



SDG&E TPR Stakeholder Meeting

2025 - Cycle 3





Welcome

Safety Moment – Distracted Driving Awareness Month



Be a Focused Driver:

- Pull over safely and park before making or taking calls, sending texts or emails, or adjusting GPS, music or podcasts
- Do not multitask while driving – including eating or drinking
- Avoid calling or texting colleagues or clients when you know they are driving
- Set cell phones to *Do Not Disturb* and/or silence notifications while driving
- If you are in a vehicle with a distracted driver, speak up for your safety and hold each other accountable
- Do not reach down or behind your seat, pick up items from the floor, or clean the inside of the window while driving

Agenda

Item
Welcome, Agenda & Logistics
SDG&E TPR Process Project Spreadsheet (PS) and SAP/TM1 Discrepancies
Copperleaf and Cost Benefit Analyses (CBA)
Processes for Utility Approval and Prioritization
Delays
Supply Chain Issues and Advance Procurement
Original Projected Cost or Cost Range and Construction Work in Progress
TPP-Approved Projects and Data Centers and Transmission Interconnection (CalPA)
Generator Interconnection-Related Network Upgrades
Transmission Pilot Programs
Project Specific Inquiries
Wrap-Up

Virtual Meeting Logistics

Meeting Agreements

- No confidential information will be discussed.
- Please be mindful that others in this virtual meeting may also have questions.
- Mute your line if you are not speaking.
- Detailed questions that cannot be addressed in the meeting should be addressed via stakeholder questions and comments due on April 16.

Engaging in Discussion

- SDG&E SMEs will present and then take live questions.
- Raise your hand (icon).
- When asking questions, please state your name and organization.

Important

- SDG&E welcomes stakeholder ideas and feedback on how to improve this meeting in written comments.

SDG&E TPR Process – Remaining Schedule

Event	Date
Stakeholder Meeting	April 1
Stakeholders' questions and comments related to Stakeholder Meeting	April 16
Written responses to questions and comments related to Stakeholder Meeting	May 7
Last day for Stakeholders to submit project-specific, follow-up questions to SDG&E	May 13
Written responses from SDG&E to Stakeholder project-specific follow-up questions	May 27
Last day for Stakeholders to submit comments to SDG&E. There is no expectation of written responses.	June 2
SDG&E releases Cycle 3 Project Spreadsheet	July 1



SDG&E TPR Process Project Spreadsheet (PS) SAP/TM1 Discrepancies

1. SDG&E TPR Data Pulling Process/2. TM1/SAP Discrepancies

Process Improvement Updates:

- Successfully shifted to a single source system, SDG&E's TM1 Planning System
- Updated data pull to exclude removal costs from capital expenditures
- SDG&E updated UID1 and UID2 for the January 2025 TPR submission, per agreement with the CPUC. UID2, formerly the Project ID, is now the Parent Work Order. UID1, formerly the child work order, is now the Project ID.

Challenges:

- Successfully updating UID1 from Child Work order to Project ID required additional data validation steps
- Extra time and coordination was required to investigate Child Work Orders associated with Multiple Project IDs

Future improvements:

- Incorporate AB 970 projects under \$1 million as an attachment to the TPR submission
- Continue to improve data pull process cadence



Copperleaf Cost Benefit Analyses (CBA)

3. Copperleaf

- SDG&E employs the Copperleaf platform to calculate the Cost Benefit Ratio (CBR) which is used to understand the value of a project.
- Since the introduction of the Copperleaf platform within the context of FERC project analysis in 2023, SDG&E has been in the process of refining and developing a structured methodology for project evaluation. The integration of the Copperleaf platform into the FERC portfolio remains in its preliminary stages and is currently being analyzed for use in informing the decision-making process for the portfolio.
- As the process for scoring projects is currently being developed, SDG&E does not have an example project to provide an end-to-end walk through.

4. Cost Benefit Analyses (CBA)

- **Project Inputs:** SDG&E considers a variety of project inputs, including safety, reliability, financial implications, customer impact, asset information, and capacity, to conduct a thorough evaluation of each investment
- **Risk Reduction Benefit Calculation:** SDG&E's process entails providing project inputs to relevant value models, calculating outputs in specific natural units (e.g., SAIDI, SAIFI, Acres Burned, Serious Injuries Avoided), and then converting these into value measures using appropriate equivalencies.
- **Value-Driven Decision Making:** The combination of all value measures gives us the total project risk reduction benefit, which informs SDG&E's decision - making process, ensuring we direct investments towards options that maximize value for our stakeholders and customers.
- The values in Field 56 are the total project cost (actual cost incurred + projected future cost), this value is the “cost” in the cost benefit ratio.
- In the 2025 FERC portfolio update, 64 projects had been analyzed in the Copperleaf program. SDG&E is currently in the process of the 2026 FERC portfolio update and as of time of reporting, 66 projects are being analyzed in the Copperleaf program.



Processes for Utility Approval and Prioritization

5. Processes for Utility Approval and Prioritization

- Projects are approved through the Work Order Authorization (WOA) process. This process is followed across all departments at SDG&E
- Project WOA approval thresholds are governed by SDG&E's Approval and Commitment Policy
- The WOA provides evidence of project review and approval for internal document control purposes
- Project prioritization for Transmission/FERC projects is determined based on factors including project driver criteria, schedule needs, permitting and agency approval timelines
- Project drivers considered in prioritization include risk reduction, regulatory commitments, customer driven projects, and reliability
- Prioritization of projects continue to be reviewed based on updated schedules, permitting or agency approval timelines, or resource availability to efficiently utilize resources across all projects in the portfolio based on several continually moving pieces



Delays

6. Delays

- Project risks that could lead to schedule delays and cost increases are identified and regularly reviewed by project managers and teams throughout the life of a project.
- When a risk is identified, response options and mitigation strategies are evaluated with the goal of minimizing impacts to project budget and schedule.
- Evaluating risks continuously through the life of a project allows for prompt action to control costs and delays as much as possible when a risk is realized and becomes an issue.
- Issues and their impact to budget and schedule are documented in project files. Project Managers work with Subject Matter Experts and project teams to develop a plan and timeline to resolve the issue.



Supply Chain Issues and Advance Procurement

7. Supply Chain Issues and Advance Procurement

SDG&E is experiencing long lead-times for many types of substation and transmission line equipment.

- **Supplier Category Planning** – Internal/Market analysis, strategy development & execution, and performance management.
- **Reserving Manufacturing Capacity** – Early purchasing, sharing material demand forecasts, contracted capacity.
- **Qualifying New Suppliers** – Regularly reviewing market participants and performing manufacturing quality, commercial terms, and risk evaluations to optimize qualified suppliers.
- **Utilize High Quality Distributors** - SDG&E is moving to a new electric materials distributor in 2025 to ensure high reliability in delivery of small parts in line hardware/accessories and maintenance parts.



Original Projected Cost or Cost Range
Construction Work in Progress

8. Data Field 54 – Original Projected Cost or Cost Range

- The Original Project Cost is pulled from the initial Work Order Authorization approval amount.
- The CAISO approved TPP-estimated cost may be different than the SDG&E estimated costs once detailed scoping is complete.

9. Data Field 59 – Construction Work in Progress (\$000)

- Values represent capital expenditures not yet placed in-service
- Projects can have phases placed into service at different times



TPP-Approved Projects Data Centers and Transmission Interconnection (CalPA)

10. TPP-Approved Projects

All the transmission projects that are TPP approved policy projects :

Row Line No.	Utility Unique ID #1(Most Specific) project id	Utility Unique ID #3 (Least Specific) budget code	Project Name(s)	Project Status	TPP Report
313	2022-3181	24126	3 ohm Series Reactor on Sycamore Penasquitos 230 kV line	Engineering less than 50% complete	2022-2023
314	2020-0294	24127	Rearrange TL23013 PQ OT and TL6959 PQ Mira Sorrento	Planning	2022-2023
317	2024-4035	24130	TL680C MELROSE RECONDUCTOR	Planning	2022-2023
318	2024-4036	24131	TL13820 CHICARITA RECONDUCTOR	Planning	2022-2023

Valley Center System Improvement Project:

- The Valley Center System Improvement project is currently in the early stages of preliminary permitting and design. Cost estimates or in service dates have not been updated. The estimated cost of the project is \$51M with a targeted in-service date of 2028.
- There is an existing 10 mW WDAT project in the queue waiting for this upgrade to move forward with the interconnection. ~~are no current/related generator interconnection-related upgrades attached to this project.~~
- Refer to response b.
- Refer to response b.

20. Data Centers and Transmission Interconnection (CalPA)

- SDG&E currently has no data centers connected to its transmission system, nor are there any transmission-level data center interconnection applications being processed.
- Retail load transmission-level interconnections are managed through SDG&E's Rule 2, which requires a \$50,000 deposit as part of the study agreement to process interconnection requests.
- SDG&E customers that need transmission service will take service on one of SDG&E's Medium/Large Commercial & Industrial rate schedules available for transmission interconnection: Schedules AL-TOU, AL-TOU2, A6-TOU, or DG-R.
- There are no planned changes to this process at present.



Generator Interconnection-Related Network Upgrades

11. Generator Interconnection-Related Network Upgrades

The table below contains the updated data on all generator interconnection related network upgrades in the TPR data

Generator Interconnection Projects – Participating Transmission Owner Cost Responsibility	Capacity (MW)	Type	ISD	Change in ISD
[Programmatic] Generation Interconnection Projects	Multiple	Multiple	Multiple	NA
A CAPTIVA STORAGE NU	250	BESS	2028-01-31	Customer Action
A SANDPIPER ENERGY STORAGE RNU	200	BESS	2025-12-01	Customer Action
A Q1170 GATEWAY ENERGY STORAGE	250	BESS	2020-05-04	Previous Date Incorrect
A Q1532 KETTLE SOLAR ONE SANU	90	BESS & Solar	2026-08-01	NA
A MIRAMAR GT INTCON TOP GUN SRG 6	30	BESS	2020-07-22	NA
A SANU MT LAGUNA WIND 2	400	Wind	2029-06-29	Customer Action
A PEREGRINE RNU	200	BESS	2025-01-03	NA
A EAST FIELD ENERGY CNTR PTO NU	300	BESS	2027-08-20	Material

Generator Interconnection Projects – Interconnection Customer Cost Responsibility	Capacity (MW)	Type	ISD	Change in ISD
[Programmatic] Generation Interconnection Projects	Multiple	Multiple	Multiple	NA
G CAPTIVA STORAGE PTO IF	250	BESS	2028-01-31	Customer Action
G SANDPIPER ENERGY STORAGE PTO IF	200	BESS	2025-12-01	Customer Action
G Q1170 GATEWAY ENERGY STORAGE PTO IF	250	BESS	2020-05-04	Previous Date Incorrect

*Highlighted cells and updates to costs to be provided in July 1 TPR



Break
Return at 10:20



Transmission Pilot Programs

12. Transmission Pilot Programs

- SDG&E is piloting the use of ACCC, a carbon core conductor type, on TL13820 Reconductor Project, which is a TPP policy driven project.
 - TL13820 is not a pilot project; ACCC is being piloted on this project
- The benefits of ACCC include higher current carrying capacity, reduction of electrical losses, and higher tensile strength than standard conductor
- The TL13820 Reconductor Project is included in the January TPR Submission



Project Specific Inquiries

13. Direct Buried Cable Projects

- At the onset of the direct buried cable replacement program, SDG&E Transmission identified ~110,000 circuit feet of aging direct buried transmission lines. These lines were then prioritized by outage history, vintage, and risks to the Grid to determine the order for replacements. As of 2024, approximately 43% of the work has been completed, with the remaining work slated to be completed by 2029.
- These direct buried lines are generally over 50 years in age which have significantly exceeded the lifespan of db cables of 30 years. Cable and component failures have increased in frequency, with every failure exacerbating the condition of the line with the additional stresses during faults and locating. During failure restorations, it was apparent that water/moisture ingress has become a significant issue with the breakdown of the cable jacket and insulation. SDG&E Transmission has concluded that these similar vintage of direct buried cables are at risk of imminent failure.
- ~43% or ~47,000 circuit feet have been replaced to date
- ~57% or ~63,000 circuit feet are remaining. Of which, ~25% or ~28,000 circuit feet is expected to start construction this year. The remaining work are currently in planning/design phases and expected to be completed by 2029.

14. Line 22 – Transmission Substation Proactive Asset Program

- The scope of this budget involves Transformers, circuits breakers, disconnects, transmission line relaying and site improvements.
- The Substation Equipment Assessment Team will develop alternatives to replace or remove obsolete and problematic equipment such as equipment that cannot be maintained (no spare parts available), equipment with poor health, or which poses a safety risk will be replaced.
- A condition assessment process and evaluation criteria have been created using probability and risk analysis, financial impacts and present value analysis to justify projects.
- Each year the average age of all substation equipment increases, with the oldest transformer currently 60+ years old.
- Ranking of substation equipment is an ongoing process and involves identifying equipment that presents a significant risk to the system. Based on the cost availability of raw materials and global demand, the lead times for major substation equipment have increased to 6 months for breakers and at least 1.5 years for transformers.
- The ranking of substation equipment is an ongoing process and involves identifying equipment that presents a significant risk to the system.

15. Line 126 – Advance Protection (Circuit Breaker Replacement) Program

- Advanced Protection Program (APP) develops and implements
 - Advanced protection technologies
 - Within electric substation and distribution lines
 - Primarily focuses on distribution fire hardening scope
 - May include transmission asset upgrades when required
- Program Goals
 - Mitigate risks of fire incidents
 - Create higher visibility and situational awareness
 - Allow implementation of new relay standards
- Evaluation Criteria
 - Evaluates and prioritizes each project using SDG&E's Wildfire Next Generation System (WINGS) model
 - Review of average age and condition of existing assets
 - Stakeholder interviews and site walks to validate scope
 - Projects are initiated and tracked end-to-end
 - Program is currently on track, 12 projects in progress
- Program Objectives
 - Replace aging equipment
 - Improve distribution reliability
 - Improve fire safety in substations and distribution HFTD circuits
- Typical Project Scope:
 - Reconfiguration of 12kV/69kV circuit breakers and relays to meet reliability and safety standards.
 - Installation of Distribution/Transmission SCADA Remote Terminal Units (RTU's)
 - Installation of new transformer bank relays
 - Installation of new 12kV Bus Differential relays
 - Installation of microprocessor feeder relays
 - Installation of advanced protection technology & protocols
 - ▶ Falling Conductor Protection (FCP)
 - ▶ Arc Sensing Technology (AST)
 - ▶ Advanced Sensitive Ground Fault (SGF) sensing
 - ▶ Remote setting changes

16. Line 208 – Transmission CMP Non HFTD Blanket Program (>\$500MM)

Transmission CMP Non HFTD Program is forecasted based on historical needs rather than specifically planned projects. This is a dynamic reactive program remediating any GO95 infractions found during routine mandated inspection. Please find the average number of poles that are replaced:

The typical challenges encountered can be summed to three categories:

1. Permitting (Caltrans, Railroad, Military bases, some municipalities) causing delays in issuing jobs to construction.
2. Environmental (sensitive areas, seasons - nesting, lambing, pocket mouse ... etc.)
3. Weather (rain and red flag) causing outage cancellation and delays in construction

Year	Non-HFTD	
	Poles	Capital Expenditures (\$000)
2019	111	32,790.17
2020	135	38,783.33
2021	128	42,750.83
2022	149	39,950.63
2023	149	42,135.17
2024	106	46,714.86
2025	120	42,789.93
2026	120	45,246.56
2027	120	48,071.81
2028	120	51,046.59
2029	120	54,370.00

17. Line 299 – Transmission Power Quality Program

- Transmission Power Quality (PQ) Program
 - Installs power quality monitors that remotely monitor and capture data supporting transmission line and substation asset management, operations, and power quality.
 - Deploys devices and develops solutions supporting advanced capabilities, including predictive fault analytics and automated fault locating
- Evaluation Criteria
 - Evaluate and prioritize project by reviewing if power quality meters are not currently installed, the average age and condition of existing assets
 - Stakeholder interviews, and site walks to validate scope.
 - Projects are initiated and tracked from inception to completion. Three projects currently in progress.
- Program Objectives
 - Transmission system health information, including RMS voltage, voltage and current transient events, System harmonics, Real and reactive power flow, power factor, flicker, etc.
 - Logging and notification of events occurring on transmission and customer systems detectable at the serving substation
 - Advanced analytics processing, including incipient fault detection (fault anticipation or predictive fault analysis) and advanced fault locating
 - Historical event storage and analytics, and steady state trends
- Typical Project Scope:
 - Installation of Power Quality (PQ) meters

18. Line 48 – South Orange County Reliability Enhancement (SOCRE)

- Project achieved ISD of the 230kV on 12/2023 Project is currently in the project closeout Stage addressing punch-list items and as build creation.
- Amount added to FERC ratebase for 2025 is \$4,855,944.
- As of FEB 2025, PTD, amount added to FERC ratebase is \$360,555,625.
- Total PTD FERC costs as of February 2025 are \$373,191,488.

19. Line 245, San Mateo Substation

- The San Mateo Substation project remains “on Hold” while the necessity of the rebuild, including equipment ratings/age and operational needs, is being evaluated. A decision is expected in Q2 2025.
- At this time there are no capacity issues or equipment concerns at the substation. Current capacity forecasts indicate that equipment upgrades may not be needed.
- Standards for substation design have evolved over time. San Mateo Substation was built in 1954 and its design reflects then-prevailing industry standards. In general, older substations have non-standard configurations relative to contemporary designs.



Thank you