

Stakeholder Comments Template

**Integration of Transmission Planning and Generation
Interconnection Procedures (TPP-GIP Integration)
Straw Proposal, July 21, 2011**

Submitted by	Company	Date Submitted
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Overview:

SDG&E is in agreement with the CAISO that changes to the existing Generator Interconnection Process (GIP) are needed to address the very large amount of generation seeking interconnection through the CAISO’s generation interconnection queue. SDG&E also generally supports the CAISO’s proposal to integrate the CAISO’s transmission planning process (TPP) with the GIP. However, SDG&E believes there are several threshold issues that must be addressed if the proposed TPP-GIP integration process is to be successful.

First, the CAISO needs to more diligently enforce existing tariff provisions, and potentially implement new tariff provisions, that allow the CAISO to expeditiously remove from its interconnection queue, generators that fail to meet minimum requirements for demonstrating ongoing project viability. Removal of non-viable projects from the generation interconnection queue has important implications for the study process that identifies the delivery network upgrades for other generators seeking full deliverability for Resource Adequacy (RA) counting purposes. If non-viable generators are removed from the CAISO’s technical studies, the network upgrades needed to make other interconnecting generators fully deliverable will, generally, be smaller in scope and lower in cost.

Second, interconnecting generators that have secured power purchase agreements (PPAs) and that can show financing commitments should be given priority in terms of the specific generating projects that are reflected in the CAISO’s adopted public policy resource portfolio. This is the portfolio that the CAISO proposes to use to identify the network upgrades that will be funded by utilities and paid for by CAISO consumers. Under the CAISO’s proposal, generators included in this portfolio would not be saddled with an up-

front funding burden for network upgrades (in contrast to the existing GIP whereby generators are obligated to fund the construction of network upgrades that make the generators fully deliverable for RA counting purposes). Because generators with signed PPAs and financing commitments are much more likely to be built than generators without such commitments, it is reasonable to include these generators as part of the CAISO's adopted public policy resource portfolio.

Assuming these two threshold issues are effectively addressed, SDG&E is supportive of the CAISO's efforts to combine the transmission planning process (TPP) with the study process that identifies deliverability solutions that allow interconnecting generators to be counted for CAISO Resource Adequacy (RA) purposes. The TPP is designed to ensure that adequate transmission is built to meet California's aggressive 33% Renewable Portfolio Standard (RPS) requirement by 2020. Integrating the TPP with the deliverability assessment process for new generation projects (which are mostly renewable) helps meet state requirements while providing reasonable cost signals for connecting generation within the various Competitive Renewable Energy Zones (CREZs) and other high potential renewable resource development locations.

While SDG&E supports most aspects of the CAISO's straw proposal, SDG&E is concerned that the straw proposal assumes the deliverability assessment will be conducted independent of the TPP; i.e., will remain as part of the Generation Interconnection Process (GIP). A far better approach would be for the CAISO to identify RA deliverability solutions in the TPP where all aspects of future grid expansion needs and alternatives can be harmonized. In particular, SDG&E believes the TPP is the place to conduct studies that identify the RA deliverability solutions and associated costs that would apply to increasing levels of potential new generation in particular locations that exceed the amounts included in the adopted public policy resource portfolio.¹ As SDG&E discusses further below, developers would use this cost information to self-select the maximum amount of network upgrade costs they are willing to absorb to interconnect at a location in which ratepayer-funded network upgrades will not provide full RA deliverability. This cost information will help prospective developers find the most cost-effective locations for their projects.

SDG&E believes that by moving the deliverability assessment for new resources into the TPP a more level playing field will be created for all prospective generators.

CAISO Template Questions:

1. The ISO has laid out several objectives for this initiative. Please indicate whether you organization believes these objectives are appropriate and complete. If your organization believes the list to be incomplete, please specify what additional objectives the ISO should include.

¹ While the adopted public policy resource portfolio is likely to be comprised primarily of renewable resource additions that will satisfy California's 33% RPS requirement, it is also possible that non-renewable resources will be included. For example, public policy goals may suggest the need for new quick-start fossil-fired generation that will support the integration of large amounts of intermittent renewable generation.

SDG&E generally supports the CAISO’s objectives, however the implementing details are crucial to the success of this initiative and are not apparent from the CAISO’s proposal as it currently stands. In addition, the CAISO’s proposal does not address a fundamental problem with the current deliverability assessment study methodology, namely the failure to use a reasonably plausible pattern of generation dispatch for the simulated peak load system condition. SDG&E believes a key objective of the current initiative must be to set forth a revised deliverability assessment study methodology that accounts for the likely dispatch of all WECC generators during peak load conditions in California.

The use of arbitrary assumptions to dispatch existing fossil-fired generation when performing the deliverability assessments for generators seeking “full capacity” deliverability status, leads to the identification of transmission upgrades that are large in scope, high and cost, and unlikely to ever be necessary in any reasonably likely peak load operating condition. In turn, prospective new generation that would otherwise be feasible and economic to build, is effectively blocked by the sometimes-staggering funding obligations associated with these transmission upgrades.

Objective #2: In order to achieve Objective #2 the existing GIP process should be modified to address only the physical interconnection requirements for new generators, specifically the radial gen-tie facilities and the reliability network upgrades that would allow the generators to operate at full output provided all other generation in the area were assumed to be backed-down or turned off. The existing TPP would be augmented with deliverability assessment studies that would provide the cost of making various amounts of potential new generation at specific locations fully deliverable. As discussed elsewhere in these comments, prospective new generation could use these cost estimates in deciding the amount of costs they are willing to absorb in order to be fully deliverable at a given location.

Objective #4: SDG&E supports Objective #4 but believes the existing deliverability assessment study methodology fails to protect consumers from the cost responsibility of building transmission upgrades that are highly likely to be under-utilized and therefore inefficient. As noted elsewhere in these comments, it makes no sense to identify delivery network upgrades on the basis of generator dispatch assumptions which bear little relationship to the WECC-wide dispatch patterns that are likely to exist under peak load conditions in California.

Objective #5: As SDG&E indicated in its comments on GIP 2, the siting and regulatory permitting/approval transmission projects is easier and more likely if the proposed transmission projects are determined to be cost effective (relative to other alternatives) through economic evaluations conducted by the CAISO.

Objective #7: As noted above, SDG&E has continually provided comments indicating that the existing GIP deliverability assessment methodology is producing illogical and unreasonable results and that the fundamental cause is the use of generator dispatch assumptions that bear no resemblance to what will actually happen during peak load conditions.

2. At the end of the Objectives section (section 4) of the straw proposal, the ISO lists seven previously identified GIP issues that may be addressed within the scope of this initiative.
 - a. Please indicate whether your organization agrees with any or all of the identified topics as in scope. If not, please indicate why not.
 - b. Please identify any other unresolved GIP issues not on this list that should be in scope, and explain why.
3. Stage 1 of the ISO’s proposal offers two options for conducting the GIP cluster studies and transitioning the results into TPP.
 - a. Which option, Option 1A or Option 1B, best achieves the objectives of this initiative, and why? Are there other options the ISO should consider for structuring the GIP study process?

Assuming the deliverability assessment studies are moved into the TPP process, SDG&E supports Option 1B whereby a single set of GIP interconnection studies would be performed to identify radial gen-tie facilities as well as the reliability network upgrades that would allow a new generator to operate at full output assuming other generation in the area is dispatched down or turned off.

- b. What, if any, modifications to the GIP study process might be needed?

See SDG&E’s comment on 3.a above.

4. Stage 2 of the straw proposal adds a step to the end of the TPP cycle, in which the ISO identifies and estimates the costs of additional network upgrades to meet the interconnection needs of the cluster. Please offer comments and suggestions for how to make this step produce the most accurate and useful results.

The Resource Adequacy (RA) deliverability analysis currently being conducted for generators seeking “full capacity” status in queue clusters 3 and 4 in the GIP should be immediately scrapped.² In addition, unless the stagnant generator projects in the queue are removed and the dispatch assumptions modified, projects in clusters 1 and 2 seeking “full capacity” status should be given the option of exiting the existing GIP process and entering the integrated TPP-GIP process for full deliverability assessment as discussed in the instant comments. (This differs from the CAISO proposal in which the CAISO would identify elements of its annual transmission plan that meet some or all of the network upgrade needs of ICs [Interconnection Customers] only in the “latest cluster.”)

² Reliability network upgrades, however, would continue be identified in Phase 1 of the GIP interconnection studies, with the results provided as input to the TPP as proposed by CAISO Option 1B. This would be “Stage 1” of the CAISO’s proposed process.

Instead, RA deliverability analysis should be conducted in the TPP for the amount of generation in the 33% Renewable Portfolio Standard (RPS) portfolio adopted by the CAISO for use in the TPP. This deliverability analysis should employ WECC-wide generator dispatch assumptions that are reasonably plausible for the California peak load conditions assumed for the deliverability assessment. Specifically, the CAISO should take into account the merit-order dispatch of generation throughout the WECC. The current practice of arbitrarily dispatching all existing fossil-fired generation (in the electrical vicinity of the interconnecting generators) at 80% of their Net Qualifying Capacity (NQC) should be changed to reflect how these generators would actually operate considering the availability of fossil-fired generation in other areas of California as well as the remainder of the WECC.³ It is not reasonable to conduct studies under the assumption that fossil-fired generation in one area of the CAISO grid will be operating at 80% of NQC while other fossil-fired generators with roughly similar operating costs are operating at lower levels of output or are assumed off-line. It is economically irrational to assume, for example, that a fossil-fired generator in Arizona would operate at a low level of output at the same time that a fossil-fired generator with similar operating costs within the CAISO grid would be operating at 80% of NQC.

Developing an economically rational generation dispatch pattern for system conditions in which California is experiencing high peak loads, also means that the CAISO's current practice of developing a different fossil-fired generation dispatch pattern for each interconnection study area must be changed. By and large, the addition of 100 MW of new generation with RA counting rights in one area of the CAISO grid, will have the same effect on fossil-fired generation dispatch as 100 MW of new generation with RA counting rights in any other area of the CAISO grid. In short, the dispatch pattern for fossil-fired generation throughout the entire WECC should be consistent regardless of the area of the CAISO grid in which the deliverability assessment is being conducted.

SDG&E also recommends that the CAISO perform RA deliverability analysis for interim RPS portfolios that reflect the likely trajectory of resource additions leading up to the year 2020 RPS portfolio. This interim analysis is needed to (i) establish the amount of import RA available from neighboring balancing authority areas for the upcoming RA compliance year, (ii) provide market participants with guidance as to how much import RA will be available in years after the upcoming RA compliance year, and (iii) help identify the timing of network upgrades that will meet the RA deliverability requirements of the adopted RPS portfolio.⁴ This analysis would take place in "Stage 2" of the CAISO's proposed process.

The costs of the network upgrades that will meet the RA deliverability requirements of the adopted RPS portfolio would be defined in the TPP as either economic or policy driven

³ SDG&E's comments focus on the dispatch of fossil-fired generation since this is the generation that is most likely to be affected by the addition on new generation. However, SDG&E notes that the CAISO's "80% dispatch assumption" is applied to other generation including nuclear units. SDG&E believes it is illogical to assume nuclear units will only be operating at less than 100% of their NQC, especially when California is in a peak load condition. This is an economically irrational dispatch.

⁴ SDG&E believes this interim analysis should consider the suitability and feasibility of pre-contingency generator redispatch and contingency-triggered Remedial Action Schemes (RAS), to provide RA deliverability prior to the time at which identified delivery network upgrades can be designed, permitted, constructed and placed in service.

transmission elements.⁵ Following CAISO Board-approval of the transmission plan, the costs of these elements are eligible to be recovered from CAISO ratepayers via the CAISO's Transmission Access Charge (TAC) mechanism; i.e., interconnecting generators would not be obligated to advance construction funds for these upgrade elements.

Where queue clusters 3 and 4, plus any generators choosing to exit clusters 1 and 2, indicate different locations and RA deliverability quantities than what is reflected in the adopted public policy resource portfolio, the CAISO would produce an analysis which shows the costs of accommodating different portions of this interest above the adopted level up to the full amount of RA deliverability interest.⁶ The analysis would produce results which can be thought of as a location specific "supply curve" for RA deliverability, with cumulative cost on the vertical axis and cumulative amounts of RA deliverability along the horizontal axis. This analysis would also take place in "Stage 2" of the CAISO's proposed process.

The costs of the transmission upgrades necessary to provide RA deliverability for amounts of renewable resources that are outside the adopted public policy resource portfolio would be the responsibility of certain interconnecting generators; i.e., interconnecting generators would have to absorb the costs of these network upgrades similar to an interconnecting generator's radial gen-tie.

Under SDG&E's proposal, each interconnecting generator that finds itself outside the locations and RA deliverability quantities in the adopted public policy resource portfolio would specify the maximum cost they are willing to absorb in order to obtain RA deliverability at their indicated interconnection location.⁷ (An "energy only" interconnecting generator would, by definition, be willing to absorb \$0.) The CAISO would construct a location specific "demand curve" based on the requested RA deliverability quantities and associated \$/MW costs that the generators are willing to absorb. Comparing the supply curve to the demand curve, the CAISO would determine which interconnection requests can be accommodated at the indicated willingness to pay and notify the successful developers.

⁵ By definition, the network upgrades necessary to provide RA deliverability are not reliability upgrades. Reliability upgrades are limited to the upgrades necessary to interconnect a generator and allow the generator to operate at full output assuming all other generation in the area is dispatched down or is off line.

⁶ As stated earlier, SDG&E believes it is essential that non-viable generation in the CAISO's generator interconnection queue be removed.

⁷ Interconnecting generators would make this selection based on whatever information the generator chooses to rely on including the generator's own assessment of (i) how much RA deliverability will be requested by other generators in the same location, and (ii) the amount, type and timing of new generation that will actually get built in that location.

The following table provides an illustrative example of how SDG&E’s proposal would work at a location where (i) the RA deliverability for the resources within the public policy resource portfolio is fully committed, and (ii) the CAISO generator interconnection queue contains another 1150 MW of proposed new generation seeking full deliverability.

“Supply Curve” Published by the CAISO							
RA Deliverability Solution	Amount of RA Deliverability Provided (MW)	Estimated Cost (millions)		Cumulative RA Deliverability Provided (MW)	Cumulative Cost (millions)		
Implement RAS	100	\$25		100	\$25		
Add Static VAR Compensation at new location	100	\$75		200	\$100		
New line on new double-circuit towers	300	\$350		500	\$450		
Add second line on double-circuit towers	300	\$75		800	\$525		
New transformer at new location	100	\$50		900	\$575		
Build a third line	300	\$250		1200	\$825		
“Demand Curve” Based on Generators’ Submissions to the CAISO							
Generators in Interconnection Queue above RA Quantity Identified in 33% RPS Portfolio	Requested Amount of RA Deliverability (MW)	Maximum Cost that Generator is Willing to Absorb to Obtain Requested RA Deliverability (millions)	\$/MW	Cumulative Amount of Requested RA Deliverability (MW)	Cumulative Amount of Cost that Generators are Willing to Absorb (millions)	Corresponding Cumulative Cost from “Supply Curve” (millions)	Can RA Deliverability Solution be Implemented Consistent with Generators’ Willingness to Absorb Cost?
Generator D	200	\$175	875,000	200	\$175	\$100	Yes
Generator F	200	\$150	750,000	400	\$325	\$450	Yes ^{a/}
Generator C	100	\$65	650,000	500	\$390	\$450	Yes ^{a/}
Generator E	150	\$85	566,667	650	\$475	\$525	Yes ^{a/}
Generator G	200	\$105	525,000	850	\$580	\$575	Yes
Generator A	100	\$40	400,000	950	\$620	\$825	No
Generator B	200	\$30	150,000	1150	\$650	\$825	No
Total	1150						

^{a/} When generator G is evaluated, the requested amount of RA deliverability for generators F, C and E can be accommodated at those generators’ indicated willingness to absorb costs.

5. Stage 3 of the straw proposal identifies three options for allocating ratepayer funded upgrades to interconnection customers in over-subscribed areas.

a. Please identify which option, Option 3A, 3B, or 3C, your organization prefers and why. Are there other options the ISO should consider?

SDG&E believes Option 3A (allocate on a first-come-first-served basis according to each IC's completion of pre-established milestones) will be simpler to implement than Option 3C (auction) and has the advantage of distinguishing between generation projects that are making identifiable progress and generation projects that are at the two-guys-and-a-laptop stage.

b. If Option 3A is selected, what are appropriate milestones to determine which projects are the "first comers?"

SDG&E recommends that one of the critical milestones be a signed Power Purchase Agreement (PPA). Other appropriate milestones include demonstrated financing commitment, proven site control, and proof that the proposed generation project is actively pursuing required regulatory approvals,

c. If Option 3B is selected, what is the appropriate methodology for determining pro rata cost shares?

d. If Option 3C is selected, how should such an auction be conducted and what should be done with the auction proceeds from the winning bidders?

6. The straw proposal describes how the merchant transmission model in the current ISO tariff could apply to network upgrades that are paid for by an interconnection customer and not reimbursed by transmission ratepayers. Do you agree that the merchant transmission model is the appropriate tariff treatment of such upgrades, or should other approaches be considered? If you propose another approach, please describe the business case for why such approach is preferable.

SDG&E supports use of the merchant transmission model for network upgrades that provide full deliverability for generators that are outside the adopted public policy resource portfolio. However, as acknowledged by the FERC in Order 1000, stakeholders need to recognize existing utilities' rights to control use of their existing rights-of-way and transmission assets.

7. Stage 3 of the proposal also addresses the situation where an IC pays for a network upgrade and later ICs benefit from these network upgrades.

a. Should the ISO's role in this case be limited to allocating option CRRs to the IC that paid for the upgrades?

Yes.

b. Should the ISO include provisions for later ICs that benefit from network upgrades to compensate the earlier ICs that paid for the upgrades?

No. It would be difficult to identify which “later ICs” benefit from which network upgrades and by how much.

8. In order to transition from the current framework to the new framework, the ISO proposes Clusters 1 and 2 proceed under the original structure, Cluster 5 would proceed using the new rules, and Clusters 3 and 4 would be given an option to continue under the new rules after they receive the results their GIP Phase 1 studies.

a. Please indicate whether you agree with this transition plan or would prefer a different approach. If you propose an alternative, please describe fully the reasons why your approach is preferable.

A different transition plan is needed. The current transition plan is limited to clusters 3 and 4, but pronounced problems with the existing GIP are not limited to clusters 3 and 4. Implausible results are being produced for generators in clusters 1 and 2 as well. SDG&E believes that it is necessary to develop a transition plan whereby generators in clusters 1 and 2 have the option of exiting the existing GIP process and proceeding under the CAISO’s proposed TPP-GIP integration initiative. Further, clusters 3-5 should definitely proceed under the new process and should utilize a methodology that does not waste IC money and CAISO/PTO analytical efforts.

b. If the straw proposal for the transition treatment of clusters 3 and 4 is adopted and a project in cluster 3 or 4 drops out instead of proceeding under the new rules, should the ISO provide any refunds or other compensation to such projects? If so, please indicate what compensation should be provided and why.

9. Some stakeholders have expressed a need for the ISO to restudy the need for and costs of network upgrades when projects drop out of the queue. The ISO seeks comment on when and restudies should be conducted, in the context of the proposed new TPP-GIP framework.

SDG&E supports restudy where projects change their size or drop out of the process, the Delivery Network Upgrades should be reevaluated to avoid overbuilding the system. This will prevent new generation projects that remain in the process from funding Delivery Network Upgrades that become unnecessary given the changes in interconnection queue quantities.

10. Some stakeholders have suggested that there may be benefits of conducting TPP first and then have developers submit their projects to the GIP based on the TPP results. Does your organization believe that conducting the process in such a manner is useful and reasonable?

In deciding whether, when and where to locate a new generation project, developers are always free to review the results of the last available annual TPP.

11. Please comment below on any other aspects of this initiative that were not covered in the questions above.

It appears the CAISO is contemplating the use of multiple renewable resource portfolios in its integrated TPP-GIP process. While SDG&E understands that it is impossible to know with precision which renewable resource portfolio will ultimately get developed, SDG&E is concerned that the use of multiple renewable resource portfolios will lead to results which are in conflict and which will therefore impede, rather than support, timely decision-making. It is SDG&E's judgment that progress on building transmission to support achievement of public policy requirements and goals, is more likely if decision-makers are focused on a single, "most likely," public policy resource portfolio. The CAISO should adopt a single public policy resource portfolio for use in identifying the transmission upgrades that support California's public policy requirements and goals.

As noted above, SDG&E also believes it is essential that this adopted public policy resource portfolio incorporate those individual generating projects which have signed PPAs and financing commitments. This will enhance the legitimacy and usefulness of the transmission plan which emerges from the integrated TPP-GIP process.