BAMX Comments on the CAISO TEAM Overview and Review of Documentation Update

The Bay Area Municipal Transmission group (BAMx)[1] appreciates the opportunity to comment on the development of the CAISO's efforts in providing documentation update of its *Transmission Economic Assessment Methodology (TEAM) methodology* as outlined in the Draft Report, dated August 8, 2017 (Draft Report, hereafter) and discussed during the August 10th stakeholder meeting. We hope that the CAISO address the BAMx questions and comments in its revised and final updated TEAM document expected by September 30, 2017.

BAMx Appreciates the CAISO's Efforts on TEAM Overview and Review of Updated Documentation

BAMx recognizes the tremendous amount of effort over that past several years toward improving the production cost database and analysis used in the TEAM economic assessment. The CAISO staff's efforts in modeling additions/changes to the TEPPC database as well as developing the sensitivities involving loads, hydro conditions, natural gas prices, GHG models and California RPS portfolios are commendable.

BAMx also appreciates the CAISO efforts in conducting a separate stakeholder process and developing the draft "TEAM Overview and Review of Documentation Update" document, which has been long overdue. We regret that the scope of this initiative is too narrow and is limited to a TEAM documentation update only, i.e., no methodology review is being contemplated. However, we do acknowledge that the CAISO has responded to some of the prior BAMx concerns associated with lack of TEAM documentation.[2] For instance, we appreciate the CAISO's Draft Report clearly laying out the conditions that need to be satisfied simultaneously for a transmission upgrade to provide resource adequacy (RA) benefit from incremental importing capability.[3] BAMx also believes that the CAISO has done a more complete job in the Draft Report in describing the updated benefit framework including the market participants' surplus components and the economically driven transmission evaluation criteria.[4]

During the August 10th meeting, in response to the question on the CAISO's justification for including the parameters for revenue requirement calculation[5], the CAISO indicated it could also request to update the numbers each year through the TPP and on a project-specific basis. While CAISO's openness in seeking the stakeholder input is encouraging, BAMx believes that the CAISO needs to explicitly identify the areas and timing as to when such stakeholder input would be sought under the annual TPP cycle. We also envision that the TEAM documentation needs to

[1] BAMx consists of City of Palo Alto Utilities and City of Santa Clara, Silicon Valley Power.
[2] See BAMX Comments on the CAISO 2016-17 Transmission Plan Stakeholder Presentation Materials from November 16, 2016, dated November 30, 2016.
[3] CAISO Draft Report, p. 24, August 8, 2017.
[4] *Ibid*, pp.13-23.
[5] *Ibid*, p.31.

be updated at least biennially going forward, if not annually based upon the stakeholder consensus on the key assumptions.

BAMx Recommendations for Revised and Final Updated TEAM Document

Below we include the BAMx recommendations in the following six (6) areas to develop a robust and complete TEAM documentation.

1. Need for a more comprehensive documentation for Capacity Savings calculations;
2. Need for further stakeholder review of some of the Additional Benefits of Economically Driven Transmission Expansion;
3. Need to document the net present value (NPV) calculations used to calculate the benefits of transmission expansion;
4. Need to document all the obsolete sections the CAISO plans to remove from the TEAM documentation and the reasons to do so;
5. Outline feedback loop between the CPUC Integrated Resource Planning (IRP) process and the CAISO Transmission Planning Process (TPP); and
6. Need for a broader framework to accommodate its application to regional expansion.

1. Need for a more comprehensive documentation for Capacity Savings calculations

The capacity benefits methodology that was determined under TEAM is outdated due to significantly changed circumstances, since the TEAM approach was originally developed more than a decade ago. The CAISO's Draft Report acknowledges some of the changed circumstances include increased renewable generation, relative adequacy of system capacity and need for greater flexible capacity in California. However, it does not delve into how these changes would affect the capacity value calculations. For the last two major transmission projects approved by the CAISO as economic-driven, the capacity benefits constituted a significant portion of the overall benefit, essentially justifying the transmission projects' economic viability. This increased role for capacity value in overall project benefits demands that several sensitivity analyses be performed, similar to the work that the CAISO has done for the production benefits. Additional capacity benefits sensitivity calculations are not burdensome, as such analyses will likely take relatively less effort and time than production costs. These calculations do not require deployment of the resource intensive production cost tool and analysis. During the August 10th stakeholder meeting, the CAISO stated that it would perform sensitivity analyses on capacity benefits on an "as-needed" and "case-by-case" basis. BAMx appreciates the CAISO's willingness to do so, and urges the CAISO to commit to running sensitivity scenarios for the capacity benefits calculations that takes into consideration stakeholder input in the TEAM documentation just as it does in case of preforming the sensitivity of energy savings values based upon production cost simulations.

The Draft Report lays out four (4) conditions that need to be satisfied simultaneously for a transmission upgrade to provide resource adequacy (RA) benefit from incremental importing capability. Two out of these four conditions are:

- There is capacity shortfall from RA perspective in CAISO BAA in the study years and beyond; and
- The capacity cost in the CAISO BAA is greater than in other BAAs to which the new transmission connects.

The TEAM documentation needs to include specifics on how the CAISO plans to make a determination that there is capacity shortfall from RA perspective in CAISO BAA in the study years and beyond. The CAISO is not the primary regulatory agency that makes decisions as to when and what resources needs to be built in the State to serve the State's load serving reliability needs. Therefore, the CAISO should defer to the CPUC for the IOU's and to the LRA's within California for the other LSE's to determine both the needs for additional RA capacity and the determination of capacity values within and outside the CAISO BAA. If regional expansion occurs, this determination should be by some body that represents the LSE's from the included states in the expanded regional footprint.

2. Need for further stakeholder review of some of the Additional Benefits of Economically Driven Transmission Expansion

BAMx notes that the stakeholders need to have an opportunity to provide input into the determination of both the quantifiable and non-quantifiable benefit categories utilized under TEAM. Section 2.5.5 (Public-policy benefit) of the Draft Report states the following.

> "*When there is a lot of curtailment of renewable generation, extra renewable generators would be built or procured to meet the goal of renewable portfolio standards (RPS). The cost of meeting the RPS goal will increase because of that. By reducing the curtailment of renewable generation, the cost of meeting the RPS goal will be reduced. This part of cost saving from avoiding over-build can be categorized as public-policy benefit.*"

It is not entirely clear to us whether the CAISO plans to quantify the value of the public-policy benefit that would be attributed to a candidate economically-driven transmission project. By comparing the production cost simulations results without and with the candidate transmission project, we can identify the reduction in curtailed renewable generation. In other words, the direct benefit of reduced curtailment can be captured by the production cost simulations. The question remains regarding the assumptions and method to calculate the cost of avoided replacement renewable generation. The Draft Report is unclear on how such valuation would be conducted. We therefore request the CAISO to provide additional details in its next TEAM document update. Furthermore, this appears to be another area where the analysis being performed under the CPUC IRP process can be utilized to identify the value of this benefit.

3. Need to document NPV calculations for estimating benefits of transmission expansion

The CAISO typically calculates the production benefits in two distinct (5 and 10) years. The CAISO then typically interpolates these benefits for the intervening years and assumes a flat

benefit of certain amount in the outer years. BAMx has repeatedly questioned the CAISO's rationale for such extrapolation of economic benefit, and has demonstrated that different methods of extrapolation of the benefits yield vastly different results, and in turn, benefit to cost ratios. The CAISO needs to justify to stakeholders its current practice in performing the extrapolation of the benefits in the outer years of the study period and include sensitivities to alternate forecast methods. The Draft Report does not include any description whatsoever on this critical component of estimating the benefits of transmission expansion. BAMx urges the CAISO to address it in the next TEAM document update.

4. Need to document obsolete sections

When asked what obsolete sections it removed from the TEAM documentation and other detailed questions during the August 10th stakeholder meeting, the CAISO stated that it removed references to the zonal model and outdated information regarding the CAISO's TPP. BAMx requests the CAISO to include a section that describes all such TEAM topics that are deemed obsolete by the CAISO along with the CAISO's rationales to categorize them as such.

5. Outline feedback loop between CPUC IRP and TPP

Senate Bill (SB) 350, known as the Clean Energy and Pollution Reduction Act of 2015 requires the California Public Utilities Commission (CPUC) to oversee an Integrated Resource Planning (IRP) involving a wide range of load-serving entities (Pub. Util. Code § 454.52). The CPUC is currently is in the process of conducting its IRP process. For the purposes of the CPUC's IRP, its consultants, Energy & Environmental Economics (E3) have developed inputs, assumptions and scenarios for RESOLVE to create and analyze optimal portfolios for the CAISO electric system under a range of different forecasts of load growth, technology costs, fuel costs, local area needs and policy constraints.[6] As we have noted above, BAMx considers this an appropriate and critical step. However, currently there is no discussion in the Draft Report on how the CAISO plans to coordinate the assumptions used by TEAM to perform the economic planning studies with the RESOLVE model in the IRP process. During the August 10th meeting, the CAISO indicated that it would use an iterative process with the CPUC, whereby the CAISO will provide updated TPP information to the CPUC for use in its IRP process (RESOLVE model) and that the CAISO will use resource portfolio and other information produced through the IRP process in its studies, including any TEAM analysis. BAMx encourages the CAISO to include the details of this feedback loop between the CPUC IRP and the TPP in the next TEAM document update.

6. Need for a broader TEAM framework

The TEAM approach to date determines whether the overall benefits of any given transmission facility under consideration exceeds its cost. However, in the Regional Transmission Access

[6] RESOLVE, a linear program, optimizes the buildout of new resources twenty years into the future, representing the fixed costs of new investments and the costs of operating the CAISO system within the broader footprint of the WECC electricity system.

Charge (TAC) Options stakeholder initiative conducted during 2015-16 time frame, TEAM was proposed to have an additional role as the key cost allocation tool. In other words, TEAM could be used to determine sub-regional shares of economic benefits associated with regional transmission projects going forward. BAMx believes the TEAM documentation needs to be enhanced to describe its use for this purpose.

Conclusion

BAMx appreciates the opportunity to comment on the TEAM documentation materials and acknowledges the significant effort of the CAISO staff to both develop this material and to adjust its planning process to reflect the numerous changes affecting the industry.

If you have any questions concerning these comments, please contact Kathleen Hughes (khughes@SantaClaraCA.gov or (408) 615-6632).