Submit comment on September 27-28 Stakeholder Call Discussion

2021-2022 Transmission planning process

1. Provide your organization's comments on the overview and key issues, as described in slides 4-16 of the ISO's day 1 presentation:

The Bay Area Municipal Transmission group (BAMx)[1] appreciates the opportunity to comment during the development of the 2021-22 Transmission Plan. The comments and questions below address the material presented at the CAISO Stakeholder meeting on September 27-28, 2021.

2. Provide your organization's comments on the preliminary reliability assessment results for the northern areas, as described in slides 17-118 of the ISO's day 1 presentation:

(Northern areas include the Greater Bay Area, Northern CA Bulk System, Central Coast & Los Padres Area, Kern Area, Fresno Area, North Coast & North Bay Area, North Valley Area, and Central Valley Area)

Previously Approved PG&E Projects

BAMx applauds the CAISO's efforts in confirming the need for the previously approved projects. For example, the Fresno Area Preliminary Reliability Assessment Results identified the continued need for the following four previously-approved projects.

1. Wilson 115kV Reinforcement Project;
2. Herndon-Bullard 115 kV Reconductor;
3. Reedley 70 kV Reinforcement (Dinuba Battery Energy Storage); and
4. Wilson-Oro Loma Reconductoring.

However, this list excludes another project, namely Oro Loma 70kV Area Reinforcement Project. Does this mean that Oro Loma 70kV area Reinforcement Project is not continued to be needed? Please see further discussion on this project below.

BAMx urges the CAISO to systematically and consistently review the continued need for the previously-approved projects in all the planning areas.

Ora Loma 70kV Reinforcement Project

Oro Loma 70kV Reinforcement Project was approved in the 2011-2012 TPP. The original scope of the project included building a new 230/70kV substation near Mercy Springs Junction and converting a single-pole line into a double circuit tower line to create a new 70kV line from

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

Mercy Springs to Canal.[2] Based on the information presented by PG&E as part of the Stakeholder Transmission Asset Review Process (STAR) process, the scope of the project has been reduced to reconductoring 2.4 miles of *Los Banos-Livingston Jct-Canal 70kV* line and reconductoring of 10.8 miles of *Mercy Springs-Canal-Oro Loma* line.[3]

The latest identified reliability need for the project is a thermal overload on Mercy Springs-Canal 70kV for the loss of Los Banos-Livingston Jct-Canal 70kV and a thermal overload on Los Banos-Livingston-Canal 70kV circuit for the loss of Mercy Springs-Canal 70kV.[4] However, this overload is not identified in any of the CAISO's preliminary reliability results for 2021-2022 TPP including the sensitivity cases. Moreover, when BAMx removed the proposed project from the 2031 Summer Peak Base Case for the Central Valley area and applied the identified contingencies, the post contingency loadings on Los Banos-Livingston-Canal 70kV and Mercy Springs-Canal 70kV circuits were 87% and 103%, respectively. Since these circuits are not overloaded in the 1-year-out (2023) and 5-year-out (2026) cases and show only a marginal overload in the 10-year-out case, BAMx suggests the CAISO reevaluate the need for the project and whether preferred resources, such as battery storage, could be used as an alternative mitigation measure.

Midway-Temblor 115kV Line and Voltage Support

The Midway-Temblor 115kV Line and Voltage Support reinforcement project was approved in the 2012-2013 Transmission Planning Process (TPP). The scope of the project is to reconductor approximately 15 miles of Midway-Temblor 115kV line and install 45MVAR of shunt capacitors at Temblor substation.

The latest identified need for the project is to mitigate a thermal overload on Midway-Temblor 115kV due to *N-1-1* outage of Gates-Midway 500kV line and Gates 500/230kV bank. The voltage support portion of the project also mitigates low voltages at Temblor due to an *N-1* outage of Midway-Temblor 115kV.[5] However, the overloads identified by PG&E were not observed in the latest Preliminary Reliability Results for years 2023 and 2026 posted by the CAISO for the 2021-2022 Transmission Planning Process. BAMx believes that the new second 500/230kV transformer at the Gates substation[6] that is currently operational potentially mitigates the identified *N-1-1* or P6 overload on the Midway-Temblor substation. BAMx requests the CAISO to re-evaluate the continued need for the project. If the project is found to be needed, the CAISO should identify the contingencies and the related overloaded transmission facilities driving the continued need for the project.

Morgan Hill Area Reinforcement Project

The Morgan Hill Reinforcement project was originally approved in the 2013-2014 TPP cycle. Through project re-evaluation, the scope of the project has changed, and the latest approved project scope is to "Rebuild Metcalf-Green Valley 115kV into the Green Valley-Morgan Hill

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[2] *Oro Loma 70kV Area Reinforcement* Project, Request Window Submission, Page 1.
[3] PG&E Stakeholder Transmission Asset Review Process Stakeholder Meeting, August 3, 2021, – Page 54 of 58.
[4] *Ibid*.
[5] PG&E Stakeholder Transmission Asset Review Process Stakeholder Meeting, August 3, 2021, – Page 58 of 58.
[6] CAISO 2020-2021 Transmission Plan, February 1, 2021, Table 8.1-2: Status of Previously-Approved Projects Costing $50 M or More, shows that the Gates #2 500/230 kV Transformer Addition project has been completed.

115kV and convert Morgan Hill 115kV bus to a BAAH configuration".[7]

The latest identified needs for the project are driven by the thermal overloads on Metcalf-Llagas 115kV circuit which are mitigated by the line re-arrangement associated with the Morgan Hill Area Reinforcement project. The justification for rebuilding the Morgan Hill 115kV substation into a breaker-and-a-half configuration is unclear. If PG&E needs an additional breaker position for the newly built Green Valley-Morgan Hill 115kV circuit, the existing substation configuration should be modified. BAMx requests the CAISO to reevaluate the need for rebuilding the Morgan Hill substation into a breaker-and-a-half configuration. If such a need is not identified, the scope of the project should be adjusted to exclude the rebuild of the Morgan Hill substation. BAMx requests the CAISO to reevaluate the need for rebuilding the Morgan Hill substation, a distribution substation, into a breaker-and-a-half configuration which is contrary to the enhanced-loop or the ring bus configuration as specified in PG&E's design standards.

3. Provide your organization's comments on the high voltage assessment results for the PG&E area, as described in slides 119-143 of the ISO's day 1 presentation:

No comments at this time.

4. Provide your organization's comments on the preliminary reliability assessment results for the southern areas, as described in slides 144-220 of the ISO's day 1 presentation:

(Southern areas include the SCE main and bulk systems, the SCE – Eastern Area, SCE – North of Lugo, SCE – East of Lugo, and SCE – Big Creek Corridor)

No comments at this time.

5. Provide your organization's comments on the preliminary reliability assessment results for the VEA areas, as described in slides 221-232 of the ISO's day 1 presentation:

See BAMx comments in response to Q.12.

6. Provide your organization's comments on the preliminary reliability assessment results for the SDG&E areas, as described in slides 233-253 of the ISO's day 1 presentation:

See BAMx comments in response to Q.11.

7. Provide your organization's comments on the wildfire assessment scenarios, as described in slides 254-261 of the ISO's day 1 presentation:

No comments at this time.

8. Provide your organization's comments on the updates related to the 20-Year Transmission Outlook, as described in slides 262-281 of the ISO's day 1 presentation:

No comments at this time.

9. Provide your organization's comments on the PG&E Reliability Alternatives:

[7] PG&E Stakeholder Transmission Asset Review Process Stakeholder Meeting, August 3, 2021, – Page 53 of 58.

No comments at this time.

10. Provide your organization's comments on the SCE Reliability Alternatives:

No comments at this time.

11. Provide your organization's comments on the SDG&E Reliability Alternatives:

SDG&E's New 500kV Miguel-Suncrest Circuit Project

SDG&E has proposed the New 500kV Miguel-Suncrest project. The scope of the project is to construct approximately 33 miles of new 500kV line between Miguel and Suncrest substations. The identified cost estimate of the proposed project is $335 million to $600 million. The justification for the project is a P3 overload identified in the 2023 Summer Peak base case and a P1 overload identified in the Peak Load and *Heavy Renewables* sensitivity case. BAMx questions if sufficient justifications exists for the approval of the project. The identified P3 violation is 105%. Per CAISO's planning standards, the P3 types of contingencies allow system readjustment between the first and second contingencies. Additionally, the CAISO has already developed a potential mitigation measure to mitigate the P3 and P6 overloads.[8]

BAMx did not find any evidence as to why system readjustments and operational actions are not capable of mitigating the P3 and P6 overloads identified in the 2023 Summer Peak case. The other P1 contingency is only for a sensitivity case and is not observed in any of the base cases. The reliability justifications for the proposed projects are not clear, and therefore the CAISO should not approve the new 500kV Miguel-Suncrest Circuit project at this time.

12. Provide your organization's comments on the GLW Reliability Alternatives:

GridLiance West Upgrade

GridLiance West has proposed a project (GLW Project, hereafter) to mitigate overloads on the VEA system identified in the 2031 Spring Off-Peak case.[9] The scope of the project includes rebuilding multiple circuits across the VEA system to 230kV voltage class, adding a second 230kV circuit from Innovation to Desert View, adding 500/230kV transformer at Sloan Canyon substation and looping the Harry Allen to Eldorado 500kV line at Sloan Canyon substation. The estimated cost of the project is $213 Million. GridLiance has identified economic benefits of $67 million annually as well as additional policy benefits from the proposed project.

Since the reliability overloads are identified exclusively in the 2031 Spring Off-Peak case with relatively low system load as compared to the Summer Peak case, the overloads are likely driven by surplus generation as opposed to inability to serve load. As the CAISO has identified in its Preliminary Reliability Assessment, the overloads identified in the 2031 Spring Off-Peak needs

[8] CAISO, San Diego Gas & Electric Area Preliminary Reliability Assessment Results, 2021-2022 Transmission Planning Process Stakeholder Meeting, September 27-28, 2021 – slides 9-12.
[9] GridLiance West Project Proposal for the 2021-2022 TPP Reliability Request Window, September 27-28, 2021, page 2.

to be further evaluated in the policy study for potential upgrades.[10] BAMx believes that it is premature to consider the GLW project as a reliability-driven project at this time, and supports the CAISO's assessment that it needs to evaluate policy and economic benefits of the project for further consideration in the current TPP cycle.

13. Provide your organization's comments on the economic assessment update, as described in slides 1-9 of the ISO's day 2 presentation:

CAISO Net Export Limit Assumption

The net export limit for the CAISO system is considered in CAISO's production cost simulation studies and in CPUC's IRP studies. BAMx agrees with the CAISO that the net export limit is neither a transmission constraint, nor a market constraint imposed by the CAISO in operation.[11] Although BAMx supports the CAISO's decision to expand the CAISO net export limit to 5000 MW in the 2031 planning PCM for the 2021-2022 transmission planning study, BAMx questions why it should be limited to 5,000 MW. After all, historical data shows increasing levels of export limits well in exceedance of 2,000 MW. Having CPUC's IRP and CAISO's renewable studies use a 5,000 MW limit in and itself should not be the reason for the CAISO to restrict it to 5,000 MW.

14. Provide your organization's comments on increasing procurement and capacity in portfolios topic, as described in slides 10-14 of the ISO's day 2 presentation:

Transmission Needed for To Accommodate Increasing Procurement and Capacity in Portfolios

During the September 28th presentation, the CAISO identified transmission needs with the increasing procurement and future portfolios. It included a list of transmission projects identified in the CAISO transmission capability estimates as shown in Table 1 below.

[10] See CAISO, Valley Electric Association Preliminary Reliability Assessment Results, 2021-2022 Transmission Planning Process Stakeholder Meeting, September 27-28, 2021, page 8.
[11] CAISO, "Economic Assessment Assumption Update for 2021-2022 Planning Cycle," 2021-2022 Transmission Planning Process Stakeholder Meeting, September 27-28, 2021, page. 5.

Table 1: Transmission Projects Identified in CAISO Transmission Capability Estimates[12]

Transmission project	Incremental FCDS with upgrade (MW)	Estimated time to construct (months)	Estimated Cost ($ million)
Antelope - Vincent 500kV line rating increase	2,700	18	15
Laguna Bell - Mesa line upgrade	470	27	21
New Colorado River 500/230kV No. 3 transformer	1,000	42	74
New Lugo 500/230kV No. 3 transformer	980	42	70
New Eldorado 500/230 transformer	400	42	70
Silvergate - Bay Blvd 230kV 3-ohm Series Reactor	2,067	72	31
Woodland-Davis 115 kV Lines	96	60	11
Gates Transformer Bank # 13	4,453	48	$40

It is not clear to BAMx whether the projects identified in Table 1 are needed to accommodate the Base and/or any of the two Sensitivity portfolios in the current transmission planning cycle. BAMx notes that additional transmission projects were identified in the CAISO's white paper on the transmission capability estimates for CPUC's resource planning process.[13] The RESOLVE model used to develop the 2021-2022 TPP resource portfolios did not take into account the scope and cost associated with the transmission projects listed in Table 1. Had it incorporated this information, it would not have selected certain resources in specific renewable zones. Therefore, even if the list of projects in Table 1 are identified to be needed to accommodate the CPUC IRP portfolios, BAMx urges the CAISO not to approve these projects as part of the current planning cycle, and reassess their need as part of the subsequent TPP cycles, where the need for additional transmission upgrades will inform the IRP portfolios.

15. Additional comments on the September 27-28, 2021 stakeholder call discussion:

CAISO Transmission Access Forecasting Model

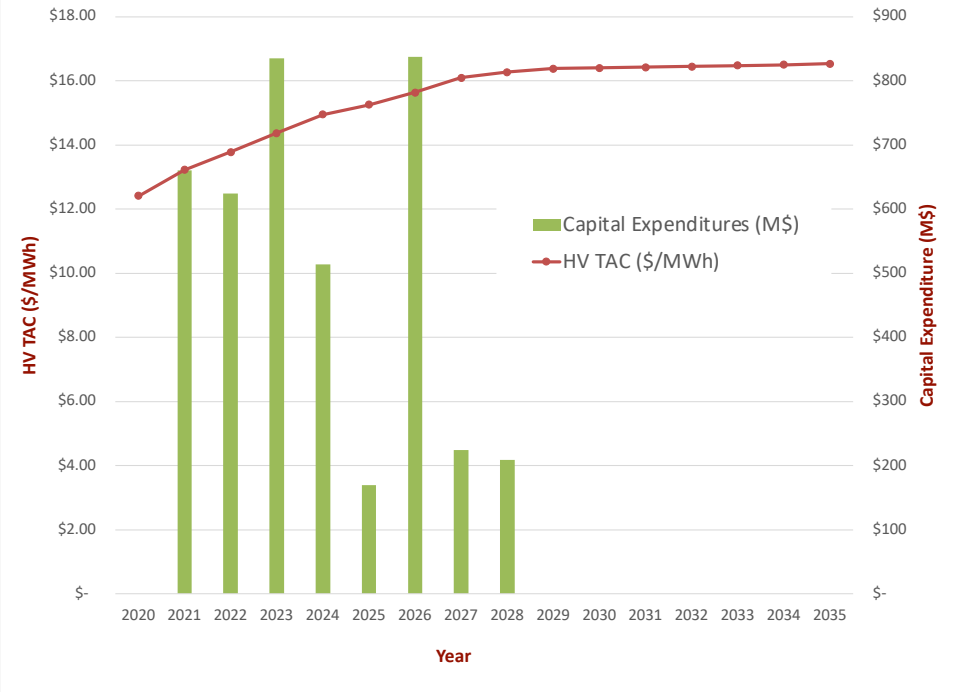
BAMx appreciates the continued work of the CAISO in keeping the stakeholders updated about the likely impact of its decision to approve transmission projects affecting the High Voltage (HV) Transmission Access Charge (TAC). BAMx appreciates the opportunity to comment on the CAISO's 2020-2021 HV TAC Estimating Model ("TAC Model" hereafter) that was posted on the CAISO website on September 23, 2021. We hope that the CAISO addresses the issues raised by BAMx in the next update of the TAC Model.

[12] CAISO, Increasing procurement and capacity in portfolios, 2021-2022 Transmission Planning Process Stakeholder Meeting, September 27-28, 2021, page 4.
[13] See Table 3-1. http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=82442AF7-0A68-4BFC-86FD-AAE1B066AE5E

1. Caveat the TAC forecast as it does not provide an accurate signal for the outer years, i.e., 2024-2029, and does not address additional wildfire mitigation costs

BAMx notes that the tapering of the CAISO's HV TAC forecast in the outer years, that is, during 2027-2035, is primarily driven by the very low (or no) levels of transmission capital expenditures assumed in the HV TAC forecasting model. As shown in Figure 2, the HV TAC forecasting model assumes that the HV capital expenditures[14] will occur during the years 2023-2028, which is primarily driven by the CAISO-approved reliability-driven transmission projects.

Figure 2: A Comparison of the CAISO's HV TAC ($/MWh) and Assumed Capital Expenditures (M$)



Clearly, one of the major reasons for a lower level of capital expenditures assumed in the outer years (2028-2035) in the TAC Forecasting Model is that they do not include the capital expenditures in the CAISO's upcoming TPP cycles. In other words, the HV TAC rates, especially for years 2028-2035, are likely going to be higher than those depicted in the current version of the HV TAC Forecasting Model. Furthermore, there needs to be a recognition that the HV TAC rates would be significantly greater upon the incorporation of the direct costs

[14] Any capital expenditures after the in-service year are added to rate base in the year of expenditure in the HV TAC forecasting model. **Source:** California ISO TAC Model Operating Instructions.

associated with the wildfire mitigation programs[15] and potential higher return on equity allowed for the participating transmission owners as a result of the wildfire risk adder[16].

There is substantial uncertainty surrounding the plans for costs associated with greater levels of return on equity and future investments to mitigate the consequences of wildfires, but it is appropriate to include components for those potential fire hazard mitigation costs. It is important to recognize that not adding anything to the forecast for these issues is a projection that assumes that they will have no impact.

BAMx appreciates the CAISO providing a separate spreadsheet comprising the capital costs documented for several capital projects with high voltage components[17]. This spreadsheet (Capital Costs Estimates) helps the CAISO and stakeholders to easily modify the transmission projects, their commercial operation dates and related capital costs going forward.

2. Capital projects questions

In addition to the issues surrounding costs for wildfire mitigation and potential raises in return on equity, BAMx has the following questions and comments on some of the capital transmission projects included in the TAC Model. We hope that the CAISO addresses them in the next revision of the TAC Model.

- **Calcite:** In the most recent TAC Model, the CAISO has added two new transmission projects, i.e., Red Bluff 2nd 'AA' Bank and Calcite. Both these projects are identified as the "Non-RTPP Driven."[18] Please provide some background on the Calcite project as it appears to be a generation interconnection driven project and, unlike the West of Devers Reconductoring project, there is almost no information available about this project in the 2020-2021 or any of the prior transmission plans.
- **Riverside Transmission Reliability Project (RTRP):** We noticed that the TAC model did not include the capital expenditure associated with Riverside Transmission Reliability Project (formerly Jurupa 230kV Sub). According to SCE's AB 970 quarterly report (Q1 2021), this project was approved by the CAISO in 2007 with a current planned in-service date of 10/15/2026. A Certificate of Public Convenience and Necessity (CPCN) for this project was granted on 03/12/2020 and indicates that its capital cost is approximately **$450M**. Please provide an explanation of why the capital expenditures associated with the RTRP were excluded from the TAC Model.
- **Alberhill Transmission Project:** The TAC model assumes the capital cost of **$314M**. This amount needs to be updated to **$545M** to reflect SCE's most updated cost estimate.[19]

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[15] Pursuant to Senate Bill 901 and the OIR to Implement Electric Utility Wildfire Mitigation Plans in R.18-10-007 of the CPUC, PG&E submitted its Wildfire Safety Plan on February 6, 2019.

[16] On April 18, 2019, SCE submitted its latest TO2019A formula rate filing, proposing a return on equity (ROE) of 17.12%, which is calculated at 11.12% plus a 6.0% adder for wildfire risk (not including other potential adders). On April 23, 2019, PG&E requested to raise its ROE from 10.25% to 16%.

[17] 2020-2021 Transmission Plan High Voltage Transmission Access Charge Capital Costs (***2020-2021TransmissionAccessCharge-HighVoltageCapitalCostEstimates.xlsx***)

[18] *Ibid.*

[19] See CPUC, A.09-09-022, Second Amended Application of Southern California Edison Company (U 338-E) For A Certificate Of Public Convenience And Necessity For The Alberhill System Project, May 11, 2020, P.7.

- **Reliability projects "On Hold" are included:** The TAC model assumes the capital expenditures of **$130M** and **$140M** each in the years 2027 and 2026 for the Midway-Andrew 230 kV and Wheeler Ridge Junction Station projects, respectively, will be made. Since both of these projects are on hold and likely cancelled conditional upon the effectiveness of battery storage alternatives that were identified in the 2019-2020 Transmission plan[20], why are these capital expenditures included in the TAC Model?

BAMx looks forward to continuing the dialog with the CAISO staff and other stakeholders in trying to build a more meaningful forecast of the CAISO HV TAC.

Conclusion

BAMx appreciates the opportunity to comment on the 2021-22 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.

[20] CAISO 2020-2021 Transmission Plan, March 24, 2021, p.2, p. 114, p. 118.