Pacific Gas and Electric Company (PG&E)
Transmission Project Review (TPR) Process

CPUC Energy Division Staff Comments on PG&E's November 2024 TPR Process Project Spreadsheet

April 4, 2025

As part of the Transmission Project Review (TPR) Process approved by the California Public Utilities Commission (CPUC) in Resolution E-5252, Energy Division Staff of the CPUC (CPUC Staff) provide these comments to Pacific Gas and Electric Company (PG&E) on its November 2024 TPR Process Project Spreadsheet.

1. Background

On November 1, 2024, PG&E issued its second semi-annual TPR Process Project Spreadsheet (PS), along with numerous project Advance Authorizations (AA) or reauthorized AAs and Business Cases (BC). The November 2024 TPR Process PS, based on data pulled from PG&E systems on September 11, 2024, included 2,531 discrete project lines.

PG&E noted numerous changes in the November PS, as compared to its previous PS, including:

- Inclusion of all Planning Orders (PO) less than $1 million if part of a larger project (referred to as a "T.Dot") with costs greater or equal to $1 million, as required by Resolution E-5252;
- May 2024 TPR PS inventory of corrections directed by the CPUC's Energy Division;
- Additional information provided in the "Utility Prioritization Ranking" Field; and,
- For Work Requested by Others, PG&E clarified that if the percentage paid by ratepayers is 0%, then the High/Low-Voltage Transmission Access Charge (TAC) allocation is also 0%.

PG&E also updated the Percent Cost in High-Voltage TAC from 44% to 34% and Low-Voltage TAC from 56% to 66% to reflect PG&E's TO20-RY2024 Formula Model and December 31, 2022 recorded plant balances.[1]

The PS contains 525 new projects, with 65 being Investment Codes and 460 being POs. The newly added projects total $7.9 billion in "Current Projected or Actual Final Cost ($000)," with 70 projects totaling $10+ million and having trailing expenditures after 2029. The CPUC also notes the continued "prioritization" of 41 projects beyond the 2029 timeframe and CPUC Staff remain concerned about the impact of project delays on system reliability, the interconnection of new generators, and cost impacts on ratepayers.

[1] PG&E November 1, 2024 TPR Process Transmittal Letter, page 3.

During the TPR Process, the CPUC submitted 84 data requests to PG&E, along with 16 agenda items developed with stakeholders for the February 4, 2025 Stakeholder Meeting. CPUC Staff appreciate the information shared during that discussion, along with the participation of numerous PG&E personnel.

2. Areas Meriting Additional Evaluation

CPUC Staff are concerned about PG&E's delays in responding to data requests and the accuracy of information in regulatory filings, as well as the depreciable lives of "life extension programs." PG&E has provided limited feedback on its Transmission Emergency Procurement and AFUDC automation efforts.

A. Data Request Response Timeliness

Delays and incomplete responses are preventing the CPUC and stakeholders from fully reviewing data and identifying follow-up questions.[2] In the previous and current TPR cycles, about 60% of PG&E's data request responses arrived late with 40% arriving up to two weeks after the deadline. Attachments, that were supposed to be provided along with the data request responses, were delayed and this limited stakeholders' ability to prepare and engage meaningfully in the February 4, 2025 November 2024 TPR Stakeholder Meeting.

Timelines in the TPR Process are set forth in Attachment C to Resolution E-5252. These dates are prescriptive and rely on timely information. CPUC Staff request that PG&E meet TPR deadlines and improve the timeliness and completeness of responses.

B. Uniformity of Project-Specific Information

According to the timeline, PG&E provides its TPR Process PS on November 1, and its FERC Rate Year Annual Update is filed no later than December 1. Given the close timing, it is expected that the data for the same projects in the annual update and TPR PS would be very similar. However, the CPUC noted seven projects in the TPR PS and RY2025 Annual Update filing with significantly different in-service dates.[3]

As an example, during the February 4, 2025 TPR Stakeholder Meeting, PG&E provided an update on T.0000159, the Egbert 230kV Switching Station. PG&E indicated that one of the planning orders associated with this larger project, PO 5767217 – Reroute Jefferson Martin 230kV, was "placed in deferred status on 4/24/2024." In response to Data Request ED_008-Q015, PG&E indicated that "the scope of work on [this PO] is not currently used and useful." However, PG&E included $34.3 million in capital additions for this same PO in its Rate Year

[2] Under Resolution E-5252, Section 3.1, PG&E is required: (1) Should the Utility not be able to respond within 15 business days, the Utility shall notify the CPUC and all Stakeholders in writing of the delay within ten business days of receiving the information request; and (2) with an explanation of why the 15-business day expectation cannot be met.

[3] 5788119-TSRP_SV_SUB_MAGUNDEN, 5767217-REROUTE JEFFERSON_MARTIN 230KV, 5747763-East Shore-Oakland J 115 kV Reconductor, 5785878-Reconductor Bellota-Cottle 230 kV, 5795569-GATE 500Kv: T-Line, 5794601-Round Mountain 500kV DRS Fern Road, 5770124-EVERGREEN: Upgrade 115 KV Bus.

2025 Annual Update, which should only occur if the project was "used and useful" and eligible for inclusion in rates. The RY2025 AU was submitted after PG&E's November 1, 2024 TPR and five months after the order had been placed in deferred status. While the CPUC acknowledges that the "TO21 Formula Model includes a true-up mechanism to account for differences in the forecasted plant additions and recorded amounts,"[4] inclusion of significant amounts in rates nearly five years before the project's expected in-service date of October 24, 2029, and at an earlier date than has been presented in the current and previous TPR information, results in rates that are artificially higher until the true-up occurs.

C. Depreciation Rates for Life Extension Programs

CPUC Staff remain concerned about the inclusion of costs incurred for life extension programs, such as tower coating, cathodic protection, and shunt splice programs, in asset classes with depreciable lives that far exceed the additional incremental years of service provided by these programs.[5] This issue has been raised in previous TPR and the earlier STAR Process, and, as PG&E deploys additional life extension programs, the cost recovery of these programs should not be transferred to future generations of customers who will not benefit from the assets' extended lives. CPUC Staff continue to recommend that these costs be recorded to an account with a depreciable life that more appropriately reflects the time the assets will be in service.

D. Balance Sheet Advanced Procurement

The CPUC is encouraged to see PG&E's program authorization for a "Transmission Substation Emergency Preparedness Long-Lead Time Materials Procurement Program."[6] The focus of this program is on emergency readiness and replacement of aging infrastructure. Given the long lead time for delivery of this equipment, along with anticipated supply chain shortages and industry demand, the CPUC would like to understand if PG&E plans to expand this program to include advanced procurement for transmission transformers, circuit breakers, and circuit switches in planned projects.

E. Automatic On-Hold for Inactive Projects

CPUC Staff appreciate PG&E's early implementation of automated Allowance for Funds Used During Construction (AFUDC) suspension for planning orders under $15 million. While still in the initial stages, PG&E began using these automated suspensions of AFUDC, which PG&E provided as part of the February 4, 2025 Stakeholder Meeting. This highlighted that implementation of these processes, when projects are delayed and have no activity, can result in reduced costs to ratepayers.[7]

3. **CPUC Summary of the November 2024 TPR Process PS**

[4] See Response to Data Request ED008-Q015(b).
[5] For example, shunt splices are recorded to an account with a 65-year life, even though the shunt splices only extend the life of an asset by 15 to 25 years. See response to Data Request ED_008-Q011.
[6] See Attachment 1 to Data Request ED_008-Q005.
[7] See file "AFUDC Idle Order Report for Dec24.xls."

Table 1[8] and Figure 1 present, by Major Work Category (MWC), the actual capital expenditures and percentage of total capital expenditures for work conducted from 2020 to 2024.[9] Transmission MWCs represent more than half of PG&E's capital expenditures during this time (54.4%), with "Replace Lines, Poles and Structures" and "Line Preventative Work" representing nearly 38% of all actual capital spending in the TPR PS. In the Substation MWCs, representing 30.8% of the actual capital expenditures, Station Capacity is the largest, at 9.9%. Work Requested by Others (WRO) and IT/Security MWCs represent 6.9% and 6.2%, respectively, of the actual 2020 to 2024 capital expenditures.

Table 1 – 2020 to 2024 Actual Capital Expenditures by Major Work Category and Functional Category

MWC	MWC Description	Number of Projects*	2020-2024 ($000)	Percentage of Total Spend
Transmission		**816**	**3,933,442**	**54.4**
60	Line Capacity	191	363,602	5.0
70	Replace Lines, Poles and Structures	114	1,430,339	19.8
71	Replace Line ROW Access	16	115,072	1.6
72	Replace Line Underground	18	23,319	0.3
92	Emergency Line Response	40	384,542	5.3
93	Line Preventative Work	290	1,310,461	18.1
94(T)	ET Reliability – Transmission	147	306,107	4.2
Substation		**1,041**	**2,228,464**	**30.8**
61	Station Capacity	299	714,614	9.9
64	Replace Substation Breakers	55	74,617	1.0
65	Replace Substation Equipment-Emergency	84	256,841	3.6
66 (Sub)	Replace Substation Other Equipment	40	120,780	1.7
67	Electric System Automation	147	275,461	3.8
68	Replace Substation Transformers	35	204,158	2.8
94(S)	ET Reliability – Substation	60	380,535	5.3
3F	System Protection	321	201,458	2.8
IT/Security		**219**	**445,075**	**6.2**
2F	IT Infrastructure and Technology	59	172,125	2.4
3N	Security	15	73,032	1.0
63	Electric Systems Operation	84	145,617	2.0
66 (Sec)	Replace Substation Other Equipment	61	54,301	0.8
Work Requested by Others		**432**	**496,108**	**6.9**
82	Work Requested by Others	432	496,108	6.9

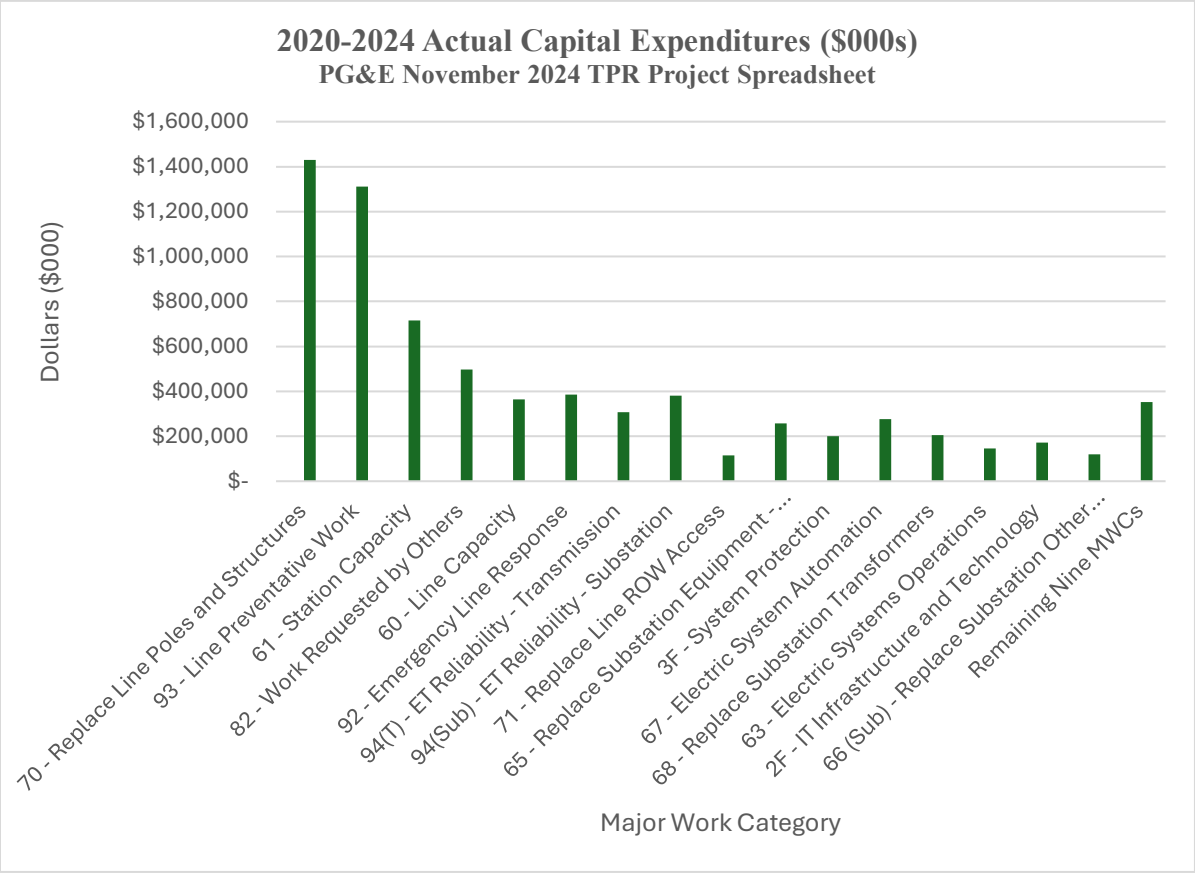
[8] Both Figure 1 and Figure 2 reflect smaller MWCs as "Remaining 9 MWCs." These MWCs primarily represent MWCs in the "Other" category.

[9] Please note that, while "2024" information is reported in the "Actuals," a portion of 2024's capital expenditures are based on a forecast for the September to December 2024 period.

MWC	MWC Description	Number of Projects*	2020-2024 ($000)	Percentage of Total Spend
Other		**19**	**126,991**	**1.8**
5	Tools	4	20,200	0.3
12	Environmental	2	2,244	0.0
21	Operations Support	8	41,565	0.6
23	Manage Buildings	5	62,982	0.9
3R	Battery	NA	NA	NA
Total		**2,527**	**7,230,079**	

** Represents number of planning orders with activity in the 2020 to 2024 period.*

Figure 1:



For the forecast period of 2025 to 2029, the distribution of capital expenditures is similar to the 2020 to 2024 "actuals," with Transmission at 54.2% and Substation at 27.5%. Work Requested by Others is a bit higher, at 13.3%, whereas in 2020 to 2024, WRO was 6.9% of the total.

Table 2 – 2025 to 2029 Forecast Capital Expenditures by Major Work Category and Functional Category

MWC	MWC Description	Number of Projects*	2025-2029 ($000)	Percentage of Total Spend
Transmission		**308**	**7,643,595**	**54.2**
60	Line Capacity	110	2,913,189	20.7
70	Replace Lines Poles and Structures	57	1,600,581	11.4
71	Replace Line ROW Access	4	113,266	0.8
72	Replace Line Underground	15	59,642	0.4
92	Emergency Line Response	7	297,087	2.1
93	Line Preventative Work	70	2,550,768	18.1
94(T)	ET Reliability - Transmission	45	109,062	0.8
Substation		**419**	**3,873,668**	**27.5**
61	Station Capacity	186	1,916,776	13.6
64	Replace Substation Breakers	16	71,586	0.5
65	Replace Substation Equipment-Emergency	22	701,942	5.0
66 (Sub)	Replace Substation Other Equipment	5	49,528	0.4
67	Electric System Automation	105	626,053	4.4
68	Replace Substation Transformers	6	22,169	0.2
94(S)	ET Reliability – Substation	11	205,963	1.5
3F	System Protection	68	279,652	2.0
IT/Security		**59**	**657,879**	**4.7**
2F	IT Infrastructure and Technology	10	18,224	0.1
3N	Security	5	16,711	0.1
63	Electric Systems Operation	25	405,615	2.9
66 (Sec)	Replace Substation Other Equipment	19	217,328	1.5
Work Requested by Others		**297**	**1,876,274**	**13.3**
82	Work Requested by Others	297	1,876,274	13.3
Other		**13**	**45,821**	**0.3**
5	Tools	4	26,894	0.2
12	Environmental	2	1,999	0.0
21	Operations Support	7	16,928	0.1
23	Manage Buildings	0	0	0
3R	Battery	NA	NA	NA
Total		**1,096**	**14,097,237**	

**Represents number of planning orders with activity in the 2025 to 2029 period.*

Figure 2:

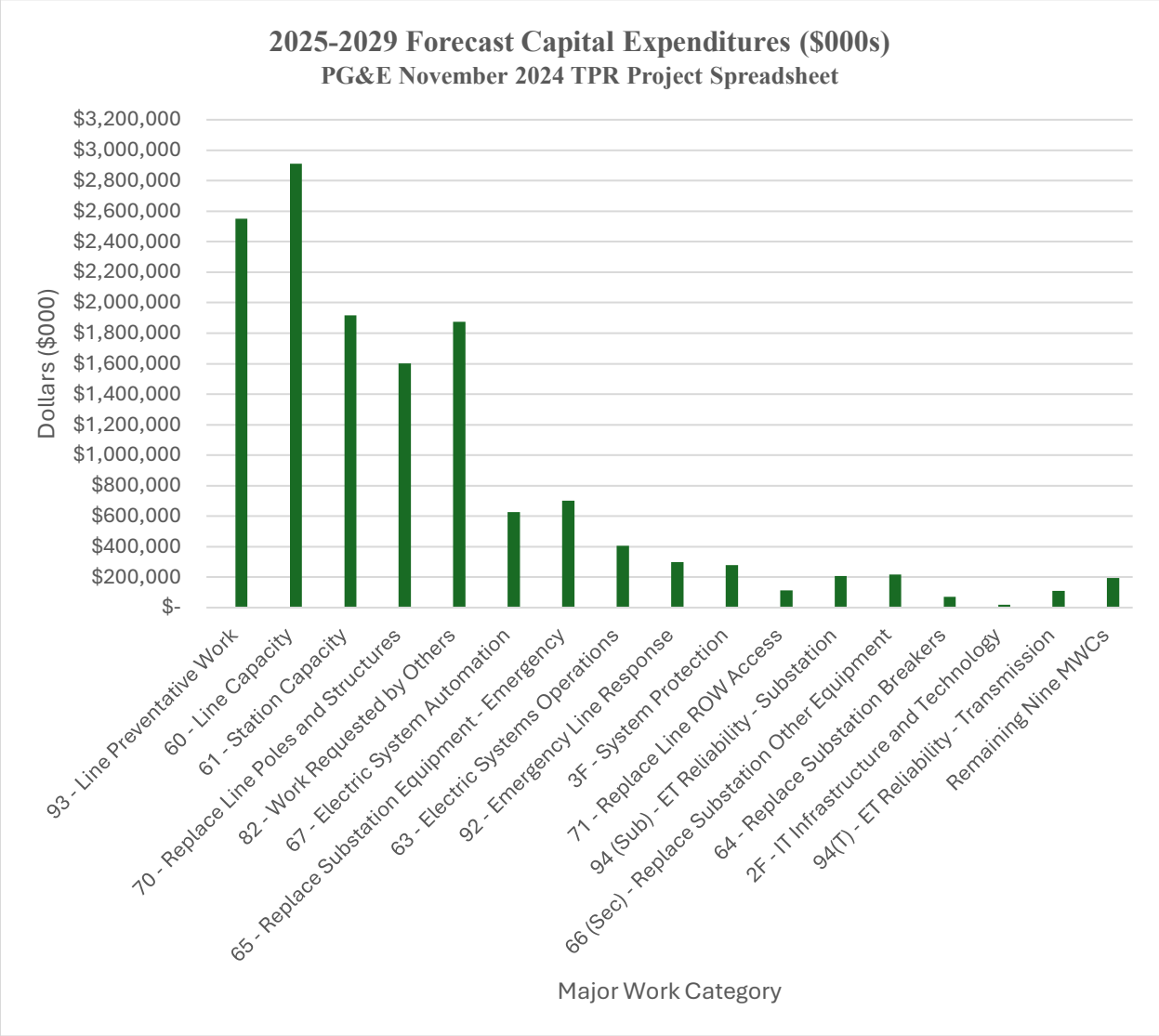


Table 3 below shows a comparison of how PG&E's actual 2020 to 2024 capital expenditures changed since its June 2024 TPR PS. Overall, actual capital expenditures for this period were lower in the November TPR PS, largely attributable to PG&E's implementation of FERC's Order on Formula Rate Year 2022 Informational Filing[10], which ordered PG&E to expense, and not capitalize, its Reliability ROW Expansion Program costs.

[10] Order on Formula Rate Informational Filing and Establishing Hearing and Settlement Judge Procedures. Docket Nos. ER19-13-000, ER19-1816-000, ER20-2265-000. *Issued October 8, 2024*. 189 FERC ¶ 61,021. ("Rate Year 2022 Order")

Table 3 – November 2024 TPR Process Project Spreadsheet Compared to June 19, 2024 TPR Process Project Spreadsheet, 2020 to 2024 Capital Expenditures by Major Work Category and Functional Category

MWC	Description	November 2024 ($000)	June 19, 2024 ($000)	Change in Cost ($000)	Percentage Change
Transmission		**3,933,442**	**4,102,842**	**-169,401**	**-4.1**
60	Line Capacity	363,602	381,403	-17,800	-4.7
70	Replace Lines Poles and Structures	1,430,339	1,406,518	23,821	1.7
71	Replace Line ROW Access	115,072	266,865	-151,793	-56.9
72	Replace Line Underground	23,319	13,493	9,826	72.8
92	Emergency Line Response	384,542	395,105	-10,564	-2.7
93	Line Preventative Work	1,310,461	1,333,010	-22,549	-1.7
94(T)	ET Reliability - Transmission	306,107	306,449	-342	-0.1
Substation		**2,228,464**	**2,256,446**	**-27,982**	**-1.2**
61	Station Capacity	714,614	734,391	-19,777	-2.7
64	Replace Substation Breakers	74,617	79,009	-4,392	-5.6
65	Replace Substation Equipment-Emergency	256,841	247,892	8,949	3.6
66 (Sub)	Replace Substation Other Equipment	120,780	118,958	1,823	1.5
67	Electric System Automation	275,461	309,641	-34,180	-11.0
68	Replace Substation Transformers	204,158	201,627	2,531	1.3
94(S)	ET Reliability – Substation	380,535	378,696	1,839	0.5
3F	System Protection	201,458	186,233	15,225	8.2
IT/Security		**445,075**	**455,510**	**-10,435**	**-2.3**
2F	IT Infrastructure and Technology	172,125	164,810	7,314	4.4
3N	Security	73,032	70,847	2,185	3.1
63	Electric Systems Operation	145,617	139,425	6,192	4.4
66 (Sec)	Replace Substation Other Equipment	54,301	80,428	-26,127	-32.5
Work Requested by Others		**496,108**	**551,935**	**-55,827**	**-10.1**
82	Work Requested by Others	496,108	551,935	-55,827	-10.1
Other		**126,991**	**128,354**	**-1,364**	**-1.1**
5	Tools	20,200	18,945	1,255	6.6
12	Environmental	2,244	2,569	-325	-12.7
21	Operations Support	41,565	40,632	933	2.3
23	Manage Buildings	62,982	61,916	1,066	1.7
3R	Battery	0	4,293	-4,293	-100.0
Total		**7,230,079**	**7,495,088**	**-265,009**	**-3.5**

Table 4 shows changes from the June 2024 to November 2024 TPR PS for forecast capital expenditures for 2025 to 2029, showing an overall increase of 45.7%. These increases are driven by the inclusion of numerous "Investment Codes" representing significant projects that have been approved, but not formally kicked off, along with forecast placeholders representing expected work activities that have not yet been individually planned. The projects are discussed in greater detail in the "November 2024 New Projects" section below.

Table 4 – November 2024 TPR Process Project Spreadsheet Compared to June 19, 2024 TPR Process Project Spreadsheet, 2025 to 2029 Forecast Capital Expenditures by Major Work Category and Functional Category

MWC	Description	November 2024 ($000)	June 19, 2024 ($000)	Change in Cost ($000)	Percentage Change
Transmission		**7,643,595**	**5,861,323**	**1,782,272**	**30.4**
60	Line Capacity	2,913,189	2,222,744	690,445	31.1
70	Replace Lines Poles and Structures	1,600,581	1,211,653	388,927	32.1
71	Replace Line ROW Access	113,266	156,234	-42,968	-27.5
72	Replace Line Underground	59,642	53,649	5,993	11.2
92	Emergency Line Response	297,087	231,092	65,995	28.6
93	Line Preventative Work	2,550,768	1,874,502	676,265	36.1
94(T)	ET Reliability - Transmission	109,062	111,447	-2,385	-2.1
Substation		**3,873,668**	**2,289,210**	**1,584,458**	**69.2**
61	Station Capacity	1,916,776	1,259,856	656,920	52.1
64	Replace Substation Breakers	71,586	68,033	3,553	5.2
65	Replace Substation Equipment-Emergency	701,942	348,924	353,018	101.2
66 (Sub)	Replace Substation Other Equipment	49,528	30,984	18,544	59.9
67	Electric System Automation	626,053	291,254	334,799	115.0
68	Replace Substation Transformers	22,169	32,084	-9,915	-30.9
94(S)	ET Reliability – Substation	205,963	70,730	135,233	191.2
3F	System Protection	279,652	187,345	92,307	49.3
IT/Security		**657,879**	**375,437**	**282,442**	**75.2**
2F	IT Infrastructure and Technology	18,224	49,330	-31,106	-63.1
3N	Security	16,711	25,884	-9,173	-35.4
63	Electric Systems Operation	405,615	250,703	154,912	61.8
66 (Sec)	Replace Substation Other Equipment	217,328	49,520	167,809	338.9
Work Requested by Others		**1,876,274**	**1,102,474**	**773,800**	**70.2**
82	Work Requested by Others	1,876,274	1,102,474	773,800	70.2
Other		**45,821**	**47,732**	**-1,911**	**-4.0**
5	Tools	26,894	26,894	0	0.0

MWC	Description	November 2024 ($000)	June 19, 2024 ($000)	Change in Cost ($000)	Percentage Change
12	Environmental	1,999	4,415	-2,416	-
21	Operations Support	16,928	16,423	505	3.1
23	Manage Buildings	0	0	0	0.0
3R	Battery	0	0	0	0.0
Total		**14,097,237**	**9,676,175**	**4,421,061**	**45.7**

November 2024 New Projects

The November 2024 TPR Process PS contains 525 new projects, with 65 Investment Codes and 460 Planning Orders (PO). The newly added projects total $7.9 billion in "Current Projected Total or Actual Final Cost ($000)." Seventy projects have total costs greater than $10 million, with trailing expenditures after 2029.

Table 5 identifies new projects and programs with 2020-2029 Capital Expenditures over $120 million. The single largest new project is "MWC 93: Backlog Non-HFTD/HFRA," which is described as "Completion of non-HFTD backlogged tags." This backlog must be cleared to reach steady-state compliance with GO-95. This project is part of MWC 93, "Line Preventative Maintenance," which is the largest category of capital expenditures for these new projects. This category contains 78 projects, with "Current Projected Total or Actual Final Cost" totaling $1.375 billion (as shown below in Table 7). The second largest project, "Tower Replacements (800+ list structures condition scores 4-5)," is a "Forecast placeholder for steel tower replacements" with $693.1 million in "Current Projected Total or Final Cost."

Table 5 – Projects with Capital Expenditures Greater than $120 Million

Planning Order	Project Name	2020 to 2029 Capital Expenditures ($000)
5533264	EO-SYSPLN 63 - Cntrl Syst	121,000
5531484	SYSPLN - MAT 94D	129,000
5531434	SYSPLN - MAT 66S	130,000
5507184	MPAC Buildings	240,000
Tx006667	MWC 93 E/F HFTD/HFRA	245,105
Ex11043	MAT 70Y: E/F HFTD/HFRA	320,136
Ex112924	Tower Replacements (800+ list structures condition scores 4-5)	693,062
Ex112944	MWC 93: Backlog Non-HFTD/HFRA	954,882

Table 6 – Number of New Projects by Level of Capital Expenditures

Range of Sum of Capital Expenditures for 2020 to 2029 ($000)	Number of Projects

0 or Less	48
$1 to $100	350
$101 to $200	33
$201 to $300	23
$301 to $400	10
$401 to $500	3
$501 to $1,000	12
$1,001 to $2,000	9
$2,001 to $3,000	7
$3,001 to $5,000	10
$5,001 to $100,000	12
$100,001 to $200,000	3
$200,001 to $400,000	3
$400,001 to $955,000	2

Table 6 shows the distribution of the new projects by level of capital expenditures in the 2020 to 2029 period. The distribution illustrates that 479 out of 525 new POs have expected capital expenditures of less than $1 million during the TPR period. While these POs appear to be less than the $1 million cost threshold for inclusion in the TPR, they must be reported because they are parts of larger T.Dot projects that are over $1 million.

Table 7 shows the total number of new POs with capital expenditures in the same period by MWC and Functional Category. Notably, in addition to MWC 93, "Line Preventative Work," MWC 70, "Replace Lines Poles and Structures" also exceeds $1 billion in capital expenditures. MWC 60, "Line Capacity", and MWC 61, "Station Capacity," represent the capacity expansion projects approved in the CAISO TPP, and together total more than $1 billion. Further, 116 new POs related to MWC 3F, "System Protection," are also included in the 525 new projects.

Table 7 – Number of New Projects and Capital Expenditures by Major Work Category and Functional Category

MWC	MWC Name	Total Number of New Projects	2020 to 2029 Capital Expenditures ($000)
Transmission		**157**	**3,299,788**
60	Line Capacity	23	646,524
70	Replace Lines Poles and Structures	15	1,085,173
71	Replace Line ROW Access	2	55,750
92	Emergency Line Response	10	2,505
93	Line Preventative Work	78	1,375,040
94 (T)	ET Reliability - Transmission	29	134,796
Substation		**277**	**979,608**
61	Station Capacity	46	376,560

MWC	MWC Name	Total Number of New Projects	2020 to 2029 Capital Expenditures ($000)
64	Replace Substation Breakers	8	17,530
65	Replace Substation Equipment – Emergency	7	16,021
66 (Sub)	Replace Substation Other Equipment	36	199,560
67	Electric System Automation	9	248,799
68	Replace Substation Transformers	5	11,683
3F	System Protection	166	109,455
IT / Security		**14**	**151,439**
2F	IT Infrastructure and Technology	7	22,952
3N	Security	1	3,466
63	Electric Systems Operation	6	125,021
Other		**1**	**969**
23	Manage Buildings	1	969
Work Requested by Others		**76**	**97,277**
82	Work Requested by Others	76	97,277
Total		**525**	**4,529,081**

Projects Omitted from the November 2024 TPR Process PS

The November 2024 PS removed 148 POs or Investment Codes that were included in May 2024 PS. Of note:

- POs associated with PG&E's Vegetation Management Reliability Right-of-Way Program. In its Rate Year 2022 Order, FERC determined that PG&E's capitalization of its Reliability ROW Expansion Program costs was not consistent with FERC accounting regulations and it directed PG&E to remove these costs from its capital additions and record these costs as utility O&M expenses.
- PG&E also removed a number of "Investment Codes," though it is unclear if that work has been remapped to other Investment Codes or new T.dots and/or Planning Orders.
- The Dinuba 70 kV Energy Storage Project was cancelled in the 2023-2024 CAISO TPP and is not included in the PS.

On-Hold Projects

104 POs, with "Current Projected Total or Final Actual Costs" of $769.9 million are currently "on hold." While three projects indicate that the "Current or Projected In-Service Date" has changed because of "Project Design," 101 projects have "N/A" or "Prioritization" in this field. Of note, while the Moraga-Sobrante 115 kV Line Reconductor project remains on hold per the 2022-2023 CAISO TPP, it is not included in these totals or included in the November PS.[11]

[11] See PG&E's November 1, 2024 TPR Process Transmittal Letter, page 6.

Prioritization Projects

Prioritization refers to PG&E's process of updating its "portfolio forecast within the Electric Transmission (ET) budget targets through a combination of project and program forecast refinement and continued project and program prioritization, which could include extending project implementation schedules and the pace of program volume execution."[12] Table 8 shows the number of POs and their associated cost where PG&E's "Reason for Change in Service Date" is "prioritization."

Table 8 – "Prioritized Projects" by Project Spreadsheet Issuance

Data Spreadsheet Date	Number of Projects	Total Cost (billions)*
June 2022 (STAR)	155	$1.595
December 2022 (STAR)	245	$2.866
June 2023 (STAR)	293	$3.721
December 2023 (STAR)	322	$3.979
May 2024 (TPR)*	413	$4.785
November 2024 (TPR)	567	$6.407

**Please note that the May 2024 TPR PS value is shown in this table.*

CAISO Projects

PG&E indicates that "all projects assigned to PG&E in the 2023-2024 CAISO Transmission Plan are included in the [PS] as either active projects with unique POs or as Investment Codes (if greater than $1 million with forecast in the TPR window). Projects with Investment Codes have not been kicked off due to prioritization or being recently approved in the 2023-2024 CAISO Transmission Plan."[13] Table 9 details PG&E's projects included in the November PS that were approved in the 2023-2024 CAISO TPP. Of the nearly $6 billion of CAISO-approved projects, policy-driven projects to support interconnection and deliverability of clean energy resources are estimated to cost $4.568 billion, reliability projects account for $1.402 billion, and there were no economically driven projects.

Table 9 – PG&E Approved Projects in CAISO's 2023-24 TPP[14]

Project Name	Expected In-Service Date	CAISO Project Cost (millions)
Reliability Projects		**$701 – 1,402.2 M**
Covelo 60 kV Voltage Support	2030	11 – 22
Martin-Millbrae 60 kV Area Reinforcement	2030	20 – 40
Atlantic High Voltage Mitigation	Q2 2029	20 – 40

[12] See PG&E's May 1, 2024 TPR Process Transmittal Letter, page 9.
[13] See PG&E's November 1, 2024 TPR Process Transmittal Letter, page 6.
[14] See 2023-2024 CAISO TPP, pages 160 to 161.

Project Name	Expected In-Service Date	CAISO Project Cost (millions)
Crazy Horse Canyon – Salinas – Soledad #1 and #2 115 kV Line Reconductoring	2030	54 – 108
Diablo Canyon Area 230 kV High Voltage Mitigation	2027	35 – 70
Salinas Area Reinforcement	TBD	226.1 – 452.3
Cortina #1 60 kV Line Reconductoring	Q2 2028	47.1 – 94.3
French Camp Reinforcement	Q2 2030	42.1 – 84.2
Rio Oso – W. Sacramento Reconductoring	2030	48.7 – 97.4
Vaca-Plainfield 60 kV Line Reconductoring	Q2 2030	34 – 68
Camden 70 kV Reinforcement	2030	50 – 100
Gates 230/70 kV Transformer Addition	2030	36 – 72
Reedley 70 kV Capacity Increase	TBD	49 – 98
Tejon Area Reinforcement	2029	28 – 56
Policy-Driven		**$3,137 – 4,586 M**
Sobrante 203/115 kV Transformer Bank Addition	2034	20 – 40
New Humboldt 500 kV Substation with 500 kV line to Collinsville [HVDC operated as AC]	2034	1,913 – 2,740
New Humboldt to Fern Road 500 kV Line	2034	980 – 1,400
New Humboldt 115/115 kV Phase Shifter with 115 kV line to Humboldt 115kV Substation	2034	40 – 57
North Dublin – Vineyard 230 kV Reconductoring	2034	116 – 233
Tesla – Newark 230 kV Line No. 2 Reconductoring	2034	29 – 58
Collinsville 230 kV Reactor	2034	39 – 58
Economically Driven		**$0 M**
None		
Grand Total – Reliability, Policy, Economic		**$3,838 – 5,988.2 M**

The CPUC's Energy Division Staff appreciate PG&E's continued engagement in the TPR Process. PG&E and stakeholders should direct any questions or comments on the TPR Process to tprprocess@cpuc.ca.gov.

Appendix A

Table A-1 – Actual Capital Expenditures by Major Work Category, Functional Category, and Year for 2020-2024

Pacific Gas and Electric Company
TPR Process Cycle 2 - November 2024
Actual Capital Expenditures by Functional Category, Major Work Category, and Year

			Actual Cost ($000)						
MWC	MWC Description	Number of Projects 2020-2024*	Inception to Date	2020	2021	2022	2023	2024	Sum 2020 to 2024
Transmission		**816**	**6,161,239**	**666,721**	**900,623**	**933,410**	**776,021**	**656,667**	**3,933,442**
60	Line Capacity	191	877,611	52,511	48,479	121,113	75,413	66,086	363,602
70	Replace Line Poles and Structures	114	1,947,613	256,831	289,339	311,769	341,922	230,478	1,430,339
71	Replace Line ROW Access	16	185,698	19,914	30,711	24,773	15,197	24,477	115,072
72	Replace Line Underground	18	29,785	5,319	3,765	2,520	1,627	10,088	23,319
92	Emergency Line Response	40	694,831	62,346	151,832	76,817	51,816	41,731	384,542
93	Line Preventative Work	290	1,968,814	190,096	266,724	311,064	262,527	280,051	1,310,461
94 (T)	ET Reliability - Transmission	147	456,887	79,703	109,773	85,354	27,520	3,757	306,107
Substation		**1,041**	**3,543,600**	**426,062**	**500,389**	**479,215**	**349,243**	**473,556**	**2,228,464**
61	Station Capacity	299	1,220,968	152,477	131,220	113,622	121,520	195,775	714,614
64	Replace Substation Breakers	55	136,729	23,299	17,627	17,718	6,109	9,864	74,617
65	Replace Substation Equipment - Emergency	84	267,463	30,861	63,140	44,975	50,042	67,822	256,841
66 (Sub)	Replace Substation Other Equipment	40	242,419	35,506	39,192	34,466	5,651	5,966	120,780
67	Electric System Automation	147	452,816	36,863	52,621	53,150	51,731	81,095	275,461
68	Replace Substation Transformers	35	264,689	37,772	61,705	60,423	31,489	12,770	204,158
94 (Sub)	ET Reliability - Substation	60	664,138	59,218	101,097	102,283	48,886	69,051	380,535
3F	System Protection	321	294,378	50,066	33,786	52,579	33,815	31,213	201,458
IT/Security		**219**	**677,400**	**89,436**	**84,434**	**74,995**	**83,652**	**112,558**	**445,075**
2F	IT Infrastructure and Technology	59	282,202	37,221	33,454	40,153	28,576	32,720	172,125
3N	Security	15	55,789	6,098	17,242	10,412	14,540	24,740	73,032
63	Electric Systems Operations	84	238,574	26,987	21,684	16,859	38,820	41,268	145,617
66 (Sec)	Replace Substation Other Equipment	61	100,835	19,130	12,054	7,571	1,715	13,830	54,301
Other		**19**	**236,336**	**23,673**	**24,949**	**59,467**	**15,052**	**3,850**	**126,991**
5	Tools	4	83,908	4,956	5,360	5,189	4,050	645	20,200
12	Environmental	2	4,318	835	410	204	190	606	2,244
21	Operations Support	8	49,740	10,254	9,155	14,628	5,456	2,073	41,565
23	Manage Buildings	5	98,370	7,628	10,025	39,447	5,356	526	62,982
3R*	Battery	NA	NA	NA	NA	NA	NA	NA	NA
Work Requested by Others		**432**	**623,193**	**61,631**	**23,897**	**91,057**	**137,210**	**182,313**	**496,108**
82	Work Requested by Others	432	623,193	61,631	23,897	91,057	137,210	182,313	496,108
Total		**2,527**	**11,241,768**	**1,267,523**	**1,534,292**	**1,638,144**	**1,361,176**	**1,428,943**	**7,230,079**

** Represents number of planning orders with activity in the 2020 to 2024 period.*

Table A-2 – Forecast Capital Expenditures by Major Work Category, Functional Category, and Year for 2025 to 2029

Pacific Gas and Electric Company
TPR Process Cycle 2 - November 2024
Forecast Capital Expenditures by Functional Category, Major Work Category, and Year

			Projected Cost ($000)					
MWC	MWC Description	Number of Projects 2025-2029*	2025	2026	2027	2028	2029	Sum 2025 to 2029
Transmission		**308**	**848,948**	**1,039,275**	**1,749,796**	**2,036,743**	**1,968,833**	**7,643,595**
60	Line Capacity	110	153,457	296,096	914,813	941,416	607,407	2,913,189
70	Replace Line Poles and Stru	57	246,424	262,221	280,726	355,061	456,150	1,600,581
71	Replace Line ROW Access	4	20,737	20,294	30,088	25,574	16,574	113,266
72	Replace Line Underground	15	10,450	11,551	6,275	4,167	27,199	59,642
92	Emergency Line Response	7	55,035	60,426	60,426	60,426	60,774	297,087
93	Line Preventative Work	70	314,069	383,951	455,803	650,099	746,846	2,550,768
94 (T)	ET Reliability - Transmissior	45	48,776	4,737	1,665	-	53,884	109,062
Substation		**419**	**671,939**	**628,166**	**899,453**	**888,897**	**785,213**	**3,873,668**
61	Station Capacity	186	345,161	388,613	440,351	450,974	291,677	1,916,776
64	Replace Substation Breaker	16	20,871	2,730	14,791	16,231	16,962	71,586
65	Replace Substation Equipm	22	87,476	98,215	159,910	147,766	208,574	701,942
66 (Sub)	Replace Substation Other E	5	4,528	-	15,000	15,000	15,000	49,528
67	Electric System Automation	105	119,146	97,635	162,140	140,532	106,598	626,053
68	Replace Substation Transfo	6	7,469	-	4,600	4,600	5,500	22,169
94 (Sub)	ET Reliability - Substation	11	44,458	9,997	38,155	49,295	64,058	205,963
3F	System Protection	68	42,829	30,974	64,505	64,500	76,843	279,652
IT/Security		**59**	**144,100**	**99,851**	**138,328**	**136,200**	**139,400**	**657,879**
2F	IT Infrastructure and Techno	10	13,813	4,411	-	-	-	18,224
3N	Security	5	3,911	3,200	3,200	3,200	3,200	16,711
63	Electric Systems Operations	25	82,347	65,740	83,328	94,000	80,200	405,615
66 (Sec)	Replace Substation Other E	19	44,028	26,500	51,800	39,000	56,000	217,328
Other		**13**	**7,822**	**7,833**	**7,862**	**7,878**	**14,425**	**45,821**
5	Tools	4	5,357	5,357	5,357	5,357	5,466	26,894
12	Environmental	2	368	379	405	417	430	1,999
21	Operations Support	7	2,097	2,097	2,100	2,103	8,529	16,928
23	Manage Buildings	-	-	-	-	-	-	-
3R*	Battery	NA	NA	NA	NA	NA	NA	NA
Work Requested by Others		**297**	**280,001**	**266,048**	**393,635**	**459,665**	**476,926**	**1,876,274**
82	Work Requested by Others	297	280,001	266,048	393,635	459,665	476,926	1,876,274
	Total	**1,096**	**1,952,810**	**2,041,173**	**3,189,074**	**3,529,382**	**3,384,797**	**14,097,237**

**Represents number of planning orders with activity in the 2025 to 2029 period.*