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**SoCalGas Comments on the IEPR Commissioner Workshop on  
Benefits from the Clean Transportation Program**

*Additional submitted attachment is included below.*



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August 13, 2021

Commissioner Patricia Monahan  
California Energy Commission  
Docket Unit, MS-4  
Docket No. 21-IEPR-07  
1516 Ninth Street  
Sacramento, CA 95814-5512

**Subject: Comments on the 2021 IEPR Commissioner Workshop on the Benefits of the Clean Transportation Program**

Dear Commissioner Monahan:

Southern California Gas Company (SoCalGas) appreciates the opportunity to provide comments on the California Energy Commission's (CEC) Commissioner Workshop on the Benefits of the Clean Transportation Program (CTP) held on August 5, 2021. I have firsthand experience as to the benefits of the Clean Transportation Program and commend the CEC's staff, management and commissioners on the continued success of this important program.

Given Governor Newsom's recent letter to the Air Resources Board requesting them to include a scenario in their 2022 Scoping Plan that accelerates the State's carbon neutrality goal to 2035, it is critical to support technologies that can reduce the most carbon and air pollutants today, while continuing to support the technologies that will help in the long-term. California must continue to expedite the reduction of short-lived climate pollutants (SLCPs) through policies like CARB's SLCP Reduction Strategy and by rapidly displacing diesel trucks. Data and results to date demonstrate that renewable natural gas (RNG) is vital to decarbonizing California's transportation and industrial sectors expeditiously and to achieving public health and air quality goals. We look forward to a continued partnership with the CEC as we work together to accelerate the development of clean fuels and infrastructure. To that end, SoCalGas offers the following comments: **(1)** Generating RNG through dairy digester projects that capture SLCPs is the most cost-effective near term pathway to decarbonize heavy-duty transportation and industry; **(2)** Heavy-duty trucks fueled with RNG support decarbonization, public health, and air quality goals by displacing greenhouse gas (GHG), diesel, and nitrogen oxide (NOx) emissions; and **(3)** Supporting incentives and innovative funding programs to turn over diesel fleets as quickly as possible is crucial for achieving the State's climate and air quality goals.

**(1) Generating RNG through dairy digester projects that capture SLCPs is the most cost-effective pathway to decarbonize heavy-duty transportation and industry.**

In recent remarks as a panelist at the CEC IEPR Workshop on Accelerating Industrial Decarbonization, Wayne Nastri, Executive Director of South Coast Air Quality Management District (SCAQMD) noted biofuels need to be seen as a way to reduce emissions in both the heavy-duty transportation and industrial sectors.<sup>1</sup> Supporting the continued procurement of RNG through dairy digesters provides a cost-effective pathway for expanding heavy-duty transportation and industry decarbonization efforts. In a 2021 Report to the California Legislature, dairy digester projects are tied for first place as the most cost-effective climate investment program to reduce GHG emissions in the State.<sup>2</sup> Of the 68 Climate programs funded in 2020, dairy digester projects provided one ton of GHG reduction (CO<sub>2</sub>e) for every \$9 invested by the state and nearly 70 percent of funding benefited priority populations.<sup>3</sup> Just to put that into perspective, community solar and single-family solar photovoltaics programs reduce one ton of GHGs per every \$204 and \$384 spent, respectively.

Accordingly, we respectfully suggest that California must continue its momentum to bring down SLCPs quickly through policies like CARB's SLCP Reduction Strategy which identifies biomethane capture and utilization for transportation. In a recent virtual discussion with Governor Newsom, Dr. Ram Ramanathan from the University of California, San Diego argued that addressing SLCPs must be an active GHG emission reduction strategy to have a chance at meeting global temperature targets.<sup>4</sup> In a recent presentation during a California Energy Commission (CEC) workshop, Julia Levin of the Bioenergy Association of California shared a graphic from the presentation "Bending the Curve: Overarching Solutions for a rapidly warming planet" by Dr. Ramanathan to illustrate the importance of reducing SLCP emissions as depicted in Figure 1.<sup>5</sup>

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<sup>1</sup> "IEPR Workshop on Advancing Industrial Decarbonization", CEC, August 2021, <https://www.energy.ca.gov/event/workshop/2021-08/session-2-iepr-commissioner-workshop-accelerate-industrial-decarbonization>.

<sup>2</sup> "Climate Change Investments: 2021 Annual Report to the Legislature on Cap-and-Trade Auction Proceeds", CARB, 2021, p. 119, [https://ww2.arb.ca.gov/sites/default/files/classic/cc/capandtrade/auctionproceeds/2021\\_cci\\_annual\\_report.pdf](https://ww2.arb.ca.gov/sites/default/files/classic/cc/capandtrade/auctionproceeds/2021_cci_annual_report.pdf).

<sup>3</sup> CARB, "Climate Change Investments," p. 17.

<sup>4</sup> "Governor Newsom Holds Virtual Discussion with Leading Climate Scientists on State's Progress Toward Carbon Neutrality," Office of Governor Newsom, last modified Jul 21, 2021, <https://www.gov.ca.gov/2021/07/09/governor-newsom-holds-virtual-discussion-with-leading-climate-scientists-on-states-progress-toward-carbon-neutrality/>.

<sup>5</sup> "Electric Investment Program Charge 2021-2025 (EPIC 4) Investment Plan Scoping: The Role of Green Hydrogen in a Decarbonized California – A Roadmap and Strategic Plan," last modified July 1, 2021, <https://www.energy.ca.gov/event/workshop/2021-07/electric-program-investment-charge-2021-2025-investment-plan-scoping>.

**Figure 1: Short-Lived Climate Pollutants Will Be Key to Our Success<sup>6</sup>**

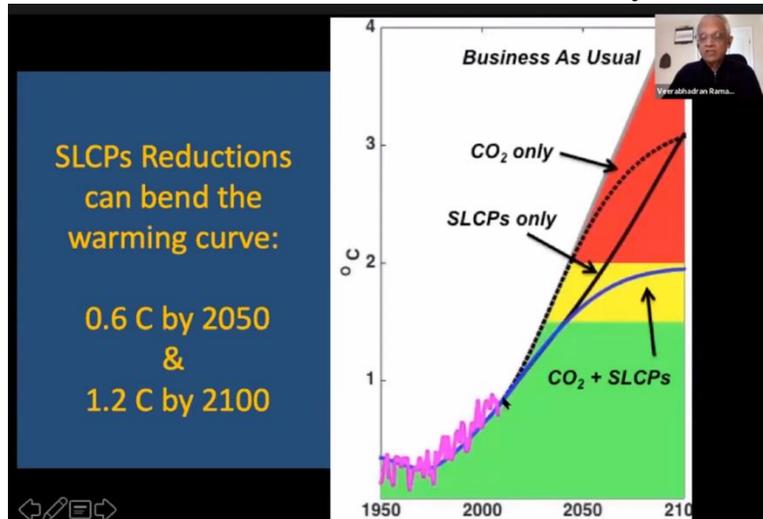


Figure 1 indicates that we are currently on pace to fall short of the goal to limit global warming by 1.5 degrees centigrade as recommended by the International Panel on Climate Change (IPCC) to avoid the most severe and irreversible impacts of climate change.<sup>7,8</sup> According to Dr. Ramanathan, mitigation measures that are low hanging fruit are reductions of diesel soot, reductions of food waste and repurposing of farm manure and crop waste, reduction of methane leaks from fracking and gas infrastructure, forest management and phasing out of hydrofluorocarbons.<sup>9</sup> Acting now to dramatically mitigate SLCPs would markedly reduce their heating effect, thereby providing a tool to bend the warming curve within the next 10 to 15 years.

Since 2015, California has leveraged over \$600 million to develop 118 dairy digester projects, with more than two-thirds of the funding coming from matching funds from grant awardees (\$413.1 M).<sup>10</sup> As a result, these projects will lead to a 6.5 percent reduction in total GHG emissions from California’s agricultural sector over the next 10 years.<sup>11</sup> However, since these projects are funded through California’s cap-and-trade program and revenues are expected to continue to

<sup>6</sup> “Bending the Curve: Overarching Solutions for a rapidly warming planet,” Dr. Ram Ramanathan, October 29, 2019, <https://sites.uci.edu/energyobserver/2019/10/30/talk-by-prof-v-ram-ramanathan-at-uc-irvine/>.

<sup>7</sup> “AR6 Climate Change 2021: The Physical Science Basis,” IPCC, last modified August 9, 2021, <https://www.ipcc.ch/report/ar6/wg1/>.

<sup>8</sup> “IPCC Special Report Global Warming of 1.5 degrees C,” last modified August 11, 2021, <https://www.ipcc.ch/sr15/>.

<sup>9</sup> “Op-Ed: To help stop global warming, curb short-lived pollutants,” Los Angeles Times, December 28, 2015, Veerabhadran Ramanathan and Daniel Press, <https://www.latimes.com/opinion/op-ed/la-oe-1225-ramanathan-press-slcps-climate-change-20151225-story.html>.

<sup>10</sup> “Report of Funded Projects, 2015-2020 for the Dairy Digester Research and Development Program”, California Department of Food & Agriculture (CDFA), March 2021, [https://www.cdfa.ca.gov/oefi/ddrdp/docs/DDRDP\\_Report\\_March2021.pdf](https://www.cdfa.ca.gov/oefi/ddrdp/docs/DDRDP_Report_March2021.pdf).

<sup>11</sup> Ibid.

decline over time, more funding programs are needed.<sup>12</sup> For example, the CEC has previously provided grants under various low-carbon, renewable, and alternative fuel programs to support the development of new RNG production facilities, including the Rialto Bioenergy Facility mentioned during the workshop. Many of these facilities are still in operation today.<sup>13</sup> To continue to support RNG -- the most cost-effective carbon and air pollution reduction strategy in the Clean Transportation Program -- we recommend that the CEC continue to provide grant funding at levels equal to or greater than those provided in the past. In addition to RNG produced from dairy digesters, the CEC should explore opportunities to support RNG production from other waste feedstocks (such as methane capture from landfills). Choosing to forgo funding for RNG projects eliminates an important and well-established SLCP reduction pathway.

## **(2) Heavy-duty trucks fueled with RNG support decarbonization, public health, and air quality goals by displacing GHG, diesel, and nitrogen oxide (NOx) emissions.**

In a recent letter to environmental justice and advocacy groups, Wayne Nastri, Executive Director of the South Coast Air Quality Management District (SCAQMD), stated that actions to make progress toward climate goals and to reduce air pollution “can and must go hand-in-hand.”<sup>14</sup> The letter further states that heavy-duty trucks fueled with RNG are commercially available today, can “provide substantial GHG emission reductions,” and are “at least 90 percent cleaner than new diesel trucks on [the air pollutant nitrogen oxide] NOx and 100 percent cleaner on cancer-causing diesel particulate matter.”<sup>15</sup> In addition, a peer-reviewed study recently published by the University of California, Riverside in the journal “Transportation Research Part D” further substantiates this point by stating heavy-duty trucks fueled with RNG should be rapidly deployed in the 2020-2040 timeframe to achieve GHG and NOx emission reduction targets, and “accelerating [the diesel trucks] fleet turnover is a more important NOx control strategy than dividing up vehicle replacements...between near-zero emissions and zero emissions vehicles.”<sup>16</sup>

Today, natural gas and RNG (NG/RNG) trucks meet CARB’s optional low NOx standard of 0.02 grams of NOx per brake horsepower hour (low NOx trucks). The Clean Truck rule doesn’t require all diesel trucks to meet the standard of 0.02 grams of NOx per brake horsepower hour until 2027 – a big difference from what is achievable by RNG (NG/RNG) trucks now.<sup>17</sup> Notably, the low NOx Cummins engine was funded by the CEC’s Natural Gas research and development

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<sup>12</sup> “As UN calls for cutting methane emissions, California trims back funding,” AgriPulse, May 19, 2021, <https://www.agri-pulse.com/articles/15880-as-un-calls-for-cutting-methane-emissions-california-trims-back-funding>.

<sup>13</sup> CEC, “Notice of Proposed Award Grant Solicitation, GFO-19-601 Low Carbon Fuel Production Program,” January 20, 2020, [https://www.energy.ca.gov/sites/default/files/2020-01/GFO-19-601\\_Notice\\_of\\_Proposed\\_Awards.pdf](https://www.energy.ca.gov/sites/default/files/2020-01/GFO-19-601_Notice_of_Proposed_Awards.pdf).

<sup>14</sup> Nastri, Wayne. “Letter to Partners in Environmental Justice and Environmental Health” August 3, 2021.

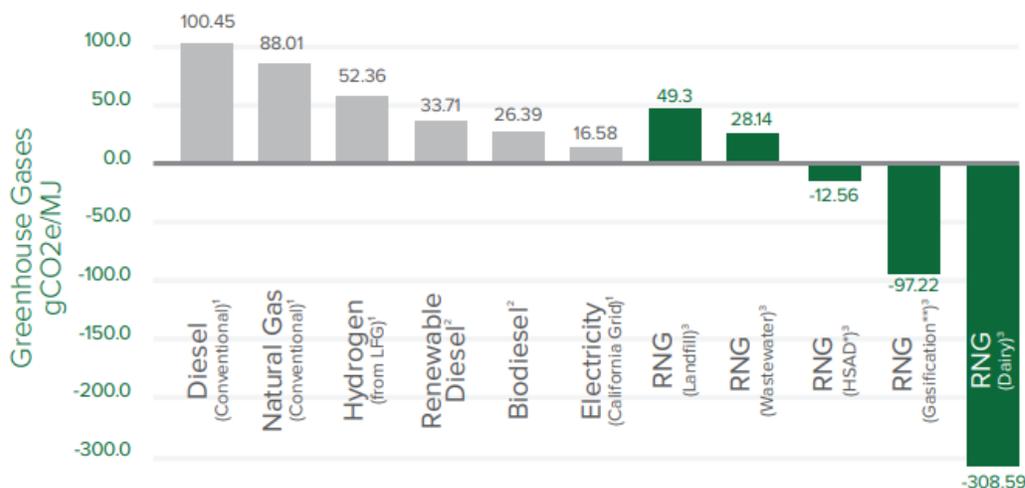
<sup>15</sup> Ibid.

<sup>16</sup> Arun S.K. Raju, Barry R. Wallerstein, Kent C. Johnson, “Achieving NOx and Greenhouse gas emissions goals in California’s Heavy-Duty transportation sector”, Transportation Research Part D: Transport and Environment, Volume 97, 2021, August 2021, <https://www.sciencedirect.com/science/article/pii/S1361920921001826>.

<sup>17</sup> Miller, Eric, “CARB Formally Adopts Low-NOx Omnibus Rule,” Transport Topics, August 28, 2020, <https://www.ttnews.com/articles/carb-formally-adopts-low-nox-omnibus-rule>.

program. Since April 2019, SoCalGas has supported the RNG market by dispensing 100 percent renewable natural gas at all utility owned refueling stations. CARB LCFS reporting shows that by the end of 2019, 98 percent of all the natural gas used in motor vehicles was RNG.<sup>18</sup> Furthermore, beginning September 2020, the RNG procured and dispensed at utility owned refueling stations had a carbon intensity (CI) of -5.845 gCO<sub>2</sub>e/MJ.<sup>19, 20</sup> This is in comparison to a CI of 82.92 gCO<sub>2</sub>e/MJ for plug-in battery electric trucks fueled by grid electricity.<sup>21</sup> Comparison of the carbon intensities of key clean transportation fuels by CARB shows that RNG produced from three sources, high solid anaerobic digestion (HSAD), gasification, and dairy, have a lower CI than electricity as shown in Figure 2.

**Figure 2: Carbon Intensity of Key Transportation Fuels<sup>22</sup>**



**(3) Supporting incentives and innovative funding programs to turn over diesel fleets as quickly as possible is crucial for achieving the State’s climate and air quality goals**

The UCR study referenced previously also suggests that “current incentive programs need to be reevaluated to ensure NZE technologies are being encouraged and not delayed.”<sup>23</sup> Further, the study recommends “replacement of as many higher emitting diesel engines as soon as possible with

<sup>18</sup> “CARB LCFS Data Dashboard, Figure 2,” last modified April 2, 2021, <https://www.arb.ca.gov/fuels/lcfs/dashboard/dashboard.htm>.

<sup>19</sup> “LCFS Pathway Certified Carbon Intensities,” last modified August 9, 2021, <https://ww2.arb.ca.gov/resources/documents/lcfs-pathway-certified-carbon-intensities>.

<sup>20</sup> Sanicola, Laura, “California’s renewable natural gas vehicles turn carbon negative in 2020,” Reuters, June 2, 2021, <https://www.reuters.com/business/autos-transportation/californias-renewable-natural-gas-vehicles-turn-carbon-negative-2020-2021-06-02/>.

<sup>21</sup> “Low Carbon Fuel Standard Annual Updates to Lookup Table Pathways,” CARB, January 2020, p.2.

<sup>22</sup> “California Air Resources Board Low Carbon Fuel Standard Program Q2 2020 Data”, CARB, last modified June 2020, <https://cngvp-7f8e.kxcdn.com/pdf/Understanding-Carbon-Intensity-Why-It-Is-Important.pdf>.

<sup>23</sup> Transportation Research Part D, “Achieving NOx and Greenhouse gas emissions goals,” p. 12.

0.02g/bhp-hr engines and ZE engines/vehicles at the earliest feasible date should be of highest priority.”<sup>24</sup>

To complement existing incentive programs managed by CARB and the air quality management districts, a fuel card program can help offset the upfront costs of owning and operating a NG/RNG HD truck. This is similar to how Toyota offers free fuel to customers who purchase a Mirai to help incentivize purchases of new hydrogen fuel cell electric light-duty vehicles. Fuel cards can be provided to customers who purchase a new HD class 8 natural gas NZE truck or hydrogen fuel cell electric truck that is pre-loaded with a balance at an amount designed to improve economics and encourage adoption. For example, for a HD Class 8 NZE truck with a \$60,000 incremental cost (compared to diesel) that travels 72,000 miles per year, a fuel card of \$10,000 could improve the payback from about 4.4 years to 2.5 years.<sup>25, 26</sup> This isn’t all that dissimilar from the Natural Gas Vehicle Incentive Program funded out of the Clean Transportation Program which provided incentives up to \$25,000 per vehicle purchased.<sup>27</sup> The difference here would be to encourage the natural gas trucks to utilize RNG to greatly reduce their GHG emissions. Such a program can also lay the foundation for offsetting the cost of owning a fuel cell heavy-duty truck as that technology is commercialized and feasible. Both the SCAQMD and the San Joaquin Valley Air Pollution Control District (SJVAPCD) are supportive of a fuel card program for its potential to help further public health and clean air goals, especially in disadvantaged communities located near major trucking corridors.

## Conclusion

Renewable natural gas (RNG) and hydrogen are vital to decarbonizing California’s transportation sector and furthering public health and air quality goals. California must continue its momentum to bring down short-lived climate pollutants (SLCPs) quickly through policies like CARB’s SLCP Reduction Strategy and to help improve public health by rapidly displacing diesel trucks. Dedicated funding to help procure clean fuels like RNG, through cost-effective programs and innovative financing approaches like a fuel card system, will be crucial policy implements to help the State meet its climate, public health, and clean air goals.

Respectfully,

*/s/ Kevin Barker*

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<sup>24</sup> Ibid.

<sup>25</sup> “[Advanced Clean Fleets – Cost Workshop Cost Data and Methodology Discussion Draft](#),” CARB, December 4, 2020, p. 3.

<sup>26</sup> “Average Annual Vehicle Miles Traveled by Major Vehicle Category,” last modified February 2020, <https://afdc.energy.gov/data/10309>.

<sup>27</sup> “Natural Gas Vehicle (NGV) Incentives,” last modified July 23, 2020, <https://afdc.energy.gov/laws/11647>.

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cc: J. Andrew McAllister, CEC Commissioner  
Siva Gunda, CEC Commissioner