

Company: Southern California Gas Company (U 904 G)
Application: A.25-10-008, Proposing Woody Biomass Pilot Project
Exhibit: SCG-05

Sierra Club Response to SoCalGas's Data Request 1

**APPLICATION OF SOUTHERN CALIFORNIA GAS COMPANY
PROPOSING WOODY BIOMASS PILOT PROJECT**

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**



California Public Utilities Commission Docket No. A.25-10-008

Application of Southern California Gas Company (U 904 G) Proposing Woody Biomass Pilot Project

Sierra Club Response to Data Request SoCalGas-Sierra Club-01

To: Ismael Bautista, Jr., on behalf of SoCalGas

From: Nina Robertson, Earthjustice, on behalf of Sierra Club

Date Request Sent: March 17, 2026

Response Due: March 31, 2026

QUESTION 1:

Page 7 of the Prepared Testimony of Emily Grubert and Ranajit (Ron) Sahu states, “Based on my evaluation of the relevant literature and my adjustments to the assumptions used in the spreadsheet model that SoCalGas disclosed, it is my opinion that the WOR GHG estimate is approximately -110 g CO₂/kg biomass applied if soil carbon sequestration is considered, or 10 g CO₂/kg if not.”

Please provide all DOCUMENTS, including spreadsheets, assumptions, sources, and /or calculations, used to determine the greenhouse gas (GHG) estimates provided in page 7 (above) of the Prepared Testimony of Emily Grubert and Ranajit (Ron) Sahu.

RESPONSE 1:

The value of 10 g CO₂e/kg¹ was rounded from the values provided by Southern California Gas Company (“SoCalGas”) in its March 6, 2026 Response 4-1 to Sierra Club’s February 20, 2026 data request (“Response 4-1”), which asks SoCalGas to state the basis for the value of 1700 g CO₂e/kg biomass incorporated to soil as indicated by the Confidential Modeling Spreadsheet provided by SoCalGas to Sierra Club.

In its Response 4-1, SoCalGas states that the GHG emissions attributable to GHG emissions other than biogenic CO₂ are 7.7 g CO₂e/kg of non-biogenic CO₂ and 2.2 g CO₂e/kg of N₂O. As described in the testimony of Dr. Grubert, it is assumed that biogenic CO₂ emissions are climate-

¹ Due to a typo, the “e” was inadvertently omitted from “g CO₂e” in this value in Dr. Grubert’s testimony. The “e” reflects that some of the emissions associated with the estimate of 10 g CO₂e/kg derived from N₂O emissions.

neutral for the purpose of calculating carbon intensity (“CI”). This assumption is based on Dr. Grubert’s expert opinion which draws from scientific convention. Further, as Dr. Grubert describes in testimony, SoCalGas appears to assume that CO₂ from the combustion of biogenic diesel and methane is carbon-neutral in its Confidential Modeling Spreadsheet, “WTW” sheet at row 28.

As indicated in Response 4-1, SoCalGas estimates that the CI GHG intensity of whole orchard recycling (“WOR”) is 1700 g CO₂e/kg, based on the summation of 1690 g CO₂e/kg + 7.7 g CO₂e/kg + 2.2 g CO₂e/kg. The testimony of Dr. Grubert asserts that 1690 g CO₂e/kg is inappropriately included because of the carbon neutrality of biogenic CO₂. When 1690 g CO₂e/kg is assumed to be 0 g CO₂e/kg to reflect carbon neutrality, this leaves the calculation of 7.7 g CO₂e/kg + 2.2 g CO₂e/kg = 9.9 g CO₂e/kg, which is rounded to 10 g CO₂e/kg.

Further, the value of -110 g CO₂e/kg of gross 20-year carbon sequestration for WOR was calculated by Dr. Grubert based on Response 4-1, which stated, “4.05 Mg C/ha projected to remain in the soil after 20 years with whole orchard recycling application rate of 61.6 Mg C/ha. Considering that the biomass was 46.1% C and the relative molecular weights of CO₂ and C, this results in flux of 1690 g CO₂e/kg of biomass applied.”

SoCalGas did not provide the calculation for the figure of 1690 g CO₂e/kg of biomass applied. The explanation provided in Response 4-1 lacks information about the assumed relative molecular weights. The calculation that was inferred by Dr. Grubert (who has knowledge of relative molecular weights) from SoCalGas’s description is $(61.6 \text{ MgC emitted} * 10^9 \text{ g/Mg} * 44 \text{ g CO}_2/12 \text{ g C}) / ((61.6 \text{ MgC applied as biomass} * 1 \text{ Mg biomass}/.461 \text{ MgC}) * 10^6 \text{ kg/Mg}) = 1690 \text{ g CO}_2\text{e/kg biomass emitted}.$

The analogous calculation was applied in Dr. Grubert’s testimony, using the value of C projected to remain in the soil after 20 years, is $(4.05 \text{ MgC sequestered} * 10^9 \text{ g/Mg} * 44 \text{ g CO}_2/12 \text{ g C}) / ((61.6 \text{ MgC applied as biomass} * 1 \text{ Mg biomass}/.461 \text{ MgC}) * 10^6 \text{ kg/Mg}) = 111 \text{ g CO}_2/\text{kg biomass sequestered, or } -111 \text{ g CO}_2/\text{kg biomass emitted}.$

Conducting this calculation gives a value of -111 g CO₂/kg applied biomass for (at minimum) 20-year sequestration.

Adding the positive emissions of 10 g CO₂e/kg and the negative emissions of -111 g CO₂e/kg gives a net value of -101 g CO₂e/kg for WOR, as described in the testimony of Dr. Grubert.

QUESTION 2:

Page 8 of the Prepared Testimony of Emily Grubert and Ranajit (Ron) Sahu states, “As such, what I claim is a very substantial overestimate of emissions – at minimum, 170 times what it should have been – has a high impact on the final Baseline Carbon Intensity (“Baseline CI”, also referred to as “base case CI”) provided.”

Please provide all DOCUMENTS, including spreadsheets, assumptions, sources, and /or calculations, used to determine “at minimum, of 170 times what it should have been” provided in page 8 (above) of the Prepared Testimony of Emily Grubert and Ranajit (Ron) Sahu.

RESPONSE 2:

SoCalGas lists the CI of WOR at 1700 g CO₂e/kg biomass applied. The testimony of Dr. Grubert asserts that the actual value supported by SoCalGas data is at most 10 g CO₂e/kg biomass applied, as described above in response to Question 1. The calculation performed to determine the emissions overestimate is $1700 / 10 = 170$.