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BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Develop an Electricity Integrated Resource Planning Framework and to Coordinate and Refine Long-Term Procurement Planning Requirements.	Rulemaking 16-02-007 (Filed February 11, 2016)

WOMEN'S ENERGY MATTERS' COMMENTS ON PROPOSED DECISION

April 8, 2019

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Summary of Recommendations
Regarding Diablo Canyon and the Next IRP Cycle

WEM recommends the plant close now. If PG&E will not make that decision, the Commission will need to intervene. In the meantime, WEM recommends that Commission staff model early retirement scenarios to reveal the cost benefit to ratepayers of plant closure.

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IRP modeling must adopt SB350's target of cumulative doubling additional achievable energy efficiency between now and 2030. To that end, the CPUC should encourage and reward CCA's for expanding energy efficiency and demand reduction activities in their service areas.

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The next cycle must acknowledge and incentivize self-generation, which should include 1) the additional distributed solar that results from the state's net zero energy policy and the recent changes by the Energy Commission to Title 24 for new housing in California, and 2) the additional behind the meter energy storage forecast in the IEPR by the Energy Commission.

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WOMEN'S ENERGY MATTERS COMMENTS ON PROPOSED DECISION

Women's Energy Matters ("WEM") provides the following comments on the March 18, 2019 Proposed Decision Adopting Preferred System Portfolio and Plan for 2017-2018 Integrated Resource Plan Cycle ("PD"). WEM's comments focus on issues related to Diablo Canyon Nuclear Power Plant ("Diablo Canyon" or "DCPP").

In responding to the Joint Parties' (PG&E, NRDC, FOE & CURE's) Petition for Modification, the PD correctly notes "[t]he responsibilities for the replacement of Diablo Canyon are embedded in the load assumptions already being planned for by PG&E and the CCAs operating in its territory,"[1] and "the electric sector is on a trajectory to satisfy the 2030 GHG emissions target even with the retirement of Diablo Canyon."[2] In other words, the work of this proceeding to reduce electricity sector GHG emissions to 42 MMT by 2030 in itself satisfies the legal requirements of D1801022 and SB1090. In fact, SB 1090 merely states that plans should ***not result in an increase*** in greenhouse emissions as a result of retirement of Diablo Canyon, while both the PD and the actual plans of LSE's do far better—by assuring ***dramatic decline*** in GHG emissions even in the context of Diablo Canyon's retirement.

WEM agrees with the PD's analysis and recommends that implementing California's ambitious policies for renewable energy, energy efficiency, and distributed generation, supported by the GHG target established through the IRP process, is California's best defense against climate change, not reliance on an aging, uneconomic nuclear power plant.

Discussion

As the PD notes, this IRP proceeding and the Diablo Canyon retirement proceeding were operating in parallel back in 2016/2017. In the Diablo proceeding , WEM advocated an early economic retirement of the plant. In D1801022, the Commission referred that issue to this proceeding:

> WEM and Mothers for Peace raise valid concerns about the current cost of operating Diablo Canyon, and the potential for significant costs that could be incurred between now and 2024/25, but those concerns cannot be considered in isolation. While shutting down Diablo Canyon in 2019/2020 would likely provide some cost savings, it would also provide less time for replacement procurement to be considered in the IRP proceeding and for the

[1] Proposed Decision, p. 145.
[2] Proposed Decision, Finding of Fact 38, p. 158.

development and deployment of additional greenhouse gas-free resources. These factors are difficult to balance, as we cannot forecast with certainty the precise growth of CCAs, the deployment of greenhouse gas-free resources, or the near-future costs of operating Diablo Canyon. For example, WEM argues that a foreseeable range of utility bundled sales:

> [R]esults in a similar—or potentially much less—bundled load for PG&E in 2020 as PG&E projects for 2025. Therefore it is likely that constraints on the need for Diablo Canyon will arise by 2020, and possibly even earlier. When this occurs, a substantial fraction of Diablo Canyon's energy will need to be sold on the wholesale market, which is below cost. … This foreseeable development will make continued operation of Diablo Canyon increasingly uneconomic and dysfunctional, and this will likely begin to happen before 2020, not 2025. (WEM Opening Brief at 12.)

Given the relatively early state of the IRP proceeding, the more prudent and conservative approach to balancing this uncertainty tips against a shutdown before 2024 and 2025. *As we gain a clearer picture of future developments, such as the relative cost of operating Diablo Canyon, this balance could change.*[3]

It is now 2019, and we have a much clearer picture of all the relevant factors described above, specifically the amount of CCA load growth, the stranded cost of continuing to operate the plant, and the availability of GHG-free replacement resources.

A crucial pillar of PG&E's argument for retirement of Diablo Canyon in *2025* in the Diablo proceeding was that it's bundled retail sales were projected to decrease dramatically by 2025, due to CCA load departures. However, this load departure is no longer projected to occur in 2025, rather it is now an historical fact. We know that PG&E's bundled load has declined precipitously since 2017. CEC data shows PG&E bundled load declining from 61,182 GW hrs in 2017 to 36,490 in 2019.[4]

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
Pacific Gas and Electric Company (Bundled)	61,182	49,777	36,490	35,108	34,895	34,972	34,877	34,827	34,869	34,781	34,669	34,513	34,373	34,210	-4.4%

[3] D1801022, pp. 14-15.
[4] California Energy Commission Energy Demand Forecast Update, Docket 18-IEPR-04 at https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=18-IEPR-04. See Docket Entry TN 226461, d. 2/5/19, Corrected LSE and BA Tables Mid Baseline Mid AAEE AAPV CEDU2018, IEPR Reports.

PG&E's Integrated Resource Plan shows that in 2018 the utility's bundled sales were even lower (at 47,986 gigawatt-hours) than what is shown in the Energy Commission data table above (49,777 gigawatt-hours), while bundled sales between 2022 and 2026 are slightly higher in PG&E's IRP. [5]

Integrated Resource Plan | Section 3 – Study Results

TABLE 8
CONFORMING SCENARIO ENERGY SALES FORECAST (GWH)

Line No.	Description	2018[a]	2022	2026	2030
1	PG&E Gross System Usage	87,375	102,149	109,941	116,897
2	Energy Efficiency	(4,147)	(8,894)	(15,930)	(22,573)
3	Distributed Generation	(2,614)	(13,662)	(17,243)	(20,290)
4	Solar PV	(2,395)	(10,012)	(13,487)	(16,459)
5	Non-PV	(220)	(3,650)	(3,756)	(3,831)
6	Electric Vehicles	160	2,353	4,205	5,982
7	PG&E Net System Sales	80,774	81,946	80,973	80,016
8	Direct Access[b]	(9,729)	(9,520)	(9,520)	(9,520)
9	Community Choice Aggregation	(23,060)	(36,264)	(36,099)	(36,309)
10	PG&E Bundled Sales	47,986	36,162	35,355	34,187

(a) The 2018 forecast for loads, supply, resources, and costs is based on the CPUC-approved 2018 ERRA Forecast revenue requirement in D.18-01-009 to maintain consistency with the 2018 IRP costs.

(b) Direct Access includes sales to BART.

PG&E is now in the situation that WEM predicted, that there would be "similar—or potentially much less—bundled load for PG&E in 2020 as PG&E projects for 2025".[6] PG&E submitted testimony in the Diablo Canyon proceeding that modeled three scenarios: a high case of 51,564 gigawatt-hours, a "reference" case of 43,854 gigawatt-hours, and a low case of 33,907 gigawatt-hours. The reference case showed a "need" for Diablo Canyon in 2025 of only 8778 gigawatt-hours, which is only half the energy production of the plant. However, the current forecast sales for PG&E in 2020 is more than 8,000 gigawatt-hours less than PG&E's reference case in the Diablo Canyon proceeding, which would have effectively erased the value of the nuclear plant for the utility's bundled customers in PG&E's model.[7]

[5] PGE 2018 Integrated Resource Plan, p. 45
[6] See D1801022, quoted above, at p. 15.
[7] Table reproduced below is from Workpapers supporting Tables 2-3 - 2-5 in PG&E's Testimony in A1608006.

Pacific Gas and Electric Company
Application 16-08-006
Workpapers Supporting Tables 2-3 to 2-5: EE, DG, CCA and Generation Resource Type in 2017, 2025 and 2030 (Reference, Low, and High Load Scenarios)
Errata

Reference Case

GWh

	Generation Requirement	2017	2025	2030
a = g - c - e	**Gross Service Territory Sales**	96,131	117,665	131,153
b = a + (h - g) - d - f	**Gross Service Territory Load**	105,208	129,408	144,369
c	Energy Efficiency	(6,482)	(20,676)	(27,461)
d = (c / 0.91) - c	T&D Line Losses	(641)	(2,045)	(2,716)
e	Distributed Generation	(7,610)	(18,862)	(23,011)
f = (e / 0.91) - e	T&D Line Losses	(753)	(1,865)	(2,276)
g = k - i	**Service Territory Sales**	82,039	78,127	80,681
h = l - i - j	**Service Territory Load**	89,722	85,960	88,905
i	CCA / DA Sales	(14,437)	(34,273)	(37,068)
j = (i / 0.91) - i	T&D Line Losses	(1,428)	(3,390)	(3,666)
k	**Utility Bundled Sales**	67,602	43,854	43,613
l = m 1 + ... + m 7	**Utility Bundled Load**	73,857	48,297	48,171
	RPS-Eligible	21,761	20,377	23,115
m 1	Large Hydro	11,677	10,232	10,231
.	CHP	5,212	3,195	1,809
.	Humboldt Local Reliability	420	419	419
.	Renewable Integration	3,405	~~4,794~~ 4,782	~~4,805~~ 4,793
m 7	DCPP Need	18,492	8,778	8,139
	Other	12,890	~~503~~ 515	~~(348)~~ (335)

A large majority of energy resources in PG&E's planning area is now provided by multiple sources, including direct access providers, CCAs, customer distributed generation, and energy efficiency. This situation is expected by PG&E to create a surplus of GHG-free energy, which implies that PG&E sells Diablo's surplus energy on the open market. PG&E shows that with retail sales of 36,162 gigawatt-hours in 2022, they will have a surplus of 7,704 gigawatt-hours to sell on the wholesale market, which means the equivalent of nearly half the average energy production of Diablo Canyon will not be needed by PG&E for its bundled customers. This appears to assume that PG&E is also selling another 2,069 gigawatt-hours of renewable energy, suggesting a total surplus of nearly 10,000 gigawatt-hours.[8]

[8] See PGE 2018 IRP, Table 12, reproduced below.

Integrated Resource Plan | Section 3 – Study Results

TABLE 12
CONFORMING SCENARIO ENERGY BALANCE (GWH)

Line No.	Description	2018	2022	2026	2030
1	Energy Load				
2	PG&E Bundled Sales	47,986	36,162	35,355	34,187
3	Losses (T&D + UFE)	4,359	3,408	3,316	3,183
4	Total Load Requirement	52,345	39,571	38,671	37,370
5	Energy Supply				
6	GHG-Free Resources				
7	Solar	9,167	10,451	10,298	10,065
8	Large Hydro[a]	[redacted]			
9	Nuclear			–	–
10	Wind	2,967	2,741	2,445	2,033
11	Storage[b]	[redacted]			
12	Small Hydro	1,965	1,609	1,580	1,520
13	Biomass	1,750	1,694	1,538	1,358
14	Geothermal	2,320	152	149	145
15	Biogas	273	497	548	529
16	CHP	[redacted]			
17	RPS Sales[c]	–	(2,069)	(2,069)	(2,069)
18	Subtotal GHG-free and Non-dispatchable Resources	[redacted]			
19	Other Resources				
20	Non-UOG Fossil	[redacted]			
21	UOG Fossil				
22	UOG Fuel Cell				
23	Wind (OOS)	939	727	–	–
24	Subtotal Other	[redacted]			
25	Market Sales / (Purchases)		7,704	(10,644)	(13,573)
26	Total Energy Supply	52,345	39,571	38,671	37,370

In PG&E's Integrated Resource Plan Preferred Scenario the surplus is even higher, reaching a staggering 10,747 gigawatt-hours in 2022.[9] This also appears to assume wholesale market sales of 2,069 gigawatt-hours, ***suggesting a total surplus of about 30 percent (or more) compared to the utility's need for energy***. All of this surplus would be dumped on the wholesale market, most likely at a financial loss.

[9] PGE 2018 IRP, Table 17, p. 59.

TABLE 17
PREFERRED SCENARIO ENERGY BALANCE (GWH)

Line No.	Description	2018	2022	2026	2030
1	Energy Load				
2	PG&E Bundled Sales	47,986	34,169	32,694	33,784
3	Losses (T&D + UFE)	4,359	3,111	2,998	3,138
4	Total Load Requirement	52,345	37,281	35,692	36,922
5	Energy Supply				
6	CNS GHG-free Resources				
7	Solar	9,167	10,451	10,298	10,065
8	Large Hydro[a]	[redacted]			
9	Nuclear			-	-
10	Wind	2,967	2,741	2,445	2,033
11	Storage[b]	[redacted]			
12	Small Hydro	1,965	1,609	1,580	1,520
13	Biomass	1,750	1,694	1,538	1,358
14	Geothermal	2,320	152	149	145
15	Biogas	273	497	548	529
16	CHP	[redacted]			
17	RPS Sales[c]	–	(2,069)	(2,069)	(2,069)
18	Subtotal CNS GHG-free Resources	[redacted]			
19	Other Resources				
20	Non-UOG Fossil	[redacted]			
21	UOG Fossil				
22	UOG Fuel Cell				
23	Wind (OOS)	939	727	–	–
24	Subtotal Other	[redacted]			
25	Market Sales / (Purchases)	[redacted]	10,747	(6,373)	(11,939)
26	Total Energy Supply	52,345	37,281	35,692	36,922

PG&E is on record at multiple proceedings, including both the Diablo Canyon proceeding and the PCIA proceeding, declaring that the cost of its nuclear power is well above market prices, and that it passes on a large portion of Diablo's costs to departed load CCA and direct access customers through PCIA charges.

The Commission has now developed a significant record on costs of operating the plant. A large amount of cost data was submitted by PG&E in their testimony for the Diablo Canyon proceeding, showing the operating costs reaching and exceeding $700 million per year after 2020, plus capital expenditures of over $100 million per year, plus more than another $200 million per year for depreciation and profit. Thus, according to this data provided by PG&E to the Commission, the total cost of continuing to run Diablo Canyon is in the ballpark of $1 billion per year.[10]

[10] See PG&E Workpapers Supporting Chapter 2, Table 2-6, Errata, reproduced below.

Pacific Gas and Electric Company
Application 16-08-006
Workpaper Supporting Chapter 2, Table 2-6
Errata

Diablo Canyon Revenue Requirement - Annual Operating Expenses

($ millions of dollars)

Cost Category	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Operations and Maintenance Administrative and General Nuclear Fuel Expenses	687.6	699.0	707.2	728.0	785.1	761.7	782.2	801.9	822.1	881.8	863.9

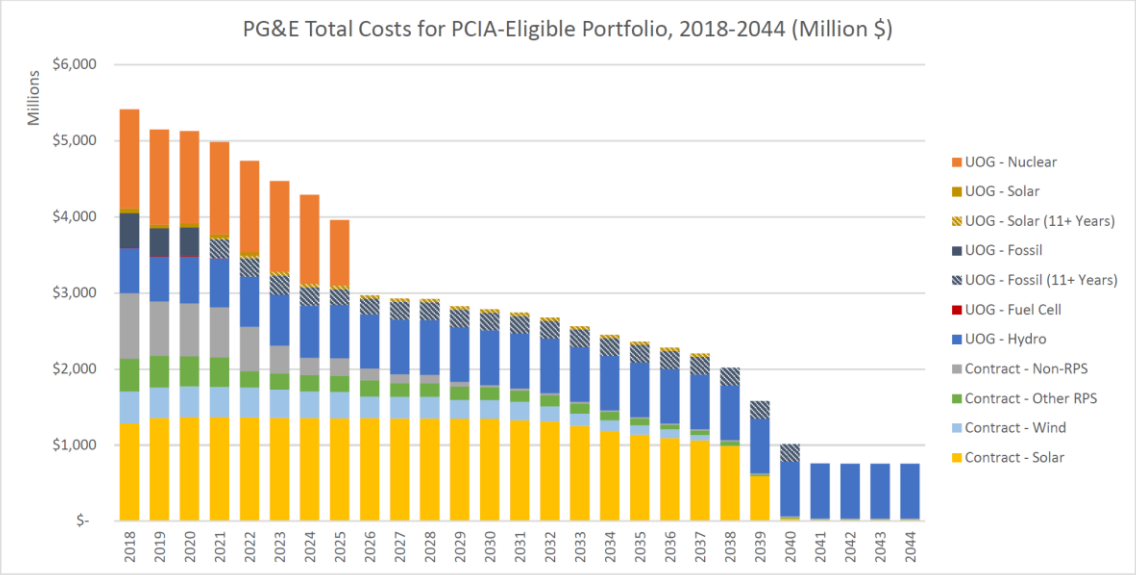
Pacific Gas and Electric Company
Application 16-08-006
Workpaper Supporting Chapter 2, Table 2-6
Errata

Diablo Canyon Revenue Requirement - Forecasted Capital Expenditures

($ millions of dollars)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Capital Equipment Expenditures	194	172	152	116	140	146	121	125	129	153	139	143	172	177	205	186

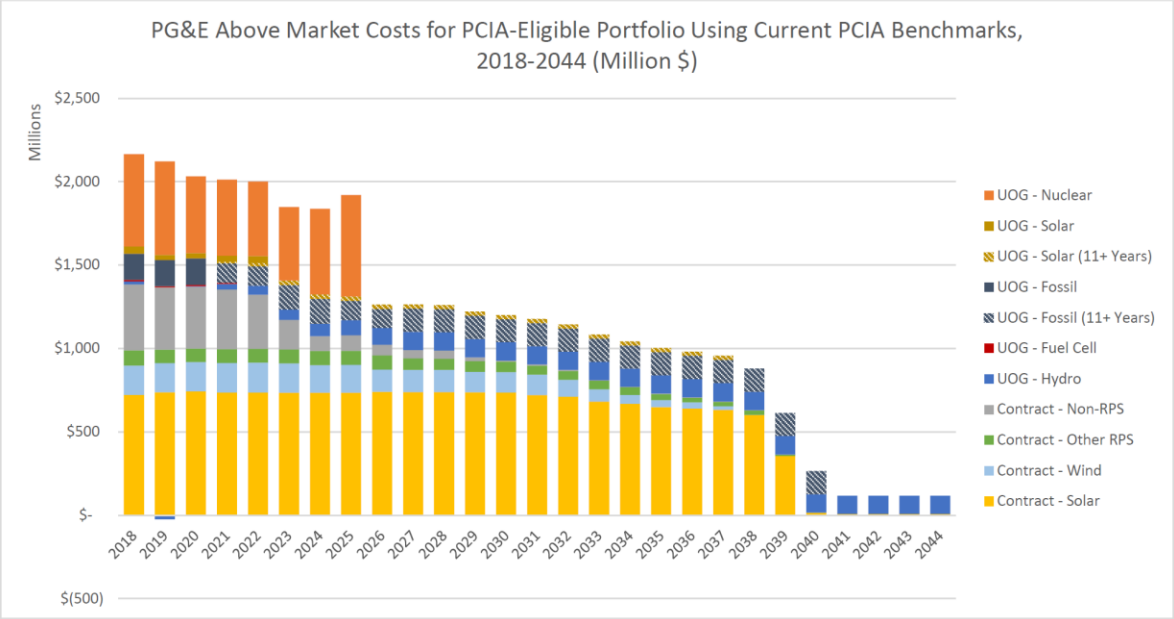
These costs are similar in order of magnitude to the figures provided by PG&E in the PCIA proceeding, although in this more recent data PG&E shows annual costs in excess of $1 billion per year for every year except 2025.[11]



PG&E fills in another crucial data gap in the chart that follows, showing the "above market" or stranded costs associated with its power generation sources. Diablo Canyon is shown by PG&E to have excess costs averaging in the ballpark of half a billion dollars for each year it

[11] The two charts below relate to PG&E's PCIA-eligible portfolio and were originally submitted by PG&E as part of a Joint IOU Exhibit (Exhibit IOU-5) in R1706026.

continues to operate between 2018 and 2020, which are being charged to both its own (bundled) customers, and to CCA customers who do not receive any energy from the nuclear plant.



Therefore, the Commission now has a reasonably clear record of testimony from PG&E to show the rather large cost burden of continuing to operate the nuclear plant. Both current wholesale market prices and current renewable energy contracts, at roughly $30 per megawatt-hour, cost significantly less than PG&E's surplus energy.

Meanwhile, the CCA's in PG&E's planning area are already reaching very high levels of GHG-free procurement. For example, East Bay Community Energy provides a default product of 85% greenhouse gas free electricity, and MCE claims 87% GHG-free. This appears to be representative of the combined average of all CCAs in PG&E's jurisdiction. While some CCAs have lower amounts of GHG-free electricity, such as the relatively small Pioneer Community Energy in Placer County, this is more than offset by the other larger CCAs on the coast.

In 2019, non-nuclear greenhouse gas-free resources are abundantly available: since 2017 battery storage technology has improved and costs have declined[12], and newer contracts on the western grid commonly offer contracts for near $30 per megawatt-hour which are with increasing frequency being bundled with energy storage for a modest additional cost. The CEC, in alignment with SB350, has set policy goals of doubling energy efficiency by 2030; however, the IRP default assumption appears only to assume 1.5 times additional efficiency, which is far

[12] See e.g., https://www.eenews.net/energywire/2019/03/26/stories/1060128525 , and https://www.utilitydive.com/news/electricity-costs-from-battery-storage-down-76-since-2012-bnef/551337/

short of the policy goal from SB 350. These newer efficiency requirements should be either similar or larger than the 2,000 gigawatt-hours of additional efficiency included in the Joint Proposal in the Diablo Canyon proceeding. Also, SB 100 has increased the Renewables Portfolio Standard from 50% to 60% in 2030, which exceeds the so-called "voluntary" 55% RPS that PG&E and the other parties included in their 2016 Joint Proposal for beyond 2030. SB100 also accelerated the 50% RPS to 2025, and sets earlier targets.

The PD notes that Commission staff are already modeling pre-purchase of solar and wind prior to 2024/2025, and that GHG-free resources procured prior to plant retirement count as replacement power for Diablo. Modeling pre-retirement replacement resources is a good idea which WEM enthusiastically supports. WEM opposed PG&E, FOE, NRDC and CURE's procurement requests in the Diablo retirement proceeding, because it made no sense to allow PG&E to procure additional, unneeded energy, when at the same time it wanted to keep Diablo running until 2024/2025. The result would have been costly over-procurement. Now, with a clearer picture of Diablo's failing economics and the ready availability of GHG-free replacement resources, it is time for the Commission to reconsider Diablo Canyon's 2024/2025 retirement dates. Meanwhile, the Commission staff's pre-retirement modeling must include scenarios in which DCPP has already retired, so the cost benefit to ratepayers will be revealed.

Diablo's Alleged GHG-Emission Benefit Is Much Over-Rated.

PG&E has offered a formula for quantifying the amount of greenhouse gases allegedly saved by Diablo. The formula assumes Diablo's output as 18,000 GWh annually, converts GWh to MWh, and multiplies by .428, the number of metric tons per MWh emitted by a natural gas plant or generic system power from the western grid. By this formula, the GHG reduction of Diablo Canyon is estimated to be about 7 million tons per year. While some parties have claimed closing the nuclear plant seriously jeopardizes the state's greenhouse gas reduction efforts, the fact remains that this is less than 2% of California's GHG emissions, which CARB reported at about 430 million metric tons in the 2016 inventory.

Furthermore, this calculation is somewhat speculative -- because we do not know with certainty how Diablo will perform between now and 2025. Either reduced output or an unplanned retirement could come at any time. SCE and SDG&E's San Onofre nuclear plant retired prematurely due to technical failures,[13] resulting in safety and cost issues that made

[1313] Including a radioactivity leak.

continued operation unjustifiable. Even if Diablo somehow makes it to 2025, we cannot assume continuous high capacity factors for each year 2019-2025. If one reactor were to fail, it would not be economic to continue operating the second (in fact, it is currently not even economic to operate both). Another thing to keep in mind, is that a portion of Diablo's 18,000 GWh never makes it to the customer (assuming there is a customer), as 8-10% of its power vanishes through line losses.[14]

The rationale that Diablo must continue on as a huge safety hazard and financial drag until 2024/2025, because it is needed to reduce GHG emissions is simply false. Continued operation of Diablo Canyon is not California's best strategy for facing climate change. The plant, with its seismic faults, marine life kill-offs, crowded spent fuel pools, and ongoing production of highly radioactive waste, is an environmental nightmare, not an environmental solution. The Commission's decision in the Diablo Canyon retirement proceeding acknowledged the need to re-evaluate the costs of continued operation as a clearer picture of future developments came into view. The picture is much clearer now. WEM strongly advocates immediate retirement of the plant. If PG&E will not make that decision, the Commission will need to intervene.

The Procurement Track Should Encourage and Reward Expanded Energy Efficiency.

The value of negawatt energy has been underestimated to date in this proceeding. The procurement track must include and incentivize negawatt resources.

At a June 7, 2018 CEC Workshop on Doubling Energy Efficiency Savings, the CPUC's Alison LaBonte noted the importance of coordinating the Commission's energy efficiency programs and planning with this Integrated Resource Planning. She noted that energy efficiency is the highest priority in the loading order, and "so we're going to have to make sure that energy efficiency is counted and considered in … the integrated resources planning."[15]

Energy efficiency is by its nature a zero GHG emitting resource. IRP modeling must adopt SB350's target of cumulative doubling additional achievable energy efficiency between now and 2030. To that end, the CPUC should encourage and reward CCA's for expanding energy efficiency and demand reduction activities in their service areas.

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[14] Diablo, like other US nuclear power plants, was sited far from major population areas for safety reasons -- by design, it inefficiently loses power to line losses, in the hopes that a radioactive emergency would only impact a 50 mile radius -- not a good model for the 21st century.

[15] See Transcript, June 7, 2018 California Energy Commission Workshop on Doubling Energy Efficiency, p. 24, available at: https://www.energy.ca.gov/2018_energypolicy/documents/#06072018

The next cycle must also acknowledge and incentivize self-generation, which should include 1) the additional distributed solar that results from the state's net zero energy policy and the recent changes by the Energy Commission to Title 24 for new housing in California, and 2) the additional behind the meter energy storage forecast in the IEPR by the Energy Commission. Energy efficiency and self generation are zero GHG emitting resources that already promise significant GHG reductions by 2030, and with proper planning and program design these zero-emitting resources can be increased. IRP planning and procurement tracks will benefit from increased utilization of these GHG free resources.

Conclusion

Women's Energy Matters appreciates the opportunity to provide these comments.

Dated: April 8, 2019

Respectfully submitted,

/s/ Robert Freehling

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ROBERT FREEHLING

/s/ Jean Merrigan

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JEAN MERRIGAN

WOMEN'S ENERGY MATTERS

APPENDIX: RECOMMENDED CHANGES TO THE PROPOSED DECISION

Findings of Fact

#. Diablo Canyon is not an optimal integrating resource, and continued operation of the plant entails significant negative environmental impacts.

#. Diablo Canyon is not needed for local reliability, and as an inflexible resource it interferes with grid integration.

#. PG&E's bundled load has precipitously declined since 2017.

#. As of 2019 PG&E is selling power generated by Diablo Canyon Nuclear Power Plant on the open market at a loss, with stranded costs passed onto ratepayers, including departed load customers through burdensome PCIA charges.

#. PG&E and CCA's in its planning area have already reached high levels of GHG-free procurement.

#. PG&E and the CCA's in its planning area have hydropower resources that are more optimal balancing resources than Diablo Canyon. The state has thousands of megawatts of pumped hydroelectric storage and is building more.

#. D1801022 authorized the retirement of Diablo Canyon Units 1 and 2 *by* 2024/2025, not *in* 2024/2025.

#. In the Diablo Canyon Retirement proceeding, PG&E stated it might retire the plant early.

#. Commission staff can run scenarios assuming early retirement dates for Diablo Canyon, which will reveal the cost benefits to ratepayers of early retirement.

#. The CEC, in alignment with SB350, has set policy goals of doubling energy efficiency by 2030; however, the current IRP default assumption appears only to assume 1.5 times additional efficiency, which is far short of the policy goal from SB 350.

Conclusions of Law:

#. The Commission has a duty to protect ratepayers from unjust rates.

#. The goal of integrated resource planning is to optimize electricity sector planning among three coequal goals: the environment, reliability and cost.

#. Diablo Canyon can be retired without threatening the state's achievement of its climate energy goals.

#. D1801022 authorized the retirement of Diablo Canyon by 2024/2025.

Order:

#. It is time to retire Diablo Canyon. If PG&E will not make that decision, the Commission will intervene on behalf of ratepayers and order immediate plant shutdown.

#. In the meantime, Commission staff will model early retirement scenarios to identify the cost benefit to ratepayers of plant closure.

#. IRP modeling must adopt SB350's target of cumulative doubling additional achievable energy efficiency between now and 2030. To that end, the CPUC should encourage and reward CCA's for expanding energy efficiency and demand reduction activities in their service areas.

#. The next cycle must acknowledge and incentivize self-generation, which should include 1) the additional distributed solar that results from the state's net zero energy policy and the recent changes by the Energy Commission to Title 24 for new housing in California, and 2) the additional behind the meter energy storage forecast in the IEPR by the Energy Commission.

#. The IRP plans of entities serving load within the territory of Pacific Gas and Electric Company shall include a section describing what the LSE has already done to procure GHG-emission free resources that reduce the impact of Diablo Canyon retirement.