



California ISO
Your Link to Power

Generator Interconnection Procedures

Straw Proposal

*Prepared for
Small Generator Interconnection Procedures Stakeholder
Initiative*

May 26, 2010

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1. Introduction

The small generator interconnection procedures (SGIP) contained in CAISO Tariff Appendix S set forth the requirements for interconnecting generating facilities no larger than 20 MW to the California ISO controlled grid¹. 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. The SGIP is simpler than the large generator interconnection procedures (LGIP) and includes a Fast Track interconnection process for generators of 2MW or less. The ISO's SGIP utilizes a serial study approach where studies are done one at a time, in the order the applications are received and reviewed for completeness.² The overall study process includes the following five steps to facilitate interconnection to the ISO controlled grid. (1) interconnection customer submission of interconnection application, (2) conducting the feasibility study, (3) conducting the system impact study, (4) conducting the facilities study, and (5) completion and execution of the small generator interconnection agreement (SGIA).³

The ISO recently experienced a significant increase in the number of small generation projects seeking interconnection to the ISO controlled grid. The large volume exacerbated problems inherently associated with processing a large number of requests serially, and also revealed areas of the ISO's SGIP process that need improvement. To accomplish improvements to the SGIP, the ISO initiated a stakeholder process to obtain interested party participation to evaluate and consider SGIP modifications.

This straw proposal is the ISO's first attempt to resolve issues identified in the previously issued Issues Paper, dated April 1, 2010 and subsequently discussed during a stakeholder meeting held April 12, 2010. In an effort to more thoroughly involve stakeholders, the ISO formed a working group of interested stakeholders who participated in conference calls and in-person meetings to contribute to the development of this straw proposal. The Issues Paper can be found on the ISO's Small Generator Interconnection Procedures stakeholder initiative webpage <http://www.caiso.com/275e/275ed48c685e0.html>.

2. Executive Summary

This straw proposal contemplates combining the small generator interconnection procedures and large generator interconnection procedures into a single annual cluster study process and interconnection procedure. The combined generator interconnection procedures process will be shorter than the current LGIP, to maintain the streamlined interconnection intent of the small generator interconnection procedures as well as to incorporate process improvements based on experience gained since the implementation of the previous generation interconnection reform process. This straw proposal also includes options for consideration that would provide projects with an

¹ ISO Tariff Appendix S can be accessed on the CAISO website at <http://www.caiso.com/2779/2779894d1b920.pdf>.

² The SGIP does provide an option for the ISO to conduct system impact studies in clusters, in coordination with the applicable Participating TO, Interconnection Requests (SGIP Section 1.3.6).

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>.

Energy Only Deliverability Status an opportunity to be considered for some level of deliverability through a Deliverability Assessment.

3. **Definitions** 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 TO, 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.

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4. **Proposed Application Process**

4.1 Facility Size

The application process for generating facilities no larger than 20 MW will be handled in the combined Small Generator Interconnection Procedures (SGIP) and Large Generator Interconnection Procedures (LGIP) referenced in this straw proposal as the Generator Interconnection Procedures (GIP), which will encompass an approximate 420 calendar days.

- A generating facility no larger than 2 MW will continue to have the option to be evaluated under the existing SGIP fast track process. which is proposed to be retained under this Straw Proposal.
- Under this Straw Proposal a request to interconnect a generating facility larger than 2 MW but no larger than 20 MW or a facility less than 2 MW

that does not pass the fast track process will be studied in a cluster process with projects larger than 20 MW, unless they qualify for the proposed independent study process. (See Section 6 below).

- A project of 2 MW or less that qualifies for the fast track process (carried over from the current SGIP) will be studied on the fast track timeline.⁴

4.2 Queue Cluster Window & Validation

One queue cluster window period (open for two-months) will be opened each year for Interconnection Customers (ICs) to submit interconnection requests under the GIP, regardless of the MW size of the proposed generating facility. Since the ISO's experience thus far with the window period for large interconnection requests is that the ISO receives the bulk of requests are received during the last week of the window, the window will be shortened from the current four month window to a two month window. The ISO will have 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 10 business days to cure any deficiency in its request to remain in the cluster study process.

Independent Study Projects. Projects that qualify for the independent study process (see below at Section 6) are not restricted to the window period. Interconnection requests for these projects can be submitted throughout the year. If the ISO validates the application as qualifying for independent study, the project would be studied in a process that is independent of the standard GIP cluster study process. If the ISO deems that an interconnection request applying for the independent study process does not qualify for that process, the interconnection request would automatically be moved into the current open application window, or at the customer's request, move to the next open application window or withdrawn.

4.3 Interconnection Request Requirements

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

4.3.2 Study Deposit Amounts and/or Processing Fees

- Projects 20 MW or less requesting Energy Only Deliverability Status

The deposit for a generating facility 20 MW or less requesting an energy only interconnection (formerly SGIP), will require an initial one-time study deposit of \$50,000. The study deposits will apply to projects that are studied in the cluster process outlined in Section 5 below and projects that qualify for the independent study process outlined in Section 6 below. The ISO will deposit all interconnection study deposits in an interest

⁴ See current SGIP Section 2 for discussion of the current Fast Track Process.

bearing account. The study deposit will be applied to pay for prudent costs incurred by the CAISO, the Participation TOs, or third parties, as applicable, to perform and administer the interconnection studies. (The customer will be invoiced for payment of study costs that exceed the study deposit.) If an IC withdraws its project from the process 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 ICs study deposit including interest, and the greater of (i) the actual study and administrative costs or (ii) one half of the original study deposit
- 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 IC executes a generation interconnection agreement (GIA). However if the IC withdraws during this timeframe, the deposit is non-refundable.

The IC will be required to pay any additional amount for actual study and administrative costs that exceed the original study deposit including interest.

- *Projects greater than 20 MW and projects 20 MW or less requesting Full Capacity Deliverability Status*

The current LGIP study deposit amounts will continue, which require a study deposit of \$250,000 for Full Capacity and Energy Only projects greater than 20MW and \$100,000 for projects 20 MW or less requesting Full Capacity Deliverability Status. The study deposits will apply to projects that are studied in the cluster process outlined in Section 5 below and projects that qualify for the independent study process outlined in Section 6 below. The ISO deposits all interconnection study deposits in an interest bearing account. The study deposit is applied to pay for prudent costs incurred by the ISO, the Participating TOs, or third parties, as applicable, to perform and administer the interconnection studies. If an IC withdraws its project from the process the interconnection study deposits are refundable as follows:

- Up to 30 days following the scoping meeting, the ISO 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 ICs study deposit including interest, and the greater of (i) the actual study and

administrative costs or (ii) \$100,000 (\$50,000 for projects 20 MW or less).

- After 30 days following the Phase I (or system impact study for projects qualifying for the independent study process) results meeting, the ISO will refund any amount over actual study and administrative costs if the IC executes a generator interconnection agreement (GIA). However if the IC withdraws during this timeframe, the deposit is non-refundable.

- *Fast Track Projects of Less than 2 MW*

The processing fee and deposit requirements for Fast Track Projects of less than 2 MW will be carried forward from Section 2 of the current SGIP. These amounts are a non-refundable processing fee of \$500 and a study deposit not to exceed \$1,000.

4.3.3 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).

4.3.4 Site Exclusivity

All interconnection requests must interconnection requests demonstration of project Site Exclusivity or the customer must post a Site Exclusivity Deposit in lieu of Site Exclusivity. For projects 20 MW or less, the deposit amount shall be \$100,000; for projects greater than 20 MW, 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.

5. Proposed Annual Cluster Study Process

Under this straw 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, including 30 calendar days to hold the Phase II Interconnection Study results meeting.

5.1 Phase I Interconnection Study

The ISO (with assistance from the Participating TO) shall conduct Phase I Interconnection Studies within approximately 120 calendar days. Within 30 days of completion of the Phase I study, a results meeting will be held among the ISO, Participating TO 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 4.1 – Proposed Annual Cluster Phase I Study Timeline

| Line | Phase I Cluster Study | Typical Calendar Days | Timeline (Days) |
|------|--|-----------------------|-----------------|
| 1 | CAISO 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 all generation in the queue cluster and deliver to CAISO | 10 | 2-11 |
| 3 | PTO develops preferred and alternative if applicable, direct interconnection plans, including the need for an Interconnection Grid Substation (IGS). | 10 | 2-11 |
| 4 | PTO develops draft contingency lists | 10 | 2-11 |
| 5 | CAISO reviews and approves base cases, Direct Interconnection Plans and merges them together, as needed. PTOs update off-peak base cases. CAISO reviews and approves contingency lists. PTO needs time to consider CAISO proposed changes. | 5 | 12-16 |
| 6 | CAISO 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. | 10 | 17-26 |
| 7 | At the CAISO'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 CAISO for review and direction. | 10 | 17-26 |
| 8 | PTO develops mitigation plans for summer peak and off-peak or supplements CAISO proposed mitigation plans for consideration, as appropriate, and submits to CAISO for review and direction. | 10 | 27-36 |
| 9 | CAISO retests Deliverability study results with proposed delivery upgrades. PTO reviews and comments on retest results. | 5 | 37-41 |
| 10 | CAISO develops shift factors for cost allocation purposes of all upgrades associated with mitigating thermal overloads. | 5 | 42-46 |

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.

| Short Circuit Duty | | | |
|--|--|-----|---------|
| 11 | CAISO to coordinate with other potentially affected facility owners. ⁶ | n/a | n/a |
| 12 | CAISO directs PTO to develop base case and run short circuit analysis. | 10 | 42-51 |
| 13 | PTO to perform facilities review (Note: possibly for feedback into the power flow and PTO mitigation plans). | 10 | 52-61 |
| 14 | PTO to prepare draft study results and submits to the CAISO for review and direction. | 3 | 62-64 |
| Facility Cost Estimates and Schedules | | | |
| 15 | At the CAISO'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. | 68 | 17-84 |
| Final Report | | | |
| 16 | At the CAISO's direction, PTO(s) prepares draft report for impacts in their service territory. | 73 | 17-89 |
| 17 | CAISO compiles all results into a draft report that covers grid impacts, as appropriate. CAISO reviews integrated draft report and submits comments, recommendations and direction to the PTO. | 10 | 90-99 |
| 18 | PTO incorporates CAISO's directions, conclusions and recommendations. If CAISO conclusions and recommendations conflict with PTO conclusions then CAISO and PTO must coordinate to resolve conflicts. Any remaining conflicts must be noted in the final report. | 10 | 100-109 |
| 19 | PTO submits final draft report to the CAISO. The CAISO will finalize the report and tender the CAISO approved report to the IC's. | | |
| Final Study Report | | | |
| 20 | CAISO provides final approved report to ICs, PTO, and any applicable affected systems. | 10 | 110-119 |

5.2 Phase II Study

The ISO (with assistance by the Participating TO) shall conduct Phase II Interconnection Studies within approximately 180 calendar days. Within 30 days of completion of the Phase II study, a results meeting will be held among the ISO, Participating TO and Interconnection Customer.

⁶ In accordance with the WECC Short Circuit Duty Procedure

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 4.2 – 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. | 5 | 1-5 |
| 22 | CAISO reviews and approves base cases. | 5 | 6-10 |
| 23 | CAISO 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. | 90 | 11-100 |
| 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 CAISO. | 40 | 61-100 |
| 25 | CAISO reviews and approves cases from line 24. | | |
| 26 | At the CAISO'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. | 40 | 101-140 |
| 27 | At the CAISO'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 | 141-150 |
| Final Plan of Service Report Including Facility Costs and Schedules | | | |

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.

| | | | |
|----|--|----|---------|
| 28 | At the CAISO's direction, PTO(s) prepares draft plan of service report. At the CAISO 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. | 55 | 101-155 |
| 29 | CAISO reviews draft plan of service report and submits comments, recommendations and direction to the PTO | 10 | 156-165 |
| 30 | PTO incorporates CAISO directions, conclusions and recommendations. If CAISO conclusions and recommendations conflict with PTO conclusions then CAISO and PTO must coordinate to resolve conflicts. Any remaining conflicts must be noted in the final report. | 15 | 166-180 |
| 31 | PTO submits final draft report to the CAISO. The CAISO will finalize the report. | | |

5.3 Coordination with the Transmission Planning Process

Coordination between the annual cluster study and the ISO Revised Transmission Planning Process (RTPP) is shown in the Attachment 1.⁸ All Category 1⁹ elements from the RTPP will be modeled in the base cases that are used to perform the cluster studies. In the Phase II cluster study, the Category 2¹⁰ elements as initially adopted or modified based on new information from the RTPP are the initial network upgrades to be considered if they can be utilized to mitigate any reliability and/or delivery issues identified. Large upgrades identified in the Phase II cluster study will be further evaluated in the Phase 2 transmission planning study.

A chart representing the timeline of the current LGIP and the revised GIP processes along with the Revised Transmission Planning Process is provided as Attachment 1. This chart shows key information handoffs between the GIP and the transmission planning process.

⁸ Information on the ISO's Revised Transmission Planning Process Initiative can be found on the initiative webpage at <http://www.aiso.com/242a/242abe1517440.html>.

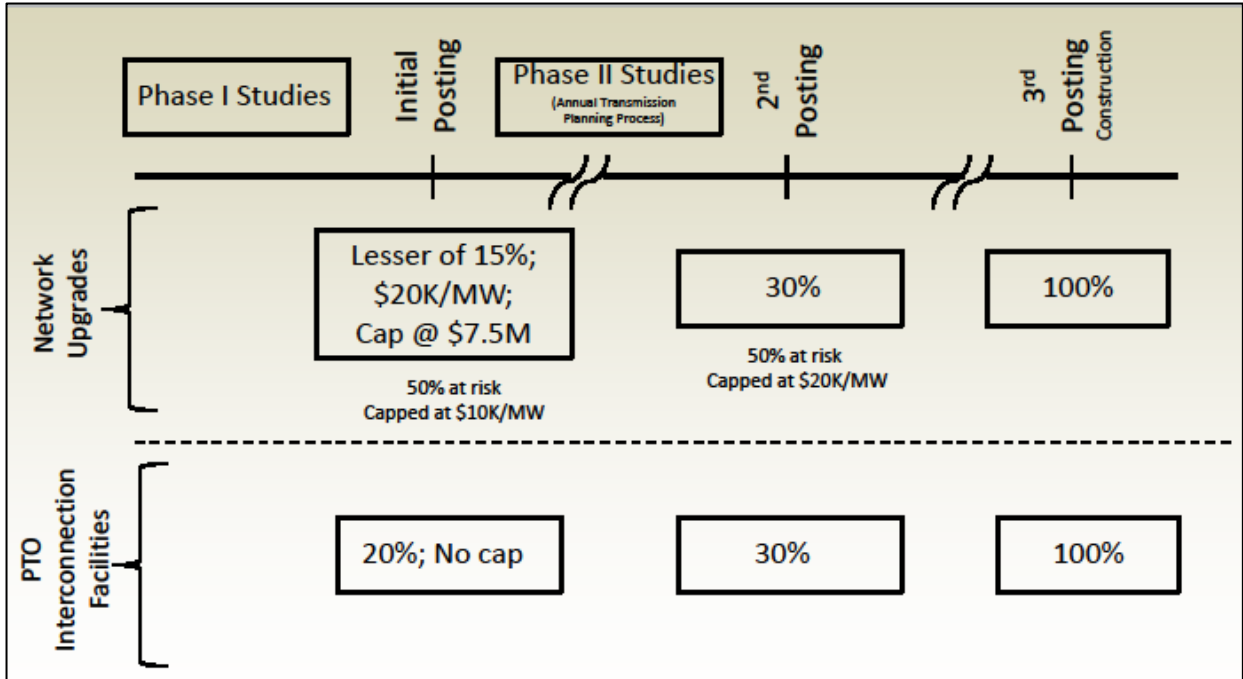
⁹ Category 1 Transmission Elements are transmission elements proposed for ISO Board approval in the comprehensive Phase 2 transmission plan, which include policy-driven transmission elements proposed based on sufficient, demonstrated commercial interest on the part of new generation that will utilize the new transmission capacity, as well as elements found to be economically beneficial based on the ISO's economic analyses.

¹⁰ Category 2 Transmission Elements are other policy-driven upgrades and additions, identified in the comprehensive transmission plan, that may be needed but whose need ultimately depends on how new renewable generation development occurs.

5.4 Interconnection Financial Security Postings

The same financial security postings as the current LGIP cluster study process will be maintained¹¹. The timing of the first security posting requirement is due 90 days after the publication of the final Phase I study report.

Figure 4.1 – Financial Security Deposit Requirements



For small projects less than 20MW, the first security posting might be subject to a cap lower than the \$7.5M currently in place for the LGIP projects.

6. Proposed Independent Study Process

The CAISO/Participating TO may study interconnection requests independently in a timely manner to the extent warranted by Good Utility Practice if they are eligible for the Independent Study Process (ISP). This ISP will apply to a very limited number of qualified projects.

6.1 Criteria

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

- Objective* demonstration that the proposed annual cluster timeline would not accommodate the desired Commercial Operation Date (COD). This would require a determination that (1) the desired COD is physically and commercially achievable, and (2) all of the required

¹¹ See generally, LGIP (App Y) Section 9.

Reliability Network Upgrades can reasonably be completed by the desired COD; and

- b) The proposed generation facility is electrically independent of cluster projects, or has negligible electrical interface with cluster projects, and would not likely trigger any significant network upgrades which may lead to impact on cluster projects. The ISO and Participating TO concurrence is required when making such a determination; and
- c) The customer is able to demonstrate an executed contract (or comparable evidence) for the sale of electrical energy or capacity from the proposed generating facility by a date certain; and
- d) The project has obtained all regulatory approvals and permits needed to begin construction, or the customer makes a reasonable demonstration of expectation that the approvals and permits will be obtained before the end of the annual cycle; and
- e) The customer is able to provide 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 through a purchase agreement that IC is a party to; and
- f) Customer demonstration of Site Exclusivity (not a deposit in lieu of Site Exclusivity); and
- g) Reasonable evidence of adequate financing/financial resources to make 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 second financial security posting within 120 days of issuance of such final study report.

In addition to the above Independent Study criteria, 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.

SGIP Fast Track (<2MW)

The current SGIP Fast Track processes (for <2MW projects) set forth in SGIP Section 2 will be retained. Note that, under this process, it is possible to have a determination that the project may not safely and reliably be interconnected, in which case the project must be studied under a study process.¹²

6.2 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 Bonds and a proposed resolution, and any other studies that are deemed necessary. The SIS shall state the assumptions upon which it is

¹² See SGIP section 2.4.

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 TO'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.

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-EO.

6.3 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.

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

6.4 Financial Security Postings

For projects studied under the ISP, the financial security posting amounts shall mirror the posting amounts due for projects studied under the cluster process. However, the IC's cost responsibility for the project shall be based upon the Reliability Network Upgrades and Delivery Network Upgrades shall be based upon the final cost estimates contained within the final study report (generally the FAS, unless waived), and the posting times shall be as follows: The first financial security posting shall be made within 30 days of the issuance of the final study report and the second security posting shall be made within 120 days of the issuance of the final study report.

7. Proposed Deliverability Assessments

The existing SGIP requires SGIP projects to go through the LGIP if the interconnection customer wants the project to be deliverable and obtain Full Capacity Deliverability Status (FC). Many projects, both previously studied and those currently in-process under the SGIP want to be deliverable for RA counting purposes, but for a variety of reasons have settled for Energy Only Deliverability Status (EO) through the SGIP. Going forward, the ISO is proposing to combine the SGIP with the LGIP into a process with a more favorable time frame and cost structure for interconnection customers. Implementation of this proposal would allow projects within the typical SGIP size (20 MW or less) to obtain FC status without having to be subjected to the current LGIP time frame and cost structure. However, a process is needed to allow previously studied and in-process SGIP projects as well as distribution connection generation, and previously studied LGIP EO projects to become deliverable, especially if the transmission capability is available.

There are two basic options discussed here for allowing these EO projects to become deliverable:

- Option 1 would allocate available transmission to EO generation for purposes of converting them to FC generation, on an annual basis. Once a generator received FC status it would retain that status in a manner consistent with all other FC generation.
- Option 2 would allow EO generation to request to be converted to FC using the existing 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. There are some hybrid options as well. For example, Option 2 could be used to convert currently existing EO generation and then use Option 1 after the transition period. Another example would be to use either Option 1 or Option 2 to convert currently existing EO generation and then close the door and don't allow any more conversions from EO to FC.

The ISO recommends Option 1 because this option appears to have no adverse impacts on transmission ratepayers. Transmission upgrades would only be built if transmission ratepayers would benefit from reduced congestion costs and increased supply of generation capacity¹³. In addition, Option 1 is more integrated with the ISO's Transmission Planning Process (TPP) than Option 2. Upgrades needed to convert EO generation to FC would be evaluated with the TPP process. Because Option 1 is the most integrated with the TPP process, it is the simplest solutions for ISO to implement.

In addition, most Wholesale Distribution Access Tariff (WDAT) generation projects¹⁴, and other generation developed in the ISO balancing authority area but not connecting to the

¹³ Generation developers with EO generation could also build merchant transmission facilities necessary to convert their generation to FC, and then obtain CRRs for that transmission as well.

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

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 EO generation in the ISO Balancing Authority Area (BAA) along with LGIP EO 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. Therefore assessing the deliverability of these projects within the TPP may be the only option.

As a final point, some stakeholders have asked; if the ISO should determine that an EO generating facility is not fully deliverable, but it is possible that part of the EO 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?

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 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.

7.1 SGIP Deliverability Implementation Options

The two options are described below and compared. There are some hybrid options as well. For example, Option 2 could be used to convert currently existing EO generation and then use Option 1 after the transition period. Another example would be to use either Option 1 or Option 2 to convert currently existing EO generation and then close the door and not allow any more conversions from EO to FC.

| | Option 1: Allocation of deliverability status to EO resources | Option 2: Conversion of EO resources to FC status |
|--------------------------------|---|--|
| Description of option | Allocate available transmission to EO generation for purposes of converting them to deliverable generation. | Allow EO generation to request to be converted to FC using the existing interconnection study processes. |
| Transmission Ratepayer impacts | Option 1 has no adverse impacts on transmission ratepayers. | Option 2 has potential for adverse impacts on transmission ratepayers, assuming that any needed transmission upgrades would have to be paid for by ratepayers regardless of the benefits to those ratepayers. |
| Concerns about “free riders” | Under Option 1, new generation interconnection customers requesting EO service can wait for those that request FC service to fund upgrades so that the EO generation may get a free ride and become FC for free. FC generation that funded the upgrades would be subsidizing EO generation. | Under Option 2, new generation could request EO and gamble that someone else will fund a lumpy upgrade. They would have no risk because they would be guaranteed to be able to convert to FC anytime that they want. Under this option they take no risk and can time their request for FC so that they may get a free ride. |
| Rebuttal to free rider concern | With Option 1, EO generation would have no assurance that they would ever be converted to FC, while new generation needing assurance that upgrades will be built to be FC would have to request FC interconnection status when they initially interconnect. | |
| Integration with TPP process | Option 1 is more integrated with TPP than Option 2. Upgrades needed to convert EO generation to FC would be evaluated within the TPP process. | Under Option 2, upgrades to convert EO generation to FC would follow the process for integrating LGIP and TPP as described in the ISO’s revised TPP proposal recently approved by the ISO Board. |
| Complexity of solution | Because Option 1 is most integrated with the TPP process, it is the simplest solution for ISO to implement. | Because Option 2 is identical to the process for new generation interconnections, it is the simplest solution for generators to understand. Because of the rigid timelines and unrestricted transmission investment structure it is preferred by generators. |

8. 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 TO(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).

9. Proposed Transition Plan

9.1 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 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 tentatively open on March 1, 2011 for all projects regardless of size. 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 requirements will be studied together in Phase II studies under the revised process and timeline. This revised process Phase II completion date of August 1, 2012, is four months ahead of the scheduled Cluster 3 and 4 Phase II completion date under the current process. If a Cluster 3 IC so chooses, the IC may delay the study of its project until the Cluster 4 study.

9.2 Transition of SGIP Projects

SGIP IRs received prior to April 1, 2010 (or other agreed upon date) that want to continue as energy only may choose to stay in the current SGIP serial process. For IRs received from April 1, 2010 through December 31, 2010 (or other dates as agreed upon), ICs that want to continue as energy only will be studied in a SGIP EO cluster during 2011. This one-time SGIP cluster will be studied in coordination with LGIP Cluster 1 and Cluster 2 Phase II study process. The specific details of this coordination process have yet to be developed. All SGIP projects must increase their current study deposit amount to \$50,000 to continue in the interconnection process, otherwise will be deemed withdrawn. If an SGIP project has yet to be studied in the current serial process and 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 a \$100,000 study deposit is made. As an alternative option the project could opt to be evaluated as part of the deliverability assessment to see if there is any available capacity as described in Section 6.

10. 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 |
| April 12 | Stakeholder meeting to discuss Issues Paper |
| April 19 | Written stakeholder comments due on Issues Paper |
| April 29 | Working Group meeting #1 |
| May 14 | Working Group meeting #2 |
| May 26 | Straw Proposal posted to ISO website |
| June 3 | Stakeholder meeting to discuss Straw Proposal |
| June 15 | Written stakeholder comments due on Straw Proposal |
| June 25 | Working Group meeting #3 |
| July 8 | Working Group meeting #4 |
| July 12 | Draft Final Proposal posted to ISO website |
| July 20 | Stakeholder meeting to discuss Draft Final Proposal |
| July 27 | 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 SGIP 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 |

11. Next Steps

The ISO requests that stakeholders provide written feedback on this straw 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. Written comments should be submitted to the ISO by e-mail, using the template, no later than June 15, 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.

12. 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 *Section 11* above. Nonetheless, the ISO recognizes the need to address these issues in a future stakeholder process. Some of these additional issues are listed below.

- Project phasing and subsequent cost recovery
- Feasibility study/preliminary scoping meetings
- Enhanced data availability
- Re-visit financial security required if PTO provides upfront funding
- Per-unit costs
- Cost allocation methodology

Attachment 1

Straw Proposal: Timeline for GIP in Coordination with RTPP

