Transmission Project Review (TPR) Process

CPUC Energy Division Staff Comments on San Diego Gas & Electric Company's (SDG&E) July 2025 TPR Process Cycle

December 5, 2025

As part of the Transmission Project Review (TPR) Process approved by the California Public Utilities Commission (CPUC) in Resolution E-5252, effective January 1, 2024, the Energy Division Staff of the CPUC (CPUC Staff) provide these comments to San Diego Gas & Electric Company (SDG&E) on its July 2025 TPR Process Review Period.

Introduction

On July 1, 2025, SDG&E provided the CPUC and Stakeholders with the July 2025 TPR Project Spreadsheet (TPR PS) of transmission projects and programs included in the TPR Process, based on data pulled from SDG&E systems on April 29, 2025, and June 2, 2025.

In addition to the July 1 TPR PS, SDG&E provided 456 additional authorization documents related to specific projects. These documents included work order authorizations with detailed information on project cost and scope. In response to a data request[1] seeking clarification on seemingly omitted and changed projects in the July 1 TPR PS, SDG&E issued an updated TPR PS on August 15, 2025 with revised Field 56, "Current Projected Total or Actual Final Cost" values. As a result, different versions of the TPR PS are referenced within this document, depending on the analysis discussed, and are referenced accordingly in footnotes for clarity.

There are a total of 367 individual projects and programs listed in the July 2025 TPR PS, up from 322 in the January 2025 TPR PS, with total capital expenditures of $7.834 billion during the 2020-2029 period.[2] This represents an increase of $1.325 billion, a 20% change in expected expenditures compared to SDG&E's January 2025 submittal. The July 2025 TPR PS covers the 2020-2029 period, the same period presented in the January 2025 submittal.

The July 2025 TPR cycle included recurring data-quality issues, including multiple TPR PS revisions and inconsistent data across cycles. Other topics included cost-estimate maturity and SDG&E's evolving prioritization framework. Project-specific themes in the cycle included Supervisory Control and Data Acquisition (SCADA) modernization, load pocket methodology changes, and California Independent System Operator (CAISO)-driven reliability upgrades.

[1] ED-SDGE_TPRJuly2025-001, Q01-01 and Q01-02 responses, September 10, 2025.
[2] UPDATE 08-15-25 - SDGE-Public - Resolution E-5252 TPR Process Data.

Summary of the July 2025 TPR Process Project Spreadsheet

The significant number of data errors, omissions, and revisions made it difficult to draw meaningful conclusions about project expenditures or any cost changes between TPR submittals. It was almost impossible to tell which data, if any, were an equal basis comparison between submittals and even between revisions within this submittal period. Nonetheless, the following summaries are presented aggregated and do not attempt to compare beyond high-level groupings of project types.

As noted above, 367 individual projects and programs are listed in the July 2025 TPR PS, up from 322 in the January 2025 TPR PS, with a total capital expenditure of $7.834 billion during the 2020-2029 period.[3] This represents an increase of $1.325 billion. The January 1, 2025 TPR PS had omissions in numerous projects in the Field 56, "Current Projected Total or Actual Final Cost",[4] which SDG&E did not address in any of the subsequent TPR PS updates, so it is not a useful comparison point against the July 1, 2025 and August 15, 2025 TPR PS submittals. When broken down by project primary purpose (excluding the errors and inconsistencies between TPR submittals in some projects) and using annual period data vs. total project cost data, some conclusions can be drawn, as described below.

In reviewing the 2020-2024 aggregate actual spending, actual annual average expenditures across all project types were approximately $444 million. In comparison, when reviewing the 2025-2029 aggregate projected spending, the projected annual average expenditures across all project types were only 5% greater at around $466 million. This consistency suggests that there is perhaps less potential that anticipated capital expenditures have been overstated.

When reviewing by category (i.e., Poles/Wires, Substation, Other, or Generator Interconnection), however, two items are noted. The first is that while overall projected spending for the years 2025-2029 is close to flat with the actual spending from 2020-2024, in the Poles/Wires category, projected costs in the years 2025-2029 drop 35% compared to 2020-2024.. Such a drastic reduction in upcoming projected spending may indicate inaccuracies in cost forecasting methodology and is something that warrants further review by SDG&E as it develops its project and budget estimates.

The second item is the nearly 50-fold increase (approximately $248 million vs. trailing average of $5 million) in Generator Interconnection projected costs in 2029. The majority of this is from the project "A UMBRIEL IV REMOTE END." In response to a data request, SDG&E stated that the "(LGIA) for this project has not been executed,"[5] and therefore it is too early to understand the project and cost details. In future cycles, it will be important to understand the

[3] UPDATE 08-15-25 - SDGE-Public - Resolution E-5252 TPR Process Data.
[4] ED-SDGE_ TPRJuly2025-001, multiple responses, September 10, 2025.
[5] ED-SDGE_TPRJuly2025-001, Q01-04 response, September 10, 2025.

project's cost components and how the costs are allocated between ratepayers and the generator interconnection customers.

Table 1 below details actual expenditures for the period 2020-2024, while Table 2 details projected expenditures for the period 2025-2029. Note that the values shown in 2025 are partly actuals, with the actual proportion unknown given the timing of the data pulls that fed the TPR PS.

Table 1: Actual Capital Expenditures by Year, Category, and Primary Purpose ($000)

Category and Primary Purpose	2020	2021	2022	2023	2024	Total
Poles/Wires						
Asset Condition	$52,759	$55,824	$56,519	$53,820	$60,229	$279,151
CAISO Transmission Planning	$10,305	$4,669	$2,609	$3,939	$2,908	$24,430
Field Test Results	$154	$3	$-	$-	$-	$157
Load Growth	$112,424	$49,961	$17,283	$61,474	$41,304	$282,446
Local Capacity Requirement	$2,046	$5,710	$15,054	$1,114	$8,172	$32,096
Policy	$-	$-	$135	$-	$-	$135
Reliability	$25,661	$50,135	$77,357	$62,157	$59,293	$274,603
Safety	$10,600	$7,855	$4,113	$4,757	$3,672	$30,997
Wildfire Mitigation	$55,420	$94,784	$56,321	$77,047	$62,433	$346,005
Work Requested by Others	$66	$1,232	$(82)	$2,019	$630	$3,865
Poles/Wires Total	**$269,435**	**$270,173**	**$229,308**	**$266,328**	**$238,640**	**$1,273,884**
Substation						
Age/End of Life	$63	$549	$31	$1,300	$658	$2,601
CAISO Transmission Planning	$622	$29	$3,721	$-	$583	$4,955
Generator Interconnection	$(47)	$40	$-	$-	$-	($7)
Load Growth	$360	$59	$3,669	$10	$305	$4,403
Location, Environmental Conditions	$109	$1	$-	$-	$-	$110
Physical Security	$1,329	$280	$2,674	$743	$1,167	$6,196
Reliability	$108,468	$91,238	$112,208	$77,167	$71,718	$460,799
Safety	$1,541	$3,414	$1,372	$1,479	$2,355	$10,161
Wildfire Mitigation	$6,887	$9,565	$9,938	$12,875	$13,963	$53,228

Category and Primary Purpose	2020	2021	2022	2023	2024	Total
Work Requested by Others	$2,666	$1,037	$40	$12,272	$(586)	$15,429
Substation Total	**$121,998**	**$106,213**	**$133,653**	**$105,846**	**$90,162**	**$557,872**
Other						
Age/End of Life	$12,088	$8,600	$261	$1,256	$444	$22,649
CAISO Transmission Planning	$6,520	$4,215	$80	$(186)	$-	$10,629
Local Capacity Requirement	$587	$101	$3	$151	$109	$951
Other	$275	$862	$1,655	$1,338	$1,289	$5,419
Physical Security	$11,764	$42,257	$52,007	$39,496	$44,398	$189,922
Reliability	$8,112	$23,732	$48,992	$17,429	$26,338	$124,603
Safety	$441	$548	$189	$196	$171	$1,545
Wildfire Mitigation	$1,612	$2,631	$4,401	$4,500	$3,547	$16,691
Other Total	**$41,399**	**$82,946**	**$107,588**	**$64,179**	**$76,296**	**$372,408**
Generator Interconnection	$2,959	$5,407	$7,528	$1,908	$(170)	$17,632
GIDAP Total	**$2,959**	**$5,407**	**$7,528**	**$1,908**	**$(170)**	**$17,632**
Grand Total	**$435,791**	**$464,739**	**$478,076**	**$438,261**	**$404,929**	**$2,221,796**

Table 2: Projected Capital Expenditures by Year, Category, and Primary Purpose ($000)

Category and Primary Purpose	2025	2026	2027	2028	2029	Total
Poles/Wires						
Asset Condition	53,630	$57,820	$61,992	$65,680	$69,918	$309,040
CAISO Transmission Planning	$7,292	$5,407	$22,997	$26,218	$1,512	$63,426
Field Test Results	$-	$-	$-	$-	$-	$0
Load Growth	$4,868	$-	$-	$-	$-	$4,868
Local Capacity Requirement	(1,180)	$-	$-	$-	$-	($1,180)
Policy	$1,042	$1,262	$1,379	$1,507	$1,646	$6,836
Reliability	75,065	$53,196	$56,103	$61,760	$64,142	$310,266
Safety	$7,040	$7,074	$11,760	$5,209	$5,784	$36,867
Wildfire Mitigation	$34,618	$52,924	$4,050	$2,629	$759	$94,980
Work Requested by Others	$(477)	$1,073	$-	$-	$-	$596
Poles/Wires Total	**$181,899**	**$178,756**	**$158,281**	**$163,002**	**$143,761**	**$825,699**

Substation						
Age/End of Life	$-	$-	$-	$-	$-	$0
CAISO Transmission Planning	$20,711	$36,842	$76,975	$105,473	$31,839	$271,840
Generator Interconnection	$-	$-	$-	$-	$-	$0
Load Growth	$4,341	$49,870	$19,159	$36,195	$37,149	$146,714
Location, Environmental Conditions	$-	$-	$-	$-	$-	$0
Physical Security	$208	$137	$149	$163	$178	$835
Reliability	$100,996	$104,803	$76,266	$95,044	$91,599	$468,708
Safety	$600	$-	$-	$-	$-	$600
Wildfire Mitigation	$12,971	$4,942	$1,114	$-	$-	$19,027
Work Requested by Others	$(93)	$-	$-	$-	$-	($93)
Substation Total	**$139,732**	**$196,593**	**$173,664**	**$236,876**	**$160,764**	**$907,629**
Other						
Age/End of Life	$32	$32	$-	$-	$-	$64
CAISO Transmission Planning	$1,208	$244	$202	$221	$238	$2,113
Local Capacity Requirement	$-	$-	$-	$-	$-	$0
Other	$1,305	$48	$18	$-	$-	$1,371
Physical Security	$25,840	$18,622	$-	$-	$-	$44,462
Reliability	$44,147	$16,361	$15,509	$15,759	$15,028	$106,804
Safety	$125	$362	$375	$388	$402	$1,652
Wildfire Mitigation	$25,009	$28,537	$35,474	$40,082	$37,170	$166,272
Other Total	**$97,666**	**$64,206**	**$51,579**	**$56,450**	**$52,837**	**$322,738**
GIDAP Total	**$(7,798)**	**$864**	**$8,773**	**$25,907**	**$248,646**	**$276,392**
Grand Total	**$411,500**	**440,419**	**$392,298**	**$482,235**	**$606,008**	**$2,332,460**

Note that due to SDG&E omissions and data errors in Field 56 "Current Projected Total or Actual Final Cost" in the July 2025 TPR PS (though corrected in the August 15, 2025 version), the reported changes in these project costs may be inaccurate and will not line up with the expenditures by year.

Sixty-seven new projects and programs were included in the July TPR PS, with a combined value of $1.256 billion, while 17 projects and five programs appeared to be removed from the July TPR PS, representing $1.012 billion of capital expenditures. A data request was provided to SDG&E, and the response indicated that these projects had either been:

- removed due to no longer meeting the $1 million threshold (6),
- re-named and therefore didn't appear to be included (3),
- inadvertently excluded (5), or
- consolidated with another row, or other reason (3)[6].

With the next TPR PS submission, SDG&E should state in the transmittal letter that summarizes any significant changes in the January 2026 TPR PS (outside of costs) in order to make any changes clearer to Stakeholders. Without this, it is more challenging to make sense of the information provided.

Additions since the January 2025 TPR PS include:

- Two of CAISO's Generator Interconnection Process projects:
    - The Row 321 "A UMBRIEL IV REMOTE END" project has the largest value of all GIDAP/Work Requested by Others (WRO) projects ($183 million), supporting interconnection of 1,500MW of solar generation
    - The Row 322 "A CAPTIVA STORAGE SANU" project supports the interconnection of a 250MW Battery Energy Storage System (BESS) facility ($27.4 million)
- Twenty-nine substation projects:
    - Three projects accommodating future load growth, totaling nearly $400 million
    - Two CAISO TPP-approved reliability projects related to short-circuit duty (SCD)
    - Two 69/12kV substation rebuilds
    - Several fiber optic projects for communications and protection system upgrades
- Eighteen transmission projects, including:
    - Two new "Transmission Construction & Maint" blanket programs – one for the High Fire Threat Districts (HFTD) and one for non-HFTD, respectively, to address routine and emergency replacements and repairs, forecast at approximately $93 million
    - Three wood-to-steel conversion projects for poles located within the HFTD, forecast at approximately $30 million
    - One CAISO TPP-approved reliability project for system improvement to reduce regional overloading due to the addition of energy storage

[6] ED-SDGE_TPRJuly2025-001, Q01-02 response, September 10, 2025.

- Eighteen other projects, including:
    - Ten fiber optic and network-related projects (that are not labeled as being specific to substation protection and control)
    - Six security-related projects

Largest Projects

SDG&E's July 2025 TPR PS includes six programs and 8 individual projects with capital spending over $100 million, with a combined value of $2.8 billion. The programmatic efforts are primarily focused on asset replacement, reliability, and fiber build-out. Five of the six programs are listed as operational, with the Transmission Substation Proactive Asset Program still in the planning phase. The individual projects consist of substation rebuilds, capacity expansions, wildfire-hardening work, and remote-end or line upgrades and span planning, engineering, and construction. Two projects are deep into construction (SOCRE and Mission 69kV Rebuild), while two major rebuilds (Escondido 230 kV and Escondido Sub Preliminary Support) remain in long-term planning stages with in-service dates extending into the early 2030s.

Cost growth between January 2025 TPR PS and July 2025 TPR PS is significant for all programs, with increases ranging from 76% to more than 200%. These escalations reflect expanded scopes or reprioritization of spending. In contrast, individual capital projects show more modest cost movements, with SOCRE and the Artesian 230 kV Substation experiencing small decreases as they near completion (SOCRE reported as 75% construction completed and Artesian 230kV Substation operational),, while ongoing rebuilds such as Mission 69 kV and Escondido 230 kV show incremental increases aligned with maturing engineering and construction progress.

Table 3: SDG&E Projects with Value over $100 million

Row/Line No	Project Name(s)	Project Status	Current Projected or Actual In-Service Date	Estimated Total Cost as of Jan 2025 ($000)	Estimated Total Cost as of July 2025 ($000)	% Change Jan-Jul
1	[Programmatic] Transmission Substation Responsive Asset Replacement	Operational	Multiple	40,714	124,908	207%
23	[Programmatic] Transmission Substation Proactive Asset Program	Planning	Multiple	58,616	164,324	180%
48	SOCRE	Construction (over 75%)	2024-08-15	362,293	358,056	-1%
51	[Programmatic] Fiber Build Initiative	Operational	Multiple	104,975	184,913	76%
70	TL6926 Rincon to Valley Center Fire Hardening	Operational	2022-12-15	81,003	102,913	27%
118	Artesian 230kV Sub Expansion	Operational	2022-12-04	132,082	126,855	-4%
192	Escondido Substation 230kV Rebuild	Planning	2032-01-31	191,791	194,637	1%
193	Mission 69kV Sub Rebuild	Construction (over 75%)	2025-06-30	128,764	139,824	9%
199	[Programmatic] Trans Fiber Links HFTD	Operational	Multiple	179,877	347,785	93%
288	[Programmatic] ELEC TRANS SMALL RELIABILITY - HFTD	Operational	Multiple	105,972	233,248	120%

Row/Line No	Project Name(s)	Project Status	Current Projected or Actual In-Service Date	Estimated Total Cost as of Jan 2025 ($000)	Estimated Total Cost as of July 2025 ($000)	% Change Jan-Jul
296	[Programmatic] ELEC TRANS SMALL RELIABILITY – non HFTD	Operational	Multiple	127,541	289,074	127%
321	A UMBRIEL IV REMOTE END	Engineering less than 50% complete	2025-15-12	NA	183,245	NA
350	A PACIFIC BEACH ROSE CANYON ELE	Planning	TBD	NA	245,468	NA
353	A ESCONDIDO SUB PRELIM SUPPORT	Planning	2033-12-31	NA	128,087	NA

Data Quality

Data quality remains a significant issue with SDG&E's TPR submissions. SDG&E issued two revisions to the TPR PS during this cycle, each addressing errors and omissions in the prior versions. While CPUC Staff appreciate that SDG&E has been forthcoming in recognizing the errors and disclosing factors that may have contributed to these issues (discussed in the Stakeholder meeting section below), SDG&E is required to provide accurate data and timely and transparent Stakeholder engagement. CPUC Staff note and appreciate that during this cycle, SDG&E provided 456 additional authorization documents related to specific projects. These documents have been requested in previous cycles and include work order authorizations with detailed information on project cost and scope.

Data Request Responses

As of November 6, 2025, CPUC Staff submitted three sets of data requests comprising 51 individual questions to SDG&E. All responses to the TPR data requests were received by December 3, 2025.

Data requests in the July 2025 cycle centered on data integrity and management data changes from cycle to cycle in the TPR PS, including validation processes, renaming or removal of projects, primary purpose reassignment, and missing or inconsistent cost data. Data requests

also probed project-specific scope, cost, schedule, permitting, and dependency details, especially for large new substations, as well as switchyards, wildfire mitigation work, and preliminary support projects. Data requests also sought clarification on SCADA/telecommunications strategy, cost-estimate maturity, cost-benefit analysis methodology, and prioritization frameworks, along with additional information related to load-pocket reliability planning and long-term coordination with CAISO and external Stakeholders.

In responses to the first set of requests, received September 10, 2025, nine of the 38 responses either did not directly address or only partially addressed the submitted data requests and required the CPUC to submit additional follow-up data requests on the same topics. The responses to the second set of requests included four (of nine) questions that were partially or completely non-responsive. The total number of incomplete or non-responsive responses for all the data request sets is 13 out of the 51 questions asked.

SDG&E must be completely responsive to data requests, consistent with the requirements of Resolution E-5252. It is unacceptable to have unanswered or partially answered data requests that require additional follow-up data requests or are left unaddressed at the end of a given submittal period.

Stakeholder Meeting

SDG&E's September 26, 2025 TPR Stakeholder Meeting provided Stakeholders with a focused review of the July 2025 Project Spreadsheet, along with an update on several ongoing initiatives affecting the utility's transmission planning, data quality controls, and modernization strategy. The meeting opened with a review of the remaining TPR schedule and key procedural expectations for Stakeholder participation, grounded in the materials shared in advance of the meeting. SDG&E described the challenges encountered while preparing the July spreadsheet, explaining that an attempted process improvement delayed access to final financial data and constrained the time available for its standard completeness and accuracy review. The utility outlined corrective actions intended to prevent future issues, including stricter internal deadlines, an additional early data pull, and more efficient data-entry and validation steps.[7]

Discussion then turned to SDG&E's prioritization methodology for Field 25, "Utility Prioritization Ranking." The utility explained that its prioritization framework incorporates multiple dimensions: project drivers, stage-gate status, cost categories, internal benefit-cost scores, and qualitative considerations, all of which are reviewed through an interdepartmental governance process. Stakeholders sought clarity on how ranking values should be interpreted, how weighting differs across ranking components, and how changes in scores between TPR cycles reflect updates to SDG&E's evolving value framework. SDG&E emphasized that the

[7] SDG&E TPR Stakeholder Meeting September 26, 2025, Slides 3-4.

rankings support portfolio-level evaluations rather than prescriptive decision rules and that refinements to the methodology are ongoing.

The conversation also covered the incomplete rollout of Association for the Advancement of Cost Engineering (AACE) cost-estimate classifications in Field 48, "AACE Class." SDG&E stated that, although some Class 5 estimates exist for newer projects, full alignment across engineering groups has not yet been achieved, and no firm timeline has been established for complete implementation.[8]

SDG&E also provided updates on its emerging use of the Copperleaf platform to support cost-benefit evaluations (Field 66, "Cost-Benefit Analysis"). The utility explained that Copperleaf has been implemented for Federal Energy Regulatory Commission (FERC)-jurisdictional projects, but that its scoring methodology is still in early development, with only a subset of higher-cost projects reviewed to date. Stakeholders asked how reliable prioritization outcomes can be in the absence of a fully calibrated model, and SDG&E noted that project scores are supplemented by subject matter expert assessments and ongoing coordination with peer IOUs.

SDG&E also explained deficiencies in Field 56, "Current Projected Total or Actual Final Cost," confirming that missing values were due to inadvertent omissions: a fully customer-funded project which should not have been included, and an incorrectly included sub–$1 million project. The utility committed to ensuring full reporting in future cycles.[9]

Other meeting topics included SDG&E's modernization initiatives, including its SCADA, telecommunications, fiber build, and EMS/SCADA replacement programs. SDG&E described fiber deployment as foundational to its long-term strategy, supporting both low-latency telemetry and expansion of system automation capabilities. The utility also outlined progress toward replacing its Transmission EMS/SCADA platform, noting that real-time telemetry and synchrophasor data will increasingly support operational decision-making. Stakeholders raised questions about leased telecommunications lines, timelines for reducing third-party communication dependencies, and the duration of SCADA expansion programs. SDG&E reaffirmed that SCADA expansion is an ongoing initiative without a defined end date. Additional updates covered physical and cybersecurity programs, including Critical Asset Security Team (CAST) and non-CAST projects, with SDG&E reporting no major risks to completion.[10]

Project-specific discussions included updates on the Umbriel IV remote-end project, Oceanside and Escondido preliminary support studies, and the Captiva 138 kV BESS interconnection. SDG&E confirmed that Umbriel IV is awaiting execution of the Large Generator Interconnection Agreement, and that Oceanside and Escondido studies are evaluating whether current load pockets require expansion or new substations. For the Captiva project,

[8] SDG&E TPR Stakeholder Meeting September 26, 2025, Slide 9.
[9] SDG&E TPR Stakeholder Meeting September 26, 2025, Slide 13.
[10] SDG&E TPR Stakeholder Meeting September 26, 2025, Slides 18-19.

SDG&E noted that the customer is constructing the switchyard and associated loop-in facilities, while SDG&E is responsible for network upgrades up to applicable CAISO reimbursement limits. The utility also discussed cost increases in the Jamacha and North Valley substation rebuilds, explaining that updated reporting consolidates all associated work orders and reflects expanded scope, higher labor costs, and undergrounding requirements. Finally, SDG&E addressed key reliability and infrastructure issues across its system, including the Valley Center 69kV upgrade driven by thermal overloads, progress on the direct-buried cable replacement initiative, Imperial Valley short-circuit mitigation efforts requiring substation expansion and transmission line relocations, and SDG&E's newly assumed responsibility for the Imperial Valley–North of SONGS 500kV line following reassignment by Horizon West Transmission.[11]

Overall, the meeting provided Stakeholders with a clearer understanding of SDG&E's ongoing transmission planning work, and areas where methodological and data-quality improvements are still needed. While several process refinements remain underway, including full implementation of AACE classifications, maturation of the Copperleaf cost-benefit model, and improvements in data validation, CPUC Staff appreciate SD&GE's iterative improvement and continued engagement throughout the TPR Process.[12]

Issues of Note

Ongoing Issues with Data Quality and Access

SDG&E identified several data-quality challenges in the July 2025 TPR cycle, primarily resulting from compressed timelines, delayed financial close, and the introduction of a new workflow step that did not operate as intended. After financial data is entered each cycle, SDG&E typically performs a review to ensure completeness, accuracy, and reasonableness. However, SDG&E noted that the July 2025 cycle allowed less time for this process due to the late validation of accounting data and staff turnover.[13] SDG&E further explained that it had attempted an early (April) preliminary data pull intended to provide more time for non-financial teams to review and update project details, but delays in reconciling financial inputs affected the broader quality-assurance workflow.[14] To improve future cycles, SDG&E indicated that it plans to tighten internal deadlines, conduct an additional pull at the start of the TPR window, and enhance the efficiency of project data entry work to restore adequate time for quality checks.[15]

It is concerning that there have been issues with the accuracy or completeness of data in all four TPR submittals since the beginning of 2024. The errors, omissions, and unexplained changes make it nearly impossible to gain a full understanding of SDG&E's actual and projected capital expenditures at any given time, much less to be able to gauge changes in time, given the

[11] SDG&E TPR Stakeholder Meeting September 26, 2025, Notes, pp. 9-10.
[12] SDG&E TPR Stakeholder Meeting September 26, 2025, Slides 3-38.
[13] ED-SDGE_TPRJuly2025-002, Q02-01 response, November 3, 2025.
[14] SDG&E TPR Stakeholder Meeting September 26, 2025, Slide 7.
[15] Ibid.

mid-cycle changes SDG&E has had to make. While SDG&E has been responsive when asked about these deficiencies[16] it is expected the errors will be prevented through more rigorous quality control during the data pulling and assembling process prior to data submittal. Addressing data quality issues two months after initial submittal is a serious hinderance to the Stakeholder review period, which is approximately four months in total.

In addition to the data quality issues mentioned, consultants to the CPUC Staff regularly encounter challenges and website error messages when attempting to access data request responses from SDG&E's website, despite repeated communication and efforts to obtain such access. SDG&E should ensure that the web hosting platform containing the TPR data is accessible to all Stakeholders.

Prioritization/Cost-Benefit Ratio

SDG&E prioritizes all electric transmission projects using a five-factor framework applied twice per year during reprioritization cycles. The first factor, Project Driver, reflects the underlying purpose of a project, such as safety, fire mitigation, regulatory commitments, customer needs, or reliability, but the numerical driver codes do not function as strict rankings. The second factor, Stage Gate, elevates projects further along in engineering or construction. The third factor, Cost Category, accounts for jurisdictional and funding distinctions like CPUC Base, FERC, or wildfire mitigation budgets. The fourth factor, Cost-Benefit Ratio (CBR), compares costs and benefits, but currently plays a limited role because SDG&E is still refining the scoring methodology. The final factor, Other Considerations, reflects real-world readiness constraints such as permitting, land rights, and constructability. Overall, the framework blends structured criteria with subject-matter expert judgment and is not strictly formulaic.[17] CPUC Staff look forward to SDG&E's timely implementation of this process in a more systematic way with clear objective criteria

AACE Project Cost Estimate Development

SDG&E is in the early stages of incorporating AACE cost-estimating classifications into its transmission project portfolio. SDG&E reports that several newer projects have begun using Class 5 cost estimates, but the company has not yet achieved alignment across engineering disciplines to consistently apply AACE methodology. As a result, no formal AACE classes appear in Field 48, "AACE Class" of the July 2025 TPR Project Spreadsheet.[18] SDG&E notes that different engineering groups currently rely on varying cost estimating methods (for example, historical spend, vendor quotes, or blanket agreements) rather than a unified project maturity-based framework, which limits its ability to maintain consistent estimating accuracy.[19]

[16] ED-SDGE_TPRJuly2025-001, Q01-01 andQ01-02 responses, September 10, 2025.
[17] ED-SDGE_TPRJuly2025-002, Q02-02 response, November 3, 2025.
[18] ED-SDGE_TPRJuly2025-002, Q02-03 response, November 3, 2025.
[19] SDG&E TPR Stakeholder Meeting September 26, 2025, Slide 11.

A data request was submitted to SDG&E on November 13, 2025, asking SDG&E to explain why no timeline exists for completing its AACE transition, to describe what internal steps (such as pilots, working groups, or training) are underway, to quantify how many projects have been classified as Class 5 and how many have progressed to Class 4 or Class 3, and to provide any available data on estimate variance or contingency usage. These questions reflect the CPUC Staff's concern that SDG&E has not fully institutionalized AACE-based cost estimating and lacks comprehensive tracking of estimate quality and performance. SDG&E's response to this DR reiterated that "At this time, AACE cost estimate classifications are not formally tracked within SDG&E's current project portfolio," but also stated that "If AACE cost estimating is deemed a requirement of SDG&E, then SDG&E will commit to implementing the AACE methodology following confirmation of its necessity and alignment with business needs. Currently, subject to change, SDG&E is planning to evaluate implementation for the AACE cost estimating practices within other engineering disciplines in 2026."[20]

Advance Procurement

SDG&E reported continuing supply chain strain for key long-lead transmission equipment, including medium- and high-voltage transformers, circuit breakers, switchgear, and gas-insulated substation equipment. These components face industry-wide extended lead times and manufacturing capacity constraints, although SDG&E stated that it has not yet experienced significant delays on its own major projects, noting only occasional minor scheduling impacts and generally adequate inventory levels to support near-term construction needs.[21] SDG&E also acknowledged persistent pressure on domestic suppliers and indicated that tariffs are contributing to noticeable cost increases across multiple material categories.[22]

To address these risks, SDG&E has expanded its advance procurement and supply-chain strategy. Measures include continuous commodity price and market monitoring; direct engagement with manufacturers and distributors; demand plan refinement and shared forecasting; and category-based strategic sourcing. SDG&E secures factory production slots through early reservations and volume commitments, and reviews domestic and foreign suppliers regularly. The utility also relies on high-quality distributors and has implemented a formal tariff review process requiring supplier documentation (such as customs records and commodity content analyses) before accepting cost increase requests.[23] These measures are intended to strengthen SDG&E's resilience against market volatility and maintain schedule reliability for transmission projects.

Changes in Primary Purpose

SDG&E explained that changes to Field 9, "Primary Purpose" occur as part of its routine reconciliation and data validation processes performed each TPR cycle. Project managers

[20] ED-SDGE_TPRJuly2025-003, Q03-01 response, December 3, 2025.
[21] SDG&E TPR Stakeholder Meeting September 26, 2025, Slide 23.
[22] ED-SDGE-TPR-July2025-001 Q01-13 response, September 10, 2025.
[23] SDG&E TPR Stakeholder Meeting September 26, 2025, Slide 23.

regularly review project scope and regulatory drivers to determine whether the previously assigned Primary Purpose remains accurate, and SDG&E noted that updates may be required even within a six-month window as project definitions change. These reviews are used to identify and correct inconsistencies between TPR releases and ensure alignment with the latest understanding of the project.[24]

In response to a data request, SDG&E identified 15 projects whose Primary Purpose fields changed between the January 2025 and July 2025 TPR spreadsheets. The utility provided a table listing each project along with the new Primary Purpose and the previous classification. Examples include reclassification of Work Requested by Others to CAISO Transmission Planning Standards, changes from "Other" to "Reliability," and updates to reflect wildfire mitigation, policy requirements, and safety-related drivers.[25]

Making these changes with no attendant explanation is a prime example of why it's imperative that SDG&E provides a transmittal letter with each TPR submittal to explain why such unexpected changes are occurring.

Changes to Load Forecast Methodology

SDG&E indicated that changes in load forecast outcomes were driven not by shifts in expected demand growth, but by a methodological change in how the utility defined the boundaries of substation load pockets in its 2025 Distribution Planning Forecast refresh. For example, the Shadowridge load pocket appeared to exceed the 85% capacity threshold under the 2023 forecast, but the 2025 forecast no longer shows a violation because the boundaries and definitions of the load pocket were revised.[26] Likewise, SDG&E noted that the Escondido load pocket's previously forecasted overload condition was eliminated in the updated 2025 forecast for the same reason.[27] These methodological changes directly impacted planning decisions, including placing certain Preliminary Support projects on hold because revised load-pocket characterizations no longer indicated a near-term need for new infrastructure. In future cycles, CPUC Staff will seek to understand more about the system-wide impacts of this revised methodology on overload outcomes.

Preliminary Support Studies for Substation Expansions

SDG&E identified significant forecasted capacity constraints in multiple coastal load pockets and is conducting Preliminary Support studies to evaluate substation expansions or construction of new facilities. For the Oceanside load pocket, which includes Cannon, Oceanside, San Luis Rey, and Stewart Substations, the utility forecasted the area reaching 85% of capacity in 2028 and 100% in 2036, prompting consideration of a new substation, rebuilds, or expansions.[28] Stakeholder materials confirm that Oceanside's long-term solution is expected to

[24] ED-SDGE-TPR-July2025-001 Q01-01 response, September 10, 2025.
[25] ED-SDGE-TPR-July2025-001 Q01-01 response, September 10, 2025.
[26] ED-SDGE-TPR-July2025-001 Q01-29 response, September 10, 2025.
[27] ED-SDGE-TPR-July2025-001 Q01-30 response, September 10, 2025.
[28] ED-SDGE-TPR-July2025-001 Q01-06 response, September 10, 2025.

be a new substation, with no near-term reliability issues anticipated before 2033, though interim load transfers remain possible.[29]

The Escondido load pocket, including Ash, Batiquitos, Esco, Escondido, Olivenhain, and San Marcos Substations, faces similar medium-term overload concerns. SDG&E indicates that the preferred strategy is to rebuild the existing Escondido Substation and add two new transformer banks, for which detailed scope and cost development are underway.[30] For the Pacific Beach–Rose Canyon load pocket, SDG&E cites forecasts showing load approaching the 85% planning threshold and anticipates adding at least two new banks between 2029 and 2032, including completing Rose Canyon Substation's ultimate three-bank configuration and adding banks at the Pacific Beach and Clairemont Substations. The project remains in preliminary engineering, and scope and phasing are not yet finalized. [31]

The CPUC submitted several data requests on these load pockets. For Oceanside and Escondido, CPUC Staff requested additional clarification on the timing and selection of preferred alternatives, including supporting load-forecast inputs and a detailed explanation of why the Oceanside and Escondido efforts are considered separate projects. SDG&E indicated that it is still in the process of evaluating necessary interim actions and alternatives, but "at this time, SDG&E has not identified any interim actions required" [32] For the Pacific Beach–Rose Canyon load pocket, CPUC Staff sought further detail on expected transformer bank ratings, timing assumptions, and whether additional contingency analyses support the proposed sequencing of bank installations SDG&E clarified timing assumptions and indicated that it is currently awaiting Commission resolution approvals within the High Distributed Energy Resources (DER) proceeding to initiate its 2025-2026 Distribution Planning Process. Once forecasts are fully refreshed in Q3 2026, SDG&E will be better positioned to reassess the appropriate scope and plan for this project." CPUC Staff will continue to monitor all of these "preliminary support" projects and the associated substation expansions.[33]

Direct Buried Cable Projects/Undergrounding

SDG&E's Direct Buried Cable Replacement (DBCR) Initiative is a system-hardening effort focused on replacing aging 69kV direct-buried transmission cables with modern conduit-based cable systems. The initiative addresses reliability risks, difficult fault repair conditions, wildfire exposure, and long outage durations associated with legacy buried cable installations. SDG&E confirmed in DR 01-15 that the DBCR program is comprised of nine transmission line segments (Rows 98, 178, 182, 183, 184, 185, 186, 187, and 189 in the TPR spreadsheet),

[29] SDG&E TPR Stakeholder Meeting September 26, 2025, Slide 27.
[30] ED-SDGE-TPR-July2025-001 Q01-06 response, September 10, 2025.
[31] ED-SDGE-TPR-July2025-001 Q01-28 response, September 10, 2025.
[32] ED-SDGE-TPR-July2025-001 Q01-06 response, September 10, 2025; and ED-SDGE-TPR-July2025-003 Q03-03 response, December 3, 2025.
[33] ED-SDGE-TPR-July2025-003 Q03-04 response, December 3, 2025.

representing approximately 109,000 feet of cable, of which approximately 47,000 feet has been replaced and approximately 62,000 feet remain.[34]

During the September 26, 2025 TPR Stakeholder Meeting, SDG&E provided a summary of the DBCR program, including the same list of projects and replacement progress. At the meeting, SDG&E confirmed that 62,000 feet of cable still need to be replaced, and that after two additional projects are completed next year, remaining footage will drop to approximately 34,000 feet.[35]

Given the emphasis on reliability and wildfire mitigation as drivers for these projects, during the January 2026 TPR cycle, the CPUC looks forward to SDG&E continuing to discuss the schedule for replacing the remaining 62,000 feet, with details about each project and associated cable footage.

SCADA and Telecommunications Programs

SDG&E indicated that its SCADA and telecommunications initiatives form a coordinated grid modernization program centered on expanding fiber infrastructure, upgrading EMS/SCADA systems, and broadening substation-level automation to improve reliability, situational awareness, wildfire-related operations, and real-time transmission system control. The Programmatic Fiber Build Initiative provides the backbone for these functions, enabling data transmission for EMS, SCADA, synchrophasors, and protection schemes, while the Transmission EMS/SCADA Replacement will use this telecommunications backbone to support real-time telemetry, high-resolution phasor data, and future linear state estimation.[36] Despite these coordinated investments, SDG&E does not have a timeline or strategy for achieving full ownership of its communications network, citing "the complexities and wide scope of SDG&E's service area" as well as ratepayer affordability and "radio spectrum availability, the need for line-of-sight on microwave paths, and constraints related to constructing direct fiber routes."[37] SDG&E posits that self-ownership is not necessarily the ultimate goal for its SCADA-supporting circuits, and that "in certain situations, regulatory, environmental, or construction cost estimates may outweigh the benefits of self-ownership and prompt the use of commercial carrier leased networks as the most cost-effective option. In such cases, SDG&E may need to accept reduced levels of communications reliability."[38]

Imperial Valley 230kV SCD Mitigation

The Imperial Valley 230kV Short-Circuit Duty (SCD) Mitigation Project was approved by CAISO to address projections that the 63kA breakers at the Imperial Valley Substation will

[34] ED-SDGE-TPR-July2025-001 Q01-15 response, September 10, 2025 and UPDATE 08-15-25 - SDGE-Public - Resolution E-5252 TPR Process Data.
[35] SDG&E TPR Stakeholder Meeting September 26, 2025, Slide 35.
[36] SDG&E TPR Stakeholder Meeting, September 26, 2025, Slides 18 and 19, and ED-SDGE-TPR-July2025-001 Q01-17 response, September 10, 2025.
[37] ED-SDGE-TPR-July2025-003 Q03-02 response, December 3, 2025.
[38] Ibid.

exceed their fault-interrupting ratings by 2035. The selected solution installs two sets of current-limiting reactors (CLR) on the 230kV buses, requiring expansion of the substation and relocation of multiple interconnecting transmission lines. SDG&E evaluated several alternatives before selecting the CLR-based mitigation plan. One alternative involved a different line relocation scheme combined with similar CLR installations, but this option required substantial undergrounding and was estimated at more than $112 million.

Another alternative considered larger system reconfigurations or expanded substation rebuilds, but these were rejected as more expensive or as providing less reliability benefit relative to the selected mitigation. SDG&E characterized the chosen solution as the most cost-effective and least environmentally intrusive alternative that still meets the identified reliability need. The preliminary total project cost is approximately $92.5 million, covering substation materials, transmission materials, contract services, labor, indirect costs, and required easements. SDG&E is coordinating with IID, Tenaska, Southern Power, and Avantus on necessary line relocations, and confirmed that no interconnection customer is responsible for cost contributions. The project is currently in preliminary engineering with required BLM and CPUC permitting and an expected in-service date aligned with the 2035 reliability need.[39]

Conclusion

CPUC Staff appreciate SDG&E's continued engagement in the TPR Process and will continue to evaluate SDG&E's plans to ensure safe, reliable, and affordable electric transmission solutions for its customers.

In spite of multiple TPR submittals, ascertaining a complete picture of SDG&E's actual and planned spending continues to be a challenge. While CPUC Staff acknowledge SDG&E's ongoing efforts to resolve errors, omissions, and inaccuracies, at this stage in the TPR process, it is expected that far more progress would have been made in providing accurate and reliable data.

Projects appear to be developed consistent with internal policies, the CAISO Transmission Planning Process, and anticipated load and generation growth within SDG&E's service territory. The July 2025 TPR process, in particular, has highlighted SDG&E's explanation of its project prioritization and development methodology,[40] and clearly laid out the prioritization criteria as well as other criteria that influence the ultimate priority assigned to a given project.

In addition to the routine data quality problems, there is one other area that needs improvement: the completeness of data request responses. Incomplete responses impede the exchange of information in the TPR process, prevent Stakeholders from ascertaining all pertinent facts and information, and do not adhere to the requirements of Resolution E-5252. Over the course of the July 2025 TPR cycle, 13 of 51 total data requests remained at least partially

[39] SDG&E TPR Stakeholder Meeting September 26, 2025, Slide 37, and ED-SDGE-TPR-July2025-001 Q01-31 response, September 10, 2025.
[40] ED-SDGE_TPRJuly2025-002, Q02-02 response, November 3, 2025.

unanswered. CPUC Staff expect SDG&E to answer all data requests fully in subsequent data submittals and are happy to have a discussion if SDG&E has questions about this matter.

SDG&E's preparedness for the Stakeholder meeting for the July 2025 TPR submittal was thorough and sufficiently detailed in the topics covered. CPUC Staff appreciate SDG&E's willingness to disclose challenges faced with internal systems, and more importantly, the clear demonstration of a corrective action plan to help resolve these challenges. There has been a significant improvement in how SDG&E approaches and prepares for the Stakeholder meetings over the course of the TPR Process.

Key Takeaways and Next Steps

Supply chain challenges are likely to persist in the energy industry for the foreseeable future, and SDG&E appears to have a reasonable approach to mitigating both delays and unnecessary costs through its procurement strategies. It is encouraging to see SDG&E proactively addressing potential delays and large price increases through its tariff review process, early production slot reservations, and volume commitments.

The changes in SDG&E's load forecast methodology could potentially have wide-ranging impacts on its project planning and budgeting system. As discussed earlier, across several data requests and the Stakeholder meeting, the immediate impacts have been increased prioritization of previously lower-ranked projects, and deprioritization of others. It would be helpful to Stakeholders if, going forward, SDG&E could explain in its TPR submittal letter why projects experience sudden increases or decreases in prioritization.

Also going forward, major projects will be watched closely for additional information regarding scope and cost as more information becomes available in future cycles.

While CPUC Staff expect improvement in SDG&E's providing clear and consistent information and full responses to data requests, CPUC Staff do appreciate SDG&E's engagement in the TPR Process and look forward to continuing to work with SDG&E in future TPR cycles.

SDG&E should direct any questions or comments on the TPR Process to tprprocess@cpuc.ca.gov.