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**NRDC comments supporting adoption of 2018 IEPR**

*Additional submitted attachment is included below.*

**Comments of the Natural Resources Defense Council (NRDC)  
on the Final 2018 Integrated Energy Policy Report (2018 IEPR), Volume II  
Docket Number 18-IEPR-01  
February 19, 2019  
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The Natural Resources Defense Council (NRDC) appreciates the opportunity to comment on the California Energy Commission's (CEC) Final Draft 2018 Integrated Energy Policy Report Update ("IEPR"). NRDC is a non-profit membership organization with more than 95,000 California members who have an interest in receiving affordable energy services while reducing the environmental impact of California's energy consumption.

NRDC appreciates the Energy Commission staff's efforts in developing this IEPR in a thorough and transparent manner. NRDC strongly supports the IEPR's emphasis on decarbonizing buildings as a key strategy to help achieve California's climate and clean air goals, including SB 32, AB 3232, SB 100, and Executive Order B-55-18.

Our comments below aim to address the issues raised by the Southern California Gas company (SoCalGas) in the comments docketed on February 8, 2019.

**The SoCalGas/Navigant study cited in SoCalGas' comments is based on systematically biased assumptions designed to support SoCalGas' business interests, not Californians' interests in clean and affordable energy.** SoCalGas's claims that replacing 16 percent of the traditional gas supply in its service territory with renewable gas by 2030 could achieve greenhouse gas (GHG) emissions reductions equivalent to converting 100 percent of buildings to electric-only energy, and that the cost of those GHG reductions would be two to three times lower. These claims are based on a Navigant study commissioned by SoCalGas in 2018. The study was thoroughly rebutted by the Sierra Club.<sup>1</sup> It systematically uses wildly

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<sup>1</sup> Sierra Club Comments on SoCalGas and Navigant Report, submitted on 8/24/2018 to docket 18-IEPR-09.

optimistic assumptions for cost and availability of renewable gas, and worst-case assumptions for the cost, energy efficiency and emissions reductions from electrification.

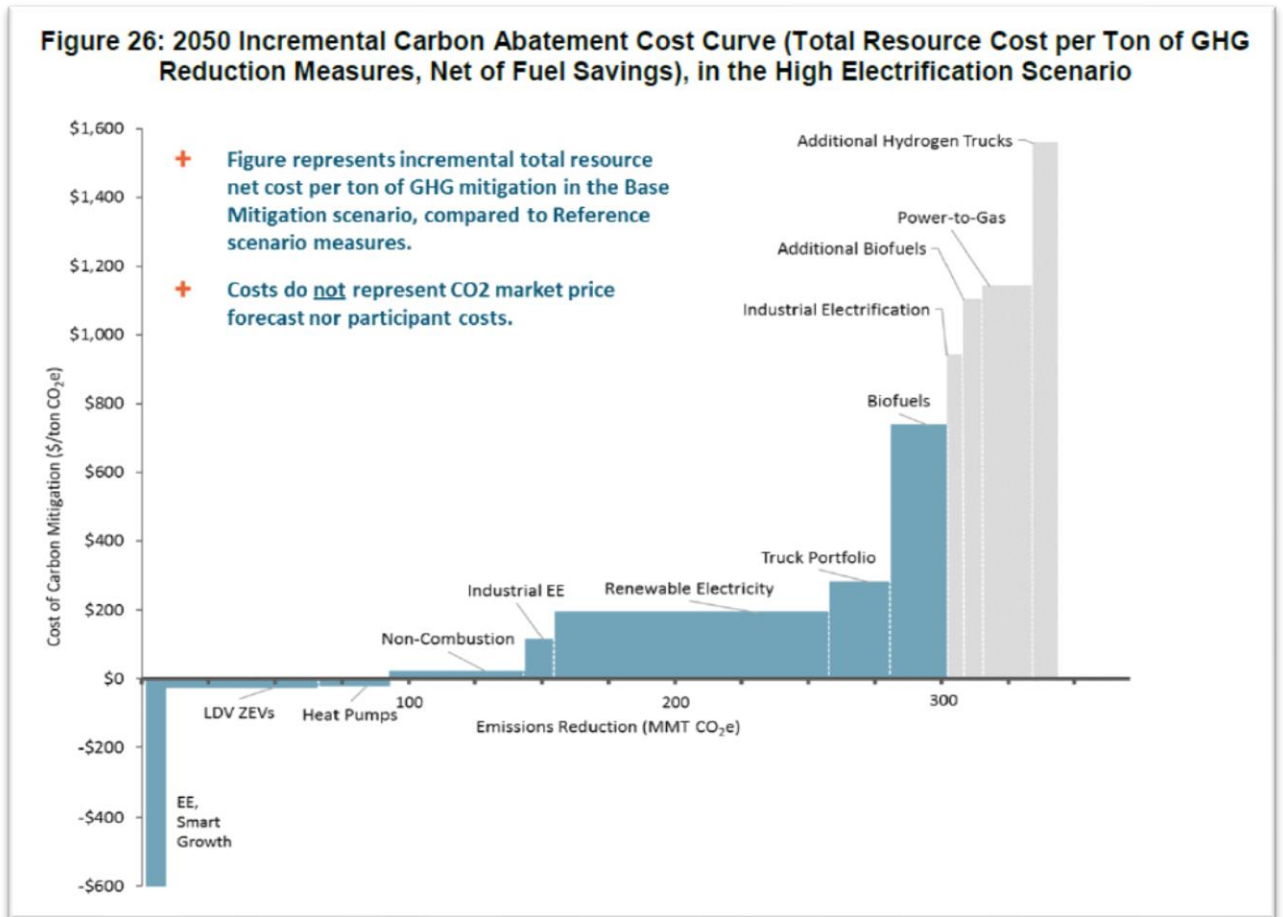
For example, the study uses heat pump water heater efficiency levels far lower than any product currently on the market, and extremely inefficient electric resistance boilers and water heaters in commercial buildings instead of heat pump technologies for these uses. It assumes gas rates increase slower than electric rates whereas gas rates have increased three times faster than electric rates in California over 2012-2017.<sup>2</sup>

The systematic bias in these assumptions resulted in an artificially low cost of emissions reductions for renewable gas, and an artificially high-cost for electric heat. With consistently optimistic assumptions for both options, the cost comparison tells a very different story. A 2018 study by Energy and Environmental Economics (E3) for CEC found that renewable gas (including biofuels and power-to-gas) cost between \$700 and \$1,200 per metric ton of GHG reduction, when heat pumps would have a slightly **negative** GHG abatement cost.<sup>3</sup> The reality is that electrification with heat pumps is by far the least cost option and building decarbonization utilizing solely renewable gas would burden Californians with much higher costs than electrification.

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<sup>2</sup> EIA, <https://www.eia.gov/dnav/ng/hist/n3010ca3m.htm>,  
<https://www.eia.gov/electricity/data/browser/#/topic/7?agg=2,0,1&geo=g&freq=M>

<sup>3</sup> “Deep Decarbonization in a High Renewables Future”, 6/12/2018, docket 18-IEPR-09.



DEEP DECARBONIZATION IN A HIGH RENEWABLES FUTURE, CEC ENERGY RESEARCH AND DEVELOPMENT DIVISION FINAL PROJECT REPORT, JUNE 2018

The SoCalGas/Navigant study allocates 16 percent of its entire conventional gas supply, including gas used in industry and power generation, solely to buildings. This would actually represent 46 percent of the conventional gas supply to building and would leave no renewable gas available for sectors that are hardest to decarbonize and where renewable gas is most needed: industry, power generation for inter-seasonal balancing, and potentially heavy-duty transportation. Instead, this scarce supply of renewable gas should be allocated to those sectors and end uses that need it the most before any leftover is used in buildings.

In the carbon-free electricity world that California is committed to by 2045, we would need a 100-percent renewable gas supply to completely decarbonize buildings in line with the state's carbon neutrality goals, not just 46 percent. And while the state has a clear trajectory toward 100-percent carbon-free electricity, it does not have any portfolio goals for renewable

gas, let alone 100 percent. In fact, today's share of renewable supply in gas pipelines is **less than 1 percent**. As the IEPR describes, there is a limited supply of renewable gas and it is unclear whether there would even be enough available to supply 10-20 percent of the entire state's current gas use. The 2017 IEPR rightly concludes that "renewable gas could likely play a more significant role in reducing GHG emissions in other energy sectors, such as transportation." NRDC supports the use of sustainably-derived renewable gas to sectors that are the hardest and most expensive to decarbonize, particularly industry and power generation (to provide inter-seasonal balancing by storing summer renewables for generating clean electricity in the winter to serve electric heating loads).

The SoCalGas/Navigant study includes other major biases that prop up a renewable gas pathway:

- It focused on 2030, not the state's 2045 carbon neutrality milestone; It is critical that building decarbonization solutions are scalable to the 2045 carbon-neutrality goal, and not just to a mid-term goal without considering their scalability and affordability at scale. Focusing solely on mid-term goals could lead us to a dead end and hinder our ability to meet longer-term goals;
- It excluded methane leakage from methane gas production and distribution, which nearly doubles the climate impacts of methane gas combustion;<sup>4</sup>
- It took vastly more than California's share of resources from out of state and is therefore not scalable nationwide;
- It did not consider the sustainability of the feedstock to create renewable gas.

**Renewable gas can play an important role in a clean energy future and potentially in building decarbonization, as a complement to electrification, not as a wholesale alternative to it.** Our comments have so far focused on correcting the systematically biased assumptions and invalid findings in the SoCalGas/Navigant study. However, we agree with CEC that "renewable gas can be a part of the solution to reducing GHG emissions from buildings, but

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<sup>4</sup> Vukovich J., Delforge P., "The Real Climate Impact of California's Buildings", <https://www.nrdc.org/experts/joe-vukovich/real-climate-impact-californias-buildings>

the role is likely to be constrained by limitations on renewable gas availability, cost, and ongoing methane leakage concerns.”

NRDC supports the Air Resource Board’s efforts to ensure that methane emissions from dairies, landfills, and sewage treatment plants are prevented from escaping to the atmosphere where they have major climate impacts. We also support research and development into reducing the cost of synthetic methane such as renewable-power-to-gas, because it could provide additional flexibility and inter-seasonal load shifting capabilities to make use of abundant summer solar resources for winter electricity needs such as heating. But the availability of sustainable and affordable renewable gas for buildings is limited in the best case and should not distract us from pursuing the most promising decarbonization strategies, particularly electrification which offers a proven, scalable, and affordable pathway to the state’s climate goals. The IEPR’s approach of investing in electrification as the primary pathway for building decarbonization while leaving the door open for renewable gas to contribute is a prudent and balanced strategy for building decarbonization.

**Gas is no longer the cheapest heating option in many cases and may lock consumers in to high heating bills over the next decades** – SoCalGas claims that “people prefer using gas by a margin of 4 to 1 over electricity for many purposes” and cites a poll conducted by the California Building Industry Association. However, a poll commissioned by NRDC found that 61 percent of Californians support transitioning from natural gas to electricity to heat homes and offices.<sup>5</sup> Neither is necessarily definitive. Customer preferences depend heavily on how questions are asked, whether they are aware of the alternatives, and how the economic benefits or impacts of the alternatives are presented to them.

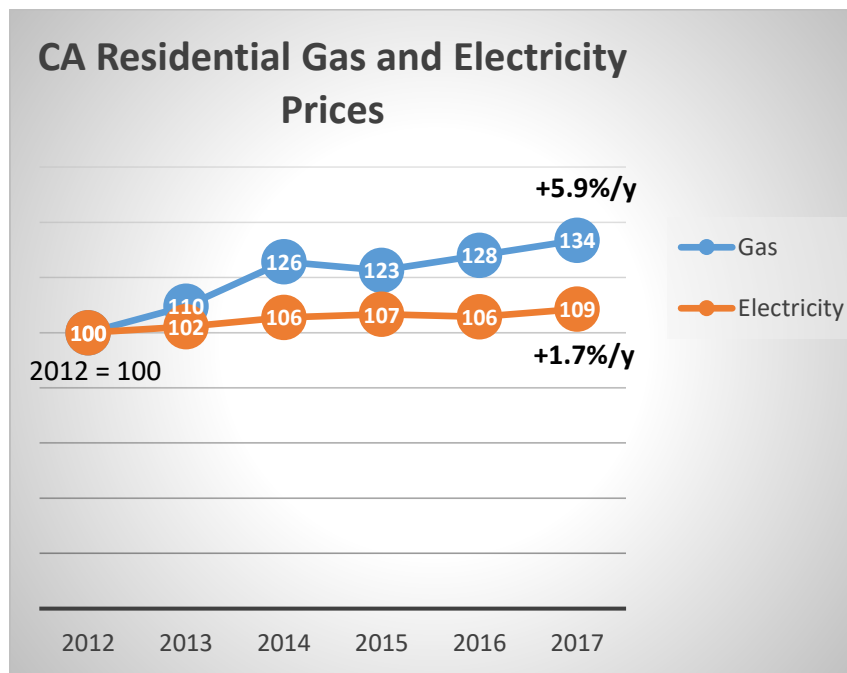
A key driver of customer perceptions, cost, is also changing rapidly. Gas has historically been perceived as the cheaper heating fuel but recent studies find that heat pump space heating and water heating now afford lower operating costs than gas in many situations, and recent trends in gas and electric rates suggest that electric heating is going to continue to increase its

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<sup>5</sup> <https://www.nrdc.org/experts/merrian-borgeson/poll-californians-support-clean-heat-homes>

operational cost advantage.<sup>6,7</sup> In fact, gas heating costs are rising rapidly and may increasingly burden customers with high winter heating bills.

NRDC’s analysis of California-wide electric and gas rates shows that gas rates have increased three times faster than electric rates over the past 5 years, and SoCalGas recently requested approval for a 45-percent revenue increase over 4 years from the California Public Utilities Commission (CPUC).



CALIFORNIA GAS AND ELECTRICITY PRICES 2012-2017 (EIA)<sup>8</sup>

<sup>6</sup> Billimoria S. et al, Rocky Mountain Institute, “The Economics of Electrifying Buildings,” June 2018

<sup>7</sup> Hopkins A. et al., Synapse Energy Economics, “Decarbonization of Heating Energy Use in California Buildings,” October 2018

<sup>8</sup> EIA, <https://www.eia.gov/dnav/ng/hist/n3010ca3m.htm>, <https://www.eia.gov/electricity/data/browser/#/topic/7?agg=2,0,1&geo=g&freq=M>



**SoCalGas Test Year 2019 GRC Request (2019-2022 Cycle)**

<b>Year</b>	<b>Increase (\$000)</b>	<b>GRC Rev. Req. (\$000)</b>	<b>% Increase</b>
2018 (As-Expected Authorized)		\$2,509,000	
2019	\$480,000	\$2,989,000	19.13%
2020	\$255,400	\$3,244,400	8.54%
2021	\$200,800	\$3,445,200	6.19%
2022	\$212,800	\$3,658,000	6.18%
<b>Sum of 2019-2022 Increases</b>	<b>\$1,149,000</b>		
<b>% Increase by 2022 (over 2018)</b>	<b>45.80%</b>		
<b>Cumulative Increase in Revenues</b>	<b>\$3,500,600</b>		

TURN PROTEST TO SCG APPLICATION TO UPDATE ITS GAS REVENUE REQUIREMENTS AND BASE RATES, NOV. 2017, PENDING CPUC DECISION <sup>9</sup>

In conclusion, a reliance on renewable gas as the primary decarbonization strategy in the building sector would likely fail to achieve the required level of emissions reductions due to supply constraints and high costs, locking Californians into a high-emissions, high-bills trajectory, and missing out on a clean, renewable, and affordable energy future. Instead, the energy policy proposed by CEC in the IEPR is a prudent and balanced approach that leaves the door open to renewable gas where and when it can contribute to building decarbonization in an affordable manner but does not bet Californians’ heating bills and climate future on an overly optimistic renewable gas scenario. CEC chooses the most affordable and scalable strategy as the primary pathway to decarbonize buildings. With appropriate market development and other policy support, California can repeat the success of its Solar Initiative and give Californians access to clean and renewable energy in their homes while lowering their heating and hot water bills, improving indoor and outdoor air quality, and improving their safety and resiliency. We commend CEC for its thought leadership and urge adoption of this IEPR.

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<sup>9</sup> <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M199/K266/199266516.PDF>