



Angeles Link – Phase 1 Quarterly Report (Q3 2024)

For the period of July 1, 2024 through September 30, 2024

October 2024

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I. OVERVIEW

Angeles Link is envisioned as a non-discriminatory, open-access pipeline system dedicated to public use, transporting up to 1.5 million metric tons of clean renewable hydrogen¹ from regional third-party production and storage sites to end users across Central and Southern California, including the Los Angeles Basin and the Ports of Los Angeles and Long Beach. On December 15, 2022, the California Public Utilities Commission (CPUC) adopted Decision (D.) 22-12-055 (Decision) authorizing SoCalGas's Angeles Link Memorandum Account (Memorandum Account) to track costs for advancing the first phase (Phase 1) of Angeles Link, including stakeholder engagement activities and the completion of a portfolio of feasibility studies. SoCalGas established the Memorandum Account on December 21, 2022.

SoCalGas hereby submits this Q3 2024 quarterly report, for the period July 1, 2024 through September 30, 2024 (Q3-2024)² pursuant to Ordering Paragraph (OP) 3(h) of the Decision.³ This report is also served on the service list for the Angeles Link proceeding⁴ and is publicly available at SoCalGas's website. SoCalGas is required to submit Quarterly Reports to the Commission's Deputy Executive Director for Energy and Climate Policy on the progress of the Phase 1 activities and to report any preliminary results and findings regarding the feasibility studies included in Phase 1.⁵

This Q3 2024 quarterly report represents a significant milestone of Angeles Link because SoCalGas has released all Phase 1 draft feasibility studies to the Planning Advisory Group (PAG) and Community Based Stakeholder Organization Group (CBOSG). Draft studies released during Q3 2024 are discussed in Section II.A and provided in Appendix 1.⁶

¹ D.22-12-055 defines clean renewable hydrogen as "hydrogen that does not exceed a standard of four kilograms of carbon dioxide-equivalent produced on a lifecycle basis per kilogram of hydrogen produced." D.22-12-055, Decision Approving the Angeles Link Memorandum Account to Record Phase One Costs (Dec. 20, 2022) ("Decision") at 66 (Finding of Fact 35).

² SoCalGas released the Draft Framework for Affordability Considerations (Affordability Framework) to the Planning Advisory Group and Community Based Stakeholder Organization Group on September 20, 2024 within Q3 2024. The two-week feedback window closed on October 4, 2022. Given that the release of the Affordability Framework occurred in Q3, responses to stakeholder comments on this document were included in this Q3 report (see Appendix 3).

³ *Id.* at 74-75.

⁴ A.22-02-007

⁵ D.22-12-055 at 74-75, OP 3(h).

⁶ SoCalGas's Phase 1 portfolio of feasibility studies prepared in compliance with D.22-12-055 includes a total of 16 studies. One additional plan (ESJ Plan) was prepared voluntarily in response to stakeholder input. The Angeles Link Draft Demand Report (Demand Study) was submitted as part of the Q1 2024 Quarterly Report. The Hydrogen Leakage Assessment Draft Report (Leakage Study) was submitted as part of the Q2 2024 Quarterly Report. The remaining 14 studies are provided herein. Studies reflect the best available information at the time of the studies' development.

II. PHASE 1 FEASIBILITY STUDIES UPDATE AND RESPONSES TO STAKEHOLDER FEEDBACK

SoCalGas’s portfolio of Phase 1 feasibility studies includes preliminary engineering, design, and environmental feasibility studies evaluating a variety of topics, including potential supply, demand, end uses, pipeline configurations and storage solutions, and analyzing certain identified alternatives. SoCalGas appreciates the continued engagement of the PAG and CBOSG throughout the stakeholder engagement process and the continued active participation in the stakeholder workshops and meetings. The complete Phase 1 portfolio of draft studies have been released to the PAG and CBOSG. The studies are reflective of the best available information at the time of the studies’ development. Given that the landscape of California’s energy transition is dynamic, SoCalGas anticipates that the market conditions and information guiding Angeles Link will continue to evolve over time.

A. DRAFT STUDIES

SoCalGas is required to submit Quarterly Reports to the Commission’s Deputy Executive Director for Energy and Climate Policy on the progress of the Phase 1 activities and to report any preliminary results and findings regarding the feasibility studies included in Phase 1.⁷ This section provides key updates from this reporting period on the status of the feasibility studies being undertaken in compliance with the Decision and in furtherance of Angeles Link.

During this Q3 2024 reporting period, SoCalGas shared 12 draft studies as well as produced an Environmental and Social Justice (ESJ) Community Engagement Plan and an Angeles Link Phase 1 Framework for Affordability Considerations (collectively, studies).⁸ These studies are presented in the order they were published and include:

1. Evaluation of Applicable Safety Requirements (Safety Study)⁹
2. Water Resource Evaluation (Water Evaluation)
3. Workforce Planning & Training Evaluation (Workforce Study)
4. Greenhouse Gas (GHG) Emissions Evaluation (GHG Study)
5. Nitrogen Oxide (NOx) and other Air Emissions Assessment (NOx Study)
6. Environmental Social Justice Plan (ESJ Plan) and Screening (ESJ Screening)
7. Production Planning & Assessment (Production Study)

⁷ D.22-12-055 at 74-75, OP 3(h).

⁸ The Demand Study was submitted as part of the Q1 2024 Quarterly Report. The Leakage Study was submitted as part of the Q2 2024 Quarterly Report. The Safety Study was released at the end of Q2 2024, but the close of the comment period was in Q3 2024.

⁹ The original title of the Safety Study was “Plan for Applicable Safety Requirements;” however, the title has been updated to the “Evaluation of Applicable Safety Requirements.”

8. Pipeline Sizing & Design Criteria Study (Design Study)
9. Preliminary Routing/Configuration Analysis (Routing Analysis)
10. High-Level Feasibility Assessment and Permitting Analysis (Permitting Analysis)
11. Project Options and Alternatives (Alternatives Study)
12. High-Level Economic Analysis & Cost Effectiveness Study (Cost Effectiveness Study)
13. Environmental Analysis
14. Framework for Affordability Considerations (Affordability Framework)

In compliance with D.22-12-015, Ordering Paragraph (OP) 3(h), SoCalGas sought feedback from the PAG and CBOG (see Appendix 2 – PAG and CBOG Written Comments), summarized in this Quarterly Report, and provided responses to comments (see Appendix 3 - SoCalGas Response to Comments).

Summary of General Comments/Global Responses

This summary provides an overview of thematic topics provided in written comments during the Q3 2024 period. General responses, referred to as “global responses,” together with detailed responses to written comments received during the Q3 2024 period are included in Appendix 3.

- **Water Availability and Geographic Considerations for Third-Party Production:** Stakeholders stated that the Water Resources Evaluation (Water Evaluation) does not adequately evaluate the availability of water for specific potential hydrogen third-party production areas given potential geographic challenges, cost considerations, and supply constraints that may apply to water supply availability at specific production locations.
- **Stakeholder Engagement and Consideration of Environmental Social Justice:** Stakeholders provided input on the timeframe to review the studies released in Q3.¹⁰ Stakeholders submitted comments expressing their support for Angeles Link, including support of the ESJ Plan, the Routing Analysis, and the Design Study. Various stakeholders expressed concern about the lack of direct community engagement with environmental justice communities. Additionally, various stakeholders expressed concern about the level of detail and analysis in the ESJ Screening component of the ESJ Plan and stated SoCalGas did not adequately consider the Equity Principles for Hydrogen in the ESJ Plan.
- **Safety:** Several stakeholders commented about overarching safety concerns of a new hydrogen pipeline and local community impacts.
- **Routing, Route Variation, and ESJ:** Stakeholders expressed concern about SoCalGas’s Routing Analysis and consideration of Disadvantaged Communities and Environmental Social Justice.

¹⁰ SoCalGas extended several feedback windows as requested.

- **Biomass Gasification and Emissions:** Various stakeholders addressed SoCalGas’s GHG Study and NOx Study assumption that biomass gasification¹¹ would not produce GHG and NOx emissions, and as a result, various stakeholders stated the conclusions of the studies overstate potential GHG and NOx reductions.
- **Affordability Framework:** Stakeholders commented about the hydrogen demand assumptions, the relative estimated project cost, and the need to further explore non-ratpayer funding options. Comments also acknowledged that the Affordability Framework appropriately outlines a process to analyze and consider affordability, rate design, and cost allocation issues when Angeles Link specifics are more certain.

As previously noted, detailed Global Responses and responses to comments are provided in Appendix 3.

III. STAKEHOLDER ENGAGEMENT ACTIVITIES

SoCalGas values the ongoing engagement of the PAG and CBOSG. Stakeholder engagement activities during Q3 2024 are further described below.

A. PAG and CBOSG Stakeholder Group Activity Summary

During this reporting period, in compliance with the Decision’s directive to conduct quarterly stakeholder engagement meetings, two workshops were held, one with the PAG and one with the CBOSG. Hybrid meetings were held with both an in-person option and a virtual option over Zoom.

July 2024 Workshop

SoCalGas hosted two July workshops - one July 23rd meeting with the CBOSG and one July 24th meeting with the PAG. SoCalGas presented draft reports for the Production Study, Routing Study, Design Study, and ESJ Plan and Screening.

Expanded Regional Outreach Efforts¹²

In response to PAG and CBOSG feedback, SoCalGas expanded its engagement beyond the CBOSG members to organizations within the broader region of SoCalGas’s service territory, including the San Joaquin Valley, Santa Clarita Valley, Antelope Valley, and San Fernando Valley to provide information about Angeles Link and offer them opportunities to stay informed. Over the Q3 2024

¹¹ Gasification is a process that converts organic or fossil-based carbonaceous materials at high temperatures (>700°C), without combustion, with a controlled amount of oxygen and/or steam into carbon monoxide, hydrogen, and carbon dioxide. The carbon monoxide then reacts with water to form carbon dioxide and more hydrogen via a water-gas shift reaction. Adsorbents or special membranes can separate the hydrogen from this gas stream. Hydrogen Production: Biomass Gasification | Department of Energy.

¹² In accordance with the Phase 1 Decision, costs associated with these outreach activities have not been recorded to the Angeles Link Memorandum Account.

reporting period, SoCalGas met with 3 organizations. Between Q2 and Q3 of 2024, SoCalGas met with a total of 32 organizations as part of the expanded engagement efforts.

IV. ALLIANCE FOR CLEAN RENEWABLE HYDROGEN ENERGY SYSTEMS

ARCHES is California’s public-private partnership formed to create a sustainable statewide clean renewable hydrogen hub in California (“California H2 Hub”) and is leading the California initiative to accelerate clean renewable hydrogen projects, including hydrogen pipeline systems.¹³ Consistent with D.22-12-055, SoCalGas joined ARCHES in 2022 and Angeles Link was included in the proposal under ARCHES application to the U.S. Department of Energy (DOE) for federal funding of the California H2 Hub. On October 13, 2023, the DOE announced that, after a rigorous application and review process, ARCHES was one of seven hydrogen hubs selected to receive up to \$1.2 billion in federal funding.¹⁴ On July 17, 2024, ARCHES and the DOE announced the signing of a formal \$12.6 billion cooperative agreement, including up to \$1.2 billion from the DOE and \$11.4 billion in public and private funds, to support development of a network of clean renewable hydrogen production sites, transporters, and end users that incorporates multiple facilities in California, with the goal of significantly decarbonizing the transportation, industrial, and electric generation sectors in the state, including public transportation, heavy duty trucking, and port operations in the Los Angeles Basin.

V. SUMMARY OF APPENDICES

This section provides a summary of the appendices contained within the Q3 2024 quarterly report.

- **Appendix 1 (A to I) – Draft Reports:** Appendix 1A to Appendix 1I include the 14 completed draft studies prepared as part of the Phase 1 portfolio of feasibility studies. Please refer to Section II. A. Draft Studies for the list of the studies.
- **Appendix 2 – PAG and CBOSG Written Comments:** Written comment letters received during Q3 2024 providing feedback on SoCalGas’s draft studies are included in their original format in Appendix 2. SoCalGas received a total of 51 comment letters on the 14 studies released during Q3 2024.
- **Appendix 3 – SoCalGas Response to Comments:** SoCalGas provides comprehensive responses to the 51 comment letters in Appendix 3.
- **Appendix 4 – Attendee Lists for PAG and CBOSG Workshop Meetings:** Appendix 4 includes a complete list of workshop meeting participants as well as those invited who did not attend.
- **Appendix 5 – Workshop Meetings Transcripts:** Appendix 5 includes certified court reporter transcripts capturing verbal feedback and meeting discussions from the PAG/CBOSG workshop meetings during the third quarter.

¹³ Regional Clean Hydrogen Hubs: <https://www.energy.gov/oced/regional-clean-hydrogen-hubs-0>

¹⁴ California wins up to \$1.2 billion from feds for hydrogen: <https://archesh2.org/california-wins-up-to-1-2-billion-from-feds-for-hydrogen/>

- **Appendix 6 – CBOSG Workshop Meeting Materials:** Materials shared at the CBOSG workshop meeting during the third quarter are provided in Appendix 6.
- **Appendix 7 – PAG Workshop Meeting Materials:** Materials shared at the PAG workshop meeting during the third quarter are provided in Appendix 7.
- **Appendix 8 – Summary of CBOSG Workshop Meeting:** A summary of the CBOSG stakeholder workshop meeting is provided in Appendix 8.
- **Appendix 9 – Summary of PAG Workshop Meeting:** A summary of the PAG stakeholder workshop meeting is provided in Appendix 9.
- **Appendix 10 – Hydrogen Safety Panel Review:** An overview of the comments provided by the Hydrogen Safety Panel on the Safety Study is provided in Appendix 10.