

BAMx Comments on the 2014-15 Transmission Planning Process
Preliminary Reliability Assessment Results and PTO Request Window
Submissions

The Bay Area Municipal Transmission group (BAMx)¹ appreciates the opportunity to comment during the development of the 2014-15 Transmission Plan. The comments and questions below address the material presented at the CAISO Stakeholder meeting on September 24-25, 2014.

General Comments

High Voltage Transmission Access Charge Estimating Model

BAMx supports the CAISO's efforts to make available a High Voltage TAC model along with the draft Transmission Plan in January 2015. BAMx encourages the CAISO to post the model and related documentation, so that Stakeholders can use the model and potentially prepare sensitivity analysis of the future HV TAC charge impact of the projects under consideration in the 2014-15 Transmission Planning Process (TPP).

Imperial Area Deliverability/Southern California Needs

BAMx is encouraged by the clarity provided by the CAISO's statement that "the preliminary reliability assessment does not show a residual reliability need in Southern California." This provides an important foundation from which to view reliability improvement proposals in the area. Before any new major transmission import projects are considered based upon enhanced reliability, parties must allow the elements of the current CAISO transmission plan and CPUC's Long Term Procurement Plan to work through their respective processes, including the implementation of the approved transmission projects as well as SCE's and SDG&E's procurement of conventional and preferred resources. This statement also allows the Imperial Area Deliverability issue to be viewed as a separate and distinct issue with a focus on (1) the ability and cost to physically connect new renewable generation in the Imperial Area, and (2) the amount of, and the need for resources in this area to count towards procurement targets along with the consumer costs that would be incurred for the two primary options being consider:

- (i) Upgrading the transmission system to afford resources in the CAISO Balancing Authority (BA) Full Capacity Deliverability Status (FCDS), or
- (ii) Reallocating Maximum Import Capability (MIC) from other CAISO interties to the CAISO's interties with the Imperial Irrigation District (IID) to afford resources in the IID BA with system Resource Adequacy (RA) counting rights.

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

Need to Perform Sensitivity Analysis for Capacity Benefits for Harry Allen-El Dorado 500 kV project

During the September 24th Stakeholder meeting, the CAISO indicated that it would estimate capacity cost benefits associated with the Harry Allen-El Dorado 500 kV project (HAE) based on an incremental increase in Path 46 transfer capability and capacity price difference. Although BAMx agrees with the CAISO's proposed concept of calculating the capacity benefits, we believe that CAISO should perform several sensitivity analyses for the calculation of the capacity benefits of *Harry Allen-El Dorado*, similar to the work that the CAISO plans to perform for the production benefits. Additional capacity benefits sensitivity calculations are reasonable, as such analyses will likely take relatively less effort and time because these calculations do not require the use of resource intensive production cost models and subsequent analysis.

In the 2013-14 TPP, the CAISO derived capacity benefits based on the assumptions that California would continue to have a resource adequacy requirement and that Arizona could be the source of contracted capacity to serve California load. Additionally, a key assumption for these savings was that the future cost of capacity in Arizona would be significantly less than the cost in California. BAMx agrees that such a set of conditions is one possible future scenario. However, the CPUC 2012 LTPP suggests that the system planning reserve margin is expected to be in the range of 120% during the 2020-2022 time period.² Although there is a need for greater flexible resources in the outer years in California, it does not mean that there is system resource inadequacy. Therefore, we caution the CAISO against using only a single scenario that assumes California has a resource deficiency in the future.

In summary, BAMx requests that the CAISO should explore additional alternative sensitivity scenarios and evaluate their impact on the capacity benefit associated with the candidate transmission projects. Furthermore, the CAISO's capacity benefits calculations performed in the 2013-14 Transmission Plan assumed that the entire capacity benefit would be attributed to CAISO ratepayers. The CAISO's Transmission Economic Assessment Methodology (TEAM), on the contrary, assumes that the capacity benefit is split equally between the buyers and sellers of capacity. BAMx urges the CAISO to perform the *Harry Allen-El Dorado* capacity value benefit calculations consistent with the CAISO's TEAM methodology and approach.

² Source: 2012 LTPP, See Appendix B. Data shown is the Base Scenario from D. 12-12-010, Appendix C, and page C-1. Also, see the presentation by Edward Randolph, Director Energy Division, CPUC at CPUC-CAISO Long-Term RA Summit, February 26, 2013.

Preferred Resource Alternatives to Transmission or Conventional Generation Methodology

BAMx also supports the efforts to integrate the use of preferred resources into the planning process and structures. During last year's planning cycle, substantial progress was made in identifying the needed characteristics for preferred resources to offset the need for transmission. Sample preferred resource development options provided by SCE were analyzed to determine their impact upon the need for transmission in the South Coast. Stakeholders were told to expect a greater application of the state policy with respect to favoring preferred resources in the 2014-15 Transmission Plan. Additionally, during the development of the latest revision to the CAISO planning standard, there was continued reference to the fact that restricting the non-consequential loss of load in high density metropolitan areas for level C events did not mean transmission would be needed to prevent the loss of load. There was a specific reference to preferred resources as alternatives to load dropping and new transmission.

Some preferred resources are best accounted for through netting against the load modeled in the base cases. In other situations, more explicit modeling of such preferred resources is necessary to understand their role in satisfying local needs and potentially deferring costly upgrades to the transmission system. BAMx, therefore, is supportive of the modeling of demand response and energy efficiency in the SCE and SDG&E systems as well as energy storage in the SCE system. However, such enhanced modeling appears to be focused on the Southern California area impacted by the Once-Through Cooling (OTC) unit retirements and the shutdown of SONGS. Outside of this specific area of recent concern, the modeling enhancements do not appear to be implemented nor was consideration of preferred resources mentioned as among the project alternatives. Hopefully, this perception is incorrect, and we will get a better understanding how such preferred resources have been taken into account later in the process of developing of the 2014-15 Transmission Plan.

In order to achieve better uniformity in system modeling and clearer understanding of the potential for preferred resources to address reliability concerns, BAMx requests that the CAISO adopt and publish a standard modeling and identification practice for preferred resources and consider the ability of such resources as an alternative mitigation to transmission proposed in the 2014-15 Transmission Plan.

CAISO Reliability Assessment Results

Local Congestion Management and Greater Bay Area (GBA) Imports

The Reliability Assessment identified potential overloads on the Contra Costa-Newark 230 kV lines. These may become more severe if modeling Pittsburg PP off-line lessens the support of Newark from the Pittsburg-Newark 230 kV line. Mitigation of the overload through congestion

management by reducing Contra Costa area generation may be a reasonable solution for this issue, but BAMx is concerned that it is unknown how this may impact GBA reliability. The planning base case generally models all major Bay Area dispatchable power plants at or near their maximum capabilities. Therefore, any reductions in generation due to congestion management (or modeling Pittsburg PP off-line) or unplanned increases in load will likely need to be offset through additional GBA imports. Unfortunately the import capability into the GBA is not defined. The CAISO's Local Capacity Requirement studies define local needs based upon the planning assumptions, but do not provide insights into the ability of the system to accommodate changes such as the Pittsburg PP and Oakland CTs being shut down or the need to reduce Contra Costa Area generation during summer peak conditions for congestion management. To better understand the flexibility of the system to accommodate such changes, BAMx recommends that the CAISO identify the import capability of the GBA and the margin available to accommodate changes such as those described above.

PTO Request Window Project Applications

San Diego Gas and Electric (SDG&E) Valley Inland Power Link

SDG&E has proposed the Valley Inland Power Link, a 1500 MW HVAC or HVDC transmission line to strengthen the connection between SCE and SDG&E, at an estimated cost of \$1.2 **Billion** to \$4.4 **Billion**. As noted above, the CAISO's reliability assessment does not show a residual reliability need in Southern California. Furthermore, the justification presented by SDG&E (meet reactive margins, replace inertia and dynamic reactive capability, renewable integration, reduce the risk of voltage collapse and improved voltage control) is inadequate to merit any serious consideration of approval of such a large expenditure in this planning cycle. Despite the CAISO's findings to the contrary, if these are long-term issues on the SDG&E system, there are much lower cost methods of improving reactive margin and voltage control that should be considered first.³ BAMx recommends that this proposal be rejected as both pre-mature and lacking sufficient consideration of lower cost alternatives.

Valley Electric Area (VEA) Nevada West Connect 230 kV New Line

Similar to the last TPP cycle, the VEA-proposed Nevada West Connect 230 kV line lacks sufficient justification for such a major transmission expansion. From a reliability perspective, the CAISO assessment identified much lower cost solutions to the identified forecast reliability deficiencies. Such a massive transmission project is certainly not justified to address voltage issues on VEA's remote 10 MW peak load in the Fish Lake area.⁴ As for enhancing access to

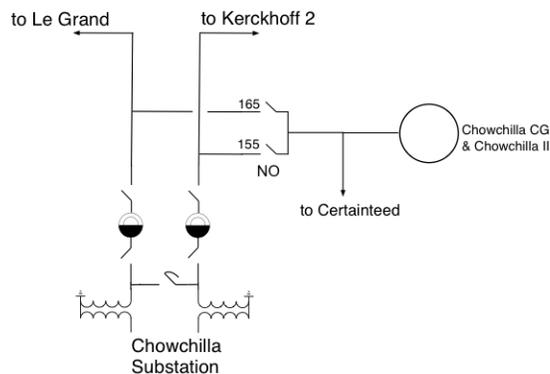
³ Note that no lower cost options typically considered for these types of voltage/reactive issues are mentioned by SDG&E as alternative solutions. After demonstrating that there are reliability deficiencies within the planning horizon, it must be shown why local reactive supply is not a feasible option.

⁴ Local voltage support or a small Static VAR Compensator (SVC) is a much more reasonable solution to local voltage issues. If additional transmission is to be considered to address this voltage issue, a 138 kV (or lower)

renewable energy projects to export beyond the VEA system, this must be measured against the renewable resource portfolios provided by the CEC and the CPUC for inclusion in the TPP. Also, the proposal is incomplete as the proposed project, though already very costly, does not address how the potential renewable energy would move beyond Inyo or Eldorado Substations, both of which already have identified renewable energy potential in excess of the planned transmission capacity.

Pacific Gas and Electric (PG&E) Le Grand-Chowchilla-Dairyland 115 kV Loop (May 2022)

PG&E has proposed looping a relatively nearby (2 miles away) 115 kV line into Chowchilla to address near-term voltage issues and long term (beyond the planning horizon) thermal loading issues. While such a looping of an existing circuit into an existing substation would normally be a promising solution, the identified cost of \$25 million to \$40 million reduces its appeal. We suspect that most of this cost is associated with reconfiguring the current Chowchilla minimal two breaker design to a six element ring bus.



One of the issues associated with the system performance at Chowchilla is that the loss of the Le Grand-Chowchilla 115 kV line, the primary supply for the area, also results in the loss of local generation due to the system configuration. The 2024 summer peak base case models the combined Chowchilla CG and II generation at 57.4 MW. This local generation also provides substantial voltage support. The contingency for the loss of Le Grand to Chowchilla circuit also takes out Chowchilla Co Generator. We believe that closing the normally open switch 155 and opening the normally closed switch 165 solves any thermal or voltage issues identified in the PG&E's request window presentation during the September 25th Stakeholder meeting (See the figure above).⁵

transmission line to the SCE Inyo substation or an additional tie to NVE are much more in line with the magnitude of the problem.

⁵ An overlapping *G-I* would also need to consider the loss of the larger Chowchilla CG, but then would not need to consider the loss of Kerckhoff 2 identified in the project assessment.

The installation of four steps of 10 MVAR capacitors was identified as an alternative to address the near term voltage issues. In the event that local voltage support is needed, the cost of this element should be identified as well as whether placement is possible in a manner that does not necessitate reconfiguring Chowchilla Substation. In the event that the CAISO does approve the proposed 115 kV loop into Chowchilla, the need for the previously approved LeGrand-Chowchilla 115 kV should be revisited.⁶ The October 1, 2014, PG&E Quarterly Status Report indicates this project is still in the engineering phase.

Scenarios should be considered to explore stand-alone preferred resources or a combination of preferred resources and shunt capacitors to eliminate both voltage and thermal loading issues.

PG&E Semitropic-Wasco-Famoso-Kern Oil-Kern 70 kV Voltage Conversion (May 2022)

This project would convert 45 miles of existing 70 kV circuit to 115 kV operation which, along with other associated upgrades, would cost \$85 million to \$125 million. The PG&E presentation indicates that this project is proposed to address the following four Category B contingency overloads.

1. Lerdo – Kern Oil – 7th Standard 115 kV Line
2. Kern – Live Oak 115 kV Line
3. Kern Oil – Witco 115 kV Line
4. Live Oak – Kern Oil 115 kV Line

The Reliability Assessment results indicate that some of these issues will be mitigated by the approved Wheeler Ridge Junction Station and Kern PP 115 kV Area Reinforcement Projects. The remaining overloads involve the loss of the Kern Oil-Witco 115 kV circuit (though the Category B overload of this circuit identified above does not appear in the assessment results). Therefore a more economic mitigation plan could include:

1. Removing the ties and restoring the Kern Oil - Kern Power to double circuit operation from Kern Oil to Witco.
2. Installing 115 kV line termination each at Kern Oil and Witco.
3. In the event there would be a capacity issue associated with the existing conductor on this line, reconductoring could be considered for this short segment.

In the event that converting the 70 kV lines to 115 kV operation is still an option being considered rather than the above, it may be possible to reduce the project scope by:

1. Converting and reconductoring the 70 kV line sections from Semitropic to Famoso and from Kern Oil to Lerdo. Leave the 70 kV line section between Famoso and Lerdo open and idle.

⁶ Approved in 2010.

2. Installing 115 kV line terminations, in either a sectionalized bus or double bus configuration, at Famoso and Lerdo Substations to terminate the converted Semitropic-Famoso and Kern Oil -Lerdo 70 kV line sections, respectively.

As for other elements of the proposed solution, consideration as to whether to no longer serve some customers in a radial configuration should be based upon a benefit-to-cost ratio (BCR) analysis as described in the CAISO Planning Standards.

The justification for converting the three 115 kV stations to a breaker-and-a-half (BAAH) configuration is not stated and is somewhat surprising for stations with lower customer densities such as these. The cost of converting these 115 kV stations to BAAH configurations should be separately evaluated and if being justified based upon reliability, should also be subject to a BCR analysis.

PG&E Panoche-Oro Loma 115 kV Reconductoring Project (May 2022)

This project would reconductor 17 miles of 115 kV line between Panoche Junction and Oro Loma Substation at an estimated cost of \$30 million to \$45 million. This appears to be due to the strength of Panoche with respect to Wilson, thereby causing a strong flow on the two 115 kV cross-valley circuits. The loss of the Panoche-Mendota 115 kV redirects heavy flows onto the Panoche-Oro Loma 115 kV line.

BAMx did a preliminary study of an alternative project that installs a series reactor on the Panoche to Oro Loma 115kV circuit as a means to avoid the overload. The reactor would limit the flow on the 115kV circuit. We believe that an appropriate sized reactor would solve the thermal overload and would not cause any voltage violations in the area. We encourage the CAISO to study this alternative.

Conclusion

BAMx appreciates the opportunity to comment on the 2014-15 Transmission Plan Reliability Assessment Results and the PTO Request window submissions and acknowledges the significant effort of the CAISO and PTO staffs to develop this material.

If you have any questions concerning these comments, please contact Robert Jenkins (415-926-1530 and robertjenkins@flynnrci.com), or Barry Flynn (888-634-7516 and brflynn@flynnrci.com), or Pushkar Wagle (888-634-3339 and pushkarwagle@flynnrci.com).