

Attachment A: Data Request



Project: LS Power Grid's Collinsville 500/230 kV Substation Project

Title: Data Request #4

From: California Public Utilities Commission
Panorama Environmental Inc.

To: LS Power Grid California, LLC (LSPGC)
Pacific Gas and Electric Company (PG&E)

Date: May 9, 2025

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Project Description

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n/a	DR-1: Potential for the Concrete Mattresses and other Covering Methods along the Submarine Segment Based on the CPUC’s coordination with USACE regarding the proposed 230 kV submarine segment, USACE’s minimum target depths, and uncertainty that the depths could be achieved in all areas, the CPUC requests that LSPGC provide additional Project Description information to account for contingencies that may be required to protect the submarine segment cables and meet USACE requirements. Specifically, we understand such contingencies may include installing concrete mattresses or covering the submarine cables using other methods and materials, if required by USACE, in any areas where the minimum target depths cannot be achieved for any reason.	A	Please provide a detailed description of the possible use of concrete mattresses along the submarine segment, if required to address depth concerns or to otherwise protect the submarine cables. Include information on the construction process and dimensions, whether the materials would be constructed on-site or prefabricated, estimates regarding the potential locations and quantities, and timing.	LSPGC
		B	Please provide a detailed description of any other submarine cable covering methods that could be used in addition to or in lieu of concrete mattresses, such as rocks or boulders, etc. Include information on the construction process and dimensions, estimates regarding the potential locations and quantities, and timing.	LSPGC
n/a	DR-2: Submarine Cable Installation using Vertical Injector Technology Based on the information LSPGC provided about available submarine cable installation methods and USACE’s minimum depths, two installation methods are capable of meeting the depth requirements, which include (a) jet-sled/hydroplow (proposed method) and (2) vertical injector. The proposed hydroplow has depth limitations that are close to the USACE required depths, whereas the vertical injector method is capable of greater depths. LSPGC has indicated that vertical injector equipment may be difficult to obtain or unavailable due to high demand and limited global access; however, the CPUC recommends including it as an optional construction method in the Project Description that could be used if necessary to achieve the minimum depth requirements.	A	Please provide a detailed description of the option to install the submarine segment using vertical injector technology. Provide a narrative similar to the proposed hydroplow method, and highlight any key differences from the hydroplow installation process, including timing and materials, etc.	LSPGC
		B	Please explain if the sediment dispersion assumptions with vertical injector installation would be similar or greater than that analyzed for the hydroplow method. If greater, please provide estimated values compared to the proposed method.	LSPGC
n/a	DR-3: Refined Project Objectives LSPGC informed the CPUC that the project objectives would be refined to address CAISO’s updated project information once CAISO’s latest transmission plan is published. The project objectives must be finalized to complete the alternatives screening process.	A	Please provide updated project objectives to support the alternatives development and screening process.	LSPGC
Data Request #2, DR-8 Data Request #3, DR-2	DR-4: Proposed Substation Property In response to Data Request #3, DR-2, LSPGC provided clarification regarding the proposed substation property size and boundary and stated the following: “The GIS data for the proposed substation property is included as Attachment A, Proposed Substation Property Size. The area includes workspaces and permanent substation features which cover 28.3 acres of the 44 acres south located of Stratton Lane on the proposed parcel (Parcel ID: 0090-12-0300).”	A	Please clarify what would be done with the unused portion of the existing parcel, and if the property would be subdivided and if existing ownership would be maintained in the unused areas.	LSPGC
n/a	DR-5: Additional PG&E Construction Measures On March 26, 2025, PG&E informed the CPUC team that they would be submitted additional Construction Measures (CMs), but no additional CMs have been submitted to date. The Project Description including the proposed CMs need to be finalized to effectively evaluate impacts.	A	If PG&E intends to submit additional CMs, please ensure they are submitted no later than May 16, 2025.	PG&E: As we discussed on the latest CPUC call, PG&E plans to obtain an ITP for Crutches Bumble Bee and Burrowing Owl and will comply with permit requirements. We suggest adding a CM to that affect and have no other proposed measures.

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Alternatives

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n/a	DR-6: Core Project Objectives for Alternatives Screening Simplified core project objectives are required to support the CPUC’s alternative screening process. The CPUC has drafted the following simplified descriptions of the core project objectives based on the detailed project objectives included in the PEA: • Meet the California Independent System Operators' (CAISO) policy-driven need established for the project in their 2021-2022 Transmission Plan: – Address identified transmission constraints on the 230 kV system – Provide additional supply from the 500 kV system • Improve and maintain the reliability of the transmission grid by addressing overloads • Facilitate deliverability of load from existing and proposed renewable energy projects, and progress California’s renewable energy goals • Achieve commercial operation by June 2028	A	Please verify the core project objectives or provide requested revisions.	LSPGC
n/a	DR-7: Alternative Collinsville Substation Sites More information is needed regarding impact areas and other project feature details associated with the alternative substation sites.	A	Please identify and provide GIS for proposed staging areas to support construction of the Collinsville Substation for Alternative A (adjacent to existing wind energy substations) and the PEA Alternative (also referred to as Applicant 2).	LSPGC
		B	Please identify and provide GIS for proposed Collinsville Substation property (beyond the minimum footprint) for Alternative A (adjacent to existing wind energy substations) and the PEA Alternative (also referred to as Applicant 2).	LSPGC
n/a	DR-8: Alternative 230 kV Submarine Segment Alignment LSPGC informed the CPUC that an alternative route for the 230 kV submarine segment would be developed in coordination with Suisun Associates to minimize impacts associated with the sand and mining lease.	A	Please provide GIS data for the alternative 230 kV submarine segment alignment.	LSPGC
n/a	DR-9: Alternative 230 kV Overhead Segment Alignment LSPGC provided data showing the alignment and structure locations for an alternative 230 kV overhead segment going south of the proposed substation site through PG&E property and west of the proposed overhead segment route. More design information is needed for this alternative, including the locations of temporary work areas and access routes consistent with the design for the Proposed Project.	A	Please provide GIS data for the alternative 230 kV overhead segment design details consistent with the Proposed Project, including the associated work areas and access roads.	LSPGC
Data Request #2, DR-19	DR-10: Alternative 230 kV Submarine Segment – Partial HDD Installation Method In response to Data Request #2, DR-19, LSPGC stated: “LSPGC reviewed the feasibility of Horizontal Directional Drilling (HDD) during the design of the proposed submarine cable routing. HDD is not feasible to install the submarine cables across the sand mining lease, as the cables are not spliced together, rather one continuous cable. If an HDD was used in these locations, an HDD would be required across the entire 4.5-mile route through the river, which is not feasible. HDD is feasible at the end points of the cable (i.e., shorelines); however, due to	A	Please identify the maximum distances from the shores that partial HDD installation could achieve.	LSPGC
		B	Please explain the construction process for a partial HDD installation method, including the process for splicing cables and continuing installation using other methods where HDD is not feasible.	LSPGC
		C	Please explain factors related to the construction schedule/duration with a hybrid installation approach using HDD and hydroplow, and how it would be different that using the proposed hydroplow method alone.	LSPGC

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	engineering constraints of the cables, the required depth of the HDD would introduce additional cables required in order to meet specified cable ratings resulting in additional impacts and time constraints in-river. Due to this, and the potential for frac-out in the river in critical habitat, HDD was not proposed.” A number of stakeholders have requested the EIR consider HDD methods to install the submarine cables, and more information is needed to understand a potential hybrid approach where both a hydroplow and HDD methods are used.	D	Please identify the additional work areas that would be required if partial HDD methods were used and provide associated GIS data.	LSPGC
n/a	DR-11: Biological and Cultural Surveys and Data for Project Alternative Study Areas Several of the project alternative study areas are outside of previously evaluated biological and cultural study areas for the Proposed Project, such as two alternative substation sites, including “Scenario A” (near existing wind energy substations) and “PEA 2/Applicant 2” (north of Tabert Lane), as well as the overhead 230 kV segment on PG&E property. Additional data is needed for the project alternative areas to evaluate and compare impacts, including along all alignments, temporary and permanent work areas, and buffers consistent with the BRTR.	A	Please conduct biological surveys and provide data coverage consistent with the BRTR for all project alternative study areas, including for vegetation communities, aquatic resources, and species/habitat presence. Please provide a BRTR Addendum focused on the project alternative study areas and associated GIS data.	LSPGC
		B	Please complete a cultural resources record search surrounding the project alternative study areas consistent with the record search performed for the Proposed Project.	LSPGC
		C	Please conduct cultural resource surveys and provide data coverage consistent with the CRTR and associated technical reports for all project alternative study areas. Please provide a CRTR Addendum focused on the project alternative study areas and associated GIS data.	LSPGC
Data Request #2, DR-18	DR-12: PG&E 500 kV Interconnection – TSP Structures Alternative Based on SMUD comments and information provided by PG&E in response to Data Request #2, DR-18, a potential alternative has been identified that involves using entirely tubular steel poles (TSPs) for the 500 kV interconnection lines instead of primarily lattice steel towers (LSTs) with a few three-pole TSPs near the proposed Collinsville Substation. Specifically, the alternative would involve using TSP monopole structures where LSTs are identified for the Proposed Project.	A	Please provide preliminary design information and GIS data for an alternative that involves the use of TSPs (monopoles) along the proposed 500 kV interconnection lines. The design information and GIS should include structure dimensions (heights, diameters, depths, use of retaining walls, etc.), structure locations, work areas, access roads, and overhead alignments.	PG&E: PG&E does not have a standard for a 500 kV TSP design. Engineering has been asked to expedite responding to this data request and has indicated it will need an additional month to evaluate and provide a preliminary response. We are hoping that SMUD may have information that could assist with this effort. PG&E update: For this 500 kV TSP alternative, PG&E would utilize monopole steel structures in tangent locations while the angle and end structures would remain in 3-pole TSP configurations. The two circuits supported by these poles would be parallel to each other. This would result in a total of approximately 30 TSPs, with 3 locations having 2 monopoles each, side by side, and 4 locations having 6 monopoles each, 3 per circuit side by side. The structure locations would be approximately the same as previously provided for parallel lattice structures. Please see the kmz attached showing the locations of the tangent single poles and the 3-pole groupings. Preliminary modeling of the tangent monopole structures shows the tallest would be approximately 170’ tall (above ground height or AGH), with the average height roughly 160’ AGH, utilizing ~32-35’ arm lengths (~ 60’-70’ total horizontal length) in a delta configuration and using V-string type insulators to minimize blowout of the conductor. The structures would have two ~15’ arms at the top of the structure to account for the two shield wires. A depiction of the potential monopole structure is attached in C below. The TSPs in the 3-pole configurations would be up to 150’ AGH. Foundation design (diameter and depths) cannot be completed until loads are provided by the pole manufacturer, but the single tangent poles have been assumed to be

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				roughly 8-10' in diameter and 30-35' in depth, and the 3-pole TSPs would be roughly 6-7' in diameter and 25-30' in depth. The work areas, access roads, and overhead alignments would be roughly similar to those proposed for the traditional 500 kV tower design. SMUD responded that it does not use monopoles for its 500 kV lines and was unable to provide any helpful design information. Based on a preliminary review of the bird strike mortality information provided by SMUD, as well as the facts that SMUD and TANC (of which SMUD is a member) do not use monopoles for their 500 kV transmission lines and the occurrence of few nests in the existing 500 kV towers in the area, there does not appear to be justification for the substantial additional ratepayer expense and risks that would result from requiring PG&E to use non-standard monopole designs for this project. The SMUD bird strike mortality dataset is relatively extensive, and a detailed review is being undertaken.  TSP Option.kmz
		B	Please explain any differences in construction procedures and schedules that would be different with the TSP alternative vs. the proposed use of LSTs. Please explain how helicopters and cranes may be used differently to install the TSPs vs. LSTs, and provide equipment details if different than proposed.	PG&E: A design will need to be developed before construction impacts can be determined. PG&E update: Due to the weight of the lower sections of the tangent monopole structures, helicopters could not be used to set them. A larger crane would be required, which would require constructing a level pad large enough to handle the crane, potentially requiring substantial cut and fill at the construction sites. It is possible that a single pad could be placed between the two single-pole structure locations for the large crane to set the two bottom pole sections at each of the 3 tangent pole locations, but that has not been field verified and otherwise confirmed. Helicopters would still be used for construction of other transmission line components. This response is preliminary and subject to change as further design and field information becomes available. Given that PG&E had completed over 60% design for the traditional 500 kV towers, the new design will impact schedule by approximately 6-8 months. Aside from the added design costs, the new design is expected to cost at least \$½-1 million more than the original design. PG&E engineers continue to recommend using the traditional towers for this project.

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		C	Please provide diagrams of typical TSP structures that would be used under this alternative.	PG&E update: PG&E does not have a standard for a 500 kV tangent monopole design. However, attached is an example of a single 500 kV TSP structure prepared by PG&E's engineers that would be considered under the proposed alternative. Note that the design is preliminary and subject to change as design work advances. Collinsville Loop - 500kv Monopole Ex

Biological Resources

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BRTR Addendum	DR-13: Survey Areas and Data for Vegetation Communities and Aquatic Resources at PG&E Transposition Sites As discussed with LSPGC and PG&E, there are gaps in the survey areas and data coverage in the BRTR Addendum at the PG&E transposition sites (i.e., Transposition Sites C and D, etc.). Complete data coverage is needed for vegetation communities and aquatic resources to complete the impact analysis.	A	Please ensure they areas are adequately surveyed for biological resources and data coverage is provided for the entire biological study area identified, particularly where project work areas and access routes are identified.	LSPGC and PG&E PG&E: Per Thursday's call with the CPUC and LSPGC, PG&E will be doing additional survey work.
BRTR Addendum	DR-14: Wetlands at PG&E Transposition Sites The BRTR Addendum doesn't provide conclusive information about where wetlands are located and if they would be avoided or impacted. There are several mapped water features located along proposed access routes and within structure work areas that may be wetlands.	A	Please describe how wetland impacts would be avoided or permitted at the PG&E transposition sites. Where avoidance is possible, provide revised GIS data for the proposed access routes and work areas at the transposition sites that demonstrates avoidance.	LSPGC and PG&E PG&E: Per Thursday's call with the CPUC and LSPGC, PG&E will be doing additional survey work to respond to this question.
BRTR Addendum	DR-15: Possible Vernal Pools at PG&E Transposition Sites The BRTR Addendum identified features that may be vernal pools (based on photos), but the report is vague about the presence of vernal pools. <i>PG&E CM BIO-1: Vernal Pool and Waters Avoidance</i> indicates vernal pools may be present; however, the presence of vernal pools has not been verified, and it's unclear if the water features identified in the BRTR Addendum (or where survey gaps have been identified) that may be vernal pools could be avoided. More information is needed about possible vernal pools that may be present at the transposition sites.	A	Please explain if the presence of vernal pools is known and identify where they occur, as well as if and how they would be avoided.	LSPGC and PG&E PG&E: Per Thursday's call with the CPUC and LSPGC, PG&E will be doing additional survey work to respond to this question.
		B	If impacts on vernal pools cannot be ruled out, explain what additional measures would be implemented to address vernal pools, such as from PG&E's HCP.	LSPGC and PG&E PG&E: If PG&E is unable to avoid indirect impacts to a vernal pool or work within 250 feet of a known vernal pool, PG&E will install BMPs to capture sediment run-off or discharge and will only conduct work during the dry season. In the unlikely event that PG&E cannot avoid direct impacts, PG&E would obtain a USACOE Section 404 permit, which would trigger a Section 7 consultation.
BRTR Addendum	DR-16: Focused Botanical Surveys The BRTR Addendum did not include recommendations for focused botanical surveys.	A	Please explain if focused botanical surveys were conducted or are in progress.	LSPGC and PG&E PG&E: PG&E had understood that LSPGC was undertaking plant surveys in the transposition areas, but now understands we were mistaken. It is now too late to do it this year. PG&E has therefore agreed with the CPUC team that it will perform seasonally appropriate rare plant surveys prior to construction.
n/a	DR-17: Crotch's Bumble Bee Habitat Assessment	A	Please provide a schedule for when the habitat assessment will be completed and provided to the CPUC.	PG&E: Completed 5/22/25, assessment should be available one week later.

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	PG&E informed the CPUC that they were working on a habitat assessment for Crotch's bumble bee.			

Geology

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n/a	DR-18: Submarine Segment Fault Crossing The submarine segment geotechnical report describes the Kirby Hills fault (also referred to as the Rio Vista fault) as being 2.3 km west of the submarine segment alignment; however, our records indicate that the Kirby Hills fault would be crossed by the submarine segment.	A	Please describe how the submarine segment would cross faults, the fault activity, and design considerations that address potential risks associated with faults along the submarine segment.	LSPGC

Utilities

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Deficiency Report #1, DEF-3	DR-19: Utility Crossings along the Submarine Segment In response to Deficiency Report #1, DEF-3, LSPGC stated: "One of LSPGC's underground 230kV circuits will cross under the existing underground Trans Bay Cable near the Pittsburg Substation. LSPGC will coordinate with Trans Bay Cable LLC/NextEra Energy Transmission, LLC to facilitate this crossing and any requirements that the utility may require. LSPGC will establish a crossing agreement with Trans Bay Cable LLC/NextEra Energy Transmission, LLC to ensure all requirements are documented." A review of available GIS data for California Transmission Lines indicates that the submarine segment would cross the Trans Bay Cable within the Delta at two locations for a total of approximately eight crossings. It appears the Trans Bay Cable would be crossed within and immediately adjacent to a federal navigation channel where USACE is requiring a minimum depth of 15 feet below the riverbed; however, according to LSPGC this public dataset is inaccurate, and the submarine segment would not cross the Trans Bay Cable within the Delta. Furthermore, the State Lands Commission informed the CPUC that there may be other pipelines or utility lines in the Delta that should be addressed if they would be crossed by the submarine segment. More information is needed about existing utilities in the vicinity of the proposed submarine segment, including but not limited to the Trans Bay Cable.	A	Please identify all utilities within a minimum of 1,000 feet of the submarine segment by feature type, feature name, operator name, and number of individual lines for each feature. Please provide associated GIS data identifying the routes as well as the source of reference data.	LSPGC
		B	Please identify which utilities would be crossed by the submarine cables, the number of and location of each cable/line crossing, provide the known or expected depth of the existing utility at the crossing locations (i.e., surface of the riverbed or depth below the riverbed), and describe the submarine crossing position (i.e., above, below, etc.).	LSPGC
		C	Please describe the process for installing submarine cables where utility crossings would occur. Explain the process for how precise locations and depths of existing utilities would be identified, how any incidental damage would be avoided, and any separation and clearance distances/procedures.	LSPGC
		D	Please explain if the USACE's minimum depth requirements would be maintained at utility crossing locations, and if existing utilities could constrain the installation depths of the proposed submarine cables, such as if the submarine cables would be installed over the existing cables and the depth of the existing utilities is less than the USACE's 10 to 15 foot minimum.	LSPGC
		E	Please describe any contingencies or construction process options that may be necessary to protect the submarine cables if the minimum depths cannot be achieved at utility crossings, such as but not limited to the use of concrete mattresses (refer to DR-1).	LSPGC
		F	Please provide any available data for any utility lines within the San Francisco Bay or Delta region that may be located within mining lease	LSPGC

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			areas, including where existing utility crossings have occurred and where the mining areas have been affected.	
n/a	DR-20: Montezuma Gas Line Based on the location of the underground Motezuma gas line in the vicinity of 500 kV interconnection lines, there are temporary work areas and access routes that would be positioned on top of the gas line.	A	Please review the locations of proposed work areas and access roads that intersect the existing gas line features, explain if the proposed construction activities at the locations could affect the gas line, describe how the gas line would be identified and protected, and or refine the boundaries of proposed work areas to avoid the gas line.	PG&E: PG&E is aware of the location of an existing CalPine gas line near its construction activities. The gas line is to the east of the new structure foundations and can be avoided. No construction or staging will occur over the gas line. A USA tag will be issued prior to construction, and the gas line will be located in the field and marked to avoid. Access may require driving over the gas line but this will only occur on existing, maintained roads that have been designed to protect the line.