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Tim Carmichael
Agency Relations Manager
State Governmental Affairs

925 L Street, Suite 650
Sacramento, CA 95814
(916) 492-4248
TCarmichael@semprautilities.com

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

RE: SCG Comments on CEC Volume 1 Draft 2020 IEPR Update (20-IEPR-01)

Dear Commissioners and Staff:

Southern California Gas Company (SoCalGas) appreciates the opportunity to provide comments on the California Energy Commission's (CEC) Volume 1, Draft 2020 Integrated Energy Policy Report (IEPR) Update (Draft Report), which focuses on California's transportation future and the transition to zero emission vehicles (ZEVs). SoCalGas supports California's efforts to reduce greenhouse gas (GHG) emissions in the transportation sector and recognizes the potential benefits that ZEVs can provide in terms of public health and economic development, particularly for Disadvantaged Communities (DACs). These benefits will not materialize by accident, but rather are dependent on policies that will be implemented now and in the near future. SoCalGas believes that decarbonizing our pipeline system can play a vital role in this GHG reduction effort. We urge the CEC to further analyze the intended and unintended consequences of your recommendations in order to provide recommendations to policy makers that create a reliable and affordable clean energy future for all Californians.

1. SoCalGas Supports Efforts to Reduce Barriers to Entry for Fuel Cell Electric Vehicles and Research into Best Practices for Integrating Hydrogen to Reduce Greenhouse Gas Emissions

The primary barriers to entry for ZEVs are cost and infrastructure and specifically for BEVs, limited range. While technology and ever-changing market conditions are improving the cost of the ZEVs, policies that promote investment in infrastructure is needed to ensure the ZEV market reaches maturity. A targeted approach that maximizes the benefits of Fuel Cell Electric Vehicles (FCEV) will be vital in this effort. As the Draft Report states, "FCEVs and plug-in electric vehicles (PEVs) have different characteristics that provide each with advantages in certain transportation market segments. FCEVs typically have longer ranges and faster refueling times than BEVs, which make this technology particularly attractive to customers who must travel long distances, have demanding duty cycles, lack access to personal charging or need to minimize downtime. By supporting PEVs and FCEVs, California is providing ZEV options that can meet the needs of more people and businesses than one technology alone."¹

¹ Draft Report at p. 103.

Green hydrogen or hydrogen produced from renewable or zero-carbon resources, can significantly reduce greenhouse gas emissions from all carbon-emitting sectors. Commercial hydrogen production is currently almost exclusively reliant on methane reformation of tradition natural gas. So, demonstrating a commercial pathway for green hydrogen production will be critical for California’s long-term climate goals by both decarbonizing the fuel mix and providing a scalable pathway to extend to commercial viability of wind and solar development in California.

2. Grid Reliability

Recent events in California demonstrated the operational vulnerabilities posed by a solar/wind-based energy system backed by batteries. Last year’s power outages experienced in August and September further underscore the critical need for long duration storage to bridge the gap between energy demand and reliable supply. The power outages also highlighted the fundamental difference between renewable energy, which is variable and only available during a limited timeframe and firm capacity which is available on-demand. The gas system provides a reliable source of energy for dispatchable “on-demand” electricity to customers to meet peak energy demand. It is also a critical component in managing the daily and seasonal ramping needs of the electric grid, which are expected to increase in frequency given California’s greater reliance on intermittent renewables (i.e. solar and wind). In fact, grid operators prefer gas-fired firm capacity over batteries for a variety of fundamental energy applications, including energy flow smoothing, dynamic reactive power and volt-ampere reactive (VAR) support.² These ramping services, coupled with the state’s gas infrastructure, have proven invaluable in responding to the rapid fluctuations of an increasingly unpredictable energy system.

California finds itself at a clear inflection point where it must develop a sustainable plan to safely and equitably deal with potentially significant electricity cost increases. California’s electricity grid was pushed to the brink of failure last summer with its frailties exposed by sustained heat waves and more frequent and intense wildfires. The Draft Report should therefore encourage solutions that do not rely on a single source of energy but rather encourages policies that support a diverse energy portfolio that includes multiple fuels and technologies. For example, the Draft Report recommends maximizing the use of renewable generation to help optimize the benefits of plug-in electric vehicles for grid integration.³ This recommendation should not be limited to intermittent sources of renewable energy like solar and wind, but should focus equally on the benefits of Renewable Gas (RG), including both biomethane and green hydrogen.

California’s leadership in driving aggressive emissions reductions has helped bring to market many new forms of renewable energy and fuels, while supporting a rapid decline in prices for renewable power such as solar, wind, and battery storage, and has accelerated adoption and price reduction of zero-emission vehicles. The cost of utility-scale solar power dropped by 50 percent from 2011 and 2015, and electric vehicle battery prices dropped 87 percent in real terms from 2010 to 2019. California has made significant investments to decarbonize the electric system, which have helped to reduce carbon emissions. However, in order to reach our ambitious carbon emissions reductions, California must make similar investments to decarbonize the gas system, because gas will continue to be key to energy resiliency and reliability.

As the state’s grid system increasingly relies on intermittent electric resources, more long duration, dispatchable capacity will be needed. This is a somewhat linear commensurate relationship, which does not

² CAISO Comments on OIR to *Establish Policies, Processes, and Rules to Ensure Safe and Reliable Gas Systems in California and Perform Long-Term Gas System Planning*, January 16, 2020 at p.2

³ Draft Report at p. 102.

necessarily equate solely to gas generation capability.⁴ However, gas is the current primary means to complement renewable energy and to maintain an affordable, reliable, and resilient electric grid as well as to provide long-duration storage. Existing gas infrastructure will play a critical role in maintaining an integrated energy system and providing the flexibility for intermittent renewable resources to be seamlessly woven into the grid. Additionally, renewable hydrogen offers many climate and energy benefits, including better utilizing curtailed power and better integrating renewable resources into the electrical grid (including providing power during seasonal renewable doldrums) to achieve greater than 100 percent zero-carbon energy and to use renewable electricity for cross-sector decarbonization.

As policy discussions about achieving carbon neutrality continue, it is essential to build a solid, well-planned strategy from which to expand stakeholder and decision-maker understanding of the critical role California's existing gaseous fuels transportation infrastructure can play in meeting the state's GHG reduction goals. The gas system is not incompatible with electrification. Rather, SoCalGas' system complements and enables the use of intermittent renewables by providing reliability, resiliency and cost-effective, long-duration storability. That means an integrated energy system of the future with decarbonized molecules and electrons working together to drive down emissions and offering "dual-fuel" options to safely, reliably, and affordably meet customer energy needs for all Californians.

3. FCEV Market

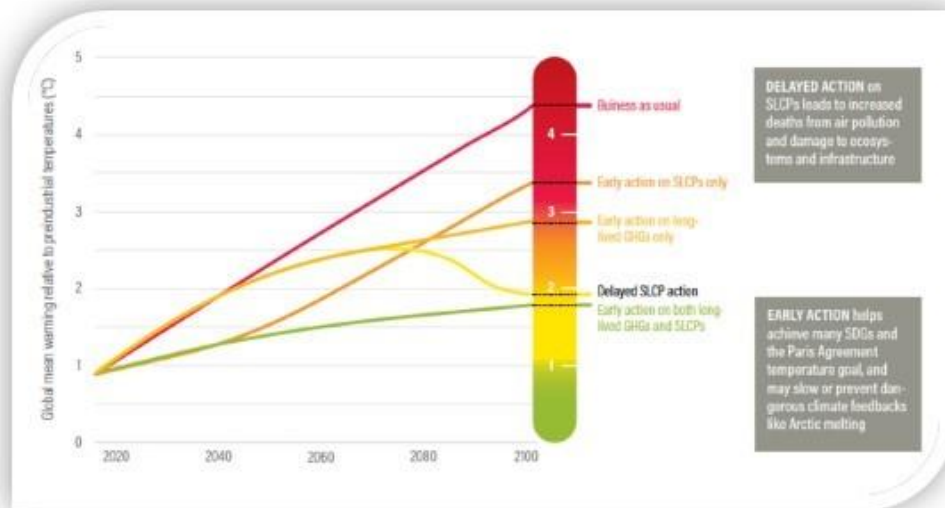
SoCalGas agrees with several points made in the document in regard to the importance of FCEVs in the heavy-duty truck sector. The IEPR states that "FCEVs typically have longer ranges and faster refueling times than BEVs, which make this technology particularly attractive to customers who must travel long distances, have demanding duty cycles, or need to minimize downtime. By supporting PEVs and FCEVs, California is providing ZEV options that can meet the needs of more people and businesses than one technology alone," and "If fuel cell technology can maintain a competitive advantage to battery technology in size, weight, and performance for many heavy-duty applications, fuel cell electric trucks will play an important role in decarbonizing the freight sector" FCEVs do not have the same limitations as plug-in technologies such as range, weight and charging time. These limitations prevent BEVs from operating in several heavy, high use vocations and SoCalGas agrees that users need options. Without options users will stick with the status quo of diesel trucks. SoCalGas strongly encourages a portfolio approach for technologies that includes plug-in, FCEVs, and renewable natural gas.

In order to support a portfolio approach and achieve the statewide ZEV goals, the state must continue to provide funding for FCEVs and hydrogen infrastructure. Assembly Bill 8 (AB 8) requires the state to provide funding for the first 100 hydrogen fueling stations. The state has a separate goal of 200 hydrogen fueling stations by 2025 established by Executive Order B-48-18. SoCalGas recommends that funding not be limited to the first 100 stations, but at a minimum to the 200-station goal. SoCalGas further recommends continued funding until a robust statewide network is established regardless of the number of stations. This would send a strong market signal that stations will be available for those that choose FCEVs as their zero-emission truck of choice.

4. RNG Delivers Methane Reduction Benefits

⁴ [Role of Long-Duration Energy Storage in Variable Renewable Electricity Systems \(cell.com\)](#)

RNG has the lowest carbon intensity of any fuel available today. Based on Q2 2020 Low Carbon Fuel Standard (LCFS) data, the average carbon intensity for compressed RNG reported in LCFS was negative and it is anticipated that the carbon intensity of RNG will continue to decline. A recent study by GNA Clean Transportation and Energy Consultants concluded that based upon existing project investments (including various CA incentive programs), by Jan. 1, 2024 there will be 160 in-state RNG production facilities.⁵ This does not include numerous out-of-state projects that have been announced, which would only increase production. These projects would produce 119 million diesel gallon equivalent (DGE) of RNG per year for the transportation sector. The weighted average carbon intensity of the 119 million DGE from the 160 in-state RNG projects will be (-) 101.74 grams of carbon dioxide equivalent units per megajoule (g/CO₂e/MJ). By comparison the electric grid currently has a carbon intensity of 82.92 gCO₂e/MJ.⁶ Negative carbon fuels that reduce short lived climate pollutants (SLCP) will be critical to reaching carbon neutrality. As shown in the graphic below, the most effective way to meet long-term climate goals is a mix of early action to reduce both carbon and SLCPs. Without affirmative action now, the benefits will not be realized for several decades, which will likely be too late to avoid the most extreme and irreversible impacts of climate change.



Source: World Resources Institute, *Strengthening Nationally Determined Contributions to Catalyze Actions that Reduce Short-Lived Climate Pollutants*

The production and use of RNG should be leveraged to reduce SLCPs. However, the IEPR states that “Some national environmental groups and local environmental justice organizations are concerned that the methane reduction benefits of renewable gas may be overstated.” As for quantifying the benefits, it is important to note that the methane reductions from RNG (or any other fuel) are calculated by the California Air Resources Board (CARB). Any valid concerns with those methodologies or formulas should be taken up with CARB when they re-evaluate the methodologies. Until then, the broad unsubstantiated statements made by those organizations should not be included in the IEPR.

The document also states that the supply of natural gas fueled trucks is “limited,” without providing a source to substantiate that comment. In a 2020 letter to the Port of Los Angeles, Cummins, the manufacturer of the Class 8 natural gas engines, stated that there are no production limitations, and

⁵ An Assessment: California’s In-State RNG Supply for Transportation 2020-2024” GNA, 2020

⁶ https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/fuelpathways/comments/tier2/elec_update.pdf

that they can produce up to 2,000 engines per month. Additionally, several major truck manufacturers including Freightliner, Kenworth, Mack, Peterbilt and Volvo have natural gas offerings using the Cummins natural gas engines.⁷ Consequently, unfounded statements about limited supply of these trucks should not be included in the IEPR.

5. Role of CEC in Monitoring Emission Leaks

Lastly the document recommends that “The state should closely scrutinize both potential and active renewable gas projects to avoid emissions from leaks, impacts to water quality, and local harm to communities impacted by the operations.” While the impacts of any and all development should be thoroughly assessed, it is not within the CEC’s authority to approve renewable gas projects. Permitting is under the purview of local jurisdictions, in accordance with state law. It is important to note that new renewable gas facilities are much more heavily regulated than existing dairy operations and result in overall improvement of conditions when compared to existing operations. As such, this recommendation should be deleted.

6. Conclusion

SoCalGas is committed to doing its part to advance the California’ climate goals while prioritizing the reliability and resiliency of our energy, affordability and choice for consumers. We look forward to participating throughout IEPR process.

Sincerely,

/s/ Tim Carmichael

Tim Carmichael
Agency Relations Manager
Southern California Gas Company

⁷ [Cummins Response to Port of Los Angeles March 10, 2020 Los Angeles Times Article](#)