

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)**  
**SIERRA CLUB-SCG-07**  
**WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)**  
**DATE REQUESTED: April 17, 2026**  
**RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-1:**

In the modeling spreadsheet provided by SoCalGas, in the Baseline Case sheet, cells C25 to B32 list GHG emissions factors attributable to different activities or fates of the woody biomass.

**QUESTION 7-1a:**

Please provide gas-specific data on each GHG emissions factors (i.e. disaggregate the methane, N<sub>2</sub>O, CO<sub>2</sub>, and any other gases)

**RESPONSE 7-1a (WBF):**

See response to Sierra Club-SCG-04 Question 4.2.

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)  
SIERRA CLUB-SCG-07  
WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)  
DATE REQUESTED: April 17, 2026  
RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-1b:**

Please indicate the witness responsible for this answer.

**RESPONSE 7-1b:**

Witness is Dr. Matthew Summers.

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)**  
**SIERRA CLUB-SCG-07**  
**WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)**  
**DATE REQUESTED: April 17, 2026**  
**RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-2:**

In Rebuttal Testimony at JLMS-14, SoCalGas testifies that its approach is consistent with “CARB Policy” and “CARB’s approach to low-carbon fuels and waste diversion strategies.”

**QUESTION 7-2a:**

Please describe both the scientific basis and precedent in carbon accounting methods generally accepted for CI calculations in California for assuming that changing the location, timing, and responsibility for emissions of CO<sub>2</sub> confers a credit for negative emissions.

**RESPONSE 7-2a (SCG):**

The scientific basis for crediting avoided emissions is a standard practice in lifecycle assessment (LCA) methodology and California’s established CI framework, which evaluates net atmospheric impact relative to a counterfactual baseline. Under 17 CCR § 95893(d)(5) and CARB’s Low Carbon Fuel Standard (LCFS), carbon intensity can be calculated as the difference between project emissions and a defined business-as-usual baseline. Crediting avoided emissions is standard practice for waste-diversion projects and dairy projects to quantify the real-world atmospheric benefit of finding an alternative solution to manage the feedstock. Similarly, the SB 1440 Pilot Project is replacing baseline practices like air curtain burning or natural decomposition (incorporation) and replacing it with a gasification to biomethane solution.

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)**  
**SIERRA CLUB-SCG-07**  
**WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)**  
**DATE REQUESTED: April 17, 2026**  
**RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-2b:**

Please specifically address the rationale, precedent, and consistency with other California CI calculations for assuming that if CO<sub>2</sub> is emitted when a Bio-SNG/CNG user burns the SNG/CNG all at once rather than when woody biomass decomposes in a field over time, no CO<sub>2</sub> emissions have occurred

**RESPONSE 7-2b:**

SoCalGas objects to this question as seeking information that is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence because it exceeds the scope of this proceeding. The question is also vague and ambiguous as to the meaning of the term “other California CI calculations.” SoCalGas further objects to this question because it calls for speculation regarding “the rationale, precedent, and consistency with other California CI calculations” and assumes SoCalGas has knowledge of all “other California CI calculations.”

Notwithstanding and subject to these objections, SoCalGas responds as follows: SoCalGas is unable to respond to this question because it lacks sufficient specificity to provide an accurate Net CI based response. As provided in Tables 1, 2 and 3 in the Corrected Revised Testimony of Lucas/Summers (Chapter 2), there are non-biogenic emissions (e.g., transportation of feedstock and Bio-SNG/CNG, diesel equipment for Whole Orchard Recycling) from the production of Bio-SNG/CNG and from Whole Orchard Recycling and other alternative woody biomass that need to be accounted for to determine Net CI.

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)  
SIERRA CLUB-SCG-07  
WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)  
DATE REQUESTED: April 17, 2026  
RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-2c:**

Please indicate the witness responsible for this answer.

**RESPONSE 7-2c:**

Dr. Matthew Summers.

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)**  
**SIERRA CLUB-SCG-07**  
**WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)**  
**DATE REQUESTED: April 17, 2026**  
**RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-3:**

Does SoCalGas agree with the following statement: the climate impact of sequestering a unit of captured CO<sub>2</sub> via a CCS facility is identical to that of shifting a unit of CO<sub>2</sub> emissions associated with biomass decomposition from a field to an end user's flue stack? If it does not agree, please explain in detail SoCalGas' basis for not agreeing with this statement. Please indicate the witness responsible for this answer.

**RESPONSE 7-3:**

SoCalGas objects to this question as seeking information that is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence because it exceeds the scope of this proceeding. SoCalGas also objects to this request on the grounds that it calls for speculation and is based on an incomplete hypothetical.

Subject to and without waiving the foregoing objections, SoCalGas responds as follows: SoCalGas is unable to agree or disagree with the above statement because SoCalGas is not familiar with a technology or solution (and any associated emissions) that can collect CO<sub>2</sub> emissions associated with biomass decomposition from an agricultural field and pipe those emissions into some type of end-user's flue stack.

Witness: Dr. Matthew Summers

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)**  
**SIERRA CLUB-SCG-07**  
**WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)**  
**DATE REQUESTED: April 17, 2026**  
**RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-4:**

In Rebuttal Testimony at JLMS-14, SoCalGas references “avoided” emissions.

**QUESTION 7-4a:**

Please explain in detail what emissions are “avoided” (rather than relocated in time and space) to calculate a net CI for Bio-SNG/CNG.

**RESPONSE 7-4a (WBF):**

SoCalGas objects to this request on the grounds the question is ambiguous and calls for speculation because the phrase “rather than relocated in time and space” is also not defined and can have many meanings.

Subject to and without waiving the foregoing objections, SoCalGas responds as follows: 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.

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)**  
**SIERRA CLUB-SCG-07**  
**WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)**  
**DATE REQUESTED: April 17, 2026**  
**RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-4b:**

Describe in detail the fate of the carbon atoms embodied in the “avoided” emissions referenced in Rebuttal Testimony.

**RESPONSE 7-4b (WBF):**

SoCalGas objects to this request on the grounds the question is ambiguous and calls for speculation because the phrase “carbon atoms embodied in the “avoided” emissions” is not defined and can have many meanings. Also, SoCalGas’s Rebuttal Testimony does not discuss the term “carbon atoms.”

Subject to and without waiving the foregoing objections, SoCalGas responds as follows: Table 1 in the Corrected Revised Direct Testimony of Lucas/Summers (Chapter 2) give a detailed estimate the greenhouse gas emissions for biogenic and non-biogenic carbon in the baseline case that are then compared as “avoided” emissions with the biogenic and non-biogenic carbon generated in the SB 1440 Pilot Project case.

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)**  
**SIERRA CLUB-SCG-07**  
**WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)**  
**DATE REQUESTED: April 17, 2026**  
**RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-4c:**

Does emitting biogenic CO<sub>2</sub> from Bio-SNG/CNG combustion rather than via Whole Orchard Recycling and other alternative woody biomass fates result in a negative CI? If so, please explain the basis for this response.

**RESPONSE 7-4c:**

SoCalGas objects to this request on the grounds the question is ambiguous and calls for speculation on the various sources of non-biogenic emissions (e.g. – transportation of feedstock and Bio-SNG/CNG, diesel equipment for Whole Orchard Recycling) from the production of Bio-SNG/CNG and from Whole Orchard Recycling and other alternative woody biomass.

Subject to and without waiving the foregoing objection, SoCalGas responds as follows: SoCalGas is unable to respond to this question because it lacks sufficient specificity to provide an accurate Net CI based response.

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)  
SIERRA CLUB-SCG-07  
WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)  
DATE REQUESTED: April 17, 2026  
RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-4d:**

Please indicate the witness responsible for this answer.

**RESPONSE 7-4d:**

Dr. Matthew Summers.

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)**  
**SIERRA CLUB-SCG-07**  
**WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)**  
**DATE REQUESTED: April 17, 2026**  
**RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-5:**

Please explain in detail the life cycle assessment and GREET experience of the preparer of Table 3 at JLMS-17 in the Amended Corrected Revised Prepared Direct Testimony. Please indicate the witness responsible for this answer.

**RESPONSE 7-5 (WBF):**

Table 3 at JLMS-17 was prepared based on the analysis of Dr. Eric Tan, a Senior Research Engineer at the National Renewable Energy Laboratory (NREL). Dr. Tan is a licensed Life Cycle Assessment Certified Professional (LCACP) and an AIChE Fellow with extensive experience in utilizing the GREET model for energy systems. James Lucas is the witness for this answer.

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)**  
**SIERRA CLUB-SCG-07**  
**WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)**  
**DATE REQUESTED: April 17, 2026**  
**RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-6:**

SoCalGas in Rebuttal Testimony states at JLMS-15 that “the GREET methodology may be validly applied as long as the analysis relies on identical mathematical calculations and validated emission factors.”

**QUESTION 7-6a:**

Please demonstrate that the analysis provided for the proposed Project relies on “identical mathematical calculations and validated emission factors.”

**RESPONSE 7-6a (WBF)**

The analysis provided for the SB 1440 Pilot Project utilizes validated emission factors sourced directly from the 2024 R&D GREET model released by Argonne National Laboratory. These factors cover all standard lifecycle activities, including biomass preprocessing, trucking, and grid electricity. To demonstrate the mathematical calculations, a full lifecycle model in Excel format containing active cells and formulas was developed. These formulas trace the emissions for each production step (Lanes 1–10) using the same logic as the Argonne GREET framework—multiplying mass/energy throughput by the validated factors to arrive at the carbon intensity. This workbook was specifically formatted to improve transparency and traceability by excluding extraneous information present in the larger Argonne tool that is not relevant to this specific pilot.

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)  
SIERRA CLUB-SCG-07  
WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)  
DATE REQUESTED: April 17, 2026  
RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-6b:**

Please identify to which GREET model these calculations are “identical.”

**RESPONSE 7-6b (WBF):**

The calculations utilize the mathematical framework and validated emission factors of the 2024 R&D GREET model released by Argonne National Laboratory.

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)  
SIERRA CLUB-SCG-07  
WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)  
DATE REQUESTED: April 17, 2026  
RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-6c:**

Please explain whether the original or the updated WTW CI values provided in SoCalGas' testimony are the values relying on "identical mathematical calculations and validated emission factors" from a GREET methodology.

**RESPONSE 7-6c (WBF):**

Both the original and updated WTW CI values rely on the identical mathematical framework and validated emission factors of the 2024 R&D GREET model. The difference between the original values and the updated values (36.1 gCO<sub>2</sub>e/MJ without CCS) is not a change in methodology, but a revision to the accounting treatment for biogenic carbon.

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)**  
**SIERRA CLUB-SCG-07**  
**WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)**  
**DATE REQUESTED: April 17, 2026**  
**RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-6d:**

Is a change in Bio-SNG/CNG CI from -18.9 to 36.1 gCO<sub>2</sub>e/MJ is consistent with use of a fully validated, trusted methodology?

**RESPONSE 7-6d (WBF):**

SoCalGas objects to this request on the grounds the question is ambiguous and calls for speculation as to the term “fully validated, trusted methodology”.

Subject to and without waiving the foregoing objection, SoCalGas responds as follows: The change reflects a revision to the accounting treatment for biogenic carbon (treating tailpipe emissions as positive rather than neutral) to promote mathematical consistency for the treatment of carbon for both the base case and use case. The underlying GREET methodology and emission factors for the processes remain the same; only the framing of biogenic neutrality changed.

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)  
SIERRA CLUB-SCG-07  
WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)  
DATE REQUESTED: April 17, 2026  
RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-6e:**

Please indicate the witness responsible for this answer.

**RESPONSE 7-6e:**

Dr. Matthew Summers in consultation with Dr. Eric Tan of National Laboratory of the Rockies (formerly National Renewable Energy Laboratory).

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)**  
**SIERRA CLUB-SCG-07**  
**WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)**  
**DATE REQUESTED: April 17, 2026**  
**RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-7:**

Rebuttal Testimony at JLMS-14 references “high-emissions practices, such as air curtain burning.”

**QUESTION 7-7a:**

Please explain whether conversion of carbon to CO<sub>2</sub> is more or less complete for air curtain burning than Bio-CNG/SNG burning.

**RESPONSE 7-7a (WBF):**

SoCalGas objects to this request on the grounds the question is overly broad, vague and ambiguous, and calls for speculation as to the type of natural gas vehicle or appliance that will combust the Bio-CNG/SNG and the make/model/size of the air curtain burner.

Subject to and without waiving the foregoing objections, SoCalGas responds as follows: Conversion of carbon to CO<sub>2</sub> is expected to be more complete and controlled in Bio-SNG/CNG combustion. Air curtain burning is expected to have lower efficiency and minimal emission controls, whereas Bio-SNG is burned in high-efficiency end-use equipment or engines with stringent criteria pollutant controls.

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)**  
**SIERRA CLUB-SCG-07**  
**WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)**  
**DATE REQUESTED: April 17, 2026**  
**RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-7b:**

Please describe the fate of the unburned carbon in either case and explain its impact on CI.

**RESPONSE 7-7b (WBF):**

SoCalGas objects to this request on the grounds the question is overly broad, vague and ambiguous, and calls for speculation as to the type of natural gas vehicle or appliance that will combust the Bio-CNG/SNG and the make/model/size of the air curtain burner.

Subject to and without waiving the foregoing objections, SoCalGas responds as follows:

Air curtain incineration is anticipated to produce biomass ash containing a small amount of unburned carbon. Unburned carbon in a natural gas vehicle is accounted for in the GREET model emissions factors that were used in the analysis.

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)  
SIERRA CLUB-SCG-07  
WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)  
DATE REQUESTED: April 17, 2026  
RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-7c:**

Please indicate the witness responsible for this answer.

**RESPONSE 7-7c:**

Dr. Matthew Summers.

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)**  
**SIERRA CLUB-SCG-07**  
**WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)**  
**DATE REQUESTED: April 17, 2026**  
**RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-8:**

Does SoCalGas agree with the following statement: the climate impact of emitting one unit of CO2 now is identical to the impact of emitting one unit of CO2 in 20 years? Please indicate the witness responsible for this answer.

**RESPONSE 7-8:**

SoCalGas objects to this question as seeking information that is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence because it exceeds the scope of this proceeding.

Subject to and without waiving the foregoing objections, SoCalGas responds as follows:

Taken over a standard 100-year window (GWP-100), the radiative forcing of a single unit of CO2 in year 1 has the same ultimate atmospheric impact of emitting one unit of CO2 in year 20. The Net CI analysis for the SB 1440 Pilot Project uses a GWP-100.

Witness: Dr. Matthew Summers

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)**  
**SIERRA CLUB-SCG-07**  
**WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)**  
**DATE REQUESTED: April 17, 2026**  
**RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-9:**

Does SoCalGas agree with the following statement: the climate impact of biogenic CO<sub>2</sub> emissions is identical to that of fossil CO<sub>2</sub> emissions? Please indicate the witness responsible for this answer.

**RESPONSE 7-9:**

SoCalGas objects on the grounds this question calls for information that is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence because it raises issues related to fossil CO<sub>2</sub> emissions and their climate impacts, which are outside the scope of SoCalGas's Corrected Revised Direct Testimony and Rebuttal Testimony.

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)**  
**SIERRA CLUB-SCG-07**  
**WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)**  
**DATE REQUESTED: April 17, 2026**  
**RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-10:**

Please provide any empirical evidence that facilities comparable to the proposed Project have successfully maintained 0 methane emissions over their lifespan. Please indicate the witness responsible for this answer.

**RESPONSE 7-10 (WBF):**

As stated in the Rebuttal Testimony of Lucas/Summers, to SoCalGas's knowledge, there is no commercial-scale gasification system in the United States capable of converting woody biomass into biomethane and interconnecting with a utility pipeline.<sup>1</sup> Consequently, longitudinal empirical data for this specific technology class in a U.S. commercial context is not yet available in the public record.

However, as detailed in the Rebuttal Testimony of Lucas/Summers and the accompanying Calculation Memorandum of Dr. Matthew Summers (Attachment 1), the SB 1440 Pilot Project's design utilizes thermochemical methanation in a fully enclosed, pressurized industrial system. This technology is more accurately compared to refinery hydrogenation units or ammonia plants rather than the low-pressure biological anaerobic digestion systems cited by Intervenors. Using industry-standard U.S. EPA protocols for equipment leak estimates, Dr. Summers calculated that controlled methane leakage for the facility is estimated at just 1.84 kg/day, or 0.0685 gCO<sub>2</sub>e/MJ. This represents a negligible 0.06% of the facility's direct plant emissions, justifying its treatment as *de minimis* in the lifecycle modeling.

Furthermore, the CPUC specifically set aside Cap-and-Invest (C&I) funding for the SB 1440 Pilot Project to address the absence of such empirical data by requiring the project to study and report on fugitive methane, criteria pollutants, and particulate matter emissions.<sup>2</sup> This rigorous monitoring framework is a core objective of the pilot so that the technology's performance is documented to inform future Commission decisions and California energy policy.

Witnesses: James Lucas and Dr. Matthew Summers.

---

<sup>1</sup> Rebuttal Testimony of Lucas/Summers at JLMS-3.

<sup>2</sup> D.22-02-025 at OP 43.

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)**  
**SIERRA CLUB-SCG-07**  
**WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)**  
**DATE REQUESTED: April 17, 2026**  
**RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-11**

What are the life cycle methane emissions from the proposed Project? Please indicate the witness responsible for this answer.

**RESPONSE 7-11 (WBF):**

As provided in the response to Data Request Sierra Club-SCG-04, Question 4-2, the broken-out greenhouse gas emission factors for methane across various lifecycle activities were enumerated.

Additionally, in response to concerns regarding fugitive emissions from the facility itself, West Biofuels provided a facility-specific "component-level analysis" in the Rebuttal Testimony of Lucas/Summers (Attachment 1, Methane Leakage Memo). Using industry-standard U.S. EPA protocols (EPA-453/R-95-017) to estimate leaks from valves, flanges, and connectors, Dr. Summers calculated the controlled methane leakage for the SB 1440 Pilot Project is estimated at 1.84 kg/day. Expressed in terms of global warming potential, this leakage equates to 0.0685 gCO<sub>2</sub>e/MJ, representing a negligible 0.06% of the facility's direct plant greenhouse gas emissions. This quantitative data confirms that fugitive methane is *de minimis* and supports its exclusion as a major emission source in lifecycle modeling.

Witness: Dr. Matthew Summers.

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)**  
**SIERRA CLUB-SCG-07**  
**WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)**  
**DATE REQUESTED: April 17, 2026**  
**RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-12:**

Rebuttal Testimony at JLMS-19 refers to the following projects and companies: GE Vernova, SLB Capturi, Shell CANSOLV, Baker Hughes, and Carbon Clean.

**QUESTION 7-12a:**

Please provide the names and addresses of operating, commercial scale CCS facilities associated with biomass gasification that have demonstrated 90%+ CO<sub>2</sub> capture via the GE Vernova, SLB Capturi, Shell CANSOLV, Baker Hughes, and Carbon Clean systems referenced by SoCalGas.

**RESPONSE 7-12a (WBF):**

West Biofuels has not asked these companies if they have operating commercial scale CCS facilities associated with biomass gasification. As specified in the Rebuttal Testimony of Lucas/Summers,<sup>3</sup> the capture rates cited for GE Vernova, SLB Capturi, Shell CANSOLV, Baker Hughes, and Carbon Clean are advertised capture efficiencies<sup>4</sup> routinely marketed by these established global technology suppliers.

For example:

- GE Vernova specifies that its post-combustion, amine-based solutions can achieve more than 95% capture.
- SLB Capturi markets modular CCS plants, such as "Just Catch™," designed for a standard performance of ~90% capture.
- Baker Hughes and Shell CANSOLV similarly market systems with ~90% capture efficiency.

While these systems have been commercially demonstrated in various power and industrial applications—such as the Shell CANSOLV system at Boundary Dam Unit 3, which was designed to capture ~90% of from a coal-fired unit— the selection of a specific supplier and site-specific engineering design for the SB 1440 Pilot Project will occur after CPUC issues a final decision for this Application.

---

<sup>3</sup> Lucas/Summers Rebuttal Testimony at JLMS 19.

<sup>4</sup> <sup>4</sup> The following are webpage links to leading CCS industry suppliers providing advertised carbon capture rates:

<https://www.gevernova.com/gas-power/future-of-energy/carbon-capture-storage>

<https://capturi.slb.com/>

<https://www.bakerhughes.com/carbon-capture-use-and-storage-ccus/carbon-capture>

<https://www.carbonclean.com/insights/solvent-based-carbon-capture-refineries>

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)**  
**SIERRA CLUB-SCG-07**  
**WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)**  
**DATE REQUESTED: April 17, 2026**  
**RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-12b:**

Please provide any evidence that the facilities with CCS referenced at JLMS-19 have demonstrated at least 78% mitigation of GHG emissions relative to pre-CCS conditions – i.e. successfully sequestered all excess GHGs induced by the use of CCS, in addition to at least 78% of the emissions associated with pre-CCS conditions, with at least 100-year demonstrated storage.

**RESPONSE 7-12b (WBF):**

The SB 1440 Pilot Project's 78–80% capture target is a conservative design floor for this technology class, purposefully set below the 90–95% capture rates advertised by leading industry suppliers<sup>5</sup> to support the credibility and achievability of the Project's GHG reduction estimates.

Evidence for the ability to mitigate GHG emissions while accounting for parasitic loads (excess GHGs induced by CCS) is found in the commercial deployment of modular systems like those from SLB Capturi, which are engineered for thousands of operating hours across multiple facilities with a standard ~90% capture performance. Additionally, Shell's CANSOLV technology at Boundary Dam Unit 3 provides a commercial benchmark for high-efficiency capture in a large-scale industrial setting.

---

<sup>5</sup> The following are webpage links to leading CCS industry suppliers providing advertised carbon capture rates:

<https://www.gevernova.com/gas-power/future-of-energy/carbon-capture-storage>

<https://capturi.slb.com/>

<https://www.bakerhughes.com/carbon-capture-use-and-storage-ccus/carbon-capture>

<https://www.carbonclean.com/insights/solvent-based-carbon-capture-refineries>

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)  
SIERRA CLUB-SCG-07  
WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)  
DATE REQUESTED: April 17, 2026  
RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-12c:**

Please indicate the witness responsible for this answer.

**RESPONSE 7-12c:**

Dr. Matthew Summers.

**SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS)**  
**SIERRA CLUB-SCG-07**  
**WOODY BIOMASS PILOT PROJECT APPLICATION (A.25-10-008)**  
**DATE REQUESTED: April 17, 2026**  
**RESPONSE DUE: May 1, 2026**

---

**QUESTION 7-13:**

Please clarify whether SoCalGas agrees that CCS capture efficiency is sufficient to demonstrate GHG mitigation potential via CCS. If not, please describe what other information is necessary to prove mitigation potential. Please indicate the witness responsible for this answer.

**RESPONSE 7-13 (WBF):**

SoCalGas objects to this request on the grounds the question is ambiguous and calls for speculation as to the term “demonstrate GHG mitigation potential via CCS”

Subject to and without waiving the foregoing objection, SoCalGas responds as follows: Capture efficiency is a critical metric, but the full lifecycle GHG mitigation potential is demonstrated by accounting for the energy required for the CCS unit, the permanence of storage, and the change compared with counterfactual baseline which is currently venting or burning that carbon. The SB 1440 Pilot Project's 80% target is a conservative design floor for this technology class.

Witness: Dr. Matthew Summers.