

## Cluster 1 and 2 Deliverability Concerns-Revised Discussion Paper, January 10, 2012

Submitted by	Company	Date Submitted
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### Introduction

BAMx recognizes the CAISO's revised discussion paper on Cluster 1 and 2 Deliverability Concerns<sup>1</sup> (*new GIP study approach*, hereafter) is a significant step in a right direction on an extremely important interconnection responsibility issue. We acknowledge that, if successfully implemented, this proposal would lower the high cost Delivery Network Upgrades (DNU) associated with Clusters 1 and 2 (C1/C2) and some earlier queued serial project related DNUs. However, the current proposal does not effectively avoid the ratepayer-funded significant additional DNUs that might be triggered by the large-scale Clusters 3 and 4 (C3/C4) and later projects. BAMx believes that the C1/C2 deliverability reassessments proposed to be applied to C3/C4, although commendable, still falls short compared to making the Transmission Planning Process-Generation Interconnection Process (TPP-GIP) integration effective for as many generation projects as possible. We also note that the CAISO's new GIP study approach should have a positive impact in containing future CAISO-wide HV TAC rates. Although such impacts are inferior to the impact in our TPP-GIP integration proposal, we note that such a TAC rate impact does not appear to be a major concern to the CAISO.

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<sup>1</sup> Generation interconnection cluster 1 and 2 deliverability concerns discussion paper was issued on January 10, 2012 and was subsequently discussed in a Stakeholder meeting on January 17, 2012.

The areas addressed by BAMx comments are described in the following Sections.

1. Include inactive LGIAs as well as unsigned LGIAs under C1 through C4 within the TPP-GIP integration framework;
2. Apply less restrictive criteria for identifying delivery network upgrades to be reassessed;
3. Include reliability network upgrades (RNU) among the network upgrades that are removed in the revised GIP studies;
4. Perform similar engineering assessments for more areas beyond the SCE/SDG&E Desert area;
5. Fully explain the discrepancies between Oct 31st and Revised paper study findings;
6. Implement mechanisms/screens to provide guidelines to the CPUC PPA process to avoid overbuilding of transmission;
7. Apply strict rules/aggressive milestones for maintaining queue positions; and
8. Do not allow reduction in C3 and C4 Phase 1 posting requirements.

We believe the suggested changes would enable the CAISO to achieve the following two critical goals. First, it addresses stakeholder concerns that the long development timelines and high costs of NUs in PTO service territories identified for certain generation interconnection projects would impede the commercial viability of these projects. Second, this objective of selecting commercially viable projects can be achieved while minimizing the ratepayer impact for funding transmission infrastructure.

**1. Include inactive LGIAs as well as unsigned LGIAs under C1 through C4 under TPP-GIP integration framework**

CAISO claims that the new GIP study approach is an effective mechanism based on three different elements. In Table A below, we compare and summarize how a

comprehensive TPP-GIP integration<sup>2</sup> would be a more effective and economically efficient alternative to the new GIP study approach in achieving these three goals.

**Table A: A Comparison of Effectiveness and Economic Efficiency of a Comprehensive TPP-GIP Framework and the New GIP Study approach**

#	New GIP study approach	A Comprehensive TPP-GIP Framework
1	Identifies and approves policy-driven transmission for deliverability of realistic generation scenarios.	Identifies generation projects (Interconnecting customers) that would trigger new transmission Network Upgrades (NUs) beyond those that are identified under TPP and holds them responsible for funding those upgrades without any refunds.
2	Provides for full capacity GIAs using TPP-based deliverability for projects advancing toward completion.	Performs reliability and deliverability assessment under TPP and provides energy only and full capacity GIAs as well as input to the CPUC/LRA procurement process.
3	Provides for TPP to expand transmission in areas where development exceeds prior expectations.	Allows for expansion of transmission in TPP only if it is economically efficient to do so. That is, it allows for building new NUs if the combined cost of generation, integration and transmission associated with new resources are <u>lower</u> than building/contracting renewable resources in other areas that rely on existing/approved transmission.

Since 2005, the CAISO has approved multiple billions of dollars of transmission Network Upgrades (NU) to interconnect specific large-scale renewable generators. Yet it has done so without utilizing any economic test to determine the reasonableness of these investments.<sup>3</sup> Recent studies have all concluded that expected increases in

<sup>2</sup> We define comprehensive TPP-GIP integration as the new framework that encompasses generation (& transmission) projects related to inactive LGIAs as well as unsigned LGIAs under C1 through C4.

<sup>3</sup> Under the existing CAISO tariff, the CAISO is obliged to interconnect generation without any economic assessment. The Federal Energy Regulatory Commission (FERC) governs the transmission rates, but it relies on the CAISO to determine whether the new transmission is needed. In its compliance with FERC Order 2003, the CAISO proposed an economic test for Large Generator Interconnection Process (LGIP) NUs to enable the CAISO to determine whether or not to approve and how to allocate the costs of high-cost upgrades where the benefits to ratepayers are relatively small. In July 2005, in its order on the

transmission upgrades, and interconnection and integration costs, represent an enormous and unprecedented new statewide infrastructure investment in our industry. The transmission cost component is currently recovered from all load connected to the CAISO grid via the Transmission Access Charge (TAC). Just the High Voltage (HV) portion of the TAC has gone up in the last 10 years from \$1.4/MWh in 2001 to \$6.8/MWh in 2011, and it is expected to increase to nearly \$17/MWh by 2020 based upon the CAISO's 2010-11 transmission plan to meet 33% RPS by 2020.<sup>4</sup>

BAMx believes that a comprehensive TPP-GIP integration framework would be a direct and more economically efficient mechanism than the one proposed by the CAISO under the new GIP study approach. In Sections 2 through 6, we further substantiate this assessment as well as suggest changes to the new GIP study approach should the CAISO management decide to implement it rather than establishing the comprehensive TPP-GIP integration framework.

## **2. Apply less restrictive criteria for identifying delivery network upgrades to be removed.**

Under the CAISO's proposed new GIP study approach, a DNU originally identified during the phase II interconnection study process for the current cluster may be removed from the phase II study results if the upgrade is not needed in the current transmission plan and satisfies at least one of the following criteria:

- a) The network upgrade consists of new transmission lines 200 kV or above, and has capital costs of \$100 million or greater; or
- b) The network upgrade has a capital cost of \$200 million or more.

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CAISOs filing FERC rejected the proposed economic test on the grounds that the CAISO did not provide sufficient details for the Commission to evaluate it.<sup>3</sup> The CAISO failed to address this issue until very recently.

<sup>4</sup>**Exhibit A** includes Historical PG&E Area and CAISO-wide HV TAC (\$/MWh) for 2001-2011 and Projected CAISO-Wide HV TAC (\$/MWh) for 2012-2020 Based on the CPUC/E3 LTPP Evaluation Metric Calculator, Dated April 29, 2011. These projections include only those transmission projects that the CAISO has approved under their 2010-11 Comprehensive 33% RPS transmission plan, and do not include any additional NUs identified in several CAISO generation interconnection studies. Combining LV TAC with this HV TAC the total transmission charge, for instance in the PG&E TAC area, is projected to be as high as \$25/MWh (=\$17+\$8) by 2020.

We understand that the CAISO has defined such high thresholds to target the most costly DNUs that are triggered by the queued generation. Furthermore, Section 24.4.6.5 (LGIP Network Upgrades) of the CAISO's current tariff applies exactly the same criteria to reassess DNUs identified under Phase 2 of the GIP studies under the annual TPP. However, we do not believe that these criteria set a precedence to apply them to actually remove them from revised GIP studies under the new GIP study approach. More importantly, these broad criteria fail to capture several DNUs (as well as RNUs as discussed in Section 3) that are individually less than \$100M, but add up to significantly greater amounts for a given study area. Ideally we would like the CAISO to study removing all NUs that are above \$10M. However, given the CAISO's already strained limited engineering resources to perform these studies we suggest a single criterion for NU removal. Additionally we do not see a need to make the voltage of the project a criterion. That is,

- The network upgrade consists of new transmission infrastructure additions that have expected capital costs of **\$50** million or greater.

We also urge the CAISO use some discretion to consider NUs that are in the neighborhood of \$50 million. We hope that this suggested criterion would enable commercially viable generation projects to sign PPAs without placing unnecessary burden on the ratepayers to pay for the unneeded NUs.

**3. Include reliability network upgrades (RNU) among the network upgrades that are removed in the revised GIP studies.**

The current CAISO new GIP study approach is restricted to removing unnecessary DNUs from GIP Phase 2 studies. We urge the CAISO to include RNUs in their assessment for two reasons. First, similar to DNUs, the RNUs will not be triggered in the absence of the interconnecting generators independent of their application status

(Energy Only, EO or Full Capacity, FC).<sup>5</sup> Second, we have seen from the past cluster studies that the magnitude and cost of RNUs can be substantial in aggregate for certain areas. For example, Phase 2 study for a single C1C2 group identified RNUs adding up to more than \$500 million. If the CAISO is concerned about targeting specific generation projects by eliminating the RNUs associated with them, such as the plan of service reliability network upgrades, the CAISO can restrict the removal of RNUs at least to those that are applicable to a group of generation projects versus specific projects. This process would avoid “picking winners and losers” among Interconnecting Customers (IC).

Exclusion of RNUs from the proposed new GIP study approach causes exactly the same problem that the CAISO is proposing to solve in regards to DNUs under the existing GIP. In particular, when the CAISO would make reliability assessments for generation projects in C3/C4, they would include all the RNUs associated with earlier queued projects -- some of which might be inactive and/or commercially unviable. This process would result in unnecessary and expensive RNUs that would need to be upfront funded for the C3/C4 ICs and ultimately paid by the ratepayers. During the January 17<sup>th</sup> and January 19<sup>th</sup> Stakeholder meetings, the CAISO mentioned that they would perform a “local” reliability assessment of RNUs. We request the CAISO to provide additional information on these “local” assessments and how that would minimize unnecessary RNUs.

#### **4. Perform similar engineering assessments for more areas beyond the SCE/SDG&E Desert area.**

We applaud the CAISO staff efforts in performing the preliminary engineering assessment that concluded that out of nearly 12,000 MWs of queued generation in the

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<sup>5</sup> Per the CAISO tariff definition of “Reliability Network Upgrades. “ it includes “the transmission facilities at or beyond the Point of Interconnection identified in the Interconnection Studies as necessary to interconnect one or more Large Generating Facility(ies) safely and reliably to the CAISO Controlled Grid, which would not have been necessary but for the interconnection of one or more Large Generating Facility(ies), including Network Upgrades necessary to remedy short circuit or stability problems, or thermal overloads.”

SCE Desert Area approximately 6,200 MW to 9,200 MW could be accommodated as fully deliverable without the need for the major upgrades identified in the C1C2 and earlier studies. As a comparison, the renewable resource portfolios under study in the 2011/2012 CAISO TPP have no more than approximately 5,000 MW to 7,000 MW of renewable generation modeled in these areas. In other words, remaining areas in the CAISO footprint could easily accommodate the remaining renewable generation required to meet the State's goal of 33% renewables. We therefore request the CAISO to perform additional engineering assessments for the past C1C2 studies and future C3C4 studies for the following areas.

- SCE's Northern Bulk System;
- SCE's North of Lugo System;
- PG&E South Area Group including Fresno-Kern Group; and
- PG&E North Area Group; etc.

**5. Fully explain the discrepancies between Oct 31st and Revised paper study findings.**

The CAISO's earlier discussion paper of the *Clusters 1 and 2 Deliverability Concerns Issue paper* posted on October 31, 2011 indicated that out of **13,500 MW** of generation in the SCE desert area in the CAISO queue, approximately **9,900 MW to 12,000 MW** can be accommodated as fully deliverable without the need for some of the major upgrades. The CAISO has indicated that the reduction to **12,000 MW** from 13,500 MW is due to withdrawals and updates to the CAISO queue information. We understand that a revised lower amount of generation range, i.e., **6,200 MW to 9,200 MW**, is attributed to additional DNUs that were removed in the new engineering assessment.<sup>6</sup> Please confirm and provide additional explanation to these changes in the revised Cluster 1 & 2 engineering assessment that the CAISO plans to post on January 31<sup>st</sup>.

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<sup>6</sup> These two additional NUs are: (1) Upgrade of Pisgah 230kV substation to 500kV substation and Lugo-Eldorado 500kV line loop-in at Pisgah 500kV bus; and (2) Q72 and associated upgrades (dual 500 kV generation tie-lines connecting to SCE and SDG&E systems near Valley and Talega substations respectively).



## 6. Implement mechanisms/screens to provide guidelines to the CPUC PPA process to avoid overbuilding of transmission.

As we indicated earlier, we believe that compared to a comprehensive TPP-GIP integration framework, the CAISO's new GIP study approach lacks a cost containment mechanism that would avoid NUs triggered by overbuilding of generation in certain areas. In other words, if more than the assumed amount of generation actually develops in any given area then the CAISO could approve additional *policy-driven* transmission in the TPP paid at ratepayer's expense. Note that the GIAs signed for these generators would not include the potential high cost of NUs that might be triggered by them. In turn, the PPAs associated with these projects will not include any significant transmission related costs, which would make these PPAs artificially more attractive and would increase their chances of being selected over other generation projects that have greater generation cost but could be accommodated within the existing/approved transmission network.

Consider the following example. Suppose the SCE Desert area can accommodate 7,500MW of renewable generation without triggering any additional NUs. Assume that the CPUC approves 8,000MW of PPAs in the SCE Desert area. Also assume that a 500MW of marginal generation resource "A" triggers a need for additional NU with the capital cost of \$500 million. Also assume that the generation component of resource A's price is \$100/MWh. If the IC associated with resource A were responsible for upfront funding of this NU without any refund, its transmission cost would have been as high as \$46/MWh.<sup>7</sup> Suppose, a remote or a distributed renewable generation resource "B" has a generation component price of \$125/MWh. Since, it can be accommodated within the existing transmission network, its overall PPA price is limited to \$125/MWh. Under the CPUC procurement process, resource A is preferred to resource B based upon the PPA price criterion, as the true cost of NU associated with resource A is not considered in the decision-making. If the true cost of NU were included in resource A's price, with

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<sup>7</sup> Assuming a 25% annual capacity factor for the renewable generating resource, its transmission cost would have been \$46/MWh (=\$500 million divided by (500MW times 25% capacity factor times 8,760hours times 10 years)).



its combined PPA price of \$146/MWh, it would never have been selected over resource **B**'s PPA with the price of \$125/MWh.

If the CAISO fails to follow our recommended approach, the above example illustrates the need for the CAISO to routinely provide “screens” that feed into the CPUC/ or Local Regulatory Authority (LRA) procurement process to avoid expensive NUs at ratepayer’s expense. This is a very serious concern for a very likely possibility. Transmission NUs have to be approved and built in advance of all the generating projects associated with approved PPAs are built. If all generation projects were realized or if some of the generation projects were never realized *ex post*, either scenario results in excessive and unnecessary NUs that would be built at ratepayer’s expense. We suggest that CAISO should make the following screens available to CPUC/LRAs at the end of every TPP cycle that would identify how much generation capacity can be accommodated in a given area without triggering the next level of NU.

- 1. A Global Screen for each major area:** A *Global* screen would indicate a ratio of amount of PPAs approved in a given major area and amount of generation that can be accommodated without additional NU. This screen will enable the CPUC/LRA to compare the cost of a generating resource within a given major area with a resource located elsewhere. This screen will also be accompanied by an indication of the nature and magnitude of the next level NU that would be triggered by incremental amount of generation.
- 2. Local screens within a major area:** A *Local* screen would identify the amount of generation that can be accommodated within each sub-area without triggering a new NU for the major area it belongs to. This screen will enable the CPUC/LRA to compare PPA prices of multiple generating resources within that major area. It will also be accompanied by the nature and magnitude of next level NU that would be triggered by an incremental amount of generation.

## **7. Apply strict rules/aggressive milestones for maintaining queue positions**

The CAISO has rightfully identified a drawback of the new GIP approach, which is that it may be less effective in reducing the size of the C3/C4 queue. If the revised phase 2 results for C3/C4 projects reduce their posting requirements sufficiently, they may all want to negotiate GIAs to remain in queue in hopes of obtaining PPAs. We recommend that the CAISO apply strict rules that correspond to achieving certain milestones that would prohibit the commercially unviable projects to indefinitely remain in the queue. For example, the CAISO may consider allowing one-year period to complete development milestone such as, a PPA approved by regulatory authority to retain deliverability status and in turn, queue position.<sup>8</sup>

## **8. Do not allow reduction in C3 and C4 Phase 1 posting requirements**

During the January 17<sup>th</sup> Stakeholder meeting, suggestions were made to the effect of reducing the (first) posting requirements identified under the C3/C4 Phase 1 studies in light of the new GIP study approach. We strongly oppose such a proposal for the following reasons. First, the CAISO's new GIP study approach is effective for the C1/C2 Phase 2 study and is not proposed for the C3/C4 Phase 1 studies. Second, the security postings requirements are restricted only to a small portion (15%) of the NU costs identified in the Phase 1 studies and are subject to refund. Third, if the new GIP study approach is implemented, the C3/C4 ICs would likely have their second posting requirements reduced significantly. This would also mean that their third and final posting would be much lower.<sup>9</sup> Since IC security posting is considered an indication of commercial viability of a given project, we believe that there should not be any compromise in terms of reducing Phase 1 posting requirements for C3/C4 ICs.

In summary, in these comments, BAMx has suggested several remedial measures to minimize the impact of stranded or unneeded transmission on ratepayers. These

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<sup>8</sup> The CAISO has proposed similar requirement to retain TPP-based deliverability status for category A projects under their TPP-GIP Integration Second Revised Straw Proposal, dated January 12, 2012.

<sup>9</sup> Third posting reflects a minimum of capital costs identified under Phase 1 and Phase 2 studies.

remedial measures include applying less restrictive criteria for identifying delivery network upgrades to be removed (Section 2), including RNUs among NUs that are removed in the revised GIP studies (Section 3), perform the engineering assessment for more areas beyond the SCE/SDG&E Desert area (Section 4), implementing mechanisms/screens to provide guidelines to the CPUC/LRA procurement process to avoid overbuilding of transmission (Section 6), and applying strict rules/aggressive milestones for maintaining queue positions (Section 7). We hope the CAISO considers these suggestions favorably in the next round of the new GIP study approach.

BAMx appreciates the opportunity to comment on this issue paper and engineering assessment, and acknowledges the significant effort of the CAISO staff to develop it.

**Exhibit A: Historical PG&E Area and CAISO-wide HV TAC (\$/MWh) for 2001-2011 and Projected CAISO-Wide HV TAC (\$/MWh) for 2012-2020 Based on the CPUC/E3 LTPP Evaluation Metric Calculator, Dated April 29, 2011**

