BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

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Application of Southern California Gas Company (U904G) Proposing Woody Biomass Pilot Project.	Application 25-10-008 (Filed October 15, 2025)

OPENING BRIEF OF SIERRA CLUB

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The Sierra Club respectfully submits this Opening Brief in the above-captioned proceeding. This brief is timely filed pursuant to the July 21, 2026 Email Ruling of the Administrative Law Judge ("ALJ").

INTRODUCTION AND SUMMARY OF RECOMMENDATIONS

The Commission should deny the Application of Southern California Gas Company ("SoCalGas") Proposing Woody Biomass Pilot Project ("Application"), which proposes to direct up to $19.704 million in Cap-and-Trade allowance auction proceeds to its own infrastructure and, if any funds remain, to a facility located in an environmental and social justice ("ESJ") community that will intentionally create methane—a leak-prone greenhouse gas ("GHG") and short-lived climate pollutant ("SLCP")—from orchard waste, a substantial portion of which would otherwise be reincorporated into the soil around almond orchard trees (the "Project" or "Proposed Project"). For numerous reasons, SoCalGas has failed to meet its burden.

First, as a threshold matter, the Application does not conform to the basic strictures of Decision ("D.") 22-02-025 and D.24-12-032 because SoCalGas improperly proposes to prioritize investments in its own, defunct methane refueling station and in its pipelines rather than a new, pipeline-connected facility.[1] D.22-02-025 and D.24-12-032 require the funds to be invested in a "gasification project[,]"[2] but SoCalGas's proposal provides no certainty that such an investment will actually occur. On this basis alone, the Application should be denied. Furthermore, while the decisions require the facility to be connected to the pipeline network,[3] SoCalGas proposes to direct any remaining funds to a facility that has no plans to connect to a pipeline.[4]

[1] SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-8.
[2] D.22-02-025, Decision Implementing Senate Bill 1440 Biomethane Procurement Program, issued February 25, 2022 at Ordering Paragraph ("OP") 43 at 67; D.24-12-032, Decision Granting Southern California Gas Company's Request for Voluntary Dismissal of Application Proposing Approval of Woody Biomass Pilot Project, issued December 24, 2024 at OP 2(b) at 10-11.
[3] D.22-02-025 at OP 43 at 67-68; D.24-12-032 at OP 2(b) at 10-11.
[4] *See* SoCalGas Application at 6-7.

Second, SoCalGas has not met its burden under D.22-02-025 and applicable regulations of the California Air Resources Board ("CARB") to demonstrate that its use of ratepayer funds will yield greenhouse gas ("GHG") reductions. The California Public Utilities Commission ("CPUC" or "Commission") previously denied Pacific Gas & Electric Company's ("PG&E") woody biomass pilot project application for failing to meet this burden,[5] and it should do the same here. SoCalGas relies entirely on hearsay evidence in its attempt to demonstrate GHG reductions, even though longstanding precedent prohibits the Commission from relying on out-of-court statements as the sole basis for any finding of fact.[6] As a result, the Commission cannot rely on the evidence proffered by SoCalGas to find GHG reductions from the Proposed Project.

Even if hearsay testimony were allowed to provide the only basis for a finding of reductions (which it is not), SoCalGas's showing fails because its unvalidated hearsay model and analysis are riddled with errors and inconsistencies. Specifically, SoCalGas's testimony erroneously assumes the Proposed Project will have zero methane emissions and overstates the emissions of the current orchard waste disposal practices to find GHG "reductions" from the Proposed Project. SoCalGas also erroneously asserts that baseline GHG emissions will be entirely "avoided" when they are merely shifted in time and space and when the Proposed Project would create new, leak-prone methane that would not have otherwise existed. SoCalGas incorrectly presumes speculative and costly carbon capture and storage ("CCS") would function to reduce Project emissions when no analogous CCS projects have delivered reliable results and when it has no plan for storage or use that will prevent the release of the carbon dioxide ("CO_2") emitted by the Proposed Project. Testimony from experts with deep experience in lifecycle carbon accounting, facility emissions, and CCS indicates that the Proposed Project will not reduce GHGs and will likely increase GHG emissions, in direct contravention of D.22-02-025 and California law and policy.

Third, in addition to risking GHG increases, if the Proposed Project becomes operational, the record shows that the facility will emit a wide range of health-harming pollutants in nearby ESJ communities. Although SoCalGas claims "Community Benefits" from the Proposed Project,[7] the

[5] D.25-05-003, Decision Denying PG&E's Woody Biomass Pilot Project Application, issued May 21, 2025 at 4, 6-8.
[6] *TURN v. Pub. Utils. Comm'n*, 167 Cal. Rptr. 3d 747, 759 (Ct. App. 2014) ("Hearsay evidence is admissible in Commission proceedings but cannot be the sole support for a finding of disputed fact.") (heading capitalization omitted).
[7] SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-17.

evidence indicates emission increases from the proposed Kerman, CA facility and only illusory potential reductions of certain pollutants from supposedly avoided baseline practices whose locations are unknown. Such pollution increases are in contravention of the Commission's ESJ Action Plan.

Fourth, SoCalGas's emissions study and reporting plans are woefully deficient and will not ensure accurate monitoring, which D.22-02-025 and D.24-12-032 require.[8] As a result, there will be no way to determine the actual pollution impacts from the experimental facility.

Finally, SoCalGas does not even commit to purchasing the methane produced by the facility, if it even becomes operational. SoCalGas thus asks that ratepayers fund modifications of its own infrastructure and potentially also a speculative, polluting production process for methane that may never secure any offtake agreements. This is neither a just nor reasonable use of ratepayer funds. Given the ongoing affordability crisis and the crippling impacts of climate change and air pollution, the Commission must ensure that ratepayer funds are justly used for no-regrets investments that deliver real climate and air quality benefits for Californians.

LEGAL BACKGROUND

SoCalGas bears the burden to establish the reasonableness of all parts of its Application.[9] In this proceeding, it must demonstrate that it has met all D.22-02-025 requirements for the woody biomass gasification pilot projects, including but not limited to compliance with CARB regulations that require a showing of GHG reductions at the application stage.[10] The Commission has also included in the scope of this proceeding impacts to ESJ Communities and the extent to which the Proposed Project is consistent with the goals of the Commission's ESJ Action Plan.[11]

When reaching its determination on the Application, the Commission is prohibited from relying on hearsay evidence as the sole basis for any finding of fact.[12]

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[8] D.22-02-025 at OP 43 at 68.

[9] *See, e.g.*, D.25-05-003 at 14 ("Thus, PG&E has failed to meet its burden of demonstrating that the Project is expected to reduce GHG emissions."); D.08-12-058, Decision Granting a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project at 17 (filed December 24, 2008), quoting Southern California Edison Test Year 2006 General Rate Application, D.06-05-016 at 7; *In Re Energy Cost Adjustment Clauses*, 1980 Cal. PUC LEXIS 1023, 4 CPUC 2d 693 (Dec. 5, 1980) at *18 (burden of proof is on the utility applicant to establish reasonableness).

[10] D.22-02-025; D.25-05-003 at 4, 6-8.

[11] Scoping Memo and Ruling at 3.

[12] *TURN*, 167 Cal. Rptr. 3d at 759-62.

FACTUAL AND PROCEDURAL BACKGROUND

This proceeding stems from D.22-02-025, which directed SoCalGas and PG&E to file applications by July 1, 2023 proposing at least one woody biomass pyrolysis/gasification pilot project that would include procurement of bio-synthetic natural gas ("Bio-SNG").[13] The decision, along with D.24-12-032, imposes a series of requirements on the proposed pilot projects. For many years, and through many iterations and revisions, SoCalGas has tried and failed to comply with Commission direction.

I. SoCalGas's First Application

On June 30, 2023, SoCalGas filed Application 23-06-024 seeking Commission approval of a woody biomass pilot project. Sierra Club, the Public Advocates Office at the California Public Utilities Commission ("Cal Advocates"), and other parties protested the application. More than nine months later, SoCalGas moved to withdraw the application on April 22, 2024. In D.24-12-032, the Commission granted SoCalGas's motion while directing SoCalGas to either return the funds to ratepayers or file a second application by October 15, 2025.[14]

II. SoCalGas's Second Application and Intervenor Protests

On October 15, 2025, SoCalGas filed the instant Application for a woody biomass pilot project and associated direct testimony, which it later modified on the same day intervenor protests were due and on the day before its rebuttal testimony was due.[15]

On November 21, 2025, Sierra Club and Cal Advocates protested the Application. The protests raised issues regarding SoCalGas's failure to propose a pilot project that conformed to Commission requirements, the Application's emissions estimates, the existing pollution burden in areas surrounding the Proposed Project, and health risks to nearby communities.[16]

III. SoCalGas's First Corrected Revised Testimony

Also on November 21, 2025 SoCalGas submitted its first "Corrected Revised Prepared Direct Testimony" ("First Corrected Revised Testimony"), which added apparent corrections to its originally filed testimony.[17] The witnesses included SoCalGas employee James Lucas and Dr. Matthew Summers, the Chief Operating Officer of West Biofuels LLC ("West Biofuels" or "WBF"), the company that

[13] D.22-02-025 at OP 43 at 67.
[14] D.24-12-032 at OPs 1-3 at 10-11.
[15] Application; Sierra Club's Motion to Strike at 2.
[16] *See* Sierra Club Protest to Application and Cal Advocates Protest to Application.
[17] Sierra Club's Motion to Strike at 2.

would own and operate the gasification facility and thus gain the ratepayer subsidy from the Cap-and-Trade proceeds if the Application is approved and if there are remaining funds after SoCalGas first invests in its own infrastructure.[18] Attached to the testimony of Dr. Summers was a memorandum from Dr. Eric C. D. Tan to Dr. Summers (the "Tan Memo").[19]

IV. Intervenor Direct Testimony

On March 13, 2026, Sierra Club and other intervenors served direct testimony that addressed SoCalGas's Application, First Corrected Revised Testimony, and SoCalGas's responses to intervenors' numerous data requests. Among other objections, Sierra Club contested SoCalGas's claim of GHG reductions, challenged SoCalGas's claim that it was using the validated Greenhouse gases, Regulated Emissions, and Energy use in Technologies ("GREET") model, objected to SoCalGas's assumption that the Proposed Project's methane leakage would be zero and that CCS would function to capture project emissions, and pointed to emissions increases of volatile organic compounds ("VOCs") and other pollutants that would increase pollution in an area with already unhealthy air.[20]

V. SoCalGas's Second Corrected Revised Testimony

On April 9, 2026, the day before the deadline to submit its rebuttal testimony, SoCalGas submitted its Second "Corrected Revised Prepared Direct Testimony" ("Second Corrected Revised Testimony"), which made substantial revisions to the Proposed Project.[21] SoCalGas has moved only that version of its testimony into the evidentiary record.

A. Project Overview

SoCalGas proposes a facility owned and operated by WBF and located in Kerman, CA that would produce Bio-SNG (the main component of which is methane) from primarily almond woody biomass residues through gasification and methanation processes, followed by its injection into the SoCalGas pipeline system.[22] According to CalEnviroScreen—"a mapping tool that helps identify California communities that are most affected by many sources of pollution, and where people are often

[18] Application at 2, 5-7, https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M583/K959/583959234.PDF; SCG-02R, Second Corrected Revised Testimony.
[19] *See* SC-01R, Sierra Club Direct Testimony, Grubert at 4:3-14; *see* SCG-02R, SoCalGas Second Corrected Revised Testimony, Attach. 1.
[20] SC-01R, Sierra Club Direct Testimony, Grubert at 6-13 (CI scores challenge); Grubert at 5-7 (GREET model challenge); Grubert at 14, Sahu at 24-25, Sahu at 27-30 (methane leakage challenge); Sahu at 34-39 (increased pollution concerns).
[21] This April 9, 2026 testimony has the same title as the November 21, 2025 testimony, but it is the second time SoCalGas has submitted Corrected Revised Prepared Direct Testimony. Sierra Club therefore refers to this submission as this Second Corrected Revised Testimony.
[22] Application at 1-2, 6.

especially vulnerable to pollution's effects"[23]—Kerman, CA is a disadvantaged community that faces a very high pollution burden.[24] The woody biomass material will be sourced from a large area spanning approximately 55 miles to the northwest and 50 miles to the southeast of the Proposed Project facility.[25]

The gasification process proposed at the facility would convert woody biomass into synthetic gas ("syngas").[26] The remaining CO_2 in the syngas would then be converted to methane via a process called methanation.[27] The facility would have both an exhaust and a flare.[28] The exhaust would directly vent various criteria pollutants and air toxics into the atmosphere as well as CO_2, a GHG.[29] SoCalGas proposes to capture approximately 80% of CO_2 emissions via CCS.[30] The flare, which would include combustion, would emit GHGs, criteria pollutants and air toxics.[31]

The methane created at the facility would be transported by truck to SoCalGas's decanter and pipeline receipt facility, located approximately 60 miles away in Visalia, CA,[32] where it would subsequently be injected into the SoCalGas pipeline network.[33] According to SoCalGas, once the biomethane enters the interconnection point, it could go to various end-uses including transportation,

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[23] State of California Office of Env't Health Hazard Assessment, "About CalEnviroScreen" (last visited Aug. 28, 2026), https://oehha.ca.gov/calenviroscreen/about-calenviroscreen.

[24] SC-01R, Sierra Club Direct Testimony, Sahu at 35:14-15 (citing State of California Office of Env't Health Hazard Assessment, "CalEnviroScreen 4.0" (last visited Mar. 13, 2026), https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40 (a search for "8325 S Madera Ave, Kerman, CA, 93630, USA." in the Map of CalEnviroScreen 4.0 Indicators generated an 88th percentile result for pollution burden); SC-01R, Sierra Club Direct Testimony, Sahu at 36:2-3 (citing State of California Office of Env't Health Hazard Assessment, "SB 535 Disadvantaged Communities" (last visited Mar. 13, 2026), https://oehha.ca.gov/calenviroscreen/sb535 (a search for "8325 S Madera Ave, Kerman, CA, 93630, USA." in the SB535 Disadvantaged Communities map generated a "Disadvantaged Community" designation, as indicated by red shading)); *see* SC-14, SoCalGas Response 1a to Cal Advocates Data Request 1, Response 4 at 4 (listing an address of "8325 S. Madera Ave, Kerman, CA 93630" on image of Proposed Project site).

[25] SC-11, SoCalGas Response to Sierra Club Data Request 9, Response 9-1 at 1.

[26] SC-01R, Sierra Club Direct Testimony, Sahu at 22:4-5 (citing U.S. Dep't of Energy, "Hydrogen Production: Biomass Gasification," https://www.energy.gov/cmei/fuels/hydrogen-production-biomass-gasification).

[27] SC-01R, Sierra Club Direct Testimony, Sahu at 23:4-5.

[28] SC-14, SoCalGas Response 1a to Cal Advocates Data Request 1, Response 4 at 5 (depicting the WBF Process Flow Diagram).

[29] SC-01R, Sierra Club Direct Testimony, Sahu at 24:22-26.

[30] SC-02R, SoCalGas Corrected Revised Testimony at JLMS-15 ("While the CCS requires energy, it captures about 80% or more of the plant CO2 emissions."); *see also* SC-02R, SoCalGas Corrected Revised Testimony, Attach. 1 at 3. (The attachment lacks page numbers, and this page citation assumes the first page should be page "1". That convention will be used hereinafter for this attachment.)

[31] SC-01R, Sierra Club Direct Testimony, Sahu at 25:5-10.

[32] SoCalGas Response to ALJ Ruling Seeking Additional Information ("SoCalGas Response to ALJ's Ruling") (Jan. 7, 2026), Attachment A (map indicating approximately 60 miles distance between facility and injections point and diagram indicating lanes of the Proposed Project).

[33] SC-02R, SoCalGas Corrected Revised Testimony at JLMS-8.

utility biomethane procurement, and industrial customers, among others.[34]

B. Dr. Tan's Life Cycle Emissions Model and Memorandum

The submission includes testimony from witnesses James Lucas and Matthew Summers, with a new memo from Dr. Tan attached. As indicated in Exhibit A, a demonstrative attached to this brief, large portions of Dr. Summers' testimony copy the Tan Memo verbatim. In the Tan Memo, Dr. Tan "[a]t the request of West Biofuels" presents "the project-specific greenhouse gas and criteria pollutant emissions [that] were analyzed for the proposed Bio-SNG project at the Central California Almond Growers Association (CCAGA) facility located at 8325 S Madera Ave, Kerman, CA 93630."[35] Dr. Tan states that "[t]he Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation (GREET) model was used for the analysis"[36] and that "this analysis relied on the best available process and emissions factor data for the baseline and use case scenarios, as well as the latest [Research and Development ("R&D")] version of the GREET model."[37] The GREET model is publicly available, although when updates to the model occur, older versions are no longer accessible on the Argonne website.[38] Dr. Tan's analysis derives from an Excel spreadsheet model, marked confidential ("Tan Model") that Dr. Tan created and that was produced during discovery.[39]

Dr. Tan's analysis (replicated in the testimony of Dr. Summers) assumes a "base case" and compares the total carbon intensity ("CI")[40] of the "base case" to the estimated CIs of two "use cases" for the Proposed Project. The two use cases are the Project as proposed with and without CCS added to facility to capture carbon emissions.[41] Dr. Tan asserts (and Dr. Summers testifies) that the CI scores for

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[34] SC-02R, SoCalGas Corrected Revised Testimony at JLMS-8; SC-03, SoCalGas Response to Sierra Club Data Request 1, Response 1-6(a) at 10.
[35] SCG-02R, SoCalGas Second Corrected Revised Testimony, Attach. 1 at 1 (footnote omitted).
[36] SCG-02R, SoCalGas Second Corrected Revised Testimony, Attach. 1 at 1.
[37] SCG-02R, SoCalGas Second Corrected Revised Testimony, Attach. 1 at 5.
[38] *See* SC-13, SoCalGas Response to Sierra Club Data Request 11, Response 11-2(b) at 7 ("SoCalGas is currently unable to locate any publicly available link to R&D GREET 2024 Rev1 Release (May 23, 2025)."); *see also* SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 2 note 2 (making the R&D GREET model available at https://earthjustice.sharefile.com/i/i6082950086a46009 and explaining that it was being made available by link because the R&D GREET file is too large to attach to the testimony and serve); Argonne National Laboratory, "R&D GREET®," https://greet.anl.gov/index.php?content=download1x (2026 update to spreadsheet model also available for download from public website).
[39] SC-15C-Atch-A, SoCalGas Modeling Spreadsheet PDF.
[40] Carbon intensity is a term used to describe the amount of climate-affecting GHG emitted per unit of a given product, like a unit of electricity. It is usually presented in terms of carbon dioxide-equivalents ("CO_2e"), which is why it is referred to it as a "carbon" intensity even though it should include the impacts of non-carbon-based GHGs (for example, N_2O) as appropriate. *See* SC-01R, Sierra Club Direct Testimony, Grubert at 4.
[41] SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-14 to JLMS-16; SCG-02R, SoCalGas Second Corrected Revised Testimony, Attach. 1 at 1-4.

both Project use cases are lower than the base case.[42]

Dr. Tan also compares the CI of the Proposed Project's methane when compared to other transportation fuels combusted in vehicles.[43] In making this comparison Dr. Tan credits the Proposed Project with purportedly "avoided" emissions, which are emissions that Dr. Tan suggests would have occurred in the "base case" (i.e., current CO_2 emissions from putting orchard waste to a wide range of uses) and that no longer occur in the "use case" when the Proposed Project makes methane from the orchard waste, which is then combusted in vehicles and emitted from the tailpipe as CO_2.[44]

Dr. Tan states that

> [w]ith these pathway factors considered, the GREET analysis shows the Bio-SNG facility can make Bio-[compressed natural gas ("CNG")] that has a CI of 36.1 gCO2e/MJ and -49.7 gCO2e/MJ for Bio-CNG and Bio-CNG with CCS, respectively (Table 3). Producing and utilizing the Bio-CNG fuel from this project is estimated to be a net carbon sink over its lifecycle with avoided emissions considered. This compares favorably to average lower sulfur diesel and North American Compressed Natural Gas (NA-CNG), which both have a CI of +90.54 gCO2e/MJ and +70.12 gCO2e/MJ, respectively, from the 2024 R&D GREET model.[45]

As indicated by Exhibit A to this brief, Dr. Summers largely repeats Tan in his testimony, stating without qualification that "[p]roducing and utilizing the Bio-CNG fuel from this project will be a net carbon sink over its lifecycle[,]"[46]

Importantly, these numbers differ from those included in Dr. Tan's prior analyses, submitted with Application and in the First Corrected Revised Testimony. In those submissions, as explained by Sierra Club in subsequent filings, the CI numbers for the Project were lower at -18.9 gCO_2e/MJ without CCS and -104 gCO_2e/MJ with CCS.[47] In the corrected revised testimony, neither Dr. Tan nor Dr. Summers stated the basis for these major changes to the Proposed Project's CI scores. In response to Sierra Club's Motion to Strike, SoCalGas explained that it "updated Table 3 after Sierra Club identified

[42] SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-14 to JLMS-16; SCG-02R, SoCalGas Second Corrected Revised Testimony, Attach. 1 at 1-4.
[43] SCG-02R, SoCalGas Second Corrected Revised Testimony, Attach. 1 at 4-5.
[44] SCG-02R, SoCalGas Second Corrected Revised Testimony, Attach. 1 at 4-5.
[45] SCG-02R, SoCalGas Second Corrected Revised Testimony, Attach. 1 at 5.
[46] Exhibit A at JLMS-17.
[47] *See* Sierra Club Motion to Strike at 2-3.

inconsistent treatment of biogenic CO2 in the [National Renewable Energy Law ("NREL")]-prepared scores (by subtracting 55 gCO2e/MJ)[,]"[48] a rationale it repeated in rebuttal.[49]

C. Emissions of Health-Harming Pollutants

In addition to presenting CI scores for the Project, the Tan Model and Memo also indicate emissions effects for health-harming criteria pollutants such as oxides of nitrogen ("NOx") and VOCs. As indicated in Exhibit A, Dr. Summers' testimony also copies verbatim the Tan Memo's analysis of these effects. Dr. Summers claims that "emission reductions" from the Proposed Project that would provide "Community Benefits[.]"[50] A comparison of the base case to the use case indicates increases in VOCs and NOx.[51] Furthermore, the precise locations of these base case emissions are unknown because the air curtain burning and diesel-intensive wood chipping operations that accounts for the lion's share of the base case emissions can occur over a vast area.[52]

VI. Rebuttal and Sur-Rebuttal Testimony

On April 10, 2026, SoCalGas served its Rebuttal Testimony. The Rebuttal Testimony introduced new facts and analysis and raised assertions and arguments for the first time concerning a wide range of issues including: (1) methane leakage from the Project (including a March 19, 2026 "Calculation Memorandum" authored by Dr. Summers titled "Methane Fugitive Emissions and Leak Rate Estimate – Bio-SNG Facility"),[53] (2) the Project's purported distance from "populated area(s)" and a "population

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[48] SoCalGas Opposition to Siera Club's Motion to Strike at 5; SCG-03, SoCalGas Rebuttal Testimony at JLMS-12 note 44 ("These percentages are derived from CI scores of 36.1 g CO_2e/MJ (without CCS) and −49.7 g CO_2e/MJ (with CCS), as presented in the Lucas/Summers Testimony, which was updated to have consistent treatment of biogenic carbon."). NREL has since been renamed to the "National Law of the Rockies."

[49] SCG-03, SoCalGas Rebuttal Testimony at JLMS-12 ("These percentages are derived from CI scores of 36.1 g CO_2e/MJ (without CCS) and −49.7 g CO_2e/MJ (with CCS), as presented in the Lucas/Summers Testimony, which was updated to have consistent treatment of biogenic carbon.").

[50] SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-17.

[51] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 18:13-18; SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-15 (Table 1: Baseline Carbon Intensity and Criteria Pollutant Emissions), JLMS-16 (Table 2: Bio-SNG Use Case Carbon Intensity and Criteria Pollutant Analysis) (comparing the VOC emissions in the base case of 1.53 mg/MJ to those in the use case without and with CSS, 2.04 mg/MJ and 2.88 mg/MJ, respectively); SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-15 (Table 1: Baseline Carbon Intensity and Criteria Pollutant Emissions), JLMS-16 (Table 2: Bio-SNG Use Case Carbon Intensity and Criteria Pollutant Analysis) (comparing the NOx emissions in the base case of 19.69 mg/MJ to 24.86 mg/MJ in the use case with CSS).

[52] *See, e.g.*, SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 32:10-20; SC-08, SoCalGas Response to Sierra Club Data Request 6, Response 6-10(a) at 23, 6-10(c) at 25.

[53] SCG-03, SoCalGas Rebuttal Testimony, Attach. 1.

center,"[54] and (3) the impacts of air toxics emissions, which SoCalGas asserts for the first time are "less than significant.[55]

Sierra Club moved to strike both the changes to SoCalGas's Second Corrected Revised Testimony (described above in Section V) and the new facts and analysis provided in SoCalGas's rebuttal. The ALJ denied Sierra Club's motion to strike and granted Sierra Club's alternative requested relief, permitting submission of sur-rebuttal testimony, which Sierra Club submitted on June 16, 2026.

In Sur-Rebuttal Testimony, Sierra Club's witnesses testify that, with respect to GHG emissions, SoCalGas has not demonstrated GHG reductions, that the changes to its model analysis are not consistent with GREET, and that Dr. Summers' "Calculation Memorandum" has not justified the Tan Model and Memo's assumption of zero methane emissions.[56] Sierra Club's witnesses further explain why SoCalGas's assumptions of negative "net CI" and "avoided emissions" are not supported and that there was no basis for concluding that there would be localized emissions reductions.[57]

After additional discovery was completed, Sierra Club and SoCalGas agreed to waive cross-examination, and on July 21, 2026, in response to Sierra Club's request, the ALJ took the scheduled evidentiary hearing off the Commission's calendar and set the briefing schedule. The ALJ granted the parties' Joint Motion to Admit Exhibits Into the Evidentiary Record on August 19, 2026.

ARGUMENT

I. The Application does not propose a pilot project that conforms to core Commission requirements.

A. There is no certainty that any of the funds will be directed to a new gasification project.

The Application does not comply with D.22-02-025 or D.24-12-032's direction to propose "at least one woody biomass gasification project focused on conversion of woody biomass to biomethane"[58] and to set aside "Cap-and-Trade Program allowance auction proceeds to fund these pilot projects"[59] because it proposes to first direct ratepayer funds to utility-owned infrastructure without any certainty

[54] SCG-03, SoCalGas Rebuttal Testimony at JLMS-29 to JLMS-30.
[55] Sierra Club Motion to Strike at 3-4, 8; SCG-03, SoCalGas Rebuttal Testimony at JLMS-30.
[56] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 5 (no GHG reduction); Grubert at 1-3, 6 (inconsistent with GREET), Sahu at 14-17 (unjustified zero methane emissions assumption).
[57] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 5, 11-12 (net CI), Grubert at 3, 8-9 (avoided emissions), Sahu at 14-15, 17-34 (localized emissions).
[58] D.22-02-025 at OP 43 at 67; D.24-12-032 at OP 2 at 10.
[59] D.22-02-025 at OP 43 at 68; *see* D.24-12-032 at OP 1-2 at 10 (ordering SoCalGas to return Cap-and-Trade funds to ratepayers or filing an application proposed at least one woody biomass gasification project).

that these funds will support interconnection of a gasification facility that converts woody biomass to biomethane. As explained above, SoCalGas seeks approval to invest in the site of its former CNG fueling station and in its own pipeline infrastructure, far downstream of any gasification project. Specifically, SoCalGas proposes to invest in a "Decanting Facility[,]" "Stanchion/hoses[,]" an interconnection "Point of Receipt" for trucked methane, and a pipeline extension that would connect to the utility's existing pipeline network.[60] According to the Application, the investment would enable SoCalGas to receive and inject trucked methane, but there is no assurance that the investment will support a project that gasifies woody biomass in the first place. Only if there are leftover funds from this investment utility infrastructure will funds go toward a proposed facility: SoCalGas states that it will only consider directing funds to upstream interconnection infrastructure owned by West Biofuels if "funds remain after covering infrastructure in lanes 7, 8, and 9," all of which are owned by SoCalGas.[61]

The Commission did not contemplate such a scenario in D.22-02-025 or D.24-12-032. The purpose of the Commission orders is to fund at least one "woody biomass gasification project" that complies with Commission requirements, not to subsidize buildout of existing SoCalGas infrastructure, which would do nothing to catalyze woody biomass gasification.[62] In D.22-02-025, the Commission explained that the Cap-and-Trade proceeds could be "available to offset pipeline build-out costs[,]"[63] but it did not state that the funds could be exclusively used for downstream, utility-owned build-out, without regard for whether a new gasification facility would actually interconnect to the pipeline system.

Further, the Mr. Lucas's testimony states that "[t]he date for the WBF Facility to be operational and trucking biomethane to the interconnection facility is not more than five years after WBF has received notification by SoCalGas that the Commission granted the Application."[64] Yet these terms are not present in the "Funding Agreement," which does not specify a deadline and indicates that any "target date" is subject to unlimited extensions.[65] The Funding Agreement provides that "the Target Date is the date by which the SB 1440 Pilot Project must be connected to the SoCalGas pipeline and flowing biomethane; such Target Date shall be [X] years after the Project Owner has received notification by SoCalGas of a successful Application."[66] SoCalGas stated in its reply to protests that

[60] Application at 7 (lanes 7-10 in illustration).
[61] Application at 7.
[62] D.22-02-025 at OP 43 at 67; D.24-12-032 at OP 2 at 10.
[63] D.22-02-025 at 46.
[64] SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-19.
[65] Application, Attachment B, Schedule B at 7.
[66] Application, Attachment B, Schedule B at 7

"the placeholder '[X]' will be finalized based on the timing of the Commission's decision for this Application and could end up being less than five years."[67] Yet the terms of the Funding Agreement are what govern, and they provide no certainty as to any date certain or to any timeline. SoCalGas claims that "WBF will have 120 calendar days from a Commission decision approving the Application and SB 1440 Pilot Project to execute [the relevant] agreements[,]" but again, there is no certainty in the terms of the agreement such execution will occur.[68] SoCalGas further maintains that the D.22-02-025 2032 deadline to return unspent funds to ratepayers will be a "driver for timely completion of construction of the project[.]"[69] The Commission should reject SoCalGas's "trust us" invitation. SoCalGas has failed to abide by the Commission's clear direction to ensure ratepayer funding is directed to a pilot project.

B. The Proposed Project will not be connected to the gas pipeline network.

If methane is ever produced by the Proposed Project, it would not be injected directly into a pipeline at the site of the facility but instead trucked approximately 60 miles to the proposed pipeline injection point in Visalia, CA.[70] As Cal Advocates' witness explains, this does not conform to the requirement of D.22-02-025.[71] The Application should accordingly be denied.

C. SoCalGas cannot claim any emissions reductions attributable to the WBF facility.

SoCalGas incorrectly asserts that its proposed "project" will lead to "emission reductions[,]"[72] relying on the Tan Memo.[73] However, the Tan Memo analyzes emissions effects attributable to the WBF facility. As discussed above, in Section I.A, the "project" that SoCalGas has proposed includes upgrades to its own infrastructure located approximately 60 miles downstream from the potential WBF facility.[74] There is no certainty that any funds will lead to gasification of woody biomass.[75] Since SoCalGas's proposal does not ensure actual financial support for the WBF facility's construction, much less interconnection, SoCalGas cannot claim credit for any of the facility's supposed GHG reductions.

II. SoCalGas has not met its burden of demonstrating GHG reductions.

Even if SoCalGas were allowed to attribute to its Application the GHG emissions impacts from

[67] SoCalGas Reply to Protests and Responses at 3.
[68] Application at 7.
[69] SoCalGas Reply to Protests and Responses at 3.
[70] SoCalGas Response to ALJ's Ruling, Attachment A.
[71] PAO-01, Cal Advocates Opening Testimony at 1-3 to 1-6; *see also* D.22-02-025 at OP 43 at 68; D.24-12-032 at OP 2(b) at 10 (ordering SoCalGas to include pipeline extensions to the pilot facility).
[72] SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-16 to JLMS-17, JLMS-20, Attach. 1.
[73] SCG-02R, SoCalGas Second Corrected Revised Testimony, Attach. 1.
[74] SoCalGas Response to ALJ's Ruling, Attachment A.
[75] *See* Application at 7.

the uncertain and contingent gasification facility, the Commission cannot make a finding of GHG reductions. SoCalGas's GHG claims are based solely on hearsay evidence, and in any event, the evidence does not show GHG reductions. To the contrary, the record shows likely GHG increases from the Proposed Project's creation of new methane that would not have otherwise existed, in direct contravention of D.22-02-025, D.24-12-032, CARB regulations, and California law and policy.

A. The Commission cannot rely on the hearsay evidence proffered by SoCalGas as the sole basis for a finding of GHG reductions.

Longstanding legal precedent holds that the Commission cannot rely on hearsay evidence—i.e., out-of-court statements offered for the truth of the matter asserted[76]—as the sole basis for any finding of fact.[77] In *The Utility Reform Network v. Public Utilities Commission*, the California Court of Appeal held that "under California statutory and decisional law, as well as the Commission's own decisions, uncorroborated hearsay cannot constitute substantial evidence to support an agency's decision absent specific statutory authorization."[78] The Court reasoned that "even if it [i]s proper for the Commission to consider and rely upon" hearsay documents, the Commission's finding "cannot rest on those materials alone."[79]

Here, SoCalGas's showing of GHG reductions relies entirely on a bespoke model and memorandum that were both authored by Dr. Tan, who was never proffered as a witness in this proceeding. SoCalGas admits that the Tan Model was created exclusively by Dr. Tan and that its own witnesses have no expertise in lifecycle carbon accounting.[80] The associated Tan Memo relies entirely

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[76] Cal. Evid. Code § 1200 (defining hearsay evidence as "evidence of a statement that was made other than by a witness while testifying at the hearing and that is offered to prove the truth of the matter stated").
[77] *See TURN*, 167 Cal. Rptr. 3d at 760 ("California decisions adhere to the so-called 'residuum rule,' under which the substantial evidence supporting an agency's decision must consist of at least 'a residuum of legally admissible evidence.' A version of the rule has been codified in this state's Administrative Procedure Act[.]") (citations omitted); *see also Daniels v. Dep't of Motor Vehicles*, 658 P.2d 1313, 1317 note 3 (Cal. 1983) ("The mere admissibility of evidence does not necessarily confer the status of 'sufficiency' to support a finding absent other competent evidence."); *Cleancraft, Inc. v. San Diego Gas & Elec. Co.*, 11 CPUC 2d 975, 1983 WL 909005 (June 29, 1983) ("While hearsay evidence is certainly admissible in administrative hearings and may be used to corroborate other evidence, it is not sufficient on its own to establish an essential fact.").
[78] *TURN*, 167 Cal. Rptr. 3d at 761 (citation and footnote omitted).
[79] *TURN*, 167 Cal. Rptr. 3d at 762.
[80] SC-10, SoCalGas Response to Sierra Club Data Request 8, Question and Response 8-14(a) at 26 (responding "Dr. Eric Tan" to the question "Regarding the statement '[t]o demonstrate the mathematical calculations, a full lifecycle model in Excel format containing active cells and formulas was developed,' who developed this model?") (alteration in original); SC-12, SoCalGas Response to Sierra Club Data Request 10, Question and Response 10-7 at 15 (answering "West Biofuels engaged Dr. Eric Tan to conduct the analysis" to the question "Did SoCalGas and/or West Biofuels retain Dr. Eric Tan to conduct the analysis presented in Attachment 1 to SoCalGas's Direct Testimony?").

on the Tan Model to present CI scores for Proposed Project. As illustrated in Exhibit A, the sponsored testimony Dr. Summers includes, verbatim, the material provided by Dr. Tan in his memo. For example, the Tan Memo presents three tables with CI scoring: Table 1: "Baseline Carbon Intensity and Criteria Pollutant Emissions"; Table 2: "Bio-SNG Use Case Carbon Intensity and Criteria Pollutant Analysis"; and Table 3 "[Well-to-Wheel] Carbon Intensity for Bio-CNG with Counterfactual Credit[.]"[81] These tables are replicated in Dr. Summers' testimony.[82] Lifted from the Tan Memo, along with approximately 3.5 pages of text and tables, is Dr. Summers' conclusion that "[p]roducing and utilizing the Bio-CNG fuel from this project will be a net carbon sink over its lifecycle."[83]

This reliance on Dr. Tan's model and memorandum is also evident in SoCalGas's discovery responses. After Sierra Club's expert witness revealed errors and inconsistencies with the Tan model presented in SoCalGas's First Corrected Revised Testimony, SoCalGas submitted its Second Corrected Revised Testimony, which included a new memorandum from Dr. Tan dated April 6, 2026[84] and new testimony from Dr. Summers, which included in it the exact changes to Table 3 that appear in Dr. Tan's new memo.[85] In response to Sierra Club's request to "indicate which witness confirmed that biogenic CO2 should not have been accounted for as carbon neutral or similar[,]" SoCalGas responded that "Dr. Matthew Summers in consultation with Dr. Eric Tan . . . confirmed the revision to the accounting rules for biogenic carbon."[86]

Exclusively citing to analysis copied from the three tables in the Tan Memo into Dr. Summers' testimony, SoCalGas's rebuttal testimony also indicates that Dr. Tan's model and memorandum are the sole basis for its GHG reduction claim:

> In addition, to demonstrate compliance with 17 CCR §95893(d)(3)(B), the Lucas/Summers Testimony developed baseline and use-case emissions estimates for both GHGs and criteria air pollutants, *as presented in Tables 1 through 3*. As shown by the carbon intensity (CI) scores in Table 3, the CI for both use-case scenarios [without CCS and with CCS] are

[81] SCG-02R, SoCalGas Second Corrected Revised Testimony, Attach. 1 at 3-5.
[82] The title of the Table 3 differs slightly between Dr. Summers' testimony and the Tan Memo, as Table 3 in the testimony omits "with Counterfactual Credit" from the end of the title. SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-15 to JLMS-17; *see also* SC-09, SoCalGas Response to Sierra Club Data Request 7, Response 7-5 at 11 ("Table 3 at JLMS-17 was prepared based on the analysis of Dr. Eric Tan[.]").
[83] The Tan Memo's conclusion states in full, "[p]roducing and utilizing the Bio-CNG fuel from this project is estimated to be a net carbon sink over its lifecycle with avoided emissions considered[,]" whereas Dr. Summers' testimony omits the final four words and changes "is estimated to be" to "will be[.]" SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-17, Attach. 1 at 5; Exhibit A at JLMS-17.
[84] SCG-02R, SoCalGas Second Corrected Revised Testimony, Attach. 1.
[85] SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-17; *see* Sierra Club Motion to Strike at 3-4 (explaining the changes to Table 3).
[86] SC-10, SoCalGas Response to Sierra Club Data Request 8, Response 8-4(a) at 6.

> respectively ~49% and ~170% lower than the CI of natural gas. These scores demonstrate substantial GHG emissions reductions relative to conventional natural gas.[87]

Even though Dr. Tan's expertise was central to SoCalGas's Application and its claim of GHG reductions, it never proffered him as a witness. Therefore, intervenors had no opportunity to cross-examine the truth of his representations. That Dr. Summers incorporated Dr. Tan's representations into his testimony does not cure this fundamental flaw or weaken the applicability of *TURN*. Dr. Summers is not qualified to testify to the truth of Dr. Tan's model and memo. He admits that he does not have the necessary expertise and that he was required to "consult"[88] with Dr. Tan to answer Sierra Club's questions about the model and CI scores or that his testimony was "based on"[89] Dr. Tan's analysis or "with the support of" Dr. Tan.[90]

These facts are analogous to the facts in *TURN*, where the Court faulted the Commission for relying on out-of-court statements and found that "they cannot alone support the Commission's [decision]."[91] In *TURN*, the court considered whether "the Commission [could] base a finding of fact solely upon hearsay evidence where the truth of the extrarecord statements is disputed[.]"[92] The evidence at issue in *TURN* were two hearsay documents attached to testimony, a declaration and a petition, which did not fall into an exception to the hearsay rule.[93] The Court held that these documents alone could not solely support a Commission finding, and there was no evidence that could "serve to corroborate the hearsay materials upon which the Commission relied to support its finding of need."[94]

Similar to the documents at issue in *TURN*, the Tan Memo and the underlying Tan Model are hearsay that does not fall into an exception; they are out-of-court written statements offered to prove the truth of the matter—GHG reductions from the Proposed Project.[95] Just as in *TURN*, this hearsay

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[87] SCG-03, SoCalGas Rebuttal Testimony at JLMS-11 to JLMS-12 (emphasis added) (citations omitted).
[88] SC-08, SoCalGas Response to Sierra Club Data Request 6, Response 6-3(d) at 6, 6-13(d) at 38, 6-14(b) at 40; SC-09, SoCalGas Response to Sierra Club Data Request 7, Response 7-6(e) at 16; SC-10, SoCalGas Response to Sierra Club Data Request 8, Response 8-4(a) at 6; SC-12, SoCalGas Response to Sierra Club Data Request 10; Response 10-6(a) at 12.
[89] SC-09, SoCalGas Response to Sierra Club Data Request 7, Response 7-5 at 11.
[90] SC-10, SoCalGas Response to Sierra Club Data Request 8, Response 8-14(b) at 27.
[91] *TURN*, 167 Cal. Rptr. 3d at 763 (citations omitted).
[92] *TURN*, 167 Cal. Rptr. 3d at 759.
[93] *TURN*, 167 Cal. Rptr. 3d at 752 (concluding that "the Commission's finding of need is unsupported by substantial evidence, because it relies on uncorroborated hearsay materials the truth of which is disputed and which do not come within any exception to the hearsay rule").
[94] *TURN*, 167 Cal. Rptr. 3d at 765.
[95] *Re Pac. Gas & Elec. Co.*, 23 CPUC 2d 352, 1986 WL 1300125 (Dec. 22, 1986) ("Documentary evidence that is introduced for the purpose of proving the matter stated in the writing is hearsay *per se* because the document is not a statement by a person testifying at the hearing.") (emphasis in original).

evidence is disputed, and there is no corroborating evidence. No witness independently asserts GHG reductions based on their own knowledge, and Dr. Summers' testimony is a mere repetition of the Tan Memo, not a unique analysis.[96] As in *TURN*, the Commission's decision cannot rest on this uncorroborated, disputed hearsay evidence from an unavailable expert.[97]

Because the Commission cannot rely on the SoCalGas testimony derived from the Tan Model and Memo and because those submissions are central to SoCalGas's attempted showing of GHG reductions, the Commission must deny the Application.

B. Even if the Commission were allowed to rely on testimony imported verbatim from the Tan Model and Memo as the sole basis for a finding of GHG reductions, the evidence does not demonstrate reductions.

SoCalGas has failed to meet its burden to demonstrate GHG reductions because it improperly relies on a bespoke, unvalidated carbon accounting model and on incorrect assumptions regarding methane emissions, biogenic CO_2 emissions (i.e., emissions from biomass decomposing, or from burning plant-based material), and CCS. D.22-02-025 requires compliance with the CARB regulations governing Cap-and-Trade allowance auction proceeds, and those regulations require the applicant to affirmatively demonstrate GHG reductions at the Application stage.[98] SoCalGas's failure to make this demonstration provides yet another reason for the Commission to deny SoCalGas's Application.

1. The Tan Model does not credibly estimate greenhouse gas impacts.

SoCalGas's claim of GHG reductions is based on an Excel workbook model and associated inferences that are riddled with errors and inconsistencies. Sierra Club's expert witness, Dr. Emily Grubert, details numerous problems with the Tan Model and Memo as well as the conclusions drawn from them, which Dr. Summers imports verbatim into his testimony. Each of these errors indicate that SoCalGas's GHG reduction showing is deficient and that SoCalGas has failed to comply with applicable CARB regulations and thus D.22-02-025 and D.24-12-032.

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[96] *See TURN*, 167 Cal. Rptr. 3d at 765 (holding that materials "based on [the] hearsay . . . cannot serve to corroborate the hearsay materials upon which the Commission relied to support its finding of need"); *see also* Exhibit A.

[97] *TURN*, 167 Cal. Rptr. 3d at 752 ("Under established California law, such uncorroborated hearsay evidence does not constitute substantial evidence to support an administrative agency's finding of fact."); *see also Cleancraft, Inc.*, 11 CPUC 2d 975, 1983 WL 909005 (explaining that "nor could or should the claim rest on . . . the hearsay opinions of unavailable experts").

[98] D.22-02-025; *see also* D.25-05-003 at 6-8 (applying CARB regulations governing Cap-and-Trade funds and stating "[i]f the Project does not comply with CARB regulations, it necessarily cannot comply with D.22-02-025").

a. The Tan Model incorrectly assumes zero methane emissions, despite the fact that the Project will manufacture methane that would not otherwise exist and despite the science showing methane emissions will likely occur at all phases of the supply chain.

The Proposed Project is designed to manufacture a potent GHG (Bio-SNG, also known as biomethane or "renewable" natural gas) that would not exist but for the Proposed Project. Therefore, any of the project-produced methane that escapes into the atmosphere will contribute to climate change, in direct contravention of the applicable CARB regulations and California law and policy. Any contribution will not be trivial: methane is a powerful GHG creating a warming impact of ~30-80 times that of CO_2 on a mass basis.[99] As detailed below, the evidence shows that such leakage is inevitable as methane is prone to leakage across all parts of the supply chain and gas system.

Given these risks, some amount of methane emissions associated with intentionally produced methane should be incorporated into any credible lifecycle assessment of GHG impacts.[100] SoCalGas does the opposite, assuming **zero** methane emissions.[101] SoCalGas has not met its burden to justify this patently unrealistic and risky assumption.

First, the evidence shows that methane emissions are likely at the proposed facility because, as Dr. Sahu explains,[102] fugitive emissions are inevitable from pipeline connections as well as fittings such as valves, pump seals, flanges, and connectors.[103] Also, the methane leak detection technology that SoCalGas intends to use is calibrated to detect unsafe levels of methane but not sufficiently sensitive to detect much lower levels of fugitive emissions.[104] Thus, SoCalGas's claim that methane leakage will be "negligible" lacks justification.[105] As Dr. Sahu explains, "[f]ugitive methane leakage rates from the proposed Project might seem 'negligible' to SoCalGas because it is used to large leak concentrations that are relevant to safety . . . but there is no basis for this 'negligible' assumption in the context of

[99] SC-01R, Sierra Club Direct Testimony, Grubert at 11:24-25.
[100] SC-01R, Sierra Club Direct Testimony, Grubert at 14:8-10; 30:13-15.
[101] SC-03, SoCalGas Response to Data Request 1, Response 1-5(c) at 6 ("The calculations assume no fugitive methane emissions as the level of leakage is expected to be negligible."); SCG-03, SoCalGas Rebuttal Testimony at 19:1-5, Attach. 1.
[102] *See, e.g.*, SC-01R, Sierra Club Direct Testimony, Sahu at 33:16-17.
[103] SC-01R, Sierra Club Direct Testimony, Sahu at 24:3-24; SC-01R, Sierra Club Direct Testimony, Sahu at 25:8-10; SC-01R, Sierra Club Direct Testimony, Sahu at 33:16-21. Notably, CCS would not address any methane emissions, as it only manages CO_2, so SoCalGas cannot rely on it as a mechanism for limiting any emissions. SC-01R, Sierra Club Direct Testimony, Grubert at 12:6-10.
[104] SC-01R, Sierra Club Direct Testimony, Sahu at 33:17-21, 28:28-30:29.
[105] SC-03, SoCalGas Response to Sierra Club Data Request 1, Response 1-5(c) at 6.

leakage that is relevant to the Proposed Project's GHG emissions."[106] Fugitive emissions need to be properly monitored, quantified, and reported in order to determine GHG impacts, but SoCalGas instead simply assumes them away.

In rebuttal, SoCalGas attempts to salvage its zero-methane-emissions assumption by presenting a "Calculation Memorandum" by Dr. Summers that finds that methane leakage would be "de minimis."[107] But the record shows that this calculation is not credible because it relies on a methodology that has not been validated for use in determining methane leakage.[108] As Dr. Sahu explains, this lack of validation renders its results "meaningless."[109] Notably, SoCalGas used this deficient methodology even though Dr. Grubert specifically laid out a peer-reviewed method that could be used to calculate the methane emissions from the Proposed Project.[110]

Second, as Dr. Gruber explains, operational data from comparable facilities indicate methane losses can be substantial.[111] For example, a study of numerous biogas plants found emissions of 0.4-14.9% of methane by mass.[112] SoCalGas asserts that the studied facilities are not "comparable" to the Proposed Project because they are located in Europe and because they do not involve gasification of woody biomass.[113] Yet, as Dr. Grubert and Dr. Sahu explain, similar leakage risks exist here, given that methane would be intentionally produced at the facility and is leak-prone.[114] Indeed, to their knowledge, "a fully methane emissions-free methane-based system has never been demonstrated."[115] Further, since gasification and methanation of woody biomass is a novel technology and an essentially an "industrial scale experiment," a conservative approach to methane emissions estimates is warranted.[116]

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[106] SC-01R, Sierra Club Direct Testimony, Sahu at 30:5-9 (citing SC-03, SoCalGas Response to Sierra Club Data Request 1, Question 1-5(c) at 6).
[107] SCG-03, SoCalGas Rebuttal Testimony at 19:1-5, Attach. 1.
[108] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 15:6-27.
[109] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 15:25.
[110] SC-01R, Sierra Club Direct Testimony, Grubert at 12:5-10 (citing SC-17-Atch-C, Grubert, Emily. 2020. "At Scale, Renewable Natural Gas Systems Could Be Climate Intensive: The Influence of Methane Feedstock and Leakage Rates." Environmental Research Letters 15 (8): 084041. https://doi.org/10.1088/1748-9326/ab9335).
[111] SC-01R, Sierra Club Direct Testimony, Grubert at 11:26-29 (citing SC-17-Atch-B, Scheutz, Charlotte, and Anders M. Fredenslund. 2019. "Total Methane Emission Rates and Losses from 23 Biogas Plants." Waste Management 97 (September): 38-46. https://doi.org/10.1016/j.wasman.2019.07.029).
[112] SC-01R, Sierra Club Direct Testimony, Grubert at Grubert 11:26-29 (citing SC-17-Atch-B, Scheutz, Charlotte, and Anders M. Fredenslund. 2019. "Total Methane Emission Rates and Losses from 23 Biogas Plants." Waste Management 97 (September): 38-46. https://doi.org/10.1016/j.wasman.2019.07.029).
[113] SCG-03, SoCalGas Rebuttal Testimony at JLMS-17.
[114] SC-01R, Sierra Club Direct Testimony, Grubert at 11:15-31; Sahu at 28:28 to 30:29; 33:16-21
[115] SCG-08, Sierra Club Response to SoCalGas Data Request 4, Response 13 at 19 (emphasis added).
[116] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 33:17-19.

Finally, even if the West Biofuels facility itself were leak-free, which is implausible, transportation and end-user methane emissions are essentially guaranteed.[117] The record includes myriad evidence showing that methane leakage occurs throughout the supply chain, including during truck transport, at CNG stations, in pipelines, and at methane storage facilities such as Aliso Canyon, which SoCalGas owns and operates and which, after an explosion, leaked a massive amount of methane into the atmosphere in 2015 and 2016.[118] SoCalGas fails to account for these emissions, even though they are part of the relevant lifecycle for determining the Proposed Project's GHG impacts, and adopts the patently unrealistic assumption that no methane emission will even occur up and down the entire supply chain.

Because SoCalGas fails to account for a major source of Proposed Project's GHG emissions, its finding of GHG reductions is unsupported.

b. Contrary to GREET, the Tan Memo assumes a high climate impact from biogenic CO_2 emissions, inflating the base case emissions to a level higher than use case emissions.

Because woody biomass is the feedstock at issue in this proceeding, proper accounting of biogenic CO_2 is essential to assess whether SoCalGas has met its burden of showing GHG reductions from the Proposed Project. The record shows that SoCalGas's accounting is unsupported by GREET and does not support a GHG reduction showing.

According to the modeling inputs, but for the Proposed Project, much of the woody biomass orchard waste would go toward Whole Orchard Recycling ("WOR") and be reincorporated as mulch into the soil surrounding orchard trees.[119] SoCalGas incorrectly asserts that such soil incorporation would lead to substantial GHG emissions because the Tan Model assumes that when that biomass decomposes, all of the embodied carbon will be emitted immediately into the atmosphere.[120] The record shows that this assumption is inconsistent with GREET.

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[117] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 9:1-2; *see also* SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 16:1-17:9.

[118] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 10:18-26 to 10:1-2 (citing CARB, "Determination of Total Methane Emissions from the Aliso Canyon Natural Gas Leak Incident" (Oct. 21, 2016), https://ww2.arb.ca.gov/sites/default/files/2020-07/aliso_canyon_methane_emissions-arb_final.pdf); SC-02-Atch-F, Saint-Vincent & Pekney. 2020. "Beyond-the-Meter: Unaccounted Sources of Methane Emissions in the Natural Gas Distribution Sector." 54 Env't. Sci. & Tech. 39-49. https://pubs.acs.org/doi/10.1021/acs.est.9b04657.

[119] SC-15C-Atch-A, SoCalGas Modeling Spreadsheet PDF (Confidential Version) at cell B30; SC-01R, Sierra Club Direct Testimony, Grubert at 7:10-8:21.

[120] SC-15C-Atch-A, SoCalGas Modeling Spreadsheet PDF (Confidential Version) at cell B30.

First, while the model assumes 1,700 g CO_2e per kilogram of applied biomass for WOR, this figure fails to account for the fact the biogenic carbon is treated in the GREET model and in other scientific literature as carbon neutral.[121] It also contradicts other parts of the Tan Memo and Dr. Summers' testimony that both state: "in the case of Bio-CNG, [fossil fuel vehicle] emissions are offset by the biogenic content of the Bio-CNG."[122] According to Dr. Grubert, if a GREET-consistent assumption were used for biogenic carbon, the correct estimate of baseline emissions from WOR would be approximately 10 g CO_2e/kg biomass, two orders of magnitude less than of the current 1,700 g CO_2e/kg estimate.[123] By this error, the Tan Model's baseline assumption for WOR emissions massively inflates the base case emissions from WOR, and as a result, the Proposed Project CI appears to be lower than the status quo base case CI, yielding a "net CI" that is negative and that is lower than the CI of fossil fuels.[124] According to SoCalGas, these figures indicate GHG reductions.[125] But when a GREET-consistent baseline emissions assumption is used for WOR, the Proposed Project does not indicate GHG reductions.[126]

Second, the evidence also shows that if soil carbon sequestration were considered, the actual CI of WOR could be even lower than 10 g CO_2e/kg at approximately -110 g CO_2e/kg biomass.[127] This is because a process like WOR that intentionally returns carbon to the soil for temporary storage is often considered to be a temporary (~years to decades) carbon sequestration strategy.[128] SoCalGas notes that its main data source on WOR, Culumber et al., projects at least 20 years of carbon storage for ~7% of the original carbon in the woody biomass.[129] Indeed, the representations of the almond industry itself

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[121] SC-01R, Sierra Club Sur-Rebuttal Testimony, Grubert at 7:6-14; SC-13-Atch-A, Excerpts of 2024 R&D GREET spreadsheet at 2, RNG tab cell E35; SC-02-Atch-B, Pscherer & Krommes. 2025. "LCA Standards for Environmental Product Assessments in the Bioeconomy with a Focus on Biogenic Carbon: A Systematic Review." Int'l J. of Life Cycle Assessment 30 (2): 371–93. https://doi.org/10.1007/s11367-024-02387-7.
[122] SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-16 to JLMS-17 (emphasis added); SCG-02R, SoCalGas Second Corrected Revised Testimony, Attach. 1 at 4-5 (emphasis added).
[123] SC-01R, Sierra Club Direct Testimony, Grubert at 7-10; SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 4:23-25, 8:1-3; *see also* SCG-04, Sierra Club Response to SoCalGas Data Request 1, Response 1 at 1-2 (detailing calculations).
[124] SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-16:10-14 to JLMS-17:1-9.
[125] SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-17:3-9.
[126] SC-01R, Sierra Club Direct Testimony, Grubert 8:10-16.
[127] SC-01R, Sierra Club Direct Testimony, Grubert 7:17-20.
[128] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 7:15-17 (citing SC-02-Atch-D, Mayer et al. ahead of print, June 7, 2026. "The Value of Reversible Carbon Storage in a Zero-Emissions World." Env't. Sci. & Tech. https://doi.org/10.1021/acs.est.6c00333).
[129] SC-10, SoCalGas Response to Sierra Club Data Request 8, Response 8-1 at 1.

claim that WOR leads to carbon storage in the soil.[130] Yet SoCalGas fails to account for this potential for sequestration, assuming all GHG emissions from decomposing orchard waste would occur immediately.

Critically, as Dr. Grubert testifies, if that same woody biomass that would have gone toward WOR in the base case is instead converted to Bio-CNG, the climate impact is essentially guaranteed to be higher: not only does intentional production of methane, a potent GHG, cause a climate impact when it leaks throughout the system,[131] but also Bio-CNG from the Proposed Project will be burned much earlier than 20 years from now. Thus, under the project scenario, carbon from the woody biomass is either released as a methane or, on average, released substantially earlier than it would have otherwise been released.[132] In this way, the Bio-CNG use case accelerates the return of carbon to the atmosphere versus the baseline case, eliminating any climate benefit from temporary CO_2 storage.[133]

As Dr. Grubert summarizes, "[t]he inflated estimate for the base case emissions means that, when comparing base case CI score to the Project's use case CI score, the Project appears to produce lower GHG emissions than the base case."[134] In her expert opinion, if GREET-consistent base case WOR GHG emissions estimates were used, "the CI score for the base case would be lower, and the Project would show higher GHG emissions than business as usual."[135] The net is effect is an increase in GHG emissions not a decrease, as SoCalGas claims and as D.22-02-025 requires.[136] As detailed below in Section II.(B)(4), this perverse outcome is in direct conflict with D.22-02-025 and California law and policy.

Finally, it bears emphasis that Dr. Grubert reached these conclusions based on a careful review of the Tan Model and Memo, on SoCalGas's data request responses, on relevant literature cited in her testimony, and on her years of experience evaluating GHG intensities and publishing relevant peer-reviewed papers on carbon accounting.[137] Further, as she underscores, the assumption regarding WOR is

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[130] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 9:25-10:2 (citing Cal. Almonds, "Whole Orchard Recycling," https://www.almonds.org/almond-industry/orchard-management/whole-orchard-recycling ("Benefits of Whole Orchard Recycling" include "+58% soil carbon.")).
[131] *See* SC-17-Atch-C, Grubert, Emily. 2020. "At Scale, Renewable Natural Gas Systems Could Be Climate Intensive: The Influence of Methane Feedstock and Leakage Rates." Environmental Research Letters 15 (8): 084041. https://doi.org/10.1088/1748-9326/ab9335
[132] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 7:9-26.
[133] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 7:26-28.
[134] SC-01R, Sierra Club Direct Testimony, Grubert at 8:10-12.
[135] SC-01R, Sierra Club Direct Testimony, Grubert at 8:12-14.
[136] SC-01R, Sierra Club Direct Testimony, Grubert at 8:14-16.
[137] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 1:27-31; SC-01R-Atch-A, Resume of Dr. Grubert. Dr.

just one of many baseline emissions assumptions. As Dr. Grubert explains, "[s]imilar adjustments are likely required for biogenic CO_2 emissions from other alternative fates for the woody biomass, but because SoCalGas's model fails to distinguish biogenic from fossil CO_2, which is not a best practice for carbon accounting, it is not clear what the numerical impact might be."[138]

c. The Tan Model is inconsistent with GREET.

Although SoCalGas claims it is using the GREET model to demonstrate GHG reductions, the record shows otherwise. Dr. Grubert, who was Chair of Argonne National Lab's GREET Model Review Committee in 2024,[139] carefully reviewed the Tan Model and stated emphatically that it is not the GREET model.[140] Dr. Tan and Dr. Summers stated that the model is GREET or "based on" GREET,[141] but when asked, SoCalGas would not indicate what parts of the spreadsheet created by Dr. Tan were derived from GREET.[142]

As explained above, Dr. Grubert found a core difference between the Tan Model and GREET that is highly consequential for the GHG calculations. While GREET clearly treats biogenic CO_2 emissions as carbon neutral,[143] Dr. Tan altered his model in the middle of this proceeding to change the part of the model that included that assumption, apparently deleting the "Biogenic CO2" line entry

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Grubert also reviewed specific versions of GREET for academic work, most notably 45VH2-GREET and its treatment of biogenic methane. SfC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 9:10-11; Grubert et al. 2025. "Greenhouse Gas Offsets Distort the Effect of Clean Energy Tax Credits in the United States." 2 Env't. Res.: Energy 015001. She has been studying and practicing Life Cycle Assessment for approximately 12 years, including by teaching a graduate-level life cycle accounting course for the past three years. She has also published many peer-reviewed papers on life cycle accounting or using life cycle accounting. SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 9:11-14; *see, e.g.*, Henao et al. 2024. "Life Cycle Assessment and Life Cycle Cost Analysis of Repurposing Decommissioned Wind Turbine Blades as High-Voltage Transmission Poles." 150 J. Constr. Eng'r & Mgmt. 05024004; Kopp, Kurtis, & Grubert. 2026."Life-Cycle Analysis of Proposed Performance-Based Specifications for Structural Concrete and Portland Cement Concrete Pavement in Georgia." 152 J. Transp. Eng'r, Part B: Pavements 05025004; Burns & Grubert. 2021. "Contribution of Regionalized Methane Emissions to Greenhouse Gas Intensity of Natural Gas-Fired Electricity and Carbon Capture in the United States." Env't. Sci. & Tech. Letters. https://doi.org/10.1021/acs.estlett.1c00531.

[138] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 8:5-8.

[139] SC-01R, Sierra Club Direct Testimony, Grubert at 1:26-29; SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 9:8-10.

[140] SC-01R, Sierra Club Direct Testimony, Grubert at 6:16-19; SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 1:32-2:3. As noted above and in testimony, Dr. Grubert also reviewed specific versions of GREET for academic work, most notably 45VH2-GREET and its treatment of biogenic methane, and has deep expertise in reviewing and applying the GREET model.

[141] SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-13; SCG-02R, SoCalGas Second Corrected Revised Testimony, Attach. 1 at 1.

[142] SC-10, SoCalGas Response to Sierra Club Data Request 8, Question and Response 8-14(c) at 28.

[143] *See* SC-02-Atch-A (GREET modeling page excerpt indicating in cell E35 a negative value for biogenic CO_2).

altogether in Table 3.[144] According to SoCalGas, he did so in response to Dr. Grubert's critique that the model was inconsistent in how it treated biogenic carbon.[145]

Incredibly, SoCalGas's mid-stream change to its carbon accounting assumptions was incorrect and directly contrary to GREET.[146] The inconsistency that Dr. Grubert revealed in SoCalGas's treatment of biogenic carbon emissions was thus resolved by making the Tan Memo and Second Corrected Revised Testimony "universally inconsistent with GREET with respect to biogenic CO_2."[147] Although GREET and the scientific consensus indicate that biogenic carbon is treated as carbon neutral, the Tan Model was altered to eliminate this assumption.[148] As Dr. Grubert summarizes, "SoCalGas's decision to ignore the biogenic character of the woody biomass-origin CO_2 in its CI calculations is in direct opposition to the GREET model that SoCalGas claims it is drawing from for its bespoke model and inconsistent with standard scientific practice."[149] As a result, "[r]ather than correct the invalid assumption for WOR biogenic CO_2 emissions, SoCalGas eliminated the GREET-consistent assumption that biogenic CO_2 is carbon neutral in the tailpipe emissions calculator."[150]

Not only is the model's treatment of biogenic carbon inconsistent with GREET, but also the very fact that Dr. Tan and Dr. Summers changed core modeling assumptions demonstrates that the CI score could not have been generated using calculations identical to those in GREET in both cases. This is but one example of an inconsistency with GREET. As Dr. Grubert indicates in her testimony, there may be other inconsistencies with GREET, but her analysis focused primarily on biogenic carbon assumptions, given its importance to the lifecycle accounting for the Proposed Project.[151]

d. The Tan Model is not validated, and changes to assumptions indicate a lack of scientific rigor.

The Tan Model's inconsistency with GREET belies a larger problem: the Tan Model has not

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[144] This deletion is apparent in the redline version of SoCalGas's Second Corrected Revised Testimony, served on April 22, 2026, and it is described in Sierra Club's Motion to Strike at 3.
[145] SoCalGas Opposition to Siera Club's Motion to Strike at 5 ("SoCalGas updated Table 3 after Sierra Club identified inconsistent treatment of biogenic CO2 in the NREL-prepared scores (by subtracting 55 gCO2e/MJ).").
[146] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 2:14-3:16.
[147] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 2:29-3:2.
[148] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 3:3-16; SC-01R, Sierra Club Direct Testimony, Grubert at 9:6-12 (citing Intergovernmental Panel on Climate Change ("IPCC"), Sixth Assessment Report, Climate Change 2023 Synthesis Report (2023), https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_LongerReport.pdf).
[149] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 3:13-17.
[150] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 2:27-29.
[151] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert 4:27-29; SC-01, Sierra Club Direct Testimony, Grubert 7:5-9.

been independently validated to ensure accuracy.[152] Validated emission factors and models are those that have gone through extensive vetting and rigorous scientific evaluation. As Dr. Grubert describes, "[t]he changes to the modeling assumptions are neither consistent with GREET, which is a validated model, nor consistent with a clearly articulated, rigorous scientific critique of GREET supported by quantitative evidence, which is a pathway by which a GREET-inconsistent emission factor could still be considered to be validated."[153] Indeed, the eleventh-hour modeling change to a key emissions assumption for biogenic carbon is itself evidence of sloppy accounting and a lack of rigorous scientific review. While SoCalGas claims that "Dr. Matthew Summers, in consultation with Dr. Eric Tan, validated the model's accuracy[,]"[154] that process was neither independent (Dr. Summers is an employee of the company that stands to gain financially from approval of the Application) nor consistent with GREET (there was at least one major inconsistency in the model with respect to biogenic carbon, identified only by Dr. Grubert). Given these deficiencies, SoCalGas has not demonstrated that its GHG assessment is consistent with validated models of CI or that its assumptions are valid.

2. SoCalGas improperly claims "avoided" GHG emissions when emissions are merely shifted in time and space and when more leak-prone methane is created than would otherwise exist.

In addition to shoddy biogenic carbon assumptions, SoCalGas also advances incorrect claims about "avoided" emissions. SoCalGas claims that "[n]et CI appropriately captures both lifecycle emissions and eligible avoided emissions, consistent with [the CARB] approach to low-carbon fuels and waste diversion strategies."[155] SoCalGas is wrong.

In fact, CARB does not credit as "avoided emissions" CO_2 emissions that are merely moved from one source (in this case, CO_2 emissions from WOR over decades) to another (in this case, CO_2 emissions from the tailpipe when CNG vehicles combust methane over months and years).[156] Fundamentally, emissions that are moved in space and in time in this manner are not "avoided."[157] **They**

[152] SC-01, Sierra Club Direct Testimony, Grubert at 6:1-3; 11:4-12.
[153] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 6:20-7:2; *see also* SCG-06, Sierra Club Response to SoCalGas Data Request 2, Response 5(a) at 5 ("[W]hile the GREET model has been validated extensively, replicative calculations have not been. This lack of validation reduces confidence in the outputs when the model itself is not being used. Thus, application of 'the GREET methodology . . . without using the actual spreadsheet provided by Argonne National Laboratory' does not ensure accurate results.").
[154] SC-12, SoCalGas Response to Sierra Club Data Request 10, Response 10-6(a) at 12.
[155] SCG-03, SoCalGas Rebuttal Testimony at JLMS-14.
[156] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 8:14-19; *see also* SCG-08, Sierra Club Response to SoCalGas Data Request 4, Response 2(a) at 3-4.
[157] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 5:6-20; 8:17-19.

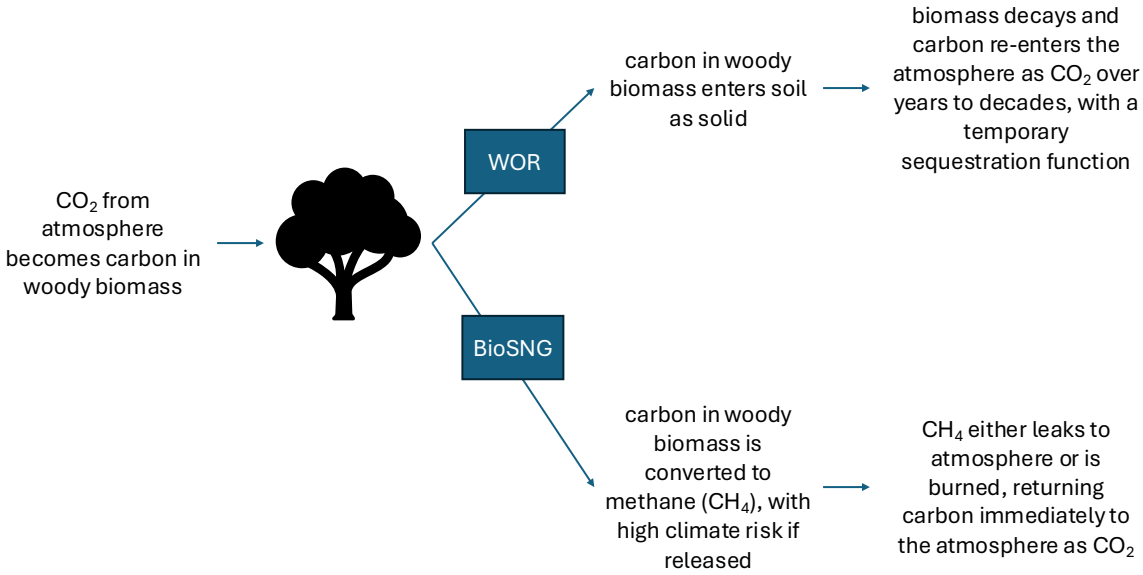
are still emitted into the atmosphere.

CARB does credit certain methane emissions as "avoided" because that methane, which CARB assumes would otherwise be vented directly into the atmosphere, is no longer vented and is instead captured and converted to CO_2 at the tailpipe when combusted in vehicles.[158] CARB assumes these methane emissions are "avoided" because the methane is destroyed via oxidation to CO_2.[159] CARB also assumes this results in GHG benefits because CO_2 is a less-potent GHG than methane.[160] But that avoided emissions scenario does not exist here.[161]

As Dr. Grubert illustrated in Figure 1 of her sur-rebuttal testimony, no emission is actually avoided: in the base case, the carbon from woody biomass becomes CO_2 and enters the atmosphere when it decomposes in the orchards via WOR.[162] In the Proposed Project use case, the carbon from woody biomass either becomes CO_2 and enters the atmosphere via combustion or it leaks into the atmosphere as methane.[163] Therefore, the emissions have merely been shifted in space and time from the use case emissions (WOR decomposition in orchards over decades) to the project case emissions (combustion of methane in vehicles occurring over months or years plus leakage of methane in the system).[164]

[158] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 8:20-23.
[159] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 8:23-24. Sierra Club does not endorse CARB's assumption that the methane emissions are avoided or this form of avoided methane crediting under the LCFS.
[160] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 8:24-25.
[161] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 8:25.
[162] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 8:25-27.
[163] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 8:28-29.
[164] As explained previously, the methane could be used for a wide range of end-uses, not just transportation. Sierra Club focuses on its use in CNG vehicles because SoCalGas claims "avoided" emissions from that use case that would be credited by CARB.

Figure 1: Comparison of CO_2 and Methane Emissions from Whole Orchard Recycling to CO_2 and Methane Emissions from Manufacturing and Combusting Bio-SNG.



A close comparison of the base case to the use case shows that the Proposed Project is worse from a climate perspective than the status quo baseline. This is true for two major reasons:

1. The Project use case results in earlier CO_2 release than the baseline case, so any climate benefits of temporary carbon storage are not achieved.[165]
2. The Proposed Project converts a resource that otherwise would not have posed any methane leakage risk into a resource that does pose a methane leakage risk. As explained above, zero-leakage methane systems are not plausible in practice; to the extent that the Proposed Project avoids CO_2 emissions from the baseline case, it does so by converting them into much higher-impact methane emissions.[166]

Therefore, SoCalGas improperly claims "avoided" GHG emissions, when in fact emissions are not avoided and will likely increase, in direct contravention of the applicable CARB regulations and D.22-02-025. This evidence provides yet another basis for rejecting its claim of GHG reductions from the Proposed Project.

[165] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 8:31-32.
[166] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 8:32-9:4.

3. SoCalGas improperly claims GHG reductions from speculative carbon capture and storage.

The Proposed Project's purported climate benefits also depend on invalid assumptions regarding future CCS, demonstrating a lack of rigorous analysis and that the Project's climate impacts should therefore be evaluated primarily on the no-CCS use case.[167]

First, woody biomass gasification with CCS has not been commercially demonstrated, and analysis has suggested that even if the technology succeeds, costs would be extremely high.[168] SoCalGas cannot indicate if any of the CCS projects that it cites as support for its carbon capture estimates resemble the Proposed Project or if any of their claimed capture rates have actually been achieved.[169]

Second, the feasibility of CCS at this site and with this contingent budget is uncertain at best. SoCalGas speculates about which technologies it may use to separate CO_2 from the waste gases before that CO_2 can be compressed to enable later sequestration.[170] This lack of basic project design features renders the proposal deficient. Dr. Grubert testifies, "[w]ithout far more detail on the CCS project's technological challenges, costs, and contingencies, it is my opinion that the CCS element should be considered unlikely to move forward[.]"[171]

Third, there is insufficient information about the fate of captured CO_2 to evaluate the GHG emissions of the CCS use case. SoCalGas says nothing about how that captured CO_2 will be sequestered to provide the speculative CI benefit it simply assumes. SoCalGas admits that "[c]ontinuously capturing CO2 for long term onsite storage will not be practical so implementation of [carbon dioxide removal] will be dependent on having an offtake partner for carbon dioxide."[172] Without a known buyer and

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[167] SC-02, Sierra Club Sur-Rebuttal Testimony, Grubert at 13.
[168] SC-01R, Sierra Club Direct Testimony, Grubert at 13:7-9 (citing California Energy Commission, Renewable Natural Gas Production from Woody Biomass via Gasification and Fluidized-Bed Methanation (2020), https://www.energy.ca.gov/publications/2020/renewable-natural-gas-production-woody-biomass-gasification-and-fluidized-bed).
[169] SC-08, SoCalGas Response to Sierra Club Data Request 6, Response 6-20(a) at 59; SC-09, SoCalGas Response to Sierra Club Data Request 7, Response 7-12(a) at 24.
[170] SC-01R, Sierra Club Direct Testimony, Sahu at 27:20-21; SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-12 to JLMS-13; SC-04, SoCalGas Response to Sierra Club Data Request 2, Response 2-14(e) at 27 ("CO2 in the flue stream will also be captured, labeled 'exhaust' in Lane 2 of the Process Flow Diagram. There are supplier technologies being considered that separate the CO2 from this stream including adsorption and filtration.").
[171] SC-01R, Sierra Club Direct Testimony, Grubert at 13:13-16; *see also* SC-01R, Sierra Club Direct Testimony, Grubert at 15:3-5 ("In my opinion, there is insufficient information about the fate of captured CO_2 to evaluate the GHG emissions of the CCS use case. Therefore, in my opinion, the reported CI score for this use case is not supported.").
[172] SC-01R, Sierra Club Direct Testimony, Sahu at 28:1-3; SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-13.

storage site for the CO_2, the assumption of long-term carbon capture is unsupported.[173] Thus, even if the CCS were successfully implemented (which is highly unlikely), the CI scores estimated in the Tan Model and Memo are inaccurate because they do not reflect the ultimate fate of the captured CO_2.[174]

Finally, as Dr. Grubert observes, for a small project like the Proposed Project, given the lack of commercially available CO_2 storage facilities, reemission of the CO_2 is a major concern if the captured CO_2 is converted to a fuel (which releases the CO_2 when burned), used for commercial purposes like beverages or greenhouse agriculture, or stored in a manner that offsets natural CO_2 uptake (e.g., in concrete).[175] If the CO_2 were to be geologically stored, "SoCalGas would need to provide estimates of reservoir leakage in addition to demonstrating access to funding and permits to secure CO_2 transportation and geologic storage, which is typically understood to rely on a type of well (Class VI)."[176] SoCalGas has provided none of this information.

Given these fundamental gaps and uncertainties in the feasibility of CCS and the fate of the captured carbon, SoCalGas's claimed CI scores for the Proposed Project with CCS are unsupported and cannot provide a basis for a finding of GHG reductions.

Notably, Dr. Grubert's evaluation is based on deep expertise in CCS. By contrast, SoCalGas's witnesses have no expertise with CCS.[177] Dr. Grubert has been modeling CCS in the energy sector since 2010.[178] From 2021-2022, she was the Deputy Assistant Secretary for Carbon Management at the US Department of Energy, where she was responsible for an office with a ~$1 billion/year budget related to research and development on CCS for power, industrial, and carbon removal purposes, as well as non-CCS based forms of carbon removal.[179] She also currently serves on the Board of the Carbon Removal Institute and is an expert reviewer for carbon removal for Frontier Climate, a major purchaser of carbon removal capacity.[180] Dr. Summers, on the other hand, has "participated in R&D projects that have

[173] SC-01R, Sierra Club Direct Testimony, Sahu at 28:4-5 ("To my knowledge, there is no offtake agreement in place. Therefore, the feasibility of carbon capture at the Project is still unclear.").
[174] SC-01R, Sierra Club Direct Testimony, Grubert at 13:17-21.
[175] SC-01R, Sierra Club Direct Testimony, Grubert at 13:21-26.
[176] SC-01R, Sierra Club Direct Testimony, Grubert at 13:26-30.
[177] SC-08, SoCalGas Response to Sierra Club Data Request 6, Response 6-20(c) at 61; *see* SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-21 to JLMS-22 (qualification statements for Mr. Lucas and Dr. Summers omitting experience as to CSS).
[178] SC-01R, Sierra Club Direct Testimony, Grubert at 2:17-26.
[179] SC-01R, Sierra Club Direct Testimony, Grubert at 2:17-21.
[180] SC-01R, Sierra Club Direct Testimony, Grubert at 2:21-23.

included CO2 separation from syngas, tailgas, and flue gas" but does not list those projects, whether they were successful, and whether they actually captured and stored CO_2.[181]

4. The record shows the Proposed Project will almost certainly increase GHGs.

Rather than reduce GHGs, as required by the Commission and governing CARB regulations, the Proposed Project is likely to increase GHGs, in direct contravention of California law and policy.

First, as detailed above in Section II.B(1)(a), the evidence shows that, because of methane leakage through the gas system, any intentionally produced methane will increase emissions—regardless of the source of the methane.

Second, even assuming methane emissions are zero, which is extremely unlikely for the reasons detailed in Section II.B(1)(a), correction of SoCalGas's analytical errors related to accounting for biogenic CO_2 indicates that the counterfactual base case would have lower GHG emissions than the Proposed Project.[182]

Third, simply demonstrating that the emissions from the Proposed Project could be lower than those from fossil fuel-based vehicle fuels, as SoCalGas submits,[183] is not the same as demonstrating reduced GHGs from this Proposed Project. California is rapidly electrifying its transportation fleet and decarbonizing its economy in conformity with its GHG reduction and air quality laws. The assumption that vehicles will use fossil CNG but for the introduction of Bio-SNG from the Proposed Project is thus unreasonable and inconsistent with state policy and progress.[184]

As a result, the Proposed Project is not consistent with the California goal, reiterated in D.22-02-025, of reducing SLCPs and other GHGs.[185] Rather than reducing SLCPs and GHGs, the Proposed Project will almost certainly increase them.

III. The Proposed Project would emit harmful pollutants in ESJ communities, in direct contravention of the Commission's ESJ Action Plan.

The Commission has published an ESJ Action Plan that "serves as both a commitment to furthering principles of environmental and social justice, as well as an operating framework with which to integrate ESJ considerations throughout the agency's work."[186] Goal 2 of the ESJ Action Plan involves investing in clean energy to benefit ESJ communities, "especially to improve local air quality

[181] SC-08, SoCalGas Response to Sierra Club Data Request 6, Response 6-20(c) at 61.
[182] SC-01R, Sierra Club Direct Testimony, Grubert at 14:6-15.
[183] SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-16:14 to JLMS:17:1.
[184] *See* SC-01R, Sierra Club Direct Testimony, Grubert at 14:16-19.
[185] D.22-02-025 at 3, 25-26.
[186] CPUC, Environmental & Social Justice Action Plan, Version 2.0 (Apr. 7, 2022) at 2.

and public health."[187] Objectives within this goal include "addressing ongoing and legacy impacts in ESJ communities in the resilient, clean energy space," and "continu[ing] to make prioritized resilient, clean energy investments in ESJ communities."[188]

Goal 9 involves monitoring the CPUC's environmental and social justice efforts to understand whether they are achieving their objectives.[189] Objective 9.1, for instance, pertains to "pursuing opportunities to standardize metrics related to ESJ communities in CPUC programs and proceedings," and Objective 9.2 relates to cultivating feedback "from the public and demonstrating resulting impact back to members of the public."[190]

This proceeding's scope includes the issue of the impact of the Proposed Project on ESJ communities.[191] As explained below, the record shows that the approval of the Application would be inconsistent with Goals 2 and 9 of the ESJ Action Plan because there is no monitoring plan included in the application, and the proposed facility would be a new source of pollution in an already polluted and disadvantaged part of California's Central Valley.

A. The facility would be located in a disadvantaged community with already unhealthy air.

The Proposed Project will be located in Kerman, CA. Data from the U.S. Environmental Protection Agency ("EPA") indicate that the region is out of attainment for Particulate Matter ("PM") 2.5 and ozone under the Clean Air Act, with nonattainment severity levels at "serious" and "extreme" respectively.[192] Because the air does not meet national air quality standards for these pollutants, it is unhealthy for humans to breathe.[193]

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[187] SC-01R, Sierra Club Direct Testimony, Sahu at 38:11-12 (citing CPUC, Environmental & Social Justice Action Plan, Version 2.0 (Apr. 7, 2022) at 23-24).
[188] SC-01R, Sierra Club Direct Testimony, Sahu at 38:12-15 (citing CPUC, Environmental & Social Justice Action Plan, Version 2.0 (Apr. 7, 2022) at 24) (alterations adopted).
[189] SC-01R, Sierra Club Direct Testimony, Sahu at 38:24-25 (citing CPUC, Environmental & Social Justice Action Plan, Version 2.0 (Apr. 7, 2022) at 26).
[190] SC-01R, Sierra Club Direct Testimony, Sahu at 38:25-26 to 39:1-2 (citing CPUC, Environmental & Social Justice Action Plan, Version 2.0 (Apr. 7, 2022) at 26) (alterations adopted, typo corrected).
[191] Scoping Memorandum and Ruling at 3 ("What, if any, are the impacts on environmental and social justice communities, including the extent to which the Proposed Project impacts the achievement of any of the nine goals of the Commission's Environmental and Social Justice Action Plan.").
[192] SC-01R, Sierra Club Direct Testimony, Sahu at 36:8-13 to 37:1-5; U.S. EPA, "Current Nonattainment Counties for All Criteria Pollutants" (last updated July 31, 2026), https://www3.epa.gov/airquality/greenbook/ancl.html#CA.
[193] SC-01R, Sierra Club Direct Testimony, Sahu at 37:6-10; *see* U.S. EPA, "Process to Determine Whether Areas Meet the NAAQS (Designations Process)" (last updated Nov. 5, 2025), https://www.epa.gov/criteria-air-pollutants/process-determine-whether-areas-meet-naaqs-designations-process.

Similarly, based on the results on CalEnviroScreen 4.0,[194] the area ranks in the 88th percentile for pollution burden[195] and is majority low-income[196] and Hispanic.[197] Kerman, CA is therefore an "Environmental and Social Justice Community" as defined by the Commission[198] and a "disadvantaged community" as defined by CalEnviroScreen.[199] The CalEnviroScreen designation of "disadvantaged community" extends to multiple jurisdictions near the facility, such as Kerman to the north, Raisin City to the east, Helm to the south, and San Joaquin to the west, as well as the area between population centers and the facility's address.[200] The below figure is an excerpt of the CalEnviroScreen map of

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[194] *See* SC-01R, Sierra Club Direct Testimony, Sahu at 35:9-19 to 36:2-3 (citing State of California Office of Env't Health Hazard Assessment, "CalEnviroScreen4.0" (last visited Mar. 13, 2026); https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40).

[195] SC-01R, Sierra Club Direct Testimony, Sahu at 35:14-15 (citing State of California Office of Env't Health Hazard Assessment, "CalEnviroScreen 4.0" (last visited Mar. 13, 2026), https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40 (a search for "8325 S Madera Ave, Kerman, CA, 93630, USA." in the Map of CalEnviroScreen 4.0 Indicators generated an 88th percentile result for pollution burden); *see* SC-14, SoCalGas Response 1a to Cal Advocates Data Request 1, Response 4 at 4 (listing an address of "8325 S. Madera Ave, Kerman, CA 93630" on image of Proposed Project site).

[196] SC-01R, Sierra Club Direct Testimony, Sahu at 35:18-19, (citing State of California Office of Env't Health Hazard Assessment, "CalEnviroScreen 4.0" (last visited Mar. 13, 2026), https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40 (a search for "8325 S Madera Ave, Kerman, CA, 93630, USA." in the Map of CalEnviroScreen 4.0 Indicators revealed that, in this area, "the percent of people living below twice the poverty level is higher than 74% of the census tracts in California")).

[197] SC-01R, Sierra Club Direct Testimony, Sahu at 35:18-19 (citing State of California Office of Env't Health Hazard Assessment, "CalEnviroScreen 4.0" (last visited Mar. 13, 2026), https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40 (a search for "8325 S Madera Ave, Kerman, CA, 93630, USA" in the CalEnviroScreen 4.0 Data Dashboard generated a majority Latino race/ethnicity result)).

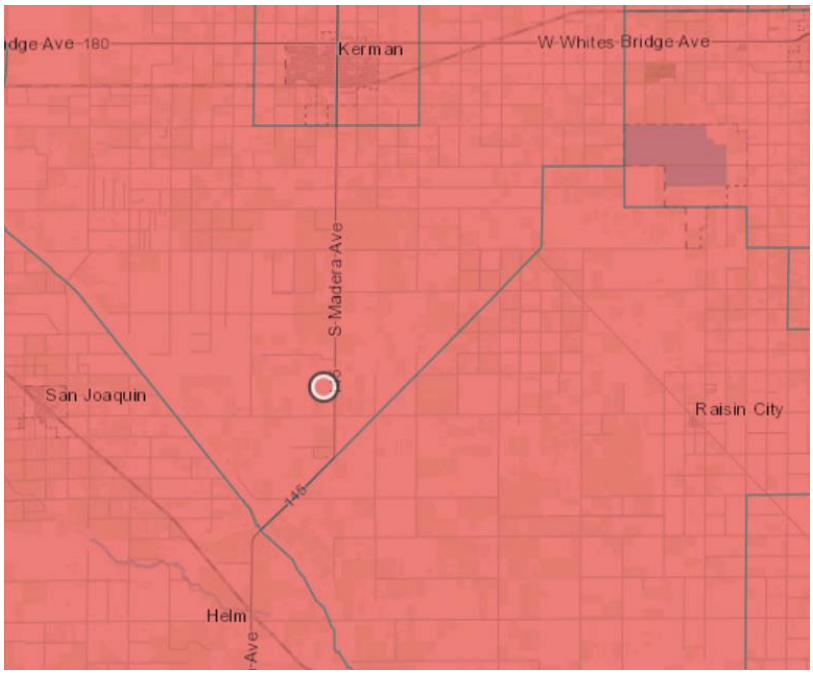
[198] SC-01R, Sierra Club Direct Testimony, Sahu at 36:7 (citing CPUC, Environmental & Social Justice Action Plan, Version 2.0 (Apr. 7, 2022) at 11-12 (defining Environmental and Social Justice Communities as "low-income or communities of color that have been underrepresented in the policy setting or decision-making process, are subject to a disproportionate impact from one or more environmental hazards, and likely to experience disparate implementation of environmental regulations and socio-economic investments in their communities[,]" as well as "Disadvantaged Communities, defined as census tracts that score in the top 25% of CalEnviroScreen 3.0, along with those that score within the highest 5% of CalEnviroScreen 3.0's Pollution Burden but do not receive an overall CalEnviroScreen score; all Tribal lands; low-income households; and low-income census tracts")).

[199] SC-01R, Sierra Club Direct Testimony, Sahu at 36:2-3 (citing State of California Office of Env't Health Hazard Assessment, "SB 535 Disadvantaged Communities" (last visited Mar. 13, 2026), https://oehha.ca.gov/calenviroscreen/sb535 (a search for "8325 S Madera Ave, Kerman, CA, 93630, USA." in the SB535 Disadvantaged Communities map generated a "Disadvantaged Community" designation, as indicated by red shading)).

[200] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 27:4-10 to 28:2-3 (citing State of California Office of Env't Health Hazard Assessment, "SB 535 Disadvantaged Communities" (last visited June 11, 2026), https://oehha.ca.gov/calenviroscreen/sb535 (A search for the address of the proposed Project—"8325 S Madera Ave, Kerman, CA, 93630, USA" as indicated in SoCalGas's December 22, 2025 Response 4 to Cal Advocates' December 8, 2025 data request (facility address in image)—in the SB 535 Disadvantaged Communities map

disadvantaged communities, indicated in red. The black circle indicates the facility's proposed location, and the dark lines are the borders of census tracts.

Figure 2: Excerpt of Map Results from Search for Project Facility Address in CalEnviroScreen SB 535 Disadvantaged Communities Tool.[201]



Given the disadvantaged status of the area surrounding the facility, the Proposed Project's hazardous emissions, as described below, would impact people living, working, recreating, studying in, or traveling through this already overburdened area.[202]

B. The record shows that the Proposed Project facility would be a new source of emissions that emit a wide range of pollutants.

The evidence shows that the Proposed Project would emit a wide range of pollutants and worsen air quality in the disadvantaged communities surrounding the Proposed Project.

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generated a "Disadvantaged Community" designation in its surrounding region as indicated by red shading. Nearby jurisdictions visible on this map.)).

[201] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 28. Dr. Sahu created this Figure from this CalEnviroScreen tool: https://experience.arcgis.com/experience/1c21c53da8de48f1b946f3402fbae55c/page/SB-535-Disadvantaged-Communities, by searching for 8325 S Madera Ave, Kerman, CA, which is the facility address, according to SoCalGas (citing SoCalGas's December 22, 2025 Response 4 to Cal Advocates' December 8, 2025 data request (facility address in image); SC-01R, Second Corrected Revised Testimony, Attach. 1 at 1 ("At the request of West Biofuels (WBF), the project-specific greenhouse gas and criteria pollutant emissions were analyzed for the proposed Bio-SNG project at the Central California Almond Growers Association (CCAGA) facility located at 8325 S Madera Ave, Kerman, CA 93630.")). He excerpted the part of the map which shows the facility, Kerman, CA, and portions of nearby census tracts.

[202] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 25-29.

First, SoCalGas's Second Corrected Revised Testimony establishes an increase in VOCs from 1.53 mg/MJ in the base case to 2.04 mg/MJ and 2.88 mg/MJ in the use case, with and without CCS, respectively.[203] VOCs and air toxics include benzene, toluene, xylenes, hexane, formaldehyde, various polycyclic aromatic compounds, and numerous metals.[204] Many air toxics are VOCs.[205] VOCs can cause harmful health impacts;[206] for instance, benzene and formaldehyde are known carcinogens.[207] The increase in VOCs from the Proposed Project would thereby add a new source of pollution in a location already experiencing high pollution levels.[208]

Second, as stated in the Second Corrected Revised Testimony, the Proposed Project will increase NOx from 19.69 mg/MJ in the base case to 24.86 in the use case with CCS.[209] NOx are harmful to human health; short exposures can "aggravate respiratory diseases, particularly asthma" and longer exposures to elevated levels "may contribute to the development of asthma and potentially increase susceptibility to respiratory infections."[210] With the increase in NOx, the Proposed Project will thereby degrade air quality and adversely affect health impacts in the ESJ communities nearby the facility.[211]

The Proposed Project will also emit numerous other pollutants. These include GHG emissions

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[203] SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-15 (Table 1: Baseline Carbon Intensity and Criteria Pollutant Emissions), JLMS-16 (Table 2: Bio-SNG Use Case Carbon Intensity and Criteria Pollutant Analysis).
[204] SC-01R, Sierra Club Direct Testimony, Sahu at 33:4-6.
[205] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 29:11 (citing U.S. EPA, "Background: What are air toxics and why are they important?" (June 2009) at 3, https://www3.epa.gov/ttnamti1/files/ambient/airtox/workbook/AirtoxWkbk3Background.pdf ("Air toxics include the following general categories of compounds: volatile and semi-volatile organic compounds (VOCs, SVOCs), polycyclic aromatic hydrocarbons (PAHs), heavy metals, and carbonyl compounds.")).
[206] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 29:16-19 to 30:1-3; U.S. EPA, "Volatile Organic Compounds' Impact on Indoor Air Quality" (last updated June 23, 2026), https://www.epa.gov/indoor-air-quality-iaq/volatile-organic-compounds-impact-indoor-air-quality ("Health effects may include: Eye, nose and throat irritation[;] Headaches, loss of coordination and nausea[;] Damage to liver, kidney and central nervous system[;] Some organics can cause cancer in animals, some are suspected or known to cause cancer in humans.").
[207] SC-01R, Sierra Club Direct Testimony, Sahu at 34:10-11; U.S. EPA, "Facts About Formaldehyde" (last updated Mar. 30, 2026), https://www.epa.gov/formaldehyde/facts-about-formaldehyde; U.S. EPA, "Volatile Organic Compounds' Impact on Indoor Air Quality" (last updated June 23, 2026), https://www.epa.gov/indoor-air-quality-iaq/volatile-organic-compounds-impact-indoor-air-quality; National Cancer Institute, "Formaldehyde and Cancer Risk" (last reviewed June 10, 2011), https://www.cancer.gov/about-cancer/causes-prevention/risk/substances/formaldehyde/formaldehyde-fact-sheet.
[208] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 30:1-2.
[209] SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-15 (Table 1: Baseline Carbon Intensity and Criteria Pollutant Emissions), JLMS-16 (Table 2: Bio-SNG Use Case Carbon Intensity and Criteria Pollutant Analysis).
[210] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 30:9-12; U.S. EPA, "Basic Information about NO_2" (last updated June 24, 2026), https://www.epa.gov/no2-pollution/basic-information-about-no2.
[211] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 30:9-16.

such as methane and CO_2, GHG emissions from nitrous oxide ("N_2O"), and numerous criteria and hazardous air pollutants, including NOx, carbon monoxide ("CO"), and various sizes of particulate matter like PM_{10} and $PM_{2.5}$, [212] which are considered "criteria pollutants."[213] The facility will thus bring the area surrounding the Proposed Project further out of attainment for $PM_{2.5}$ and ozone.

In sum, the Proposed Project would exacerbate the health harms caused by polluted air, add to the high pollution burden that this ESJ already bears, and contravene the Commission's ESJ Action Plan.

C. SoCalGas's reliance on "avoided" baseline emissions is unavailing because those purportedly avoided emissions could occur far from Kerman and nearby communities.

SoCalGas attempts to explain away this increase in VOCs and NOx compared to baseline conditions by claiming that these increases are far from populated areas, minor when compared to the alleged air quality "benefits" of the Proposed Project,[214] and that future air permitting will address the risks.[215] These arguments are unfounded.

First, SoCalGas's base case emissions data are uncertain. SoCalGas admits that its witnesses did not verify the accuracy of the CCAGA-estimated base case disposal methods and quantities, which were apparently communicated in a phone call.[216] In addition, the "avoided emissions" associated with the base case[217] include air curtain burning and diesel-intensive wood chipping operations whose geographic coordinates are unknown and will vary annually;[218] these could be located anywhere in the CCAGA service area, spanning approximately 55 miles to the northwest and 50 miles to the southeast of the Proposed Project site.[219]

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[212] SC-01R, Sierra Club Direct Testimony, Sahu at 32:30-31 to 33:1-6 (citing SC-05, SoCalGas Response to Sierra Club Data Request 3, Question 3-2(d)).
[213] SC-01R, Sierra Club Direct Testimony, Sahu at 33:2-4; California Air Resources Board, "Criteria Pollutants," https://ww2.arb.ca.gov/criteria-pollutants.
[214] SCG-03, SCG Rebuttal Testimony at JLMS-9 to JLMS-10 (alleging that the Proposed Project "is expected to deliver meaningful local air-quality benefits for ratepayers in the San Joaquin Valley").
[215] SCG-03, SCG Rebuttal Testimony at JLMS-29 to JLMS-30.
[216] *See* SC-12, SoCalGas Response to Data Request 10, Response 10-2(a) at 2, 10-2(b) at 3.
[217] SC-09, SoCalGas Response to Data Request 7, Response 7-4(a) at 7 ("The 'avoided' emissions are those generated by the current disposal fate of the biomass: air curtain burning, biomass power generation, and diesel-intensive chipping/loading operations, etc. Without the SB 1440 Pilot Project, these practices will release criteria air pollutants and GHGs into the San Joaquin Valley."); *see also* SC-09, SoCalGas Response to Data Request 7, Amended Question 7-4(c)(a) Response at 29.
[218] *See, e.g.*, SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 32:10-20; SC-08, SoCalGas Response to Sierra Club Data Request 6, Question 6-10(a) at 23, 6-10(c) at 25.
[219] SC-11, SoCalGas Response to Sierra Club Data Request 9, Response 9-1 at 1.

Sierra Club witness Dr. Sahu analyzed SoCalGas's emissions data. Dr. Sahu has more than 35 years of experience in environmental, mechanical, and chemical engineering fields; has served as an air pollution adjunct faculty member at numerous universities; has conducted, supervised, or reviewed more than 500 human health risk assessments; and has evaluated at least 30-40 pilot projects in a number of industries, including the woody biomass pilot project proposed by PG&E in A.23-06-023, which the Commission rejected.[220] As he explains, the one source of base case emissions that is known—the biomass plant located in Stockton, CA—is approximately 130 miles from the facility.[221] Assuming that there are actual emissions decreases from the plant as a result of the Proposed Project that are experienced in the community surrounding the facility (which is itself questionable), those decreases would provide only an incremental health impact, if any, to the people in Kerman, Raisin City, Helm, and San Joaquin who experience a certain increase in emissions from the facility.[222]

Thus, given the deficiencies in the base and use case calculations, there is unlikely to be any "benefit[]" to the nearby ESJ community.[223] As Dr. Sahu testifies, if all of the air curtain burning and diesel chipping is currently occurring a significant distance from the facility, then even under SoCalGas's own approach for evaluating impacts, it cannot claim an air quality "benefit" to the "community" near the facility based on a comparison of the base case (occurring far from the facility) and the use case (occurring at or near the facility location).[224] In other words, the ESJ communities impacted by the facility will experience the use case increase in pollution from the Proposed Project without any decrease of the alleged base case emissions if those base case emissions are currently occurring elsewhere.[225] Therefore, the conclusion of Dr. Summers that there will be "Community Benefits" from the Proposed Project is pure speculation and lacks evidentiary support.[226]

Third, the distance from populated areas is immaterial when considering the air impacts of the

[220] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 21:12-23; SC-01R, Sierra Club Direct Testimony, Sahu at 18:25-34 to 19:3-4; SC-01R-Atch-B, Resume of Dr. Sahu.
[221] SC-12, SoCalGas Response to Sierra Club Data Request 10, Response 10-1 at 1.
[222] SCG-09, Sierra Club Response to SoCalGas Data Request 5, Response 4 at 5, 5 at 5; SCG-10, Sierra Club Response to SoCalGas Data Request 6, Response 1 at 2, 2(b) at 5.
[223] *See, e.g.*, SCG-03, SCG Rebuttal Testimony at JLMS-32 (claiming that the Proposed Project "will provide meaningful benefits to disadvantaged communities").
[224] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 31:3-7.
[225] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 31:7-11.
[226] SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-17 (claiming that "[i]n addition to the emission reductions, WBF plans to support the local community through inclusive community engagement, workforce development, and environmental stewardship").

Proposed Project. As Dr. Sahu testifies, the proper metric to consider the exposures is at the fenceline,[227] and the Scoping Memo and Ruling does not limit "environmental and social justice communities" to population centers, as suggested by Dr. Summers in Rebuttal Testimony.[228] Only considering populated areas overlooks people who live, work, study, recreate, and/or travel near the facility. In addition, SoCalGas has not analyzed whether there are residences close to the facility[229] nor nearby sensitive receptors[230] (those with a heightened risk of negative health from air pollution)[231] and unrealistically assumes static background levels and no future land use changes.[232]

Finally, SoCalGas's claim that future air permitting will address these risks is hollow.[233] Certain facilities must conduct health risk assessments to determine the impact of their operations on ambient air and the risk to the local community.[234] Without a health risk assessment for the Proposed Project, the concentration of air toxics at the fenceline is unknown.[235] As Dr. Sahu explained, if results indicate impacts exceeding health risk thresholds, facilities must reduce such risks before operating.[236] The Commission must consider the risks to ESJ communities in its decision of whether to approve this Proposed Project, and barring a pre-approval health risk assessment, any allegation of low risk is mere conjecture.[237]

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[227] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 18:10-12 (citing U.S. EPA, "Revised Policy on Exclusions from 'Ambient Air,'" https://www.epa.gov/nsr/revised-policy-exclusions-ambient-air-0 (last updated Dec. 15, 2025)).

[228] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 20:16-21; Scoping Memorandum and Ruling at 3; SCG-03, SoCalGas Rebuttal Testimony at JLMS-29 to JLMS-30.

[229] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 25:9-10.

[230] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 26:5-21; SC-08, SoCalGas Response to Sierra Club Data Request 6, Supplemental Response 6-8(b) at PDF page 63.

[231] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 25:21-24 to 26:1-8 (citing California Air Resources Board, "Sensitive Receptor Assessment," https://ww2.arb.ca.gov/capp/cst/rdi/sensitive-receptor-assessment; San Joaquin Valley Air Pollution Control District, "Air Toxics Program: Public Notification," https://ww2.valleyair.org/permitting/air-toxics-program/resources-for-regulated-facilities/public-notification/).

[232] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 32:12-14.

[233] SC-10, SoCalGas Response to Sierra Club Data Request 8, Response 8-9(b) at 19 ("A formal, site-specific Health Risk Assessment (HRA) will be finalized and verified by the [San Joaquin Valley Air Pollution Control District] as a mandatory component of the post-approval permitting process to confirm that impacts remain well below significance thresholds.").

[234] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 22:7-13.

[235] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 24:9-18.

[236] *See* SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 22:11-13 (citing San Joaquin Valley Air Pollution Control District, "APR – 1906: Framework for Performing Health Risk Assessments" at 1-2, https://ww2.valleyair.org/media/0shm0mlk/apr-1906.pdf (last updated Feb. 12, 2020)).

[237] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 23-26; Scoping Memorandum and Ruling at 3.

D. The experimental nature of the Proposed Project heightens the risk of accidental pollution exposure in surrounding ESJ communities, and SoCalGas did not evaluate this risk.

In addition to misrepresenting community air "benefits" based on a comparison of base case and project case scenarios,[238] SoCalGas has also entirely failed considered air toxics impacts and health risks from accidental events. For this additional reason, Dr. Summers' statements that the facility would have "[n]egligible" local air quality impacts due to facility distance to the "population center" lack support.[239]

In the Application, "SoCalGas acknowledges that woody biomass pilot projects involve nascent technology with inherent construction and operation risks."[240] In other words, the Proposed Project is "an industrial scale experiment."[241] Thus far, neither SoCalGas nor West Biofuels has conducted an accidental risk assessment of these new technologies.[242] While such an assessment is not explicitly required by the governing decisions, it is relevant to the issue of ESJ community impacts and must be considered. Accidental risks include the "unanticipated emission of a regulated substance or other extremely hazardous substance into the ambient air[,]" in other words, fires or explosions.[243] An accidental risk assessment is formally conducted based on quantities of substances stored on a property and subject to the general duty clause of the Clean Air Act.[244] It evaluates the probability and consequences of non-routine risks that could lead to harmful exposures to the nearby ESJ community.[245]

SoCalGas's failure to conduct an accidental risk assessment to fully present the risk of accidental pollution to the ESJ community is thus another reason for the Commission to reject SoCalGas's application.

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[238] SCG-03, SCG Rebuttal Testimony at JLMS-9 to JLMS-10 (alleging that the Proposed Project "is expected to deliver meaningful local air-quality benefits for ratepayers in the San Joaquin Valley").
[239] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 33:3-25; SCG-03, SoCalGas Rebuttal Testimony at JLMS-29 to JLMS-30.
[240] Application at 3.
[241] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 33:18-19.
[242] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 33:7-25.
[243] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 33:10-12, 33:23-24 (citing 42 U.S.C. § 7412(r)(2)(a) (defining "accidental release")).
[244] SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 33:12-14 (citing 42 U.S.C. § 7412(r)(1) ("It shall be the objective of the regulations and programs authorized under this subsection to prevent the accidental release and to minimize the consequences of any such release of any substance listed pursuant to paragraph (3) or any other extremely hazardous substance. The owners and operators of stationary sources producing, processing, handling or storing such substances have a general duty in the same manner and to the same extent as section 654 of Title 29 to identify hazards which may result from such releases using appropriate hazard assessment techniques, to design and maintain a safe facility taking such steps as are necessary to prevent releases, and to minimize the consequences of accidental releases which do occur.")).
[245] *See* SC-02, Sierra Club Sur-Rebuttal Testimony, Sahu at 33:7-25.

IV. The Application does not comply with the D.22-02-025's study and reporting requirements.

D.22-02-025 ordered the utilities proposing pilot projects to "study and report fugitive methane, pollutant, and particulate matter emissions and emissions reduction or elimination methods in the gasification or pyrolysis process, the methanation process, and pipeline infrastructure."[246] For several reasons, the Application fails to meet this important requirement.

A. The Proposed Project's methane leakage detection technology is inadequate because it is not sufficient to detect fugitive leaks.

As noted above, SoCalGas intends to monitor methane to detect leaks at the gasification facility that are prohibited for safety reasons.[247] The record shows that such methods do not detect low levels of methane emissions that will likely occur as a result of the Proposed Project.[248] The evidence also shows that such low levels of leakage are highly relevant for purposes of determining the Project's GHG emissions impacts; any intentionally produced methane that escapes from the system is GHG-positive and contributes to climate change.[249] Further, SoCalGas has not determined the exact equipment it will use. It indicates it will do so only after the CPUC approves the Application.[250] SoCalGas has no plan to monitor methane leakage that will inevitably occur during methane transportation and use down the supply chain.

B. SoCalGas does not propose a monitoring system for health-harming pollutants.

As explained above, the proposed facility will emit pollutants from both the exhaust and the flare.[251] Monitoring at both sources is insufficient. With respect to the exhaust, SoCalGas does not propose to use any form of exhaust monitoring. It merely states that such monitoring, if it is required by the air district, may include certain methods.[252] With respect to the flare, SoCalGas proposes to study emissions by merely monitoring the hours of operation of the flare[253] and then using generic emission factors (that it will get from its supplier) to estimate emissions.[254] This method does not provide an

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[246] D.22-02-025 at OP 43 at 68.
[247] SC-16, SoCalGas Response to Cal Advocates Data Request 2, Response 5 at 9.
[248] SC-01R, Sierra Club Direct Testimony, Sahu at 33:16-21, 39:24-30.
[249] SC-01R, Sierra Club Direct Testimony, Grubert at 11:15-25; SC-17-Atch-C, Grubert, Emily. 2020. "At Scale, Renewable Natural Gas Systems Could Be Climate Intensive: The Influence of Methane Feedstock and Leakage Rates." Environmental Research Letters 15 (8): 084041. https://doi.org/10.1088/1748-9326/ab9335.
[250] SC-07, SoCalGas Response to Sierra Club Data Request 5, Response 5-2(a) at 5, 5-2(b) at 6; SC-16, SoCalGas Response to Cal Advocates Data Request 2, Response 3(b) at 6.
[251] See *supra* at 6.
[252] SC-05, SoCalGas Response to Sierra Club Data Request 3, Response 3-2(c) at 4, 3-2(d) at 5; SC-07, SoCalGas Response to Sierra Club Data Request 5, Response 5-9(d) at 29, 5-9(e) at 30.
[253] SC-05, SoCalGas Response to Sierra Club Data Request 3, Response 3-2(c) at 4.
[254] SC-04, SoCalGas Response to Sierra Club Data Request 2, Response 2-14(a) at 23.

accurate picture of actual emissions. As Dr Sahu explains, since the quantities of syngas that will be flared are not being monitored, simply monitoring hours cannot provide estimates of pollutant mass emissions.[255] Further, the flare emissions could be directly measured at the stack using continuous monitoring systems ("CEMS") for NOx, $PM_{2.5}$, CO, and other emissions and also by conducting periodic, representative, stack testing for other pollutants including air toxics.[256] SoCalGas does not propose any of these methods.

SoCalGas has therefore failed to comply with the Commission's direction in D.22-02-025, and the Commission should accordingly deny the Application. Critically, even if SoCalGas had proposed a rigorous study and reporting system (which it clearly has not), SoCalGas cannot overcome the fundamental, threshold flaws in its Application that require the Commission to reject it: (1) SoCalGas has not proposed a "pilot project" because its funding of a gasification facility is entirely contingent upon funds leftover after it has invested the ratepayer dollars in its own infrastructure, and (2) even if SoCalGas had proposed a pilot project, it has not demonstrated GHG reductions.

V. The Proposed Project is neither a just nor reasonable use of ratepayer funds.

SoCalGas incorrectly claims that "[r]atepayers will benefit from the SB 1440 Pilot Project because the WBF Facility is expected to provide emission reductions compared to typical biomass disposal practices from the almond industry (without the SB 1440 Pilot Project)."[257] As detailed above, there will not be emissions reductions from the Proposed Project and instead there is a near certainty of emissions increases of both GHG emissions and other harmful localized pollutants. This is neither a just nor reasonable use of ratepayer funds. During this era of high utility rates, affordability stresses, and climate vulnerability, the Commission must ensure ratepayer funds go toward investments that will yield long-term benefits for Californians and that bring the State closer to its climate, equity, and air quality goals. This risky and costly experiment meets none of these criteria. The funds should be returned to ratepayers' pockets.

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[255] SC-05, SoCalGas Response to Sierra Club Data Request 3, Response 3-2(c) at 4; SC-01R, Sierra Club Direct Testimony, Sahu at 40:25-31.
[256] SC-01R, Sierra Club Direct Testimony, Sahu at 41:1-4. CEMS has been implemented by U.S. EPA for NOx and CO for numerous sources for at least the last 30 years. *See* Sahu SC-01R, Sierra Club Direct Testimony, Sahu at 41:1-13 (citing U.S. EPA, "California /Maintenance Status for Each County by Year for All Criteria Pollutants" (last updated Feb. 28, 2026), https://www3.epa.gov/airquality/greenbook/anayo_ca.html).
[256] SC-01R, Sierra Club Direct Testimony, Sahu at 40:27-31.
[257] SCG-02R, SoCalGas Second Corrected Revised Testimony at JLMS-13.

CONCLUSION

Because SoCalGas has not met its burden, the Commission must deny its Application and return all funds to ratepayers.

Dated: August 28, 2026

Respectfully submitted,

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Representing Sierra Club

Exhibit A

Demonstrative exhibit indicating in highlight text from Dr. Tan's Memorandum that is repeated verbatim in Dr. Summers' Testimony

ranges from 2-4% of the biomass and is generated from the non-organic parts of the biomass. This material can be utilized as a soil amendment or in cement production.

These CDR systems are not required for operating the plant, as they are simply extra process steps to improve the overall carbon intensity of the produced Bio-SNG. The gasification, cleaning, and methanation steps can still operate without the carbon capture steps. Continuously capturing CO2 for long term onsite storage will not be practical so implementation of CDR will be dependent on having an offtake partner for carbon dioxide.

D. Permitting (Witness: Dr. Matthew Summers)

While the permitting process for this project has not yet begun, WBF is well-versed in permitting similar-scale biomass power plant projects, having successfully completed several in California. WBF estimates that it will take 8 to 12 months to obtain all required permits after submitting finalized facility drawings and a detailed description of planned operations with an application for a Conditional Use Permit with Fresno County.

The expected permits and associated environmental review for the WBF Facility include:

- Conditional Use Permit from Fresno County
- Applicable Air Quality Permit(s) from the San Joaquin Air Pollution Control District
- Building Permit from Fresno County
- Applicable CEQA review initiated by Fresno County

E. Benefits (Witness: Dr. Matthew Summers)

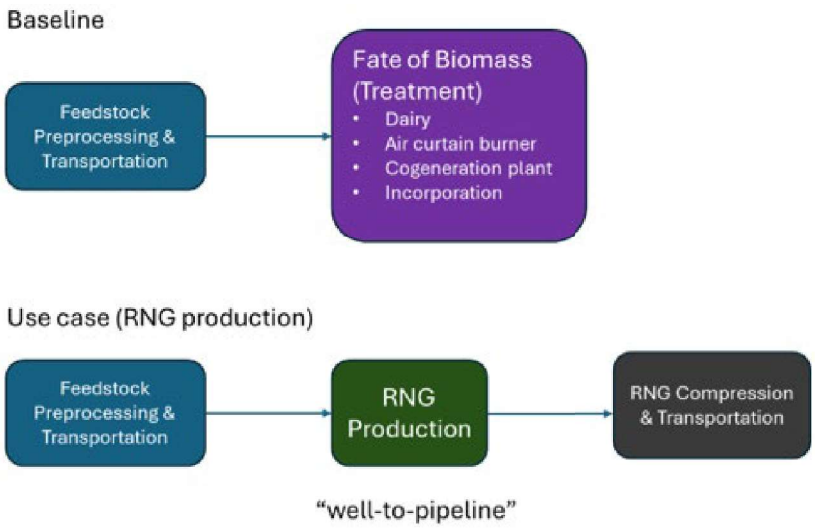
1. Ratepayer and Environmental Benefits

Ratepayers will benefit from the SB 1440 Pilot Project because the WBF Facility is expected to provide emission reductions compared to typical biomass disposal practices from the almond industry (without the SB 1440 Pilot Project). The National Renewable Energy Laboratory analyzed the project-specific GHG and criteria pollutant emissions using the Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation ("GREET") model originally developed by Argonne National Laboratory ("ANL") and used by the California Air Resources Board ("CARB") and others to quantify and compare the emissions of fuel production pathways (see Attachment 1). Specifically, CARB has developed its own adaptation called CA-GREET, which is based on ANL's GREET model. In the first step, the "well-to-pipeline" emissions for the Bio-SNG were compared to the business as usual "baseline" emissions using

the standard biomass disposal methods. In the second step, the "well-to-wheels" carbon intensity ("CI") is calculated for the compressed Bio-SNG fuel ("Bio-CNG") produced from this project.

In the "well-to-pipeline" analysis, the baseline emissions from the current and projected future biomass disposal practices of the CCAGA were analyzed. Without the development of the WBF Facility, these practices are expected to continue into the future. The baseline emissions are then compared to the Bio-SNG production use case, which is illustrated in Figure 3.

Figure 3: Comparison of Baseline Emissions to Bio-SNG Production



The baseline disposal practices for each type of biomass to be used at the WBF Facility are shown below (Table 1) along with their corresponding emissions. Almond shells, which make up approximately 20% of the feedstock, are normally delivered to dairies as feed and bedding. Of the stick piles generated from the sorting and hulling process, which accounts for approximately 10% of the total feedstock to the pilot facility, approximately half are disposed of at biomass power facilities and half are burned in air curtain incinerators ("ACI"). Of the orchard removals (older low yielding trees), which are approximately 70% of the facility feedstock, about 90% are incorporated into the soil and 10% are disposed of at biomass power facilities. Incorporation, sometimes referred to as "whole orchard recycling," is not always feasible because some fields require removal of the dead wood to prevent the transfer of disease to new plantings. The almond industry and CCAGA expect the need for off-site removal of this biomass will continue to increase with time. The WBF Facility will provide a beneficial outlet for this removed material, offsetting less desirable forms of disposal, such as air curtain burning. Table 1 shows the baseline CI's expressed in grams of carbon dioxide equivalent per potential megajoule

of Bio-SNG production (gCO2e/MJ) for each of the current disposal alternatives for the biomass. The criteria pollutant emissions associated with the disposal methods are expressed in milligrams per potential megajoule of Bio-SNG production (mg/MJ). Criteria pollutants include oxides of nitrogen ("Nox"), particulate matter less than 10 microns ("PM10"), volatile organic compounds ("VOC"), carbon monoxide ("CO"), and sulfur oxides ("Sox").

Table 1

Baseline Carbon Intensity and Criteria Pollutant Emissions

Biomass type	**%**	**Base case disposal method**	**Qty**	**CI**	**NOx**	**PM 10**	**VOC**	**CO**	**SOx**
			kg/hr	gCO2e /MJ	mg/MJ				
Almond shells	20%	100% dairy bedding	608	16.5	0.87	0.06	0.09	0.64	0.01
Sticks	10%	50% air curtain inc.	152	6.8	3.95	18.01	0.98	16.26	1.14
		50% biomass plant	152	8.2	5.07	0.12	0.07	0.90	9.32
Orchard removal	70%	90% incorporation	1914	100.9	2.73	0.18	0.29	2.00	0.04
		10% biomass plant	213	11.5	7.08	0.17	0.10	1.25	13.00
Total	100%		3038	143.9	19.69	18.55	1.53	21.05	23.53

For the use case of processing the biomass to Bio-SNG on a "well-to-pipeline" basis, the emissions include the feedstock logistics (feedstock gathering, chipping/grinding, loading, truck transport), Bio-SNG plant electricity (electric grid power), the Bio-SNG plant direct emissions, and Bio-SNG compression and transportation to the point of injection into the pipeline. Two use cases were analyzed: (1) Bio-SNG production, and (2) Bio-SNG production with carbon capture and storage (CCS). While the CCS requires energy, it captures about 80% or more of the plant CO2 emissions. Table 2 below shows the results of the two use case scenarios for Bio-SNG production.

Table 2

Bio-SNG Use Case Carbon Intensity and Criteria Pollutant Analysis

Use Case (Bio-SNG)	CI	NOx	PM10	VOC	CO	SOx
	gCO2e /MJ	mg/MJ				
Feedstock logistics	1.55	3.80	0.25	0.41	3.03	0.07
Bio-SNG plant electricity	4.01	3.91	0.46	0.63	2.14	1.42
Bio-SNG plant direct emissions	116.55	10.26	0.83	0.71	2.33	0.31
CCS						
Bio-SNG compression and transportation	1.69	1.65	0.19	0.29	4.20	0.53
Total, g/MJ Bio-SNG	123.81	19.62	1.73	2.04	11.7	2.33

Use Case (Bio-SNG w/ CCS)	CI	NOx	PM10	VOC	CO	SOx
	g CO2e/ MJ	mg/MJ				
Feedstock logistics	1.55	3.80	0.25	0.41	3.03	0.07
Bio-SNG plant electricity	4.01	3.91	0.46	0.63	2.14	1.42
Bio-SNG plant direct emissions	23.31	10.26	0.83	0.71	2.33	0.31
CCS	7.71	5.24	0.62	0.84	2.86	1.90
Bio-SNG compression and transportation	1.69	1.65	0.19	0.29	4.20	0.53
Total, g/MJ Bio-SNG	38.27	24.86	2.35	2.88	14.57	4.23

In comparing the base case to the Bio-SNG production cases, there is an overall reduction in CO2e emissions (carbon intensity) for both cases on a well-to-pipeline basis. The results also show that for almost all of the major criteria pollutants, the Bio-SNG production use cases generate less emissions than the baseline practices. In addition, the overall emissions are expected to decline steadily over time as California's electric grid continues to transition toward more decarbonized, renewable energy sources.

The CI of the Bio-SNG can be compared with other transportation fuels. It can be compared with fossil CNG and other "well-to-wheel" ("WTW") fuel pathways. The WTW analysis expands the well-to-pipeline analysis to include the GHG emissions from the vehicle operation. Because fossil CNG is the chemical equivalent of Bio-CNG, vehicle emissions are the equivalent. However, in the case of Bio-CNG, these emissions are offset by the biogenic content

of the Bio-CNG. In addition, this analysis also credits the avoided emissions from the "business as usual" disposal fate of the biomass from the baseline case (aka counterfactual credit).

With these pathway factors considered, the GREET analysis shows the Bio-SNG facility can make Bio-CNG that has a CI of 36.1 gCO2e/MJ and -49.7 gCO2e/MJ for Bio-CNG and Bio-CNG with CCS respectively (Table 3). Producing and utilizing the Bio-CNG fuel from this project will be a net carbon sink over its lifecycle. This compares very favorably to average lower sulfur diesel and North American Compressed Natural Gas ("NA-CNG"), which both have a positive CI of +90.54 gCO2e/MJ and +70.12 gCO2e/MJ respectively from the 2024 R&D GREET model.[20] WBF has plans to utilize this GREET analysis to apply for a Low Carbon Fuel Standard ("LCFS") fuel pathway with CARB to certify the Bio-SNG/Bio-CNG carbon intensity.

Table 3: WTW Carbon Intensity for Bio-CNG

	CI LS-Diesel	**CI NA-CNG**	**CI Bio- CNG**	**CI Bio-CNG with CCS**
	Units in gCO2e /MJ			
Feedstock	7.31	11.3	1.6	1.6
Fuel production	7.57	2.7	122.3	36.5
Vehicle operation	75.66	56.1	56.1	56.1
Avoided emissions	0	0	-143.9	-143.9
WTW (gCO2e /MJ)	**90.54**	**70.12**	**36.1**	**-49.7**

2. Community Benefits

In addition to the emission reductions, WBF plans to support the local community through inclusive community engagement, workforce development, and environmental stewardship. The project will offer opportunities to small and diverse businesses by collaborating with community and labor stakeholders, creating clean energy job opportunities, and encouraging participation from disadvantaged communities. Examples of anticipated community benefits include job creation in Fresno County, partnerships with local organizations, educational outreach, and the responsible use of agricultural waste to reduce pollution. Building on WBF's

[20] Argonne National Laboratory, *R&D GREET 2024 Rev1 Release* (May 23, 2025), *available at:* https://greet.anl.gov/.