

The ISO received comments on the topics discussed at the October 25, 2023 stakeholder meeting from the following:

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Copies of the comments submitted are located on the User Groups and Reoccurring Meetings Page under Transmission Development Forum at:

<https://www.caiso.com/informed/Pages/MeetingsEvents/UserGroupsRecurringMeetings/Default.aspx>

The following are the ISO and PTO’s responses to the comments.

1. SB Energy		
No	Comment Submitted	Responses
a	<p>Some of delays to reliability network upgrades are very significant.</p> <p>Can PG&E please aim to review and provide an update on possible acceleration to lead times (materials) at the next TDF?</p>	<p><u>PG&E RESPONSE</u></p> <p>At present PG&E and the industry are seeing unprecedented lead times from suppliers that manufacture our 115kV, 230kV, and 500kV circuit breakers. Project delays are an expected outcome until this issue is resolved. The process of adding certified suppliers is one way PG&E is looking to resolve the issue and adding new suppliers takes time to ensure PG&E employs only proven equipment into service.</p> <p>PG&E expects that the January Transmission Development Forum will come with timeline updates for most network upgrade projects as new lead-times get reflected in PG&E schedule updates. As of right now there is insufficient PG&E stock on-hand to supply demand for new and higher capacity breakers therefore making acceleration of schedules unlikely.</p>

2. QCELLS		
No	Comment Submitted	Responses
a	<p>ID# C11P2-ND01 (Re-conductor Fulton-Hopland 60 kV Line (Fitch Mountain Tap-Geysers Jct)):</p> <ol style="list-style-type: none"> 1) How many structures are planned to be replaced? <ol style="list-style-type: none"> a) What approximate percentage of structures require placement? 2) What is the existing conductor and rating? 3) What is the proposed conductor and rating to be achieved? 	<p><u>PG&E RESPONSE</u></p> <p>Approximately 60% of the structures in the Fulton-Hopland 60kV reconductor project are planned for replacement. The scope is to re-conductor Fulton-Hopland 60 kV Line (Geysers Jct-Fitch Mountain Tap) from Geysers Jct. Existing there is around 7 miles total of 4/0 AAC being converted to 715 AAC. The current line rating is 34/40/46/49.2 MVA and the future line rating would be 65.6/77.1/101/108 MVA.</p>
B	<p>ID# C12P1-NPT04 (Vaca Dixon Substation 230 kV circuit breakers 442, 452 and 462 overstress): For circuit breakers at Vaca-Dixon:</p> <ol style="list-style-type: none"> 1) What lines do circuit breakers 442, 452, and 462 have direct/adjacent bus connections? 2) What is the current rating/breaker size and technology type? 3) What is the planned replacement rating/breaker size? 	<p><u>PG&E RESPONSE</u></p> <p>Any public information available to developers can be found on the CAISO's Market Participant Portal (MPP) or through the various study reports that are received through the GIDAP study process. PG&E in conjunction with CAISO worked on providing existing breaker information to be made publicly available. Current breaker information is available with the short circuit base cases for the appropriate Cluster studies on the MPP.</p>
C	<p>ID# C12P1-NPT04: What are the fault current contributions for projects assigned to this RNU?</p>	<p><u>PG&E RESPONSE</u></p> <p>Any public information made available to developers can be found on the CAISO's Market Participant Portal (MPP) or through the various study reports that are received through the GIDAP study process.</p>
D	<p>ID# C12P1-NPT04:</p> <ol style="list-style-type: none"> 1) We encourage continued exploration of an earlier completion date by utilizing breakers from another project if the opportunity presents itself. 2) Would any temporary configuration, such as the utilization of series reactors to limit fault duty, be possible to mitigate overstressed breaker concerns sooner until a CB upgrade can occur? 	<p><u>PG&E RESPONSE</u></p> <p>PG&E is always evaluating and striving to complete projects in the most efficient and safest manner possible. There may be options interconnection customers can evaluate as part of their project to reduce fault duty contributions to the PG&E electrical system. Some of those options may include, but not limited to, the following:</p>

		<ol style="list-style-type: none"> 1. Ensuring their projects modeling and manufacturing information is as updated and accurate as possible based on current project state. 2. Verify Transformer Technical Parameters including configuration, impedance, size, and quantity. 3. Adding a Reactor or other current limiting device installation at the customer's facility, this could include modification of transformer impedances. <p>Please note that this information being shared is a general statement and does not guarantee a project's capability of reducing or mitigating fault duty issues.</p>
E	<p>ID# C12P1-NPT04: We would like to have our Project analyzed at 81 MW instead of 150 MW to determine our short circuit contribution to these overstressed breakers.</p> <ol style="list-style-type: none"> 1) We understand that we currently contribute 192 Amps to the CBs and need to be under 98 Amps for the RNU to drop off. 2) Does 81 MW place a contribution under 98 Amps? <ol style="list-style-type: none"> a) If so, what is the new Amp contribution? If not, what Project size would contribute under 98 amps? 	<p><u>PG&E RESPONSE</u></p> <p>Currently there are no options under the CAISO Tariff or GIDAP Business Practice Manual to complete a sensitivity analysis. If a project wants to be studied in a different manner, then the project can submit a downsizing request or limited operation study to the CAISO that follow their current rules and guidelines under there Tariff and/or Business Practice Manual.</p>

3. Cal Advocates		
No	Comment Submitted	Responses
a	<p>A Comprehensive Forum is Needed</p> <p>Currently, the Forum workbooks and Forum quarterly meetings address only a subset of the individual PTO's CAISO-approved, but not yet built, transmission and interconnection projects. Specifically, each PTO identifies only a small fraction of its total number of projects to discuss in the Forum. Cal Advocates recommends that at least one of the quarterly Forums includes a</p>	<p><u>CAISO RESPONSE</u></p> <p>The intent of the Transmission Development Forum (TDF) is to provide status upgrades on approved transmission projects in the ISO transmission plan and network upgrades of the generation interconnection process where changes have occurred since the previous TDF. The PTOs present on the projects that have status updates or</p>

	<p>discussion of the full scope and status update of each PTO’s outstanding projects. The PTO’s status update should include 1) its plan and schedule for completing its projects in a timely fashion (i.e., when was the project approved in the CAISO TPP, 2) projects submitted to the CPUC for permitting, 3) the date of final permit approval and, 4) the construction start date and end date (when the project is used and useful). This “big picture” review would help the CAISO and stakeholders understand the magnitude of any backlogs, reasons for delays, plans to address delays, and any other problems with a project</p>	<p>changes at the TDF. The complete list of projects is included in the posted workbooks. Stakeholders can ask about projects that did not have a change from the previous TDF during the stakeholder call or in written comments.</p>
<p>B</p>	<p>TPP Should Incorporate the Status of Projects in the Forum</p> <p>Cal Advocates recommends the CAISO reevaluate the need for previously approved transmission projects that have been substantially delayed. For example, if a project was found to be necessary by CAISO decades previously and is still not built or scheduled, the need for the project should be reevaluated under current conditions. If such projects were approved and are still not online while the grid has been undergoing continual build out, it is unclear if the project is still needed because the prior need may have already been addressed by another project that is already constructed. If the project is no longer needed, its construction may lead to stranded assets.</p> <p>Cal Advocates recommends the CAISO reevaluate previously approved TPP projects including PG&E’s 15 long delayed projects that were approved prior to the 2012-2013 TPP.² If CAISO finds that the need for these projects no longer exists or is no longer compelling, these projects should be eliminated. This type of critical analysis could reduce both cost impacts to ratepayers and PG&E’s current backlog of more than 100 transmission projects.</p>	<p><u>CAISO RESPONSE</u></p> <p>The TDF is not the forum to review need of projects. The ISO reviews the need of previously approved projects, on a case by case basis, in its annual transmission planning process as appropriate.</p>

	<p>Likewise, before adding to its backlog with this year’s TPP approved projects, the CAISO 2023-2024 TPP should take into consideration PG&E’s massive backlog of CAISO-approved transmission projects that are delayed or pending operational status. Recent workbooks show that PG&E has 98 network transmission projects and 40 generation interconnection projects under development.³ CAISO should consider market alternatives such as having independent contractors bid in a competitive solicitation for all approved projects in work assigned in PG&E’s territory within the context of its tariff to help alleviate PG&E’s backlog of CAISO approved transmission projects needed for grid reliability and policy.</p>	
<p>C</p>	<p>Question for PG&E on Expected Filing Date for projects recently approved by CAISO</p> <p>For the following projects, Cal Advocates would like to know if PG&E expects to file an application at the CPUC for a PTC, CPCN, or submit a NOC. Also, please provide an anticipated year when these projects will be will be filed at the CPUC, if applicable, or construction will be initiated.</p> <ul style="list-style-type: none"> • Elements Removal Project • Weber-Mormon Jct 60 kV Line Section Reconductoring Project • Banta 60 kV Bus Voltage Conversion • Borden-Storey 230 kV 1 and 2 Line Reconductoring • Equipment Upgrade at CCSF Owned Warnerville 230 k Substation Manteca #1 60 kV Line Section Reconductoring Project • Coppermine 70 kV Reinforcement Project • Contra Costa PP 230 kV Line Terminals Reconfiguration Project • Cooley Landing 60 kV Substation Circuit Breaker No #62 Upgrade • Cortina 230/115/60 kV Transformer Bank No. 1 Replacement Project • Reconductor Rio Oso–SPI Jct–Lincoln 115kV line • Atlantic 230/60 kV transformer voltage regulator 	<p><u>PG&E RESPONSE</u></p> <p>Please see Attachment 1 below, which includes most recent information on CAISO-approved Transmission Plan projects in PG&E’s service area.</p>



	<ul style="list-style-type: none"> • New Collinsville 500 kV substation • New Manning 500 kV substation • Manteca-Ripon-Riverbank-Melones Area 115 kV Line Reconductoring Project • Moss Landing – Las Aguilas 230 kV Series Reactor Project • Reconductor Delevan-Cortina 230kV line • San Jose Area HVDC 230 kV Line (Newark - NRS) • San Jose Area HVDC 500 kV Line (Metcalf– San Jose) • Series Compensation on Los Esteros-Nortech 115 kV Line • Table Mountain Second 500/230 kV Transformer • Vasona-Metcalf 230 kV Line Limiting • Garberville Area Reinforcement • Henrietta 230/115 kV Bank 3 Replacement • Lone Tree–Cayetano–Newark Corridor Series Compensation • Los Banos 230 kV Circuit Breakers Replacement • Los Banos 70 kV Area Reinforcement • Mesa 230/115kV Spare Transformer • Metcalf 230 / 115 kV Transformers Circuit Breaker Addition • North East Kern 115 kV Line Reconductoring • Panoche 115 kV Circuit Breaker Replacement and 230 kV Bus Upgrade project • Pittsburg 115 kV Bus Reactor project • Redwood City 115kV System Reinforcement • Santa Rosa 115 kV lines Reconductoring project • South Bay Area Limiting Element Upgrade • Tesla 115 kV Bus Reconfiguration • Tulucay-Napa #2 60 kV line Reconductoring project 	
<p>D</p>	<p>Question for PG&E on expected CPUC filing.</p> <p>PG&E reports several expected CPUC filings as “N/A” but does not explain what this indicates. PG&E should please explain what this means</p>	<p><u>PG&E RESPONSE</u></p> <p>The entry of “N/A” under the ‘Expected CPUC Filing’ data field implies the project is exempt from GO 131-D filing requirements.</p>
<p>E</p>	<p>Question for PG&E, SCE, and SDG&E about expected CPUC filing date.</p>	<p><u>PG&E RESPONSE</u></p>

PG&E, SCE, and SDG&E report that the expected CPUC filing dates for several projects is either “pending” or “to be determined”. These PTOs should be more specific about what they mean by “pending” or “to be determined” as those terms relate to the CPUC filing date and, for each project, indicate if it falls under any of the following project status definitions. If so, which one. If a project does not fall under any of the status definitions below, explain what status the project does fall under.

1. The design of the project has not begun.
2. The utility has not determined whether it will file at the CPUC for a PTC, CPCN, or seek an exemption.
3. The utility has no projected timeline for when it will file at the CPUC.

“To be determined” or “TBD” under the ‘Expected CPUC Filing’ data column means one or a combination of the following: (1) design has not been completed, (2) PG&E has not determined yet if it will file at CPUC or seek exemption, and (3) PG&E has no projected timeline for when it will file at CPUC. For PG&E projects identified as ‘TBD,’ please refer to Column 10 of Attachment 1 below for the most current project status. Information on status of permitting is also included in PG&E’s quarterly AB 970 reports submitted to the CPUC.

PG&E in the most recent Transmission Development Forum workbooks did not use the term “pending” under the ‘Expected CPUC Filing’ data column.

SCE RESPONSE

For the projects with no specific CPUC permit application filing date, we translated the N/A, Exempt, Pending, et cetera to one of the four status definitions in column P (CPUC Filing Status) of the ‘TPP’ tab and column K (CPUC Filing Status) of the ‘GIP’ tab:

1. The design of the project has not begun.
2. The utility has not determined whether it will file at the CPUC for a PTC, CPCN, or seek an exemption.
3. The utility has no projected timeline for when it will file at the CPUC.
4. The project is deemed excluded or exempt from the CPCN and PTC requirements

SDGE RESPONSE

If expected CPUC filing date is marked with a status of “To Be Determined (TBD)”, it means the filing type (i.e. PTC, CPCN or exemption) and date has not yet been determined since



		<p>the project is still in the planning/initiation phase. This status applies to projects approved in the most recent 2022-2023 TPP process.</p>
F	<p>Question for PG&E on Reprioritization</p> <p>The expected in-service date for the following projects was moved up to an earlier expected in-service date due to reprioritization.</p> <ul style="list-style-type: none"> • Borden 230/70 kV Transformer Bank #1 Capacity Increase • Coppermine 70 kV Reinforcement Project • Metcalf-Piercy & Swift and Newark-Dixon Landing 115 kV Upgrade • Midway – Kern PP #2 230 kV Line (Bakersfield-Kern Reconductor) • North Tower 115 kV Looping Project • Ravenswood 230/115 kV transformer #1 Limiting Facility Upgrade • Reconductor Rio Oso–SPI Jct–Lincoln 115kV line • Wheeler Ridge Junction Substation <p>The expected in-service date for the following projects was delayed due to reprioritization.</p> <ul style="list-style-type: none"> • Atlantic 230/60 kV transformer voltage regulator • Clear Lake 60 kV System Reinforcement • Kern PP 115 kV Area Reinforcement • Manteca-Ripon-Riverbank-Melones Area 115 kV Line Reconductoring Project • Moss Landing – LasAguilas 230 kV Series Reactor Project • Newark-Milpitas #1 115 kV Line Limiting Facility Upgrade • Salinas-Firestone #1 and #2 60 kV Lines • South of San Mateo Capacity Increase • Table Mountain Second 500/230 kV Transformer 	<p><u>PG&E RESPONSE</u></p> <p>Given PG&E must manage funding from the GRC and TO rate cases and its overalls costs, the CAISO-approved projects are considered by PG&E for prioritization, together with a broader list of non-CAISO projects, in its project execution schedule. In prioritizing projects, PG&E reconciles budget constraints with safety, load growth and reliability needs, as well as other factors, such as contractual obligations and state mandates. For example, load growth in certain areas may not materialize as quickly as assumed in CAISO planning, or wildfires or winter storms may require pivoting to large safety-reform and restoration efforts. As a result of prioritization, some CAISO-approved projects are deferred to future years.</p> <p>In 2023, an increased number of CAISO projects were deferred due to work reprioritization within PG&E. Reprioritization has been driven by two main factors. First, PG&E launched its Community Wildfire Safety Program in 2018 to respond to wildfire conditions due to climate change. Funding flowed to support hardening and undergrounding the distribution systems, installing weather stations and enhanced power line safety settings, the Public Safety Power Shutoff program, and other advanced tools and technologies like artificial intelligence and drones to automate fire detection and response. The Community Wildfire Safety Program, along with increased need for</p>



<ul style="list-style-type: none"> • Tyler 60 kV Shunt Capacitor • Weber-Mormon Jct 60 kV Line Section Reconductoring Project • Midway-Temblor 115 kV Line Reconductor and Voltage Support <p>PG&E should explain what factors it considers when making determinations about a project’s relative priority in its reprioritization process. It also should explain the specific attributes of the projects listed above that influence whether the project is prioritized or deprioritized</p>	<p>major storm response in recent years, has required significant financial and workforce resources. Second, significant inflation and supply chain delays have increased the cost and time to execute PG&E’s work plan.</p> <p>In regard to CAISO-approved Transmission Plan projects, a guiding principle of reprioritization is to enable projects that are in-flight or projected to complete construction in near term or serving a critical customer and generation Interconnection, to be preserved to the extent practicable to continue to meet timing needs. PG&E takes the following criteria under consideration for prioritization amongst the transmission plan projects: (1) projects supporting interconnection of generation and/or storage projects, (2) high voltage issues, (3) real-time and existing concerns, and (4) customers at risk or reliability impacts.</p>
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