

DOCKETED

Docket Number:	22-ERDD-02
Project Title:	Climate Innovation Program
TN #:	253811
Document Title:	SoCalGas Comments - SoCalGas Comments on Climate Innovation Program Workshop
Description:	N/A
Filer:	System
Organization:	SoCalGas
Submitter Role:	Public
Submission Date:	1/5/2024 4:15:45 PM
Docketed Date:	1/5/2024

*Comment Received From: SoCalGas
Submitted On: 1/5/2024
Docket Number: 22-ERDD-02*

SoCalGas Comments on Climate Innovation Program Workshop

Additional submitted attachment is included below.



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January 5, 2024

Jonah Steinbuck
California Energy Commission
Docket Unit, MS-4
Docket No. 22-ERDD-02
715 P Street
Sacramento, CA 95814-5512

Subject: Comments on the Climate Innovation Program: Forests and Agriculture Workshop

Dear Mr. Steinbuck,

Southern California Gas Company (SoCalGas) appreciates the opportunity to provide comments on the California Energy Commission (CEC) Climate Innovation Program: Forests and Agriculture Workshop held on December 12, 2023. SoCalGas commends the CEC for addressing the important topic of advancing technologies which will help California meet its carbon neutrality targets while also increase grid reliability and resilience. Clean molecules like renewable natural gas (RNG) and clean and renewable hydrogen can play a critical role to enable the State to reach net-zero greenhouse gas emissions by 2045. As part of that effort, SoCalGas has set a goal to replace 20 percent of our traditional core gas deliveries with RNG by 2030. We look forward to continuing the partnership with the CEC and California Public Utilities Commission (CPUC), among other stakeholders, in our shared work to advance the public interest.

1) Producing RNG is a valuable resource to reduce short lived climate pollutants (SLCP)

As described by Julia Levin in the workshop, RNG or biomethane¹ is produced from raw biogas typically derived from organic waste streams such as dairy manure, landfill gas, municipal organic waste (*i.e.*, food scraps, lawn clippings, and animal and plant-based material), agricultural waste, forest debris, and wastewater treatment byproducts.² Capturing waste stream biogas emissions and producing RNG is a valuable renewable resource that will help achieve critical climate change objectives since the majority of methane emissions in the State come from the dairy and livestock

¹ Referred to in Ms. Levin's presentation as "bioenergy."

² "Climate Innovation Program: Forests and Agriculture Workshop," December 12, 2023, CEC, available at: <https://www.energy.ca.gov/event/workshop/2023-12/climate-innovation-program-forests-and-agriculture-workshop>.

sector (54 percent) and landfilled organic waste (22 percent).³ Further, RNG can be considered carbon negative depending on the feedstock and conversion system.⁴ Capturing methane from waste streams and utilizing it via existing pipeline in a fuel cell, linear generator, water heater, stove or other end use fueled by gas avoids the global warming impact such methane would have produced if it had been released into the environment because methane is a powerful short-lived climate pollutant with a global warming potential 25 times greater than carbon dioxide.⁵ One primary benefit of RNG is that it is a drop-in fuel; it can be deployed where it is needed in existing gas pipeline infrastructure without the need for equipment or infrastructure changes.⁶ It can also be available 24 hours of the day and does not exhibit intermittency issues that other renewable energy sources such as solar or wind have.

Currently, RNG is helping California reduce SLCPs and criteria air pollutants emissions as a transportation fuel in near-zero emission heavy-duty trucks.⁷ However, going forward RNG will need to play a greater role in helping decarbonize the industrial and agriculture sectors by either avoiding methane releases, reducing intensity of wildfires through reduction of feedstock or consumption of RNG.

Given these significant benefits of RNG, we encourage the CEC to continue advancing the use of RNG as a clean fuel and include the utilization of biomass to create RNG as an eligible technology for funding as part of the Climate Innovation Program.

2) Renewable natural gas and clean and renewable hydrogen should be considered for the Climate Innovation Program.

Biomass can be utilized to produce both RNG and renewable hydrogen through the process of pyrolysis or gasification. Frontline Bioenergy, a company that designs systems and proprietary equipment for biomass gasification, can produce both RNG and clean and renewable hydrogen using biomass as the starting basis in their process. The company can use gasification and gas conditioning technologies with catalytic methanation and carbon dioxide removal to produce RNG that meets pipeline injection standards.⁸ The renewable hydrogen produced by Frontline Bioenergy can have a carbon intensity as low as -150gCO₂e/MJ when used in new fuel cell powered

³ “Short Lived Climate Pollutants Public Workshop,” CARB, June 2021. Available at https://ww2.arb.ca.gov/sites/default/files/2021-06/carb_sp_kickoff_june2021.pdf.

⁴ “Get the Facts: Common Myths of Natural Gas Vehicles (NGV) and Renewable Natural Gas,” California Natural Gas Vehicle Partnership, at 1. Available at <https://cngvp-7f8e.kxcdn.com/pdf/cngvp-get-the-facts.pdf>.

⁵ “GHG Global Warming Potential,” CARB, last modified September 9, 2021. Available at <https://ww2.arb.ca.gov/ghg-gwps>.

⁶ “Energy Systems, Chapter 7,” Intergovernmental Panel on Climate Change (IPCC), at 536. Available at https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter7.pdf.

⁷ “California’s Fleets Fueled with bio-CNG Repurposing a Captured Climate Pollutant for Use as Carbon-Free Motor Fuel,” NGVAmerica, June 6, 2023. “In 2022, the RNG procured for and sold at California’s compressed natural gas refueling stations had a carbon intensity (CI) of -98.98 gCO₂e/MJ” available at: <https://ngvamerica.org/2023/06/06/california-fleets-fueled-with-bio-cng-repurposing-a-captured-climate-pollutant-for-use-as-carbon-free-motor-fuel/>.

⁸ “Integration to End Products,” Frontline Bioenergy, 2023, available at: <https://frontlinebioenergy.com/integration-to-end-products/>.

vehicles.⁹ Given the potential GHG reduction benefits of RNG and clean and renewable hydrogen, SoCalGas encourages the CEC to include RNG and clean and renewable hydrogen production from biomass as an eligible technology for funding as part of the Climate Innovation Program.

3) SoCalGas’s proposed and ongoing pilot projects demonstrate the potential of biomass to be used to produce RNG and clean and renewable hydrogen.

SoCalGas is engaged in several pilot projects which demonstrate the potential of biomass utilization for production of RNG and clean and renewable hydrogen. One pilot with San Joaquin Renewables LLC in the City of McFarland will use biomass and other agricultural waste to create RNG. This project falls under the purview of the CPUC’s Senate Bill (SB) 1440 Renewable Gas Procurement Standard and targets.¹⁰ SoCalGas filed an application with the CPUC to support the development of the pilot project which would utilize organic waste such as chipped wood, along with nut shells, and turn it into RNG.¹¹ If approved, the project would be one of the largest RNG project in the state of California, producing up to 4.5 billion cubic feet of fuel each year from 400,000 to 500,000 tons of agricultural waste, some of which would otherwise be burned. It could more than double already historic deliveries of RNG in 2022 from existing projects within SoCalGas's service territory and could deliver carbon-neutral or negative fuel, equivalent to taking up to 52,000 gasoline vehicles off the road each year. Pursuant to CPUC direction, SoCalGas proposed funding its portion of the project – about \$13 million – with cap-and-trade funds. The project is planned to come online in 2026 if approved.

In another demonstration project, SoCalGas funded the demonstration of an innovative carbon-negative, waste-to-energy technology designed to divert organic waste from California landfills and convert it into clean hydrogen and RNG.¹² The modular conversion system used a proprietary pyrolysis process, which heats organic waste under high temperatures in a zero-oxygen environment, converting the waste to a blend of gases that could be converted to clean hydrogen or RNG, along with a solid carbon char that can be used to enhance soil quality or help decarbonize cement and steel production. The technology was designed to meet South Coast Air Quality Management District’s (South Coast AQMD's) ultra-low NOx and particulate emissions standards. The demonstration received funding from SoCalGas’s Research, Development, & Demonstration¹³ program as well as from the South Coast AQMD.

⁹ *Ibid.*

¹⁰ “CPUC Sets Biomethane Targets for Utilities,” CPUC, February 24, 2022, available at:

<https://www.cpuc.ca.gov/news-and-updates/all-news/cpuc-sets-biomethane-targets-for-utilities>.

¹¹ “SoCalGas Files Application to Develop California’s Largest Renewable Natural Gas Pilot Project, Turning Agricultural Waste into Fuel,” PR Newswire, August 8 2023, available at: <https://www.prnewswire.com/news-releases/socalgas-files-application-to-develop-californias-largest-renewable-natural-gas-pilot-project-turning-agricultural-waste-into-fuel-301895257.html#:~:text=The%20project%20would%20be%20developed,come%20online%20in%20late%202026>.

¹² “SoCalGas Announces the Commissioning of Carbon-Negative Waste-to-Energy Technology at Los Angeles Facility,” SoCalGas Newsroom, July 20, 2022, available at: <https://newsroom.socalgas.com/press-release/socalgas-announces-the-commissioning-of-carbon-negative-waste-to-energy-technology-at>

¹³ [Research Development & Demonstration \(RD&D\) | SoCalGas, https://www.socalgas.com/sustainability/research-development-demonstration-rdd](https://www.socalgas.com/sustainability/research-development-demonstration-rdd)

Manufacturers, technology providers, and gas end users will likely be the most interested in applying for Industrial Decarbonization funds from the Climate Innovation Program, but many may not have the bandwidth and sufficient resources to monitor workshops and weigh in through written comments. We have reached out to them to inform them of the program and assist with any procedural questions they may have.

Conclusion

SoCalGas appreciates the opportunity to provide comments and to help shape the CEC's Climate Innovation Program structure. The utilization of biomass for conversion into RNG and clean and renewable hydrogen would go a long way to reduce GHG emissions from the agricultural and industrial sectors. Supporting technological advancements in these areas provides a great opportunity for the Climate Innovation Program to achieve its goals. Thank you for your consideration of our comments.

Respectfully,

/s/ Kevin Barker

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