



BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

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Order Instituting Rulemaking to Continue
Electric Integrated Resource Planning and
Related Procurement Processes.

Rulemaking 20-05-003

**OPENING COMMENTS OF CALIFORNIA ENVIRONMENTAL JUSTICE ALLIANCE,
SIERRA CLUB, AND DEFENDERS OF WILDLIFE ON THE STAFF PAPER ON
ADDITIONAL GAS CAPACITY**

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The California Environmental Justice Alliance (“CEJA”), Sierra Club, and Defenders of Wildlife respectfully submit these comments in the above-referenced proceeding in response to the Administrative Law Judge’s October 13, 2021 email ruling (“ALJ Ruling”) seeking comments on the Staff Paper “Considering Gas Capacity Upgrades to Address Reliability Risk in Integrated Resource Planning” (“Staff Paper”). These comments are timely filed pursuant to the ALJ Ruling.

INTRODUCTION

In 1993, Bill Murray starred in a movie called *Groundhog Day*, in which his character found himself reliving the same day over and over again. The Staff Paper and the ALJ Ruling’s related questions appear to be the Commission’s own version of *Groundhog Day*. It’s another day and another month, and the Commission is still asking the same tired questions about procuring more gas and expanding California’s dependence on the dirty fuels that brought us the climate crisis in the first place.

Yet, there are important differences between Bill Murray’s movie and the Commission’s version of *Groundhog Day*. In the film, the days that preceded February 2nd were exactly the same, and *Groundhog Day* itself always began when Murray’s alarm went off, playing the same Sonny & Cher song. Here, however, the world has changed in significant ways during the months since the Commission last considered expanding gas capacity in this proceeding. Specifically:

- Scientists from around the globe have sounded a red alert that the climate crisis is even more dire than previously predicted and that bold and swift action to reduce emissions *in this decade* is needed to avoid a climate catastrophe;
- Hundreds of megawatts (“MWs”) of storage have come online and been shown to be reliable;

- A California Energy Commission’s (“CEC”) mid-term reliability (“MTR”) analysis found that there is no need for additional procurement in 2023 and beyond given the current procurement mandates;
- No load serving entities (“LSEs”) advocated for procuring new gas capacity in their comments on the Preferred System Plan (“PSP”);
- Gas prices have continued to rise and spike;
- The International Energy Agency (“IEA”) has issued a stark warning that we must stop investing in fossil fuels if we are to have any hope of meeting climate goals;
- Gas-fired resources have derated, failed, and even exploded when dispatched, showing they are not reliable when they are most needed;
- Risks of methane leaks and their climate and health impacts have persisted despite global and local attention; and
- The COVID-19 pandemic continues to expose the health disparities that plague our state and that are exacerbated by harmful pollution from gas combustion.

These facts further bolster the already robust record demonstrating that the Commission should not authorize additional gas. Bill Murray’s character in *Groundhog Day* was not able to move to February 3 until he shed the old vestiges holding him back. The same is true here: The Commission must leave gas behind and end California’s cycle of fossil fuel dependence. There is no study or model that will transform gas into a resource that is part of California’s future. Rather than authorize procurement of dirty, climate-harming fuels, the Commission must accelerate investment in the resources that the CEC has found to be reliable: zero-emission, clean energy.

DISCUSSION

The Staff Paper’s erroneous gas analysis relies almost entirely on a narrow and oversimplified cost assessment as the basis for its conclusions about adding costly and polluting new capacity to gas plants. Cleaner alternatives that the energy system will need in the future are already available, but Staff give them short shrift. Staff also vastly underestimate the cost of gas by failing to take into account a wide range of additional costs including greenhouse gas (“GHG”) emissions and air quality impacts, among others. There is a reason no LSE advocated for more gas resources in the last round of comments in this proceeding: They are not needed. Staff’s misguided approach cannot be the basis of the Commission’s decision-making. For the

following reasons, the Commission should reject Staff's findings and decline to modify its procurement order to allow additional gas capacity: (1) New gas capacity is not needed; (2) new gas capacity costs significantly more than Staff projects and is neither just nor reasonable; (3) more gas would increase GHGs when the system must be moving to target of 30 MMT or lower; (4) new gas capacity would lead to increased air quality impacts; (5) gas is not reliable on the hottest days; and (6) many other zero-emitting resources can and should be deployed to meet any perceived need. We expand on each of these points below.

1. The CEC's MTR Analysis Shows That the System Is Reliable and That New Gas Capacity Is Not Needed.

As Staff admit, the CEC's MTR Analysis, which is based on a loss-of-load expectation ("LOLE") analysis, demonstrates that the system will be reliable in 2023 and beyond.¹ The MTR Analysis further demonstrates that "relying on non-emitting resources like renewable generation and energy storage did not diminish reliability compared to portfolios that contained differing or additional amounts of thermal resources."² The CEC's reliability determination holds even if some energy storage does not come online on time. As Staff note: "[w]hile meeting these build outs will be challenging, CEC's analysis found that as much as 20% of the projected battery procurement being delayed by up to one year would not constitute a threat to system reliability."³

In particular, the CEC's MTR Analysis finds that the modeled PSP meets and exceeds the 0.100 LOLE reliability standard from 2023-2026.⁴ This analysis further demonstrates that "[a] portfolio of preferred resources can provide equivalent system reliability to gas resources."⁵ In addition, the MTR Analysis provides overly conservative assumptions, including the following:

- Only 116 MW of procurement from the Emergency Reliability proceeding (R.20-11-003),⁶ despite the fact that more procurement has been ordered, which must be available by 2023;
- Extremely limited hydropower availability that is unlikely to reflect reality;⁷ and

¹ Staff Paper, p. 4.

² *Id.*

³ *Id.*

⁴ CEC August 30 Analysis on Mid-Term Reliability Presentation, Slide 33 (Aug. 30, 2021), *available at* <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=21-ESR-01>.

⁵ *Id.*

⁶ Question by CEJA counsel during CEC August 30, 2021 Midterm Reliability workshop.

⁷ Angela Tanghetti, et al., 2022 Summer Stack Analysis (Sept 8, 2021), p. 14 (citing SCE comments).

- A lower import level that was “not representative of import availability during peak hours or consistent with historical experience...[and] a total of 7000 [MW] of imports were realized during the 2020 extreme heat event.”⁸

Given these conservative assumptions, the CEC’s MTR Analysis likely fails to include over 1,000 MW of capacity available for 2023. This underestimate of capacity lends further credence to the CEC’s conclusions that (1) the already-authorized resource procurement is sufficient to meet 2023 needs and (2) no additional gas is needed for reliability.⁹

The CEC is not alone in its determination that the PSP is reliable. CAISO also modeled the PSP and found that it meets reliability requirements, and that it will even meet these reliability requirements if 500 MW of anticipated procurement is removed.¹⁰ SCE’s modeling goes a step further finding no unserved hours of energy.¹¹ Rather than asking for increased procurement to meet reliability, many LSEs are asking for decreased procurement because the system is too reliable.¹² Indeed, *no* LSE is asking for more procurement of gas. The lack of LSE requests is not surprising because, as described above, reliability analysis after reliability analysis has shown gas is not needed.

To the extent there is any near-term need, as the Staff Paper acknowledges, those needs are being examined in the Emergency Reliability proceeding, R.20-11-003.¹³ The only potential need shown by the CEC MTR Analysis is for one month during September 2022 for certain contingencies. It is not likely this need even exists given the available resources not considered by the CEC (as listed above), but even if it does, a potential one-month need does not support procuring new gas capacity. Such a need can and should be met with demand-side resources and supply-side resources that are consistent with GHG and air quality requirements. Moreover, the question of potential September 2022 need is squarely before the Commission in R.20-11-003, where parties have submitted proposals for hundreds of additional MW of demand-side and clean supply-side resources to meet this need. The Commission should evaluate those proposals

⁸ *Id.*

⁹ CEC August 30 Analysis on Mid-Term Reliability Presentation, Slide 33.

¹⁰ CAISO PSP Opening Comments on PSP, pp. 1-2.

¹¹ SCE PSP Opening Comments on PSP, p. 5.

¹² *See, e.g.*, SCE PSP Opening Comments on PSP, p. 5; CalCCA Opening Comments on PSP.

¹³ Staff Paper, p. 7.

in that proceeding and meet the need with resources that are consistent with climate, air, and equity requirements.

In its June 2021 decision, D.21-06-35, the Commission was very clear that it was not allowing any new gas capacity, stating that “we are not authorizing fossil-fueled resources to count toward the 11,500 MW of total capacity required by this order.”¹⁴ The CEC’s MTR Analysis confirms that the Commission’s decision was right: There is no need for additional fossil-fuel generation.

2. New Gas Capacity Costs Significantly More than Staff Project and Is Neither Just Nor Reasonable.

As an initial matter, the Staff Paper mistakenly relies on RESOLVE’s cost-focused approach to inform its findings on procurement. Procurement decisions must include consideration of GHG and air quality impacts, not only the narrow set of economic costs recognized by RESOLVE. Because the Staff Paper overlooks this fundamental point, it cannot form the basis of future procurement decisions.

Second, additional gas capacity cannot be justified as a just and reasonable cost. The actual cost of gas is far higher than Staff’s estimate. The Staff Paper only accounts for capital costs, which amount to the already high figure of approximately \$85kw-year. A wide range of significant *additional* costs also exist. These include operation and maintenance (“O&M”) costs, the costs associated with increased market power issues, the social cost of carbon, the costs of increased air pollution, and subsidies that support gas production and deployment, among other costs.¹⁵ The Joint Agency SB 100 Report acknowledged that a comparison to the Commission’s average resource adequacy (“RA”) prices show that they are likely underestimating gas retention costs, and “[h]igher than modeled gas fleet maintenance costs may decrease economic gas retention or increase total scenario cost or both.”¹⁶ These additional cost considerations likely significantly underestimate the real cost of keeping gas online. As CARB described:

There are additional costs to society outside of the [social cost of carbon], including costs associated with changes in co-pollutants, the social cost of other GHGs including methane and nitrous oxide, and costs that cannot be included due to modeling and data limitations. The IPCC has stated that the [Interagency Working Group] [social cost of carbon] estimates

¹⁴ D.21-06-035, p. 43.

¹⁵ CPUC Staff Response to Questions, Sept. 1 Workshop on the PSP.

¹⁶ SB 100 Report, March 2021, p. 79.

are likely *underestimated* due to the omission of significant impacts that cannot be accurately monetized, including important physical, ecological, and economic impacts.¹⁷

Table 1 describes the many costs of new and retained gas that must be accounted for in order to accurately assess gas’s actual cost.

Table 1: Additional Cost Considerations Relevant to Gas

Cost Category	Data Source	Reasoning
Fixed Cost	National Renewable Energy Lab (“NREL”) Annual Technology Baseline.	This cost is already considered in the modeling, but the value should be updated to reflect the most recent data.
Variable O&M Costs	NREL Annual Technology Baseline, shows natural gas has a variable O&M cost ranging between \$1.7-\$4.8/MWh. ¹⁸ Given the high cost of repairs in CA and more frequent repairs due to increased cycling, we recommend the high end of this range.	Recent data reflects significantly higher variable O&M costs than reflected in the RESOLVE model. Given the higher forced outage rate that many units are experiencing, these higher gas costs should be expected and updated.
Social Cost of Carbon	The March 15, 2020 Joint Agency SB 100 Report calculated a social cost of carbon of \$85.73 per metric ton CO ₂ . ¹⁹	This figure helps capture the true cost of GHGs, but is likely an underestimate of the true cost of GHG emissions due to the omission of significant impacts that cannot be accurately monetized, including important physical, ecological, and economic impacts. ²⁰
Air Emissions Costs	Analysis in the IDER proceeding found a \$21/MWh-\$23/MWh air quality benefit from clean distributed resources using EPA BenMap. ²¹ This can be translated into a cost of MWh from gas resources.	While this is likely an underestimate of the true costs of pollution (as it does not consider lifecycle emissions), this figure captures some of the cost of air quality impacts from polluting generation.
Market Power Cost Adder	Recent Advice Letters. For example, SDG&E Advice Letter 3838-E proposes paying a \$10/kW-month	Recent advice letters and the 2019 Resource Adequacy Report show the actual ratepayer cost of keeping gas

¹⁷ CARB 2017 Scoping Plan, p. 41 (2017), https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf?utm_medium=email&utm_source=govdelivery (emphasis added).

¹⁸ NREL, Annual Technology Baseline, available at <https://atb.nrel.gov/electricity/2021/index>.

¹⁹ CPUC, CEC, and CARB, SB 100 Report, C-2 (March 15, 2021), available at <https://www.energy.ca.gov/publications/2021/2021-sb-100-joint-agency-report-achieving-100-percent-clean-electricity>.

²⁰ CARB 2017 Scoping Plan, p. 41.

²¹ See R.14-10-003, E3 Air Quality Modeling (Dec. 9, 2020 Workshop). This analysis utilized EPA’s BENMAP tool.

	incentive to Miramar to stay online. The 2019 RA costs averaged \$3.46/kW-month for contracts, with a \$15.25/kW-month high. ²²	plants online. The modeling should include a market cost adder to ensure that the costs reflect the premium that ratepayers are already paying to keep gas plants online.
Natural Gas Price Spikes	Recent and more frequent price spikes have raises the price of natural gas. ²³	Price spikes are likely to happen more often as a result of pipeline or infrastructure failures, natural disasters, and extreme weather.

There are likely additional costs of gas not included in Table 1. Consideration of these and other associated costs are important to accurately analyze the economic impacts of gas “upgrades.” Indeed, even a better estimate of the market rate costs alone show that the Staff’s costs are likely significantly underestimated. Staff estimates the “very high cost” to be \$85/kW-year, but yet the RA report shows a high cost of \$15.25/kW-month, which translates into **\$183/kW-year**. This \$183/kW-year does not even take into account the many other costs of gas capacity described in Table 1 above. Given this, the costs of upgrading gas far exceed those assumed by Staff and are not just and reasonable.

Furthermore, increased investment in gas is neither just nor reasonable because it would likely lead to stranded assets. California is rapidly moving toward carbon neutrality, and to meet this requirement, the State must immediately start retiring—not building—gas capacity. Indeed, as Staff’s analysis shows, California currently has around 27 GW of gas resources available.²⁴ This capacity is significantly more than what is needed in all but the most climate risky scenarios where California is likely to exceed GHG targets. Moreover, adding new gas capacity to a system already plagued by too many polluting gas resources would not constitute the addition of useful resources, and thus should not be recovered in rates.²⁵

3. More Gas Investments Would Increase GHG Emissions.

Even Staff admit that additional investment in gas would lead to increases in GHG emissions.²⁶ And California’s still-incomplete social cost metric illustrates the massive scale of

²² CPUC, 2019 Resource Adequacy Report (March 2021), available at <https://www.cpuc.ca.gov/RA/>.
²³ See, e.g., *SoCal spot gas prices soar as California ramps up thermal generation to keep cool* (June 29, 2021) <https://www.spglobal.com/platts/en/market-insights/latest-news/natural-gas/062921-social-spot-gas-prices-soar-as-california-ramps-up-thermal-generation-to-keep-cool>.
²⁴ Staff Paper, p. 5.
²⁵ See, e.g., D.92-12-057 (removing \$30.2 million asset from the rate base because it will not be operated again and cannot be considered useful).
²⁶ Staff Paper, pp. 13-14.

the GHG emissions increase. The GHG increases projected by Staff from increasing gas capacity would result in social costs of around \$21.25 million per year,²⁷ dwarfing any perceived benefit from these projects.

These increases are especially concerning given that the climate crisis is even more dire than previously understood. The latest report from the United Nation’s Intergovernmental Panel on Climate Change called a “code red” for humanity due to the irrefutable evidence of climate change’s devastating impacts.²⁸ In light of the climate emergency, the IEA has stated that we must stop investing in fossil fuels today if we want to have any hope of meeting our climate targets.²⁹ The Staff Paper’s call for additional fossil fuel capacity flies in the face of these warnings.

Allowing additional procurement of new gas capacity is also inconsistent with numerous important state mandates, policies, and rulings on climate, including Senate Bill (“SB”) 100,³⁰ California’s commitment to decarbonization, SB 32,³¹ and SB 350,³² statutory language that requires analysis of other resources before procurement of carbon resources, and this Commission’s prior decision and planning. California law requires an actual reduction in GHGs. If procured, new gas, which often has a lifespan greater than 25 years, will likely be called on more often and increase GHGs.

California cannot continue to invest in gas resources if we are to have any chance of meeting climate requirements and goals. As the E3 Carbon Neutrality Report shows, continued reliance on gas resources is a “high risk” scenario that jeopardizes California’s ability to meet its climate mandates and policies.³³ Continued investment in gas is also inconsistent with Governor Newsom’s July 2021 statement on the “Electricity System of the Future,” which emphasizes that:

²⁷ This calculation uses California’s \$85.73 metric for the social cost of carbon multiplied by the Staff’s projection of .25 MMT increase in GHG emissions.

²⁸ United Nations, *IPCC report: ‘Code red’ for human driven global heating, warns UN chief*, <https://news.un.org/en/story/2021/08/1097362>.

²⁹ International Energy Agency, *Pathway to critical and formidable goal of net-zero emissions by 2050 is narrow but brings huge benefits* (May 18, 2021), <https://www.iea.org/news/pathway-to-critical-and-formidable-goal-of-net-zero-emissions-by-2050-is-narrow-but-brings-huge-benefits>.

³⁰ California Renewables Portfolio Standard Program: emissions of greenhouse gases (De León, 2017-2018).

³¹ California Global Warming Solutions Act of 2006: emissions limit (Pavley, 2015-2016).

³² Clean Energy and Pollution Reduction Act of 2015 (De León, 2015-2016).

³³ E3 Carbon Neutrality Report (Oct. 2020), https://ww2.arb.ca.gov/sites/default/files/2020-10/e3_cn_final_report_oct2020_0.pdf, p. 5.

“[w]e must remove carbon emissions from our energy sources to support a sustainable future” and that “[a]lthough California has made great strides in eliminating coal power plants and increasing renewable energy resources, our current electricity system is still producing greenhouse gas emissions and contributing to unhealthy air quality in communities.”³⁴ The direction from the Governor is clear: The Commission must act rapidly now to reduce reliance on fossil fuels.

Increased reliance on gas is additionally concerning because the climate crisis has made clear that planning to meet a 38 MMT GHG target is not enough: the Commission must aim to achieve 30 MMT as soon as possible.³⁵ All of CARB’s proposed Scoping Plan Update scenarios start with a 2030 target of 30 MMT or lower, and the Commission should ensure consistency with this planning.³⁶ What is more, the difference in price between the 38 MMT and the 30 MMT portfolios is 1.7%, but the difference in carbon emissions is 22%.³⁷ These facts underscore the need to adopt the lower GHG target and reject any additional gas procurement that will increase GHG emissions.

4. Increased Gas Capacity Would Worsen Air Pollution in Already Overburdened Communities and Increase the Risk of Methane Leakage.

Staff propose to increase the capacity of combined cycle plants, but they fail to analyze the impacts on air quality from this increased capacity. As Staff admit, these very plants are likely to be dispatched more often, causing more pollution.³⁸ The high likelihood of increased cycling of combined cycle plants is very concerning. Indeed, gas facilities, especially combined cycle facilities, emit significantly more air pollution while starting than they do during full-load

³⁴ Governor Gavin Newsom, Electricity System of the Future (July 30, 2021),

<https://www.gov.ca.gov/wp-content/uploads/2021/07/Electricity-System-of-the-Future-7.30.21.pdf>.

³⁵ See EDF Opening Comments on PSP, p. 1 (suggesting that the Commission adopt a 30 MMT limit in this decision for the next IRP cycle and using the highest beneficial electrification load forecast available); American Clean Power Opening Comments on PSP, p. 1; Gridliance West Opening Comments on PSP, p. 11 (supporting moving to 30 MMT if changes in transmission assumptions are made); San Francisco Opening Comments on PSP, p. 4 (supporting exploring adopting a lower GHG target in future cycles); Hydrostar Opening Comments on PSP, p. 6; Defenders of Wildlife Opening Comments on PSP, pp. 3-4.

³⁶ CARB, September 2021, Draft Scoping Plan Scenario Inputs,

https://ww2.arb.ca.gov/sites/default/files/2021-09/carb_presentation_sp_scenarioinputs_september2021.pdf.

³⁷ PCF Opening Comments on PSP, pp. 8-9.

³⁸ Staff Paper, p.16 (“While some plant efficiency improvements may decrease the rate of criteria pollutant emissions, it is possible that increased plant dispatch could lead to overall greater emissions.”).

steady state operation. In fact, the pollution from one start can be more than if the natural gas power plant operated the entire day.³⁹ For example, a single start of the Colusa Generating Station, a combined cycle gas plant, can emit as many nitrogen oxide (“NOx”) emissions as the facility would have emitted in 12 to 38 hours of steady-state operation.⁴⁰ These estimates are based on permitted values, but unfortunately operational monitoring data shows that plant emissions can be even higher. During a start in May 2020, the Colusa facility emitted over 900 pounds of NOx during its first three hours of operation, compared to around 10 pounds per hour of NOx after start-up.⁴¹ This means that the Colusa facility emitted more than *90 times* its regular rate of NOx emissions during a single start. These startling pollution data demonstrate why the Commission must reject any proposal that would increase the use and cycling of combined cycle plants.

In addition, new gas resources will increase pollution in air basins that are already in serious, extreme, or severe non-attainment for one or more criteria pollutants and further harm disadvantaged communities suffering the effects of COVID-19.⁴² Gas-fired power plants emit many harmful pollutants, and the majority of California’s gas-fired power plants are located in the state’s most disadvantaged communities.⁴³ This injustice results in compounding harms. For example, fine particulate matter emissions from gas combustion are closely connected to decreased lung function, more frequent emergency department visits, additional hospitalization and increased morbidity.⁴⁴ Combined with health impacts of COVID-19, particulate matter and other forms of air pollution have become even more dangerous. A study by Harvard University’s School of Public Health found that an increase in only 1 µg/m³ in long-term exposure to

³⁹ Aspen Environmental Group, Cal. Independent System Operator SB 350 Studies, Volume 9, Table 4.4-3, p. 100 (2016), available at <https://www.caiso.com/Documents/SB350Study-Volume9EnvironmentalStudy.pdf>.

⁴⁰ *Id.*

⁴¹ See U.S. EPA Clean Air Markets Database, Colusa Power Plant, May 28, 2020 Data (according to the continuous emissions monitor data, the plant emitted 145, 393, and 404 pounds of NOx during its first three hours of operation. After those first three hours, the next 11 hours were between 8 and 10.5 pounds of NOx per hour).

⁴² U.S. EPA, *Green Book: Current Nonattainment Counties for All Criteria Pollutants* (data current as of Dec. 31, 2020), available at <https://www3.epa.gov/airquality/greenbook/ancl.html>.

⁴³ Brightline Defense, *Winding Up for Offshore Wind*, p. 2, <https://www.offshorewindnow.com/brightline-defense-report> (“78% of gas-powered plants [in California] are located in frontline environmental justice communities.”).

⁴⁴ American Lung Association, *Particle Pollution*, <https://www.lung.org/clean-air/outdoors/what-makes-air-unhealthy/particle-pollution>.

particulate matter was associated with an 8 percent increase in the COVID-19 death rate.⁴⁵ As the COVID-19 pandemic continues to claim the lives of Californians, now is not the time to increase health risks in our most vulnerable communities.

What is more, new gas capacity is likely to be called upon more often than other resources, resulting in increased air pollution in the most polluted air basins. The cycling of gas plants produces significant amounts of pollution because emissions control systems are not as effective at capturing pollutants when plants are starting and stopping. As indicated in Table 2, the procurement of additional gas capacity would take place at existing power plants such as the Sentinel Energy Center and the Alamos Energy Center, both of which are in some of the most polluted census tracts in the State, where communities already breathe air that fails to meet ambient air quality standards.

Table 2: Potential Gas Capacity Expansion Locations

Plant Name	Location
Alamos Energy Center	One of the most polluted areas of the State, ranking in the top 5% of the most polluted census tracts
Huntington Beach Generating Station	The Los Angeles Basin, which is in nonattainment for ozone and particulate matter
Carlsbad Energy Center Project	One of the top 10% of census tracts most polluted by pesticides and hazardous waste in the State.
Sentinel Energy Center	Riverside, which is in non-attainment for ozone and particulate matter.

Additional gas capacity in these already polluted air basins would increase the health burden on surrounding communities.⁴⁶ This is especially true given the relaxed air permit requirements.⁴⁷

⁴⁵ See X. Wu et al, Air pollution and COVID-19 mortality in the United States: Strengths and limitations of an ecological regression analysis, *Science Advances* (2020), available at <https://projects.iq.harvard.edu/covid-pm>; see also <https://www.hsph.harvard.edu/news/hsph-in-the-news/air-pollution-linked-with-higher-covid-19-death-rates/>. Another analysis found that nearly 80% of the deaths in Italy, Spain, France, and Germany occurred in the five most polluted regions based on nitrogen dioxide concentrations. Yaron Ogen, *Assessing nitrogen dioxide (NO2) levels as a contributing factor to coronavirus (COVID 19) fatality*, Vol. 726 *Science Direct* (2020), <https://www.sciencedirect.com/science/article/pii/S0048969720321215>.

⁴⁶ Due to these and other impacts that have not been accounted for in the PSP modeling, any Commission decision to authorize new gas capacity may trigger requirements under the California Environmental Quality Act, including the requirement to conduct an Environmental Impact Review.

⁴⁷ See, e.g., D. Kasler, *California asks Biden administration to relax pollution rules to avoid rolling blackouts* (Sept. 10, 2021), <https://www.sacbee.com/news/local/article254137028.html>; Dep't of Energy Order No. 202-21-2 (suspending permit limits for six CA power plants, including Alamos, Huntington Beach, and others in the LA area.) <https://www.energy.gov/sites/default/files/2021-09/EXEC-2021-005025%20-%20Order%20202-21-2%20-%20signed%209-10-21.pdf>.

Furthermore, increased investment in gas could increase cycling and run times at these gas facilities to meet out-of-state loads. As long as gas resources remain online, they can be called upon by other markets as exports, which, as explained above, leads to increased pollution in many parts of California already breathing some of the worst air in the country.⁴⁸ This increased reliance on gas resources for exports is already evident, and it is likely to worsen if California continues to invest in more gas plants rather than retiring them.

Finally, continued reliance on gas capacity also increases the risk of methane leakage. Methane is a harmful GHG, and leakage can cause severe health impacts, as witnessed by the community living near the Aliso Canyon gas storage facility. Between October 2015 and February 2016, the facility released at least 109,000 tons of methane, forcing the relocation of thousands of residents for several months.⁴⁹ A UCLA study found that many community members living around Aliso Canyon experienced elevated indoor levels of air toxins and persistent health impacts following the leaks.⁵⁰ These residents exhibited headaches, nausea, stomach aches, dizziness, and trouble breathing following the leak, and a local physician found signs of bone marrow suppression, which can lead to anemia and leukemia.⁵¹ In light of these health risks, then-Governor Jerry Brown called on the Commission to start identifying alternatives to Aliso, and the Commission rightly started exploring how to close it, which cannot occur if the Commission now authorizes additional procurement of gas-fired generation.⁵²

5. Gas Is Not Reliable on the Hottest Days.

The Commission should reject additional gas because gas plants are not reliable during extreme heat events. The forced outage rate of gas plants has increased in recent years, with some types of gas facilities experiencing an average rate of 14%,⁵³ which is higher in extreme

⁴⁸ Cal Advocates, Opening Comments on PSP, pp. 16-17.

⁴⁹ *Id.*

⁵⁰ Diane A. Garcia-Gonzales, et al., *Associations among particulate matter, hazardous air pollutants and methane emissions from the Aliso Canyon natural gas storage facility during the 2015 blowout*, (Nov. 2019), <https://www.sciencedirect.com/science/article/pii/S0160412018327314?via%3Dihub>.

⁵¹ Sharon McNary, *What Did Porter Ranch Residents Breathe During the Massive Gas Leak? Here's What One Doctor's Quest Revealed*, LAist (Nov. 5, 2019), <https://laist.com/2019/11/05/aliso-canyon-porter-ranch-gas-leak-blowout-health-benzene-nordella.php>.

⁵² See I.17-02-002.

⁵³ See, e.g., CEC MTR Analysis, Slide 22.

heat.⁵⁴ For example, during the June 2021 heat wave, almost 11,000 MW were offline due to outages, and many of those outages impacted gas plants.⁵⁵ CAISO reported that during the June 17 and 18, 2021 heat events, the grid lost about 2,200 MW of gas capacity.⁵⁶ Furthermore, the Preliminary Root Cause Analysis of the Mid-August 2020 Heat Storm found that the gas fleet experienced 1,400 to 2,000 MW of forced outages during peak demand.⁵⁷ The Final Root Cause Analysis confirms this finding and also appears to suggest over 2,000 MW of forced outages occurred during certain hours.⁵⁸

In a related vein, gas plants can pose public safety risks that also make them unreliable, as demonstrated by the May 27, 2021 explosion at the Russell City Energy Center in Hayward. The blast hurled large chunks of metal into the air, two of which landed on city buildings, penetrating the roof of one.⁵⁹ The gas plant was taken offline for weeks after the explosion providing no power for the grid, and the CEC approved the resumption of plant operations over the staunch objection of community members and city leadership.⁶⁰ Given these gas plant failures, California should not be relying on gas plants because they are risky and cannot deliver reliability.

⁵⁴ Another study showed the connection between increased forced outage rates and extreme heat. *See, e.g.,* Sinott Murphy et al., *Resource adequacy implications of temperature-dependent electric generator availability* (Mar. 15, 2020), <https://www.sciencedirect.com/science/article/pii/S0306261919321117>.

⁵⁵ Coby Bermel, 'Old clunkers': California power plants break down during heat wave (Jun 30, 2021) <https://www.politico.com/states/california/story/2021/06/30/old-clunkers-california-power-plants-break-down-during-heat-wave-1387507>.

⁵⁶ CAISO, 2021 Summer Readiness – July Update, EPR Joint Agency Workshop on Summer 2021 Electric and Natural Gas Reliability (July 8, 2021), <https://efiling.energy.ca.gov/getdocument.aspx?tn=238737>, Slide 3; *see also* <https://www.politico.com/states/california/story/2021/06/30/old-clunkers-california-power-plants-break-down-during-heat-wave-1387507?>.

⁵⁷ CAISO, CPUC, and CEC, Preliminary Root Cause Analysis of the Mid-August 2020 Heat Storm, p. 8 (the gas fleet experienced 1,400 to 2,000 MW of forced outages during the outages);

⁵⁸ *See* CAISO, CPUC, and CEC, Final Root Cause Analysis, Figure 4.4, Figures B.8-B.19 (showing almost 3,000MW of forced outages at natural gas plants at various hours of the day during August 14 and 15).

⁵⁹ City of Hayward, Russell City Energy Center, <https://www.hayward-ca.gov/your-government/departments/city-managers-office/russell-city-energy-center>; Specht, M. *I Toured “the Best Damn Plant in the Fleet.” Two Years Later It Exploded.* (Aug. 12, 2021), <https://blog.ucsusa.org/mark-specht/i-toured-the-best-damn-plant-in-the-fleet-two-years-later-it-exploded/>.

⁶⁰ City of Hayward, <https://www.hayward-ca.gov/your-government/departments/city-managers-office/russell-city-energy-center>.

6. Zero-Emitting Resources Can and Should Be Deployed to Meet Any Perceived Need.

The Commission should decline to approve new gas for the additional reason that preferred resources can provide equivalent system reliability. The CEC’s MTR Analysis provided key data that was not previously available on energy storage. Although modeling has assumed energy storage can provide energy during peak times, CAISO and California had limited data on that occurring in practice. The analysis presented during the CEC’s August 30 workshop on the MTR Analysis provided solid data that energy storage works in practice, and can be expected to provide reliability during key times. As the CEC’s MTR Analysis found, “[a] portfolio of preferred resources can provide equivalent system reliability to gas resources.”⁶¹ California needs to trust its own data and move past fossil fuel resources. It already has 27 GW of gas resources that it needs to start phasing out. Now is not the time to add more fuel to the fire.⁶²

CONCLUSION

As the climate crisis worsens, Californians are feeling its devastating effects, from drought to wildfires and extreme heat. Pollution from gas combustion is harming residents throughout the State, especially in already overburdened communities. To avoid climate catastrophe and protect public health, California must escape the *Groundhog Day* trap of never-ending, knee-jerk reliance on gas resources. For the many reasons detailed above, the Commission should reject the Staff Paper’s erroneous findings and implement a least-regrets strategy that focuses on clean resources, consistent with GHG, air quality, and equity goals and

⁶¹ CEC MTR Analysis, Slide 41.

⁶² The above comments address first two topics included in the ALJ Ruling (i.e. “1. The assumptions and conclusions of the RESOLVE analysis that includes gas capacity upgrades as a candidate resource; 2. Whether gas capacity upgrades at existing sites should be considered as eligible resources for the procurement requirements of D.21-06-035? If so, which of the various procurement process steps of D.21-06-035 would need to be amended, and how?”) Our comments explain the many reasons why the Staff Paper’s assumptions are flawed and why the Commission should not order procurement of new gas capacity. Therefore, we decline at this time to address the third and fourth questions posed by the ALJ because they are based on the assumption that gas capacity will be procured. (i.e. “3. Whether load serving entities that wish to contract with gas capacity upgrades at existing sites, if permitted by the Commission, should be required to demonstrate that they first attempted to procure non-emitting resources. If so, what should this demonstration consist of, and on what timeframe? 4. If the Commission allows gas capacity upgrades at existing sites, whether the Commission should restrict or prohibit gas capacity upgrades in disadvantaged communities, as defined by the CalEnviroScreen tool, or impose some other/additional criteria”). We reserve the right to respond in reply.

requirements. It is time for California to decisively leave gas behind and step into a clean energy future.

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Respectfully submitted,

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