

Docket: A.96-08-043
Commissioner:
Admin. Law Judge:



PUBLIC ADVOCATES OFFICE
California Public Utilities Commission

MONITORING AND EVALUATION REPORT
November 1, 2016 through October 31, 2017

Pacific Gas and Electric Company's
Core Procurement Incentive Mechanism
Performance Results
(CPIM Year 24)

Application 96-08-043

San Francisco, California
May 10, 2019

TABLE OF CONTENTS

1	SUMMARY AND RECOMMENDATIONS	
1.1	Introduction and Summary	1
1.2	Background	1
1.3	Procurement and Sales	3
1.4	Financial Hedging Activities	4
1.5	Natural Gas Storage	5
1.6	Core Intrastate Capacity	6
1.7	Core Interstate Capacity	6
1.8	Review of CPIM Performance	8
1.9	Conclusion	9
2	MONITORING AND EVALUATION AUDIT	
2.1	Public Advocates Office's CPIM Reward Evaluation	9
2.2	Summary of Benchmark and Actual Costs	11
2.3	Review of Benchmark Commodity and Reservation Charges	12
2.4	Actual Natural Gas Costs and Reservation Charges	13
2.5	Natural Gas Storage Costs	16
2.6	Review of Purchase Gas Account (PGA)	17
2.7	Review of Core Pipeline Demand Charge Account (CPDCA)	18
2.8	Review of Miscellaneous Costs and Revenue	19
2.9	Examination of Hedging Costs	20
2.10	Review of Sales and Volume Transactions	22
2.11	Review of Volumetric Transport Costs	23
2.12	Review of Reservation Charges	24
2.13	Review of Benchmark Commodity Indices	26
2.14	Review of Fixed Storage and Transportation Costs	27
2.15	Utilization of Firm Interstate and Intrastate Pipeline Assets	28

Exhibits for CPIM Report

CHAPTER 1

SUMMARY AND RECOMMENDATIONS

1.1 Introduction and Summary

The Public Advocates Office performed an audit and evaluation of the data and documents submitted by Pacific Gas and Electric Company (PG&E) for its Core Procurement Incentive Mechanism (CPIM) Annual Performance Reports for the period November 1, 2016 through October 31, 2017 (Year 24). The details and results of Public Advocates Office's review are presented in Chapter 2 of this CPIM Monitoring and Evaluation Report. The Public Advocates Office's evaluation of PG&E's recorded natural gas costs confirms that PG&E's costs were below the benchmark for CPIM Year 24 which resulted in ratepayer savings.

For Year 24, PG&E submitted its CPIM Performance Report on October 12, 2018 which covered the period of November 1, 2016 through October 31, 2017. The Public Advocates Office's examination of PG&E's recorded costs for Year 24 shows that PG&E's costs were below the benchmark's lower tolerance band, which results in a reward of \$2,563,084 to PG&E's shareholders and a ratepayer benefit of \$16,330,853.¹

1.2 Background

The objective of the CPIM is to provide PG&E an incentive to reduce natural gas procurement costs. These costs include fixed transportation costs for Canadian and U.S. interstate, intrastate, and reservation charges. Other procurement costs include pipeline volumetric transportation costs and natural gas storage. The incentive mechanism is used as a ratemaking tool and is designed to increase efficiency in administering regulatory controls.

¹ Public Advocates Office Monitoring and Evaluation Report CPIM Year 24, Table 1-1.

The CPIM structure establishes procedures on performance evaluation and reporting for PG&E's gas procurement costs. It sets forth guidelines for standard operating conditions and for special circumstances. The allowed monthly benchmark dollars are totaled over the annual CPIM period and compared to actual costs for the year to determine PG&E's performance. A tolerance band is constructed around the benchmark and defines a range of costs considered reasonable. If PG&E's actual gas costs as measured against the CPIM benchmark are between the upper and lower limit specifications for the tolerance band, there is no shareholder reward or penalty for the CPIM period. If actual costs fall outside the tolerance band, there will be sharing of the gains or losses that occur outside the tolerance band between ratepayers and PG&E shareholders. In Chapter 2 of this report, Public Advocates Office presents detailed results of the tolerance band calculation.

The CPIM program was originally approved by the Commission in Decision (D.) 97-08-055 as set forth in the PG&E/ORA. Post-1997 CPIM Agreement and PG&E's Supplemental Report describing the Post-1997 CPIM. This decision established the framework to recover core gas procurement and transportation costs through rates. Since then, numerous changes and extensions have been made to modify and refined the CPIM program structure and incentives.

In D.07-06-013, the Commission approved a settlement agreement between PG&E, ORA, The Utility Reform Network (TURN), and Aglet Consumer Alliance (Aglet). The settlement modified the CPIM to increase benefits to ratepayers in situations where natural gas purchases are less than the lower range of the tolerance band. The specific CPIM changes that resulted from the settlement agreement included:

- A 20/80 shareholder/ratepayer sharing of savings below the tolerance band, in contrast to the previous 25/75 shareholder/ratepayer sharing;
- The 2.5 Billion cubic feet (Bcf) of un-sequenced storage withdrawal adjustment was eliminated and is included proportionately to the storage withdrawal sequence;

- A change in the sequencing steps for San Juan Basin and AECO for natural gas purchases;
- A savings of five-percent (5%) from full tariff rates on pipeline or storage contracts in order to offset CPIM gas costs;
- A change in the index used to calculate the benchmark for daily swing from the NGI daily Topock index to the NGI daily PG&E CityGate index;
- For storage acquired via the Incremental Storage Capacity Request for Offers process, the daily benchmark will be adjusted to accommodate the incremental storage injection and withdrawal requirements to improve savings in gas costs.

In D.10-01-023, the Commission adopted a settlement agreement between PG&E, the Division of Ratepayer Advocates, and TURN which addressed the treatment of hedging costs for PG&E. The key provisions of the adopted settlement call for the following treatment of hedging transactions:

- 80% of net realized gains or losses and associated transaction costs will be included in the CPIM Benchmark;
- 100% of the net hedging realized gains or losses and associated transaction costs will be included in the cost side of the CPIM calculation. Any gains will be subtracted and losses will be added to CPIM costs;
- A modification to the CPIM sharing mechanism such that total shareholders earnings will be capped solely at 1.5 percent of annual gas commodity costs and a removal of the hard dollar cap of \$25 million on shareholder gains effective November 1, 2009.

1.3 Procurement and Sales

PG&E's actual commodity costs (including commodity, transportation, hedging, and storage costs) for Year 24 totaled \$832,841,922 which was associated with a volume of 298,912,699 MMBtus.

PG&E utilizes gas sales to help manage its assets and reduce gas costs. It purchases and sells gas supplies to comply with daily pipeline balancing requirements, respond to changes in core loads, and capture price arbitrage opportunities. For CPIM Year 24, PG&E reported total gas sales of \$211,010,655 in revenue with an associated sales volume of 67,341,396 MMBtus.

1.4 Financial Hedging Activities

Per D.07-06-013, before CPIM Year 18, all derivative gains, losses and related transaction costs associated with PG&E's winter hedging plan were excluded from CPIM costs. These costs flowed directly to PG&E's retail customers. D.07-06-013 authorized PG&E, under the terms of the settlement, to place financial hedges on a rolling three-year basis via an Annual Plan filing. PG&E was required to file five Annual Plans beginning with the 2007/2008 winter season, that authorized a hedging plan for the current winter season and the subsequent two winter seasons. In addition, the settlement created a Core Hedging Advisory Group where ORA, Aglet, TURN and PG&E met quarterly to discuss PG&E's Annual Plan, and related hedging operations. By April 1 of each year, PG&E is required to report financial results of its Annual Plan including total funds spent on hedging instruments, total losses and gains for each category of hedging instrument, amount of monthly natural gas supplies hedged, and the impact of hedging results on customer rates.²

Pursuant to D.10-01-023, PG&E remains responsible for managing hedges proactively to ensure stability in customer rates. This includes implementing controls and selecting appropriate hedging instruments to mitigate derivative risks. PG&E is also required to take proactive steps by adjusting its hedging positions in response to changing market conditions.

² Settlement Agreement – Regarding PG&E Long-Term Core Hedge Program (A.06-05-007), the Core Procurement Incentive Mechanism (CPIM), and Transportation Capacity held on Behalf of Core Customers, December 15, 2006.

On January 25, 2010, the Commission approved D.10-01-023 and the associated Settlement Agreement which requires eighty percent (80%) of winter hedging gains and losses and related transaction costs to be included in the CPIM benchmark. The Settlement Agreement also requires, one hundred percent (100%) of winter hedging gains and losses and related transaction costs be included in the CPIM actual commodity costs. These CPIM changes would be incorporated starting in CPIM Year 18.

For the current CPIM Year 24, the total costs of winter hedges included in the CPIM were \$8,036,432, which was comprised of \$8,036,432 in option premiums, option and swap Settlements of (\$707,213) and \$10,321 in fees.

1.5 Natural Gas Storage

Under the CPIM, PG&E has a daily injection and withdrawal schedule. For CPIM Year 24, beginning inventory excluding incremental storage was reported at 28,819,945 MMBtus, and ending inventory was 28,887,345 MMBtus.

Pursuant to D.06-07-010 and D.07-06-013, PG&E is authorized to acquire incremental storage to meet a 1-day-in-10-year peak-planning standard for its core customers. The incremental storage costs are included in the benchmark and inventory schedules are adjusted by the amount of daily injections and withdrawals on a daily basis. This enables PG&E to track costs for the benchmark and adjust the amount of daily actual incremental natural gas injection and withdrawals.

Pursuant to D.06-07-010, and modified by D.08-07-009, PG&E acquired additional incremental storage capacity for future winter season periods for 2011 through 2015. This capacity became effective in Year 18 for the purpose of injection activity.

On August 7, 2009, the Commission approved Advice Letter 3031-G, which authorized PG&E to acquire additional incremental storage capacity to improve its

reliability during peak demand periods. These acquisition costs were reported in CPIM Years 18 through 22.

In a Memorandum of Understanding (MOU) between PG&E and ORA on October 19, 2009, the parties agreed to a change of firm storage injection and withdrawal requirements used to calculate the CPIM benchmark. These changes provided an updated storage profile beginning in Year 17 and are adjusted for allocations to Core Transport Agents (CTAs) as detailed in Tariff G-CT. This MOU remains in effect until both parties agree to make changes.³

1.6 Core Intrastate Capacity

Pursuant to D.04-12-050, the Commission allowed PG&E's Core Procurement Department to recover costs for firm reservation of intrastate backbone pipeline capacity. Effective July 1, 2016 to December 31, 2018, PG&E holds Redwood intrastate capacity providing approximately 605 MDth/d and Baja intrastate capacity providing 182 MDth/d with an additional seasonal capacity of 157 MDth/d during November 1 to March 31.⁴

1.7 Core Interstate Capacity

PG&E holds interstate capacity for the core on NOVA Gas Transmission Ltd. (NGTL), Foothills Pipe Lines, Ltd. (Foothills), Gas Transmission Northwest (GTN), El Paso Natural Gas Company (EPNG), Transwestern Pipeline Company (TW), Ruby Pipeline, L.L.C. (Ruby), and Kern River Gas Transmission Company (Kern River).

³ CPIM - ORA and PG&E Memorandum of Understanding, dated October 19, 2009.

⁴ PG&E Annual Performance Report, Year 24, page 17.

For Year 24, core interstate capacity was reported as approximately 288 MDth/d for NOVA, 285 MDth/d for Foothills, 280 MDth/d for GTN, 25 MDth/d for EPNG, 50 MDth/d for TW, and 250 MDth/d for Ruby.⁵

Pursuant to D.04-09-022, the Commission authorized PG&E to seek pre-approval and expedited advice letter treatment for interstate capacity contracts that meet specified criteria. Prior to seeking pre-approval, PG&E is required to consult with ORA, TURN, and the Energy Division (ED) to obtain agreement.

Pursuant to Advice Letter 3747-G-A, PG&E extended two contracts with Foothills for 284,810 Dth/d and 81,384 Dth/d, and a contract with NGTL for 287,745 Dth/d and the GTN contract for 279,968 Dth/d through October 31, 2030.

Pursuant to Advice Letter 3693-G, PG&E signed a contract with EPNG for 25,000 Dth/d from April 1, 2016 through March 31, 2018. In addition, Advice Letter 3692-G authorized PG&E to sign a seasonal contract with Transwestern for 50,000 Dth/d from April through October, and 190,000 Dth/d during November to March effective April 1, 2016 through March 31, 2018.

1.8 Review of CPIM Performance

Table 1-1 below compares benchmark gas costs to actual costs of natural gas (including commodity, transportation, reservation and storage costs) in total dollars.

⁵ Id.

Table 1-1 Pacific Gas & Electric Company CPIM Year 24 Gas Cost Comparison November 1, 2016 - October 31, 2017
--

Actual Gas Cost	\$	832,841,922	
Benchmark Gas Cost	\$	851,735,859	
Public Advocates Office Audited Total Savings	\$	18,893,937	
PG&E Reported Savings	\$	18,893,937	
Variance	\$	-	
Rounding	\$	-	
Total Variance	\$	-	
Savings and Reward			
Ratepayer Saving	\$	16,330,853	
Shareholder Reward	\$	2,563,084	
	\$	18,893,937	

1.9 Conclusion

Based on the foregoing, the Public Advocates Office recommends a shareholder reward in the amount of \$2,563,084 for CPIM Year 24 to be recovered through PG&E's Purchased Gas Account. The Public Advocates Office will continue to monitor and evaluate the CPIM and collaborate with PG&E and other parties to identify any modifications needed to enhance the CPIM's effectiveness.

CHAPTER 2
MONITORING AND EVALUATION AUDIT
YEAR 24

2.1 Public Advocates Office 's CPIM Reward Evaluation

Pacific Gas and Electric Company (PG&E) filed its Core Procurement Incentive Mechanism (CPIM) Performance Report, Year 24 Application ((A.)96-08-043), which reports on natural gas procurement results for the period from November 1, 2016 through October 31, 2017. The Public Advocates Office conducted a review and evaluation of PG&E's accompanying performance report. The results from this evaluation include working papers from the Public Advocates Office's compilations, which are incorporated as exhibits in Appendix A. This report filing is in compliance with the Gas Accord Decision, (D.)97-08-055, dated August 1, 1997, which approved the CPIM method for PG&E's recovery of core gas procurement and transportation costs.⁶ On August 22, 2002, the Commission issued D.02-08-070, the Gas Accord II Decision, extending the initial Gas Accord market structure including the CPIM, through 2003. On December 18, 2003, the Commission issued D.03-12-061, extending the CPIM through Year 2005, or until a revised CPIM is adopted by the Commission. Pursuant to D.07-06-013, the Commission adopted a Settlement Agreement that address long-term hedging for PG&E's core customers, as well as CPIM related modifications.

The CPIM summarizes gas costs, tolerance band limits, and performance results that compare actual costs to the benchmark. The CPIM benchmark consists of four components: a) variable costs which include commodity costs, Canadian and U.S. interstate, and California intrastate pipeline fuel and volumetric capacity costs; b) fixed

⁶ In D.97-08-055, the Commission approved a CPIM mechanism for core gas costs incurred after December 31, 1997. In this decision, the Commission ordered PG&E to file quarterly and annual reports on core procurement operations starting after completion of one year of Gas Accord operations.

transportation costs which include Canadian, U.S. interstate, and California intrastate reservation costs; c) storage costs for fixed reservation charges and variable costs; and d) Hedging costs which included 80% of net realized gains or losses and associated transaction costs of winter hedges. The total combined cost of these four components serves as the benchmark to compare to the actual costs.

The actual commodity costs of gas are measured on an annual basis against the benchmark and the calculated tolerance band. The benchmark commodity cost is based on the prevailing published natural gas price indices for gas delivered from the gas production areas, borders and PG&E's CityGate.

The Public Advocates Office's evaluation of PG&E's CPIM Year 24 performance in Table 2-1 shows benchmark costs of \$851,735,859 and PG&E's actual costs of \$832,841,922. The difference between the benchmark cost and PG&E's actual cost results in a total of \$18,893,937 in natural gas procurement savings. This results in an upper tolerance band benchmark (benchmark plus 2.0% of commodity benchmark plus reservation charges) of \$863,892,891, and a lower tolerance band benchmark (benchmark minus 1.0% of commodity benchmark plus reservation charges) of \$845,657,343.

The actual cost of \$845,657,343 is \$12,815,421 less than the lower tolerance band cost of \$845,657,343. This is below the CPIM benchmark, which reflects PG&E's gas savings performance. The lower limit of the tolerance band is used to calculate the ratepayers saving and shareholder reward. These results provide savings to be shared between PG&E's customers and shareholders, as shown in Table 2-1.

The Public Advocates Office's review shows PG&E's CPIM Year 24 savings below the lower tolerance band resulting in a total savings of \$12,815,421. Based on the CPIM, \$10,252,337 of this savings is allocated to ratepayers and \$2,563,084 to PG&E shareholders. The total ratepayer savings is \$16,330,853.

TABLE 2-1
Pacific Gas & Electric Company
Ratepayer Savings and Shareholder Award Calculation
CPIM 24
November 1, 2016 Through October 31, 2017

CPIM Reward Calculation

Total Benchmark Costs	\$	851,735,859
Total Actual Costs		832,841,922
Under/(Over)		18,893,937
Upper Tolerance Band (Benchmark + 2% of Commodity Cost)		863,892,891
Lower Tolerance Band (Benchmark - 1% of Commodity Cost)		845,657,343
Lower Tolerance Band Less Actual Commodity Cost		12,815,421
Ratepayer Shared Savings (80%)		10,252,337
Shareholder Shared Savings (20%)		2,563,084
	\$	15,358,739
Total Ratepayer Savings	\$	16,330,853

2.2 Summary of Benchmark and Actual Costs

Table 2-2 shows the overall annual results of the actual commodity costs compared to the benchmark commodity costs of gas operation in CPIM Year 24.

The Public Advocates Office and PG&E's Core Gas Supply (CGS) signed a Memorandum of Understanding (MOU) to incorporate the United States Customs and Border Protection's Merchandise Processing Fee (MPF) into the Benchmark calculation.⁷ The MPF is the fee associated with Canadian gas purchases.

⁷ On April 3, 2018, the Public Advocates Office and PG&E's CGS signed an MOU to include MPF costs in the CPIM actual and benchmark costs. For CPIM Year 24, the calculation of MPF costs covers: 1) the fee for CPIM Year 19 – Year 22 in both the actual and benchmark costs; and 2) a fee adjustment for the CPIM Year 23 benchmark costs which is due to MPF costs already included in CPIM Year 23 actual costs, not benchmark costs.

In CPIM Year 24, PG&E received El Paso Service Agreement rate credit from El Paso Natural Gas Company, LLC.⁸ The rate credit is adjusted in the both actual and benchmark calculation.

The Public Advocates Office examined and reconciled all gas commodity costs, hedging costs, and transportation reservation charges that were reported in the CPIM Year 24 period. The natural gas sale and miscellaneous costs and revenues are included in the actual costs as costs or credits depending on the result of natural gas operation. The Public Advocates Office's examination of PG&E's records for miscellaneous costs, winter hedges, reservation and transportation costs, and regulatory balancing accounts is performed to highlight variances in the reporting of gas costs. The following sections in this chapter will provide a detailed review and breakdown of these related costs.

Table 2-2
Pacific Gas & Electric Company
Summary of Benchmark and Actual Costs
CPIM 24
November 1, 2016 Through October 31, 2017

	Actual	Benchmark	Difference
Purchased Natural Gas Cost	\$ 773,217,431	\$600,906,904 *	\$ (172,310,527)
Volumetric Transportation Costs	\$ 24,542,004	\$ -	\$ (24,542,004)
Natural Gas Sales	\$ (211,010,655)	\$ -	\$ 211,010,655
Other Costs and Revenues	\$ (4,112,339)	\$ -	\$ 4,112,339
Hedge Cost	\$ 8,036,432	\$ 6,429,146	\$ (1,607,286)
Reservation Charges	\$ 243,509,532	\$243,885,190	\$ 375,658
Custom and Border Protection Fee	\$ 146,487	\$ 146,487	\$ -
Custom and Border Protection Fee Adjustment For Year 19-23	\$ 546,147	\$ 695,376	\$ 149,229
El Paso Rate Adjustment For Year 18-23	\$ (2,033,117)	\$ (327,244)	\$ 1,705,873
Total Commodity Cost	\$ 832,841,922	\$851,221,240	\$ 18,893,937

⁸ On May 3, 2018, the Federal Energy Regulatory Commission (FERC) issued Opinion No. 528-B in RP10-1398. The order addressed issues relate to El Paso's Rate Case and required El Paso to issue refund to the affected shippers.

2.3 Review of Benchmark Commodity and Reservation (Demand) Charges

The CPIM benchmark is based on published indices for natural gas commodity costs at PG&E's Citygate. This CPIM benchmark consists of three main components; the total gas purchase cost, 80% of winter hedging cost, and reservation charges. Table 2-3 provides a breakdown for each pipeline cost that represents PG&E's commodity costs for the period. For this period, total benchmark costs including purchased gas costs, winter hedging costs, reservation costs and other costs, equaled \$851,221,240. The benchmark commodity costs are \$600,906,904; the benchmark winter hedge costs are \$6,429,146 and benchmark pipeline reservation charges are \$243,885,190.

TABLE 2-3
Benchmark Commodity Costs and Reservation Charges
CPIM Year 24
November 1, 2016 Through October 31, 2017

	Market
	Benchmark
Benchmark Purchased Gas Costs - by Pipelines:	
Ruby Rockies	\$ 170,623,921
AECO	\$ 209,596,758
San Juan	\$ 103,953,453
Kingsgate	\$ 1,095,460
Topock	\$ 41,934,670
PG&E Citygate	\$ 73,702,642
Total Benchmark Gas Costs:	\$ 600,906,904
Hedging Cost	
80% of Winter Hedging Cost	\$ 6,429,146
Benchmark Reservation Charges:	
Foothills Pipelines Ltd	\$ 6,291,258
Nova Gas Transmission Ltd	\$ 15,636,515
Gas Transmission Northwest Corp	\$ 29,985,753
El Paso Natural Gas Company	\$ 1,132,399
Ruby Pipeline	\$ 48,130,916
Transwestern Pipeline Company	\$ 7,755,443
California Gas Transmission	\$ 71,325,263
Storage	\$ 63,627,643
Total Benchmark Reservation Charges:	\$ 243,885,190
Total Benchmark Commodity Costs:	\$ 851,221,240

2.4 Actual Natural Gas Costs

A review of actual costs for commodity purchases and reservation charges reported by PG&E is summarized in Table 2-4. On a monthly basis, PG&E will sell some of its unused assets. The net sale is treated as a credit to the procurement costs. In addition to the calculation of actual commodity costs of CPIM Year 24, one hundred percent of winter hedging realized gains or losses and associated transaction costs are included in the actual costs. Reservation charges include intrastate and interstate charges for California Gas Transmission, El Paso Natural Gas Company, Ruby Pipeline LLC, Transwestern Pipeline Company, Nova Gas Transmission, Ltd., Gas Transmission Northwest Corporation, and Transwestern Pipeline Company.⁹

PG&E's net total actual commodity costs are \$841,375,641, which include interstate and intrastate purchased gas costs of \$589,829,677, winter hedging costs of \$8,036,432, reservation charges for interstate and California intrastate capacity of \$243,509,532.

⁹ PG&E Annual Performance Report, CPIM Year 24, dated October 12, 2018.

TABLE 2-4
Summary of Actual Commodity Costs & Reservation Charges
CPIM Year 24
November 1, 2016 Through October 31, 2017

Actual Purchased Gas Costs - by Pipeline:	Actual Costs	
CGT - Citygate	\$	103,478,173
CGT - El Paso	\$	120,134,091
El Paso	\$	20,090,193
GTN	\$	25,715,265
Nova	\$	205,750,129
Ruby	\$	124,988,172
TW	\$	173,061,408
Volumetric Transportation Cost	\$	24,542,004
Gas Sale	\$	(211,010,655)
Miscellaneous Costs & Revenues	\$	3,080,897
Total Purchased Gas Costs:	\$	589,829,677
Hedging Costs		
100% Winter Hedging Cost	\$	8,036,432
Actual Reservation Charges:		
Foothills Pipelines Ltd	\$	6,291,258
Nova Gas Transmission Ltd	\$	15,636,515
Gas Transmission Northwest Corp	\$	29,985,753
El Paso Natural Gas Company	\$	1,132,399
Ruby Pipeline	\$	48,130,916
Transwestern Pipeline Company	\$	7,755,443
California Gas Transmission	\$	71,325,263
Storage Costs	\$	63,627,643
Discount Demand Charges	\$	(375,658)
Capacity Release Revenue	\$	-
Total Reservation Charges:	\$	243,509,532
Net Actual Commodity Costs:	\$	841,375,641

2.5 Natural Gas Storage Costs

In accordance with D.06-07-010, PG&E uses a monthly distribution of winter storage withdrawals and summer storage injections in the calculation of the monthly benchmark purchase volumes. PG&E reports on its managed storage so that impacts to CPIM metrics can be attained while ensuring adequate capacity is available for reliability. PG&E also uses a schedule to establish daily benchmark allocations of injections and withdrawals and to ensure distributions are allocated evenly throughout the period. When it becomes necessary to balance portfolio supplies with core loads,

PG&E will generally make exceptions from its planned schedules in order to meet interstate and intrastate pipeline tolerances, balancing rules, and most importantly, conservation of gas for storage and peak requirements.¹⁰

For the benchmark, the storage cost component includes volumetric storage charges as well as storage reservation costs at the as-billed rate for: a) 33.5 MMdth of annual inventory, b) 115 to 207 Mdth per day of summer injection, and c) 720 to 1,355 Mdth per day of winter withdrawal capacity, which is adjusted for core aggregation elections.¹¹

In Table 2-5, a summary of storage inventory shows the status of physical inventories (measured in MMBtus) for beginning and ending balances as of October 31, 2017. PG&E reported beginning storage inventory levels as of November 1, 2016 at 28,819,945 MMBtus and ending inventory as of October 31, 2017 at 28,887,345 MMBtus.

TABLE 2-5 Pacific Gas and Electric Company Summary of Storage Inventory Injections and Withdrawals CPIM Year 24 November 1, 2016 through October 31, 2017		
Gas Storage Providers	Beginning Inventory 11/01/16 (MMBtus)	Ending Inventory 10/31/17 (MMBtus)
Firm Storage CGT	27,819,945	27,887,345
Incremental Storage	1,000,000	1,000,000
Total Storage Inventory	28,819,945	28,887,345

2.6 Review of Purchase Gas Account (PGA)

PG&E submitted its reconciliation of its regulatory balancing account, the Purchase Gas Account (PGA). For the reporting period, PG&E’s accounting entries

¹⁰ PG&E Annual Performance Report, CPIM Year 24, dated October 12, 2018.

¹¹ The actual ratemaking treatment of the core storage reservation provides for a fully bundled cost with no variable charge. However, for CPIM calculation purposes, a variable storage cost has been assumed in order to provide an appropriate economic incentive to use storage services efficiently.

represent amounts expected to be received from, or refunded to, PG&E's customers through authorized adjustments within a twelve-month period. The PGA shows the tracking of gas related costs and revenues for recovery. The under-or-over collected position of this account is dependent upon the seasonality and volatility in gas volumes. Table 2-6 below illustrates net commodity costs, which shows immaterial timing difference with supporting documentation presented in PG&E's Performance Report, for actual natural gas purchases.

As part of the PGA audit, the Public Advocates Office selected samples of purchase invoices. PG&E provided copies of supporting documents and purchase invoices for the purpose of the verification. The Public Advocates Office traced the costs of these purchase invoices to the monthly statement and then to the annual report and determined that the selected purchase invoices reconciled with recorded amounts in the annual report.

TABLE 2-6
Pacific Gas and Electric Company
Purchase Gas Account Review
CPIM Year 24

November 1, 2016 through October 31, 2017

CPIM Purchase Costs	Commodity Purchases	Volumetric Transportation	Subtract True-up	Add True-up	Total CPIM
CPIM Costs:					
Purchases and Sales:					
EPNG, Kern River, and Transwes	\$ 105,776,889	\$ 652,641			\$ 106,429,530
CGT	\$ 89,755,374	\$ 19,588,987			\$ 109,344,361
GTNC and NGTL	\$ 214,604,735	\$ 1,091,162			\$ 215,695,897
Ruby Pipeline	\$ 120,378,734	\$ 3,072,478			\$ 123,451,212
WFS	\$ 66,582,548	\$ 136,733			\$ 66,719,281
Citygate (Mission Path)	\$ (34,891,504)	\$ -			\$ (34,891,504)
SubTotal	\$ 562,206,776	\$ 24,542,001	\$ -	\$ -	\$ 586,748,777
Misc. Revenues and Expenses	\$ (3,190,153)				\$ (3,190,153)
Total	\$ 559,016,623	\$ 24,542,001	\$ -	\$ -	\$ 583,558,624
SAP Journal Entries:					
SAP Total	\$ 549,770,101	\$ 24,415,734	\$ (42,101,348)	\$ 51,432,427	\$ 583,516,914
Prior Period Adjustment	\$ -	\$ 74,706			\$ 74,706
Costs Included in CPDCA	\$ 5,630	\$ -			\$ 5,630
Time Difference	\$ 67,364	\$ -			\$ 67,364
El Paso Refund	\$ -	\$ (75,864)			\$ (75,864)
Adjustment Error	\$ (30,125)				\$ (30,125)
Total PGA	\$ 549,812,970	\$ 24,414,576	\$ (42,101,348)	\$ 51,432,427	\$ 583,558,625
Timing Difference	\$ 9,203,653	\$ 127,425	\$ 42,101,348	\$ (51,432,427)	\$ (1)

2.7 Review of Core Pipeline Demand Charge Account (CPDCA)

As part of the CPIM Year 24 filing, PG&E submitted its reconciliation for regulatory balancing account Core Pipeline Demand Charge Account (CPDCA). This account is used to record costs associated with backbone transmission, interstate capacity, and Canadian capacity for core procurement. The Public Advocates Office reviewed PG&E's documentation, which shows total charges by pipeline for the period to be \$243,509,534 (see Table 2-7).

The Public Advocates Office's audit showed the CPIM demand costs were \$243,509,533 which included demand charges, discount demand charges, capacity release revenue and release revenue charges. When the Public Advocates Office

compared the reported CPIM demand costs to the SAP journal entries, no material difference is found.

TABLE 2-7 Pacific Gas and Electric Company CPDCA and CFSA Accounts Review CPIM Year 24 November 1, 2016 through October 31, 2017				
CPIM Demand Costs	Demand Charges	Subtract True-up	Add True-up	Total CPIM
Foothills Pipe Lines Ltd	\$ 6,291,258			\$ 6,291,258
California Gas Transmission	\$ 71,325,263			\$ 71,325,263
El Paso Natural Gas	\$ 1,027,732			\$ 1,027,732
Ruby Pipeline	\$ 48,130,916			\$ 48,130,916
NOVA Gas Transmission	\$ 15,636,515			\$ 15,636,515
Gas Transmission N.W.	\$ 29,956,529			\$ 29,956,529
Transwestern Pipeline Company	\$ 7,513,677			\$ 7,513,677
Third Party Gas Storage	\$ 1,500,030			\$ 1,500,030
Firm Storage Costs	\$ 62,127,613			\$ 62,127,613
Total Demand Charges:	\$ 243,509,533	\$ -	\$ -	\$ 243,509,533
SAP Journal Entries				
SAP Total	\$ 245,694,703	\$ (23,584,896)	\$ 23,089,141	\$ 245,198,948
Reservation Discount	\$ (375,649)			\$ (375,649)
Exchange Rate Variance	\$ (5,058)			\$ (5,058)
Prior Period Adjustments	\$ 62,465			\$ 62,465
Costs Classified In PGA	\$ (5,629)			\$ (5,629)
Timing Difference	\$ (806,290)			\$ (806,290)
CTA Mid-Year Storage Adj	\$ (559,253)			\$ (559,253)
Total CPDCA:	\$ 244,005,289	\$ (23,584,896)	\$ 23,089,141	\$ 243,509,534
Timing Difference:	\$ (495,756)	\$ 23,584,896	\$ (23,089,141)	\$ (1)

2.8 Review of Miscellaneous Costs and Revenues

Table 2-8 shows a summary of miscellaneous costs and credits from PG&E's Annual Performance Report for the period. The revenues in this section also offset reported procurement costs and assist management in managing net costs that impact CPIM performance. Results show total annual miscellaneous costs and revenues at \$4,112,339. This amount consists of Cochrane Extraction Revenue of \$3,444,794,

Non-Winter Hedge Cost and Revenues of \$947,624, and Miscellaneous Costs and Revenues of \$280,079.

<p>TABLE 2-8 Pacific Gas and Electric Company Miscellaneous Costs and Revenues CPIM Year 24 November 1, 2016 through October 31, 2017</p>
--

Month	Cochrane Extraction Revenue	Non-Winter Hedge Cost and Revenues	Miscellaneous Costs and Revenues	Total
Nov-16	\$ (223,613)	\$ -	\$ 19,861	\$ (203,752)
Dec-16	\$ (292,868)	\$ 395,233	\$ 27,710	\$ 130,075
Jan-17	\$ (380,453)	\$ 52,041	\$ 32,864	\$ (295,548)
Feb-17	\$ (374,078)	\$ (10,780)	\$ 27,616	\$ (357,242)
Mar-17	\$ (241,485)	\$ 73,238	\$ 29,886	\$ (138,361)
Apr-17	\$ (243,382)	\$ (90,462)	\$ 16,333	\$ (317,511)
May-17	\$ (236,719)	\$ 155,443	\$ 12,890	\$ (68,386)
Jun-17	\$ (2,639)	\$ 27,150	\$ 20,988	\$ 45,499
Jul-17	\$ (242,178)	\$ (49,561)	\$ 19,368	\$ (272,371)
Aug-17	\$ (284,400)	\$ (195,998)	\$ 41,890	\$ (438,508)
Sep-17	\$ (462,400)	\$ (116,550)	\$ 17,519	\$ (561,431)
Oct-17	\$ (460,579)	\$ (1,187,378)	\$ 13,154	\$ (1,634,803)
Total	\$ (3,444,794)	\$ (947,624)	\$ 280,079	\$ (4,112,339)

2.9 Examination of Financial Derivatives

Pursuant to D.07-06-013, the Commission authorized PG&E's Annual Core Hedge Implementation Plan for 2008 for long term hedging for purchases of call options and swaps for a three-year period. This decision provided guidelines for the long-term core hedging program as well as reporting requirements.

In D.10-01-023, the Commission approved a policy incorporating winter hedging transactions into the CPIM. The winter hedging transactions executed on or after November 1, 2009 would be included in PG&E's CPIM calculation beginning on or after November 1, 2010. CPIM Year 18 was the first year to include the winter hedging costs and this change was adopted for future CPIM calculations. The financial results for the current CPIM Year 24, winter 2016-2017 are summarized in Table 2-9.

PG&E reported \$8,036,432 in CPIM Year 24 for actual winter hedging costs. The total Option Premiums costs are \$8,733,324, Option and Swap Settlements revenue are \$707,213, and Commission and Fees are \$10,321.

<p>Table 2-9 Pacific Gas and Electric Company Winter Hedge Costs CPIM Year 24 November 1, 2016 - October 31, 2017</p>
--

	Option Premiums	Option and Swap Settlements	Commissions and Fees	Winter Hedge Cost Total
Nov-16	\$ -	\$ -	\$ -	\$ -
Dec-16	\$ 3,008,145	\$ -	\$ 3,555	\$ 3,011,700
Jan-17	\$ 3,008,145	\$ (707,213)	\$ 3,555	\$ 2,304,487
Feb-17	\$ 2,717,034	\$ -	\$ 3,211	\$ 2,720,245
Mar-17	\$ -	\$ -	\$ -	\$ -
Apr-17	\$ -	\$ -	\$ -	\$ -
May-17	\$ -	\$ -	\$ -	\$ -
Jun-17	\$ -	\$ -	\$ -	\$ -
Jul-17	\$ -	\$ -	\$ -	\$ -
Aug-17	\$ -	\$ -	\$ -	\$ -
Sep-17	\$ -	\$ -	\$ -	\$ -
Oct-17	\$ -	\$ -	\$ -	\$ -
Total	<u>\$ 8,733,324</u>	<u>\$ (707,213)</u>	<u>\$ 10,321</u>	<u>\$ 8,036,432</u>

2.10 Review of Sales and Volume Transactions

Table 2-10 shows PG&E's total sales of \$211,010,655, and total reported volume of 67,341,396 MMBtus. A breakdown by pipeline shows sales for CGT CityGate of \$138,369,677, CGT-All of \$1,279,835, EPNG-Basin of \$1,104,666, GTN-All of \$14,142,228, Kern River of \$801,853, Nova of \$2,728,271, Ruby of \$5,452,431, Transwestern of \$30,502,339, and Williams Field Service of \$16,629,355.

The same period shows sales volumes for CGT CityGate of 43,494,491 MMBtus, CGT-All of 402,619 MMBtus, EPNG-Basin of 354,578 MMBtus, GTN-All of 4,087,459 MMBtus, Kern River of 311,104 MMBtus, Nova of 1,820,268 MMBtus, Ruby

of 1,604,197 MMBtus, Transwestern of 9,514,893 MMBtus, and Williams Field Service of 5,751,787 MMBtus.

<p>Table 2-10 Pacific Gas and Electric Company Gas Sales and Volumes CPIM Year 24 November 1, 2016 through October 31, 2017</p>
--

Sale by Pipeline:	Volume (MMBtus)	Dollars
CGT CityGate	(43,494,491)	(138,369,677)
CGT - All	(402,619)	(1,279,835)
EPNG	(354,578)	(1,104,666)
GTN All	(4,087,459)	(14,142,228)
Kern	(311,104)	(801,853)
Nova	(1,820,268)	(2,728,271)
Ruby	(1,604,197)	(5,452,431)
TW	(9,514,893)	(30,502,339)
WFS	(5,751,787)	(16,629,355)
Total:	(67,341,396)	\$ (211,010,655)

2.11 Review of Volumetric Transport Costs

Table 2-11 provides a summary of PG&E's reported volumetric transportation costs by pipeline. It shows that trends in transport activity are consistent with purchase and sales transactions.

The total volumetric transport costs were \$24,542,004. In addition, costs were broken down by pipeline to identify changes: PG&E CGT \$19,588,987, EPNG-Basin \$150,828, GTN-All \$1,091,162, Ruby Pipeline \$3,072,478, Transwestern-Basin \$501,816, and Williams Field \$136,733. These costs are included in the CPIM and are part of the reconciliation of the PGA balancing account.

TABLE 2-11
Pacific Gas and Electric Company
Commodity Volumetric Transport Costs
CPIM Year 24
November 1, 2016 through October 31, 2017

Pipeline	Costs	
PG&E CGT	\$	19,588,987
EPNG	\$	150,828
GTN-ALL	\$	1,091,162
Ruby Pipeline	\$	3,072,478
Transwestern	\$	501,816
Transcanada	\$	-
Williams Field	\$	136,733
Total Volumetric Transport Costs:	\$	24,542,004

2.12 Review of Reservation Charges

To identify any variances, the Public Advocates Office completed a reconciliation of the benchmark to the actual reservation charges reported in PG&E's Annual Performance Report for the subject period. Table 2-12 provides a summary of adjustments that were offset against the benchmark. The results show no discrepancies. The reconciliation account for actual reservation charges was \$243,509,534 which included demand charges of \$180,257,549, adjustments of discounted demand charges of \$375,658, and storage cost of \$63,627,643.

TABLE 2-12
Pacific Gas and Electric Company
Reconciliation of Reservation Charges
CPIM Year 24
November 1, 2016 through October 31, 2017

Actual Demand Charges by Pipeline System:	Benchmark Demand Charges:	
<u>Canadian</u>		\$ 180,257,547
Foothills Pipelines Ltd.	6,291,258	
Nova Gas Transmission Ltd.	15,636,515	
Canadian Subtotal	\$ 21,927,773	
<u>Interstate</u>		
Gas Transmission Northwest Corporation	29,985,753	
El Paso Natural Gas Company	1,132,399	
Kern River Gas Transmission	-	
Ruby Pipeline	48,130,916	
Transwestern Pipeline Company	7,755,443	
Interstate Subtotal	\$ 87,004,511	
<u>Intrastate</u>		
California Gas Transmission	71,325,265	
Intrastate Subtotal	\$ 71,325,265	
Total Actual Demand Charges:	\$ 180,257,549	\$ 180,257,547
Discount Demand Charges:		
El Paso Natural Gas Company	(104,667)	
Transwesten Pipeline Company	(241,765)	
Gas Transmission Northwest LLC	(29,226)	
Demand Charge Discount Subtotal:	\$ (375,658)	\$ -
Capacity Release Revenue:		
Canadian Pipeline	0	
Interstate Pipeline	0	
Intrastate	0	
Total Capacity Release Revenue:	\$ -	\$ -
Storage Cost:		
California Gas Transmission Firm Storage	62,127,613	
Other Storage Costs	1,500,030	
Storage Cost Subtotal:	\$ 63,627,643	\$ 63,627,643
Reconciliation of Reservation Charges:	\$ 243,509,534	\$ 243,885,190

2.13 Review of Benchmark Commodity Indices

The benchmark gas price indices are published by various natural gas publications. Each index is then adjusted with fuel costs from supplying regions to

PG&E's Citygate and the adjusted gas indices are used to calculate the monthly commodity costs benchmark.

The Canadian benchmark commodity indices are established using the exchange rates in effect when the indices are issued prior to the availability of closing currency exchange rates. However, the final indices, which determine the actual gas supply prices, reflect closing exchange rates.

For the reporting period, PG&E's gas operations applied a pipeline sequencing methodology for purposes of purchasing gas at the lowest cost. PG&E however has the discretion to change the sequence to select a different pipeline at any time in order to meet reliability requirements.

2.14 Examination of Benchmark Storage Charges and Transportation Costs

PG&E reported its benchmark reservation (demand) and fixed storage charges. The Public Advocates Office reviewed the costs and identified changes in activity in the report from the prior year's report. The total transportation and storage costs are \$243,885,190, which consisted of Canadian pipeline demand charges of \$21,927,773, U.S. interstate pipeline reservation costs of \$87,004,511, California intrastate pipeline costs of \$71,325,263, and storage costs of \$63,627,643. Table 2-14 provides a summary of these costs.

TABLE 2-14
Pacific Gas and Electric Company
Summary of Fixed Transport and Storage Costs
CPIM Year 24
November 1, 2016 through October 31, 2017

Benchmark Demand Charges	
<u>Canadian</u>	
Foothills Pipelines Ltd.	6,291,258
Nova Gas Transmission Ltd.	15,636,515
Canadian Subtotal	<u>\$ 21,927,773</u>
<u>Interstate</u>	
Gas Transmission Northwest Corporation	29,985,753
El Paso Natural Gas Company	1,132,399
Kern River Gas Transmission	-
Ruby Pipeline	48,130,916
Transwestern Pipeline Company	7,755,443
Interstate Subtotal	<u>87,004,511</u>
<u>Intrastate</u>	
California Gas Transmission	71,325,263
Intrastate Subtotal	<u>\$ 71,325,263</u>
Total Demand Charges	<u>\$ 180,257,547</u>
 CA Intrastate Storage Costs:	
California Gas Transmission Firm Storage	62,127,613
Other Storage Costs	1,500,030
Total Storage Costs	<u>\$ 63,627,643</u>
Total Transportation & Storage Costs:	<u>\$ 243,885,190</u>

2.15 Utilization of Firm Interstate and Intrastate Pipeline Assets

PG&E has short and long term contracts to meet core gas demand for purchases of natural gas resources transported from Canadian, U.S. interstate and California intrastate pipeline systems. During CPIM Year 24, PG&E transported natural gas resources using firm transportation contracts. PG&E estimates its utilization proportionally based on capacity available to transport supplies and/or releases to other parties. The summary in Table 2-15 below shows PG&E's estimated utilization for the period and notes changes in contract activity from prior years.

Pursuant to D.04-09-022, PG&E is authorized to recover the costs associated with its Canadian and U.S. interstate capacity, allocate firm intrastate capacity and recover associated costs. Pursuant to D.07-07-002, PG&E can also allocate firm

interstate capacity and recover associated costs. In CPIM Year 19, PG&E added the Ruby pipeline to PG&E's core supply portfolio effective November 1, 2011. The Ruby pipeline provides contracted quantities of 250,000 Dth/d and the contract expires on October 31, 2026.

Table 2-15
Pacific Gas and Electric Company
Core Gas Supply - Utilization of Interstate, Intrastate and Canadian Pipeline Assets
CPIM Year 24
November 1, 2016 through October 31, 2017

Pipeline Capacity:	Quantity (Dth/d)	Contract Expiration Date	Utilization Rate
TransCanada Pipelines:			
NGTL	287,745	10/31/20	
	82,223	10/31/20	
Total NOVA:	369,968		99%
Foothills-BC System			
	284,810	10/31/20	
	81,384	10/31/20	
Total Foothills-BC System:	366,194		99%
Interstate Pipelines:			
Gas Transmission Northwest	279,968	10/31/20	
	80,000	10/31/20	
Total Gas Transmission Northwest:	359,968		99%
El Paso Natural Gas	25,000	03/31/18	
Total El Paso Natural Gas:	25,000		96%
Transwestern Pipeline Co.	50,000	3/31/2018	
	190,000	3/31/2018	
Total TW:	Varies		98%
Ruby			
Total Ruby:	250,000	10/31/26	94%
PG&E Core Gas Supply- Intrastate Pipelines:			
Redwood Path	605,088		99%
Total Redwood:	605,088		
Baja Path	182,000		
Seasonal (Nov.-Mar.)	157,000		
Total Baja:	Varies		98%

Exhibits

2-1
Pacific Gas and Electric Company
CPIM Year 24
November 1, 2016 - October 31, 2017
CPIM Calculation

	Interstate and Intrastate Gas Purchase		Pipeline Reservation Charge		CPIM Performance					
	Actual Commodity	Benchmark Commodity	Actual Reservation Charge	Benchmark Reservation Charges	Total Actual Costs	Total Benchmark Costs	Benchmark Less Actuals	Upper Limit (2%)	Lower Limit (1%)	(Over)/Under Tolerance Band
Nov-16	\$ 52,958,722	\$ 50,064,623	\$ 21,774,307	\$ 21,821,678	\$ 74,733,029	\$ 71,886,301	\$ (2,846,728)	\$ 72,887,593	\$ 71,385,655	\$ (3,347,374)
Dec-16	\$ 93,980,600	\$ 88,624,450	\$ 21,887,698	\$ 21,934,748	\$ 115,868,298	\$ 110,559,198	\$ (5,309,100)	\$ 112,331,687	\$ 109,672,954	\$ (6,195,345)
Jan-17	\$ 103,314,525	\$ 103,952,082	\$ 22,389,961	\$ 22,437,011	\$ 125,704,486	\$ 126,389,093	\$ 684,607	\$ 128,468,135	\$ 125,349,572	\$ (354,914)
Feb-17	\$ 77,946,042	\$ 64,838,853	\$ 22,009,825	\$ 22,053,186	\$ 99,955,867	\$ 86,892,039	\$ (13,063,828)	\$ 88,188,816	\$ 86,243,650	\$ (13,712,217)
Mar-17	\$ 48,725,740	\$ 43,877,732	\$ 21,349,792	\$ 21,394,634	\$ 70,075,532	\$ 65,272,366	\$ (4,803,166)	\$ 66,149,921	\$ 64,833,589	\$ (5,241,943)
Apr-17	\$ 52,697,678	\$ 54,971,614	\$ 19,089,611	\$ 19,110,414	\$ 71,787,289	\$ 74,082,028	\$ 2,294,739	\$ 75,181,460	\$ 73,532,312	\$ 1,745,023
May-17	\$ 40,864,906	\$ 43,078,689	\$ 19,198,995	\$ 19,220,208	\$ 60,063,901	\$ 62,298,897	\$ 2,234,996	\$ 63,160,471	\$ 61,868,110	\$ 1,804,209
Jun-17	\$ 35,990,530	\$ 39,210,314	\$ 19,254,604	\$ 19,274,132	\$ 55,245,134	\$ 58,484,446	\$ 3,239,312	\$ 59,268,652	\$ 58,092,343	\$ 2,847,209
Jul-17	\$ 28,368,389	\$ 32,478,417	\$ 19,210,133	\$ 19,229,706	\$ 47,578,522	\$ 51,708,123	\$ 4,129,601	\$ 52,357,691	\$ 51,383,339	\$ 3,804,817
Aug-17	\$ 21,049,893	\$ 29,403,232	\$ 19,199,153	\$ 19,218,726	\$ 40,249,046	\$ 48,621,958	\$ 8,372,912	\$ 49,210,023	\$ 48,327,926	\$ 8,078,880
Sep-17	\$ 12,991,217	\$ 25,092,160	\$ 19,078,292	\$ 19,097,503	\$ 32,069,509	\$ 44,189,663	\$ 12,120,154	\$ 44,691,506	\$ 43,938,741	\$ 11,869,232
Oct-17	\$ 21,931,118	\$ 31,890,371	\$ 19,067,161	\$ 19,093,244	\$ 40,998,279	\$ 50,983,615	\$ 9,985,336	\$ 51,621,422	\$ 50,664,711	\$ 9,666,432
Total	\$ 590,819,360	\$ 607,482,537	\$ 243,509,532	\$ 243,885,190	\$ 834,328,892	\$ 851,367,727	\$ 17,038,835	\$ 863,517,378	\$ 845,292,902	\$ 10,964,010
MPF adjustment 19-22	\$ 546,147	\$ 546,147	\$ -	\$ -	\$ 546,147	\$ 546,147	\$ -	\$ 557,070	\$ 540,686	\$ (5,461)
MPF adjustment Year 23	\$ -	\$ 149,229	\$ -	\$ -	\$ -	\$ 149,229	\$ 149,229	\$ 152,214	\$ 147,737	\$ 147,737
EL Paso Refund 18-23	\$ (2,032,190)	\$ (326,317)	\$ (927)	\$ (927)	\$ (2,033,117)	\$ (327,244)	\$ 1,705,873	\$ (333,770)	\$ (323,981)	\$ 1,709,136
	\$ 589,333,317	\$ 607,851,596	\$ 243,508,605	\$ 243,884,263	\$ 832,841,922	\$ 851,735,859	\$ 18,893,937	\$ 863,892,891	\$ 845,657,343	\$ 12,815,421

Pacific Gas and Electric Company
 CPIM Year 24
 November 1, 2016 - October 31, 2017
 CPIM Calculation

	Actual		Benchmark		Under/Over
Commodity Costs	\$ 773,217,431	\$	600,906,904	\$	(172,310,527)
Volumetric Transportation Costs	\$ 24,542,004	\$	-	\$	(24,542,004)
Commodity Sales	\$ (211,010,655)	\$	-	\$	211,010,655
Total Gas Purchase Costs	\$ 586,748,780	\$	600,906,904	\$	14,158,124
Other Costs and Revenues	\$ (4,112,339)	\$	-	\$	4,112,339
Winter Hedging Costs	\$ 8,036,432	\$	6,429,146	\$	(1,607,286)
Customs & Border Protection Merchandise Processing Fee	\$ 146,487	\$	146,487	\$	-
Total Commodity Costs	\$ 590,819,360	\$	607,482,537	\$	16,663,177
Demand Charges	\$ 180,257,547	\$	180,257,547	\$	-
Discount Demand Charges	\$ (375,658)	\$	-	\$	375,658
Capacity Release Revenues	\$ -	\$	-	\$	-
Firm Storage Costs	\$ 63,627,643	\$	63,627,643	\$	-
Total Reservation Costs	\$ 243,509,532	\$	243,885,190	\$	375,658
sub Total	\$ 834,328,892	\$	851,367,727	\$	17,038,835
Customs & Border Protection Merchandise Processing Fee Adjustment For GCIM 19-23	\$ 546,147	\$	695,376	\$	149,229
El Paso Refund For Year 18-23	\$ (2,033,117)	\$	(327,244)	\$	1,705,873
Total	\$ 832,841,922	\$	851,735,859	\$	18,893,937

Pacific Gas and Electric Company
CPIM Year 24
November 1, 2016 - October 31, 2017

	Monthly Actual Cost												Total
	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	
Commodity Costs	\$ 70,440,986	\$ 112,196,732	\$ 121,977,584	\$ 80,649,254	\$ 61,225,317	\$ 55,463,354	\$ 49,532,368	\$ 50,759,013	\$ 47,093,672	\$ 44,835,531	\$ 39,073,914	\$ 39,969,706	\$ 773,217,431
Volumetric Transportation Costs	\$ 2,695,006	\$ 2,301,062	\$ 2,330,504	\$ 2,181,488	\$ 2,370,524	\$ 1,815,881	\$ 1,927,829	\$ 1,779,730	\$ 1,822,355	\$ 1,821,958	\$ 1,789,715	\$ 1,705,952	\$ 24,542,004
Commodity Sales	\$ (19,986,005)	\$ (23,671,369)	\$ (23,014,902)	\$ (7,258,903)	\$ (14,744,140)	\$ (4,276,046)	\$ (10,539,305)	\$ (16,605,712)	\$ (20,287,667)	\$ (25,181,488)	\$ (27,322,981)	\$ (18,122,137)	\$ (211,010,655)
Total Gas Purchase Costs	\$ 53,149,987	\$ 90,826,425	\$ 101,293,186	\$ 75,571,839	\$ 48,851,701	\$ 53,003,189	\$ 40,920,892	\$ 35,933,031	\$ 28,628,360	\$ 21,476,001	\$ 13,540,648	\$ 23,553,521	\$ 586,748,780
Other Costs and Revenues	\$ (203,752)	\$ 130,075	\$ (295,548)	\$ (357,242)	\$ (138,361)	\$ (317,511)	\$ (68,386)	\$ 45,499	\$ (272,371)	\$ (438,508)	\$ (561,431)	\$ (1,634,803)	\$ (4,112,339)
100% Winter Hedging Costs	\$ -	\$ 3,011,700	\$ 2,304,487	\$ 2,720,245	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,036,432
Custom and Border Protection													
Marchandise Processing Fee	\$ 12,487	\$ 12,400	\$ 12,400	\$ 11,200	\$ 12,400	\$ 12,000	\$ 12,400	\$ 12,000	\$ 12,400	\$ 12,400	\$ 12,000	\$ 12,400	\$ 146,487
Total Commodity Costs	\$ 52,958,722	\$ 93,980,600	\$ 103,314,525	\$ 77,946,042	\$ 48,725,740	\$ 52,697,678	\$ 40,864,906	\$ 35,990,530	\$ 28,368,389	\$ 21,049,893	\$ 12,991,217	\$ 21,931,118	\$ 590,819,360
Demand Charges	\$ 16,594,480	\$ 16,707,550	\$ 17,098,596	\$ 16,714,771	\$ 16,222,889	\$ 13,884,040	\$ 13,993,834	\$ 13,881,088	\$ 13,836,662	\$ 13,825,682	\$ 13,751,107	\$ 13,746,848	\$ 180,257,547
Discount Demand Charges	\$ (47,371)	\$ (47,050)	\$ (47,050)	\$ (43,361)	\$ (44,842)	\$ (20,803)	\$ (21,213)	\$ (19,528)	\$ (19,573)	\$ (19,573)	\$ (19,211)	\$ (26,083)	\$ (375,658)
Capacity Release Revenues	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Firm Storage Costs	\$ 5,227,198	\$ 5,227,198	\$ 5,338,415	\$ 5,338,415	\$ 5,171,745	\$ 5,226,374	\$ 5,226,374	\$ 5,393,044	\$ 5,393,044	\$ 5,393,044	\$ 5,346,396	\$ 5,346,396	\$ 63,627,643
Total Reservation Costs	\$ 21,774,307	\$ 21,887,698	\$ 22,389,961	\$ 22,009,825	\$ 21,349,792	\$ 19,089,611	\$ 19,198,995	\$ 19,254,604	\$ 19,210,133	\$ 19,199,153	\$ 19,078,292	\$ 19,067,161	\$ 243,509,532
Actual Costs	\$ 74,733,029	\$ 115,868,298	\$ 125,704,486	\$ 99,955,867	\$ 70,075,532	\$ 71,787,289	\$ 60,063,901	\$ 55,245,134	\$ 47,578,522	\$ 40,249,046	\$ 32,069,509	\$ 40,998,279	\$ 834,328,892

2-4
Pacific Gas and Electric Company
CPIM Year 24
November 1, 2016 - October 31, 2017
Monthly Benchmark Cost

	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Total
Commodity Cost	\$ 50,052,136	\$ 86,202,690	\$ 102,096,092	\$ 62,651,457	\$ 43,865,332	\$ 54,959,614	\$ 43,066,289	\$ 39,198,314	\$ 32,466,017	\$ 29,390,832	\$ 25,080,160	\$ 31,877,971	\$ 600,906,904
Volumetric Transportation Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Commodity Sales	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Gas Purchase Cost	\$ 50,052,136	\$ 86,202,690	\$ 102,096,092	\$ 62,651,457	\$ 43,865,332	\$ 54,959,614	\$ 43,066,289	\$ 39,198,314	\$ 32,466,017	\$ 29,390,832	\$ 25,080,160	\$ 31,877,971	\$ 600,906,904
Other Costs and Revenues	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
100% Winter Hedging Cost	\$ -	\$ 2,409,360	\$ 1,843,590	\$ 2,176,196	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,429,146
Custom and Border Protection													
Merchandise Processing Fee	\$ 12,487	\$ 12,400	\$ 12,400	\$ 11,200	\$ 12,400	\$ 12,000	\$ 12,400	\$ 12,000	\$ 12,400	\$ 12,400	\$ 12,000	\$ 12,400	\$ 146,487
Total Commodity Cost	\$ 50,064,623	\$ 88,624,450	\$ 103,952,082	\$ 64,838,853	\$ 43,877,732	\$ 54,971,614	\$ 43,078,689	\$ 39,210,314	\$ 32,478,417	\$ 29,403,232	\$ 25,092,160	\$ 31,890,371	\$ 607,482,537
Demand Charge	\$ 16,594,480	\$ 16,707,550	\$ 17,098,596	\$ 16,714,771	\$ 16,222,889	\$ 13,884,040	\$ 13,993,834	\$ 13,881,088	\$ 13,836,662	\$ 13,825,682	\$ 13,751,107	\$ 13,746,848	\$ 180,257,547
Discount Demand Charges	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capacity Release Revenue	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Firm Storage Cost	\$ 5,227,198	\$ 5,227,198	\$ 5,338,415	\$ 5,338,415	\$ 5,171,745	\$ 5,226,374	\$ 5,226,374	\$ 5,393,044	\$ 5,393,044	\$ 5,393,044	\$ 5,346,396	\$ 5,346,396	\$ 63,627,643
Total Reservation Cost	\$ 21,821,678	\$ 21,934,748	\$ 22,437,011	\$ 22,053,186	\$ 21,394,634	\$ 19,110,414	\$ 19,220,208	\$ 19,274,132	\$ 19,229,706	\$ 19,218,726	\$ 19,097,503	\$ 19,093,244	\$ 243,885,190
Benchmark CPIM Commodity Cost	\$ 71,886,301	\$ 110,559,198	\$ 126,389,093	\$ 86,892,039	\$ 65,272,366	\$ 74,082,028	\$ 62,298,897	\$ 58,484,446	\$ 51,708,123	\$ 48,621,958	\$ 44,189,663	\$ 50,983,615	\$ 851,367,727

Pacific Gas and Electric Company
 CPIM Year 24
 November 1, 2016 - October 31, 2017
 Actual Commodity Purchases Summary

	CGT-													
	PGE Citygate	CGT	El Paso	GTN	Kern	Nova	Ruby	TW	Total					
Nov-16	\$ 10,074,819	\$ 7,155,403	\$ 1,692,284	\$ 2,882,436	\$ -	\$ 19,840,737	\$ 12,008,241	\$ 16,787,066	\$ 70,440,986					
Dec-16	\$ 34,532,804	\$ 15,179,561	\$ 2,076,157	\$ 2,597,990	\$ -	\$ 19,478,857	\$ 17,291,467	\$ 21,039,896	\$ 112,196,732					
Jan-17	\$ 23,230,538	\$ 18,133,735	\$ 2,222,001	\$ 4,521,493	\$ -	\$ 24,747,468	\$ 24,978,437	\$ 24,143,912	\$ 121,977,584					
Feb-17	\$ 13,971,944	\$ 13,002,525	\$ 1,799,431	\$ 1,804,910	\$ -	\$ 18,217,183	\$ 12,779,676	\$ 19,073,585	\$ 80,649,254					
Mar-17	\$ 4,827,951	\$ 10,867,913	\$ 1,462,589	\$ 1,819,748	\$ -	\$ 16,733,949	\$ 10,332,265	\$ 15,180,902	\$ 61,225,317					
Apr-17	\$ 11,037,680	\$ 7,227,961	\$ 1,591,526	\$ 2,611,500	\$ -	\$ 16,337,452	\$ 5,350,769	\$ 11,306,466	\$ 55,463,354					
May-17	\$ 2,620,878	\$ 7,284,335	\$ 1,610,776	\$ 1,281,264	\$ -	\$ 18,415,097	\$ 6,189,831	\$ 12,130,187	\$ 49,532,368					
Jun-17	\$ 307,578	\$ 7,302,314	\$ 1,525,862	\$ 3,068,794	\$ -	\$ 19,269,331	\$ 7,258,809	\$ 12,026,325	\$ 50,759,013					
Jul-17	\$ -	\$ 8,982,660	\$ 1,601,651	\$ 1,440,997	\$ -	\$ 16,863,628	\$ 7,393,728	\$ 10,811,008	\$ 47,093,672					
Aug-17	\$ 55,983	\$ 9,362,727	\$ 1,556,025	\$ 1,552,044	\$ -	\$ 14,802,805	\$ 7,031,995	\$ 10,473,952	\$ 44,835,531					
Sep-17	\$ 260,838	\$ 8,521,265	\$ 1,485,427	\$ 1,022,128	\$ -	\$ 10,452,426	\$ 6,883,265	\$ 10,448,565	\$ 39,073,914					
Oct-17	\$ 2,557,160	\$ 7,113,692	\$ 1,466,464	\$ 1,111,961	\$ -	\$ 10,591,196	\$ 7,489,689	\$ 9,639,544	\$ 39,969,706					
Total	\$ 103,478,173	\$ 120,134,091	\$ 20,090,193	\$ 25,715,265	\$ -	\$ 205,750,129	\$ 124,988,172	\$ 173,061,408	\$ 773,217,431					

Pacific Gas and Electric Company
 CPIM Year 24
 November 1, 2016 - October 31, 2017
 Volumetric Transportation Costs

	El Paso Natural Gas Company, LLC	Gas Transmission Northwest LLC	Kern River Gas Transmission Company	PG&E California Gas Transmission	Ruby Pipeline, LLC	Transcanada	Transwestern Pipeline Company	Williams Field Services Complany, LLC	Total
Nov-16	\$ 15,420	\$ 91,350	\$ -	\$ 2,227,906	\$ 277,842	\$ -	\$ 74,337	\$ 8,151	\$ 2,695,006
Dec-16	\$ 10,177	\$ 92,279	\$ -	\$ 1,872,716	\$ 248,260	\$ -	\$ 70,531	\$ 7,099	\$ 2,301,062
Jan-17	\$ 13,170	\$ 88,024	\$ -	\$ 1,872,555	\$ 273,966	\$ -	\$ 77,328	\$ 5,461	\$ 2,330,504
Feb-17	\$ 12,300	\$ 89,589	\$ -	\$ 1,752,501	\$ 246,101	\$ -	\$ 69,894	\$ 11,103	\$ 2,181,488
Mar-17	\$ 12,837	\$ 94,272	\$ -	\$ 1,912,900	\$ 266,141	\$ -	\$ 77,102	\$ 7,272	\$ 2,370,524
Apr-17	\$ 12,586	\$ 91,064	\$ -	\$ 1,386,906	\$ 292,261	\$ -	\$ 18,673	\$ 14,391	\$ 1,815,881
May-17	\$ 12,935	\$ 94,505	\$ -	\$ 1,449,316	\$ 335,769	\$ -	\$ 19,363	\$ 15,941	\$ 1,927,829
Jun-17	\$ 12,949	\$ 90,834	\$ -	\$ 1,372,571	\$ 270,648	\$ -	\$ 18,661	\$ 14,067	\$ 1,779,730
Jul-17	\$ 12,858	\$ 92,514	\$ -	\$ 1,458,299	\$ 226,302	\$ -	\$ 18,943	\$ 13,439	\$ 1,822,355
Aug-17	\$ 13,062	\$ 88,963	\$ -	\$ 1,459,258	\$ 228,536	\$ -	\$ 18,873	\$ 13,266	\$ 1,821,958
Sep-17	\$ 12,525	\$ 89,204	\$ -	\$ 1,431,882	\$ 224,076	\$ -	\$ 18,339	\$ 13,689	\$ 1,789,715
Oct-17	\$ 10,009	\$ 88,564	\$ -	\$ 1,392,177	\$ 182,576	\$ -	\$ 19,772	\$ 12,854	\$ 1,705,952
Total	\$ 150,828	\$ 1,091,162	\$ -	\$ 19,588,987	\$ 3,072,478	\$ -	\$ 501,816	\$ 136,733	\$ 24,542,004

2-7
Pacific Gas and Electric Company
CPIM Year 24
November 1, 2016 - October 31, 2017
Commodity Sales Revenue

	CGT- PG&E Citygate	CGT -All	El Paso	GTN	Kern	Nova	Ruby	TW	WFS	Total
Nov-16	\$ (17,321,801)	\$ -	\$ -	\$ (530,198)	\$ -	\$ (653,021)	\$ (364,642)	\$ (109,759)	\$ (1,006,584)	\$ (19,986,005)
Dec-16	\$ (3,308,295)	\$ (753,049)	\$ (646,163)	\$ (4,503,887)	\$ -	\$ (10,909)	\$ (1,113,050)	\$ (9,089,665)	\$ (4,246,351)	\$ (23,671,369)
Jan-17	\$ (629,487)	\$ (1,700)	\$ (66,300)	\$ (8,061,850)	\$ -	\$ (27,671)	\$ (2,556,837)	\$ (8,218,061)	\$ (3,452,996)	\$ (23,014,902)
Feb-17	\$ (83,307)	\$ -	\$ -	\$ (75,050)	\$ -	\$ (78,078)	\$ (876,234)	\$ (5,266,270)	\$ (879,964)	\$ (7,258,903)
Mar-17	\$ (9,253,246)	\$ (37,301)	\$ (17,491)	\$ (53,424)	\$ -	\$ (468,294)	\$ (199,838)	\$ (3,143,359)	\$ (1,571,187)	\$ (14,744,140)
Apr-17	\$ (3,264,187)	\$ (147,384)	\$ -	\$ (28,575)	\$ -	\$ (122,801)	\$ -	\$ (25,704)	\$ (687,395)	\$ (4,276,046)
May-17	\$ (9,676,816)	\$ -	\$ (7,830)	\$ (1,695)	\$ -	\$ (365,363)	\$ (20,888)	\$ -	\$ (466,713)	\$ (10,539,305)
Jun-17	\$ (12,713,924)	\$ (13,000)	\$ -	\$ (120,506)	\$ (604,736)	\$ (29,284)	\$ (77,350)	\$ (449,171)	\$ (2,597,741)	\$ (16,605,712)
Jul-17	\$ (17,752,156)	\$ (66,451)	\$ (26,700)	\$ (152,720)	\$ -	\$ (111,736)	\$ (120,063)	\$ (1,282,506)	\$ (775,335)	\$ (20,287,667)
Aug-17	\$ (22,890,571)	\$ -	\$ -	\$ -	\$ (13,350)	\$ (482,594)	\$ -	\$ (1,523,947)	\$ (271,026)	\$ (25,181,488)
Sep-17	\$ (25,043,513)	\$ (184,050)	\$ -	\$ (113,700)	\$ (102,242)	\$ (143,000)	\$ (26,900)	\$ (1,379,998)	\$ (329,578)	\$ (27,322,981)
Oct-17	\$ (16,432,374)	\$ (76,900)	\$ (340,182)	\$ (500,623)	\$ (81,525)	\$ (235,520)	\$ (96,629)	\$ (13,899)	\$ (344,485)	\$ (18,122,137)
Total	\$ (138,369,677)	\$ (1,279,835)	\$ (1,104,666)	\$ (14,142,228)	\$ (801,853)	\$ (2,728,271)	\$ (5,452,431)	\$ (30,502,339)	\$ (16,629,355)	\$ (211,010,655)

\$ (211,010,655)

\$ -

2-8
Pacific Gas and Electric Company
CPIM Year 24
November 1, 2016 - October 31, 2017
Demand Charges Summary

	El Paso Natural Gas Company LLC	Gas Transmission Northwest LLC	PG&E California Transmission	Ruby Pipeline, LLC	Transcanada-Foothills Pipelines Ltd	Transcanda Nova Gas Transmission Ltd	Transwestern Pipeline Company	Total
Nov-16	\$ 98,133	\$ 2,563,119	\$ 6,782,649	\$ 4,169,353	\$ 598,812	\$ 1,233,436	\$ 1,148,978	\$ 16,594,480
Dec-16	\$ 98,098	\$ 2,648,556	\$ 6,782,649	\$ 4,169,605	\$ 595,256	\$ 1,226,109	\$ 1,187,277	\$ 16,707,550
Jan-17	\$ 98,098	\$ 2,648,556	\$ 7,060,745	\$ 4,169,605	\$ 530,081	\$ 1,404,234	\$ 1,187,277	\$ 17,098,596
Feb-17	\$ 98,098	\$ 2,392,245	\$ 7,060,745	\$ 4,167,879	\$ 527,097	\$ 1,396,328	\$ 1,072,379	\$ 16,714,771
Mar-17	\$ 93,251	\$ 2,517,571	\$ 6,711,518	\$ 3,963,402	\$ 494,314	\$ 1,314,294	\$ 1,128,539	\$ 16,222,889
Apr-17	\$ 93,251	\$ 2,436,359	\$ 5,329,141	\$ 3,962,784	\$ 485,158	\$ 1,289,947	\$ 287,400	\$ 13,884,040
May-17	\$ 93,251	\$ 2,517,561	\$ 5,329,141	\$ 3,963,355	\$ 490,198	\$ 1,303,348	\$ 296,980	\$ 13,993,834
Jun-17	\$ 93,251	\$ 2,436,355	\$ 5,329,141	\$ 3,962,787	\$ 503,921	\$ 1,268,233	\$ 287,400	\$ 13,881,088
Jul-17	\$ 91,742	\$ 2,476,862	\$ 5,242,968	\$ 3,904,913	\$ 519,809	\$ 1,308,209	\$ 292,159	\$ 13,836,662
Aug-17	\$ 91,742	\$ 2,476,862	\$ 5,242,968	\$ 3,899,276	\$ 518,289	\$ 1,304,385	\$ 292,160	\$ 13,825,682
Sep-17	\$ 91,742	\$ 2,396,964	\$ 5,242,968	\$ 3,898,639	\$ 522,664	\$ 1,315,395	\$ 282,735	\$ 13,751,107
Oct-17	\$ 91,742	\$ 2,474,743	\$ 5,210,630	\$ 3,899,318	\$ 505,659	\$ 1,272,597	\$ 292,159	\$ 13,746,848
Total	\$ 1,132,399	\$ 29,985,753	\$ 71,325,263	\$ 48,130,916	\$ 6,291,258	\$ 15,636,515	\$ 7,755,443	\$ 180,257,547

Demand charge are net of CTA stranded cost, CTA capacity release,

Pacific Gas and Electric Company

CPIM Year 24

November 1, 2016 - October 31, 2017

Other Commodity Costs and Revenues

	Cochrane Extraction Revenue	Non-Winter Hedge Costs and Revenues	Miscellaneous Costs and Revenues	Total
Nov-16	\$ (223,613)	\$ -	\$ 19,861	\$ (203,752)
Dec-16	\$ (292,868)	\$ 395,233	\$ 27,710	\$ 130,075
Jan-17	\$ (380,453)	\$ 52,041	\$ 32,864	\$ (295,548)
Feb-17	\$ (374,078)	\$ (10,780)	\$ 27,616	\$ (357,242)
Mar-17	\$ (241,485)	\$ 73,238	\$ 29,886	\$ (138,361)
Apr-17	\$ (243,382)	\$ (90,462)	\$ 16,333	\$ (317,511)
May-17	\$ (236,719)	\$ 155,443	\$ 12,890	\$ (68,386)
Jun-17	\$ (2,639)	\$ 27,150	\$ 20,988	\$ 45,499
Jul-17	\$ (242,178)	\$ (49,561)	\$ 19,368	\$ (272,371)
Aug-17	\$ (284,400)	\$ (195,998)	\$ 41,890	\$ (438,508)
Sep-17	\$ (462,400)	\$ (116,550)	\$ 17,519	\$ (561,431)
Oct-17	\$ (460,579)	\$ (1,187,378)	\$ 13,154	\$ (1,634,803)
Total	\$ (3,444,794)	\$ (947,624)	\$ 280,079	\$ (4,112,339)

2-10

Pacific Gas and Electric Company
CPIM Year 24
November 1, 2016 - October 31, 2017
Winter Hedge Transaction

	Option	Option and Swap		Winter Hedge
	Premiums	Settlements	Commissoin and Fee	Costs
				Total
Nov-16	\$ -	\$ -	\$ -	\$ -
Dec-16	\$ 3,008,145	\$ -	\$ 3,555	\$ 3,011,700
Jan-17	\$ 3,008,145	\$ (707,213)	\$ 3,555	\$ 2,304,487
Feb-17	\$ 2,717,034	\$ -	\$ 3,211	\$ 2,720,245
Mar-17	\$ -	\$ -	\$ -	\$ -
Apr-17	\$ -	\$ -	\$ -	\$ -
May-17	\$ -	\$ -	\$ -	\$ -
Jun-17	\$ -	\$ -	\$ -	\$ -
Jul-17	\$ -	\$ -	\$ -	\$ -
Aug-17	\$ -	\$ -	\$ -	\$ -
Sep-17	\$ -	\$ -	\$ -	\$ -
Oct-17	\$ -	\$ -	\$ -	\$ -
Total	\$ 8,733,324	\$ (707,213)	\$ 10,321	\$ 8,036,432

Pacific Gas and Electric Company
 CPIM Year 24
 November 1, 2016 - October 31, 2017
 Demand Charge Discounts Summary

	El Paso Natural Gas Company LLC	Gas Transmission Northwest LLC	Transwestern Pipeline Company	Total
Nov-16	\$ (10,484)	\$ (2,418)	\$ (34,469)	\$ (47,371)
Dec-16	\$ (8,933)	\$ (2,499)	\$ (35,618)	\$ (47,050)
Jan-17	\$ (8,933)	\$ (2,499)	\$ (35,618)	\$ (47,050)
Feb-17	\$ (8,933)	\$ (2,257)	\$ (32,171)	\$ (43,361)
Mar-17	\$ (8,492)	\$ (2,494)	\$ (33,856)	\$ (44,842)
Apr-17	\$ (8,492)	\$ (2,414)	\$ (9,897)	\$ (20,803)
May-17	\$ (8,492)	\$ (2,494)	\$ (10,227)	\$ (21,213)
Jun-17	\$ (8,492)	\$ (2,414)	\$ (8,622)	\$ (19,528)
Jul-17	\$ (8,354)	\$ (2,454)	\$ (8,765)	\$ (19,573)
Aug-17	\$ (8,354)	\$ (2,454)	\$ (8,765)	\$ (19,573)
Sep-17	\$ (8,354)	\$ (2,375)	\$ (8,482)	\$ (19,211)
Oct-17	\$ (8,354)	\$ (2,454)	\$ (15,275)	\$ (26,083)
Total	\$ (104,667)	\$ (29,226)	\$ (241,765)	\$ (375,658)

2-13
Pacific Gas and Electric Company
CPIM Year 24
November 1, 2016 - October 31, 2017
Firm Incremental Storage

	PG&E California				
	Transmission	Gas Storage-003	Gas Storage-002	Total	
Nov-16	\$ 5,060,528	\$ 166,670	\$ -	\$ 5,227,198	
Dec-16	\$ 5,060,528	\$ 166,670	\$ -	\$ 5,227,198	
Jan-17	\$ 5,171,745	\$ 166,670	\$ -	\$ 5,338,415	
Feb-17	\$ 5,171,745	\$ 166,670	\$ -	\$ 5,338,415	
Mar-17	\$ 5,171,745	\$ -	\$ -	\$ 5,171,745	
Apr-17	\$ 5,226,374	\$ -	\$ -	\$ 5,226,374	
May-17	\$ 5,226,374	\$ -	\$ -	\$ 5,226,374	
Jun-17	\$ 5,226,374	\$ 166,670	\$ -	\$ 5,393,044	
Jul-17	\$ 5,226,374	\$ 166,670	\$ -	\$ 5,393,044	
Aug-17	\$ 5,226,374	\$ 166,670	\$ -	\$ 5,393,044	
Sep-17	\$ 5,179,726	\$ 166,670	\$ -	\$ 5,346,396	
Oct-17	\$ 5,179,726	\$ 166,670	\$ -	\$ 5,346,396	
Total	\$ 62,127,613	\$ 1,500,030	\$ -	\$ 63,627,643	

2-14
Pacific Gas and Electric Company
CPIM Year 24
November 1, 2016 - October 31, 2017
Benchmark Commodity Cost

	Ruby Opal	NOVA Aeco	TW San Juan	GTN Kingsgate	Topock-Baja	Citygate	Total
Nov-16	\$ 13,033,717	\$ 18,653,660	\$ 9,779,680	\$ 117,874	\$ 3,113,221	\$ 5,353,984	\$ 50,052,136
Dec-16	\$ 18,194,401	\$ 20,072,282	\$ 16,568,232	\$ 129,576	\$ 9,544,171	\$ 21,694,028	\$ 86,202,690
Jan-17	\$ 23,925,198	\$ 25,397,264	\$ 20,516,775	\$ 108,097	\$ 10,047,173	\$ 22,101,585	\$ 102,096,092
Feb-17	\$ 17,653,206	\$ 18,691,983	\$ 14,444,340	\$ 107,314	\$ 4,570,649	\$ 7,183,965	\$ 62,651,457
Mar-17	\$ 11,424,985	\$ 16,639,508	\$ 8,634,713	\$ 62,600	\$ 2,279,428	\$ 4,824,098	\$ 43,865,332
Apr-17	\$ 15,965,837	\$ 16,965,076	\$ 4,861,086	\$ -	\$ 6,595,092	\$ 10,572,523	\$ 54,959,614
May-17	\$ 15,295,861	\$ 18,742,928	\$ 4,956,285	\$ 16,318	\$ 3,000,281	\$ 1,054,616	\$ 43,066,289
Jun-17	\$ 13,334,731	\$ 19,823,954	\$ 5,114,001	\$ 113,585	\$ 788,749	\$ 23,294	\$ 39,198,314
Jul-17	\$ 10,082,284	\$ 17,316,810	\$ 4,977,577	\$ 89,346	\$ -	\$ -	\$ 32,466,017
Aug-17	\$ 8,973,851	\$ 15,385,999	\$ 4,917,773	\$ 113,209	\$ -	\$ -	\$ 29,390,832
Sep-17	\$ 9,513,243	\$ 10,760,978	\$ 4,689,660	\$ 101,093	\$ 15,186	\$ -	\$ 25,080,160
Oct-17	\$ 13,226,607	\$ 11,146,316	\$ 4,493,331	\$ 136,448	\$ 1,980,720	\$ 894,549	\$ 31,877,971
Total	\$ 170,623,921	\$ 209,596,758	\$ 103,953,453	\$ 1,095,460	\$ 41,934,670	\$ 73,702,642	\$ 600,906,904

2-15

Pacific Gas and Electric Company

CPIM Year 24

November 1, 2016 - October 31, 2017

Benchmark Winter Hedge Costs

	Option Premiums	Option and Swap Settlements	Commision and Fees	Total
Nov-16	\$ -	\$ -	\$ -	\$ -
Dec-16	\$ 2,406,516	\$ -	\$ 2,844	\$ 2,409,360
Jan-17	\$ 2,406,516	\$ (565,770)	\$ 2,844	\$ 1,843,590
Feb-17	\$ 2,173,627	\$ -	\$ 2,569	\$ 2,176,196
Mar-17	\$ -	\$ -	\$ -	\$ -
Apr-17	\$ -	\$ -	\$ -	\$ -
May-17	\$ -	\$ -	\$ -	\$ -
Jun-17	\$ -	\$ -	\$ -	\$ -
Jul-17	\$ -	\$ -	\$ -	\$ -
Aug-17	\$ -	\$ -	\$ -	\$ -
Sep-17	\$ -	\$ -	\$ -	\$ -
Oct-17	\$ -	\$ -	\$ -	\$ -
Total	\$ 6,986,659	\$ (565,770)	\$ 8,257	\$ 6,429,146

Pacific Gas and Electric Company

CPIM Year 24

November 1, 2016 - October 31, 2017

Actual Commodity Purchases Volume Summary in MMBtu

	CGT-									
	PGE Citygate	CGT	El Paso	GTN	Kern	Nova	Ruby	TW	WFS	Total
Nov-16	3,166,005	3,056,916	726,209	1,315,700	-	8,885,784	4,524,623	4,676,342	1,878,205	28,229,784
Dec-16	9,187,920	4,363,779	649,831	745,928	-	9,204,251	5,530,063	4,851,416	1,873,100	36,406,288
Jan-17	6,253,881	5,301,972	639,676	1,256,100	-	9,221,785	6,834,667	4,848,308	1,953,263	36,309,652
Feb-17	4,476,284	4,612,090	577,920	630,900	-	8,390,834	4,085,615	4,382,213	1,736,409	28,892,265
Mar-17	1,576,394	4,279,017	608,975	696,206	-	9,041,037	4,434,932	4,683,092	1,860,000	27,179,653
Apr-17	3,304,106	2,579,765	589,560	962,300	-	8,480,592	2,010,900	1,180,150	3,089,500	22,196,873
May-17	757,413	2,614,338	607,298	469,300	-	8,961,610	2,345,288	1,214,022	3,410,000	20,379,269
Jun-17	98,476	2,617,698	589,533	1,166,966	-	8,515,093	2,583,904	1,169,989	3,168,983	19,910,642
Jul-17	-	3,241,187	609,354	563,807	-	8,707,500	2,794,000	1,188,563	2,896,200	20,000,611
Aug-17	17,400	3,372,495	599,326	575,564	-	8,638,214	2,697,700	1,183,317	2,823,800	19,907,816
Sep-17	80,000	3,084,346	579,714	381,500	-	8,479,266	2,637,200	1,149,837	2,858,502	19,250,365
Oct-17	810,264	2,790,360	599,354	433,014	-	8,735,366	2,996,687	1,198,336	2,686,100	20,249,481
Total	29,728,143	41,913,963	7,376,750	9,197,285	-	105,261,332	43,475,579	31,725,585	30,234,062	298,912,699

Pacific Gas and Electric Company

CPIM Year 24

November 1, 2016 - October 31, 2017

Actual Commodity Sale Volume in MMBtu Summary

	CGT- PGE Citygate	CGT- All	El Paso	GTN	Kern	Nova	Ruby	TW	WFS	Total
Nov-16	(6,451,418)	-	-	(205,500)	-	(356,569)	(169,194)	(50,484)	(461,205)	(7,694,370)
Dec-16	(888,508)	(204,927)	(180,000)	(1,245,494)	-	(4,739)	(305,000)	(2,578,176)	(1,214,300)	(6,621,144)
Jan-17	(172,864)	(500)	(20,000)	(2,237,745)	-	(11,374)	(677,532)	(2,278,828)	(992,050)	(6,390,893)
Feb-17	(24,996)	-	-	(28,700)	-	(38,671)	(279,947)	(1,722,513)	(345,909)	(2,440,736)
Mar-17	(2,936,200)	(15,400)	(6,770)	(20,600)	-	(248,612)	(75,169)	(1,297,767)	(632,400)	(5,232,918)
Apr-17	(1,004,200)	(53,400)	-	(10,000)	-	(60,660)	-	(9,389)	(247,800)	(1,385,449)
May-17	(2,894,920)	-	(2,470)	(600)	-	(175,630)	(7,500)	-	(172,788)	(3,253,908)
Jun-17	(3,924,423)	(5,000)	-	(47,605)	(231,504)	(15,639)	(30,000)	(140,065)	(997,633)	(5,391,869)
Jul-17	(5,491,500)	(23,392)	(10,000)	(57,599)	-	(66,523)	(13,600)	(447,700)	(318,100)	(6,428,414)
Aug-17	(6,975,862)	-	-	-	(5,000)	(328,229)	-	(506,375)	(105,100)	(7,920,566)
Sep-17	(7,526,500)	(70,000)	-	(44,201)	(44,600)	(115,823)	(10,000)	(477,686)	(135,302)	(8,424,112)
Oct-17	(5,203,100)	(30,000)	(135,338)	(189,415)	(30,000)	(397,799)	(36,255)	(5,910)	(129,200)	(6,157,017)
Total	(43,494,491)	(402,619)	(354,578)	(4,087,459)	(311,104)	(1,820,268)	(1,604,197)	(9,514,893)	(5,751,787)	(67,341,396)

2-18

Pacific Gas and Electric Company

CPIM Year 24

November 1, 2016 - October 31, 2017

Benchmark Load

	Ruby Opal	NOVA Aeco	TW San Juan	GTN Kingsgate	KR Opal	Topock-Baja	Citygate	Total
Nov-16	4,680,124	7,662,691	3,572,278	44,160	-	1,098,074	1,594,466	18,651,793
Dec-16	5,758,811	8,732,686	5,039,466	51,181	-	2,603,902	5,742,958	27,929,004
Jan-17	6,135,940	8,820,337	5,260,080	34,565	-	2,912,284	6,049,658	29,212,864
Feb-17	5,395,795	7,933,436	4,236,995	41,216	-	1,667,716	2,340,763	21,615,921
Mar-17	4,679,110	8,238,606	3,430,205	27,652	-	869,899	1,575,686	18,821,158
Apr-17	5,679,150	8,177,250	1,703,730	-	-	2,254,360	3,166,716	20,981,206
May-17	5,480,344	8,405,929	1,760,521	6,603	-	1,001,626	302,526	16,957,549
Jun-17	4,499,942	8,055,570	1,703,730	42,060	-	289,863	7,563	14,598,728
Jul-17	3,621,480	8,141,220	1,731,970	37,572	-	-	-	13,532,242
Aug-17	3,270,983	8,177,298	1,731,970	53,103	-	-	-	13,233,354
Sep-17	3,467,592	7,725,510	1,676,100	61,410	-	5,451	-	12,936,063
Oct-17	5,036,546	8,106,810	1,731,970	84,196	-	746,977	286,675	15,993,174
Total	57,705,817	98,177,343	33,579,015	483,718	-	13,450,152	21,067,011	224,463,056

Pacific Gas and Electric Company
CPIM Year 24

November 1, 2016 - October 31, 2017

Custom & Border Protection Merchandise Processing
Fee

Merchandise Processing Fee	
Nov-16	\$ 12,487
Dec-16	\$ 12,400
Jan-17	\$ 12,400
Feb-17	\$ 11,200
Mar-17	\$ 12,400
Apr-17	\$ 12,000
May-17	\$ 12,400
Jun-17	\$ 12,000
Jul-17	\$ 12,400
Aug-17	\$ 12,400
Sep-17	\$ 12,000
Oct-17	\$ 12,400
Total	\$ 146,487
