Submitted to regionaltransmission@caiso.com
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BAMx Comments on the CAISO Policy Driven and Economic Upgrade Analyses

The Bay Area Municipal Transmission group (BAMx)[1] appreciates the opportunity to comment on the CAISO's preliminary results for the 33 percent Renewable Portfolio Standard policy driven transmission need assessment and the economic transmission need assessment studies as presented at Stakeholder Meeting on December 11-12, 2012. Our comments focus on some of the analyses of several large project proposals, including the Coolwater-Lugo/AV Clearview comparison, the Sycamore-Penasquitos 230 kV line, Central California Study and the Economic Planning Study.[2]

We are concerned about the level of stakeholder engagement for the large transmission projects that may be considered for inclusion in the draft transmission plan. There currently are a number of open items including the consideration of the alternate scenarios in the deliverability projects, completing the economic, sensitivity and water analysis on the Central California studies, and modeling enhancements and sensitivity analysis for the economic studies. Given these open items that were not available for discussion with stakeholders, we request that an additional stakeholder meeting (or conference call) be scheduled for the second or third week of January to focus on the larger (greater than $50 million) projects that are under active consideration for inclusion in the draft transmission plan and the progress in completing these open issues. It also makes sense for an exchange of ideas and opinions to take place between the CAISO and its Stakeholders before the CAISO decides what positions to take, especially on large potential Category 1 projects, in its draft transmission plan. We also request that, prior to the requested meeting (or conference call) CAISO provides, to the extent possible, any additional information requested by stakeholders such as those requested by BAMx below.

General Comments

BAMX supports that CAISO Stakeholder process and finds the presentation materials and the interaction with the CAISO engineers extremely valuable in understanding the analyses prepared by the CAISO. However, there was much information, not only the study findings, but also the underlying assumptions, that the Stakeholders were exposed to for the first time during the December 11-12th meeting. To better understand the CAISO findings, more information is needed, especially:

- A complete list of the renewable projects, by each area (CREZ) modeled in the reliability assessment cases so that they can be systematically compared to the data the CAISO has provided for the four portfolios.

[1] BAMx consists of Alameda Municipal Power, City of Palo Alto Utilities, and City of Santa Clara, Silicon Valley Power.

[2] Lack of comment on any particular aspect of the analyses should not be interpreted as support for it a specific project.

- The rationale as well as a description of the peak and off-peak of hours selected for the policy-driven studies.
- The modeled peak and off-peak injections of the RPS Generation modeled in the 4 RPS portfolios. (The documentation only reflects the nameplate capacity.) We feel that this information may help stakeholders understand why the Commercial Interest portfolio has most of the overloads.
- Clearly lay out the assumptions on the level of Once-Through-Cooling generation modeled.
- Post the Request Window Applications. Posting of these applications only after the draft transmission plan is released prevents the stakeholders from providing timely input into how such upgrades could be valuable to the transmission plan.

Currently both the Policy Driven Planning Deliverability Assessment and the Economic Planning studies are only based on the base (Commercial Interest) portfolio. These studies give an impression that some additional projects are needed to meet the policy goals and/or economically justifiable. However before decisions are made for recommendations for Category 1 policy driven upgrades, all four RPS scenarios must be considered with similar findings for a significant percentage of the stressed scenarios before proceeding. Therefore the analyses as presented at the stakeholder meeting are insufficient to make a Category 1 policy driven upgrade recommendation.

While BAMx has raised the issue in other CAISO forums, we feel that it is important to restate that we question the need to model all renewable resources as Full Capacity Delivery in order to meet California's RPS policy goals. As the 33% RPS goal is an energy requirement, not an RA one, as a minimum requirement, the CAISO should perform an economic test on the benefit of transmission to receive the RA from these low RA value resources before recommending any transmission upgrade as part of the analysis completed to date for the Policy Driven Upgrades.

Coolwater-Lugo/AV Clearview Comparison

We appreciate the CAISO considering alternatives to the proposed Coolwater-Lugo transmission line. This line, estimated by SCE to cost in excess of $500M, deserves serious scrutiny of its value proposition as well as investigating the adequacy of less costly alternatives. The 765 MW of solar, geothermal and wind resources that support this line only appear in the Commercial Interest RPS portfolio. The Cost Constrained, Environmentally Constrained and High DG portfolios have a maximum of 64 MW that would be served by this line. As such, this upgrade should, at best, be considered a Category 2 project and not included in the policy driven upgrades presented for Board approval in this planning cycle.

Also with respect to the alternatives to the Coolwater-Lugo Project, the CAISO notes that expansion of the Kramer RAS may not be feasible. Given the high cost and risk reflected in the limited portfolio drivers for this project, the nature of the feasibility

of expanding the RAS needs to be better understood. If the barrier is the technical capability of the RAS, the cost of the alternatives provides a high economic incentive to better understand why the existing equipment cannot be upgraded or replaced.

The CAISO provided a comparison of Coolwater-Lugo 230 kV Project to the AV Clearview Transmission Project and concluded that the Coolwater-Lugo 230 kV Project serves the needs of the area at less cost. It also indicated that the AV Clearview Transmission Project provided additional capability to accommodate renewable generation in excess of that needed for the Commercial Interest case. While these alternatives accommodate the full development reflected in this area for the Commercial Interest portfolio, we think the CAISO needs to also examine less expensive alternatives to Coolwater-Lugo even if they cannot accommodate the full 765 MW represented in one possible future scenario.

As noted above, despite the above request for further analysis, the CAISO's analysis with and without the Coolwater-Lugo project is quite valuable. BAMx urges the CAISO perform similar analyses for all such LGIA-related projects identified to be needed to meet 33% RPS in the next planning cycles, including the West of Devers upgrades, South of Contra Costa upgrades, Borden-Gregg reconductoring, etc.

Sycamore-Penasquitos 230 kV line

This line, with an estimated cost of $111M-$221M, is identified in the potential policy driven solutions for a number of SDG&E area overloads. However many of the overloads are relatively minor and all have multiple relatively inexpensive solutions. Therefore the major expense of this line has not been sufficiently justified in light of these alternatives. Given this lack of foundation, it is surprising to see that in the presentation to the CAISO Board a couple of days later on the Briefing on Nuclear Generation Studies, the Sycamore-Penasquitos 230 kV line is included in the "Management's preliminary conclusions reflect least regret considerations" as simply an advancement. While the return of SONGS is uncertain and planning for flexibility of the transmission system to continue to reliably serve load in the face of such SONGS uncertainty is an immediate challenge, considering the Sycamore-Penasquitos 230 kV line as forgone conclusion and simply advancing it to support the needed flexibility may be masking other, lower cost solutions than building this line in the first place.

Therefore we request that the CAISO first determine whether the multitude of relatively less expensive upgrades will address the transmission capacity issue and this serve as the foundation of the assessment for any additional system flexibility needs to accommodate the SONGS uncertainty.

Central California Study

The analyses presented at the stakeholder meeting provided good insights into the nature of the issues in the Central California area. We support this type of in-depth long-term look at needs for an area of the grid. We understand that the whole grid cannot get this type of in-depth treatment every year but we encourage the CAISO to

complete take this type of assessment with an area specific study plan in each yearly planning cycle.

We understand that this year's effort for the Central California area is still a "work in progress" and look forward to the CAISO's further analysis – hopefully at another stakeholder meeting (or conference call) as requested above. While there are a number of transmission overloads identified in the scenarios, the issues appear to be around economic operation of the system as opposed to the ability of the system to reliably serve the load in the area. As such, the value of any upgrades is likely to be non-linear with the larger benefits being associated with the first capacity increases. We encourage the CAISO to first consider the economics of upgrading the existing transmission lines that appear in many scenarios, such as the Warnerville to Gregg sections of the Bellota-Gregg 230 kV line. With only 250 hours of congestion in the area and a higher priority being placed on upgrades to existing infrastructure, we would expect that there would be insufficient reliability and/or economic justification for large projects such as the Greater Fresno Area Upgrade Project presented at the September stakeholders meeting. We are particularly concerned about some of the assumptions for Helms dry year pumping and generating assumptions. There should be a baseline of (minimum) upgrades driven by real reliability issues. Any increase in scope of upgrades beyond this baseline, such as for increased Helms operating flexibility, should be subject to a separate economic analysis.

Economic Planning Study

This year's economic planning studies indicate a significantly higher amount of congestion in the CAISO-controlled grid relative to the prior two annual assessments. The benefits associated with certain transmission projects, in particular, the Delany-Colorado River 500kV project, have nearly tripled relative the last year's assessment. The $325M total cost and ~$1,000M benefit is significantly different findings in the 2011-12 planning cycle of a $319M total cost and on $237M benefit. Although we applaud the efforts to make the economic analysis more accurate by making improvements such as the better representation of individual control areas, we encourage the CAISO to take an in-depth look at their studies before concluding that this years assessment is the correct one when it differs so dramatically from previous years. Such volatility in the economic benefits for one year to the next merits a much deeper investigation before any decisions are made on the merits of moving forward with this project.

Additionally we are unclear on how this project meshes with the generator interconnection activities in the Riverside area. There are over 5,300 MW of generators in the Transition through Cluster 4 of the CAISO Interconnection Queue in the Riverside area that are awaiting transmission upgrades to move forward. The CAISO's Technical Bulletin on Generation Interconnection Procedures: Deliverability Requirements for Clusters 1-4 acknowledges that many of the projects in these Clusters are not likely to be needed based on the amount of new generation expected to actually receive PPAs and become commercially viable. Therefore the

CAISO has removed the upgrades identified in this area for Clusters 1&2 from their LGIAs. These include a new 500 kV line from Colorado River to Red Bluff to Valley Substation. While BAMx supports that these upgrades are unlikely to be needed in the current plan, we are concerned that the economic analysis of a new Delaney-Colorado River 500 kV line has not fully considered the CAISO program to allow for an oversubscription of Full Capacity Deliverability Service in this area in anticipation of generator attrition. The ultimate addition of this generation may result in greater congestion and corresponding economic impacts for which the current studies do not account.

Therefore we request a more detailed assessment of this project's impacts and greater sharing of the underlying assumptions and model inputs before proceeding any further with this project.

North PG&E Policy Driven Power Flow and Stability Results

The Greater Bay Area Summer Peak results identifies overloads of up to 25% on eight 115 kV transmission circuits that serve the East Bay as well as a 13% overload on the Moraga 230/115 kV transformer. This result is unexpected as the reliability studies did not show these overloads and there are few, if any, renewable generation projects in the East Bay that would vary among the resource scenarios. The identified mitigation for these overloads is pre-dispatch the Oakland generation to mitigate the potential overloads.

Any plan to pre-dispatch of these Oakland CTs should be considered very cautiously. There are no statements as to the number of hours that the system would in a state requiring such re-dispatch. However given the high levels of the overload and the more moderate temperature variations in this area, the number of hours is likely significant. Additionally, not only are the Oakland CTs inefficient to pre-dispatch, such units often have environmental limitations on their total annual hours of operations that should be checked. In any event, such pre-dispatch of these units should only be considered a stopgap measure until a long-term solution can be identified.

As noted in Alameda's October comments on the reliability assessment, a separate but related forum should be developed that would assist the CAISO in selecting the long-term transmission solution for the Oakland/Alameda area.

BAMx appreciates the opportunity to comment on the CAISO 2012-13 Transmission Plan and acknowledges the significant effort of the CAISO staff to develop the plan to date.

If you have any questions concerning these comments, please contact Barry Flynn (888-634-7516 and brflynn@flynnrci.com) or Pushkar Wagle (888-634-3339 and pushkarwagle@flynnrci.com)