

DOCKETED	
Docket Number:	21-IEPR-01
Project Title:	General Scope
TN #:	241326
Document Title:	Sierra Club_NRDC_RMI Comments on Draft 2021 IEPR Vol III 2022-1-28
Description:	N/A
Filer:	System
Organization:	Sierra Club, NRDC and RMI
Submitter Role:	Public
Submission Date:	1/28/2022 4:20:20 PM
Docketed Date:	1/28/2022

Comment Received From: Nihal Shrinath
Submitted On: 1/28/2022
Docket Number: 21-IEPR-01

Sierra Club_NRDC_RMI Comments on Draft 2021 IEPR Vol III 2022-1-28

Additional submitted attachment is included below.



January 28, 2022

Via online submission

California Energy Commission
Dockets Office
1516 Ninth Street
Sacramento, CA 95814-5512

**Re: Comments on the CEC Draft 2021 Integrated Energy Policy Report, Volume III:
Decarbonizing the State's Gas System**

California is far from reaching its 2030 climate goals. In the last three years, statewide greenhouse gas emissions have decreased by just 1.3 percent on average each year.¹ In order to hit 2030 emissions targets, California will need to reduce emissions at three times the current rate, by 4.3 percent each year.² With natural gas combustion and direct emissions contributing 41 percent of the state's greenhouse gas (GHG) emissions in 2019, the CEC has appropriately dedicated a volume of its draft Integrated Energy Policy Report ("Report") to decarbonizing California's gas system.³ Below, we supplement the Report's recommendations so that they better align with the urgency of solving California's climate crisis.

- I. Create a Long-Term, Comprehensive Gas Planning Process for California
 - a. Ensure gas system safety and reliability while achieving GHG reductions during transition from fossil gas - **The CEC should not assume that the solutions to gas system safety and reliability lie in reinforcing the current gas system**

The Report identifies a need for *additional* gas capacity between 2040 and 2045, due to the proliferation of renewables and a corresponding increase in peaking demand.⁴ In other places, it looks to gas, including increased storage and generation capacity, to solve reliability needs.⁵ At

¹ California Green Innovation Index, Carbon Economy, Next10, *available at* <https://greeninnovationindex.org/2021-edition/carbon-economy/>. (last accessed Jan. 28, 2022).

² *Id.*

³ Total greenhouse gas emissions were 418.15 MMTCO₂e in 2019. *Id.* GHG emissions from gas combustion and direct methane were 132 MMTCO₂e and 39.33, respectively, in 2019. Draft 2021 Integrated Energy Policy Report Volume III Decarbonizing the State's Gas System. California Energy Commission, pp. 11-12 (2022), *available at* <https://efiling.energy.ca.gov/GetDocument.aspx?tn=241153> [hereinafter "Report"]

⁴ Report, p. 26.

⁵ *See, e.g.* Report, p. 40.

the same time, it notes that many reliability issues stem from problems with the gas system itself, such as vulnerability to extreme weather conditions and decaying infrastructure.⁶

Incremental gas capacity would further entrench fossil fuel infrastructure that has contributed to the exact climate-induced weather events that we are trying to address in improving reliability. New gas procurement would further damage the climate and public health, frustrate the state's progress towards its climate and environmental justice mandates, and risk saddling ratepayers with stranded investments.

Gas infrastructure emits enormous amounts of greenhouse gases. Gas resources rely on extraction and delivery systems with intense environmental and local health impacts, including well-documented leakage emissions of methane, with a warming potential 20x that of carbon emissions. Average national leakage rates for methane from conventional gas extraction is estimated to be 3.3%, and average national leakage rates for methane from shale or fracked extraction is estimated to be 3.9%.⁷ Procurement of natural gas can slow the process of decarbonizing the electric grid by delaying deployment of renewable energy.⁸ California has strong climate policies, but those policies have little impact if the CEC does not implement them consistently and tenaciously. New fossil fuel infrastructure has no place in either the near-term or long-term.

State officials and stakeholders at the CEC and CPUC have worked diligently to figure out how many gigawatts of new renewable and storage resources are needed to hit our climate targets and alleviate pollution burdens for disadvantaged communities. None of the plans made to date include increasing gas capacity. Incremental gas capacity is completely misaligned with the State's long-term planning in the Integrated Resources Planning proceeding as well as SB 100 and would only frustrate the CEC's own work on these matters.

Furthermore, incremental gas capacity investments risk creating stranded assets. Many of the state's gas plants have capacity factors below 5% and can be used only rarely in order to avoid violating their air permits. If the CEC endorses new gas generation capacity, it is very likely that new plants will run infrequently and even less frequently over time. Yet, ratepayers would need to fund the entire capital and maintenance costs for the plants. Because there is no established role for new incremental gas capacity in California's long-term needs, it is highly likely that investments will be expensive, stranded, or both.

- b. Realign rate structures and address environmental impacts to explicitly address equity issues and reduce burdens on disadvantaged communities and low income customers - **The CEC should ensure that disadvantaged communities do not continue to suffer from the local pollution impacts of gas transmission and**

⁶ See, e.g. Report, pg. 32.

⁷ See Robert W. Howarth et al., *Methane and the greenhouse-gas footprint of natural gas from shale formations*, at 683 (2011), available at <https://link.springer.com/content/pdf/10.1007%2Fs10584-011-0061-5.pdf>; Andrew Burnham et al., *Life-Cycle Greenhouse Gas Emissions of Shale Gas, Natural Gas, Coal, and Petroleum* (2011), available at <https://pubs.acs.org/doi/pdf/10.1021/es201942m>.

⁸ Christine Shearer et al., *The effect of natural gas supply on US renewable energy and CO2 emissions*, *Environmental Research Letters*, Vol. 9, Number 9, p. 6 (2014), available at <https://iopscience.iop.org/article/10.1088/1748-9326/9/9/094008/pdf>.

combustion from both buildings and power plants, are not left paying for stranded gas assets, and are prioritized in the clean energy transition to ensure equity

Californians have been affected by multiple years of wildfires and air quality crises—but the particular impacts to disadvantaged communities over the past few years have been extreme. This objective is especially important for disadvantaged communities who already bear disproportionate pollution burdens, particularly as the COVID-19 pandemic has highlighted how air pollution exacerbates health risks. Disadvantaged communities have faced coronavirus at rates far exceeding whiter, more affluent, communities. COVID-19 risks increase significantly with increased exposure to air pollution. In particular, Harvard’s School of Public Health found that a small increase in long-term exposure to particulate matter was associated with a 15 percent increase in the COVID-19 death rate.⁹ Another analysis found that nearly 80% of the deaths in Italy, Spain, France, and Germany occurred in the five regions most polluted by nitrogen dioxide.¹⁰ The health impacts of air pollution are very real for Californians, and the CEC should be investigating how to decrease emissions from gas plants and target electrification investments in disadvantaged communities to ensure they are at the forefront of this transition.

The state needs more clean energy to hit its climate and equity targets, and the CEC should only promote investments that are consistent with those targets. Investing further in gas resources will hinder us from reaching our climate goals, exacerbate existing environmental injustices, and risk stranding costs on ratepayers. Any investment in the gas fleet will undercut the value of other preferred resource investments by displacing the need for capacity that is already slated for development between now and 2030.

The Report, even though it addresses some environmental impacts, does not fully address the local air pollution impacts from gas use and unequal climate impacts from gas’ GHG emissions. Air pollution from gas plants is poisoning California’s air and our communities. Approximately half of the state’s gas plants are located in disadvantaged communities.¹¹ In residential buildings, NOx pollution from gas appliances elevates the risk of respiratory diseases for residents, and a recent Stanford study found that methane emissions from gas stoves alone contribute as much in GHG emissions as 500,000 combustion engine cars in a given year.¹² We ask the CEC to consider not only the climate impacts but also public health impacts in offering solutions to gas system reliability issues. Where there is a non-gas, non-pipeline alternative to gas, such as electrification, energy efficiency, and distributed generation through a whole-home approach as

⁹ See Xiao Wu et al., *Air pollution and COVID-19 mortality in the United States: Strengths and limitations of an ecological regression analysis*, Science Advances, Vol. 6, No. 45 (Nov. 4, 2020), available at <https://advances.sciencemag.org/content/6/45/eabd4049>.

¹⁰ See Yaron Ogen, *Assessing nitrogen dioxide (NO2) levels as a contributing factor to coronavirus (COVID-19) fatality*, Science of The Total Environment, Volume 726, 138605 (July 15, 2020), available at <http://www.sciencedirect.com/science/article/pii/S0048969720321215>.

¹¹ PSE Healthy Energy, *California Peaker Power Plants: Energy Storage Replacement Opportunities*, p. 1 (May 2020) available at <https://www.psehealthyenergy.org/wp-content/uploads/2020/05/California.pdf>.

¹² Eric D. Lebel et al., *Methane and NOx Emissions from Natural Gas Stoves, Cooktops, and Ovens in Residential Homes*, Environmental Science and Technology, (Jan. 27, 2022), available at <https://pubs.acs.org/doi/10.1021/acs.est.1c04707>

discussed in Volume 1 of the Report and in Chapter 5, the state should pursue the non-gas option.¹³

- c. Develop an inclusive, comprehensive, geotargeted and transparent process for transitioning the gas system that involves gas utilities, labor, local communities (and disadvantaged communities), environmental groups, and various stakeholders¹⁴ - **CEC can play a critical role in identifying key groups and constituencies as part of this process. Gas planning should operate on a recurring schedule and align with California's updated GHG goals**

We applaud the CEC for its emphasis on the importance of long-term gas planning. As the Report suggests, inherent in long-term gas planning should be alignment with GHG goals and strategies to achieve decarbonized end uses, and we support a proactive, inclusive, comprehensive, and transparent process in which the CEC can play a critical, lead role. The Report correctly identifies rate cases as an improper forum for deciding on important gas infrastructure investment issues, especially safety and reliability investments, which are recurring and rarely scrutinized.¹⁵ We also agree that gas infrastructure investments should not be considered to have useful lives of 50+ years, given the necessary reductions in gas demand in a decarbonized future. In the CPUC Long-Term Gas System Planning Rulemaking (R 20-01-007), the Amended Scoping Memo and Ruling queries whether gas capital investments of a certain size should have to go through the same case-by-case approval process that electric sector investments have to go through.¹⁶ The CEC should endorse this approval process, as it is consistent with the CEC's desire for more scrutiny of the expansion or propping up of aging gas infrastructure. We also recommend that gas utilities be required to submit plans that are equivalent to the resource plans submitted in the CPUC Integrated Resource Plan proceeding, which ensure that electric service providers are meeting GHG and air quality objectives.

We also agree with and support the Report's statements regarding the need for long-term gas planning to include a broader set of stakeholders that are usually not able to participate in formal proceedings or other regulatory venues due to capacity constraints, lack of access to resources, and other challenges.¹⁷ We strongly agree that stakeholders, particularly low-income and disadvantaged communities that usually find the regulatory process inaccessible, have views vital to long-term decision-making on the gas system and related decarbonization. Furthermore, we agree and support that there needs to be more transparency around utility investment

¹³ Report, p. 83 ("It is also unclear the extent to which utilities consider nonpipeline alternatives when deciding which pipelines to repair or safety investments to make. In some cases, targeted energy efficiency or building electrification programs could reduce or eliminate the need for repairs or replacement.").

¹⁴ Meghan Harwood et. al, *The Flipside Report: A White Paper on Targeted Geographic Electrification in California's Gas Transition*, Building Decarbonization Coalition & Common Spark Consulting (2021), available at https://www.buildingdecarb.org/uploads/3/0/7/3/30734489/the_flipside_report_-_targeted_electrification_for_gas_transition.pdf

¹⁵ Report, p. 84.

¹⁶ *Order Instituting Rulemaking to Establish Policies, Processes, and Rules to Ensure Safe and Reliable Gas Systems in California and perform Long-Term Gas System Planning*, Proceeding No. R.20-01-007, (CPUC Jan. 5, 2022), available at <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M436/K692/436692151.PDF>.

¹⁷ Report, p. 83-4.

decisions, so everyone has a clear understanding of the purpose and priority of utility investments and can ultimately make informed decisions on gas system planning.

- d. **Improve Natural Gas Demand Forecasts - The CEC and CPUC should rely on independent gas demand forecasts in order to inform the long-term gas planning process**

In multiple sections of the Report, conclusions are drawn from demand forecasts from the 2020 California Gas Report, authored by California’s utilities.¹⁸ These forecasts feed into the gas reliability analysis in Chapter 2 that concludes that new gas capacity may need to be added to address high peak winter demand. As the Report points out in Chapter 8, California’s ambitious GHG reduction goals require independent forecasts to inform gas planning. That planning must include scenarios based on the CEC’s own data showing that building electrification can technically and feasibly reduce 87 percent of residential and commercial gas consumption.¹⁹ The CEC should establish a goal of gas demand reduction by 2030 aligned with this report to facilitate market development and large-scale deployment of clean technologies.

Moreover, in the Aliso Canyon Storage Facility proceeding before the CPUC, there has been an inability to pinpoint areas ripe for electrification and accurately predict winter peak demand, partially because of a dearth of data and information that does not rely on gas industry inputs and assumptions.²⁰ The FTI Consulting study commissioned by the CPUC to inform that proceeding relies on American Gas Association assumptions to inform its scenarios. There is an obvious conflict of interest when the gas industry is supplying forecasts on gas demand, which is the basis for the industry’s remaining viability. It is no surprise that the Commission has been unable to shut down Aliso Canyon, despite public pressure and years after the fact former Governor Edmund G. Brown Jr. and the former chair of the CEC sent a letter to the former president of the CPUC making clear their request that the facility be closed.

- e. **The CEC should expand its planning, monitoring, and assessment of gas and electric interdependencies critical to system reliability and integrating renewable resources - The Report should explore and support further exploration of non-gas, non-pipe solutions to integrating renewable resources and satisfying peaking demand.**

CEC staff estimate that in 2030, building electrification can reduce natural gas usage in residential and commercial buildings by 24 to 72 percent.²¹ The CEC, along with the CPUC, has the power to make the aggressive electrification scenarios that align with California’s climate goals a reality. As stated in Gridworks’ report on California’s gas system: “The simple fact is

¹⁸ See, e.g., Report, Figure ES-3: Total Statewide Gas Demand, pg. 5.

¹⁹ Report, pg. 77.

²⁰ *Order Instituting Investigation pursuant to Senate Bill 380 to determine the feasibility of minimizing or eliminating the use of the Aliso Canyon natural gas storage facility located in the County of Los Angeles while still maintaining energy and electric reliability for the region*, Sierra Club Comments on November 3, 2021 Workshop pp. 2, 9 (CPUC Nov. 10, 2021), available at <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M422/K279/422279815.PDF>.

²¹ Report, p. 77.

that meeting California’s GHG reduction goals, a statewide priority and absolute necessity to combat climate change, inevitably means a substantial decline in gas throughput in the state.”²²

The Report spends Chapter 3 explaining that climate change is making California’s gas system less reliable and more vulnerable to failure due to extreme weather shocks, but does not mention that our dependence on fossil fuels is exacerbating extreme weather.²³ Investments in electric heat pumps, electric panel upgrades, and information campaigns for building electrification are investments that will help California reach its climate goals and help relieve peak demand. Heat pumps, in particular, can shift load off of peak hours, thereby reducing peak demand.²⁴ As the report notes, peak demand during these weather shocks is driven by space and water heating needs.²⁵

We agree with the CEC that a good approach to downsizing the gas system is through aggressive, targeted residential and commercial building electrification. We would recommend prioritizing environmental justice communities to ensure an equitable transition. Furthermore, we agree that zonal electrification can target leaky gas pipes and unreliable gas mains to improve safety and decommission gas infrastructure. The CEC and other state agencies have a key role to play in targeted and zonal electrification to trim the gas system, especially where customers are serviced by a separate gas and electric utility.²⁶

- f. The CEC should work with the CPUC and stakeholders to expand planning for extreme events (winter cold from polar vortex and extended hot summers) to ensure sufficient gas supplies to maintain gas and electric system reliability and lower price spikes - **The CEC should explore non-gas solutions to demand hikes associated with extreme events, given the California gas system’s reliance on gas from out of state, the environmental justice impacts, and the safety, climate, and environmental issues inherent in gas use and storage.**
- g. California could pursue options to ensure that it receives gas supplies from winterized out-of-state wells. This could include leveraging “differentiated gas” programs that certify that gas has been procured from winterized wells. - **California should pursue options that are aligned with state climate policy and improve in-state resiliency and reliability, rather than continuing to rely on importing natural gas from basins that are subject to increasingly extreme weather conditions.**
- h. Develop a plan for the retirement of Aliso Canyon - **The CEC and CPUC should identify and plan for zonal/targeted electrification in order to retire Aliso Canyon.**

²² Gridworks, *California’s Gas System in Transition Report* (2019), p. 1, available at https://gridworks.org/wp-content/uploads/2019/09/CA_Gas_System_in_Transition.pdf.

²³ Report, pg. 44.

²⁴ Thibaut Abergel et al., *Is Cooling the Future of Heating* (Dec. 13, 2020), available at <https://www.iea.org/commentaries/is-cooling-the-future-of-heating>

²⁵ Report, pg. 28.

²⁶ Report, pg. 83.

II. Gas Issues to Support Building Decarbonization

a. Consider modifying or eliminating the gas utility obligation to serve

In order to ensure that gas decommissioning can occur seamlessly and fast enough to mitigate stranded assets, we agree that the California legislature should modify the CPUC code to clarify that the obligation to serve is not an obligation to serve gas, but to serve existing gas' end uses in an equitable manner and trim the gas system.²⁷

b. Eliminate subsidized line extension allowances for new gas hookups

The CEC is in alignment with the CPUC Energy Division staff in proposing that gas line extension allowances should be eliminated. California utilities spend upwards of \$140 million per year in rate-based funds subsidizing new gas connections.²⁸ By comparison, the CPUC TECH and BUILD programs to support building electrification in mostly low-income communities have been allocated \$200 million in total. With an impending climate crisis, there is no reason to keep this subsidy in favor of natural gas. These subsidies should be reallocated to help support electrification.

c. Gas transition equity: Electrification subsidies should focus on low-income and disadvantaged community customers who are least able to afford new electric appliances.

Building electrification presents a unique opportunity for an equitable transition away from gas use. If utilities and the state legislature can provide funding for heat pumps and other electric appliances, low-income communities can receive the first benefits from cleaner air and load-shifting without rent hikes and rate hikes.²⁹ We recommend that the CEC support zonal/targeted building electrification in ESJ communities to trim the gas system and support larger utility investments in building electrification, such as Southern California Edison's recent application to install 250,000 heat pumps in low-income homes.

III. Role of Clean Fuels in Utility Gas Systems

a. Encourage the use of renewable gas -**The CEC should be careful to not entrench gas infrastructure by promoting the use of “renewable” gas, which is scarce, expensive, has substantial environmental justice impacts, and can create perverse incentives for methane emitters**

²⁷ See, e.g. Wallace, Nicholas et. al. *Removing Legal Barriers to Electrification*. Stanford Woods Institute for the Environment, p. 24 (2020), available at https://www-cdn.law.stanford.edu/wp-content/uploads/2020/10/2020-10-20_Natural-Gas-Memo_formatted.pdf.

²⁸ California Environmental Justice Alliance et. al., *Opening Comments on the Phase III Staff Proposal*, California Public Utilities Commission (Dec. 20, 2021), pg. 1, available at <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M432/K773/432773561.PDF>.

²⁹ See The Greenlining Institute, *Equitable Building Electrification: A Framework for Powering Resilient Communities* (2019), pg. 23, available at https://greenlining.org/wp-content/uploads/2019/10/Greenlining_EquitableElectrification_Report_2019_WEB.pdf.

While acknowledging its limitations, the CEC endorses pipeline injection of renewable natural gas, as a “clean” solution to lingering gas demand from ramping and heating needs during extreme weather events. Renewable natural gas not only provides cover for propping up gas infrastructure that may otherwise be retired, it also presents unique affordability and environmental issues. Renewable natural gas from dairies and landfills can only be produced at industrial scale facilities.³⁰ In California, industrial dairies are major sources of water and air pollution for ESJ communities, particularly in the Central Valley, resulting in serious public health and environmental impacts.³¹ Renewable gas procurement standards, as have been proposed in the CPUC, encourage the further industrialization of the dairy industry, and worsen harm to environmental justice communities who already bear a disproportionate impact caused by climate change.

The CEC also runs the risk of incentivizing the creation of larger landfills, which like dairies, disproportionately are sited next to ESJ communities, and create toxic local pollution.³² RNG would have to be heavily subsidized in order to be affordable. A gas industry study from 2019 shows that a majority of RNG projects cost more than five times the current cost of natural gas.³³ If RNG is to help supply peaking demand rather than local needs, as CEC proposes, additional costs would accumulate from preparing the gas for pipeline injection and from siting costs for injection infrastructure.

Building electrification, as shown by the CEC’s own data, is a superior solution to reduce emissions, improve public health, and safeguard affordability.

- b. Encourage the use of renewable hydrogen - **At its current cost, green hydrogen should not be a priority for investment and should not be relied upon to replace gas**

The Report notes that because of its cost, not even 1 percent of hydrogen in the energy market is green hydrogen. Maintaining gas infrastructure in the hopes that green hydrogen will be available at cost and scale to supply winter peaking demand is a risk that climate change and local pollution-impacted communities cannot afford, especially when load-shifting electrification and distributed energy technologies exist that can respond to winter peaking demand. While green hydrogen, if cost effective, could provide carbon-neutral energy in the future, it is likely that until then, grey hydrogen, produced at refineries, with high emissions, will fill the pipelines.³⁴ In California, refineries sit next to impacted environmental justice communities.³⁵ Furthermore, hydrogen can be used to hinder necessary climate action particularly on building electrification as electric appliances are more energy efficient, improve air quality, and have no

³⁰ Report, pg. 59, 61.

³¹ Emily Grubert, Scale, *Renewable Natural Gas Systems Could be Climate Intensive: The Influence of Methane Feedstock and Leakage At Rates*, *Envntl. Research Letters* (2020) <https://doi.org/10.1088/1748-9326/ab9335>

³² Mohai, Paul & Saha, Robin, *Which Came First, People or Pollution? Assessing the Disparate Siting and Post-Siting Demographic Change Hypotheses of Environmental Injustice*, *Environmental Research Letters* (2015).

³³ Feinstein, Laura & De Place, Eric, *The Four Fatal Flaws of Renewable Natural Gas*, *Sightline Institute* (Mar. 9, 2021), available at <https://www.sightline.org/2021/03/09/the-four-fatal-flaws-of-renewable-natural-gas/>.

³⁴ Earthjustice, *Reclaiming Hydrogen for a Renewable Future* (Aug. 2021), available at https://earthjustice.org/sites/default/files/files/hydrogen_earthjustice_2021.pdf

³⁵ *Id.*

hydrogen leak risks. The CEC should prioritize building electrification as the key strategy to achieve our climate targets with respect to the buildings sector.

IV. Conclusion

Thank you for the opportunity to comment. We look forward to continuing to work with the CEC to ensure that California meets its near-term and long-term climate, air quality, and equity goals.

Dated: January 28, 2022

Respectfully submitted,

/s/ Merrian Borgeson

Merrian Borgeson, Senior Scientist
Natural Resources Defense Council
111 Sutter Street, 21st Floor
San Francisco, CA 94104
(415) 875-6100
Email: mborgeson@nrdc.org

/s/ Nihal Shrinath

Nihal Shrinath, Associate Attorney
Sierra Club
2101 Webster Street, Suite 1300
Oakland, CA 94612
(415) 977-5627
Email: nihal.shrinath@sierraclub.org

/s/ Kiki Velez

Kiki Velez, Building Decarbonization Fellow
Natural Resources Defense Council
111 Sutter Street, 21st Floor
San Francisco, CA 94104
(415) 875-6100
Email: kvelez@nrdc.org

/s/ Leah Louis-Prescott

Leah Louis-Prescott, Senior Associate
RMI
1901 Harrison St, Ste 200
Oakland, CA 94612
(810) 772-8248
Email: llouisprescott@rmi.org