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Comments on the Clean Transportation Program First Advisory Committee Meeting for the 2022-2023 Investment Plan Update

Additional submitted attachment is included below.

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April 29, 2022

The Honorable Patricia Monahan
Commissioner
California Energy Commission
Docket Unit, MS-4
Docket No. 22-ALT-01
715 P Street
Sacramento, CA 95814-5512

Subject: Comments on the Clean Transportation Program First Advisory Committee Meeting for the 2022-2023 Investment Plan Update

Dear Commissioner Monahan:

Southern California Gas Company (SoCalGas) appreciates the opportunity to comment on the Clean Transportation Program First Advisory Committee Meeting for the 2022-2023 Investment Plan Update. While California has made progress towards decarbonizing the transportation sector, strategies that emphasize technologies with the greatest greenhouse gas (GHG) and criteria pollutant emission reductions in the near- to mid-term will be crucial to improving public health and set the stage for achieving long-term GHG reductions.

As such, our comments for the Investment Plan Update are as follows: (1) Prioritizing the most viable technologies to decarbonize the transportation sector today builds a strong foundation for zero-tailpipe emission technologies in the long-term; (2) An inclusive definition of clean hydrogen in the Clean Transportation Program is key to retaining federal funding for hydrogen development; and (3) the CEC should take a complementary approach for activities within the Clean Transportation Program to achieve long-term decarbonization goals.

1) **Prioritizing viable technologies to decarbonize the transportation sector today builds a strong foundation for zero-tailpipe emission technologies in the long-term.**

SoCalGas' September 30, 2021 comments emphasized that heavy-duty trucks fueled with renewable natural gas (RNG) provide the most benefit-cost decarbonization, public health, and air quality goals by reducing short-lived climate pollutants (SLCPs), GHG, diesel, and nitrogen oxide

(NOx) emissions.[1] Recognizing this, Senator Bob Wieckowski, at the Senate Budget and Fiscal Review Subcommittee on the Zero-Emission Vehicle Package, asked California Air Resources Board (CARB) and CEC representatives, "shouldn't [the State] consider short-term solutions for immediate emission reductions today?"[2] SoCalGas submits that the answer should be in the affirmative. One short-term solution that could be considered is replacing traditional diesel or gasoline with RNG to fuel heavy-duty trucks because RNG trucks are commercially available and capable of replacing diesel-fueled heavy-duty trucks on a one-for-one basis. Further, switching to cleaner fuels for use in heavy-duty trucks can significantly reduce NOx, particulate matter, and GHG emissions.

In 2020, RNG used as a transportation fuel lowered GHG emissions equivalent to taking approximately 760,000 passenger vehicles off the road or reducing CO_2 emissions from approximately 394 million gallons of gasoline consumed.[3] A benefit of RNG fuel often overlooked is that it can be derived from waste produced by industrial and agricultural activities including landfills, animal manure, and solid waste. Landfills are a leading source of methane emissions and the decomposition of organic waste in landfills recently accounted for 21 percent of statewide methane emissions.[4] RNG fuel production can capture and allow the productive use of methane that would otherwise escape into the atmosphere.[5]

Since September 2020, the RNG procured and dispensed at utility-owned refueling stations has a carbon intensity (CI) of -5.845 gCO_2e/MJ.[6,7] This is compared to a CI of 82.92 gCO_2e/MJ for plug-in battery-electric trucks relying on grid electricity today.[8] CARB's carbon intensity comparison of key clean transportation fuels demonstrates that RNG produced from three sources, high solid anaerobic digestion (HSAD), gasification, and dairy, have a lower CI than the other transportation fuels, as shown in Figure 1 below. Transportation fuels with low CI scores can incentivize fleets to adopt cleaner fuels and technologies for improved air quality and reduced emissions.

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[1] *See* SoCalGas Comments – on the 2021-2023 Investment Plan update for the Clean Transportation Program, California Energy Commission (CEC) Docket 21-ALT-01, September 30, 2021, available at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=239890&DocumentContentId=73331.

[2] *See* Legislative Analyst Office comments on Zero-Emission Vehicle Package for the Senate Budget and Fiscal Review Subcommittee Number 2 Hearing held March 2, 2022, at page 10, available at https://sbud.senate.ca.gov/sites/sbud.senate.ca.gov/files/Sub%202%20Agenda%203.2%20Final.pdf.

[3] *See* "Decarbonize Transportation with Renewable Natural Gas," RNG Coalition and NGV America, April 2021, available at: https://ngvamerica.org/wp-content/uploads/2021/04/Decarbonize-Transportation-with-RNG-Updated-April-16-2021.pdf.

[4] *See* CARB 2022 Scoping Plan Update – Short-Lived Climate Pollutants Workshop Presentation on September 8, available at: https://ww2.arb.ca.gov/sites/default/files/2021-09/carb_presentation_sp_slcp_september2021_0.pdf.

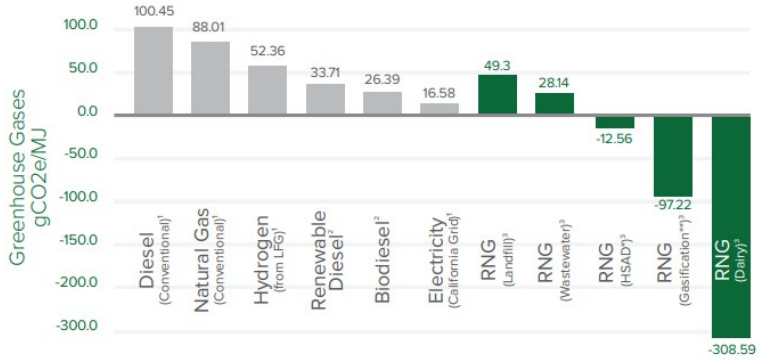
[5] *See* "What Is Renewable Natural Gas," American Geoscience Institute, 2022, available at: https://www.americangeosciences.org/critical-issues/faq/what-renewable-natural-gas

[6] *See* CARB LCFS Pathway Certified Carbon Intensities Webpage, available at: https://ww2.arb.ca.gov/resources/documents/lcfs-pathway-certified-carbon-intensities.

[7] Laura Sanicola, "California's renewable natural gas vehicles turn carbon negative in 2020," Reuters, June 2, 2021, available at: https://www.reuters.com/business/autos-transportation/californias-renewable-natural-gas-vehicles-turn-carbon-negative-2020-2021-06-02/.

[8] *See* Low Carbon Fuel Standard Annual Updates to Lookup Table Pathways, CARB, p.2. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/fuelpathways/comments/tier2/elec_update.pdf

Figure 1: Carbon Intensity of Key Transportation Fuels[9]



Carbon intensity scores are also a key factor in programs aimed at reducing emissions generated by the transportation sector, such as CARB's Low Carbon Fuel Standard (LCFS) program which showed that by year-end 2019, 98 percent of all the natural gas used in motor vehicles was RNG.[10] Additionally, natural gas and RNG heavy-duty trucks meet or exceed CARB's Optional Low NOx standard of 0.02 grams of NOx per brake horsepower-hour (Optional Low NOx trucks). Fortune 500 companies, such as Amazon.com, Inc. and the United Parcel Service, Inc., are ramping up procurement and use of compressed natural gas Class 6 and Class 8 trucks within their heavy-duty truck fleet to help further reduce their carbon emissions. According to Reuters, "Amazon has ordered more than 700 compressed natural gas class 6 and class 8 trucks,"[11] and the United Parcel Service, Inc. announced plans to procure approximately 6,000 natural gas-powered trucks over three years to immediately reduce the environmental impact of its fleet of nearly 123,000 vehicles.[12] The CARB Clean Truck rule does not require heavy-duty diesel trucks to meet the Optional Low NOx standard until 2027, which results in deferring emission reductions that could otherwise be achieved today by RNG trucks.[13]

2) An inclusive definition of clean hydrogen in the Clean Transportation Program is key to retaining federal funding for hydrogen development.

During the First Advisory Committee meeting, it was expressed that all hydrogen is not equal. It is noteworthy that the federal statutory definition of clean hydrogen is "*hydrogen produced with a carbon intensity equal to or less than 2 kilograms of carbon dioxide-equivalent produced at the*

[9] *See* "California is increasingly impacted by the growing climate crisis," California Natural Gas Vehicle Partnership, at page 2, available at: https://cngvp-7f8e.kxcdn.com/pdf/Understanding-Carbon-Intensity-Why-It-Is-Important.pdf.
[10] "CARB LCFS Data Dashboard, Figure 2," CARB, April 2, 2021. Available at https://www.arb.ca.gov/fuels/lcfs/dashboard/dashboard.htm.
[11] Laura Sanicola, "Exclusive: Amazon orders hundreds of trucks that run on natural gas," Reuters, February 5, 2021, available at: https://www.reuters.com/article/us-amazon-engines-natural-gas-exclusive/exclusive-amazon-orders-hundreds-of-trucks-that-run-on-natural-gas-idUSKBN2A52ML.
[12] *Ibid.*
[13] *See* CARB Formally Adopts Low-NOx Omnibus Rule, Transport Topics, August 28, 2020, available at: https://www.ttnews.com/articles/carb-formally-adopts-low-nox-omnibus-rule.

site of production per kilogram of hydrogen produced, (emphasis added)."[14,15] Considering a more inclusive definition of "clean hydrogen," based on carbon intensity (similar to the widely successful low carbon fuel program) instead of color,[16] could make it easier for California to align with the direction of the Federal Infrastructure Investment and Jobs Act (IIJA). Federal funding could help to strengthen California's role as the low-carbon hydrogen hub of the United States and possibly the globe. As such, the CEC should be inclusive of clean hydrogen, as defined by federal statute, and seek to leverage federal funding to accelerate research, development, demonstration, and deployment of hydrogen from clean energy sources.

In addition to clean hydrogen funding of over $9 billion,[17] an incremental and separate provision of the IIJA specifically allocates over $12 billion[18] to Carbon Capture, Utilization, and Storage (CCUS) opportunities. Hydrogen produced from renewable fuels, such as renewable natural gas (RNG) sourced from dairies, in combination with CCUS, is a viable carbon negative pathway. Thus, alternative clean forms of hydrogen offer opportunities to decarbonize California's transportation system.

3) The CEC should take a complementary approach for activities within the Clean Transportation Program to achieve long-term decarbonization goals.

During the First Advisory Committee meeting, Commissioner Monahan agreed with SoCalGas' comment that policies related to electric vehicle charging infrastructure and hydrogen fueling infrastructure are often discussed independently of one another.[19] Siloing these critical infrastructure technologies, which are important for the State's transportation decarbonization policies, could create competing interests and, thus, eventual loss of investment parity within the Investment Plan Update. In fact, according to a 2021 report published by the Hydrogen Council, with the analytical support from McKinsey & Company, "leveraging the respective strengths of both FCEVs and BEVs, will enable greener transportation faster and cheaper compared to relying on a single technology."[20] The report provides a perspective on the complementary relationship

[14] 42 USC 16166 Sections (a) and (b).

[15] The federal definition of clean hydrogen is subject to the development of an initial standard for the carbon intensity of clean hydrogen production to be developed by the Secretary of Energy in consultation with the U.S. Environmental Protection Agency (EPA) and stakeholders within 180 days of enactment.

[16] The energy industry uses different color codes or nicknames to differentiate between the various types of hydrogen – depending on the type of production process used, different colors are assigned. The industry has not yet reached a consensus on naming conventions and color definitions may change over time.

[17] "Infrastructure Investment and Jobs Act: Accelerating the Deployment of Hydrogen," National Law Review, November 18, 2021, available at: https://www.natlawreview.com/article/infrastructure-investment-and-jobs-act-accelerating-deployment-hydrogen.

[18] *See* "CURC Welcomes House Passage of Infrastructure Investment and Jobs Act," Carbon Utilization Research Council, November 5, 2021, available at: http:/www.curc.net/curc-welcomes-house-passage-of-infrastructure-investment-and-jobs-act.

[19] *See* First Advisory Committee Meeting Event Recording, California Energy Commission (CEC), April 12, 2022, at 02:01:03, available at: https://energy.zoom.us/rec/play/nR3NOnBMDbzoixfAgmR9IYBZ9wjhqevdFdRJ1J0c0mzsLyClAaIUEjYnqjzpHKpQFUigJb2BQN4yyh9c.1Do7qn37rNoyLx8Q?continueMode=true&_x_zm_rtaid=3dbpK4SqR5yRA7I7vCWuaA.1649865230363.b4e1dad840b554892d3f9ddfdeba810c&_x_zm_rhtaid=135.

[20] *See* "Greener, Faster, Cheaper: A Combination Of Battery And Fuel Cell Electric Technology Is Key To Successfully Decarbonising Global Transport, Hydrogen Council," October 27, 2021, available at:

between BEVs and FCEVs as a combined path to decarbonizing the transportation sector, while avoiding costly grid upgrades and overcoming the need for larger battery capacities.[21] Further, hydrogen can be produced from renewable electricity at times of peak renewable production, thus avoiding curtailment and grid overload. Ultimately, this approach results in a systemic output which is higher than the output in a single-technology system.[22] SoCalGas believes that there are opportunities for greater synergy to be achieved through the Clean Transportation Program Investment Plan for Fiscal Year 2022-2023.

Conclusion

In closing, we appreciate the opportunity to comment on the CEC's Clean Transportation Program First Advisory Committee for the 2022-2023 Investment Plan Update. Advancing statewide decarbonization goals by deploying technologies that are available today, like Optional Low NOx heavy-duty trucks fueled by RNG, is critical. SoCalGas offers these comments in the spirit of collaboration, and we look forward to working with CEC Commissioners and Staff to determine funding allocations that positively benefit the State by the greatest magnitude.

Respectfully,

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https://hydrogencouncil.com/en/greener-faster-cheaper-a-combination-of-battery-and-fuel-cell-electric-technology-is-key-to-successfully-decarbonising-global-transport/.

[21] Hydrogen Council, "Roadmap towards zero emissions: The complementary role of BEVs and FCEVs: Summary Document," September 2021, available at: https://hydrogencouncil.com/wp-content/uploads/2021/10/Transport-Study-Full-Report-Hydrogen-Council-1.pdf.

[22] *Ibid.*