP.

Second Financial Posting. For SGIP-sized projects, the network upgrade posting amount is modified to include a \$1 million cap, so that the amount is the lesser of 30% of the network upgrade cost responsibility assigned to the customer in the lower of the Phase I or Phase II study cost estimates, or \$1 million. The minimum posting level for SGIP-sized project’s network upgrades

(i.e. the “no less than” amount) has been reduced from \$500,000 to \$100,000. For the participating transmission owner’s Interconnection Facilities, the 30% cost responsibility has been carried over from the LGIP.

For LGIP-sized projects, this draft final proposal includes a provision to cap the 30% posting amount at \$25 million. There was some discussion in the July 6, 2010 breakout telephone discussion on financial security postings and the July 8, 2010 working group session about a proposal raised by a stakeholder to address issues relating to the 30% posting requirement which are coming into focus as the LGIP transition cluster, which is the first cluster processed under the ISO’s cluster LGIP, moves closer to that posting requirement. The LGIP transition cluster second posting requirements are expected to come due in January or February of 2011. The issue of the 30% posting as applied to the transition cluster is the subject of an ISO waiver petition request filed with FERC on June 30, 2010.¹⁸ The argument has been raised that conditions of regulatory uncertainty referenced in ISO’s request for tariff waiver for up front funded projects also support giving partial relief from the 30% posting to other customers in the transition cluster, and that the issues for these customers will not be timely and adequately addressed if the ISO defers consideration of the issue to ISO’s later LGIP stakeholder process which does not begin until early 2011. The impact of the 30% posting requirement is arising in both the tariff waiver request proceeding and this stakeholder process because the subject matter of the interconnection process financial postings and interested parties overlaps. Accordingly, because the ISO anticipates including a proposed \$25 million cap to the 30% posting for all customers in the LGIP transition cluster, the ISO includes the provision here.

¹⁸ FERC Docket No. ER10-1656-000. The waiver request pertains to projects for which a participating transmission owner has agreed to fund certain network upgrades in place of the interconnection customer; the basis for the request is the immediate need to promote California’s 33% RPS initiative, and in particular, those projects targeted for American Recovery & Reinvestment Act of 2009 (ARRA) stimulus cash grants under Section 1603; these grants require customers to start construction on the plant by December 31, 2010.

Table 4 – Proposed Financial Postings

Project Size	First Posting	Second Posting	Third Posting
20 MW or less	<p><i>Network Upgrades</i></p> <p>Lesser of</p> <ul style="list-style-type: none"> • 15% • \$20,000 per MW <p>(but in no event, less than \$50,000)</p> <p><i>PTO Interconnection Facilities—20%</i></p>	<p><i>Network Upgrades</i></p> <p>Lesser of</p> <ul style="list-style-type: none"> • \$1 million • 30% of lower of Phase I or Phase II (but in no event less than \$100,000) <p><i>PTO Interconnection Facilities—30%</i></p>	100%
Greater than 20MW	carryover of current LGIP	<p><i>Network Upgrades</i></p> <p>Lesser of</p> <ul style="list-style-type: none"> • \$25 million** • 30% of lower of Phase I or Phase II (but in no event less than \$500,000) <p>**New</p> <p><i>PTO Interconnection Facilities—30%</i></p>	100%

5 PROPOSED TRANSITION PLAN

5.1 TRANSITION OF LGIP PROJECTS

LGIP interconnection requests (IRs) received during the current LGIP Cluster 3 window that opened on April 1, 2010 and closes on July 31, 2010 will complete the Phase I interconnection studies under the current LGIP process and timeline. The current LGIP Cluster 4 window scheduled to open on October 1, 2010 will be suspended. The first window for IRs under the revised process will be Cluster 4 and will open on March 1, 2011 for all projects regardless of size and will be one month in duration. Requests received during the Cluster 4 window will be studied together in Phase I studies. Following completion of their respective Phase I interconnection studies, Cluster 3 and Cluster 4 projects that demonstrate their desire to continue by posting their financial security will be studied together in Phase II studies under the revised process and timeline. This proposed Cluster 3 and 4 Phase II study completion date of August 1, 2012, is four months ahead of the scheduled completion date under the current LGIP timelines.

5.2 TRANSITION OF SGIP PROJECTS

5.2.1 STAKEHOLDER DISCUSSION

The transition plan was developed by the transition plan working group team, one the stakeholder working groups that developed to work through the issues of SGIP reform process. During the transition plan team's discussions, determining what date would be the cutoff date to apply the new GIP process—which means, conversely, the operative date for which some projects would be “grandfathered” under the existing SGIP process and studied as a -- the serial group received the greatest amount of debate. On this issue, the Participating TOs and the ISO believe it is in the best interests of the process, and in the best interests of the current SGIP and LGIP interconnection customers, to have the number of projects that remain in the serial process be as few as possible. Limiting the size of the serial group will allow those serial projects to be completed in a timely manner and so that transition does not become long, drawn-out process that continues to cause problems for the cluster study process. In contrast, a number of interconnection customers stress that it is of greater benefit for the generators in process to remaining in the serial process and want to make the criteria for remaining in the serial process as lenient as possible. In order to balance these two competing concerns, criteria was developed to allow those projects that have proceeded through the SGIP process to the point of having either a System Impact or Facilities Study agreement executed by a specified date to remain in the serial process.

5.2.2 ISO PROPOSED CUT OFF DATE FOR THE SGIP SERIAL GROUP

The ISO proposes to that any project that has received and returned to the ISO a signed and executed System Impact Study or Facilities study agreement by July

30, 2010 the option of remaining in the serial process. While remaining in the serial process provides the possibility for a serial project to have its study completed prior to the proposed SGIP Transition Cluster study completion date of July 31, 2011, there is no guarantee that this will occur, especially depending on the number of projects that remain in the serial process. If the number of projects that remain in the serial process is too large, it is likely that a significant number of projects will have their studies completed after the SGIP Transition Cluster Phase II study completion date of July 31, 2011. The ongoing nature of the LGIP serial process after the GIPR was completed is evidence how difficult it can be to study and move serial projects through the serial process. Currently the LGIP Transition Cluster Phase II studies are being released and there are still a number of LGIP serial projects in the study process.

5.2.3 ISO PROPOSED TRANSITION PROCESS FOR SGIP PROJECTS IS AS FOLLOWS:

- Hold date after which requests will be studied under new GIP. The current process of accepting SGIP IRs would be suspended October 1, 2010 and IRs received after September 30, 2010 will be studied under the revised GIP process in Cluster 4.
- Grandfathered requests to be studied serially under current process. SGIP IRs received prior to October 1, 2010 that want to continue as Energy Only may choose to stay in the current SGIP serial process if the projects that have a signed System Impact or Facilities Study agreement no later than July 30, 2010. This does not guarantee that these projects will have their study's completed within the timeline of the agreements, rather is used for criterion purposes only.
- Serial Study Transition Cluster--Projects to be studied in a one-time SGIP cluster to be coordinated with the pending LGIP Phase II study-cycle. For interconnection requests received through September 30, 2010 that do not qualify for remaining in the serial process, or that opt out of the serial process, and want to continue as Energy Only will be studied in a SGIP Energy Only cluster during 2011. This one-time SGIP Transition Cluster ("SGIP TC") will be studied in coordination with LGIP Cluster 1 and Cluster 2 Phase II study process, scheduled to begin January 1, 2011, with a completion date of July 31, 2011.

Table 5 - Transition Plan Study Options

SGIP Projects	Study options if interconnection customer desires Energy Only interconnection	Study options if interconnection customer desire Full Capacity interconnection
Projects with a signed and returned System Impact Study agreement by July 30, 2010	<ul style="list-style-type: none"> • SGIP Serial Projects • SGIP Transition Cluster • GIP Cluster 4 	GIP Cluster 4
Projects that applied prior to October 1, 2010, but do not have a signed SIS or Facilities study agreement by July 30, 2010	<ul style="list-style-type: none"> • SGIP Transition Cluster • GIP Cluster 4 	GIP Cluster 4
Projects that apply after September 30, 2010	GIP Cluster 4	GIP Cluster 4

As stated earlier, all SGIP projects must increase their current study deposit to the amount to continue in the interconnection process, otherwise will be deemed withdrawn.

- Base fee of \$50,000 plus,
- \$1,000 per MW of project capacity

(Net of study deposit already paid by the interconnection customer)

If an SGIP project desires to switch to Full Capacity it may notify the ISO in writing of its intent and request to be studied as part of the Cluster 4 study process provided that the study deposit amount stipulated above is provided to the ISO during the Cluster 4 open window. The total deposit amount will be required without any netting out of study costs already paid by the interconnection customer since this will initiate a new study process and previous study results will be invalid. As an alternative option the project could opt to be evaluated under the deliverability assessment option as described in Section 4.4.

The current process of accepting SGIP IRs would be suspended October 1, 2010 and IRs received after September 30, 2010 will be studied under the revised GIP process.

5.3 TRANSITION CLUSTER STUDY PROPOSAL

The SGIP Transition Cluster will be studied with the LGIP Cluster 1 and Cluster 2 Phase II studies as detailed in Section 4.2.2. These projects will be modeled and studied as Energy Only. At the end of the study, each project will receive a Phase II study report with their share of cost allocations for network upgrades. If the interconnection customer decides to continue, the interconnection customer must sign and execute an interconnection agreement within 90 days of receiving the final report and post and required financial security as described in Section 4.6 above within 180 days after receiving the final report. For the SGIP projects that opt to be studied in the Transition Cluster only, there will not be any forfeited study deposits upon withdraw due to the fact that only one study will be completed. As always, the interconnection customer will be required to pay actual study costs, even if they amount to more than the original study deposits.

6 STAKEHOLDER PROCESS SCHEDULE

This section discusses the ISO's schedule to prepare generation interconnection procedures that meet the needs of stakeholders.

Date	Event
April 1	Issues Paper posted to ISO website http://www.caiso.com/276b/276bd173481d0.pdf
April 12	Stakeholder meeting to discuss Issues Paper
April 19	Written stakeholder comments due on Issues Paper http://www.caiso.com/275e/275ed48c685e0.html
April 29	Working Group meeting #1
May 14	Working Group meeting #2
May 26	Straw Proposal posted to ISO website http://www.caiso.com/27a2/27a2f34fa360.pdf
June 3	Stakeholder meeting to discuss Straw Proposal
June 15	Written stakeholder comments due on Straw Proposal http://www.caiso.com/275e/275ed48c685e0.html
June 25	Working Group meeting #3

July 8	Working Group meeting #4
July 20	Draft final proposal posted to ISO website
July 27	Stakeholder meeting to discuss draft final proposal
Aug 3	Written stakeholder comments due on draft final proposal
Week s of August 2 & Aug 9	Additional stakeholder engagement if necessary
Aug 13	Stakeholder Process Complete
Sep 9-10	Board of Governors meeting – approval of modified GIP requested
Week of Sep 13	Draft tariff language posted
Week of Sep 20	Written stakeholder comments on draft tariff language due
Week of Sept 27	Stakeholder meeting to discuss draft tariff language
Week of Oct 12	Tariff language filed at FERC
Week of Dec 20	Anticipated FERC Order Issued

7 NEXT STEPS

The ISO requests that stakeholders provide written feedback on this draft final proposal to the ISO. For convenience, a template will be created for stakeholders to submit written comments to the ISO. The template can be found on the ISO website <http://www.caiso.com/275e/275ed48c685e0.html> after the meeting on July 27, 2010. Written comments should be submitted to the ISO by e-mail, using the template, no later than August 3, 2010, sent to dkirrene@caiso.com. Comments received by the ISO will be posted to the ISO website <http://www.caiso.com/275e/275ed48c685e0.html> and considered in connection with further activities for the SGIP modification initiative.

8 ADDITIONAL ISSUES

There are a number of additional issues that have been raised through this stakeholder process that will not be able to be addressed in this process without jeopardizing the ability of accomplishing the issues address in this paper in the timeframe outlined in

above. Nonetheless, the ISO recognizes the need to address these issues in a future stakeholder process. Some of these additional issues are listed below.

- Repayment of amounts paid by interconnection customers for network upgrades in circumstances where a customer has phased the generating facility. Under LGIP Section 12.3.2, repayment does not commence until all phases of a phased generating facility are completed. Some stakeholders have asked for a re-visitation of this 2008 LGIP design principle
- Feasibility study/preliminary scoping meetings. Some stakeholders, particularly small business entity interconnection customers have expressed that certain information from the ISO and/or participating transmission owners should be available to generator developers in advance of submitting an interconnection request, or greater communication opportunities should be available.
- Enhanced data availability. Some stakeholders have indicated that there should be more access to current and/or updated queue or base case information. These have included requests that ISO provide information such as additional data/maps/meeting minutes/study availability.
- Re-visitation financial security required if the participating transmission provides upfront funding. Many stakeholders have indicated that there should be further process regarding the interplay of participating transmission owner up front funding of network upgrades and interconnection customer cost responsibility for financial security postings.
- Per-unit costs; cost-allocation methodology. Some interconnection customers have stated that the per-unit cost estimates and cost-estimation provided by participating transmission owners under the cluster process results in overstatement of costs and that there should be further exploration of cost methodology and estimation.
- Interconnection of energy storage devices (flywheels, batteries...). Some stakeholders have indicated that interconnection processes should be updated include interconnection of non-traditional generation assets, such as battery storage, flywheel technology and similar items.

Attachment 1

Straw Proposal: Timeline for GIP in Coordination with RTPP

