

PACIFIC GAS AND ELECTRIC COMPANY
2014 GENERAL RATE CASE
EXHIBIT (PG&E-X), ENERGY SUPPLY

WORKPAPERS SUPPORTING
CHAPTER X, HYDRO OPERATIONS COSTS

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FOR ILLUSTRATION PURPOSE ONLY

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Table X-1
Pacific Gas and Electric Company
Exhibit (PG&E-X), Chapter X
Hydro Operations Costs
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

No.	MWC	Description	Capital Expenditures									Reference	
			2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast		2016 Forecast
1	3	Office Furniture & Equipment											
2	5	Tools & Equipment											
3	11	Power Gen Licenses & Permits											
4	12	Environmental											
5	13	Power Gen Safety & Regulatory											
6	81	Power Gen Maint Relabil/Avail											
7	85	IT - Infrastructure											
8		Total	-	-	-	-	-	-	-	-	-	-	

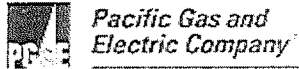


Table X-2
Pacific Gas and Electric Company
Exhibit (PG&E-X), Chapter X
Hydro Operations Costs
Capital Expenditures by Subprogram and Major Work Category
(Thousands of Nominal Dollars)

Line No.	Subprogram	MWC	Description	Capital Expenditures										Reference	
				2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast		
1	Regulatory	11	Licenses & Permits												
2	Environmental	12	Environmental Compliance												
3	Safety	13	Power Gen Safety												
4	Reliability	3	Office Furniture & Equipment												
5	Reliability	5	Tools & Equipment												
6	Reliability	85	IT - Infrastructure												
7	Reliability	81	Maintain Reliability & Availability												
8			Subtotal Reliability												
9			Total	-	-	-	-	-	-	-	-	-	-	-	



*Pacific Gas and
Electric Company*

**Table X-3
Pacific Gas and Electric Company
Exhibit (PG&E-X), Chapter X
Hydro Operations Costs
Forecast Capital Expenditures Summary
(Thousands of Nominal Dollars)**

Line No.	Description	Capital Expenditures					Reference
		2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	
1	Projects > \$1 million						
2	Other Works						
3	Total	-	-	-	-	-	

Table X-4
Pacific Gas and Electric Company
Hydro Operations Costs
Recorded CWIP and Forecast Capital Expenditures Details > \$1 Million
(Thousands of Nominal Dollars)

No.	Project No.	Description	MWC	Operative Date	Capital Expenditures					Subtotal	Reference
					CWIP Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast		
Other Capital Expenditures			3								
Other Capital Expenditures			5								
Projects Over \$1 Million											
1	5700287	RCC LC- Water Temperature Control	11								
2	5701979	Poe FERC 2107 Relicense	11								
3	5704039	UNFFR FERC 2105 Relicense	11								
4	5704359	Spring Gap-Stan FERC 2130 Relicense	11								
5	5705579	Kern Canyon FERC 0178 Relicense	11								
6	5706038	Chill Bar Relicense FERC 2155	11								
7	5710619	Bass Lake Inst Rip-Rap Embankment Reinf	11								
8	5716718	DeSabra Centerville Relicensing	11								
9	5719001	Spring Gap St LC - Dismantle A Bay Dam	11								
10	5719003	Spring Gap St LC-SandBar Dam Fish Scrms	11								
11	5719004	Spring Gap Stan LC - Stream Flow Mods	11								
12	5719039	McCloud-Pit FERC 2106 Relicense	11								
13	5719538	Drum Spaulding Relicensing	11								
14	5720509	Merced Falls FERC 2467 Relicense	11								
15	5720687	DeSabra-Centerville New FERC License Cond	11								
16	5720766	UNFFR LC- Lake Almanor Campgrounds	11								
17	5720779	Battle Cr Salmon/Steelhead Phase 1	11								
18	5720780	Pit 345 LC Recreation	11								
19	5720781	Pit 345 LC Roads	11								
20	5720782	Pit 345 LC Flow Rel	11								
21	5720787	Kilarc-Cow License Surrender	11								
22	5720793	Pit 1 New FERC License Conditions	11								
23	5722558	Philbrook Refurbish Spill Channel	11								
24	5729661	Potter Valley Construct Bypass	11								
25	5730480	Pit 4 Dam Low Level Outlet Shutoff Gates	11								
26	5732881	Kilarc-Cow Physical Decommissioning	11								
Subtotal Projects Over \$1 Million			11		-	-	-	-	-	-	
Subtotal Other Capital Expenditures			11		-	-	-	-	-	-	
			11 Total		-	-	-	-	-	-	
Projects Over \$1 Million											
27	5719029	Balch Camp Repl Sewer/Water	12								
28	5720653	Pit 5 Oil Spill Prevention U1 & U2	12								
29	5721738	Pit 5 U3 & U4 Oil Spill Prevention	12								
30	5722338	Belden Oil Spill Prevention	12								
31	5722339	Caribou 2 Oil Spill Prevention	12								
32	5726480	Rock Cr U1, U2 Oil Spill Prevention	12								
33	5729359	Pit 1 Oil Spill Prevention	12								
34	5729360	Pit 3 Oil Spill Prevention	12								
35	5729501	Kings River - Oil Spill Prevention	12								
Subtotal Projects Over \$1 Million			12		-	-	-	-	-	-	
Subtotal Other Capital Expenditures			12		-	-	-	-	-	-	
			12 Total		-	-	-	-	-	-	
Projects Over \$1 Million											
36	5718908	Canyon Dam Tower Seismic Retrofit Cap	13								
37	5720759	Canyon Dam Outlet Replace Lower Gates	13								
38	5720814	Courtright Dam Replace Slabs/Joints	13								
39	5720815	Wishon Dam Repl Slabs/Joints	13								
40	5721429	Bucks Penstock Fall Protection	13								
41	5724399	Drum 1&2 Penstock Tunnel Replacement	13								
42	5724401	Potter Valley Replace Fish Screen Screw Pump	13								
43	5724979	Crane Valley Dam - Seismic Upgrade	13								
44	5726860	Relief Dam Low Level Draft Valves	13								
45	5728218	Helms - Install Sergi System	13								
46	5728988	Helms - Install TPC System	13								
47	5729018	Pit 5 Arc Flash Remediation	13								
48	5729769	Helms - 13.8kV Breaker/Arc Relay Install	13								
49	5730439	Cresta Arc Flash Remediation	13								
50	5730440	Rock Cr Arc Flash Remediation	13								
51	5732366	Sand Bar Diversion - Install Cutoff Wal	13								
Subtotal Projects Over \$1 Million			13		-	-	-	-	-	-	
Subtotal Other Capital Expenditures			13		-	-	-	-	-	-	
			13 Total		-	-	-	-	-	-	
Projects Over \$1 Million											
52	5704040	Poe U2 Replace Runner	81								

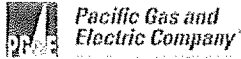


Table X-4
Pacific Gas and Electric Company
Hydro Operations Costs
Recorded CWIP and Forecast Capital Expenditures Details > \$1 Million
(Thousands of Nominal Dollars)

No.	Project No.	Description	MWC	Operative Date	CWIP	Capital Expenditures					Subtotal	Reference
					12/11 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast		
53	5715938	South Yuba Canal Gunite	81								-	
54	5718910	Caribou 2 Penstock Remediation	81								-	
55	5718918	Coal Canyon Replace M. Miocene 9/1 Flume	81								-	
56	5718919	Coal Canyon Replace Penstock	81								-	
57	5718947	Rock Cr Upgrade Units	81								-	
58	5719458	McCloud-Pit Cloud Seeding Project	81								-	
59	5720499	Dutch Flat Rewind & Protection	81								-	
60	5720500	Stanislaus PH Replace Governor Control	81								-	
61	5720513	Salt Springs 1 Rewind Stator and Reinsul	81								-	
62	5720521	Electra Unit 1 & 2 Replace TSVs	81								-	
63	5720527	Electra Rewind Unit 1 Stator	81								-	
64	5720528	Electra Rewind Unit 2	81								-	
65	5720542	Lake Valley Pipe Phase II Pipe Replacement	81								-	
66	5720573	Phoenix Flume Sheet Liner	81								-	
67	5720652	Pit 5 U2 Replace Wickets & Runner	81								-	
68	5720655	Pit 7 U2 Rewind	81								-	
69	5720656	Caribou 1-1 Rewind Unit 1	81								-	
70	5720657	Caribou 1-2 Rewind Unit 2	81								-	
71	5720662	Cresta U2 Rewind	81								-	
72	5720663	Cresta U1& 2Replace Wickets & Facing Pl.	81								-	
73	5720667	Pit 3 U1 Rewind	81								-	
74	5720682	Pit 3 U3 Rewind	81								-	
75	5720683	Poe U1 Replace Runner, Wickets & FPs	81								-	
76	5720685	Pit 5 U1 Ins. Bull Nose/River Gate/Clad.	81								-	
77	5720690	Pit 5 U1 Replace Wickets & Runner	81								-	
78	5720701	McCloud Dam New Unit	81								-	
79	5720704	Pit 3 Dam Britton Powerhouse	81								-	
80	5720705	Pit 4 Dam Chalk Mtn Powerhouse	81								-	
81	5720713	Pit 5 Replace 480V Switchgear	81								-	
82	5720725	Caribou 1 Replace U1 Runner	81								-	
83	5720726	Caribou 1 Replace U2 Runner	81								-	
84	5720727	Caribou 1 Replace U3 Runner	81								-	
85	5720731	Lime Saddle Replace Penstock	81								-	
86	5720734	Pit 7 Replace Trash Rake	81								-	
87	5720737	Belden Replace Wickets & FPs	81								-	
88	5720763	Pit 5 U1 Rewind	81								-	
89	5720764	Pit 5 U2 Rewind	81								-	
90	5720788	Pit 1 Replace Dredge	81								-	
91	5720829	AGWishon U3 Rewind Generator	81								-	
92	5720840	Kern Canyon Rewind Unit-Cap	81								-	
93	5720852	Balch 2 U2 Repl Exciter	81								-	
94	5720853	Haas U1 Repl Basler Exciter-Cap	81								-	
95	5720857	AGWishon U1 Rewind Generator	81								-	
96	5720860	Kerckhoff 2 Vibration Problem-Cap	81								-	
97	5720874	Balch 2 U3 Repl Exciter	81								-	
98	5720880	Tule Repl Wood Stave Pipe	81								-	
99	5720881	AGWishon U4 Rewind Generator	81								-	
100	5721419	Bear River Canal Gunite	81								-	
101	5724338	Coleman Replace Turbine Equipment	81								-	
102	5724538	Helms - Replace Governors	81								-	
103	5724539	Helm - Replace Exciters	81								-	
104	5724542	Tule - Unit 2 Rewind Generator	81								-	
105	5724778	Caribou Automate Powerhouses	81								-	
106	5724779	Pit 5 Automate Powerhouse	81								-	
107	5725479	Kern Canyon- Repl Valve & Establish Stulceway	81								-	
108	5725498	Pit 1 Repl McArthur Headgate & Bridge	81								-	
109	5728078	Helms - Replace Relays	81								-	
110	5728979	Haas - Unit 2 Replace Exciter	81								-	
111	5728980	Haas - U1/U2 Replace Governor	81								-	
112	5728981	Balch - U2/U3 Replace Governor	81								-	
113	5728982	Kings River PH - Replace Governor	81								-	
114	5729319	Black Rock - Repl. 1L Outlet Actuators	81								-	
115	5729439	Shasta Consolidate Switching Centers	81								-	
116	5729440	DeSabra Consolidate Switching Centers	81								-	
117	5729500	Rock Cr Dam Install New Unit	81								-	
118	5729502	Kern Canyon - Replace Runner	81								-	
119	5729543	Stanislaus - Repl 13.8 - 115kv TransBank	81								-	
120	5729601	MainTuolumne Canal-Install ShotcretLiner	81								-	
121	5729602	Tiger Creek Canal - Reline Canal	81								-	

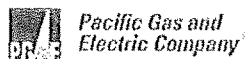


Table X-4
Pacific Gas and Electric Company
Hydro Operations Costs
Recorded CWIP and Forecast Capital Expenditures Details > \$1 Million
(Thousands of Nominal Dollars)

No.	Project No.	Description	MWC	Operative Date	CWIP	Capital Expenditures					Subtotal	Reference
					12/11 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast		
122	5729660	PotterValleyPH-Replace Annunciator/Metering	81								-	
123	5729668	Drum 2 Unit 5 - Runner Replacement	81								-	
124	5729708	Halsey PH - Replace TSV's	81								-	
125	5729763	Kern Diversion - Repl. Spillgate Control	81								-	
126	5730478	McCloud Dam LLO Improvements	81								-	
127	5730481	Pit 4 Dam Replace Drum Gate Seals__	81								-	
128	5730858	Belden Replace Transformer	81								-	
129	5730898	Coleman Replace Penstock	81								-	
130	5731000	Stanislaus Forebay, Install Trash Rake	81								-	
131	5731361	Hydro SCADA - Master Stations	81								-	
132	5731498	Hat 1 Alternate Access	81								-	
133	5732829	Narrows PH 1 - Replace TSV	81								-	
134	5733249	Pit 3 Dam Replace Dam Crest Gates	81								-	
135	5733842	Bucks Cr Penstock Joint Replacement	81								-	
136	5733885	Pit 7 Afterbay Weir New Unit	81								-	
137	5734418	Helms - Instl Penstock Plug Wtr Barrier	81								-	
138	5734683	Potter Valley Replace Transformer	81								-	
Subtotal Projects Over \$1 Million			81		-	-	-	-	-	-	-	
Subtotal Other Capital Expenditures			81		-	-	-	-	-	-	-	
81 Total			81		-	-	-	-	-	-	-	
Other Capital Expenditures			85		-	-	-	-	-	-	-	
Total Projects Over \$1 Million					-	-	-	-	-	-	-	
Total Other Capital Expenditures					-	-	-	-	-	-	-	
Grand Total Capital Expenditure					-	-	-	-	-	-	-	

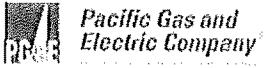


Table X-5
Pacific Gas and Electric Company
Hydro Operations Costs
Recorded CWIP and Forecast Capital Expenditures Details - Other Works
(Thousands of Nominal Dollars)

No.	Description	MWC	CWIP	Capital Expenditures					Subtotal	Reference
			12/11 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast		
1	Office Furniture & Equipment	3 Total	-	-	-	-	-	-	-	-
2	Tools & Equipment	5 Total	-	-	-	-	-	-	-	-
3	Power Gen Licenses & Permits	11 Total	-	-	-	-	-	-	-	-
4	Environmental	12 Total	-	-	-	-	-	-	-	-
5	Power Gen Safety & Regulatory	13 Total	-	-	-	-	-	-	-	-
6	Power Gen Maint Relabil/Avail	81 Total	-	-	-	-	-	-	-	-
	Grand Total		-	-	-	-	-	-	-	-