Together, Building
a Better California

Transmission Development Forum

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

July 25, 2023

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Presentation Summary and Updates

- 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.
- *Update:* PG&E is open to discussions with resources developer about having funds advanced to PG&E to maintain or, when possible, expedite network upgrade timelines. Reach out to your interconnection manager at PG&E if you would like to further discuss this option.

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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	Cottonwood 115 kV Bus Sectionalizing Breaker Replace Cottonwood Transformer Banks 1 & 4, replacement of six circuit breakers, addition of bus parallel circuit breaker, and upgrade the aging protection and control equipment at the Cottonwood substation.	In-Flight	6/30/2025	3/25/2026	11/12/2025	Q3-2023: Improved ISD due to schedule/construction sequencing date adjustments.
TPP	Red Bluff-Coleman 60 kV Reinforcement This project proposes to reconductor the Coleman-Red Bluff 60 kV line.	In-Flight	7/7/2025	3/30/2029	11/7/2028	Q3-2023: Improved ISD due to schedule/construction sequencing date adjustments.
TPP	San Jose Area HVDC 230 kV Line (Newark - NRS) To build two HVDC lines, 1) from Newark 230 kV to NRS 230 kV and 2) Metcalf 500 kV to San Jose B 115 kV.	In-Flight	7/31/2025	12/1/2028	11/30/2027	Q3-2023: Improved ISD due to schedule/construction sequencing date adjustments.
TPP	San Jose Area HVDC 500 kV Line (Metcalf – San Jose) To build two HVDC lines, 1) from Newark 230 kV to NRS 230 kV and 2) Metcalf 500 kV to San Jose B 115 kV.	In-Flight	6/11/2025	12/1/2028	4/30/2028	Q3-2023: Improved ISD due to schedule/construction sequencing date adjustments.

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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	Cottonwood 230/115 kV Transformers 1 and 4 Replacement Project Replace Cottonwood Transformer Banks 1 & 4, replacement of six circuit breakers, addition of bus parallel circuit breaker, and upgrade the aging protection and control equipment at the Cottonwood substation.	In-Flight	7/3/2025	7/18/2025	11/19/2025	Q3-2023: Delay due to schedule/construction sequencing date adjustments.
TPP	Gates 500 kV Dynamic Voltage Support This project proposes to add 500kV breakers, switches, bus work and associated equipment required to connect the voltage support equipment. The voltage support equipment, which is installed by third-party, will support the system voltage after DCPP retires in 2024/2025. This project has an estimated In-Service Date of June 2024.	In-Flight	4/3/2023	8/30/2024	12/4/2024	Q3-2023: Delay due to schedule/construction sequencing date adjustments.
TPP	Martin 230 kV Bus Extension The Martin 230 kV Bus Extension project will: Construct a new 230 kV switching station near, but not adjacent to, Martin Substation. Relocate voltage control and power flow limiting equipment associated with the Jefferson-Martin and Martin-Embarcadero Cables from Martin, if necessary, to the new switching station. Completion of the Martin Bus Extension project will improve service reliability and system resiliency in serving customers in San Francisco and northern San Mateo County.	In-Flight	2/7/2024	11/13/2025	4/23/2026	Q3-2023: Delay due to reprioritization.
TPP	Midway-Kern PP Nos. 1,3 and 4 230 kV Lines Capacity Increase (Midway 230kV Bus Section D Upgrade Project) Install seven bays (four full and three partial) of 230kV systems (new Bus Section D) and its connection to the existing 230kV bus at Midway Substation.	In Flight	4/7/2021	5/30/2025	8/29/2025	Q3-2023: 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	Vierra 115 kV Looping Project Loop the Tesla-Stockton Co-Gen Junction 115kV Line into Vierra Substation, convert the Vierra 115kV bus into a 4-bay breaker-and-a-half (BAAH) bus configuration, add a Howland Road Co-Gen Radial Feed, install a 115kV Sustainable Modular Protection (SMP) / Modular Protection Automation and Controls (MPAC), and install battery buildings.	In-Flight	2/1/2024	5/1/2025	5/29/2026	Q3-2023: Delay due to reprioritization. This project is expected to be funded in 2024.

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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 20rsmt-5	Tesla 500 kV circuit breaker 612 overstress Replace Tesla Substation 500 kV CB 612 and associated switches/relays	In-Flight	10/21/2024	10/28/2024	6/30/2025	Q3-2023: The previous ISD has been moved out due to resource requirements. Rescheduled to come after CB542 and CB642 construction activities.
GIP C12P2-PNU-02	Gates 230 kV circuit breakers 352, 362 and 372 overstress mitigation (Cap Banks) Replace Gates 230 kV circuit breakers 352, 362 and 372 with 63 kA interrupting capability	In-Service	10/24/2022	5/23/2023	7/12/2023	Q3-2023: Project has gone In-Service on 7/12/23.
GIP C12P2-GRNU2	Gates Substation 230 kV Bus Overstress Install series bus reactors between Gates Substation 230 kV bus sections E and F	In-Flight	11/1/2023	3/31/2025	5/31/2024	Q3-2023: Some schedule improvement due to planning and scoping of the work. Dates are subject to change until permitting, land acquisitions, and clearances are approved.

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Generation Interconnection Project Upgrades

Project No.	Scope	Status	Planned * Const. Start	Previous TDF Report Dated	Planned ** In-Service	Comments
GIP 20rsmt-4	Metcalf 115kV breakers Overstress (almost all breakers) Install 4-3 ohm reactors at low side of Metcalf 115 kV 230kV Transformers	In-Flight	10/6/2025	2/5/2026	7/10/2026	Q3-2023: 2023 Reprioritization. An interim solution has mitigated the breaker overstress thus the interconnecting projects are not impacted by this upgrade.
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	3/7/2025	2/26/2026	9/23/2025	Q3-2023: 2023 Reprioritization. An interim solution has mitigated the breaker overstress thus the interconnecting projects are not impacted by this upgrade.
GIP C8P2-15	Cottonwood Substation 230 kV Circuit Breaker 522 and 542 Overstress Cottonwood Substation 230 kV CB Overstress: Replace CB 522 & 542 (rated @ 34.5KA, overstress close-in fault is 35,179A or 2%, 679A).	In-Flight	8/29/2023	9/4/2024	12/31/2025	Q3-2023: Current ISD is procurement lead time sensitive. Long Lead materials expected to be received in June 2024 with phased install of the circuit breakers.
Maintenance	Morro Bay MPAC New 230kV MPAC building relocates 230kV equipment from existing Control Building	In-Flight	11/3/2026	5/6/2027	5/30/2028	Q3-2023: 2023 Reprioritization. There are no current dependent Generation projects triggering this work.

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PG&E Projects Status Summary
Generation Interconnection Project Upgrades

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GIP 20rsmt-6	20RSMTRAS-02 (Reliability) to open Bitterwater Sw Sta-Wheeler Ridge #2 230 kV Line for loss of Midway-Bitterwater 230 kV line and overload on the Midway-Wheeler Ridge #1 230 kV line.	In-Flight	5/21/2024	12/31/2023	11/14/2024	Q2-2023: This project has been delayed. Interconnection project has triggered an interim solution which mitigates the need for this RAS to go in-service. This project only impacts deliverability to the connecting project.
GIP C8P2-10	QC8RAS-02 SPS (Deliverability Triggered RNU) QC8SPS-02 SPS to modify the existing Hatchet Ridge SPS to trip Q1106 200 MW wind and Hatchet Ridge 102 MW wind for thermal overloads on the Q1106 SS-Cottonwood, Carberry SS-Round Mountain or Pit #3-Carberry SS 230 kV Lines.	Deferred	5/23/2028	3/31/2027	12/7/2028	Q2-2023: In-service date shown aligns with overall new Switching Station construction. Triggering Interconnection Project has suspended for 1-year.

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Project No.	Scope	Status	Planned * Const. Start	Previous TDF Report Dated	Planned ** In-Service	Comments
GIP C12P2-LDNU1	Ripon-Manteca 115 kV Line Reconductor Reconductor Ripon-Manteca 115 kV line 1.51 mi section of 2/0 CU and 0.92 mi 4/0 ACSR (2.43 mi total)	In-Flight	3/16/2026	9/11/2028	4/19/2027	Q3-2023: Some schedule improvement due to planning and scoping of the work. Dates are subject to change until permitting, land acquisitions, and clearances are approved.
GIP C12P2-LDNU2	Stanislaus-Melones Sw Sta-Manteca #1 115 kV Line Reconductor Reconductor Stanislaus-Melones Sw Sta-Manteca #1 115 kV line 25.23 miles section of various conductors from 018/115-043/277	In-Flight	1/13/2026	9/11/2028	2/29/2028	Q3-2023: Some schedule improvement due to planning and scoping of the work. Dates are subject to change until permitting, land acquisitions, and clearances are approved.
GIP C12P2-LDNU3	Bellota-Riverbank-Melones Sw Sta 115 kV Line 115 kV Line Reconductor Reconductor a total of 17 miles of Bellota-Riverbank-Melones SW STA 115 kV Line with 477 ACSS	In-Flight	1/5/2028	9/11/2028	4/12/2028	Q3-2023: Some schedule improvement due to planning and scoping of the work. Dates are subject to change until permitting, land acquisitions, and clearances are approved.
GIP C12P2-LDNU4	Stanislaus-Melones SW STA-Riverbank Jct Sw Sta 115 kV Line Reconductor Reconductor Stanislaus-Melones Sw Sta-Riverbank Jct Sw Sta 115 kV Line 7.53 miles section of various conductors from 000/001-007/043 - scope taken over by the more comprehensive STAN-MELONES TAP LINES: REPL CU COND P3 project.	In-Flight	12/14/2027	9/11/2028	5/29/2028	Q3-2023: Some schedule improvement due to planning and scoping of the work. Dates are subject to change until permitting, land acquisitions, and clearances are approved.

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