SoCalGas

Angeles Link Phase 1 Reasonableness Review Chapter 3 Workpapers: Project Options and Alternatives and High-Level Economic Analysis and Cost Effectiveness Studies

I. Introduction

This workpaper provides details on the prudent and reasonable activities taken to develop the Project Options & Alternatives Study (Alternatives Study) and High-Level Economic Analysis and Cost Effectiveness Study (Cost Effectiveness Study) in compliance with Decision (D.) 22-12-055 (Phase 1 Decision),[1] including details on study costs and management, and cost control measures. The total loaded cost associated with the Alternatives and Cost Effectiveness studies is $3.7 million in operating and maintenance (O&M) expenditures for Phase 1 activities.[2]

II. Study Costs

A combination of internal and external resources were utilized to execute the Alternatives and Cost Effectiveness Studies. Direct costs for these activities reflect labor costs (e.g., internal personnel) and non-labor costs (e.g., third-party contractors and miscellaneous costs associated with supporting Angeles Link Phase 1 activities).[3] Indirect costs reflect costs for overhead loaders.[4] The total loaded cost for the Alternatives Study and Cost Effectiveness Study is $1.6 million and $2.1 million, respectively. See Table 1 below for additional cost details.

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1 Phase 1 Decision Ordering Paragraphs (OP) 3(a), 3(c), 3(e), 3(h), 5(a), and 5(c)-(e) for the Alternatives Study and OP 3(a), 3(c), 3(e), 3(h), 5(a), and 5(c)-(e) for the Cost Effectiveness Study (Phase 1 Decision at 73-75). The activities were scoped and conducted in compliance with the Phase 1 Decision in its entirety, which includes broader requirements than those required for cost recovery, including OP 6(d) (*id.* at 76). Phase 1 Decision OP 6 requirements to advance to Phase 2 are being addressed in A.24-12-011.

2 Expenditures for these activities were incurred from January 2023 through December 2024, with some discrete trailing charges through 2025.

3 *See* Chapter 1 (Direct Testimony of Shirley Arazi and Amy Kitson) for a description of miscellaneous costs.

4 *See* Chapter 6 (Direct Testimony of Jenny Chhuor and Michael W. Foster) for a description of the overhead costs.

Table 1: Alternatives Study and Cost Effectiveness Study Total Costs (in millions)

Study	Labor	Non-Labor	Overheads	Total Loaded Costs
Alternatives Study	$0.2	$1.2	$0.2	$1.6
Cost-Effectiveness Study	$0.2	$1.7	$0.2	$2.1
Total Costs	**$0.4**	**$2.9**	**$0.4**	**$3.7**

A. Labor Costs

Labor costs for the Alternatives and Cost Effectiveness Studies total $0.4 million and consist of support from SoCalGas personnel within the Angeles Link organization (e.g., project managers, directors, and subject matter experts (SMEs)) as well as personnel from other departments such as general administration, regulatory and policy, and public affairs).[5]

The subject matter expertise within SoCalGas was utilized throughout the development of the Alternatives and Cost Effectiveness Studies (e.g., collaboration with personnel from Supply Management and Strategy & Sustainability Planning). Leveraging this institutional knowledge allowed for alignment with company standards, industry codes, and technical requirements, while reducing costs and reliance on third-party contractors.

Labor costs reflect the following activities:

- Defined study objectives and developed scope of work.
- Developed and issued statements of work for third-party contractor evaluation.
- Managed contractor evaluation and selection in collaboration with Supply Management organization.
- Oversaw contractor performance, including review of the study progress, activities, and monitoring invoices.
- Provided review, feedback, and comments on contractor deliverables.

[5] *See* Chapter 1 (Direct Testimony of Shirley Arazi and Amy Kitson) for additional labor costs details.

- Synchronized the studies' workstreams and facilitated the integration of information across dependent studies.
- Collaborated with SMEs throughout the development of the study.
- Developed materials, including slide decks and handouts, to support stakeholder engagement meetings.
- Reviewed and prepared responses to stakeholder feedback.
- Incorporated stakeholder feedback into studies as appropriate.
- Supported the preparation of quarterly reports.
- Development of the Alternatives and Cost Effectiveness Studies.

A. Non-Labor Costs

Non-labor costs for Alternatives and Cost Effectiveness Studies total $2.9 million and consist of third-party contractor costs and miscellaneous expenses.[6] Examples of non-labor cost activities include the following:

- Meetings/workshops to gather pertinent information based on scope objectives, including evaluating study interdependencies.
- Assessment of the scopes of work for Alternatives and Cost Effectiveness Studies.
- Development of technical approaches for both Alternatives and Cost Effectiveness.
- Development and assessment of criteria to compare Angeles Link across other hydrogen and non-hydrogen delivery alternatives.
- Development of key input assumptions and costs to evaluate the cost effectiveness of Angeles Link.
- Development of cost models to assess the cost effectiveness of Angeles Link across other hydrogen and non-hydrogen delivery alternatives.
- Review of milestone deliverables, quarterly reports, and stakeholder comments and responses, as appropriate.

[6] The original agreement with Burns and McDonnell included a project options and alternatives scope of work as it relates to Angels Link potential directional routes that was eventually consolidated with the Alternatives and Cost Effectiveness Study.

- Development of the Alternatives and Cost Effectiveness Studies.

The following section provides detail on the third-party contractor and contract amendments necessary to conduct the Alternatives and Cost Effectiveness Studies.

In September 2023, SoCalGas awarded Wood Mackenzie a fixed-fee contract for $1,200,000 with a milestone payment schedule to perform a single Alternatives and Cost Effectiveness Study. This approach allowed for more efficient alignment, management and focused analysis of the studies as they were heavily interrelated (e.g., the Cost Effectiveness Study evaluated alternatives selected in the Alternatives Study—it assessed the costs of each Alternative and then returned this information back to the Alternatives Study for a complete analysis of all alternatives).

In April 2024, a contract amendment was executed to extend the original agreement's term. This amendment reflected the increased level of effort and resources required to iterate the studies, to align key assumptions and findings with other dependent studies (e.g., necessary key assumptions derived from the final system scenarios from the Design Study) and to incorporate stakeholder feedback. The amendment increased the contract amount by $941,443, bringing the total contract amount to $2,141,443.

In August 2024, a second contract amendment was executed to address stakeholder feedback (e.g., expanding discussion around the selection and assessment criteria for alternatives in the Alternatives Study and the development of a supplemental databook providing key assumptions, as part of the Cost Effectiveness study) and to support additional analysis. The amendment increased the contract by $246,480, bringing the total contract amount to $2,387,923. The total Wood Mackenzie cost incurred for the Alternatives and Cost Effectiveness Studies was $2,361,923.

SoCalGas employed study management and cost control measures to help manage scope and costs. These measures included:

- A project manager to manage scope, cost, and schedule.
- Developing an effective third-party contractor selection process.
- Following a structured invoice and cost management process, including reviewing invoices against activities and deliverables to confirm that costs accurately reflect work performed.

- Maintaining regular communication with the third-party contractor to oversee the scope and timeline of milestone deliverables, responding to technical inquiries as they emerged, and offering guidance on work expectations.
- Evaluating the scope to enhance the alignment between study topics, technical analyses, and third-party contractor expertise and to address stakeholder feedback where appropriate.
- Assessing the need for modifications to the study scope.