BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

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Application of Pacific Gas and Electric Company to Recover in Customer Rates the Costs to Support Extended Operation of Diablo Canyon Power Plant from September 1, 2023 through December 31, 2025 and for Approval of Planned Expenditure of 2025 Volumetric Performance Fees. (U39E)	Application 24-03-018 (Filed March 29, 2024)

CALIFORNIANS FOR GREEN NUCLEAR POWER'S OPENING BRIEF

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Table of Contents

Table of Authorities

Cases

Other Authorities

Internet Source

Official Record

The following issues are enumerated in the June 18, 2024 Scoping Memorandum - The issues to be determined or otherwise considered are:

1. Whether PG&E's forecast cost of operations and requested revenue requirement of $418 million over the Record Period for DCPP is reasonable, including the following forecasts and their underlying financial assumptions and calculations, subject to PG&E updating these forecasts in the Fall Update:

CGNP observes the Record Period from September 1, 2023 through December 31, 2025 spans 852 days, or 2 years, 3 months, 4 weeks, and 2 days. We have previously noted the Diablo Canyon Power Plant (DCPP) is a California base load generator supplying nominal annual generation of 18 terawatt-hours (TWh.) (A terawatt-hour is one billion kilowatt-hours.) Using the definition of a year as 365.25 days, the record period corresponds to 852 days / 365.25 days or 2.333 years. Thus, during the Record Period, DCPP is expected to produce the product of 2.333 years and 18 TWh or 41.988 TWh. The DCPP cost per TWh during the record period is $ 23,222,222.22. Using the above definition of TWh, this cost is equal to $0.0232 per kWh. This low cost approximates the unsubsidized cost of electric power from what is typically the least expensive means of generating electric power, namely large hydroelectric dams.

CGNP's comments in this Brief focus on issue 1. g. Netting of California Independent System Operator revenues for the period from November 3, 2024, to December 31, 2025. CGNP will establish that it is likely the Record Period cost of $0.0232 per kWh serves at the upper bound for California ratepayer costs. As a consequence of the September 2, 2022 passage of California SB 846 (Dodd, 2022) a unique mechanism to provide DCPP ratepayer rebates was included in California Public Utility Code § 712.8 (h) (3) [1] As the text of this section which

[1] PUC § 712.8 (h) (3) If, as a result of the annual true-up for extended operations in paragraph (1), the commission determines that market revenues for the prior year

appears in the footnote clarifies, there is a much larger rebate allowed for ratepayers within the PG&E service territory than for ratepayers outside the PG&E service territory who may only have their DCPP-related fees and expenses rebated.

CGNP's perspective is this differential treatment is just and equitable since PG&E ratepayers alone were subject to rate recovery for DCPP's substantial construction and upgrade costs totaling around $10 billion since DCPP began construction in 1969. However, CGNP remains concerned regarding the recent County of San Luis Obispo property tax shortfall arising from the two rounds of DCPP accelerated depreciation which yield a PG&E book value for DCPP approximating zero by the end of the Record Period. (The California State Board of Equalization uses book value of a utility firm asset as the basis for property tax determinations. [2])

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exceeded the annual costs and expenses, including those in subdivisions (f) and (g [decommissioning costs, employee retention program costs, volumetric payments, the fixed management fees, and the liquidated damages account capped at $300 million as of September 1, 2024,] **the commission shall direct that any available surplus revenues in an account created under subdivision (e) be credited solely to customers in the operator's service territory. For customers outside the operator's service territory, market revenues may be credited up to, but not to exceed, their respective annual costs and expenses**. (emphasis added) If excess funds remain in an account created under subdivision (e) as a result of market revenues exceeding costs and expenses in the final year of the extended operating period, after truing up the final operating year's market revenues against costs and expenses, the remaining funds shall be the sole source of loan repayment per the requirements provided under Chapter 6.3 (commencing with Section 25548) of Division 15 of the Public Resources Code, except that any federal funds received as described in paragraph (2) of subdivision (b) of Section 25548.3 of the Public Resources Code shall also be used to repay the loan. Ratepayer funds shall not otherwise be used in any manner to repay the loan provided for under Chapter 6.3 (commencing with Section 25548) of Division 15 of the Public Resources Code.

[2] (Page 3 note: The Unitary roll contains properties, such as railroads and utilities, whose value is determined by the State Board of Equalization, not the County Assessor.) Property Tax Perspective - County of San Luis Obispo, Fiscal Year July 1, 2022 to June 30, 2023, County of San Luis Obispo California Assessor and Tax Collector. **https://www.slocounty.ca.gov/departments/auditor-controller-treasurer-tax-collector-public/forms-documents/property-tax-reports-and-documents/property-tax-perspective/property-tax-perspective-2022-23**

1. a. Operations and Maintenance costs (including expenses, project costs, and statutory costs and fees, as well as associated escalations);

CGNP commented in this and related Commission Proceedings that DCPP's costs for Operations and Maintenance (O&M) costs (including expenses, project costs, and statutory costs and fees, as well as associated escalations) are reasonable and in line with U.S. nuclear industry experience for a well-maintained nuclear power plant beginning its initial extended operations period.

DCPP has typically been in the top quartile relative to other U.S. nuclear power plants as measured by the Institute of Nuclear Power Operations (INPO.) DCPP is subject to careful scrutiny by the U.S. Nuclear Regulatory Commission NRC) with two Resident Inspectors onsite. The Committee and Staff of the Diablo Canyon Independent Safety Committee (DCISC) provide an additional level of oversight. California's Independent Peer Review Panel weighs in regarding seismic safety issues connected with DCPP.

PG&E managed routine service operations such as the replacement of the steam generators for both reactors during slightly-extended refueling outages during 2008 and 2009. Those replacement steam generators were "like for like" replacements that have already provided reliable service for about 15 years. For longer life, the replacement steam generators used improved performance alloys that were not available when the plant was initially designed. Furthermore, PG&E has been at the forefront of modernizing the plant's analog process controls with more robust digital process controls. [3] These are some of the reasons why DCPP's O&M costs are reasonable.

See also the results of CGNP's first Data Request in A.24-03-018 from PG&E

[3] "Diablo Canyon Power Plant Digital Process Protection System Replacement Diversity and Defense-in-Depth," Scott B. Patterson, PE, PMP, John W. Hefler, PE, and Edward (Ted) L. Quinn, NPIC_HMIT 2012, Technology Resources White Paper 5015. **http://technology-resources.com/docs/5015.pdf**

1. b. Charges for the liquidated damages account pursuant to Pub. Util. Code section 712.8(g);

CGNP is unaware of any withdrawals from the DCPP liquidated damages account. As of September 1, 2024, the liquidated damages account should be fully funded at the $300 million level. The ratepayer impact of funding the liquidated damages account during the past twelve months was modest.

1. c. Resource Adequacy (RA) substitution capacity forecast costs;

PG&E seeks recovery from ratepayers of forecast RA Substitution Capacity Costs of $78,129,900 for 2024 – 2025, as identified in Table 4-1 of PG&E's testimony. Here is the relevant passage on page 148 from Attorney John Geesman of A4NR cross-examining PG&E employee George Clavier on September 11, 2024:

Evidentiary Hearing
September 11, 2024 148

RA benchmark.

Q And it's your belief that during the Diablo Canyon extended operations period, the circumstance would be analogous to the circumstances addressed in that decision that you cite?

A Yes, I would say it is.

The -- the decision -- the -- the decis -- the Commission has determined that the recovery process for Diablo Canyon in extended operations should mirror the CAM -- the CAM process; and that's in Decision 23-12-036, I believe it is.

And now recently in this RA decision, they've determined that for replacement of CAM resources when they're on outage, we should -- we should use -- and it's just not PG&E, it's all utilities should use the PCIA RA benchmark, so we -- we -- we believe that's what the Commission will be -- already has ordered us to do.

CGNP believes that PG&E is following Commission guidance as set forth in D.23-12-036 to arrive at forecast RA Substitution Capacity Costs of $78,129,900 for 2024 – 2025.

1. d. Operating expenses that would be amortized through 2030 (e.g., nuclear fuel procurement);

CGNP previously noted per the U.S. EIA that nuclear fuel costs about 1/4 of the cost per unit of energy produced relative to natural gas or coal. Here's an example passage from April 14, 2013: "Nuclear power plant fuel costs are typically much lower on a dollar-per-megawatthour ($/MWh) basis than coal or natural gas plant fuel costs: in 2011, the estimated average national fuel costs for coal and natural gas plants were $25/MWh and $36/MWh, respectively. In contrast, the national average cost of nuclear fuel was $6/MWh. As a result, given the same wholesale electricity price, nuclear power plants generally produce more revenue net of fuel cost on a dollar-per-megawatt basis than coal- or natural gas-fired plants." [4] Nuclear power plants are typically much more capital intensive than other dispatchable power plants. The notable exception is nuclear power plants during periods of extended operations. In June, 2024, Lazard estimated the levelized cost of energy for extended nuclear power plant operation - such as at DCPP - to be a modest $32.00/MWh. [5] Since nuclear fuel

[4] "Lower wholesale power prices reduce quark spreads available to nuclear plant operators," April 24, 2013, Today in Energy, U.S. Energy Information Administration. **https://www.eia.gov/todayinenergy/detail.php?id=10971**

[5] "Levelized Cost of Energy Version 17.0" June, 2024, Lazard.
https://www.lazard.com/media/xemfey0k/lazards-lcoeplus-june-2024-_vf.pdf
Note (3) Reflects the average of the high and low LCOE marginal cost of operating fully depreciated gas peaking, gas combined cycle, coal and nuclear facilities, inclusive of decommissioning costs for nuclear facilities. Analysis assumes that the salvage value for a decommissioned gas or coal asset is equivalent to its decommissioning and site restoration costs. Inputs are derived from a benchmark of operating gas, coal and nuclear assets across the U.S. Capacity factors, fuel, variable and fixed operating expenses are based on upper- and lower-quartile estimates derived from Lazard's research. See page titled "Levelized Cost of Energy Comparison—New Build Renewable Energy vs. Marginal Cost of Existing Conventional Generation" for additional details

has a useful life of about five years, DCPP's modest fuel cost will be amortized over this interval, yielding negligible ratepayer impact.

1. e. PG&E's proposal to mitigate Internal Revenue Code (IRC) Normalization violation concerns by allowing the additional recovery of the revenue requirement equivalent of the Accumulated Deferred Income Taxes (ADIT) (for the normalization depreciation book-tax difference) included in the Results of Operation (RO) model;

CGNP has no comment regarding this issue.

1. f. Federal and state income tax gross up of fixed management fees; and

CGNP has no comment regarding this issue.

1. g. Netting of California Independent System Operator revenues for the period from November 3, 2024, to December 31, 2025.

DCPP is an economical generator. If the SB 846 rules regarding rebates of any excess market revenues in excess of DCPP's operation costs had applied, **ratepayers would have been entitled to $1.313 billion in total rebates for the years 2021, 2022, and 2023.** This result is unsurprising. CGNP has informed the Commission multiple times of the 2011 findings of the CCST that ....Nuclear power can provide constant, reliable emission-free energy with a much lower and more easily met requirement for load balancing. Roughly 30 new nuclear power plants could provide two-thirds of California's electric power in 2050 [6].....

As we will show, DCPP's operating costs are essentially unaffected by factors that drive up California power prices. Those factors include recent natural gas transmission pipeline explosions such as El Paso Natural Gas's Line 2000 in 2021 or SoCalGas's Line 235-2 in 2017. These failures require multiple

[6] "California's Energy Future: The View to 2050" Release Date: May 24, 2011 | Last Updated Date: February 19, 2015 https://ccst.us/reports/californias-energy-future-the-view-to-2050/ **https://tinyurl.com/CCST-Nuclear-1** (The California Council of Science and Technology - CCST is a nonpartisan, nonprofit organization established via the California State Legislature — making California's policies stronger with science since 1988.)

years to repair. Since natural gas is the dominant energy source for dispatchable in-state electricity generation, natural gas supply impairments drive up California electricity prices during periods of high demand. Furthermore, DCPP's costs were unaffected by the California Heat Storm during August and early September, 2022.

California imports the highest amount of electricity of any state. The result is that wildfires force California power prices upward when 5,000 MW electricity transmission import pathways such at the AC Intertie (Path 66) are curtailed to protect those valuable assets.

Commercial competitors to DCPP are now aggressively lobbying California decision-makers for commercial advantage, with the apparent goal of DCPP shutdown. Contrary to California legislative intent, these competitors are also aggressively lobbying federal regulators at the WIEB-CREPC via their innocuously-named "Pathways Initiative" which CGNP has objected to [7]. Likely adverse consequences of their lobbying campaign at the federal level are criticized in our final sections.

1. g.2. Overview of DCPP's net ratepayer benefits if SB 846 had applied to the years 2021, 2022, and 2023.

[7] **https://tinyurl.com/WWGPI-Opposed**

PACIFIC GAS AND ELECTRIC COMPANY
DIABLO CANYON POWER PLANT 2025 COST RECOVERY FORECAST TO SUPPORT OPERATIONS AS DIRECTED BY THE STATE TO ENSURE ELECTRIC RELIABILITY AND TO REDUCE GREENHOUSE GAS EMISSIONS FOR ALL CALIFORNIANS

WORKPAPERS SUPPORTING CHAPTER 8
CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION MARKET REVENUES
DCPP FORWARD POWER PRICE DERIVATION Souce: Workpapers Page WP 8-7

Annual Market Value of DCPP Operations

Year	DIABLO_7_UNIT 1	DIABLO_7_UNIT 2	Grand Total
2021	$ (478,499,345.20)	$ (334,477,264.90)	**(812,976,610.09)**
2022	$ (757,381,763.70)	$ (727,791,708.73)	**(1,485,173,472.43)**
2023	$ (449,952,876.59)	$ (526,105,715.76)	**(976,058,592.35)**
Grand Total	$ (1,685,833,985.49)	$ (1,588,374,689.39)	**(3,274,208,674.88)**

DCPP Annual Production, MWh

Year	DIABLO_7_UNIT 1	DIABLO_7_UNIT 2	Grand Total
2021	9,854,371.70	6,651,740.14	16,506,111.85
2022	8,915,481.58	8,729,836.67	17,645,318.25
2023	8,196,055.07	9,543,051.47	17,739,106.54
Grand Total	26,965,908.36	24,924,628.29	51,890,536.64

3-Year DCPP Ratio	63.10
3-year Avg NP15 Price	67.59
DCPP weight	0.93

DCPP Annual Cost and Calculated Cost / MWh from PG&E's May 19, 2023 Testimony in R2301007

Year	Cost	Cost	Dollars / MWh
2021	$ 581,344,000		**35.22**
2022	$ 644,111,000		**36.50**
2023	$ 735,836,000		**41.48**

2021 and 2022 data from Table 1, 2023 data from Table 2.

Annual DCPP Net Ratepayer Benefit Equals Total Annual Market Value Less Annual Cost

Year		
2021	$	**231,632,610**
2022	$	**841,062,472**
2023	$	**240,222,592**
Total	$	**1,312,917,675**

CGNP included PG&E's costs shown in their May 19, 2023 testimony in R.23-01-007 [8]

Note the range of DCPP's modest cost per MWh: $35.22/MWh in 2021, $36.50/MWh in 2022, and $41.48 in 2023. These values are comparable to the

[8] Page WP 8-7 of PG&E's March 29, 2024 A2401018 Public Version Workpapers at ***https://pgera.azurewebsites.net/Regulation/ValidateDocAccess?docID=788417***

$32.00/MWh figure for extended nuclear power plant operations that Lazard published in June, 2024. These levels will be shown as horizontal red lines near the origin on the charts. The annual market value of DCPP's generation in excess of DCPP's annual costs (the annual ratepayer rebate if the SB 846 rules applied) is significant: $231,632,610.00 in 2021, $841,062,472.00 in 2022, and $240,222,592 in 2023.

Employing the detailed hour-by-hour tabulations (that comprise the bulk of the PG&E March 29, 2024 public version workpapers) of locational marginal prices (LMPs) north of path 15, (NP15 [9]) - essentially the PG&E service territory except ZP26,

CGNP examines three challenges to the California power grid that drove up prices between 2021 and 2023 in the subsequent sections: natural gas supply impairments during periods of high natural gas demand, record electricity demand during the California Heat Storm of August through early September 2022, and wildfires such as the 2021 Bootleg Fire near the Oregon-California border causing transmission lines to be shut down. As shown in section 1.g.3. below, the natural gas supply impairments caused the greatest ratepayer burdens, as shown by the largest area under the red trace for this case. These challenges to California grid reliability are likely to recur during DCPP extended operations.

[9] NP15 map from CAISO's OASIS login page at **http://oasis.caiso.com/mrioasis/logon.do**

If California decision makers had heeded the 2011 advice of the eminent scientists and engineers that prepared the three CCST reports, none of those three factors would likely nave been able to cause significant increases to electricity prices. The CCST advice would still benefit ratepayers. (One of the factors driving California's recent population loss is the contribution of high power costs to the cost of living. [10] California's power prices are typically the most expensive in the continental U.S.)

1. g.3. Natural Gas Transmission Impairments drove up the cost of natural gas during high demand periods from late November, 2022 through early February, 2023, increasing California's wholesale electricity prices.

California imports about 95% of the natural gas consumed in the state. Thus, the state is dependent on a reliable natural gas transmission network to assure a supply of natural gas. Natural gas is the dominant energy supply for dispatchable in-state electricity generation. There are very few in-state natural gas storage facilities to serve as supply buffers, making natural gas a "just in time" energy source. Use of the largest storage facility, the Aliso Canyon Storage Field (ACSF) in the San Fernando Valley has been curtailed by the state since the failure of ACSF well SS-25 in October, 2015, which led to the largest escape of natural gas in history. SoCalGas's Line 235-2 exploded on October 1, 2017 near the Newberry Springs Compressor Station. El Paso Natural Gas's 30-inch Line 2000 exploded on August 15, 2021 near Coolidge, Arizona. This June 22, 2018 *Natural Gas Intelligence* article [11] notes many of these natural gas pipelines are

[10] **https://www.latimes.com/california/story/2023-12-22/california-loses-population-for-unprecedented-third-straight-year-but-the-exodus-has-slowed**

[11] **https://naturalgasintel.com/news/socalgas-sdge-accused-of-natural-gas-pipeline-violations/**

likely nearing the end of their service lives. Thus, additional natural gas transmission line failures are likely. Here's a snapshot of SoCalGas's delivery impairments on June 24, 2022:

SOUTHERN CALIFORNIA GAS COMPANY
PIPELINE/STATION MAINTENANCE SCHEDULE

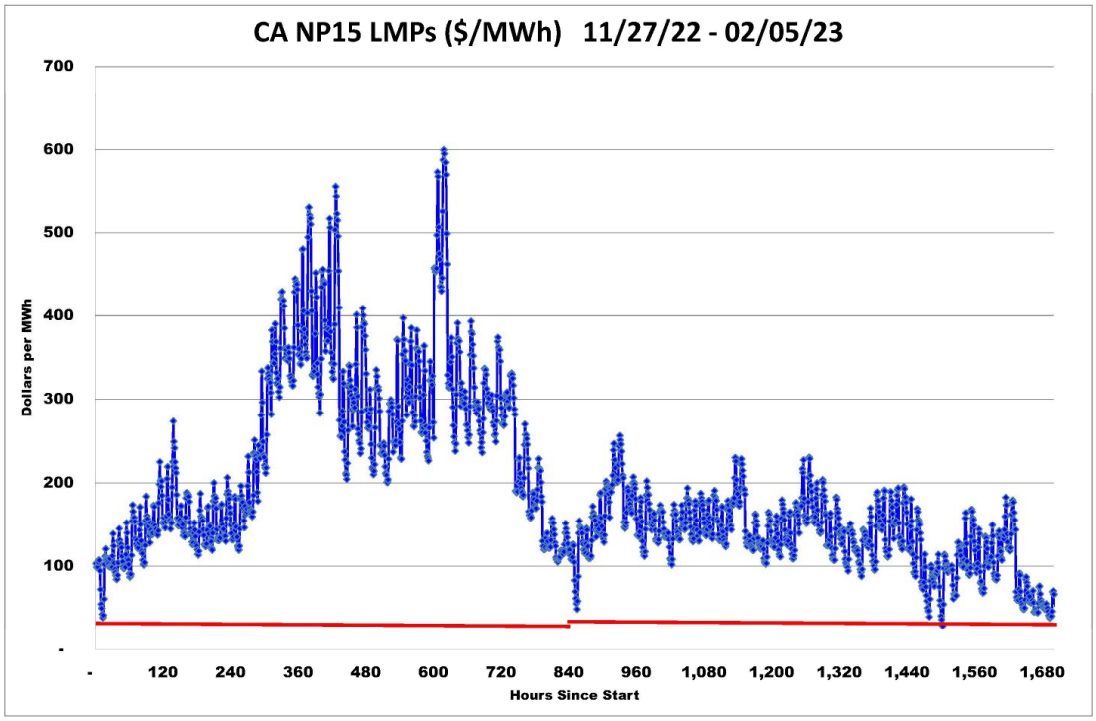
Receipt Capacity https://www.socalgasenvoy.com/ebb/attachments/1656099715872_SYSIMPT.pdf Archived 06 24 22 by CGNP

Location Type	Location	Start Date	End Date	Maintenance Type	Description	Capacity Reduction (MMCF)	Capacity Reduction (Dth)
Area Zone	Needles/Topock Area Zone	10/01/2021	TBD	Planned	L4000 and L235 Operational Restrictions	510	520,710
Receipt Point	TGN-Otay Mesa	06/18/2022	06/24/2022 11:59:59 PM PCT	Planned	Otay Mesa Station Maintenance. Reliability.	400	412,400
Sub-Zone	EP-Ehrenberg/NBP-Blythe	06/28/2022	06/30/2022 11:59:59 PM PCT	Planned	Compressor Station Maintenance. Reliability.	380	392,540
Sub-Zone	EP-Ehrenberg/NBP-Blythe	03/29/2018	TBD	Planned	L2000 Right of Way Expiration. See last critical notice titled "Southern System Right-of-Way" dated 4/16/2020 for more information.	30	30,990
Sub-Zone	EP-Ehrenberg/NBP-Blythe	01/02/2015	TBD		L2000 - Planned Outage - Voluntary decrease of maximum operating pressure on L2000 Southern Transmission Zone by approximately 20%. This change is being made to further improve and maintain the safety of So Cal Gas pipelines. Note: Original Job start date 8-6-2011	202	208,666
Sub-Zone	TW-Topock/EP-Topock	10/01/2018	TBD	Planned	L3000 Operational Restrictions	190	194,370
Zone	Northern Zone	10/01/2021	TBD	Planned	L4000 and L235 Operational Restrictions	340	349,180
Zone	Southern Zone	06/28/2022	06/30/2022 11:59:59 PM PCT	Planned	Compressor Station Maintenance. Reliability.	210	216,930
Zone	Southern Zone	06/18/2022	06/24/2022 11:59:59 PM PCT	Planned	Otay Mesa Station Maintenance. Reliability.	230	237,590
Zone	Southern Zone	03/10/2018	TBD	Critical	Zone reduced because of seasonal load conditions	460	475,180

A total receipt capacity reduction of 3,038,556 Dth / day (where a Dth is approximately equal to 1 MMBTu) was a contributing factor to inadequate refilling of ACSF during the summer of 2022, leading to record high natural gas prices starting in late November, 2022. On December 4, 2022, SoCalGas's ENVOY showed their receipt capacity impairments still totaled 2,463,300 Dth/day. At the left is a tabulation of relevant SoCalGas Citygate prices. The January 1, 2023 cost of $34.99 / MMBTu (million BTu) was extreme. (The

Month	Effective	Core Procurement Gas Price (Cents Per Therm) [10 Therms = 1 MMBTu]	
January	1/1/2023	**344.892**	**[$34.49 / MMBTu]**
December	12/1/2022	105.329	[$10.53 / MMBTu]
November	11/1/2022	64.959	[$6.50 / MMBTu]
October	10/1/2022	65.420	
September	9/1/2022	96.994	
August	8/1/2022	97.540	
July	7/1/2022	75.995	
June	6/1/2022	103.488	
May	5/1/2022	74.318	
April	4/1/2022	58.143	
March	3/1/2022	55.921	
February	2/1/2022	60.655	
January	1/1/2022	83.569	
December	12/1/2021	65.129	

US EIA shows the August 20, 2024 price is $1.53 / MMBTu at the southern California border.) This significant price increase led to multiple months-long-duration electricity price increases. Other California natural gas suppliers such as PG&E also had significant price increases per MMBTu. Thus, NP15 wholesale electricity prices were elevated from at least late November, 2022 through early February, 2023.



The blue trace is the LMP trend in dollars per MWh for NP15 for the period from November 27, 2022 through February 5, 2023. (120 hours corresponds to five days. The event is about 70 days long.) The red line is DCPP cost of $35.22 per MWh during 2022 and $41.48 per MWh during 2023. Clearly, DCPP market revenues are significantly more than DCPP costs during almost

every hour during this interval. If the SB 846 rules applied, the ratepayer rebate would be proportional to the large area under the blue traces less the small area between the zero line for the y-axis and the red lines. The most significant market revenue increase began around December 7, 2022 and extended through almost the entire month. The peak of about $600.00 per MWh occurred around December 24, 2022. The adverse ratepayer impact extended during the entire 24 hour period, showing the ongoing vulnerability of the California power grid to natural gas transmission disruptions.

1. g.4. The California electric generation system was stressed during the August - early September 2022 Heat Storm. A record-high NP15 LMP greater than $1,200.00 / MWh occurred during a high demand period.

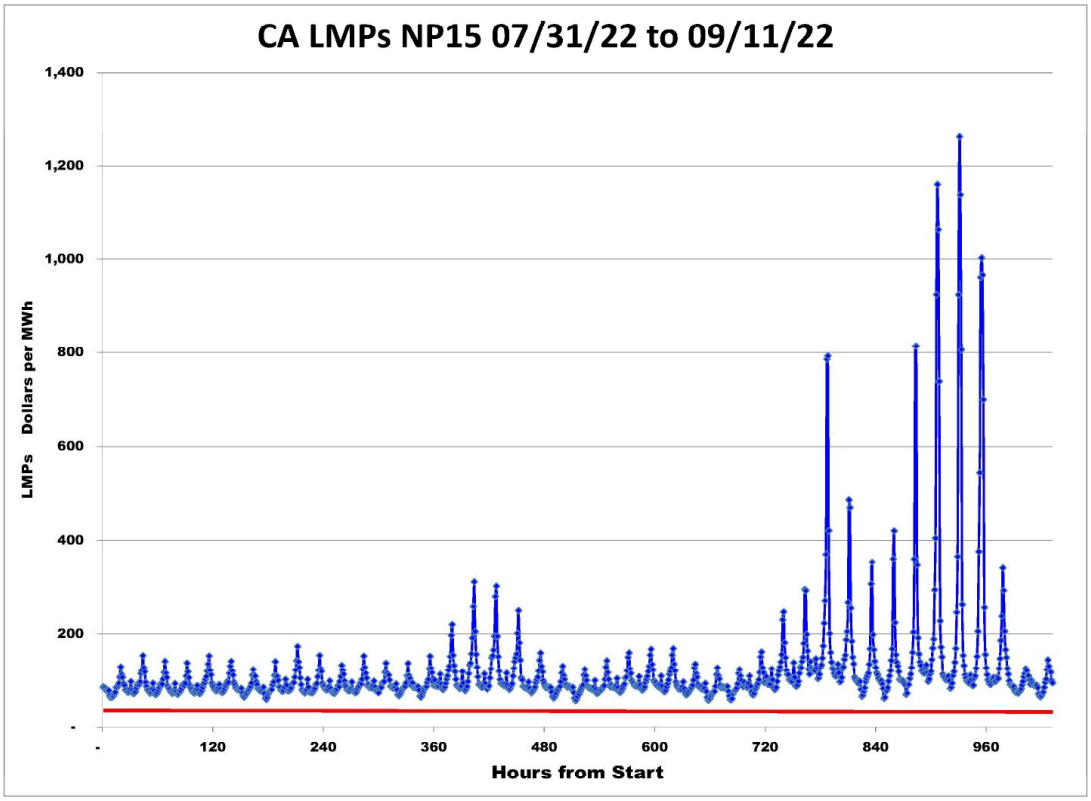
The Commission should note DCPP was producing its full output during the entire interval of the Heat Storm. Nuclear power tends to be extremely reliable. DCPP's typical annual capacity factor exceeds 90%, meaning DCPP is producing full power on a 24-7 basis for extended intervals. Here's what Governor Newsom said regarding the importance of DCPP in preventing California blackouts on September 12, 2022. [12] Many fossil-fired power plants

[12] Eytan Wallace CA Capital correspondent for @KTLA, @KRON4news, @KSEE24, @CBS47, @KGETnews, @fox40, @fox5sandiego | Formerly: @KGETnews, @NBCLA, @USC, @AnnenbergMedia
https://tinyurl.com/Newsom-on-DCPP
3:34 PM • Sep 12, 2022 0:24 seconds. Gov. @GavinNewsom 42,700 Views, 102 retweets, 48 quote tweets, 425 likes

....Without the power supply from the Diablo Canyon Nuclear Power Plant during the record heatwave last week, we "full stop" would have had rolling outages during that period.

Eytan: What do you think could have happened last week if we did not have Diablo Canyon?
Governor Newsom: We would have I mean, if we didn't have that 9 % base load its about 9% of the base load of electricity in the state of California, there's no doubt we would have blown past, we would have absolutely triggered into what we call load reduction, otherwise referred to as blackouts, unquestionably, if we did not have Diablo Canyon period, full stop. That's not even in debate or dispute.....

throughout the American West had unplanned outages during this extreme Heat Storm spanning about 40 days. DCPP's power production cost remained a modest $36.50 / MWh during the Heat Storm. Climate scientists anticipate there will be similar Heat Storms in the future. The graph on this page shows the NP15 LMP trend in blue during this Heat Storm. DCPP's power production cost is shown as the red horizontal line at $36.50 / MWh.



The prelude to increased NP15 LMPs are the four daily LMP spikes above $200.00 per MWh from August 16 through August 19, 2022. The next time a LMP spike exceeded $200.00 per MWh was on August 31, 2022. There were 11 daily LMP spikes which continued through September 10, 2022. While CAISO's new

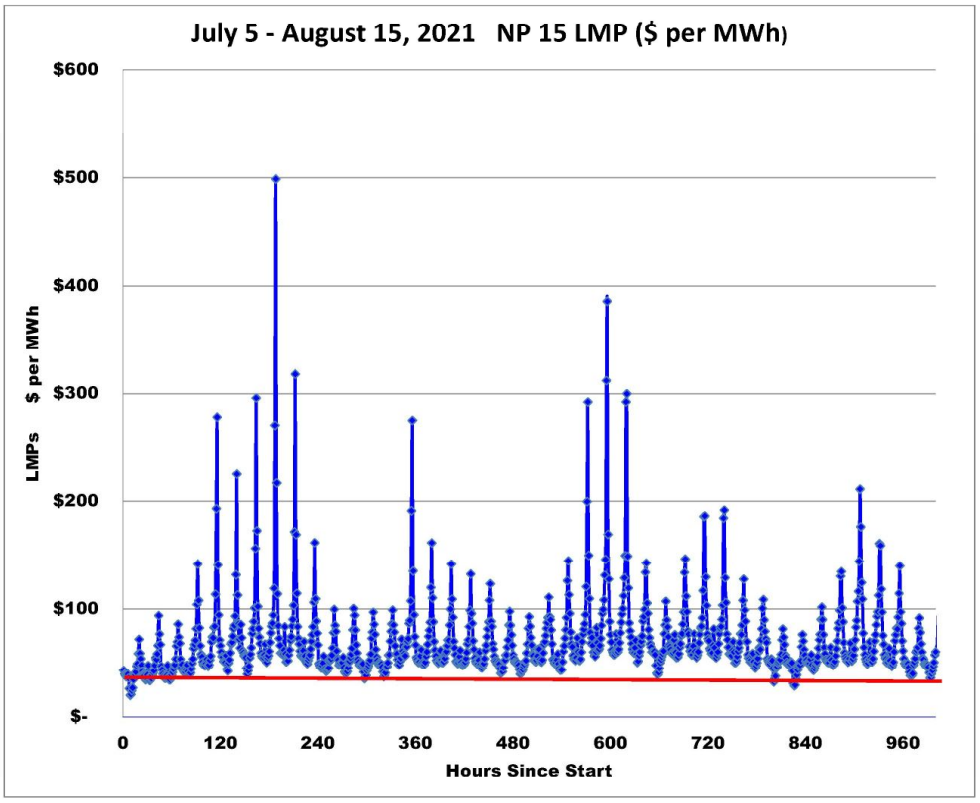
record power demand of 52,061 MW occurred at 16:57 on September 6, 2022 [13], likely as a consequence of the cumulative impact on the fossil generation fleet from this extended Heat Storm, the peak LMP above $1,200.00 did not occur until two days later on September 8, 2022. Note DCPP's production cost of $36.50 per MWh was well below the hour-by-hour NP15 LMPs during the entire more than month-long Heat Storm.

1. g.5. During the Bootleg Fire from July 6, 2021 – August 15, 2021, near the Oregon-California border, the 5,000 MW AC Intertie (Path 66) was threatened. This caused significant increases in NP15 LMPs, illustrating the wildfire vulnerability of long-distance electricity transmission moving power from other states to California.

In multiple CPUC Proceedings, CGNP noted the structural vulnerability of the California power grid that arises from importing the greatest amount of power (about 100 TWh per year) of any U.S. state to serve a state load near 300 TWh per year. (A TWh is a billion kilowatt-hours.) The loss of the 5,000 MW AC Path 66 is the largest contingency that CAISO must plan for. Path 66 currently consists of three roughly parallel 500 kV 3-phase AC power transmission lines that cross the Oregon - California border. For more than a month, the Bootleg Fire repeatedly threatened one or more of these power transmission lines. The period of elevated California electricity prices spanned about 40 days. On the evening of July 9, 2021, two of the three lines were shut down to protect this valuable asset during the wildfire. CGNP made a June 15, 2022 presentation regarding the statewide LMP impact of this wildfire during a panel discussion at the annual American Nuclear Society meeting. Sharply rising LMPs are a marker showing electricity reliability challenges. (CGNP's PowerPoint slides will be

[13] **https://www.caiso.com/documents/californiaisopeakloadhistory.pdf**

posted in the supporting materials section at the CGNP website for this testimony. The archived LMPs shown in the CGNP presentation are much higher than the LMPs we are charting for the same date and time intervals in this testimony.) Without local and reliable DCPP, which has short, triply redundant pathways to California's main 500 kV AC backbone, long duration California blackouts would have been the likely outcome of the Bootleg Fire. The NP15 LMP details are shown on this chart. As previously, the blue traces are the NP15 LMPs and the red horizontal line is the modest $35.22 per MWh 2021 operational cost of DCPP.



As a consequence of the importance of AC Path 66, there were elevated NP15 LMPs for almost all of the hours the Bootleg Fire was a threat to this

transmission pathway. 2/3 of AC Path 66 was shut down during the evening of July 9, 2021, triggering a CAISO EEA2. However, the biggest NP15 LMP spike was three days later: $399.00 per MWh at 8:00 PM on July 12, 2021! LMPs above $200.00 per MWh were observed on ten evenings, with the last over $200.00 per MWh event on the evening of August 12, 2021. CGNP notes that if the CAISO grid regionalization plan which results in the substitution of PacifiCorp's mostly coal-fired generation for local, reliable DCPP, California will be much more vulnerable to blackouts because the majority of PacifiCorp's "Energy Gateway" crosses forests that are vulnerable to wildfires similar to the 2021 Bootleg Fire. CGNP holds this is an unacceptable alternative to keeping Diablo Canyon running well beyond 2030.

1. g.6. General Comments

Diablo Canyon opponent's testimony utilizes assumptions leading to inflated DCPP cost projections. The most egregious example was the 2016 testimony in A.16-08-006 coordinated by PacifiCorp's nonprofit proxy, CEERT [14] and joined by organizations doctrinally opposed to nuclear power. This report [15], which the Commission and PG&E relied on projected 2025 DCPP power costs in the neighborhood of $100.00 per MWh, completely contrary to the U.S. nuclear power price trends. As noted earlier, the actual 2023 DCPP cost was a mere $41.48 per MWh. In 2022, the Breakthrough Institute prepared a concise rebuttal

[14] Berkshire Hathaway Energy owns PacifiCorp. The most troubling conflict of interest during several relevant years was the Chairman of CEERT's Executive Committee, Attorney Jonathan M. Weisgall, continues to serve as Vice President of Legislative and Regulatory Affairs for Berkshire Hathaway Energy. **https://ceert.org/about-ceert/ceert-board/jonathan-m-weisgall/**

[15] **https://web.archive.org/web/20161123130308/http://webiva-downton.s3.amazonaws.com/877/6d/5/8551/PlanBfinal.pdf**

[16] of the faulty 2016 CEERT study. CGNP advises the Commission to take DCPP opponents's inflated DCPP cost claims with a proverbial grain of salt.

In a similar vein, CGNP reminds supporters of CAISO grid regionalization that Maryland decision-makers apparently believed the representations of PJM grid regionalization advocates that the right to set state electricity policies would be preserved. The Commission should take claims of state's rights preservation regarding electricity policy by CAISO grid regionalization advocates with a similar grain of salt. CGNP predicts that bedrock California environmental legislation such as AB 32, SB 100, and SB 1386 (Perata, 2006) will become quaint memories if CAISO grid regionaliztion is enacted. How will California's environmentally-conscious voters react?

2. Whether the calculation of the non-bypassable charge and rate proposals by PG&E, SCE, and SDG&E comply with D.23-12-036 and should be approved.

CGNP's Opening Direct Testimony supported the modest non-bypassable charge and rate proposals by PG&E, SCE, and SDG&E.

3. Whether PG&E's proposal complies with the implementation of the methodology established by D.23-12-036 for allocating the RA attributes and GHG-free energy associated with DCPP's extended operations.

CGNP's Opening Direct Testimony supported PG&E's proposal for allocation of DCPP's RA attributes and GHG-free energy associated with DCPP's extended operations. CGNP alerts the Commission to Ava Community Energy's

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[16] "The Faulty Diablo Canyon Study that Started it All - How Friends of the Earth and a Prominent Renewable Energy Lobbyist Hoodwinked California Policy-Makers," Jonah Messinger, Seaver Wang, and Adam Stein, August 30, 2022, The Breakthrough Institute, Oakland, California.
https://thebreakthrough.org/issues/energy/the-faulty-diablo-canyon-study-that-started-it-all

approval of item 15 accepting some of DCPP's energy and beneficial attributes during their September 18, 2024 Board of Directors meeting. [17]

4. Whether PG&E's proposed volumetric performance fees (VPFs) spending plan for the November 3, 2024 to December 31, 2025 period complies with Pub. Util. Code section 712.8(s)(1) requirements and should be approved.

CGNP agrees with the text of PUC § 712.8 (s) (1) reproduced here. The operator shall submit to the commission for its review, on an annual basis the amount of compensation earned under paragraph (5) of subdivision (f), how it was spent, and a plan for prioritizing the uses of such compensation the next year. Such compensation shall not be paid out to shareholders. **Such compensation, to the extent it is not needed for Diablo Canyon, shall be spent to accelerate, or increase spending on, the following critical public purpose priorities:** (emphasis added.)

(A) Accelerating customer and generator interconnections.

(B) Accelerating actions needed to bring renewable and zero-carbon energy online and modernize the electrical grid.

(C) Accelerating building decarbonization.

(D) Workforce and customer safety.

(E) Communications and education.

(F) Increasing resiliency and reducing operational and system risk.

5. Whether PG&E's proposed modified regulatory process for PG&E to utilize a Tier 3 advice letter for reporting on the amount of VPF, how the funds were spent and a plan for prioritizing the uses of such funds pursuant to Pub. Util. Code sections 712.8(f) (5) and 712.8(s)(1), is reasonable and should be approved.

[17] Ava Community Energy September 18, 2024 Board meeting Agenda Item 15 **https://avaenergy.org/wp-content/uploads/2024/09/15.-Item-15-Nuclear-Allocation-Decision-Action-Item-1.pdf** and the video record of the board meeting. **https://www.youtube.com/watch?v=qLsjr1XwkC4**

See CGNP's comments in section 4., immediately above.

6. Whether PG&E's testimony satisfies all the regulatory requirements set forth in D.23-12-036.

CGNP continues to be concerned that opponents to DCPP extended operations continue to raise out-of-scope issues. Such actions motivated CGNP's September 4, 2024 Motion to Strike testimony proffered by SLO Mothers for Peace (which was later rejected by the ALJ.) CGNP again calls on the Commission to reject out-of-scope issues raised by opponents to DCPP extended operations.

7. Conclusion

CGNP's Opening and Rebuttal Testimony documented that DCPP is a cost-effective generator during extended operations. Thus, DCPP's costs are reasonable. DCPP's extended operations will likely result in rebates unless the controversial CAISO grid regionalization plan backed by PacifiCorp is enacted. If CAISO grid regionalization is enacted, SB 846 will likely be successfully challenged in federal court by PacifiCorp. Following the reasoning in the 2016 case decided by the U.S. Supreme Court, *Hughes v. Talen Energy* [18] and a pair of similar 2016 FERC Decisions involving state subsidies for two nuclear power plant in Ohio. SB 846 would likely be invalidated under federal preemption, applying the U.S. Constitution's Commerce Clause likely yielding the probable

[18] *Hughes v. Talen Energy Marketing Consolidated with CPV Maryland, LLC v. Talen Energy Marketing*
https://www.scotusblog.com/case-files/cases/nazarian-v-ppl-energyplus-llc/

Docket No.	Op. Below	Argument	Opinion	Vote	Author	Term
14-614	4th Cir. Feb 24, 2016		Apr 19, 2016	8-0	Ginsburg	OT 2015

Holding: Maryland's regulatory program to encourage development of new in-state energy generation is preempted by the Federal Power Act, which vests in the Federal Energy Regulatory Commission exclusive jurisdiction over interstate wholesale electricity rates. Judgment: Affirmed, 8-0, in an opinion by Justice Ginsburg on April 19, 2016. Justice Sotomayor filed a concurring opinion. Justice Thomas filed an opinion concurring in part and concurring in the judgment.

PacifiCorp objective of shutting down the safe, reliable, abundant, local, cost-effective DCPP and largely replacing it with PacifiCorp's mostly coal-fired generation in and near Wyoming - with the associated air and water pollution and transmission risks, just as occurred when SONGS was needlessly closed at the end of January, 2012. The SONGS power substitution has been obscured via the use of "unspecified power" in the power source labeling by IOUs such as SCE and SDG&E. (Unspecified power is mostly out-of-state coal-fired generation.) DCPP plays an important role in California electric power grid reliability by assuring large amounts of synchronous grid inertia [19] which would otherwise be supplied by PacifiCorp's out-of-state mostly coal-fired generation. Assuring California electric power grid reliability and protecting the environment are two of the Commission's responsibilities.

At the WIEB - CREPC "Pathways Initiative" website, there is already an April 10, 2024 letter showing the CPUC's endorsement of CAISO grid regionalization despite consistent opposition since 2016 from the California state legislature and a letter showing general support from the CPUC's Public Advocate's Office. [20] These filings endorsing the WWGPI plan are a likely consequence of PacifiCorp's $2,541,794.12 lobbying budget directed towards the CPUC between 2019 and 2023. Another likely consequence of PacifiCorp's lavish direct CPUC lobbying expenditures between 2019 and 2023 is the improper CPUC Decision to completely deny CGNP's A.16-08-006 January 27, 2023 intervenor compensation request of $153,082.09 in D.24-01-018. CGNP was the

[19] **https://greennuke.substack.com/p/why-is-grid-inertia-important**

[20] Comments on the April 10, 2024 proposals of the West-Wide Governance Pathways Initiative Launch Committee (Launch Committee)
https://www.westernenergyboard.org/wp-content/uploads/13.-State-Signatories-Comments.pdf
Public Advocates Office Comments on the West-Wide Governance Pathway Initiative Phase 1 Straw Proposal, May 8, 2024
https://www.westernenergyboard.org/wp-content/uploads/Public-Advocates-Office-Comments-on-WWGPI-Phase-1-Straw-Proposal.pdf

lone party of 55 that advocated for DCPP extended operations during the entirety of A.16-08-006, which was the final decision. At the same time, the Commission provided generous intervenor compensation awards to opponents of DCPP extended operations in the final phase of A.16-08-006, contrary to legislative intent and clearly established precedent.

Dated: October 1, 2024

Respectfully submitted,

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