

***Transmission Competitive Solicitation Questions Log
Question / Answer Matrix
2022/2023 TPP – Phase 3***

No.	Comment Submitted	ISO Response	Assigned To:
1	With the exception of one key selection factor for the North Gila – Imperial Valley #2 500kV line all of the project key selection factor are the same. Why does the North Gila – Imperial Valley #2 500kV line project include selection factor 24.5.4 (f) (the technical and engineering qualifications and experience of the Project Sponsor and its team) but the other projects do not?	The CAISO inadvertently left this key selection factor off of the 2 other projects posted for this year’s solicitation. The key selection factor document has been revised accordingly and will be posted to the CAISO website.	Grid Assets
2	The CAISO noted that the Project Sponsor Application documents had been revised. Is a listing of the specific changes available?	<p>The CAISO made changes to 3 documents; the Project Sponsor Application, the Cost and Containment Workbook and the Prior Projects and Experience Workbook. The changes are summarized below;</p> <p>The changes to the Project Sponsor Application are detailed in the revision log in the updated document posted on the CAISO website.</p> <p>The Cost and Containment Workbook changes include; expanding the number of years available for annual cost data entries, updating section 1b to provide more details to categories of capital costs, expanding section 4b to allow for the entry of CWIP data if selected, expanding section 4e to solicit greater details on proposed Rate Base Adjustments, and expanding section 5 to solicit more information concerning the proposed depreciation method.</p> <p>The Prior Projects and Experience Workbook was modified to include selections for individual project details for use in evaluation of qualifications and expertise.</p>	Grid Assets
3	The overview of this year’s competitive solicitation projects identified an ISO requested in service date. However, staff noted that the functional specification for each project also identified a required in	Imperial Valley – North of SONGS 500kV line and substation: Requested in service date: 12/31/2030 No later than: 06/01/2034	Planning

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	service date. Can you please provide the specific “no later than” in service date for those projects where it differs from the requested in service date?	North of SONGS – Serrano 500kV line project: Requested in service date: 12/31/2033 No later than: 06/01/2034	
4	The North Gila – Imperial Valley #2 500kV Project does not identify an emergency rating and duration as noted in the other projects. Is there a required emergency rating and duration for this line?	The required minimum line 4 Hour Emergency Ampacity is 2857 Amps.	Planning
5	The specification for the North of SONGS substation and associated 500kV line to Imperial Valley substation notes that the line shall be supplied with series compensation and line reactors. The specification specifically notes that the project sponsor shall specify the location of the series compensation and that the line reactors will be installed within the terminating substations. Can you please clarify if the line reactors at the Imperial Valley substation are within the scope of this solicitation?	The series compensation can be placed anywhere along the line, either at separate location or at the North of SONGS substation. The identified line reactors shall be placed at the North of SONGS substation. Line reactors at the Imperial Valley Substation, if required are not a part of this solicitation.	Grid Assets
6	Is there a range of impedance values that are acceptable for the North Gila – Imperial Valley #2 500kV line or is the exact value identified in the specification required?	The specified approximate Line Impedance is 0.00098 + j0.02327 pu (100 MVA base), plus/minus 5 percent.	Planning
7	Is there a range of impedance values that are acceptable for the North of SONGS – Serrano 500kV line or is the exact value identified in the specification required?	The specified approximate Line Impedance is 0.000315 + j0.008640 pu (100 MVA base) plus/minus 5 percent.	Planning
8	Please explain the steps required to solicit collaboration from other possible participants?	Any entity interested in collaborating with another entity may notify the CAISO of its interest in collaborating within ten business days after the bid window for a transmission facility opens. The ISO will post on its website a list, including contact information, of entities interested in collaborating. It is NOT a requirement to notify the CAISO if an applicant project sponsor wishes to collaborate.	Grid Assets

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9	Is there an agreement between the CAISO and IID to insure that the potential IID cost sharing for the construction of this line will be available to all potential project sponsors?	No.	Planning
10	The diagram for the new North of SONGS substation notes that the tertiary is to be rated for 13.8kV while the specification identifies the tertiary voltage rating as 12kV. Which is correct?	The tertiary is to be rated for 13.8kV.	Planning
11	The specification for the transformers at the North of SONGS 500/230kV substation identifies a tertiary winding but does not note any external use for the tertiary. Is this tertiary buried or required for an external connection to external devices, i.e. reactors or station service?	The tertiary winding is to be designed to include a tertiary bus and allow for the future addition of up to 4 tertiary reactors to be used for voltage control.	Grid Assets
12	The new application posted on Friday also lists that it's Version 7, even though the previous posted version is also listed as Version 7. How should we distinguish the 2?	The new revision has now been labelled properly and uploaded to the CAISO website. Accordingly, the revision log has also been updated to reflect the changes.	Grid Assets
13	Are there any federal funding opportunities available to help lower the financing and construction cost for these projects. Specifically, has the DOE identified any funds to assist these transmission projects?	The ISO is aware of several potential funding opportunities such as EPACT05 Section 1703 and 1706, the DOE Transmission Facilitation Program, and WAPA's Transmission Infrastructure Program (TIP). The ISO encourages potential project sponsors to consider and explore opportunities to lower costs to consumers. The ISO anticipates paying particular attention to potential project sponsors' plans to seek such funding opportunities and to exercise such opportunities, in considering satisfaction of the key selection factor section 24.5.4(j), "demonstrated cost containment capability of the Project Sponsor and its team, specifically, binding cost control measures the Project Sponsor agrees to accept, ..." that was identified as a key selection factor by the ISO for all projects in the 2022-2023 competitive solicitation.	Legal

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14	The summary listing of projects in the CAISO specifications identified in Appendix I of the final transmission plan notes that there are specifications for four projects. Is this correct?	There are three projects—not four.	Planning
15	What are the specific requirements for interconnecting to the SCE stations?	In seeking interconnection to SCE facilities, the approved project sponsor shall adhere to all applicable requirements in SCE's Interconnection Handbook . These include, but are not limited to, all applicable protection, voltage regulation, VAR correction, switching and tagging, and metering requirements.	Planning
16	Tentative optimum routing alternatives for North Gila-Imperial Valley #2 500kV line suggest practical line lengths outside plus/minus 5 percent of the stated 97 miles. Please provide the basis for the solicitation requirement's approximate line length of 97 miles.	The North Gila-Imperial Valley #2 500kV line modeling was based on data submitted by a stakeholder through the project request window. The line length of 97 miles in the Functional Specification document is incorrect and should be 85 miles. Longer line lengths are acceptable so long as the line impedance meets the specifications. Series compensation can be added if necessary to meet the impedance specification.	Planning
17	For the North Gila - Imperial Valley #2 500kV Line, please clarify if the given range for Approximate Line Impedance, plus/minus 5 percent applies only to the total impedance amplitude, or it applies to the resistance and reactance portions of the impedance separately.	The Approximate Line Impedance, plus/minus 5 percent applies primarily to the magnitude of the impedance. See response to 16.	Planning
18	Is it acceptable to include reactive power compensation to meet the impedance requirements of a given project? Would these be in the scope of the project sponsor or the interconnecting PTO?	See response to 16. The addition of series compensation would be in scope of the project sponsor.	Planning

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19	For the North Gila-Imperial Valley #2 500kV line, the calculation for the proposed Approximate Line Impedance is "0.00098 + j0.02327 pu (100 MVA base), plus/minus 5 percent." When using the 525kV base value established according to the Manual, the results are inconsistent. Please confirm the appropriate base value.	The base kV in the power flow model is 500 kV and that is the base kV for the Approximate Line Impedance.	Planning
20	For the Imperial Valley-North of SONGS 500kV line, the calculation for the proposed Approximate Line Impedance is "0.001523 + j0.02088 pu (100 MVA base), plus/minus 5 percent." When using the 525kV base value established according to the Manual, the results are inconsistent. Please confirm the appropriate base value	The base kV in the power flow model is 500 kV and that is the base kV for the Approximate Line Impedance.	Planning
21	Please provide maximum short circuit values at Serrano 500kV substation bus, North Gila 500kV substation bus, Imperial Valley 500kV substation bus, North of Songs 500kV substation bus and North of SONGS 230kV substation bus within the CAISO 10-year and/or 20-year planning horizon.	We have requested this information from the applicable PTOs, and we will post it in this log when it is received.	Planning
22	Please clarify the termination of the new transmission lines as at interconnecting facilities. Is the final dead end structure to be located 100 feet of interconnecting utility substation fence?	Yes, that is correct.	Grid Assets
23	The specification for the North Gila – Imperial Valley #2 500kV Line project notes different requested in-service dates within the document; June 1, 2028 and June 1, 2032. Which is correct?	June 1, 2032	Grid Assets
24	Can you help us clarify the total number of single-phase transformers needed for the initial configuration on Imperial Valley – North of SONGS?	Three 3–phase banks with an installed spare, single phase units are permissible with one single phase spare. In other words, 10 single phase transformers.	Planning

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	The one-line diagram, Figure I.1-2 shows 11 transformers.		
25	Is the intended specification to have the R and X values individually within +/- 5% or should the magnitude be within +/- 5%?	The magnitude be within +/- 5%	Planning
26	How did CAISO determine the estimated route length for the North Gila – Imperial Valley #2 500 kV Line Project? The functional specifications state the estimated line length is 97 miles but the existing North Gila – Imperial Valley 500 kV transmission line is between 75-80 miles in length. The required impedance values will be significantly impacted by shorter routes.	See response to 16.	Planning
27	The NOS – Serrano specification does not contain the +/- 5% requirement. Does this segment not have the same requirement for the impedance as the other two segments?	This segment does have the same +/- 5% tolerance.	Planning
28	What conductor assumption was made in determining the impedance values in the functional specifications?	The IV-N.SONGS 500 kV line, N.SONGS-Serrano 500 kV line, and IV-N. Gila #2 500 kV line impedance were based on 2B-2156 ACSR.	Planning
29	Does CAISO have any requirements for the secondary communication path for the IV-NG #2, IV-NOS, and NOS-Serrano solicitations?	The two communication paths need to be diversely routed so there are no common failure modes.	Planning
30	The CAISO Functional Specifications require both a minimum continuous current and a range of impedance. For solutions that are shorter than 85 miles, we have found that all conductors that meet the CAISO's requirements for continuous current have an	The 5% tolerance accommodates these changes. Please see the revised specification and new impedance. However, please provide specific details and calculations if there is still an issue.	Planning

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	impedance that is below the lower bound of the CAISO's range. Would the CAISO be open to a solution that has a lower impedance than it has currently required in the Functional Specifications?		
31	The CAISO specifies a 4-Hour Emergency Rating for the substation buses at 7500A. 7500A would require a non-standard bus design. Would the CAISO be open to a lower rating for the Initial Configuration?	The CAISO has issued a revised specification for this equipment. The revised rating information is available on the CAISO websites Transmission Planning page	Grid Assets
32	What temperature is assumed for the impedance calculated in the competitive projects?	It is based on existing CAISO facility per mile impedance data. The temperature assumptions are based on the CAISO facility owner assumptions. Please note that each individual project specification identifies the required design temperature.	Planning
33	Will bids be required to comply with Section 8386 of the California Public Utilities Code requiring all electrical corporations to have approved wildfire mitigation plans when owning and operating electric utility facilities in High Fire Threat Districts	The successful bidder will be required to comply with all applicable laws. All proposals should include anticipated wildfire mitigation plans and procedures for operations under extreme conditions for facilities in High Fire Threat Districts.	Grid Assets
34	Should bids include the bidder's wildfire mitigation plan and operational procedures for operations during extreme wildfire conditions?	The final, approved wildfire mitigation plan is not required for bidding. As indicated in the response to question #33 proposals should address wildfire mitigation requirements and indicate anticipated measures and procedures for operating during extreme wildfire conditions.	Grid Assets
35	Can the CAISO specify a minimum amount of liability insurance that bidders and their contractors will be required to maintain during construction and operations?	The CAISO does not specify the amount of liability insurance bidders and contractors must carry during construction and operations. However, the CAISO does evaluate a project sponsor's ability to assume liability for major losses as one of the selection factors.	Grid Assets
36	Will bidders be required to have coverage for wildfires under their liability insurance to address wildfires caused by their facilities or	The CAISO itself does not prescribe what liability insurance a project sponsor must carry or the specific the amount of any such	Grid Assets

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	activities? Can the CAISO specify a minimum amount of wildfire coverage that bidders will be required to maintain during construction and operations? If not, how does the CAISO plan on evaluating each bidder’s financial capacity and/or resources to address potential wildfire liabilities caused by their facilities or activities?	liability insurance. Project sponsors must comply with all applicable laws and regulations. The CAISO does evaluate a project sponsor’s ability to assume liability for major losses as one of the selection factors in the comparative analysis. The CAISO holistically considers all of the support data and information a project sponsor submits with its application to show its satisfaction of the various selection criteria.	
37	If separate entities are involved in construction of the facilities versus ownership of the facilities, will the CAISO be evaluating each entity’s standalone liability protection and financial standing separate from the other?	The CAISO will evaluate all information provided by the project sponsor in support of its proposal, including information on its proposed team. The CAISO does not prescribe how a project sponsor can demonstrate satisfaction of the selection criteria. After the project sponsor signs the APSA, it is contractually responsible for the design, construction, operation, and maintenance of the approved transmission solution.	Grid Assets
38	What role does a bidder’s participation (or non-participation) in the California Wildfire Fund have in the CAISO’s overall assessment of its bid application?	The CAISO does not prescribe how a project sponsor can satisfy the selection criteria. The CAISO will holistically evaluate all information provided by the project sponsor in support of its proposal. Selection criteria include a project sponsor’s financial capabilities and ability to assume liability for major losses. “coverage.	Grid Assets
39	Will the CAISO require all bidders to design facilities in accordance with “known local conditions” that require companies to design to a higher standard than the particulars specified in GO 95 (i.e., where applicable within the CPUC’s High Fire Threat Districts) to enable the furnishing of safe, proper, and adequate service?	Bidders have to comply with all applicable laws, ordinances and regulations including those associated with transmission lines routed through High Fire Threat Districts.	Grid Assets
40	If one or more of the projects that are subject to the competitive transmission procurement process of the Transmission Plan (i.e. Gila-Imperial Valley, Imperial Valley North of SONGS, and North of	No	Planning

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	SONGS-Serrano) were to be later canceled, withdrawn or terminated (whether due to permitting impediments or otherwise), will that have an effect on the viability of the remaining project or projects		
41	What conductor and assumptions are being used for the provided impedance specification?	See responses to #28 and #32.	Planning
42	The recent specification update indicates a lower length than the previous, yet the reactance as gone up. Was this the intention, and if so, what was the driver for this increase in comparison to the previous set of values given that the driver cannot be the length with all else being equal?	The 97 mile length was incorrect. The impedance calculation was based on 85 miles and was slightly updated based on the per mile impedance used for the other two projects.	Planning
43	Section I3.1 of the updated specification indicates in the NG-IV #2 line length is estimated at 85 miles (page 16 of 20), but Section I3.2 states the approximate line length is 81 miles. Which length is the provided impedance based on?	The 81 mile length is incorrect. The correct mileage is 85 miles. See response to #42.	Planning
44	Will CAISO accept a series compensation value either higher or lower than 50% to meet the required impedance value for the IV-NOS project? The functional specifications list a 50% series compensation requirement as well as an impedance value requirement.	The series compensation can be adjusted if necessary to meet the impedance specification. The compensation limit for the line is 70%.	Planning
45	We have reviewed the latest Q&A log posted by CAISO and believe an error exists in the NG-IV #2 impedance calculation provided by CAISO. The impedance values we calculate for NG-IV #2 based on the CAISO inputs are 10-15% below the CAISO identified values. We cross-checked our impedance calculation against the existing NG-IV line as another data point, and the existing line impedance is similarly ~ 20% below the CAISO identified values. The CAISO	The CAISO has reviewed the impedance calculations for all three projects and adjusted the specifications accordingly. The revised specifications can be found on the CAISO website on the Transmission Planning page.	Planning

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	identified impedances for the IV-NOS and NOS-Serrano projects appear high as well.		
46	The CAISO reduced the lower bound for the impedance to 20% below the specification. Would the CAISO be open to reducing this to 25% below the specification? This would be within +/-10% of the existing North Gila #1 circuit.	The ISO would be concerned about the accuracy of our TPP studies with any further reduction in the lower bound of the impedance tolerance.	Planning
47	The CAISO application template (version 8, Introduction and General Instructions, page 5) refers to a 20 MB limit for the submission due to an email limitation limit followed by “Project sponsors shall submit their information via CD or DVD medium”. Does the 20 MB limit apply if the files are submitted via CD or DVD, which can hold much more than 20 MB of data?	The 20MB limit does not apply to information submitted via CD or DVD media.	Grid Assets
48	Is the 20 MB limit a per file or per attachment limit or a gross limit for all files and attachments combined?	The 20MB limit is a gross limit for email submissions of electronic files. Multiple emails with attachments of 20 MB or less can be submitted when submitting your proposal.	Grid Assets
49	What if we have a file or attachment to our Bid Application that is larger than 20 MB after it is compressed?	A compressed file that is less than 20MB is acceptable. Files larger than 20MB can be submit on a CD or DVD.	Grid Assets
50	Can the CAISO Bid Application, including all files and attachments, be submitted via a flash drive or storage media other than CDs or DVDs?	No, due to the ISO’s security policies flash drives or other storage devices other than CDs or DVDs will not be accepted.	Grid Assets
51	On the “Prior_Projects_and_Experience_Workbook” that bidders need to complete/submit, could you please let us know what “F” stands for in column R and row 3?	The “F” refers to the Financing experience of the respective project sponsor or associated contractor.	Grid Assets

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52	Can a project sponsor can answer “Yes” in the Prior Projects and Experience Workbook for Project Sponsor Performed Responsibility to the questions if contractors performed the work but the proposed project sponsor’s staff reviewed and managed the work done for that particular project.	Yes, but project sponsor shall indicate the specific functions that we performed but contractors but directly supervised and managed by the project sponsor.	Grid Assets
53	For the Imperial Valley – North Gila #2 500 kV Line, are studies for the WECC Path Rating studies for Path 46 & Path 49 intended to be included in the proposed bid?	No. A path rating study may be needed with all three of the 2022-2023 competitive solicitation projects combined.	Planning
54	Please confirm that, as specified in Appendix I for the North of SONGS Substation, on-load LTCs on the 500/230 kV banks are required. This appears to be an unusual requirement for this size transformer in this region.	Confirmed. Similar sized transformers in this region have LTCs.	Planning
55	For the Imperial Valley – North of SONGS 500 kV Line and North of SONGS Substation, is there a required minimum size for the line shunt reactor to be installed at the North of SONGS Sub?	The required minimum size is 138 MVA	Planning
56	For the Imperial Valley – North Gila #2 500 kV Line, should the target impedance range [0.000893 + 0.024480 pu (100 MVA base), plus 5 percent/minus 20 percent] change proportionally with the line length if it deviates from CAISO’s expected line length of 85 miles, or is the impedance target absolute regardless of the designed line length?	The impedance needs to be within the specified range.	Planning
57	What is the voltage base for the specified transmission line impedances - is it 500 kV or 525 kV ?	500 kV	Planning

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58	What swing current should be applied to the series compensation design? If it has not been studied, what value should bidders assume (IEEE 824 suggests a typical range of 1.7 to 2.5 per unit)?	Bidders should assume a 1.7 p.u. swing current in their proposals.	Planning (revised)
59	Regarding the Imperial Valley – North of SONGS 500 kV Line, we presume the focus of the RFP is achieving the target <i>overall net line impedance</i> +/-5%. If this is so, then could we suggest also permitting some variability in the specified percent compensation that would allow more variability in both the uncompensated line impedance and series compensation while still achieving the overall target - perhaps +/- 10% for the target series compensation? This change can facilitate optimization of the line design which could result in an overall reduction in cost from all bidders for this project.	The specified Approximate Line Impedance including the series compensation is: 0.001523 + j0.02088 pu (100 MVA base), plus/minus 5 percent. The series compensation can be adjusted as long as the net line impedance is within this range.	Planning
60	Are the Requested In-Service Date and the Not Later Than Date both June 1, 2032 for the North Gila – Imperial Valley #2 500 kV Line Project? The functional specifications for IV-NOS and NOS-Serrano each show separate Requested In-Service Dates and the Not Later Than Dates. The functional specification for the North Gila – Imperial Valley #2 500 kV Line Project only provides a Requested In-Service Date.	The Requested In-Service Date and the Not Later Than Date are both June 1, 2032 for the North Gila – Imperial Valley #2 500 kV Line Project.	Planning
61	The CAISO application template's response boxes are in a specific format that prevents indented lists and tables from fitting in the response box. Must the responses fit into the default response boxes? Must responses be italicized? Are there any additional	Supplemental information may be submitted as a separate pdf attachment. The supplemental file shall reference the specific application section it contains information for in the title. The information in each specific application sections does not have to be italicized.	Grid Assets

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	formatting requirements for the responses not included in the application instructions?		
62	If submitting the application via CD/DVD but paying the application fee electronically via wire transfer, to what address should the CD/DVDs be sent?	California Independent System Operator Attn: Julie Balch 250 Outcropping Way Folsom, Ca 95630	Grid Assets
63	If submitting the application via email, to what email address should the application be sent?	transmissioncompetitivesolicitation@caiso.com svaughan@caiso.com	Grid Assets
64	What information should be included in the cover letter aside from the list of documents and attachments?	The cover letter should include the project name, the sponsor name, the contact individual for the project and contact information for the applicant.	Grid Assets
65	The project specifications for the for the North Gila-Imperial Valley #2 and the Imperial Valley-North of SONGS 500kV transmission lines specify that the new line segments will terminate on a dead end structure(s), to be owned by the incumbent PTO (SDG&E). This differs from previous competitive projects, can the ISO confirm that this is correct?	The project specifications are not correct. The approved project sponsor will be responsible for constructing, maintaining, operating and owning the new transmission line, including the final dead end structure located within 100' for the existing PTO substation. .	Grid Assets
66	Approximate costs were provided by CAISO for the three competitive solicitation projects in Appendix I of the TPP report. For each of the three projects, please provide the year that the approximate project costs were projected based upon – present day (2023), or escalated to a specific future year. If the costs were escalated, please also provide the assumed escalation rates applied for each project. (Because the required year for some of the	All cost estimates are in 2022 Constant Dollars.	Planning

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	projects changed since the original publishing of Appendix I, we are requesting the specific year for escalation, if any was applied, for accurate benchmarking cost comparisons.)		
67	When filling out the cost and cost containment workbook, it was discovered that the transmission and substation subtotals on the “Capital Costs” sheet are not summing correctly (C33:C41, row 41, C50:C61, row 61). Does the CAISO intend to update the sheet, or does the applicant need to make a note in its application regarding the lack of totals for these sections?	The CAISO has corrected the error and posted a revised cost and cost containment workbook to the CAISO website. This document should be used in any application packets submitted.	Grid Assets
68	Will the CAISO accept a link to an Electronic Data Transfer portal that requires the CAISO to submit an email address and download the data from a secure site?	Yes	Grid Assets