



# Angeles Link Quarterly Report (Phase One)

For the Period April 1, 2023 through June 30, 2023

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## I. BACKGROUND

On December 15, 2022, the California Public Utilities Commission (CPUC) adopted Decision 22-12-055 (Decision) authorizing the establishment of SoCalGas’s Angeles Link Memorandum Account (Memorandum Account) to track costs for advancing the first phase of the Angeles Link Project (Project). SoCalGas established the Memorandum Account on December 21, 2022.

The objective of the proposed Project is to develop a system that will transport clean renewable hydrogen,<sup>1</sup> likely from multiple local and longer term regional clean hydrogen production sources to various delivery points in the Los Angeles Basin (including the concentrated commercial and industrial area in and around the Ports of Los Angeles and Long Beach), and in the broader Southern and Central California region. The CPUC recognized clean renewable hydrogen “has the potential to decarbonize the state and the Los Angeles Basin’s energy future and bring economic opportunities and new jobs to the region.”<sup>2</sup>

To increase transparency and gain valuable feedback, SoCalGas proposed in its Memorandum Account Application for Angeles Link to submit interim reports to the CPUC and the public regarding Project status and updates. Pursuant to Ordering Paragraph (OP) 3(h) of the Decision,<sup>3</sup> SoCalGas hereby submits this second Quarterly Report, for the period April 1, 2023 through June 30, 2023 (Q2-2023). In compliance with the Decision, this report is also being served on the service list for the Angeles Link proceeding (A.22-02-007) and will be made publicly available at: <https://www.socalgas.com/sustainability/hydrogen/angeles-link>.

## II. PLANNING ADVISORY GROUP AND COMMUNITY BASED ORGANIZATION STAKEHOLDER GROUP ACTIVITY SUMMARY

During this reporting period, in compliance with the Decision’s directive to conduct quarterly stakeholder engagement meetings, two Planning Advisory Group (PAG) meetings (one quarterly and one supplemental) and two CBO Stakeholder Group (CBOSG) meetings (one quarterly and one supplemental) were held. These meetings are discussed in chronological order below.

In addition to engaging with CBOSG and PAG members at quarterly meetings, in response to requests from PAG and CBOSG members and enhance project transparency throughout the Phase One study process, supplemental CBOSG/PAG meetings will be held throughout Phase One as needed to provide members with additional opportunity to provide feedback on Phase

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<sup>1</sup> Per the Decision (D.22-12-055), “clean renewable hydrogen” is defined as hydrogen 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 its production process. For purposes of the Project, we use the terms “green hydrogen” and “clean renewable hydrogen” interchangeably.

<sup>2</sup> Decision 22-12-055, p. 2

<sup>3</sup> *Id.* At pp. 74-75.

One studies. One supplemental CBOSG meeting was held on May 18, 2023, via Zoom to share the Stakeholder Engagement Plan (SEP). This meeting was organized in response to CBOSG/PAG feedback to provide additional detail on procedures in place to address stakeholder feedback. Thirty-three (33) CBO representatives participated in the CBOSG Zoom meeting. Similarly, sixteen (16) PAG representatives attended a PAG supplemental meeting held on May 18, 2023 via Zoom. The SEP provides an overview for how stakeholder engagement will be conducted for Phase One activities for Angeles Link. Additionally, input and feedback from CBOSG/PAG members on the governance of Angeles Link stakeholder engagement was solicited.

Next, regularly scheduled quarterly meetings were held in June. The CBOSG quarterly meeting was held on June 22 at AltaSea at the Port of Los Angeles. The PAG quarterly meeting was held at the same location on June 28. In response to requests from PAG/CBOSG members, both meetings were offered in a hybrid format to allow representatives to attend in person or virtually via Zoom. The meetings focused on three main topics based on prior PAG/CBOSG interest and comments: Phase One studies schedule and approach to obtaining CBOSG/PAG feedback, Angeles Link Purpose and Need, and the Phase One Project Alternatives analysis. The Purpose and Need presentation focused on how Angeles Link, as an open access common carrier pipeline system delivering clean renewable hydrogen, could significantly reduce greenhouse gas emissions and improve air quality, enhance energy system reliability, resiliency and flexibility and provide long duration clean renewable energy storage while reducing natural gas use served by Aliso Canyon. Based on PAG/CBOSG feedback provided at the prior supplemental meetings held in May, the majority of the time for each topic at the quarterly meetings was dedicated to PAG/CBOSG member discussion. Member surveys were conducted during the quarterly meetings to assess the level of interest in Project feasibility study topics to determine upcoming focused workshop topics.

Additional information regarding the meetings is provided in the Quarterly Report Appendices. For the four meetings held in the second quarter 2023, Appendix 1 includes lists of PAG and CBOSG members who were invited to and attended the respective meetings; Appendix 2 includes CBOSG materials presented at each CBOSG meeting, including presentation slides, the CBOSG Application; Appendix 3 includes PAG materials presented at each PAG meeting, including presentation slides for each PAG meeting; Appendix 4 contains links to websites supporting recordings of both PAG and CBOSB meetings; Appendix 5 is the CBOSG summary report for both CBOSG meetings and CBOSG polling results from the second quarterly meeting; Appendix 6 is the PAG summary report for both PAG meetings and PAG polling results from the second quarterly meeting; Appendix 7 includes court reporter transcripts for each meeting, as discussed further below; Appendix 8 includes SoCalGas's thematic response to stakeholder feedback, and Appendix 9 contains comments received from the PAG/CBOSG.

### **III. COMMENTS AND RESPONSES TO STAKEHOLDER FEEDBACK**

In compliance with OP 3(h), SoCalGas has solicited feedback from the PAG and CBOSG, and is including that feedback in this Quarterly Report. SoCalGas is appreciative of the PAG and CBOSG comments and feedback we received during our governance-focused meetings in May

and our second quarterly meetings held in June with CBOSG and PAG members. Provided in Appendix 8 is a thematic compilation of second quarter stakeholder feedback and SoCalGas’s responses.

SoCalGas continues to be committed to addressing stakeholder feedback throughout Phase One in accordance with the Decision’s guidance that “an iterative stakeholder feedback process is beneficial for the development of the Project.”<sup>4</sup> The table below summarizes actions SoCalGas has taken in this quarter in response to feedback received from stakeholders or through consultation with CPUC Energy Division staff.

<b>General Feedback</b>	<b>Action</b>
More transparency on stakeholder feedback being incorporated/implemented. Request that feedback is documented within the main body of the quarterly report.	A new section (Section IV herein) was developed to increase transparency with stakeholders and share what actions SoCalGas has taken in response to feedback. Thematic responses to stakeholder comments are included in Appendix 8.
More active listening instead of lengthy presentations by SoCalGas.	Presentations from SoCalGas were adjusted for stakeholder engagement meetings during this quarter. The goal is to have presentations for each agenda item to be approximately 10 minutes in length with approximately 20-30 minutes for stakeholder feedback. This updated meeting approach was implemented at the second quarterly meetings held in June.
Concern that technical input provided by PAG would not be incorporated. Desire to be involved in early stages of Phase one studies, be provided scope of work documentation, and be provided the opportunity to have input on technical approach (inputs and assumptions).	The approach to gathering and incorporating stakeholder feedback for the Phase One studies (i.e., descriptions of work, technical approach, preliminary findings, and draft reports) was presented during the second quarterly meetings in June. SoCalGas will also conduct supplemental meetings in addition to the regular quarterly meetings to gather feedback on Phase One studies. The description of work for the Project Options and Alternatives study was shared with CBOSG and PAG members on June 15, 2023, and the descriptions of work for the remaining studies were shared with CBOSG and PAG members on July 6, 2023, allowing for input until July 31, 2023.

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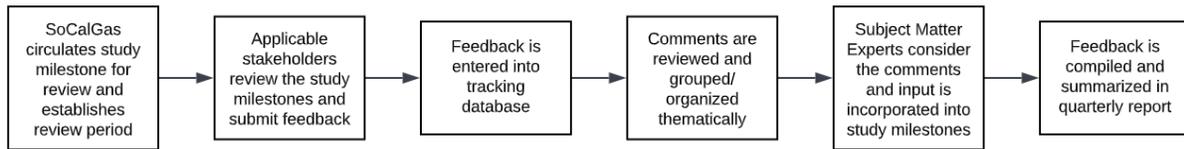
<sup>4</sup> Decision 22-12-055, p. 46

<p>Provide meeting materials at least two weeks before meetings. Request for a predictable schedule for when input from stakeholders will be needed and provide adequate time for review.</p>	<p>SoCalGas will strive to provide meeting materials at least two weeks in advance of meetings, and no later than a week before. Meeting materials for the second quarterly meeting held in June were provided one week in advance of the CBOSG meeting and 12 days in advance of the PAG meeting. During the second quarterly meetings held in June, SoCalGas presented the proposed approach and schedule for gathering stakeholder feedback and identifying key Phase One feasibility study milestones and timeframes for which stakeholder feedback would be requested. Stakeholders will typically be provided approximately four weeks to provide input on study descriptions of work, technical approach, preliminary findings, and draft reports.</p>
<p>Request to discuss Project options and alternatives (i.e., other decarbonization options) as required by the Decision.</p>	<p>The primary focus of the second quarterly meetings held in June was to present the purpose and need for the Project and present the scope of the study of Project options and alternatives.</p>
<p>Request for SoCalGas to provide support to CBO Stakeholders in educating and facilitating conversations with their community-member bases about hydrogen and possible Project impacts and benefits during the feedback process. Community focus groups were suggested to address this comment.</p>	<p>SoCalGas is currently exploring options to further educate stakeholders about hydrogen and other clean energy topics, which could include focus groups or other approaches. An immediate action SoCalGas has taken to address this request was including a segment in the July 19, 2023, meeting on “Hydrogen 101.”</p>
<p>Organize additional meetings to review Phase One study descriptions via in-person/hybrid meetings by the end of July</p>	<p>Based upon feedback from certain PAG members, the second quarterly meetings held in June focused on Alternatives, one of the sixteen Phase One feasibility studies. SoCalGas scheduled four additional workshop meetings (two for the PAG and two for the CBOSG) offering hybrid attendance options from July 18-21 to present and gain stakeholder feedback on the remaining fifteen studies and present a stakeholder feedback tracking system.</p>

## IV. CONSIDERATION OF STAKEHOLDER FEEDBACK ON SOCALGAS'S APPROACH TO PHASE ONE STUDIES

Consistent with the Decision, SoCalGas is committed to considering stakeholder input on the Phase One studies and has retained Insignia Environmental (Insignia) to facilitate tracking stakeholder feedback. A Feedback Tracking System (FTS) has been developed that is designed to track and catalog feedback for evaluation by relevant SoCalGas subject matter experts (SMEs). Insignia will manage the FTS database, with their activities including incorporating feedback into the tracking system, categorizing comments, coordinating with SMEs to review stakeholder feedback on the technical studies and reports, and tracking responses and/or changes to the scope, technical approach, preliminary findings/data and draft study reports based on the feedback.

As described in Section V below, SoCalGas has identified four milestones throughout the Phase One feasibility studies for the PAG and CBOSG to provide feedback: (1) the scope of the studies, (2) the technical approach for the studies, (3) preliminary data findings, and (4) the draft reports. When materials are distributed for review, SoCalGas will provide a comment period—typically four weeks—within which the PAG and CBOSG members can provide their feedback as set forth below. To the extent certain studies progress ahead of this preliminary feedback approach schedule, distribution of study materials and gathering feedback may be advanced ahead of this schedule.



Stakeholders can submit feedback via email to Insignia. Specific details regarding the stakeholder feedback tracking system was shared with PAG and CBO members at the July workshop meetings. In addition to the dedicated email addresses, stakeholder feedback can be provided through an online form, mail, or during the meetings, as described above. Specific instructions for providing feedback by mail or an online form will be provided directly to the PAG and CBOSG.

The stakeholder feedback will be compiled and summarized for inclusion in future quarterly reports.

## V. PHASE ONE MILESTONES AND FEEDBACK SCHEDULE

Figure 1 below shows the proposed schedule for completing Phase One feasibility studies. It is categorized by key milestones and shows the anticipated dates to distribute study information to CBOSG and PAG members, conduct additional workshop sessions, and gather and consider feedback. Feedback will be gathered on study descriptions, technical approaches, preliminary findings, and study draft reports with adjusted timelines for distribution of materials and gathering feedback to the extent certain Phase One studies advance ahead of this feedback schedule. This proposed timeline will be updated as necessitated as the studies progress. SoCalGas’s goal is to partner with PAG and CBOSG stakeholders throughout the Phase One feasibility study process and to obtain preliminary findings and data for all Phase One feasibility studies by the end of 2023 and issue final reports by mid-2024. This schedule and approach was presented during the second quarterly CBOSG and PAG meetings held in June.

Figure 1

Angeles Link Phase One Study Proposed Stakeholder Feedback Schedule

PHASE 1	2023						2024						
	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
Phase 1 Study Descriptions	<ul style="list-style-type: none"> <li>✔ Distribute Purpose and Need Study descriptions</li> <li>✔ Q2 PAG/CBO Quarterly Meetings to Discuss Purpose and Need, Alternatives Study/Feedback</li> <li>✔ Distribute Remaining Study Descriptions to Stakeholders</li> <li>✔ Mid-July – Additional Feedback Gathering Sessions</li> <li>✔ End of July – PAG/CBO Final Feedback Due</li> </ul>												
Phase 1 Study Technical Approach	<ul style="list-style-type: none"> <li>✔ Distribute Phase 1 Technical Approach Summaries to Stakeholders</li> <li>✔ Q3 PAG/CBO Quarterly Meetings to Discuss Technical Approach Summaries</li> <li>✔ Additional Technical Approach Stakeholder Feedback Gathering Sessions</li> <li>✔ PAG/CBO Final Feedback to Technical Approach Summaries Due</li> </ul>												
Phase 1 Data and Preliminary Findings	<ul style="list-style-type: none"> <li>✔ Distribute Phase 1 Preliminary Findings/Data received to Stakeholders</li> <li>✔ Q4 PAG/CBO Meetings to Discuss Preliminary Findings/Data/Feedback</li> <li>✔ Additional Preliminary Findings/Data Stakeholder Gathering Sessions*</li> <li>✔ PAG/CBO Final Feedback Due</li> </ul>												
Phase 1 Study Draft Reports	<ul style="list-style-type: none"> <li>✔ Distribute Phase 1 Study Draft Reports</li> <li>✔ Q1 PAG/CBO Meetings</li> <li>✔ Additional Feedback Gathering Sessions</li> <li>✔ PAG/CBO Final Feedback Due</li> </ul>												
Phase 1 Study Final Reports	<ul style="list-style-type: none"> <li>Issue Final Reports ✔</li> </ul>												

## VI. PHASE ONE ACTIVITIES UPDATE

The Decision requires SoCalGas to submit Quarterly Reports to the Commission’s Deputy Executive Director for Energy and Climate Policy on the progress of the Phase One activities and to report any preliminary results and findings regarding the feasibility studies.<sup>5</sup> SoCalGas is required to make the Quarterly Reports public and include in them feedback received from

<sup>5</sup> Decision 22-12-055, p. 74. OP 3(h)

parties and PAG members.<sup>6</sup> To ensure the Project delivers clean energy benefits and aligns with the Commission’s public policy goals, the CPUC set additional project-specific standards in the Decision that SoCalGas must demonstrate, at a minimum, to receive recovery of Phase One costs recorded in the Memorandum Account.<sup>7</sup> These project-specific standards are meant to address affordability, impacts to disadvantaged communities, consistency with California law and public policies, stakeholder concerns, and consideration and evaluation of Project alternatives.<sup>8</sup> In authorizing the Angeles Link Project Memorandum Account to track the costs of the studies discussed in this report, the Decision recognized that “clean renewable hydrogen is a key potential solution to decarbonize the state’s and the Los Angeles Basin’s energy use”<sup>9</sup> and “is one of the only few viable carbon-free energy alternatives for hard-to-electrify industries, electric generation, and the heavy-duty transportation sector.”<sup>10</sup> As such, the Project is required to balance multiple public policy priorities, including affordability,<sup>11</sup> environmental justice,<sup>12</sup> public interest benefits, support for California’s environmental law and public policies<sup>13</sup> (including CPUC decisions, policies and directives<sup>14</sup> and aligning with federal clean renewable hydrogen standards<sup>15</sup>), addressing climate change, reducing greenhouse gas emissions, prioritizing safety, and enhancing energy system reliability.

The following studies are being undertaken in compliance with the Decision, in furtherance of the Project, and in alignment with the additional project-specific standards adopted by the CPUC. Note that the contracting/scope may be subject to change given PAG/CBOSG input on study descriptions, results from other studies, and/or other variables.

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<sup>6</sup> Ibid.

<sup>7</sup> Decision 22-12-055, p. 75, OP 5

<sup>8</sup> Ibid.

<sup>9</sup> Decision 22-12-055, p. 28

<sup>10</sup> Ibid.

<sup>11</sup> Decision 22-12-055, p. 76, OP 6 (k)

<sup>12</sup> Decision 22-12-055, p. 76, OP 6 (l)

<sup>13</sup> Decision 22-12-055, p. 77, OP 6 (n)

<sup>14</sup> Decision 22-12-055, p. 77, OP 6 (o)

<sup>15</sup> Decision 22-12-055, p. 77, OP 6 (j)

## Market Assessment & Alternatives

Demand Study	
<b>Overview</b>	The Decision requires (OP 6 (a) and OP 6 (c)) SoCalGas to identify hydrogen demand, end uses, and potential end-users (including current natural gas customers and future customers) of the Project. This study will evaluate potential clean renewable hydrogen demand and assess adoption in the Mobility, Power Generation, and Industrial sectors.
<b>Progress Summary</b>	Over the reporting period, SoCalGas went through a contractor selection process and selected Accenture, who is also working with Electric Power Research Institute (EPRI). The demand analysis is currently under way for priority sectors - Mobility, Power Generation, and Hard to Electrify Industrial sectors. Highlights of the work to date include development of the demand methodology, prioritization of sectors, identification of potential subsectors (e.g., mobility subsectors include heavy-duty vehicles and port vehicles, power generation subsectors include baseload generators and flexible peaker plants, and the hard-to-electrify industrials subsectors include metals and cement manufacturing), examination of available data sets, and planning interviews with potential end users, industry participants across the hydrogen value chain, and other subject matter experts to inform the analysis.

Production Planning & Assessment	
<b>Overview</b>	The Decision requires SoCalGas to identify the potential sources of hydrogen generation for the Project (OP 6 (b)) and its plans to ensure the quality of the hydrogen gas meets the clean renewable hydrogen standards set in the Decision (OP 6 (j)). This study will evaluate potential sources of clean renewable hydrogen production from renewable sources such as solar and wind, input requirements, estimated cost of production, and policies, procedures, and other methods to meet clean renewable hydrogen standards.
<b>Progress Summary</b>	Over the reporting period, SoCalGas went through a contractor selection process and selected Burns & McDonnell to conduct the study. Initial work has begun, including discussions on the strategic approach, the integration among other studies, and development of a detailed schedule and project execution plan.

<b>High-Level Economic Analysis &amp; Cost Effectiveness</b>	
<b>Overview</b>	The Decision requires (OP 6 (d)) SoCalGas to evaluate the cost effectiveness of the Project against alternatives and determine a methodology to measure cost effectiveness between alternatives. This study will determine a methodology to measure cost effectiveness that includes gathering cost estimates, performing an economic analysis to determine the potential levelized cost of clean renewable hydrogen to be delivered to end users, and comparing the cost effectiveness of the Project against various project alternatives.
<b>Progress Summary</b>	Over the reporting period, SoCalGas began the contracting process for a consultant to conduct this study. Consultant selection, contract finalization, and initial study commencement is anticipated in the third quarter of 2023.

<b>Project Options and Alternatives</b>	
<b>Overview</b>	The Decision requires (OP 6 (d)) SoCalGas to consider and evaluate Project alternatives, including a localized hydrogen hub or other decarbonization options such as electrification. SoCalGas is also required (OP 3 (c)) to study a localized hydrogen hub solution under the specifications required to be eligible for federal funding as part of Phase One. This study will evaluate Project options and alternatives, including a localized hydrogen hub.
<b>Progress Summary</b>	Over the reporting period, SoCalGas began the contracting process for a consultant to conduct an initial evaluation of potential options and alternatives related to other potential decarbonization methods (e.g., electrification, energy efficiency, renewable natural gas) as well as other hydrogen delivery pathways (e.g., trucking). Consultant selection, contract finalization, and initial study commencement is anticipated in the third quarter of 2023. For options and alternatives related to pipeline routing and/or configurations of the Angeles Link system, SoCalGas went through a contractor selection process and selected Burns & McDonnell. Initial work has begun, including coordination of project execution, integration among the studies, and strategic approach. See Appendix 2 for CBOG presentation and Appendix 3 for PAG presentation on this study.

## Regulatory, Policy & Environmental

Water Resource Evaluation	
<b>Overview</b>	<p>The Decision requires (OP 6 (b)) SoCalGas to identify the potential sources of clean renewable hydrogen generation and water and estimate the costs of the hydrogen for the Project. This study will evaluate the availability of water resources for clean renewable hydrogen production in the Central and Southern California regions.</p>
<b>Progress Summary</b>	<p>Over the reporting period, SoCalGas continued overseeing early activities with its selected consultants for this study—Rincon Consultants, Inc. (Rincon) and Jacobs. Rincon and Jacobs have initiated work for certain tasks in the study, including: (1) outreach to public agencies managing and treating potential water sources to inform further analysis; (2) review of potential water resources available for third-party hydrogen production, including recycled water, advanced water treatment concentrate, brine line flows, oil and gas industry water, surface water (through water exchanges), inland brackish groundwater, and dry weather flow; and (3) review of the water quality requirements for electrolytic hydrogen generation. Preliminary findings from those initial tasks are not yet finalized. Work on finalizing those tasks along with initiating the remaining tasks is progressing.</p>

<b>Nitrogen Oxide (NOx) and other Air Emissions Assessment</b>	
<b>Overview</b>	The Decision requires (OP 6 (h)) SoCalGas to assess potential NOx emissions associated with the Project, including appropriate controls to mitigate emissions. The NOx assessment will evaluate NOx and other air emissions associated with storage and transportation of hydrogen, as well as NOx emissions associated with end users. Key areas of focus will be the Mobility, Power Generation, and Industrial sectors. Identification and evaluation of potential mitigation measures will also be included.
<b>Progress Summary</b>	<p>Over the reporting period, SoCalGas went through a contractor selection process and selected Stantec and University of California, Irvine (UCI) to prepare this analysis. Initial work has begun. The consultants and SoCalGas have met on several occasions to discuss research and strategic approach.</p> <p>Stantec and UCI have started their review of available NOx emissions studies, mitigation and control technologies, and scientific literature.</p>

<b>Hydrogen Leakage Assessment</b>	
<b>Overview</b>	The Decision directs (OP 6 (g)) SoCalGas to assess the risks and mitigations for hydrogen leakage. During Phase One, an evaluation of potential hydrogen leakage associated with production, storage, and transportation of hydrogen will be prepared. Identification and evaluation of potential mitigation measures will also be included.
<b>Progress Summary</b>	<p>Over the reporting period, SoCalGas went through a contractor selection process and selected Stantec and University of California, Irvine to prepare this analysis. Initial work has begun. The consultants and SoCalGas have met on several occasions to discuss research and strategic approach.</p> <p>Stantec and UCI have started their review of available hydrogen leakage information from studies, new detection methods and mitigation technologies, component design, and scientific literature.</p>

<b>Greenhouse Gas Emissions Evaluation</b>	
<b>Overview</b>	The Decision directs (OP 6 (n)) SoCalGas to provide the findings from Phase One feasibility studies demonstrating compliance with environmental laws and public policies. To support environmental laws and public policies, SoCalGas will conduct an initial evaluation of greenhouse gas (GHG) emissions associated with the Project, including the potential for emissions reductions. This assessment will evaluate GHG emissions associated with storage and transportation of hydrogen, as well as GHG emissions associated with end users. Key areas of focus will be the Mobility, Power Generation, and Industrial sectors.
<b>Progress Summary</b>	<p>Over the reporting period, SoCalGas went through a contractor selection process and selected Stantec and University of California, Irvine to prepare this analysis. Initial work has begun. The consultants and SoCalGas have met on several occasions to discuss research and strategic approach.</p> <p>Stantec and UCI have started their review of available research on hydrogen and potential indirect associations with the formation of GHGs from studies and scientific literature.</p>

<b>Environmental &amp; Environmental Social Justice Analysis</b>	
<b>Overview</b>	The Decision directs (OP 6 (n)) SoCalGas to provide the findings from Phase One feasibility studies demonstrating compliance with environmental law and public policies. Further, the Decision directs SoCalGas to address and mitigate impacts to disadvantaged communities and other environmental justice concerns (OP 6 (l)). SoCalGas will conduct an initial evaluation of a clean renewable hydrogen transportation system's compliance with environmental law and public policies, which will include an assessment of environmental impacts of project alternatives, environmental justice concerns and impacts to disadvantaged communities.
<b>Progress Summary</b>	During the reporting period, SoCalGas completed the contracting activities for this analysis and selected Insignia Environmental to assist with this evaluation. Initial work has begun, including project execution activities and preliminary Geographic Information Systems (GIS) desktop analysis.

<b>High-Level Feasibility Assessment &amp; Permitting Analysis</b>	
<b>Overview</b>	The Decision requires SoCalGas to identify and compare possible routes and configurations for the Project (OP 6 (i)). As part of this assessment, SoCalGas will conduct a high-level assessment of potential environmental and regulatory approvals, including federal, state, and local environmental permitting and regulatory approvals, regulatory approval timing, and environmental constraints.
<b>Progress Summary</b>	Over the reporting period, SoCalGas completed the contracting process for this analysis and selected Rincon Consultants to assist with this analysis. Initial work commenced in the second quarter, including project execution and preliminary GIS desktop analysis.

<b>Right-of-Way Study</b>	
<b>Overview</b>	The Decision requires SoCalGas to identify and compare possible routes and configurations for the Project (OP 6 (i)). As part of this assessment, SoCalGas will conduct an initial evaluation to review the potential availability of its existing private rights-of-way to accommodate the Project and future right-of-way locations needed.
<b>Progress Summary</b>	Over the reporting period, SoCalGas began the process of evaluating proposed pipeline alignments for right-of-way review. These activities included preliminary identification of public and private rights of way.

<b>Franchise Study</b>	
<b>Overview</b>	The Decision requires SoCalGas to identify and compare possible routes and configurations for the Project (OP 6 (i)). As part of this assessment, SoCalGas will conduct an initial evaluation to review the potential availability of its existing franchises to accommodate the Project and potential future franchises needed for the Project.
<b>Progress Summary</b>	Over the reporting period, SoCalGas began the process of identifying and reviewing existing city and county franchise agreements. These activities included preliminary identification of franchise agreements.

## Engineering Design

Preliminary Routing/Configuration Analysis	
<b>Overview</b>	<p>The Decision requires (OP 6 (i)) SoCalGas to identify and compare possible routes and configurations for the Project. This study will (i) determine preferred routing/configuration alternatives for hydrogen system; (ii) consider existing pipeline corridors or rights-of-way, other known existing rights-of-way, franchise rights, designated federal energy corridors or rights-of-way, and the need for new rights-of-way; and (iii) evaluate technical considerations, major crossings, elevations, terrain types, and other potential geographical and urban challenges. This study includes high-level construction staging for implementation of routes and evaluation of a localized hydrogen hub. As part of the configuration analysis, SoCalGas will conduct an initial evaluation of hydrogen storage technology. SoCalGas will assess storage proximity to the Southern California region and both aboveground and underground technologies.</p>
<b>Progress Summary</b>	<p>Over the reporting period, SoCalGas went through a contractor selection process and selected Burns &amp; McDonnell to assist with this evaluation. Initial work has begun, including around project execution, integration among the studies, and strategic approach.</p>

Pipeline Sizing & Design Criteria	
<b>Overview</b>	<p>The Decision requires SoCalGas to compare possible routes and configurations (OP 6 (i)) and evaluate safety concerns for the Project (OP6 (f)). This study will: (i) estimate potential pipeline sizes for the pipeline route from production to end-use; (ii) identify specific materials for pipeline, fittings, and differences in operational equipment; (iii) discuss safety considerations, pressures, and maintenance operations associated with design; and (iv) evaluate compression characteristics and options.</p>
<b>Progress Summary</b>	<p>Over the reporting period, SoCalGas went through a contractor selection process and selected Burns &amp; McDonnell to assist with this study. Initial work has begun, including project execution, integration between the studies, and strategic approach.</p>

<b>Plan for Applicable Safety Requirements</b>	
<b>Overview</b>	The Decision requires (OP 6 (f)) SoCalGas to evaluate safety concerns involved in pipeline transmission, storage, and transportation of hydrogen applicable to the Project. This study will evaluate safety concerns and develop an assessment of applicable safety requirements for employee, contractor, system, and public safety.
<b>Progress Summary</b>	Over the reporting period, SoCalGas went through a contractor selection process and selected Burns & McDonnell to assist with this study. Initial work has begun, including project execution, integration between the studies, and strategic approach.

<b>Workforce Planning &amp; Training Evaluation</b>	
<b>Overview</b>	The Decision requires (OP 6 (e)) SoCalGas to evaluate workforce planning and training. This study will evaluate operations and maintenance protocols for utility workers regarding hydrogen infrastructure and workforce needs in terms of staging and growth for the Project.
<b>Progress Summary</b>	Over the reporting period, SoCalGas went through a contractor selection process and selected Burns & McDonnell to assist with this study. Initial work has begun, including project execution, integration between the studies, and strategic approach.

## **VII. ALLIANCE FOR RENEWABLE CLEAN HYDROGEN ENERGY SYSTEMS (ARCHES)**

The United States Department of Energy (DOE) is planning to award \$8 billion to up to ten regional hydrogen hubs across America to build self-sustaining hydrogen economies of producers, infrastructure, and users.<sup>16</sup> Seventy-nine potential hydrogen hubs sent in concept papers last fall to DOE, who encouraged 33 hubs to apply for funding by April 7. The application details are private and the DOE will release further information when the hydrogen hubs are selected to receive funding in Fall 2023. The DOE has indicated that between now and the Fall, it is anticipated that the DOE will start interviewing certain hubs as part of the selection process.

The Alliance for Renewable Clean Hydrogen Energy Systems (ARCHES) is California’s public-private hydrogen hub consortium to accelerate the development and deployment of clean, renewable energy sources to reduce greenhouse gas emissions and advance to a zero-carbon

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<sup>16</sup> <https://archesh2.org/>

economy.<sup>17</sup> The Decision requires SoCalGas to “join other entities that are members of the Alliance for Renewable Clean Hydrogen Energy Systems in support of the State of California’s application for the federal funding provided through the Infrastructure Investment and Jobs Act”<sup>18</sup> and to “study a localized hydrogen hub solution, under the specifications required to be eligible for federal funding provided through the Infrastructure Investment and Jobs Act, as part of Phase One.”<sup>19</sup> SoCalGas joined ARCHES in October 2022 and SoCalGas’s efforts and progress in partnering with ARCHES on its application being undertaken in compliance with the Decision is provided herein.

In accordance with the Decision, SoCalGas has been coordinating with ARCHES throughout the development of ARCHES’s application for federal funding and has been supportive of the State’s efforts to secure federal funding for a California hydrogen hub. On April 7, 2023, the State submitted its application to the DOE. SoCalGas actively participated with ARCHES during the development of its application and is among one of the more than 100 members within the ARCHES network. SoCalGas also invited ARCHES to participate on the Angeles Link PAG on February 10, 2023, and June 28, 2023.

## **VIII. APPENDIX**

1. Attendee list for PAG and CBOSG meetings, including those invited.
2. CBOSG meeting materials.
3. PAG meeting materials.
4. Links to PAG and CBOSG meeting recordings.
5. Summary of CBO stakeholder meetings, including survey question responses, other feedback during Q2 meetings, and polling results.
6. Summary of PAG meetings, including survey question responses, other feedback obtained during Q2 meetings, and polling results.
7. Transcripts
8. SoCalGas Thematic Responses to Comments.
9. PAG/CBOSG Member Comments

End of Report

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<sup>17</sup> Ibid.

<sup>18</sup> Decision 22-12-055, p. 74, OP 3 (d)

<sup>19</sup> Decision 22-12-055, p. 74, OP 3 (c)