

Transmission Competitive Solicitation Questions Log
Question / Answer Matrix
2018/2019 TTP – Phase 3

No.	Comment Submitted	ISO Response	Assigned To:
1	<p>We are wondering. Have you had a chance to discuss and resolve the issue about CAISO providing the modeling capability for evaluating the momentary cessation issue?</p> <p>We are trying to study and evaluate the reactive support needs at Round Mountain and Gates in order to provide a competitive project bid as part of the CAISO competitive solicitation process for this important reliability issue. We would like to achieve similar results to what CAISO has achieved and the current models do not show this for the momentary cessation issue. Our goal is to benchmark the CAISO results and evaluate various reactive support alternatives as identified in the 2018-2019 CAISO transmission plan.</p>	<p>The CAISO has been working with industry and NERC on an initiative to address identified adverse characteristics of inverter-based resource performance during grid faults including an evaluation of momentary cessation impacts. This work is ongoing. Due to the lack of better information at this time, a generic EPCL model was developed to apply agreed upon universal momentary cessation settings on all selected inverter based resources to investigate, directionally, the impacts of momentary cessation. With that said, upon request, the CAISO will provide the EPCL, subject to the NDA as identified on the ISO transmission planning process webpage (link below).</p> <p>http://www.caiso.com/planning/Pages/TransmissionPlanning/Default.aspx</p>	Planning
2	<p>I understand the process requires an “Option to Collaborate” response from all participants within 10 Business Days ...</p> <ul style="list-style-type: none"> • What does the “Option to Collaborate” obligate us to? • Are there any financial obligations? • When is the deadline for submitting the “Option to Collaborate” response? 	<p>The process does not require collaboration. The ISO provides a public venue in the first 10 days of the solicitation window for parties to announce their interest in collaborating and are open to be contacted by other parties.</p> <p>Prior notice to the CAISO is not a prerequisite for a Project Sponsor to submit an application, including a joint application, to finance, own, construct, operate, and maintain a Regional Transmission Facility under Section 24.5.</p>	Grid Assets
3	<p>What is the refundability of the \$75,000 deposit if a bidder decides to withdraw a bid after the application deadline?</p>	<p>The applicant only pays for costs incurred during the process associated with evaluating their application. If the costs are greater than \$75,000 but less than \$150,000 the applicant will be billed for the difference (see CAISO tariff section 24.5.6)</p>	Grid Assets

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4	<p>I have a client that is determining to becoming a PTO, the construction is the question it is all the other things a PTO is required to do on a day to day basis. I had a question after I read through the posted “2018–2019 Transmission Planning Process Phase 3 – Competitive Solicitation” presentation. My question or comment is what are the next steps of becoming a PTO in parallel of constructions. I know some of the answers but there isn’t much posted of what needs to happen between being awarded and the asset(s) become operational. I asked for a external checklist from the MPAI group to be posted but will that be enough for a awarded PTO to determine the full scope of what needs to happen while constructing, modeling and operational of the asset?</p>	<p>The successful project sponsor is required to be a PTO. The APSA defines the rights of the approved project sponsor through the construction period up to commercial operation. The pro forma Approved Project Sponsor Agreement can be found on the Transmission Planning page of the CAISO web site. Prior to commercial operation the approved project sponsor will be required to sign the Transmission Control Agreement (TCA) and meet the identified requirement for a PTO. PTOs have many requirements as defined in the CAISO tariff and TCA. CAISO staff will work with the successful candidate to ensure that all requirements are met for the APSA and TCA to ensure a timely transition.</p>	Grid Assets
5	<p>I have a question about the 2018-2019 Transmission Plan. Specifically, I am seeking clarification with regard to the Round Mountain 500 kV Dynamic Reactive Support project and how it relates to PG&E’s proposed Round Mountain 500 kV Voltage Support Project. I am wondering if there is anyone at CAISO who I should be contacting to have my questions answered.</p>	<p>These are the same project.</p>	Planning
6	<p>The CAISO posted slide deck (slide 4), indicates that a comparative analysis of the bids are done several months after the bid window closes. Our client is wondering if that means they are allowed to improve/refine the capital costs prior to the comparative analysis stage is reached, or does the submitted capital cost is firm and not updatable? If our client is selected is there an opportunity to refine capital cost afterwards as well? Tariff Section 24 doesn’t mention the possibility that improving or refining the bid is permissible.</p>	<p>The competitive solicitation process does not allow applicants to improve or refine capital costs once the proposal window has closed. Once selected to construct the project, the Approved Sponsor will execute the APSA which will include the cost provisions from their proposal.</p>	Grid Assets

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7	<p>In APPENDIX I: Description and Functional Specifications for Transmission Facilities Eligible for Competitive Solicitation the rated MVAR of the reactive devices are described as: For Round Mountain Rated MVAR: +500/-500 MVAR. The entire inductive (absorption) range should be continuously available when the voltage is in the 500 kV – 550 kV range and the entire capacitive (injection) range should be available when the voltage is in the 473 kV – 540 kV range.</p> <ol style="list-style-type: none"> 1. Please confirm that this means that the device must be capable of injecting 500 MVAR capacitive power at an operating voltage of 473 kV and that the device must be capable of absorbing 500 MVAR inductive power at an operating voltage of 500 kV. 2. Please provide required V/I curve(s) for the reactive device at base 500 kV and 500 MVA. 3. Please indicate in the V/I diagram, the defined capacitive operating points at 473 kV (0.946 p.u.) 500 kV (1.0 p.u.) and 540 kV (1.08 p.u.), along with the defined inductive operating points at 500 kV (1.0 p.u.) and 550 kV (1.1 p.u.) respectively. 	<ol style="list-style-type: none"> 1. It is required that the reactive support device be able to inject 500 Mvar at 473 kV and absorb 500 Mvar at 550 kV. 2. The reactive support device should be able to perform in the voltage range and with the response time specified in the functional specification. All different technologies with different V-I curves will be considered as long as they meet the performance requirements in the functional specification. 3. The device has to inject up to 500 MVAR or absorb up to 500 MVAR in the voltage range of 473-550 kV under 	Planning
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		steady-state conditions. V/I curve depends on the technology of the device	
8	<p>For Gates Rated MVAR: +800/-800 MVAR at the Gates 500 kV bus. The entire inductive (absorption) range should be continuously available when the voltage is in the 500 kV – 550 kV range and the entire capacitive (injection) range should be available when the voltage is in the 473 kV – 540 kV range.</p> <ol style="list-style-type: none"> 1. Please confirm that this means that the device must be capable of injecting 800 MVAR capacitive power at an operating voltage of 473 kV and that the device must be capable of absorbing 800 MVAR inductive power at an operating voltage of 500 kV. 2. Please provide required V/I curve(s) for the reactive device at base 500 kV and 800 MVA. 3. Please indicate in the V/I diagram, the defined capacitive operating points at 473 kV (0.946 p.u.) 500 kV (1.0 p.u.) and 540 kV (1.08 p.u.), along with the defined inductive operating points at 500 kV (1.0 p.u.) and 550 kV (1.1 p.u.) respectively. 	<ol style="list-style-type: none"> 1. It is required that the reactive support device be able to inject 800 Mvar at 473 kV and absorb 800 Mvar at 550 kV. 2. The reactive support device should be able to perform in the voltage range and with the response time specified in the functional specification. All different technologies with different V-I curves will be considered as long as they meet the performance requirements in the functional specification. 3. The device has to inject up to 800 MVAR or absorb up to 800 MVAR in the voltage range of 473-550 kV under steady-state conditions. V/I curve depends on the technology of the device 	Planning

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9	Can the CAISO provide an itemized list of the PV units that comprise the generation totaled in Figure B1.2-21. 2020 Summer Peak case with high renewable output. An outage of the Gates-Midway 500 kV line with a three phase fault, assuming momentary cessation of inverters. Solar PV generation output?	The base cases and dynamic data on MPP could be tuned to run the studies and obtain the same results presented in Figure B1.2-21. Upon request, the CAISO will provide the latest base case, dyd, EPCL and instructions to run studies, subject to the NDA as identified on the ISO transmission planning process webpage (link in response to question 1).	Planning
10	Can the CAISO define the bounds of the non-competitive scope and the competitive scope in detail?	The interconnection PTO will design, engineer, install, own, operate and maintain the necessary equipment additions within the existing substations (Gates and/or Round Mountain). The substation terminations and line drops into the PTO owned substations will be owned, operated and controlled by the PTO. These facilities are not included in the scope of the competitive solicitation projects.	Grid Assets
11	What liabilities does the project sponsor carry if the projects are not completed on schedule?	The liabilities for reliability projects are defined in the Section 24.6 of the CAISO tariff and APSA. Specifically for delay in project, the APSA addresses the steps to be taken in Article 5.7 and 5.8. The projects are reliability projects and must be completed on time to ensure that the CAISO does not violate the NERC reliability standards.	Contracts
12	Will bidders need to commit to an exhaustive list of certain FERC transmission incentives in the bid submitted to CAISO, and commit to foregoing additional FERC transmission incentives, as part of the APSA?	The competitive solicitation process requires applicants to provide any special incentives that the applicant would agree to. Otherwise the CAISO assumes that the applicant will avail themselves of any FERC incentives available to the project. Once selected to construct the project, the Approved Sponsor will execute the APSA which will include the cost provisions from their proposal including any agreement to forego FERC transmission incentives.	Contracts

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13	How will the CAISO evaluate the schedules submitted by each bidder for feasibility?	The ISO will utilize external consultants and internal staff to evaluate all portions of submitted applications. Specific evaluation criteria and selection factors are specified in section 24.5 of the CAISO tariff.	Grid Assets
14	If selected, will the project sponsor be required to enter into an interconnection agreement with the local PTO and/or the CAISO? If so what type of interconnection agreement (LGIA, Load Interconnection, etc.)?	The project sponsor will be required to execute a transmission interconnection agreement with the Interconnecting Transmission Owner(s). CAISO is not a party to those agreements.	Contracts
15	Will bidders be required to complete potential sub-synchronous resonance study for each site as a prerequisite to development of protection requirements/project scope?	Subsynchronous Resonance (SSR) studies are required to be completed for both sites and any identified mitigation shall be implemented as part of this project.	Planning
16	Is the CAISO only requiring SSR studies for synchronous condenser solutions, or is the CAISO requiring SSR or sub synchronous type studies on SVC and STATCOM as well?	Subsynchronous Resonance (SSR) studies are required for all technologies other than synchronous condenser.	Planning
17	Per the response to Question 9 and related to the Figures B1.2-21, B1.2-22, B1.2-23, XXX requests the latest base case and dynamic (DYD) files, which were used to run the studies documented	See the CAISO's answer to question #1	Planning
18	<p>1. Environmental data</p> <p>a. What is the maximum ambient temperature that the California ISO would like the system to withstand?</p> <p>b. What is the minimum ambient temperature) that the California ISO would like the system to withstand?</p> <p>This information is required for specifying the design tolerances of the respective reactive support projects.</p>	The ambient temperature range for both sites shall be: 0C- 50C.	Planning/Grid Assets

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19	<p><i>For both sites, please provide the following:</i></p> <p>2.1 System voltage</p> <ol style="list-style-type: none"> a. Normal operating voltage range b. Minimum continuous operating voltage c. Maximum continuous operating voltage d. Temporary over-voltage profile <p>2.2 System frequency</p> <ol style="list-style-type: none"> a. Normal continuous system frequency range b. Minimum continuous system frequency c. Maximum continuous system frequency d. Temporary low and high system frequency profiles <p>2.3 Short circuit levels</p> <ol style="list-style-type: none"> a. Maximum three-phase fault current (kA) b. Minimum three-phase fault current (kA) c. Maximum single-phase fault current (kA) d. Minimum single-phase fault current (kA) <p>2.4 Harmonics</p> <ol style="list-style-type: none"> a. Harmonic impedance sectors (<u>for performance</u>) up to 50th harmonic b. Harmonic impedance sectors (<u>for rating of filter components</u>) up to 50th harmonic 	<p>2.1 The CAISO has supplied the 500kV system operating voltage range in the functional specifications for each respective project. The temporary overvoltage profile is not available. Temporary overvoltage characteristics and design shall be based on equipment limits using the nominal system voltage and voltage range provided by the CAISO as well as applicable industry standards including but not limited to IEEE C57.00 and C62.22.</p> <p>2.2 At a minimum, the system design shall meet the requirements of identified in PRC-024-2.</p> <p>2.3 The ISO is working to determine these values. They will be provided once the information is received.</p> <p>2.4 The ISO does not have this information.</p>	Planning/Grid Assets
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	c. Background harmonic voltage (up to 50 th harmonic)		
20	<p>For both sites, please provide the following:</p> <p>3.1 Rating</p> <p>a. Dynamic system rating. Please refer to the appendix ‘SVS Rating.pdf’ for the typical information required for design.</p> <ol style="list-style-type: none"> 1. Will the California ISO specify additional information, or should the Proponent state assumptions in the application? 2. If not specified, how will the California ISO evaluate assumptions presented by the Proponent? <p>3.2 Response criteria</p> <ol style="list-style-type: none"> b. Maximum step response time (time to 90% of step magnitude) c. Maximum overshoot (% of ordered change) d. Settling time (time to settle within ±5% of final value) <p>3.3 Availability and reliability</p> <ol style="list-style-type: none"> a. Annual equivalent availability (%) for forced outages b. Forced outage rate per year c. Annual availability including forced and planned maintenance outages 	<p>3.1 The ISO does not have this information, please state your assumptions in your proposal.</p> <p>3.2 The ISO does not have this information, please state your assumptions in your proposal.</p> <p>3.3 This information is to be provided by each respective bidder for evaluation during the phase 3 process.</p>	Planning/Grid Assets

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	<p>3.4 Harmonic and filter performance</p> <p>3.4.1 Voltage Distortion Criteria</p> <p>a. D - Individual distortion (%)</p> <p>b. THD – Total Harmonic Distortion (%)</p> <p>3.4.2 Other requirements applicable for harmonic performance</p> <p>3.5 Audible noise</p> <p>a. Would the California ISO specify the Maximum accepted sound level at property boundary, or should just applicable regulations be considered?</p> <p>b. Any other requirements for the sound levels of the dynamic reactive system equipment?</p> <p>3.6 Loss evaluation criteria</p> <p>a. How are the dynamic reactive system losses weighted within the full MVAR operating range?</p>	<p>3.4 The harmonic and filter performance must comply with all applicable standards including but not limited to IEEE519.</p> <p>3.5 The audible noise requirements will be determined as part of the CEQA and environmental review process after the successful bidder has been awarded the project.</p> <p>3.6 The successful applicant must meet the specified range at the point of interconnection as identified in the specification</p>	
21	<p><i>For both sites, please provide the following:</i></p> <p>4.1 Please clarify the desired operating control modes (or functions) besides voltage control and reactive power control.</p> <p>4.2 Control system hardware</p> <p>a. Are supplier’s standard control panels acceptable or are there specific standards for the panel design(s)?</p>	<p>4.1 No other control modes are specified</p> <p>4.2a The ISO has not specified any specific control panel standards, please provide a design as part of your proposal.</p>	Planning/Grid Assets

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	<p>b. Are there any special requirements for panel hardware (e.g. terminal blocks, wiring or test switches)?</p> <p>4.3 SCADA communication</p> <p>a. Communication protocol(s)</p> <p>b. Any other requirements for SCADA communication</p>	<p>4.2b The ISO has not identified any special requirements for panel hardware.</p> <p>4.3 SCADA communications system design details will be determined during the interconnection study process. General SCADA and communication interconnection requirements can be found in the PG&E Interconnection handbook: https://www.pge.com/includes/docs/pdfs/shared/rates/tariffbook/ferc/tih/combined_version_handbooks.pdf</p>	
22	<p><i>For both sites, please provide the following:</i></p> <p>5. Standards</p> <p>a. Are there any requirements for standards that need to be followed for system/equipment design or may supplier suggest standards that we typically follow?</p>	<p>5. Please follow all applicable US and IEEE standards, provide details in your project proposal.</p>	Planning/Grid Assets
23	<p>For the 500kV option of the Round Mountain project is the requirement to interconnect the new substation between 40 and 60 percent of the distance between Round Mountain and Table Mountain a firm requirement or will CAISO allow for interconnection outside of this range if it can be shown that locating the project outside of this range brings significant benefits?</p>	<p>Any location from Round Mountain substation all the way up to around 60% of the way to Table Mountain substation would be acceptable as per functional specification.</p>	Planning
24	<p>For the 230kV option of the Round Mountain project what do the cost estimates for the PG&E scope of work of \$91M for Round Mountain and \$43M for Table Mountain consist of? If the additional</p>	<p>The transformer costs are included in the cost estimates.</p>	Planning

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	230kV transformers are included in these cost estimates will the CAISO consider the additional reliability benefits of these transformer additions in their evaluation of the proposal?	The key criteria in evaluating proposals are documented in “key selection criteria” document posted on the ISO website. However, the CAISO considers all of the criteria specified in the tariff.	
25	What General Liability limits will PG&E and CAISO require of the Project Sponsor for the Gates and Round Mountain projects?	The liability requirements can be found in Article 15 of the pro forma Approved Project Sponsor Agreement posted on the CAISO website at: http://www.caiso.com/Documents/AppendixX_ApprovedProjectSponsorAgreement_asof_Mar28_2016.pdf	Contracts
26	In Revision 1 of the description and functional specification for the Round Mountain 500 kV DRS, for Alternative 1, CAISO indicates that PG&E will “build the loop in tie lines to connect the new switching station to the existing round Mountain to Table Mountain 500 kV lines.” Figure 2 in the specification provides a high level schematic diagram showing PG&E construction responsibilities. a. Can CAISO define where change of ownership of the loop-in tie-lines occurs? b. Can CAISO please provide the requirements to interconnect to PG&E’s line (e.g., dead-end tension requirements, communications, protection and control, etc)?	PG&E will design, engineer, install, own, operate and maintain the loop –in tie lines up to the last dead end structure located outside of the new switching station. This structure will be constructed and owned by PG&E. Dead-end tension, communication and protection and control requirements will be determined during the interconnection study process after award of the project. PG&E interconnection facilities are not included in the scope of the competitive solicitation projects.	Planning/Grid Assets
27	Please clarify why a direct connection into Round Mountain is not feasible?	The CAISO specification notes that proposed solution shall be “installed in a minimum of two equally sized block independently connected to the 500kV bus ...these blocks are to be completely independent of each other and have their own dedicated connections to the bus.” These two independent connections to	Planning/Grid Assets

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		the 500kV bus cannot be accommodated at the Round Mountain substation due to physical space constraints .	
28	Per the CAISO's answer to Question 9 and related to the figure B1.2-21, X requests the latest base case (SAV) and dynamic (DYD) files to replicate the aforementioned documented studies/results.	The base case and dynamic data will be provided upon request subject to the execution of an NDA. Details of the NDA requirements can be found under Accessing transmission data at the following link: http://www.caiso.com/planning/Pages/TransmissionPlanning/Default.aspx	Planning
29	For Alternative 1, please clarify who will estimate the costs and schedule associated with PG&E's loop-in tie-lines.	The CAISO, in conjunction with its consultants, will estimate the costs and schedule associated with PG&E's transmission line extensions. The cost of the transmission line extensions will be highly dependent upon the location identified by the applicant project sponsor in its proposal.	Grid Assets
30	For Alternative 1, please clarify how the CAISO will evaluate the overall cost and schedule of each proposal since the developer will not be responsible for the loop-in tie-lines? Are developers responsible for including schedule and cost estimates for the loop-in tie-lines as part of their proposal? If a developer includes those estimates, will CAISO consider those in its evaluation? Or, will CAISO develop its own estimates or obtain estimates from PG&E or follow another approach?	As noted in the Functional Specifications, the transmission line extensions associated with Alternative 1 are not included in the scope of the applicant project sponsor. The CAISO will consider the estimated cost of the transmission line extensions when evaluating the total cost of the proposal, and will also consider possible impacts to the proposed project schedule.	Grid Assets
31	In regards to the new alternatives released on May 14th, we respectfully request that CAISO provide the following: a. Any power system performance studies (steady state and transient) and associated reports analyzing the new alternatives	Please refer to response 28 regarding access to the power flow models. As noted in response 27 , it is not feasible to terminate two blocks of dynamic reactive support devices to the 500 kV buses in the existing Round Mountain 500 kV substation. Alternative 1 will address this issue by adding a new switching station along the	Transmission Planning

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	b. If any, describe additional transmission issues that CAISO is trying to solve with Alternatives 1 and 2.	Round Mountain – Table Mountain 500 kV lines and connecting the dynamic reactive support devices into the new switching station. In Alternative 2, although the dynamic reactive support devices are connected to the 230 kV buses, they provide a similar voltage profile across the 500 kV system as they control the 500 kV buses.	
32	For Alternative 1, will series compensation installations be required for the existing COI lines, which will terminate at the new station?	No new series compensation is required to be installed on the existing COI lines terminating at the new switching station.	Transmission Planning
33	For Alternative 1, has CAISO determined if any adjustments to existing series compensation must occur? If so, please provide details to allow for appropriate modeling.	No adjustments to the existing series capacitors are required.	Transmission Planning
34	In Alternative 1, does CAISO believe this will trigger a Phase 3 rating process?	The CAISO's understanding is that since the Round Mountain – Table Mountain 500 kV lines are not part of a WECC path, connecting a new switching station to them will not require a path rating process.	Transmission Planning
35	For Alternative 2, please provide details on how 230 kV and 500 kV voltages should be controlled and coordinated given a 500 kV measurement point. Please provide specifics as to interactions and control coordination with existing reactive equipment (e.g., significant existing installations of capacitors) at Round Mountain and Table Mountain 230kV.	The dynamic reactive devices will control their 500 kV buses to a set point provided by the CAISO or the PTO. If required, the status of other switched shunts will be adjusted to manage the voltage on the 230 kV side.	Transmission Planning
36	For Alternative 2, are any modifications to existing equipment or existing Remedial Action Schemes (RAS) associated with the operation of the COI or PDCI anticipated? If so, how will CAISO evaluate the costs associated with these modifications?	No modifications to the existing equipment or RAS are anticipated.	Transmission Planning
37	For Alternative 2, please provide the technical data on the proposed 500/230 kV transformers to be added by the PTO at both locations.	The CAISO does not have this information as it does not own nor maintain this equipment. The PTO would be designing and	Grid Assets

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		installing the transformer; however it is assumed that the second transformer at each of the locations would be similar to the existing transformers at the substations.	
38	For Alternative 2, will the PTO be installing shunt reactors on the tertiary bus of the new transformers at either or both stations? If so what will be the rating?	No.	Transmission Planning
39	For Alternative 2, please provide the range of available fault level (minimum with N-2 to maximum normal conditions) at the 230 kV bus at both stations?	The CAISO does not have this information. Typically, this information is available during the interconnection studies which are finalized after the approved project sponsor is identified.	Grid Assets
40	Can a project submitting into the TPP Phase 3 RFP for Gates and Round Mountain sell power and energy into the CAISO ancillaries services market while still meeting CAISO's Reactive Power Requirements?	<p>The "project" the CAISO will evaluate will be the transmission assets placed under CAISO operational control by the project sponsor as a Participating Transmission Owner and receiving cost-of-service based cost recovery. The project will be required to provide the necessary reactive power voltage support on a 24/7/365 basis, subject to forced and maintenance outages consistent with good electric operating practice. The CAISO does not currently have a framework in place for transmission assets to also participate in the CAISO's energy or ancillary services markets. Please refer here for the status of the CAISO's "SATA" initiative that was exploring this possibility, and which is currently on hold: http://www.caiso.com/informed/Pages/StakeholderProcesses/StorageAsATransmissionAsset.aspx</p> <p><u>Although the TPP will only analyze the transmission facilities designed to meet the reactive power requirements, nothing prevents the developer from separately submitting a generator interconnection request for additional supply facilities at the same</u></p>	Transmission Planning

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		<u>point of interconnection. See Section 25 and Appendix DD of the CAISO tariff.</u>	
41	Who will give operational direction, CAISO or PG&E?	The CAISO.	Transmission Planning
42	Who determines the device set points, CAISO or PG&E?	The approved project sponsor will determine device “set points”, however these are defined, as the equipment is owned by the approved project sponsor. The interconnecting PTO (PG&E) will determine appropriate voltage schedules.	Transmission Planning
43	Who is performing engineering analysis for real time operations and doing the outage studies, CAISO or PG&E?	Depending on the scope of the required studies, either the CAISO or PG&E will take the lead in performing the studies.	Transmission Planning
44	Who would the project sponsor submit outage requests to for approval, CAISO, PG&E or the RC?	The approved project sponsor will become a PTO and will submit outage requests to the CAISO. The CAISO will coordinate with PG&E and also the RC.	Transmission Planning
45	For Alternative 1: Since PG&E will be responsible for procuring and constructing the Round Mountain loop-in-lines, will the t-lines maintenance also fall under PG&E’s responsibility?	PG&E will own and maintain the transmission lines.	Grid Assets
46	How will station service for the auxiliary loads associated with the reactive support devices be provided? Through CAISO market/backfeed from grid (if so, how would it be billed)?, or separate distribution connection/agreement to local distribution company?	The project sponsor is responsible to provide its own station service. The transmission interconnection study can also include details for local station service. The interconnection study process will normally start after the CAISO selects the approved project sponsor.	Grid Assets

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47	What Basic Insulation Level (BIL) should be used for design of the HV equipment for each project?	The CAISO does not specify the BIL. Please include your assumptions in your proposal.	Grid Assets
48	CAISO mentions high availability being a requirement of the design as well as requirements for two separate blocks and electrical and physical separation between the two reactive support blocks all the way up to the POI. Does CAISO have any specific requirements for sparing (for example the step up transformer) for these projects? If not, can you provide any insight into how CAISO plans to evaluate and value availability based on the proposed sparing strategy of each bidder?	<p>The CAISO does not have specific sparing requirements. Potential project sponsors should state in its application a sparing strategy to achieve high availability.</p> <p>Specific evaluation criteria and selection factors are specified in section 24.5 of the CAISO tariff. Applicants can also review prior selection reports available on the CAISO's website.</p>	Transmission Planning / Grid Assets
49	Does CAISO or the interconnecting TO have any specific seismic requirements or specifications for the reactive support devices or the associated substation equipment?	The CAISO does not have specific seismic requirements. Please include your assumptions in your proposal.	Grid Assets
50	Does CAISO or the interconnecting TO have any standard design criteria or other minimum specifications beyond what has already been posted on the 2018-2019 Transmission Planning web page that would apply either to the reactive support devices or the associated substation equipment?	The CAISO has published all of its design criteria. The interconnecting TO may have additional criteria that will be available to the approved project sponsor during the interconnection study.	Transmission Planning

