APPLICATION OF SOUTHERN CALIFORNIA GAS COMPANY FOR ANGELES LINK PHASE 2 A.24-12-011

DATA REQUEST Cal PA-SCG-DR02
Date Requested: March 25, 2025, Submitted: April 9, 2025

QUESTION 1: These questions are a follow-up to the SoCalGas Response to DR-01.
DR 1 Question 2a asked whether segments in addition to the two proposed ARCHES segments are necessary for the ARCHES segments to be operational. SoCalGas responded as follows:

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 hydrogen 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. Because SoCalGas expects that Angeles Link will be constructed in stages to support alignment with ARCHES' timing expectations for the California Hydrogen Hub, the San Joaquin Valley and Lancaster segments (Hub Segments) could be operational prior to the full operation of the broader Angeles Link system. However, the broader Angeles Link system would connect the Hub Segments and holistically provide the necessary pipeline infrastructure for delivering clean renewable hydrogen at scale in Central and Southern California. Angeles Link is anticipated to be approximately 450 miles and the entirety of the system is required to transport the estimated throughput to the end users.

For the San Joaquin Valley and Lancaster ARCHES segments (which SoCalGas calls Hub Segments) of the Angeles Link, please provide the anticipated critical deadlines for delivery of the following major work products:

a) ARCHES environmental review;
b) All engineering and design milestones;
c) When construction must begin;
d) When the pipeline segments are expected to be operational; and,
e) Any other ARCHES required deadlines not identified above.

RESPONSE 1:

SoCalGas objects to this request on the grounds it is vague and ambiguous, particularly with respect to the phrase "anticipated critical deadlines." Subject to and without waiving the foregoing objection, SoCalGas responds as follows.

a) SoCalGas objects to this request on the grounds it is vague and ambiguous, particularly with respect to the phrase "ARCHES environmental review." Subject to and without waiving the foregoing objection, SoCalGas responds as follows.

   At this time, SoCalGas is not a subrecipient of Department of Energy (DOE) funding to ARCHES. Accordingly, Angeles Link, including the Hub Segments, is not part of the proposed "action" as defined under National Environmental Policy Act (NEPA). SoCalGas intends to collaborate with ARCHES to best position Angeles Link to support ARCHES's implementation of the California Hydrogen Hub.

   With regards to the schedule for the DOE's preparation of an Environmental Impact Statement (EIS) to assess the potential environmental impacts of the proposed action of providing financial assistance to ARCHES for the California Hydrogen Hub, per its publicly accessible

website, the DOE anticipates publication of the NEPA Draft EIS in October 2025, publication of the Final EIS in April 2026, and issuance of a Record of Decision in May 2026. The DOE website can be accessed here: DOE/EIS-0570: California Hydrogen Hub | Department of Energy (https://www.energy.gov/nepa/doeeis-0570-california-hydrogen-hub).

b) As noted in the Application[1], upon Commission authorization, Phase 2 would commence with activities to identify a preferred system route for Angeles Link, which includes the Hub Segments, followed by collecting technical details and other requirements to conduct a Front End Engineering and Design (FEED) study. The FEED study will advance Angeles Link's engineering design to approximately 30%. Angeles Link Phase 2 activities required to reach a 30% design are estimated to take approximately 30 months.

   Upon completion of Phase 2 and the FEED study, SoCalGas will prepare and file, among other long-lead time permit authorizations, a Certificate of Public Convenience and Necessity (CPCN) application with the Commission. If authorized, Angeles Link will then move into the execution phase, when ministerial construction permit applications are submitted and processed, detailed engineering design will commence, and materials procurement and construction will subsequently occur.

c) SoCalGas estimates construction activities would need to begin in 2032 to allow for staged build-out of Angeles Link, including the Hub segments, and to align with ARCHES' timing expectations to begin to be operational by the end of 2033.

d) SoCalGas understands that ARCHES envisions the two Hub Segments of Angeles Link to be operational by the end of 2033 to help launch the California Hydrogen Hub.

e) Refer to response 1 (a-c), for discussion of planning and activities that contribute to meeting the operational timeline provided by ARCHES. SoCalGas is not currently aware of any additional ARCHES deadlines that would apply to SoCalGas.

[1] A.24-12-011, page 79. "1. Engineering Design and Related Activities"

APPLICATION OF SOUTHERN CALIFORNIA GAS COMPANY FOR ANGELES LINK PHASE 2 A.24-12-011

DATA REQUEST Cal PA-SCG-DR02
Date Requested: March 25, 2025, Submitted: April 9, 2025

QUESTION 2: For the remaining Ang[e]les Link Segments as submitted in the Application, please provide the anticipated critical deadlines for delivery of the following major work products:

a) ARCHES environmental review;
b) All engineering and design milestones;
c) When construction must begin;
d) When the pipeline segments are expected to be operational; and,
e) Any other ARCHES required deadlines not identified above.

Note: This question is explicitly asking about any ARCHES related deadlines for non-ARCHES segments of the Angeles Link Application.

RESPONSE 2:

SoCalGas objects to this request on the grounds it is vague and ambiguous, particularly with respect to the phrase "anticipated critical deadlines." Subject to and without waiving the foregoing objection, SoCalGas responds as follows.

a) SoCalGas objects to this request on the grounds it is vague and ambiguous, particularly with respect to the phrase "ARCHES environmental review." Subject to and without waiving the foregoing objection, SoCalGas responds as follows.

   Angeles Link is one pipeline transportation system. As noted above in Response 1(a), at this time, SoCalGas is not a subrecipient of ARCHES' DOE funding and Angeles Link is therefore not part of the DOE proposed "action" as defined under NEPA.

b) Angeles Link is one pipeline transportation system. See Response 1(b) above.

c) Angeles Link is one pipeline transportation system. See Response 1(c) above.

d) Based on currently known information as noted in Figure 9 of the Application (page 86), portions of Angeles Link are envisioned to be operational by the end of 2033 and Angeles Link will continue to become operational as the remaining segments are constructed and put into service.

e) See Response 1(e) above.

APPLICATION OF SOUTHERN CALIFORNIA GAS COMPANY FOR ANGELES LINK PHASE 2 A.24-12-011

DATA REQUEST Cal PA-SCG-DR02
Date Requested: March 25, 2025, Submitted: April 9, 2025

QUESTION 3: For the "currently known information" regarding the independent operation and/or independent utility of the two ARCHES Segments (which SoCalGas calls Hub Segments), please describe:

a) What multiple production sites can be served by the Hub Segments, and only the Hub Segments;
b) What offtake sites can be served by the Hub Segments, and only the Hub Segments;
c) Whether the Hub Segments will be able to deliver hydrogen to sites "including in the Los Angeles Basin", using only the Hub Segments.

RESPONSE 3:

a) The Preliminary Routing/Configuration Analysis (Routing Analysis) prepared in Phase 1 integrates information collected by other Phase 1 Studies and information released by ARCHES[2] to illustrate the potential for clean renewable hydrogen and potential hydrogen production and offtake sites across Central and Southern California in relation to proposed routes. Key findings from the Routing Analysis support that the Hub Segments are located close to areas of high potential for clean renewable hydrogen production. The broader Angeles Link system would connect the Hub Segments and holistically provide the necessary pipeline infrastructure for delivering clean renewable hydrogen at scale in Central and Southern California. Angeles Link is anticipated to be approximately 450 miles, and the entirety of the system is required to transport the estimated throughput from producers to the end users. As noted in the ARCHES federal application, California Hydrogen Hub projects were selected with consideration to closely match production and offtake[3].

   As proposed in A.24-12-011, in Phase 2 SoCalGas intends to conduct refined and additional analyses to advance Angeles Link to a 30% design[4]. This includes further analysis of hydrogen production planning, location-specific details, and specific operability constraints[5].

b) See Response 3(a). Key findings from the Routing Analysis indicate that the Hub Segments are located close to several ARCHES identified off-take sites[6] but far away from the concentrated areas of high demand located in the Los Angeles Basin.

---

[2] ARCHES H2, *Meet ARCHES* (October 2023), *available at*: https://archesh2.org/wpcontent/uploads/2023/10/MeetArches_October-2023.pdf; DOE – Office of Clean Energy Demonstrations

[3] ARCHES stated in its application for federal funding: "A balance was also chosen between different pathways (i.e., projects, feedstocks, and technologies in proximity) to ensure closely matched production and offtake requiring only buffering storage. Similarly, a balance amongst different operation paradigms was also chosen to be seeded from the hub funding so that they can flourish together and complement one another." ARCHES Technical Submission to DOE (April 2023) at 8, available at: https://archesh2.org/wp-content/uploads/2024/08/ARCHESTechnical-Volume-Redacted.pdf.

[4] A.24-12-011,

[5] Testimony Chapter 3 - Project Development and Programmatic Activities (A. Kitson)

[6] ARCHES H2, *Meet ARCHES* (October 2023), *available at*: https://archesh2.org/wpcontent/uploads/2023/10/MeetArches_October-2023.pdf; DOE – Office of Clean Energy Demonstrations

As proposed in A.24-12-011, in Phase 2 SoCalGas intends to conduct refined and additional analyses to advance Angeles Link to a 30% design[7]. This includes further analysis of hydrogen end use, location-specific details, and specific operability constraints[8].

c) As identified in the Angeles Link Routing Analysis, both Hub Segments are located in areas of anticipated hydrogen demand. The Lancaster Segment can deliver a portion of the anticipated clean renewable hydrogen throughput from producers in the Lancaster area to the Los Angeles Basin access point, which is approximately 30 miles from the Ports. The San Joaquin Valley Segment can deliver a portion of hydrogen production to off-takers in the Central Valley, but the full system throughput and functionality is realized by connecting the Hub Segments, which are not contiguous, with the entirety of the Angeles Link system.

[7] A.24-12-011
[8] Testimony Chapter 3 - Project Development and Programmatic Activities (A. Kitson)

QUESTION 4: What requirements, if any, does ARCHES place on SoCalGas' Hub Segments to meet ARCHES's definition of "operational"?

RESPONSE 4:
SoCalGas defines operational as when the asset is used and useful. As noted in Response 1.a., SoCalGas intends to collaborate with ARCHES to best position Angeles Link to support ARCHES's implementation of the California Hydrogen Hub by aligning with ARCHES' timing expectations to begin to be operational by the end of 2033. To date, ARCHES has not indicated it has any different understanding of the term "operational".

QUESTION 5: What requirements, if any, for amount/volume of hydrogen delivered does ARCHES place on SoCalGas' Hub Segments?

RESPONSE 5:

At this time, ARCHES has not indicated it has any specifications for hydrogen quantities delivered by the Hub segments of Angeles Link. The potential volume of clean renewable hydrogen delivered by Angeles Link, including the Hub segments, will be determined in Angeles Link Phase 2 upon selection of a preferred system route and in subsequent FEED activities, and the system capacity will ultimately be determined by the Commission through the CPCN process.

QUESTION 6: What requirements, if any, on the definition of "clean renewable hydrogen" does ARCHES place on SoCalGas' Hub Segments?

RESPONSE 6:
In accordance with Commission Decision D.22-12-055, Ordering Paragraph 3(a), Angeles Link is restricted to the transport of clean renewable hydrogen that is produced with a carbon intensity equal to or less than four kilograms of carbon dioxide equivalent produced on a lifecycle basis per kilogram and does not use any fossil fuel in the production process. This carbon intensity standard is in alignment with the threshold of the hydrogen production tax credit (PTC) and with the US Department of Energy (DOE) proposed Clean Hydrogen Production Standard[9], which provides guidance on clean hydrogen following the release of the Infrastructure Investment and Jobs Act (IIJA).

[9] Available at: https://www.hydrogen.energy.gov/docs/hydrogenprogramlibraries/pdfs/clean-hydrogen-production-standard-guidance.pdf?sfvrsn=173e9756_1

QUESTION 7: SoCalGas states that the broader Angeles Link system is required to connect the San Joaquin Valley and Lancaster segments (which SoCalGas calls Hub Segments) to "…holistically provide the necessary pipeline infrastructure for delivering clean renewable hydrogen at scale in Central and Southern California." If the CPUC does not approve the broader Angeles Link project, how would the Hub Segments **alone** meet the requirements of "operational" as defined by ARCHES?

RESPONSE 7:

Angeles Link, as envisioned and brought forth before the Commission for approval to proceed on Phase 2, is inclusive of the Hub Segments.

Two segments of Angeles Link are envisioned to be operational by the end of 2033 to help launch the California Hydrogen Hub. See also Responses to Questions 4 and 5.

In order to align with ARCHES' timing expectations for the California Hydrogen Hub, SoCalGas expects that Angeles Link will be constructed in stages starting with the Hub Segments, which could be operational prior to the full operation of the broader Angeles Link system. However, operating the Hub Segments alone would limit the ability to connect large scale clean renewable hydrogen producers to off-takers to meet expected demand across Central and Southern California, potentially hindering ARCHES efforts for a California hydrogen economy lift-off. The broader Angeles Link system would connect the Hub Segments and holistically provide the necessary pipeline infrastructure for delivering clean renewable hydrogen at scale in Central and Southern California. This is in alignment with ARCHES forecast for future demand in California[10].

[10] https://www.hydrogen.energy.gov/docs/hydrogenprogramlibraries/pdfs/review24/oced001_galiteva_2024_o.pdf?sfvrsn=f835161f_3

QUESTION 8: How much of the ARCHES project contains offtake sites located out of state?

RESPONSE 8:

SoCalGas objects to this request pursuant to Rule 10.1 of the Commission's Rules of Practice and Procedure, which provides that parties may obtain discovery "that is relevant to the subject matter involved in the pending proceeding, if the matter either is itself admissible in evidence or appears reasonably calculated to lead to the discovery of admissible evidence." SoCalGas understands "the ARCHES project" to refer to the California Hydrogen Hub and, accordingly, additionally objects that the request is overly broad as the Application pertains to Phase 2 activities of Angeles Link. Subject to and without waiving the foregoing objections, SoCalGas responds as follows.

As illustrated in the Angeles Link Phase 1 Routing Analysis, Angeles Link is envisioned and was evaluated as an intrastate pipeline system with offtake located in state.

QUESTION 9: Does SoCalGas anticipate that in the future the San Joaquin Valley and Lancaster segments (which SoCalGas calls Hub Segments) will connect to pipelines out of state?

RESPONSE 9:

See Response 8 above. At this time, SoCalGas does not anticipate that the Hub Segments will connect to pipelines out of state.