Together, Building a Better California

Transmission Development Forum

Generation Interconnection Project (GIP) Upgrades and Transmission Planning Process (TPP) Upgrade Status

January 25, 2023

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Presentation Summary

- PG&E fully supports the Transmission Development Forum to share Generation Triggered Reliability and Deliverability project status to all stakeholders.
- PG&E workbooks capturing Generator Interconnection Projects (GIP) and Transmission Planning Process (TPP) project statuses. The Excel Workbook contains projects that have been triggered by Interconnection Agreements while it may not show upgrades not yet triggered by an interconnection agreement.
- This presentation provides updates and the opportunity for discussion on the status of GIP and TPP projects that are highest priority to immediate generation interconnection. This is a technical discussion on the projects.
- PG&E requests that stakeholders save questions until the completion of each slide. Projects have been grouped to enable efficient and productive discussion.

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PG&E Projects Status Summary
TPP Projects with Improvements

Project No.	Scope	Status	Planned * Const. Start	Previous TDF Report Dated	Planned ** In-Service	Comments
TPP	Manteca #1 60 kV Line Section Reconductoring Project Reconductor ~1.13 miles of the Manteca #1 60 kV Line with larger conductor and remove any limiting component as necessary.	In-Flight	Q4-2024	Q4-2026	Q1-2025	Q1: Improvement due to reprioritization
TPP	North of Mesa Upgrade (formerly Midway-Andrew 230 kV Project) The Midway – Andrew 230 kV Project proposes to bring a new 230 kV power source into the Central Coast/Los Padres area by constructing new 230 kV transmission line within Kern, San Luis Obispo, and Santa Barbara Counties. The new 230 kV line will be terminated at Midway Substation and at a new 230/115kV substation (Andrew) which will be built in the Los Padres area between the existing Mesa and Sisquoc 115 kV Substations (initial location identified is near Andrew Avenue), near Santa Maria, CA. In addition, Andrew Substation will also be looped into the Santa Maria –Sisquoc and Mesa –Sisquoc 115 kV lines with a new 16 miles 115 kV line between Andrew and Divide Substations.	On-Hold (CAISO)	Q1-2024	Q4-2029	Q3-2029	Q1: The current changes in milestone dates reflect a recalibration due to a systemwide changes to PG&E's scheduling software and not changes to the project schedule. This project is under reassessment by CAISO and is currently on-hold. Once project is restarted, the in-service dates will be adjusted.

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PG&E Projects Status Summary
TPP Projects with Delays (3+ months)

Project No.	Scope	Status	Planned * Const. Start	Previous TDF Report Dated	Planned ** In-Service	Comments
TPP	Rio Oso Area 230 kV Voltage Support Install a 230kV +200/-260 Mega Volt-Ampere reactive (MVAR) SVC at Rio Oso Substation	In-Flight	Q1-2024	Q4-2024	Q2-2025	Q1-2023: no date changes at this time.
TPP C11P2-GP01	Moraga-Castro Valley 230 kV Line Capacity Increase Project The project scope of work involves upgrading the limiting substation equipment (jumper conductors and wave traps) on the Moraga-Castro Valley and Castro Valley-Newark 230 kV lines to utilize their full conductor ratings.	In-Flight	Q2-2024	Q1-2024	Q2-2024	Q1: Delay due to reprioritization
TPP C11P2-NP02 C11P2-NP01	Contra Costa PP 230 kV Line Terminals Reconfiguration Project Replaces need for: Contra Costa 230kV Bus Sections D, E and F and circuit breaker 820 overload Contra Costa 230kV SW's 601, 603 overload	In-Flight	Q4-2023	Q1-2025	Q2-2025	Q1: Reason for delay due to error. Feb 2025 ISD was draft date. May 2025 was supposed to be ISD in Q4 2022 TDF

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PG&E Projects Status Summary
TPP Projects with Delays (6+ months)

Project No.	Scope	Status	Planned * Const. Start	Previous TDF Report Dated	Planned ** In-Service	Comments
TPP	East Shore-Oakland J 115 kV Reconductoring Project (name changed from East Shore-Oakland J 115 kV Reconductoring Project & Pittsburg-San Mateo 230 kV Looping Project since only the 115 kV part was approved) Provide a third source of power into the Oakland J Substation from Eastshore Substation by reconductoring 14.8 circuit miles of transmission lines, modifying 35 towers (out of 98 towers on this line) and 4 substations, replacing and installing redundant communication fiber.	In-Flight	Q2-2021	Q2-2023	Q4-2023	Q1: Delay due to reprioritization
TPP	Morgan Hill Area Reinforcement (formerly Spring 230/115 kV substation) Improve electric transmission system reliability and operational flexibility in both the Morgan Hill – Gilroy and Santa Cruz – Watsonville areas by upgrading existing transmission facilities. To mitigate these system problems and resolve the customer outage issues and reduce the reliance on local gas-fired generation in the Morgan Hill – Gilroy area, this project will: • Reconductor a portion of the Metcalf – Green Valley 115 kV Line and re-terminate it into the 115 kV bus at Morgan Hill Substation, creating the Morgan Hill-Green Valley 115 kV Line. • Convert the Morgan Hill 115 kV bus to a breaker-and-a-half (BAAH) configuration to improve reliability and operational flexibility.	In-Flight	Q3-2025	Q2-2026	Q3-2027	Q1: Delay due to reprioritization.

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PG&E Projects Status Summary
TPP Projects with Delays (6+ months)

Project No.	Scope	Status	Planned * Const. Start	Previous TDF Report Dated	Planned ** In-Service	Comments
TPP	Red Bluff-Coleman 60 kV Reinforcement This project proposes to reconductor the Coleman-Red Bluff 60 kV line.	In-Flight	Q2-2027	Q2-2030	Q4-2031	Q1: Delay due to reprioritization.
TPP	Rio Oso 230/115 kV Transformer Upgrades This project will resolve current configuration issues, address reliability and capacity concerns, and alleviate high- voltage issues at Rio Oso Substation. The upgrades to Rio Oso will also position the substation	In-Flight	Q3-2022	Q2-2025	Q4-2025	Q1-2023: schedule/construction sequencing date adjustments. Partial 2023 funding reinstated
TPP	Vaca Dixon-Lakeville 230 kV Corridor Series Compensation The project scope is to install about 78 modular power flow control systems deployed on a dedicated bank structure at Vaca Dixon Substation (or adjacent property). Further scoping activities will finalize the substation location(s) to address potential new line overloads. The CAISO recently approved this project in their 2017-2018 Transmission Plan.	In Flight	Q1-2025	Q4-2025	Q2-2026	Q1: Delay due to reprioritization

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PG&E Projects Status Summary
TPP Projects with Delays (6+ months)

Project No.	Scope	Status	Planned * Const. Start	Previous TDF Report Dated	Planned ** In-Service	Comments
TPP	Estrella Substation Project Construct and own the new Estrella 230/70/21 kV Substation and associated transmission line work as defined by the CAISO's Transmission Plan. Construct 230 kV and 70 kV transmission lines to connect the Morro Bay-Gates 230 kV and San Miguel-Paso Robles 70 kV lines via Estrella Substation. Reconductor the southernmost portion of the San Miguel-Paso Robles 70 kV line between Estrella and Paso Robles Substations.	In-Flight	Q2-2024	Q1-2027	Q2-2028	Q1: The delay in getting the PTC will push the FISD (new) to May 2028
TPP	Midway – Kern PP #2 230 kV Line This project proposes to reconductor approximately 42 circuit miles of the Midway - Kern No. 1 230 kV Line, and split the No. 1 line into Midway - Kern No. 1 and No. 2 230 kV Lines, and remove crosstie connections to split the Midway - Kern No. 1 230 kV Line. Remove the Stockdale Nos. 1 and 2 230 kV Tap Lines from the Midway – Kern 230 kV lines and relocate directly to the Kern PP 230 kV bus.	In Flight	Q4-2018	Q2-2026	Q2-2027	Q1: Project relies on the Midway 230kV Section D Bus Upgrade project (T.0001650) to be in-serviced to provide a new terminal position for the new 230kV line. Due to the Midway 230kV Section D Bus Upgrade project being deferred due to 2023 budget constraints, this will push the Midway-Kern project out to April 2027.

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TPP Projects with Delays (6+ months)

Project No.	Scope	Status	Planned * Const. Start	Previous TDF Report Dated	Planned ** In-Service	Comments
TPP	Panoche – Ora Loma 115 kV Line Reconductoring This project proposes to reconductor approximately 16.22 of the Panoche - Oro Loma 115 kV Line between Panoche Junction and Oro Loma Substation, and replace wood poles as needed. The new conductor will be 1113 kcmil AAC and have the capability to handle at least 825 Amps and 975 Amps under normal and emergency conditions, respectively. Completion of this project will provide additional transmission capacity to serve over 30,000 electric customers in Fresno County.	In-Flight	Q1-2022	Q4-2022	Q2-2024	Q1: Delay due to reprioritization
TPP	Wheeler Ridge Junction Substation Construct and own the new Wheeler Ridge Junction project substation (to be named Casa Loma) including two new 230/115 kV transformers and three 230 kV line terminations. Upgrade existing Wheeler Ridge-Adobe Switching Station and Adobe Switching Station-Lamont 115 kV lines to 230 kV operations. Upgrade existing Kern-Tevis-Stockdale-Lamont and Kern-Tevis-Stockdale 115 kV lines to 230 kV. Rebuild existing idle line that connects Kern-Tevis-Stockdale to Magunden Substation. Reconductor Stockdale 230 kV tap #1 and #2 lines.	On-Hold (CAISO)	Q1-2030	Q2-2029	Q4-2032	Q1: The current changes in milestone dates reflect a recalibration due to a systemwide changes to PG&E's scheduling software and not changes to the project schedule. This project is under reassessment by CAISO and is currently on-hold. Once project is restarted, the in-service dates will be adjusted.

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PG&E Projects Status Summary
Generation Interconnection Project Upgrades

Project No.	Scope	Status	Planned * Const. Start	Previous TDF Report Dated	Planned ** In-Service	Comments
GIP C12P1-GCR01	Moraga 115 kV circuit breakers 582, 612, 622, 642 and 712 overstress Replace Moraga 115 kV circuit breakers 582, 612, 622, 642 and 712	In-Flight	Q3-2028	Q4-2029	Q4-2028	Q1-2023: Project funding secured for 2023 engineering to revert back closer to earlier project timeline.
GIP C12P1-NPT03	Rio Oso Substation 115 kV circuit breakers 412, 422, 482, 522 and 542 overstress Replace Rio Oso Substation 115 kV circuit breakers 412, 422, 482, 522 and 542 and associated switches/relays	In-Flight	Q2-2021	Q2-2024	Q4-2024	Q1-2023: schedule/construction sequencing date adjustments impacting changes between Q3 2022 TDF and this TDF
GIP C13P1-GPN04	Metcalf Substation 230 kV capacitor circuit breakers 654, 664, 674 and 684 overstress Replace Metcalf Substation 230 kV capacitor circuit breakers 654, 664, 674 and 684	In-Flight	Q4-2023	Q1-2026	Q2-2025	Q1-2023: Interim Solution Complete. This no longer impacts reliability for interconnections
PG&E	Tesla MPAC New 230kV MPAC building relocates 230kV equipment from existing Control Building	In-Flight	Q3-2024	Q4-2024	Q4-2025	Q1-2023: schedule correction due to reprioritization for 2023. Dates assumed Building for Bus Section C installed.

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Generation Interconnection Project Upgrades

Project No.	Scope	Status	Planned * Const. Start	Previous TDF Report Dated	Planned ** In-Service	Comments
GIP C11P2-ND01	Re-conductor Fulton-Hopland 60 kV Line (Fitch Mountain Tap-Geysers Jct) Re-conductor Fulton-Hopland 60 kV Line (Fitch Mountain Tap 009/005A-Geysers Jct 016/004) ~7 mi total length with 715 AAC	In-Flight	Q3-2025	Q4-2025	Q1-2026	Q1-2023: schedule/construction sequencing date adjustments.
GIP C9P2-N02	Re-conductor Fulton-Hopland 60 kV Line (Geysers Jct-Cloverdale Jct-Hopland) Re-conductor 24.21 mi Fulton-Hopland 60 kV Line (Geysers Jct 016/003A-Cloverdale Jct 026/002-Hopland) with 715 AAC and upgrade any limiting equipment	In-Flight	Q3-2025	Q4-2025	Q1-2026	Q1-2023: schedule/construction sequencing date adjustments.

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