

**BAMx Comments on the 2015-16 Transmission Planning Process**  
**Preliminary Reliability Assessment Results and PTO Request Window**  
**Submissions**

The Bay Area Municipal Transmission group (BAMx)<sup>1</sup> appreciates the opportunity to comment during the development of the 2015-16 Transmission Plan. The comments and questions below address the material presented at the CAISO Stakeholder meeting on September 21-22, 2015.

**General Comments**

***Preferred Resource Alternatives to Transmission or Conventional Generation Methodology***

BAMx supports the efforts to integrate the use of preferred resources into the planning process and structures. During the 2013-14 planning cycle, substantial progress was made in identifying the necessary 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 future planning cycles. 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 also 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 is supportive of the explicit modeling of demand response and energy efficiency and is pleased to see explicit modeling of AAEE has been expanded to the PG&E area in this cycle.

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. Also as a next step in building upon the program underway in the SONGS area, a joint CAISO, CPUC, and utility effort should be developed to target areas where more focused preferred

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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.

resource development can be identified and implemented to further integrate resource and transmission planning.

### **CAISO Reliability Assessment Results**

#### **Tesla-Metcalf-Moss Landing-Los Banos 500 kV Loop N-1-1 Performance**

The Reliability Assessment identified potential reliability issues with the southern Bay Area associated with overlapping 500 kV outages. This is an important new finding in the 2015-16 Transmission Planning Process (TPP). The assessment identified long-term issues if all the Once-Through-Cooling (OTC) units at Moss Landing are shut down in their compliance year of 2020. However, if the two new combined cycle power blocks (Units 1 & 2) are available at 85% of their current capacity, the assessment concluded that the reliability concerns would be mitigated. It was noted that the plant owner has a compliance plan that would allow such operation for Units 1 & 2.

There are similarities between the condition identified for the southern Bay Area and those of San Diego where overlapping 500 kV outages and the potential shut down of OTC units creates a potential risk for interruption to service for high density urban loads. While in this case there is a potential for the local generation to remain in operation, the status of such generation needs to be monitored closely. While the ability to operate is a necessary condition, it is not sufficient as the generation projects must be commercially viable.<sup>2</sup>

BAMx recommends that the amount of local generation required to maintain local reliability be coordinated with the CPUC Long Term Procurement Process and that both the permit and commercial status of the Moss Landing units be monitored closely. The outcome of the local procurement activities and the OTC compliance progress then must inform future transmission planning cycles.

#### **Buck Blvd Generation Tie Loop-In Project**

BAMx supports the CAISO's assessment in regards to the Buck Blvd Generation Tie Loop-In Project that this appears to be a solution that creates as many, if not more, problems than it solves. The project would connect additional transmission capacity to Colorado River and/or Red Bluff where neither location has been identified as having a transmission capacity need in the TPP following the recent completion of the Colorado River-Devers-Valley 500 kV line. The constraint appears to be west of Julian Hinds, which the proposed project neither reinforces nor sufficiently relieves. Furthermore, the CAISO identifies that there are measures in place or proposed to address all current reliability issues.

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<sup>2</sup> The need for commercial viability to sustain long-term operation has been highlighted recently by the shut down of the Coolwater generating facility and the threatened shut down of the Sutter Power Plant.

## **PTO Request Window Project Applications**

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

Once again, SDG&E has proposed the Valley Inland Power Link, HVAC or HVDC transmission line to strengthen the connection between SCE and SDG&E, estimated in previous TPP cycles to cost \$1.2 **Billion** to \$4.4 **Billion**. This project is unnecessary. To again submit this project into the Request Window suggests that SDG&E believes that it will fail in its CPUC LTPP Track 4 procurement efforts.<sup>3</sup> Even if this is SDG&E's Transmission Planning's position, such an assessment is premature until the SDG&E preferred and gas fired resource procurement results are reported. The CAISO's reliability assessment does not show a residual reliability need in Southern California. Furthermore, the justification presented by SDG&E (to meet reactive margins 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.<sup>4</sup> BAMx recommends that this proposal be rejected as both pre-mature and lacking sufficient consideration of lower cost alternatives.

### SDG&E SCR Reinforcement and Install 3rd Miguel Class 80 Bank

SDG&E not only proposes a third 500 kV connection into San Diego as described above, it also proposes to increase the capacity of the two existing connections through the SCR Reinforcement and the installation of a third Miguel 500/230 kV transformer. They were described by SDG&E at the stakeholder meeting as shorter-term alternatives compared to the longer term Valley-Inland Power Link. However, the SCR Reinforcement includes a new 230 kV line on a new right-of-way. As such, like the Valley-Inland Power Link, it would need to go through a full permitting process and be subject to similar development schedules.

The SDG&E Request Window proposals are deficient in that they do not include an estimate of the cost of the SDG&E proposals. Such information is important so that the cost of local resource options identified in the current SDG&E procurement processes can be compared to the cost of expanded import capability. Further expansion of the San Diego import capability must be part of an integrated planning process that considers local supply options in order to assure the reliable supply of energy at a reasonable cost.

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<sup>3</sup> CPUC Authorizing Long-Term Procurement For Local Capacity Requirements Due To Permanent Retirement of The San Onofre Nuclear Generations Stations, (Decision 14-03-004), March 13, 2014, p.4.

<sup>4</sup> 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.

### SDG&E Reinforcement of Southern 230 kV System

Similar to the other large proposals by SDG&E, this project lacks any cost information or consideration of alternatives. Also it was not clear from the scope of the proposed work whether the upgrades could be done on existing structures or if new structures would be needed (Miguel-Bay Blvd 230 kV). The CAISO's reliability assessment included a number of project alternatives; however, it is not clear how or whether any of these alternatives were considered. BAMx recommends withholding approval of this project in the current TPP cycle until an economic comparison of fully defined alternatives can be presented.

### SCE Big Creek Corridor Thyristor Control Series Capacitors (TCSC)

BAMx supports the overall approach of fully utilizing existing transmission capacity before considering new transmission lines requiring new rights-of-way. This proposal reflects one such approach and is represented as being superior in both performance and price to the two other flow control devices considered (SMART Wires Tower Routers and Phase Shifting Transformers). Another option that would increase the utilization of existing assets would be a connection between SCE Big Creek lines and the PG&E Helms or Kings River lines. BAMx recommends that SCE/PG&E connection also be considered.

BAMx also recommends that whether the solution is TCSC devices or a new SCE/PG&E interconnection, any approved project should be subject to competitive solicitation.

### PG&E High Voltage Mitigation Projects

PG&E has proposed a series of nine projects to install a total of 1,275 MVARs of shunt reactors at a combined cost of \$156 million to \$231 million. As an initial observation, it is unclear why the high off-peak voltage problem has emerged. Most common causes of high voltages during load periods are the addition of new, lightly loaded transmission circuits, transmission reconfigurations, or significant changes in generation dispatch, especially unit commitment.<sup>5</sup> Natural load growth can provide some mitigation of high system voltages. More investigation is needed as to the cause of the trend in high voltages to better understand as to whether such causes are temporal or indicative of a long-term change.

BAMx supports PG&E's use of an Optimal Power Flow (OPF) tool to identify size and location of the proposed installations. However, like most tools, the inputs assumptions are critical.<sup>6</sup> For

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<sup>5</sup> In its presentation of its Big Creek Corridor proposal, SCE identified a trend in reduced generation from its hydroelectric generation as the cause of a reliability concern. Much of the northern area where PG&E proposes to install shunt reactors serves to connect both PG&E and third party hydroelectric generation. Further investigation is needed to understand whether this area has also experiencing changes in the off-peak generation dispatch and unit commitment.

<sup>6</sup> It is unknown whether the OPF started with a posted off peak reliability base case.

example, PG&E notes that its distribution substation power factors have been leading, thereby contributing to the high voltage problem. The CAISO tariff includes load power factor requirements so that distribution systems do not overly burden the transmission system.<sup>7</sup> PG&E should maintain the distribution power factors within the CAISO tariff requirements, and it should be verified that the optimal power flow base case assumptions are consistent with the CAISO tariff and whether further improvements to the distribution voltage control can serve as an alternative. Secondly, the generation unit commitment should be reviewed to assess whether the commitment reflects expected conditions. Committing fewer generation units reduces the voltage control on the system and can result in high off-peak voltages.

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

This project was submitted in the previously planning cycle. This project would reductor 17 miles of 115 kV line between Panoche Junction and Oro Loma Substation. BAMx is pleased to see that the estimated cost has dropped by almost half compared to the prior estimate.

As commented in the last planning cycle, the high loading on the Panoche-Oro Loma 115 kV 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. As noted in the last planning cycle, 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 appropriately 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 2015-16 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](mailto:robertjenkins@flynnrci.com)), or Barry Flynn (888-634-7516 and [brflynn@flynnrci.com](mailto:brflynn@flynnrci.com)), or Pushkar Wagle (888-634-3339 and [pushkarwagle@flynnrci.com](mailto:pushkarwagle@flynnrci.com)).

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<sup>7</sup> CAISO Tariff Section 8.2.3.3 “All Loads directly connected to the CAISO Controlled Grid shall maintain reactive flow at grid interface points within a specified power factor band of 0.97 lag to 0.99 lead.”