

## **BAMX Comments on the CAISO Draft 2015-16 Transmission Plan**

The Bay Area Municipal Transmission group (BAMx)<sup>1</sup> appreciates the opportunity to comment on the CAISO Draft 2015-16 Transmission Plan (Draft Plan). The comments and questions below address the multiple *Draft Transmission Plan* studies, findings and recommendations included in the CAISO Draft 2015-16 Transmission Plan dated February 1, 2016 and were subsequently discussed during the February 18<sup>th</sup> stakeholder meeting.

### **Introduction**

Many of the BAMx comments below are driven by a concern about the impact of the CAISO's proposed recommendations and decisions on the Transmission Access Charge (TAC) for load served from the CAISO grid. Substantial increases in the TAC have already been imposed on users of the CAISO grid and significant increases are still yet to come due to not only the Capacity projects in the current CAISO Transmission Plan but the significant non-capacity work (maintainence, compliance, automation, etc) being planned by the PTOs. As such, BAMx believes that it is important to include TAC forecasts as an integral part of the transmission plan. BAMx looks forward to reviewing the CAISO's updated TAC model that is expected to be incorporated into the Final Draft Transmission Plan.

BAMx continues to disagree with the CAISO's position that "Full Capacity Deliverability Status is a necessary and reasonable requirement for the renewable generation portfolios provided to achieve the 33 percent renewable portfolio standard."<sup>2</sup> BAMx supports ORA's previous comment that the CAISO should undertake a cost-benefit analysis to show that any proposed new transmission project to assure deliverability of new resources and/or to decrease envisioned congestion is justified. Notwithstanding this objection, BAMx supports the CAISO identification of low cost solutions such as Special Protection Systems in order to address deficiencies in deliverability that it has identified in this planning cycle.

### **Reliability Transmission Projects**

Many of the transmission projects proposed for approval in this planning cycle are voltage control projects and reflect about 64% of the total recommended capital costs. Most of these are reactive projects in the PG&E area designed to reduce system voltages. As stated in prior comments, it is unclear why the high off-peak voltage problem has emerged and, therefore, it is not understood whether this is a short term problem, perhaps due to the hydroelectric unit commitment during the drought, or if the PG&E load power factors may be excessively leading during low load periods. BAMx recommends that the cause of the increasing system voltages should further studied for another year before approving the major capital additions (which total \$192 million), so that the most appropriate mitigation can be implemented.

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<sup>1</sup> BAMx consists of Alameda Municipal Power, City of Palo Alto Utilities, Port of Oakland, and City of Santa Clara, Silicon Valley Power.

<sup>2</sup> CAISO's response to BAMx's comments on the November 16<sup>th</sup> stakeholder meeting.

While almost all of the proposed large reactive installations are at 230 kV, one of the recommended projects is to install a 100 MVar shunt reactor on the Cottonwood 115 kV bus. It is unclear why this installation is recommended at a different voltage level than the others. Also, it is unclear whether installation of such a large reactor at 115 kV could lead to future 230/115 kV transformer bank capacity issues at Cottonwood.

BAMx supports the CAISO's continued review of previously approved projects to assess whether the planning assumptions have changed sufficiently to cancel or defer a project. CPUC Staff, ORA and BAMx all supported this review of previously approved transmission projects in prior comments. BAMx supports the CPUC Staff request for a list of all previously approved projects that have not yet begun construction and were reviewed by the CAISO. With the increased reliance on Preferred Resources, where the location may not be determined toward the end of the planning horizon, and with the recent legislative mandate to double the energy efficiency goals, BAMx recommends maintaining a list of approved projects that have not yet begun construction, so that the continuing need and timing can be reviewed as part of future planning cycles.

In addition to the 13 projects cancelled in this transmission planning cycle, BAMx recommends that further investigation of the following previously approved projects:

#### Midway-Kern PP #2 230kV Line

The project was justified based on the overloads identified by manually adjusting the demand levels upwards from the load shown in the TPP series base case that was developed from the CEC forecast. For the resulting overloads associated with increased loads, PG&E stated:

“The Special Protection Schemes (SPS) approved in the 2012-2013 TPP as a part of the Kern 230 kV Area Reinforcement will mitigate concerns with the NERC Category C5 contingencies of the Midway-Kern PP 230 kV lines, however, the SPS's proposed will not cover the NERC Category B, and C3 contingencies identified in this reliability assessment.”

The identified Category B contingency exhibited only a 1% overload in the 2023 horizon year. With increased energy efficiency and new solar projects projected for this area,<sup>3</sup> BAMx recommends review of this project to assess whether it can be deferred.<sup>4</sup>

#### Midway-Andrew 230kV Circuit:

The following justification was used to approve the project during the 2013-2014 Transmission Planning Cycle:

“The Midway-Andrew 230 kV Project will fully mitigate the voltage collapse problems presently observed in the Mesa and Divide 115 kV system and protect against approximately 270 MW of load drop following loss of any two of the 230 kV sources at

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<sup>3</sup> There are also very heavy reactive flows in the 2025 case from Midway to Kern PP through the 230kV circuit. Improving the power factor in the Kern area should reduce the ampere flow on these circuits.

<sup>4</sup> Either operational measures or expansion of the SPS are potential options for the C3 (N-1-1) concerns.

the Mesa substation (Category C5, C2 and C3 outages). For the Divide area, the project will avert system voltage collapse and protect against approximately 145 MW of load shedding following loss of Mesa-Divide #1 & 2 115 kV Lines.”

The load forecast for the Central Coast area has been declining in recent planning cycles. BAMx recommends considering whether increased local reactive support and a reduced level of load dropping within the NERC and CAISO Planning Standards would address the identified deficiencies. If this is insufficient, energizing the idle Midway-Santa Maria 115 kV line may provide additional relief.

#### Eldorado-Lugo and the Lugo-Mohave Series Capacitor Projects

The Eldorado-Lugo Series Capacitor Project was originally identified in the Cluster 3-4 Phase II study report as an upgrade required to provide deliverability for the SCE Eastern Group interconnections. It was subsequently approved as a policy-driven project in the 2012-2013 Transmission Plan. Similarly, the Lugo-Mohave Series Capacitor Project was identified in the 2013-2014 Transmission Plan as a policy-driven project. Since the approval of these projects, 1,690 MW of the 2061 MW of the Cluster 3&4 generation projects in the SCE Eastern Bulk System have withdrawn from the CAISO interconnection queue. One remaining request is a 221 MW Energy Only interconnection request, leaving only a 150 MW FCDS request from this cluster. BAMx recommends that this transmission project be reviewed as to whether it is still needed. Such a review should align with the CPUC upcoming decision concerning West of Devers Upgrades, which was also justified to provide FCDS transmission capacity for this same SCE Eastern Area.

#### Special Study – Local Capacity Requirements

BAMx supports the TPP’s continued monitoring of the reliability issues in southern California as the mitigation plan is implemented to mitigate the reliability impacts of the shutdown of both SONGS and the Once Through Cooling (OTC) units. It is important that timely information be provided to the CPUC, so that local resource procurement authorization can be adjusted to match the needs in a timely fashion. In this cycle, the transmission studies identified new concerns about the loading on the 220 kV transmission circuits out of Mesa substation. Information as to what adjustments to the CPUC’s current procurement instructions and the potential alternative transmission costs necessary to mitigate this new issue need to be clearly identified for both the CPUC and SCE. If the 220 kV loading concern cannot be addressed through refinements in the resource procurement, BAMx supports the CAISO’s consideration of lower cost transmission options, such as series reactors as the CAISO staff identified in the stakeholder meeting.

#### Special Study – Gas-Electric Coordination Transmission Planning Studies

The interdependence between the gas and electric infrastructure potential impact on electric reliability needs to be better understood in northern California. BAMx recommends that future planning cycles include such a gas-electric coordination study for the San Francisco Bay Area.

#### Special Study – 50 Percent Renewable Energy

BAMx is highly encouraged by the findings of the investigation into the feasibility and implications of using energy-only procurement to integrate the additional renewable resources

necessary to meet California's 50% RPS goal. In addition to the report's recognition that the need for future renewable generation to provide system resource adequacy capacity is diminishing, BAMx notes that the study demonstrates that nearly 26,000MW of In-State resources can be accommodated on the existing transmission, which significantly exceeds the maximum of 15,000 MW of incremental renewables needed in the CAISO balancing authority area to transition from 33% to a 50% RPS goal. This suggests significant locational flexibility in selecting resources that minimize the risk of curtailment while balancing resource quality and permitting concerns. The availability of congestion and curtailment information, such as presented, is important for the market to make informed resource development and selection decisions.

BAMx also supports increasing use of the interties in the studies to expand exports during times of over-generation. As the initial findings from the SB 350 study have shown with the RESOLVE model, increased export assumptions allow for lower cost implementation of the RPS goals by easing the integration of greater levels of In-State solar generation. Therefore, the CAISO's sensitivity analysis of three export capability assumptions helpful in understanding the value of such capability.

Future enhancements to the 50% RPS studies could include:

1. Clear explanations that the study considered the potential availability of out-of-state resources that can be brought in on the existing interties. The Out-of-State 50% Portfolio included over 4,000 MW of Wyoming and New Mexico wind, but it does not appear that renewable resources in proximity to existing external delivery points utilizing transmission were considered. The initial information from the SB 350 studies suggests that this may be a cost effective alternative. A valuable enhancement for future planning cycles would be to more fully explore the potential for such "neighboring imports." While the SB 350 study assumed an availability of 3,000 MW of such imports, it would be valuable to study the potential range of imports that the system can accommodate on the existing transmission in conjunction with the In-State resource portfolios.
2. Future planning cycles should seek to better define this range to better inform the portfolio selection. This special study looked at a net export range from 0 to 8,000 MW. As noted previously, the ability to manage and export surplus resources is critical to the integration of high penetrations of in-state solar resources.
3. Better explanations of the risk of renewable curtailment under maintenance scenarios. BAMx agrees that, in particular for the Riverside area, the ability to either reduce Arizona imports or schedule power east from this area to manage congestion from renewable generation needs to be understood.

### **Special Study – Bulk Energy Storage**

The Bulk Energy Storage Resources Study with 40% RPS in 2024 found that the economic benefits of energy storage are marginal and that a more diversified portfolio may be a more cost effective solution. BAMx suggests that in future planning cycles the CAISO expand this study to:

1. Consider whether the value of pumped storage changes as the RPS portfolio expands to 50%. Would energy storage appear more cost effective than the reliance on Wyoming and New Mexico wind to achieve a diversified portfolio?
2. Analyze whether the potential value of energy storage would be enhanced if such storage were sited close to the renewable resources, so that in addition to managing over-generation, the energy storage would also help reduce the potential for curtailment associated with internal transmission congestion. One enhancement to the value of such storage implementation would be to redefine how storage would receive FCDS in such an application. For example, reviewing whether storage could be allocated FCDS without any additional DNU's up to the difference in the local solar nameplate rating and its capacity counting value. From this standpoint, the storage could be viewed as "firming" the solar energy. This could increase the capacity value of energy storage sited in congested transmission areas.

BAMx appreciates the opportunity to comment on the CAISO Draft 2015-16 Transmission Plan. BAMx would also like to acknowledge the significant effort of the CAISO staff to develop the Draft Plan, as well as the staff's willingness to work with the stakeholders in the process to more fully develop it. We hope to work with the CAISO staff to continue to improve and enhance its capabilities.

If you have any questions concerning these comments, please contact Joyce Kinnear ([jkinnear@santaclaraca.gov](mailto:jkinnear@santaclaraca.gov) or (408) 615-6656)