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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	**R.16-02-007** (Filed 02/11/2016*)*

CALIFORNIANS FOR GREEN NUCLEAR POWER, INC. COMMENTS IN RESPONSE TO ALJ FITCH'S PROPOSED DECISION DATED MARCH 18, 2019 RE ADOPTING PREFERRED SYSTEM PORTFOLIO FOR 2017-2018 INTEGRATED RESOURCE PLAN

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I. Introduction

Independent nonprofit, **Californians for Green Nuclear Power, Inc. (CGNP)** respectfully requests time to present its viewpoint at the All-Party Meeting set for April 4, 2019 at the CPUC headquarters. In order to fight climate change, PG&E should withdraw its plan to voluntarily close its Diablo Canyon Power Plant (DCPP) in 2025 as its plan is not in the public interest..

While some arguments necessarily assume massive energy storage will be available for intermittent resources within 10-20 years, this proceeding by law covers time horizons much earlier too. There is nothing in the record or in the public domain that indicates the massive quantities of energy storage are available now or will be available shortly, to make an appreciable difference in the deployment of "renewables" and hence emissions. For the next decade, the only logical thing to do is maintain extant dispatchable GHG-free power sources online, like Diablo Canyon Power Plant (DCPP.) As the record in previous proceedings shows, DCPP has ample useable life left to serve as the bridge technology that California needs.

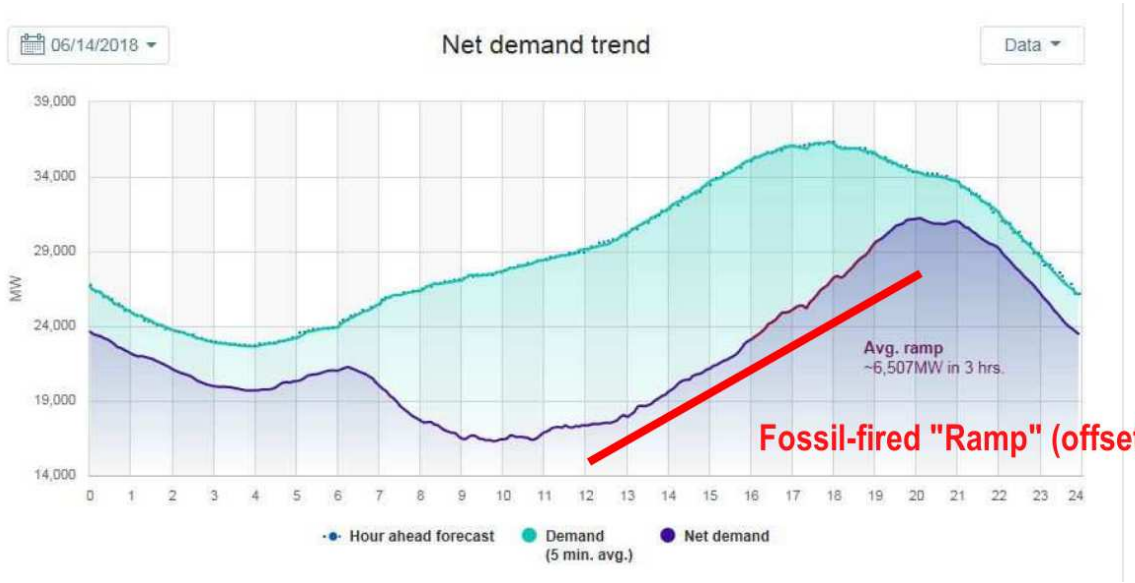
CGNP submitted testimony in the Diablo Canyon case which showed that every large electric grid in the world relies upon a continuous large supply of power from baseload sources. This reliable supply must make up a substantial fraction of the total at all times in order to ensure grid stability. For the CAISO, this minimum is many times the output of Diablo Canyon. No reliable carbon free replacement for DCPP's 2,240 MW power has been identified in the IRP.

Under this IRP. the reliable supply of essential baseload power will be met by burning natural gas, more than if Diablo continued to operate, increasing CO2 emissions by 9 million tons annually. As the ALJ noted without DCPP, the set of IRPs submitted will not be adequate to meet the GHG emissions goals and could even challenge grid reliability. Further the ALJ noted that Since Diablo Canyon was a baseload resource and most renewable resources are not, if anything we are concerned that the replacement power procured mostly by CCAs will not represent as reliable and cost-effective a resource as DCPP has proven to be over the decades.

Indeed, intermittent solar and wind sources are not capable of replacing a baseload plant such as DCPP because they can never be counted upon to produce power whenever it is needed. All of the wind and solar sources in the proposed IRPs do not allow for ANY firm generating capacity to be retired. As the ALJ noted, the IRPs do not provide sufficient information on the emissions of pollutants associated with the resources they would use. Detailed analysis filed by CGNP in the A/16-08-006 also shows the proposed intermittent replacements will result in much higher overall costs to ratepayers than continued operation of Diablo Canyon. For all of these reasons

the IRP should provide for enabling Diablo Canyon, California's largest reliable, economical carbon free energy source, to continue operating well beyond PG&E's proposed shutdown.

II. The Proposed IRP fails to identify a reliable, economical zero-carbon emitting replacement for DCPP.



This California net and total demand trend plot is from the California Independent System Operator (CAISO) website. The aqua curve is total California electric power demand as a function of time. The horizontal units are hours, starting with 0 at midnight. The curve ends 24 hours later at the next midnight. [1]

The difference between the pair of curves is met by so-called "renewable" resources. The dominant intermittent generation means are solar and wind. Both of those generation resources fall to negligible values during significant intervals, with the biggest factor being night, which

[1] The CAISO Net demand (demand minus solar and wind) is shown near the bottom of the page at http://www.caiso.com/TodaysOutlook/Pages/default.aspx. Unfortunately, only the previous 50 weeks of plots and spreadsheet data are visible. Thus, the above plot will only be visible at the CAISO website until the beginning of June, 2019.

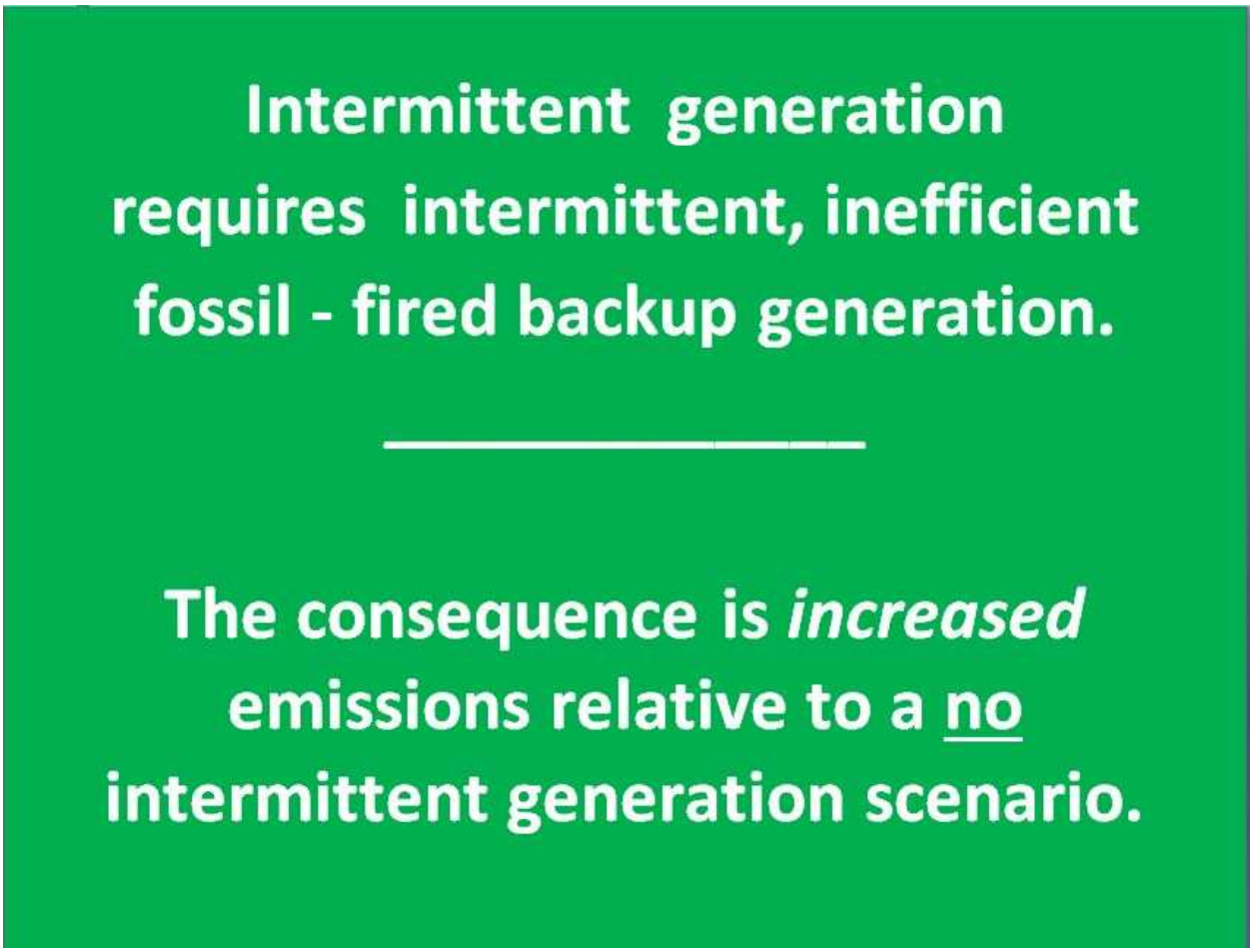
produces zero solar generation. CGNP carefully tabulated the CAISO generation records for the half-year ending on January 31, 2017. CGNP found that the "capacity factor" (or percentage on-time) for the half-year for both solar and wind was only about 20%, or 1/5 of the time.[2] Per the CAISO, the total installed generation (nameplate) capacity for California solar and wind was about 18,000 Megawatts (MW) on that date.

The purple curve is net demand, which is met by California's dispatchable generation resources. The primary fast-acting generation resource is natural-gas-fired generation, with its attendant emissions of both carbon dioxide (CO2) from combustion and methane (CH4) from leakage during extraction and distribution.. On Thursday, June 14, 2018, natural-gas-fired generation compensated for the remaining ~ 80% of the day. Promoters of solar and wind downplay this connection, which was documented in the August 11, 2016 ***Washington Post*** article by Chris Mooney, "Turns out wind and solar have a secret friend: Natural gas."
http://tinyurl.com/Natural-Gas-Secret

The vertical coordinate is MW, or Megawatts of generation. Please note the zero level falls on the second line of text below the chart, with the first entry shown at 14,000 MW. The value increases by 5,000 MW with each entry, ending with a highest value of 39,000 MW.

The natural-gas-fired "ramp" starts at about noon and ends at about 8:00 PM. The ramp height is about 16,000 MW. To give some perspective, Hoover Dam's generation capacity (nameplate) is 2,078 MW. This curve means one Hoover Dam is added in the first hour, two Hoover Dams in the second hour until eight Hoover Dams are running in the eighth hour. These generators are **not zero-carbon** such as Hoover Dam or DCPP - a nuclear power plant. Instead, they are natural-gas fired plants that are being run in an inefficient, intermittent fashion, To understand this, consider operating your vehicle in stop-and-go city driving. Emissions are higher and miles per gallon are lower than running your vehicle on the freeway at an essentially constant power level.

2 "NECG Commentary - Diablo Canyon Retirement" by Gene Nelson, Ph.D. January 11, 2018 https://nuclear-economics.com/wp-content/uploads/2018/01/2018-01-11-DCPP-1.pdf



Natural-gas-fired generators are huge machines that obey the same laws of physics. The conclusion is this stop-and-go pattern for running these natural-gas-fired generators yields higher natural gas consumption (good news for a natural-gas vendor) and higher emissions (bad news for the environment.) Any environmental benefit from the zero-carbon solar generation or wind generation is questionable. Results from both France and south Australia show emissions have increased as more solar and wind are added**. Adding more solar or wind only exacerbates these intermittency problems.** California's energy storage systems (Helms and Castaic) are used to prevent supply reliability and instability problems caused by intermittent solar and wind.

"Always On" zero-carbon DCPP does not suffer from any intermittency problems. It runs for years at a time with a self-contained energy source. Any "extra" nuclear power could be used to charge electric vehicles or desalinate water close to its point of use.

III: The impossibility of replacing zero-carbon DCPP with solar and wind

The previous section explained the reasons for this impossibility In 2017-2018, CGNP submitted written testimony and appeared before several California Assembly and California Senate standing committees advocating for preserving the environmental and ratepayer benefits of the continued safe operation of DCPP. Many times, CGNP reiterated the statement

> ... In an 11 April 2018 conversation with CGNP's Dr. Nelson, EQC [3] consultant Dr. David Garcia agreed, based on Dr. Nelson's analysis, that replacing Diablo Canyon with other carbon-free energy would be "impossible". Indeed, it is scientifically impossible....

Solar and wind advocates incorrectly point to "energy storage" as a means to mitigate the above intermittency challenges. California's two large energy storage projects, built in the 1980s demonstrate the negligible benefit of storage (which is **not** an energy source. A power source charges storage.) Castaic Pumped Storage (Castaic) is in southern California and PG&E's Helms Pumped Storage (Helms,) is about 50 miles east of Fresno in the Sierra foothills. The modest annual production curves of Castaic and Helms are contrasted with the abundant output of DCPP in reference 2, above. The likely reason is "Ancillary Services" - which are **required** when large amounts of intermittent generation are attached to the California power grid - are given much higher market rewards than bulk energy storage. To prevent equipment damage, voltage and frequency stability must be maintained, despite solar and wind's well-documented grid destabilization effects. Furthermore, Battery Electric Storage (BES) is not cost effective. [4]

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[3] EQC = Senate Standing Committee on Environmental Quality https://senv.senate.ca.gov/

[4] "The $2.5 **trillion** reason we can't rely on batteries to clean up the grid - Fluctuating solar and wind power require lots of energy storage, and lithium-ion batteries seem like the obvious choice—but they are far too expensive to play a major role."
by James Temple, ***MIT Technology Review***, July 27, 2018 (Retrieved the day of publication)
https://www.technologyreview.com/s/611683/the-25-trillion-reason-we-cant-rely-on-batteries-to-clean-up-the-grid/

The California Energy Commission (CEC) requested from the California Council on Science and Technology (CCST) an analysis of the most cost-effective pathway to achieve California's legislatively-mandated emissions reductions. Consistent with CGNP's advocacy, the highly-qualified CSTC scientists and engineers indicated in a pair of 2011 reports the only path forward: **Expand nuclear power**.[5]

Consider also the March 26, 2019 advocacy of PG&E's former CEO Geisha Williams for keeping the U.S. nuclear power fleet operating as a critical means to fight climate change. [6] The ***Law 360*** article also notes PG&E's potential liability of $10.5 billion for the lethal Camp Fire in November, 2018..

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[5] "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/
... 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. However, nuclear waste storage remains a significant problem with existing reactor technology, not to mention public concern, especially in the wake of Japan's recent earthquake and tsunami disaster....
"California's Energy Future – Powering California with Nuclear Energy" Release Date: July 1, 2011 | Last Updated Date: February 19, 2015 https://ccst.us/reports/californias-energy-future-powering-california-with-nuclear-energy/
... Jane C.S. Long, associate director at large for Lawrence Livermore National Laboratory and co-chair of the California's Energy Future study. Population growth and energy demand will eventually force a decision on California's energy strategy, especially with the requirement for drastic reduction in emissions. "By 2050, California's population is expected to rise to 55 million people. That increase, accompanied by economic growth, will likely require a doubling in electricity production, but with virtually no emissions, to meet state goals," says Jane Long. "That is why nuclear power could prove one important option for meeting those strict and necessary standards."...

[6] "Climate Change Must Guide Utility Plans, Ex-PG&E Boss Says" By Keith Goldberg ***Law360*** (March 26, 2019, 3:55 PM EDT) -- https://www.law360.com/bankruptcy/articles/1142924/climate-change-must-guide-utility-plans-ex-pg-e-boss-says retrieved March 27, 2019 "States have an important role in setting an emissions target. Setting wide and aggressive goals is appropriate," Williams said. "I think how to get there should be left to system operators ... and not necessarily by a prescriptive mandate that says you must purchase this percentage of electricity from certain technologies." In making that point, Williams put in a plug for keeping existing U.S. nuclear power plants and their carbon-free emissions up and running for as long as possible.
"I think that greenhouse gas is the enemy, and we need to decide how we reduce that in the most cost-effective manner," Williams said. "To cast that aside would be pretty irresponsible."

IV. Closing a zero-emissions nuclear power plant increases natural-gas-fired generation, hence increases emissions - contrary to California statutes.

California's San Onofre Nuclear Generating Station (SONGS) was closed in January, 2012 as a consequence of the plant owners mis-managing a routine service operation (steam generator replacement.) Nuclear generation, unlike solar generation and wind generation is safe and dispatchable, available to meet demand 24/7, 365 days a year. Thus, when dispatchable SONGS ceased generation, the replacement generation needed to be dispatchable, namely natural-gas-fired generation. This California Air Resources Board (CARB) graphic clearly shows this concept. Zero-carbon SONGS prevented about 9 million metric tons (MMT) of emissions in 2011.

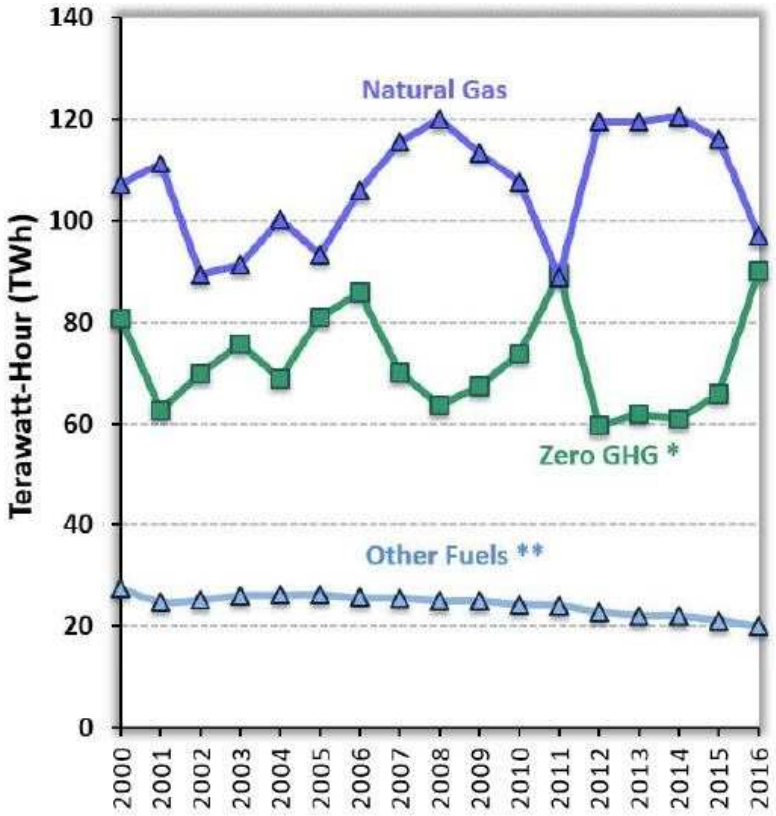


Figure 10a. In-State Electricity Generation by Fuel Type. This figure shows the amounts of electricity generated by in-state natural gas power plants, zero-GHG sources (which includes solar, wind, hydro, and nuclear)

In this graphic shown on page 9 of 29 from the 2018 CARB publication [7] the blue curve shows in 2011, California in-state natural-gas-fired generation produced about 90 tera-watt hours (TWH) of electricity. The natural-gas-fired value soared to 120 TWH in 2012, with the most important factor being the loss of about 18 TWH/year previously supplied by SONGS generation, as is shown in the green curve. Finally, in the wet

[7] California Air Resources Board, California Greenhouse Gas Emissions 2000-2016 https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2016/ghg_inventory_trends_00-16.pdf retrieved March 27, 2019

year 2016, large hydroelectric power production temporarily increased. However, California's large hydroelectric power production is subject to the random climate variations, so in dry years, natural-gas-fired generation must increase, with corresponding increases in emissions.

If PG&E follows through with its proposal to voluntarily close DCPP in 2025, the inevitable result is an increase in fossil-fired emissions, likely from a combination of in-state and out-of-state fossil-fired generators. CGNP joined a coalition of environmental and labor organizations to defeat AB 813 in 2018. AB 813 would have terminated the operations of the CAISO and substituted a multi-state board, much more friendly to coal-fired generation. The likely beneficiary of AB 813 was to be the Berkshire Hathaway energy company PacifiCorp. PacifiCorp lobbied extensively for AB813. PacifiCorp currently owns 6,000 MW of dirty coal-fired generation, mostly in coal-friendly Wyoming. Contrary to legislative intent, replacing zero-carbon DCPP by outsourcing California's fossil-fired generation to out-of-state generators would cause multistate harms and increase California ratepayer burdens.

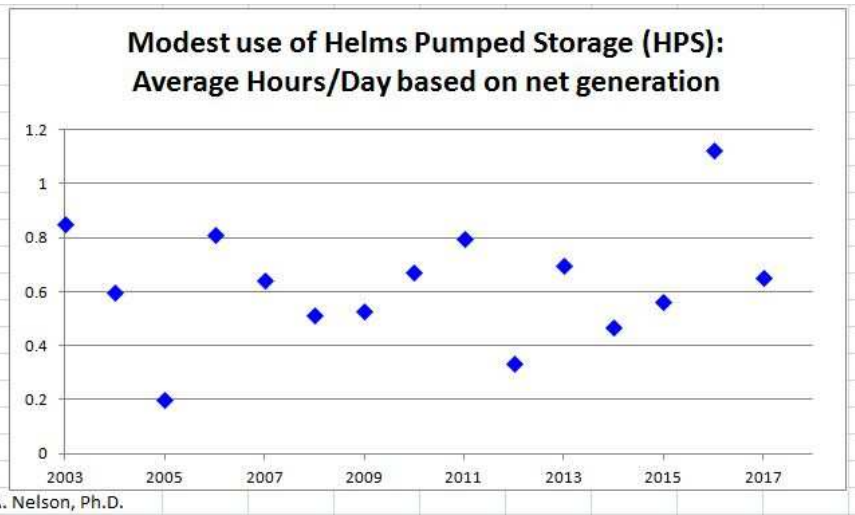
V. Another imposed cost of "renewables" - substantial stranded assets

California ratepayers annually pay the investor-owned utilities (IOUs) shareholders large sums via the obscure "Capital Cost Recovery" or "Cost of Capital" mechanism. IOU shareholders are awarded the product of the annual allowed depreciation of the IOU's generation and transmission assets and a percentage, currently in the range of 10% to 11% - far in excess of the current Federal Funds Rate of 2.5%. Ratepayers are ultimately responsible for paying this high interest rate as a component of their energy bills.

A generating or transmission asset that is not in use most of the time is a "stranded asset" that provides little ratepayer benefit. As noted above, Helms Pumped Storage (HPS) is apparently used primarily to compensate for the intermittencies of solar and wind generation. Based on statistics from the U.S. Energy Information Administration (USEIA) this expensive asset is barely used. The greatest use of HPS between 2003 and 2018 was in 2016, with an average use of about 67 minutes per day during that year. The lowest use was 12 minutes per day in 2005. In proceeding A.16-08-006, CGNP filed a data request with PG&E, the owner of HPS to learn why

this resource with a nameplate capacity of 1,212 MW was used so sparingly. CGNP's data request was rebuffed by PG&E.

Year	MWh	Hours/Day	Capacity Factor
2018	-412,780	0.932	3.88%
2017	-290,220	0.656	2.73%
2016	-498,562	1.126	4.69%
2015	-250,413	0.566	2.36%
2014	-209,450	0.473	1.97%
2013	-308,524	0.697	2.90%
2012	-149,997	0.339	1.41%
2011	-353,906	0.799	3.33%
2010	-297,961	0.673	2.80%
2009	-235,417	0.532	2.22%
2008	-227,328	0.514	2.14%
2007	-286,510	0.647	2.70%
2006	-359,910	0.813	3.39%
2005	-89,046	0.201	0.84%
2004	-265,979	0.601	2.50%
2003	-376,550	0.851	3.55%



Above spreadsheet revised 03/28/19 by Gene A. Nelson, Ph.D.

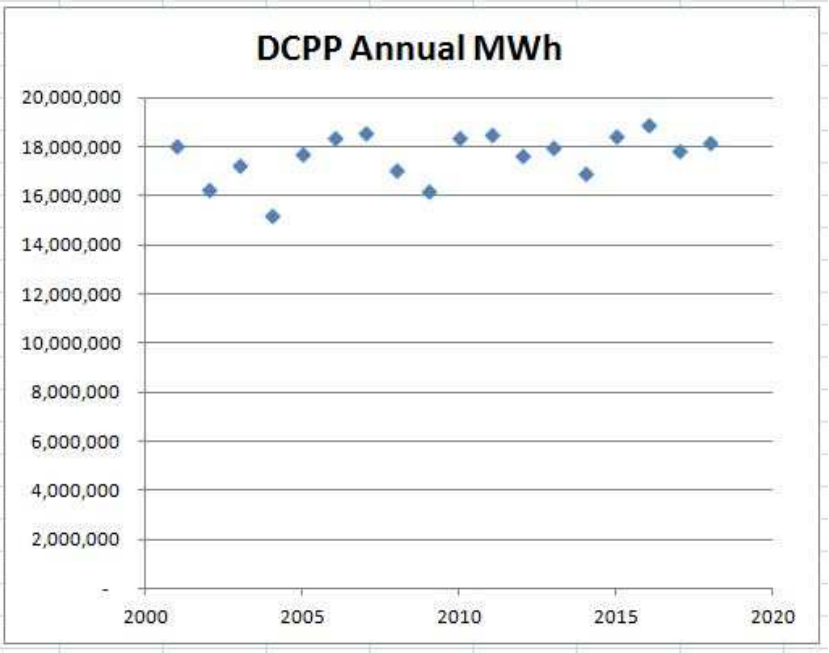
Another example of stranded assets is Southern California Edison's (SCEs) Mountainview Power Combined-Cycle Gas Turbine Power Station in Redlands, CA and the "Peaker" power plants that SCE owns and operates. Quoting from Page 40, Section IV Peaker Power Plants [8], ... The Peaker Division of the Power Production Department includes the five Peaker Units, their centralized control center and support facilities, and the employees who operate, maintain, and manage these facilities. The first four Peakers – Barre (next to the SCE Barre sub-station), Center (next to the SCE Center sub-station), Grapeland (next to the Etiwanda Generating Station), and Mira Loma (next to the SCE Mira Loma sub-station) – began commercial operation in August 2007. Due to permitting delays, the fifth Peaker – McGrath (next to the Mandalay Generating Station) – did not begin commercial operation until November 2012.[44]

[44] The Etiwanda and Mandalay Generating Stations are owned and operated by Reliant Energy.

[8] 2018 General Rate Case A.16-09-____ Southern California Edison Workpapers. "Power Supply - Coal, Mountainview, Peakers and Mohave Closure" SCE-05 Volume 04, Book A September, 2016 http://www3.sce.com/sscc/law/dis/dbattach5e.nsf/0/00F5AD067DB2F4178825803B00773630/$FILE/WPSCE05V04BkA-S.Handschin.pdf Archived 03 24 19

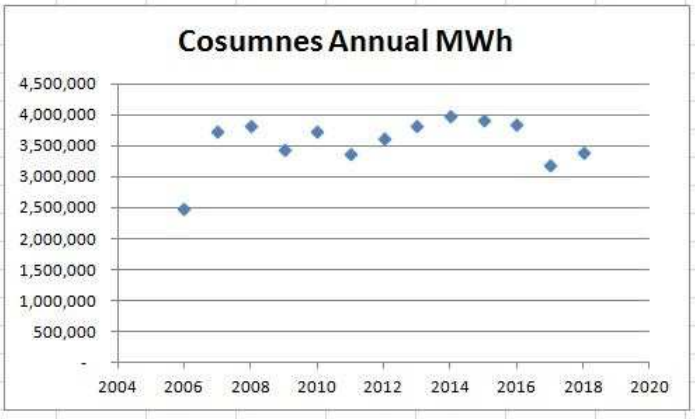
DCPP demonstrates efficient use of its 2,240 MW zero-carbon nameplate capacity and approximately $8.5 billion basis. PG&E and its employees have been excellent stewards of this plant, which is highly regarded throughout the U.S. nuclear power industry. DCPP's 2018 capacity factor (percentage "ON" time) is **92.75%**, with a high of **96.231%** in 2016.

Year	MWh	CF
2018	18,213,519	**92.757%**
2017	17,901,079	**91.165%**
2016	18,907,578	**96.291%**
2015	18,505,385	**94.243%**
2014	16,985,978	**86.505%**
2013	18,012,439	**91.732%**
2012	17,712,468	**90.205%**
2011	18,566,074	**94.552%**
2010	18,429,925	**93.859%**
2009	16,264,858	**82.833%**
2008	17,090,527	**87.037%**
2007	18,588,490	**94.666%**
2006	18,390,995	**93.660%**
2005	17,755,302	**90.423%**
2004	15,230,437	**77.564%**
2003	17,285,039	**88.028%**
2002	16,304,206	**83.033%**
2001	18,077,713	**92.065%**
100% =	19,635,840	MWh



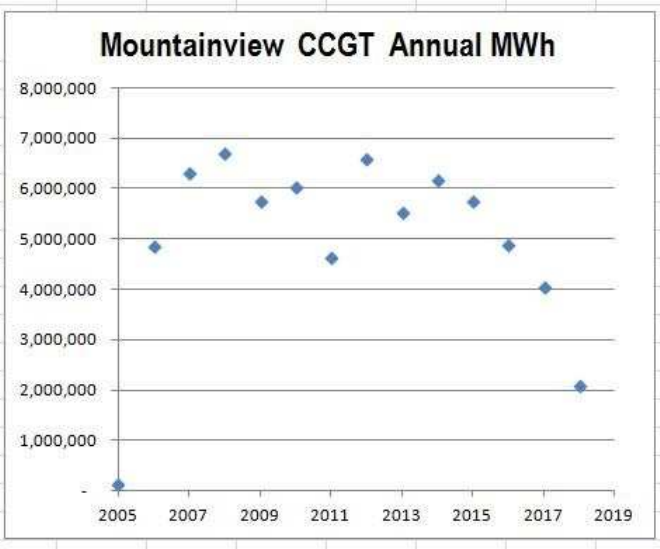
Moving on to fossil-fired generation, the municipal utility, the **Sacramento Municipal Utilities District demonstrates that a baseload fossil-fired plant may be run efficiently**. This plant had a capacity factor in excess of 90% in 2014. More significantly, this plant had a "heat rate" or measure of the energy efficiency to produce a unit of power of less than 7 MMBTu/MWh for most years. **This efficient heat rate means less emissions per unit of generated power.**

Year	MWh	MMBTu	CF	MMBTu/ MWh
2018	3,398,778	22,959,001	0.775	**6.755**
2017	3,192,303	21,948,723	0.728	**6.876**
2016	3,859,086	26,419,481	0.880	**6.846**
2015	3,924,276	26,607,071	0.895	**6.780**
2014	3,980,086	26,984,745	0.908	**6.780**
2013	3,828,845	26,054,237	0.874	**6.805**
2012	3,622,730	25,123,687	0.827	**6.935**
2011	3,369,234	23,753,684	0.769	**7.050**
2010	3,738,648	25,992,736	0.853	**6.952**
2009	3,436,323	24,164,354	0.784	**7.032**
2008	3,838,140	27,111,694	0.876	**7.064**
2007	3,731,659	27,439,378	0.851	**7.353**
2006	2,485,381	18,630,693	0.567	**7.496**
100% CF =	4,383,000	MWh		



Compare the performance of Cosumnes with SCE's huge Mountainview Plant that employs the theoretically more-efficient combined cycle gas turbine (CCGT) technology. Cosumnes's heat rate is superior to Mountainview from 2008 to present. **Despite a nameplate capacity less than half of Mountainview, the Cosumnes annual production exceeded Mountainview in 2018.**

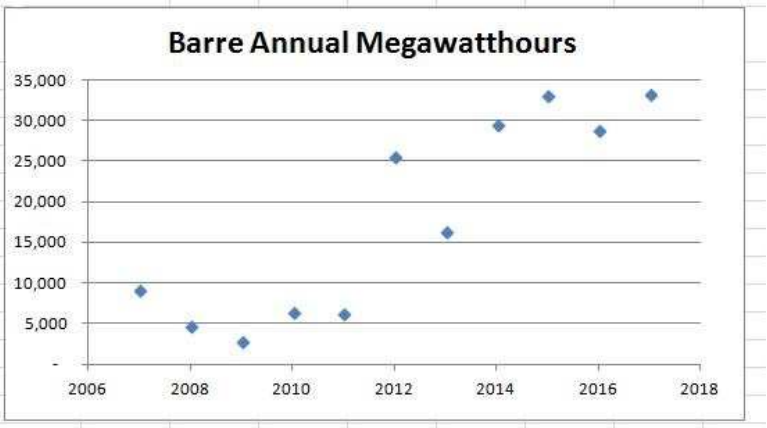
Year	MWh	MMBTu	MMBTu/ MWh	CF
2018	2,091,875	16,733,883	7.999	22.727%
2017	4,040,507	31,708,211	7.848	43.898%
2016	4,890,772	37,701,950	7.709	53.136%
2015	5,750,409	44,001,665	7.652	62.475%
2014	6,172,663	46,054,807	7.461	67.063%
2013	5,518,342	40,620,967	7.361	59.954%
2012	6,586,447	48,849,533	7.417	71.558%
2011	4,631,480	34,947,976	7.546	50.319%
2010	6,034,355	45,531,126	7.545	65.560%
2009	5,749,671	43,862,609	7.629	62.467%
2008	**6,691,295**	49,996,825	7.472	**72.697%**
2007	6,308,447	46,499,103	7.371	68.538%
2006	4,866,120	35,309,849	7.256	52.868%
2005	148,559	1,075,351	7.239	1.614%
2002	-	-	-	-
2001	38,269	421,681	11.019	0.416%
100% CF =	9,204,300	MWh		



The above bolded anomaly is likely to be repeated in 2019 as a consequence of the increased penetration of California solar generation and California wind generation.

Finally, one of SCE's five 45 MW peaker plants, Barre is highlighted.

Year	MWh	CF	MMBTU	MMBTU/ MWH
2017	33,132	8.40%	336,913	10.169
2016	28,750	7.29%	295,224	10.269
2015	33,129	8.40%	336,110	10.145
2014	29,409	7.46%	307,394	10.452
2013	16,282	4.13%	175,024	10.750
2012	25,507	6.47%	270,245	10.595
2011	6,191	1.57%	71,151	11.493
2010	6,446	1.63%	74,873	11.615
2009	2,715	0.69%	35,852	13.205
2008	4,727	1.20%	56,982	12.055
2007	9,165	2.32%	107,634	11.744
100% CF =	394,470	MWh		



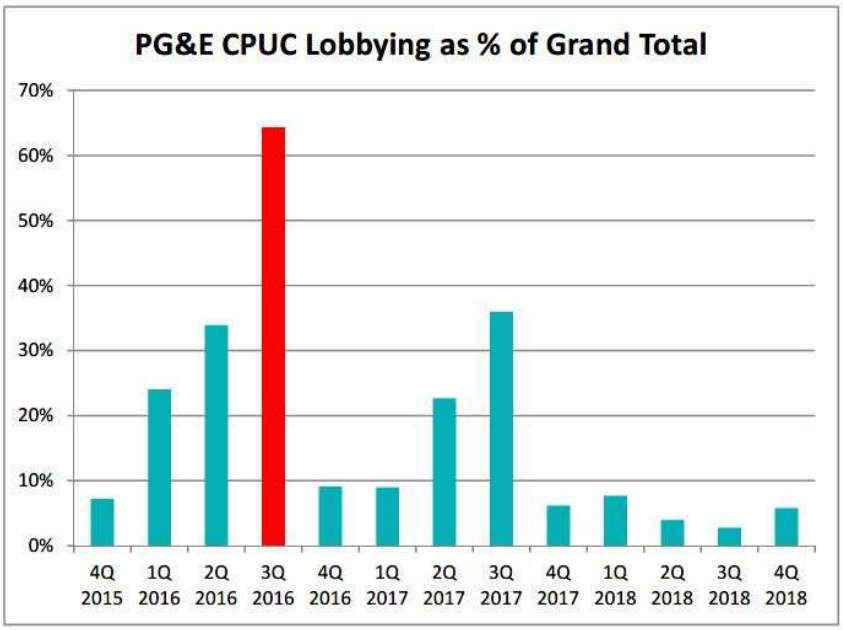
The modest power production and **minuscule capacity factors** coupled with the significantly **lower heat rates** are striking. These peaker plants produce significantly more emissions per unit of power generated. The US EPA's Field Audit Check Tool (FACT) was used to examine hour-by-hour Continuous Emissions Monitoring System (CEMS) data from SCE's five peakers These peakers are used for a few hours per day, with greater use in the summer to accommodate greater air conditioning and water pumping loads. The higher fossil-fired "ramp rates" documented above correspond to the less-efficient use of those peaker generators. Unfortunately, California has many fossil-fired peaker power plants.

So, PG&E wants to voluntarily close California's biggest, most reliable and most efficient generator by far - which is also truly zero-carbon in 2025. The plan is to burn more fossil fuel, and as is demonstrated above, use that fossil fuel less and less efficiently as greater and greater amounts of intermittent solar generation and intermittent wind generation are planned to be deployed in California. California's already-excessive power rates will climb even higher. Clearly, this plan is not in the interests of ratepayers or the environment.

This harmful PG&E plan should be stopped dead in its tracks. Now.

VI. Fossil-fuel interest lobbying is likely the root cause of these poor policy choices.

Since before 2010, there has been a steady stream of news reports regarding the large annual amounts that fossil-fuel interests expend on lobbying decisionmakers. CGNP believes the bloated amount being spent is acting as a **barrier to implementing sound evidence-based energy policies.** A pair of recent articles [9] highlighted PG&E's lobbying, a corporation with billions of dollars in annual fossil fuel sales (natural gas.)



CGNP reviewed PG&E's recent lobbying expenditures directed towards the CPUC. This chart provides a summary. CGNP believes the red bar

[9] "Embattled California utility spent most for 2018 lobbying" KATHLEEN RONAYNE Associated Press ***The Chicago Tribune*** February 4, 2019 11:00 AM Sacramento, CA
http://www.chicagotribune.com/business/sns-bc-us--california-utility-lobbying-20190201-story.html
(This AP article appeared in the print edition of the San Luis Obispo, California ***Tribune*** on page 1B of the Saturday, February 2, 2019 edition with the headline "Embattled PG&E spent most on lobbying in California last year.") Pacific Gas & Electric Corp. spent nearly $10 million on California lobbying efforts in the year before the utility giant declared bankruptcy, spending more than any other entity seeking to influence California government in 2018....

"PG&E Topples Western States Petroleum Association in California Lobbying Spending in 2018" by Dan Bacher ***IndyBay*** Tuesday Feb 5th, 2019 10:03 PM
https://www.indybay.org/newsitems/2019/02/05/18820999.php
Two days before the filing of lobbying expenses by PG&E, Consumer Watchdog called for the ouster of the California Public Utilities Commission over its decision to extend a $6 billion credit line to Pacific Gas & Electric in what the group called “an unneeded emergency process that allowed no time for scrutiny....”

is a significant outlier. In the third quarter of 2016, PG&E filed its application A.16-08-006 with the CPUC on August 11, 2016. **PG&E expended almost a quarter of a million dollars lobbying the CPUC during the 3rd quarter of 2016**. [10] At that time, PG&E's concerns about wildfire-related liabilities were not significant, as the Wine Country Fires did not occur until about a year later. So why was PG&E expending so much on CPUC lobbying that quarter? The likely answer was that PG&E desired to increase its post-2025 profits by voluntarily closing DCPP in 2025. The amounts PG&E spent lobbying the CPUC during that quarter clearly showed its desire to prevail in matters before the CPUC. The bar to ex-parte communications was not imposed until Q4, on October 6, 2016 at the prehearing conference (PHC.) The CCR mechanism, highlighted above, could be employed by PG&E to construct a very large amount of unneeded generation and transmission assets. CGNP's adverse testimony in A.16-08-006, which drew heavily on PG&E's sworn statements in A.10-01-022, clearly established that DCPP had many more decades of useful life beyond 2025. The CPUC chose to ignore CGNP's technical and legal arguments in approving A.16-08-006 on January 11, 2018. CGNP timely filed its legal objections to the CPUC via an Application for Rehearing (AFR) that was denied on September 27, 2018. CGNP further pursued California Appellate Court review in B293420 before the 2nd District, Division 6. However, review was declined without prejudice. California law does not offer a right of appellate court review of a CPUC decision that a party objects to. Appellate court review is discretionary.

PG&E's lobbying for a California fossil-fueled future is a small component in a larger fossil-fuel interest campaign that has expended roughly a billion dollars since 2015 lobbying and using public relations tools to prevent meaningful action regarding climate change. [11]

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[10] PG&E's Quarterly Form 635 lobbying disclosures with the California Secretary of State. The $222,908.11 PG&E spent lobbying the CPUC was almost one quarter of the $1,057,644.97 that PG&E spent lobbying the CPUC between the 4th quarter of 2015 and the 4th quarter of 2018.

[11] "How Big Oil Continues to Oppoose the Paris Agreement" March 22, 2019 InfluenceMap, London, UKhttps://influencemap.org/report/How-Big-Oil-Continues-to-Oppose-the-Paris-Agreement-38212275958aa21196dae3b76220bddc 12 instances of "California."
3 instances of "Western States Petroleum Association." "The Dirty Secret Of 'Renewables' Advocates Is That They Protect Fossil Fuel Interests, Not The Climate" by Michael Shellenberger ***Forbes*** blog, March 29, 2019. https://www.forbes.com/sites/michaelshellenberger/2019/03/28/the-dirty-secret-of-renewables-advocates-is-that-they-protect-fossil-fuel-interests-not-the-climate/

CONCLUSION

In sworn 2010 CPUC filings, PG&E made a clear case for operation through 2045 as the most cost-effective among 18 detailed scenarios. CGNP's analysis, based largely upon PG&E's figures, confirmed this. DCPP deserves a zero-carbon credit (ZCC), such as awarded to nuclear plants in Illinois, New York and New Jersey, as its continued operation through 2045 would avoid the generation of well over 100 million tons of greenhouse gas emissions. A ZCC credit would appropriately **recognize DCPP is California's largest reliable and dispatchable carbon-free energy source, for which no reliable carbon-free replacement has been identified**. It would create a level playing field ensuring DCPP is fully competitive. As a first step, the proposed IRP should be modified to reflect the continued safe operation of DCPP well beyond 2025.

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Respectfully submitted,

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See also Michael Shellenberger's recent YouTube video from TEDx Danubia https://www.youtube.com/watch?v=N-yALPEpV4w At 9:11, he shows two wind turbine workers who died as a consequence of a 2013 wind turbine fire in the Netherlands. No workers nor anyone in the general public have died as a consequence of radiation from a U.S. commercial nuclear power plant.