Application: A.25-08-XXX
Exhibit No.: SCG/Lakeside-03
Witness: M. Pacheco

Application of Southern California Gas Company (U 904 G) and Lakeside Pipeline LLC to Initiate Reasonableness Review and Recovery of Lakeside Maas Energy Works Dairy Biomethane Pilot Project Costs.	A.25-08-XXX

CHAPTER 3

PREPARED DIRECT TESTIMONY OF

MARITZA PACHECO

ON BEHALF OF SOUTHERN CALIFORNIA GAS COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

August 15, 2025

TABLE OF CONTENTS

PREPARED DIRECT TESTIMONY OF MARITZA PACHECO (PROJECT EXECUTION COST)

I. PURPOSE AND SUMMARY

The purpose of my testimony is to present the project execution costs associated with the SoCalGas component of the Lakeside: Maas Energy Works Dairy Biomethane Pilot Project (Project) in compliance with D.17-12-004. The Project complies with state legislation (SB 1383) and supports the capture of fugitive methane gas produced at dairy farms, processing of such gas, and the introduction of such processed gas into the SoCalGas pipeline system. This Project delivers on SB 1383's intent by cutting methane emissions and gathering valuable insight for future projects.

SoCalGas requests the fully loaded cost recovery of approximately $7.8 million above the authorized amount of approximately $10.8 million for SoCalGas's design, construction, and commissioning of SoCalGas's Pipeline Laterals, Compressor, Point of Receipt, and Pipeline Extension. These assets will hereafter be referred to as the "Facility" portion of the Project.

The total revenue requirement associated with the $7.8 million capital expenditure is $3.3 million as discussed in the prepared testimony of Rae Marie Yu and Majorie Schmidt-Pines (Chapter 4).

The Table - 1 below summarizes my sponsored costs.

Table-1
Summary of Facility Reasonableness Review
(in $000s)

	Authorized Amount (2019)[1]	Actual Costs	Variance
Direct Costs	8,611	15,544	6,933
Indirect Costs	2,233	3,131	898
Total Facility Costs[2]	10,844	18,675	7,831

[1] Cost estimates were completed in 2018, but the revenue requirement submitted in AL 5398-A was not authorized until 2019. Authorized amount includes $0.277 million in escalation.

[2] Total Facility Costs are fully loaded. Fully loaded costs include both direct and indirect costs (*i.e.* overheads, Allowance for Funds Used During Construction (AFUDC), and ad valorem taxes).

As detailed in this testimony and the associated workpaper, "Lakeside: Maas Energy Works Dairy Biomethane Pilot Project (Lanes 4-6)" (Facility workpaper), SoCalGas completed the Facility scope of work which achieved Lakeside Pipeline LLC objective to deliver processed, uncompressed renewable natural gas into the SoCalGas pipeline system in support of SB 1383 Dairy Pilots. SoCalGas made prudent decisions during the Engineering, Procurement, Construction and Closeout stages of the Facility project. The Facility was completed at a reasonable cost while adhering to industry practices and standards. SoCalGas utilized the available information and reasonable judgment to address challenges (from initial estimating through construction) to arrive at cost effective decisions.

This testimony will show that SoCalGas prudently managed and made reasonable decisions to achieve the Facility's objectives at a reasonable cost. Facility scope and schedule changes increased the number of resources necessary to manage the engineering, design and construction. Furthermore, the timeline to produce the cost estimate, the complexity of the compression system was not fully identified and captured in the preliminary scope of work or cost estimate of the project. In addition, the actual costs reflect higher escalation than the $0.277 million included in the authorized amount.

II. LAKESIDE MAAS ENERGY WORKS DAIRY BIOMETHANE PILOT PROJECT

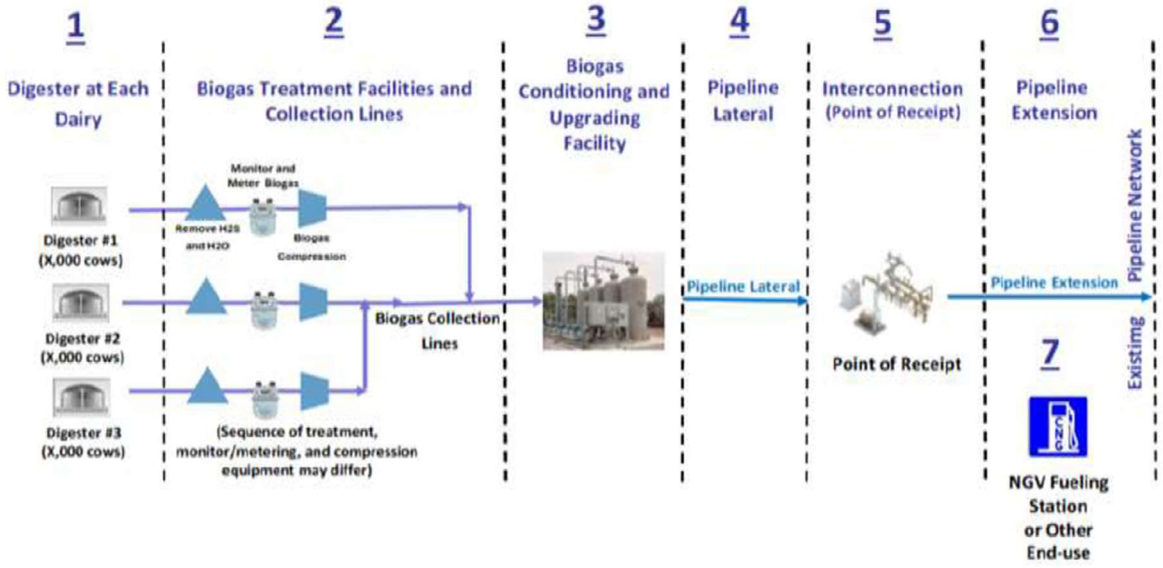
A. Scope of Work

As indicated in the Chapter 1 testimony of Jim Lucas and shown in Figure 1, the project design includes a digester (Lane 1) and a treatment facility (Lane 2). The gas is then transported through collection lines (Lane 2) to a centralized gas conditioning/upgrading facility (Lane 3). The gas is compressed by Utility owned compressors (Lane 4) and connected to the pipeline network through SoCalGas's Point of Receipt (Lane 5) and Pipeline Extension facilities (Lane 6). This testimony will represent SoCalGas's scope of work which includes the design, construction, and commissioning of the facilities shown in Lanes 4-6 of Figure 1 which receive and inject Lakeside's renewable natural gas (RNG) into the SoCalGas pipeline system.

As part of the Project, SoCalGas constructed the Pipeline Lateral and Compressors (Lane 4), a Point of Receipt (Lane 5), and a Pipeline Extension (Lane 6), as depicted in Figure 1 below. As part of Lane 6, pressure betterment enhancements were also necessary to provide sufficient receipt capacity for the RNG volumes. The pressure betterment enhancements

included upsizing existing pipeline to accommodate for the increase in gas volume; which was originally identified in the early stages of engineering and design when the preliminary estimate was developed. Details of the pressure betterment are included in the Facility workpaper.

Figure 1[3]
Dairy Biomethane Pilot Primary Components



In typical producer (suppliers of gas produced in California) interconnect projects, the producers deliver compressed gas to the Pipeline Lateral (Lane 4) at a sufficient pressure to inject into the SoCalGas pipeline system in addition to conditioning the gas to meet gas quality standards. At the typical Interconnection (Lane 5), Point of Receipt (POR), that is, at the point before the gas enters the pipeline extension, SoCalGas installs (i) a filter separator to remove any remaining contaminants, (ii) gas analyzers to validate the gas quality, (iii) service and monitor control valves to protect the SoCalGas pipeline system and public from over pressurizing the pipeline, (iv) a gas meter to measure gas volume, and (v) an odorizer to inject odorant to the producers un-odorized gas. A Remote Terminal Unit (RTU) is installed and enables automated control of the POR (such as closing shut-off valves when the gas analyzers identify gas constituents that do not meet specification). A communication modem is connected to the RTU to enable communication to the SoCalGas Supervisory Control and Data Acquisition network which allows continuous remote monitoring at the SoCalGas Gas Control center. Providing

[3] D.17-12-004 at 17. Pipeline lateral and compression that delivers biomethane from a biogas conditioning facility to the point of receipt is defined as an eligible for funding in the diary biomethane pilot implementation framework. *Id.*, Appendix A at 1.

short duration backup power to the POR is an Uninterrupted Power Supply (UPS). Additionally, a shelter is installed to house and collocate the aforementioned gas analyzers. Once installed, the POR is largely automated, requiring minimal manual intervention or coordination for safe and reliable delivery of gas into the pipeline system.

This Facility was a more complicated operational model. The D.17-12-004 required SoCalGas to design, build, own and operate the compressors to increase the pressure of the gas to meet existing pipeline pressure. This additional responsibility and ownership required a more complicated design and operation. The Facility required the design of a reciprocating compression system that could safely and reliably deliver gas to the POR which in turn facilitates delivery to the SoCalGas pipeline system.

Installing compressors to increase pressure drives the need for certain engineering activities to be completed to mitigate potential safety and reliability issues that can result from compressor installations. For example, the installation of compressors introduces challenges such as pulsation[4], which can cause vibration on the pipelines. Vibration in pipelines can be an operational and safety concern and can lead to unplanned pipe movement. To address this potential issue, detailed engineering studies were completed to design the required pipe supports for system stability.

Another challenge that is introduced by compression is that the compression process increases the temperature of the RNG. This is a challenge because RNG delivered at too high of a temperature can negatively impact the SoCalGas pipeline system. The RNG delivered to the SoCalGas pipeline system must meet the pipeline's temperature specification which requires gas delivery to not be below 50 degrees F or above 105 degrees F. Engineering is performed to identify how to mitigate the temperature increases which in the case of the Facility required the installation of heat exchangers, chillers and utility air compressor systems for instrumentation and controls.

The compressors and auxiliary equipment increased the power demand from the Facility. Engineering identified that the power demand to support the compressors and auxiliary equipment for the Facility required the additional power supply equipment. To manage the

[4] Pressure fluctuations produced by the piston inside the compressor.

Facility power distribution a dedicated Power Distribution Center (PDC) building was engineered and installed.

In addition, due to the installation of the compression system safety and control systems, including emergency shutdown and over-pressure controls, were necessary to maintain safe and reliable operation of the complex Facility.

Unlike typical interconnection projects, the Facility required close coordination with the Producer to design a system that would effectively and efficiently manage the compression and delivery process. This required the installation of a control and communication system which enables the compression system to be available when the producer site is processing gas and ready to deliver gas to the POR.

Overall, while the typical RNG POR and pipeline extension project scope[5] is relatively routine for SoCalGas, the Facility experienced additional complexities as described above. SoCalGas provided the estimate within the regulatory required 30-day period, which limited the ability to complete the technical scope which included integrating compression system. The level of design maturity (percentage of engineering completed) at the time of estimating was in the 1 – 15% range which did not fully identify all detailed scope elements for this type of Facility as stated above.

B. Variance From Assumptions/Projections in Application

SoCalGas was required to provide the Facility cost estimate within the regulatory 30-day period requirement set by D.17-12-004. While the timeline was challenging, SoCalGas utilized the AACE International (AACE)[6] recommended practices to develop the Class 4 cost estimate of $10.8 million. This cost estimate was approved as funding by the Commission in its approval of AL 5398. The actual project costs were $18.675 million.

As described by AACE[7] Class 4 estimates are generally prepared with limited information and subsequently have fairly wide accuracy ranges. They are typically used for project screening, determination of feasibility, concept evaluation, and preliminary budget approval. Typically Class 4 estimates are prepared with only ~1–15% engineering definition,

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5 Point of Receipt and Pipeline Extensions.

6 An industry association of cost estimating professionals.

7 AACE Recommended Practice No.18R-97 - Cost Estimate Classification System - As Applied in Engineering, Procurement, and Construction for the Pipeline Transportation Infrastructure Industries.

meaning engineering details have yet to be defined. In addition, Class 4 estimates can range from -30% on the low side to +50% on the high side. The AACE standard recognizes the project actual costs can fall outside of the range for complex projects. Several factors that can influence an estimate's range include but are not limited to complexity of the project, unique project location, quality of assumptions, time to prepare the estimate and market pricing.[8]

The timelines provided in D.17-12-004 were shorter than the standard duration SoCalGas utilizes to develop costs estimates for a typical SoCalGas Rule 39[9] project at that time. In opening comments to the proposed decision establishing implementation and selection framework to implement the dairy biomethane pilots required by Senate Bill 1383, SoCalGas and SDG&E first recommended changing the preliminary estimate timeframe from 30 days to 120-150 days, consistent with the amount of time needed for a Rule 39 Preliminary Engineering Study.[10] SoCalGas and SDG&E also recommended increasing the time to complete the Final Cost Estimate from an additional 30 days to a 120-180 days since the Final Cost Estimate scope of work is similar to a Detailed Engineering Study which typically takes 120 to 180 days to complete.[11] D.17-12-004 did not adopt these recommendations and this time constraint impacted SoCalGas's ability to generate cost estimates with increased accuracy.[12]

SoCalGas utilized the available sources of information to develop the preliminary project scope and estimate the costs of the Facility. In 2018, the estimate was developed using SoCalGas historical data, information known about the project at the time, and assumptions about project design and execution activities. The data and information used for the estimate did not contain the complicated compression system and the additional engineering, design and

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[8] Despite prudent and reasonable efforts to avoid and reduce costs, external factors can impact project scope, cost, and schedule. Escalation factors are used to adjust labor, equipment, materials, and services costs to reflect anticipated increases over static base year estimates.

[9] SoCalGas Rule 39 Access to the SoCalGas Pipeline System, *available at:* https://tariffsprd.socalgas.com/view/tariff/?utilId=SCG&bookId=GAS&tarfKey=298.

[10] R.17-06-015, Comments of Southern California Gas Company (U 904 G) and San Diego Gas and Electric (U 902 G) to proposed decision establishing implementation and selection framework to implement the dairy biomethane pilots required by Senate Bill 1383 (November 29, 2017) at 7, *available at:* https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M201/K974/201974289.PDF.

[11] *Id.* at 7-8.

[12] In SoCalGas and SDG&E's opening comments to the Proposed Decision to Rulemaking (R.) 17-06-015, SoCalGas/SDG&E cited the shortened timelines as a challenge to producing accurate cost estimates.

construction necessary for the completion Facility. However, increased engineering definition would have resulted in a more reliable cost estimate.

In summary, the $10.8 million project cost estimate approved by the CPUC used a Class 4 estimate, based on limited engineering data prepared with approximately 1–15% engineering definition. As stated previously, SoCalGas had cautioned against the 30-day estimating window and recommended longer duration for more accurate estimates. As a result, the Project proceeded with very preliminary project scope and estimate. This limitation and other factors contributed to cost variances, which are addressed in the following section as reasonable and prudent given the circumstances and constraints.

All costs are included in the presented testimony and Facility workpaper. This testimony, and within the associated Facility workpaper, explains how the actual costs vary from the initial Class 4 estimate, and why these variances reflect prudent and reasonable decision-making. Section II. 2. C. Facility Cost Components, details the variance of costs of the Facility as authorized in 2019 to the actual cost to construct the Facility.

C. Facility Cost Components

Table -2[13]
Summary of Fully Loaded Facility Cost Variance (in $000s)

Costs Component	Authorized (2019)[14]	Actuals Costs	Variance
Engineering	683	3,105	2,422
Equipment & Materials	3,127	3,386	259
Construction	2,813	6,031	3,218
Company Labor	704	1,161	457
Other Construction Management	1,284	1,861	577
Direct Costs	**8,611**	**15,544**	**6,933**
Indirect Costs	**2,233**	**3,131**	**898**
Total Loaded Costs	**10,844**	**18,675**	**7,831**

There are five main categories that contributed to Facility cost variances from the initial estimates: (1) Engineering; (2) Equipment and Materials; (3) Construction; (4) Company Labor; and (5) Other Construction Management Costs. These variances resulted from scope changes

[13] Values may not add to total due to rounding.

[14] Cost estimates were completed in 2018, but the revenue requirement submitted in AL 5398-A was not authorized until 2019. Authorized amount includes $0.277 million in escalation.

and external events that were largely unforeseeable at the time of the estimate including, but not limited to, material cost volatility, evolving regulatory requirements, and other external factors. In addition, the actual costs reflect higher escalation than the $0.277 million included in the authorized amount.

SoCalGas navigated technical challenges that required coordination of multiple complex systems, site specific electrical configurations, and control philosophies. SoCalGas reasonably managed each component variance through comprehensive planning, project risk management including schedule financial monitoring. SoCalGas took appropriate actions to manage each variance component as detailed in the following sections and in the Facility workpaper.

1. Engineering Component

Table-3
Summary of Engineering Variance (in $000s)

Scope	Authorized Amount (2019)[15]	Actual Cost	Variance
SoCalGas's Facility	683	3,105	2,422

Increases in Engineering costs were incurred as a result of several factors, but not limited to, expanded engineering scope to include additional equipment and materials, detailed engineering and design support for the multi-discipline project, and drawing as-built close-out support. The additional engineering support resulted in a variance of $2.422 million above the authorized amount of $0.683 million, see Table – 3 above.

The primary scope changes and their approximate cost impacts are provided in Table – 4 Engineering Cost Impact Matrix below, with detailed information available in the supporting Facility workpaper (Section IV.C.1. Engineering).[16]

[15] Cost estimates were completed in 2018, but the revenue requirement submitted in AL 5398-A was not authorized until 2019. Authorized amount includes $0.277 million in escalation.

[16] The associated indirect costs are captured in Section II.C.6. below.

Table – 4 – Engineering Cost Impact Matrix

Cost Impact Matrix		
Scope Change	**Description**	**Cost Impact**
Additional Electrical, Civil, and Structural Design	The electrical and instrumentation requirements for this Facility significantly exceeded those of typical RNG projects. This was primarily due to the inclusion of site-specific equipment such as the compressors and a methane detection system, which introduced a substantial additional electrical load. As a result, a larger and more complex Power Distribution Center (PDC) had to be designed, and multiple equipment sizes and specifications were revised to accommodate the updated design. Furthermore, geotechnical report findings completed after the estimate was created identified soft ground conditions at the project site. These findings necessitated modifications to the civil and structural design, particularly in the sizing and configuration of equipment foundations.	$847,000
Detailed Design Support Activities	During the detailed design phase, the engineering firm was tasked with numerous additional activities to enable the Facility to operate safely, efficiently, and in compliance with regulatory and operational standards. These included advanced drafting and 3D modeling to enable system integration and accuracy. A detailed Process Hazard Analysis led to safety-driven design enhancements, while close coordination with the biogas producer aligned project layouts. The team validated compressor designs for operational compatibility and managed frequent design revisions based on stakeholder input. During construction, they addressed field changes and unforeseen conditions, and prepared additional permitting documents for site requirements.	$450,000
Project Modifications and Close-out	As is common with pilot projects, the final design of the Project evolved significantly due to unforeseen field conditions, stakeholder input, and emerging technical needs. Alignment changes to avoid existing substructures required redesigns and updated construction documents. The scope expanded to include new design standards, control surveys, construction staking, detailed as-builts, and documentation of alignment and tap location changes. Additional support was also needed for stakeholder drawing reviews, so that all updates were captured in the final design package.	$215,000

The addition of the gas compression system added several elements of complexity to a typical SoCalGas Rule 39 RNG Project. The Facility required considerable increase engineering and design support. The expanded scope of work increased the engineering and design effort needed to enhance the design for site-specific equipment, including compressors and a methane detection system, and electrical and controls equipment. The effort included the design of a Power Distribution Center (PDC), safety analyses for geological conditions and a comprehensive

Process Hazard Analysis (PHA). In addition, extensive coordination was necessary to align with Facility layouts and revise engineering drawings throughout the course of the Project.

The final design evolved due to the preliminary nature of the estimate, unforeseen conditions, and stakeholder input. Due to the compressed regulatory timeline for Dairy Pilot site selection, engineering design drawings could not be incorporated, leading to high-level estimates. Typical projects of this complexity go through Front-End Engineering Design (FEED) to define technical requirements and project scope for the development of a cost estimate for authorization. To meet the Commission's filing schedule, the original cost estimate did not utilize FEED. Rather, a preliminary high level plot plan depicting the Facility was developed based on historical Point of Receipt sites. Upon authorization of the Project by the Commission, the selected engineering vendors started FEED. As the scope of work and design basis progressed during FEED, the new design requirements deviated from the preliminary high level plot plan. For example, specified equipment sizes were greater than anticipated which required redesign to accommodate for the changes in equipment.

2. Equipment and Materials Component

Table-5
Summary of Equipment and Materials Variance (in $000s)

Scope	Authorized Amount (2019)[17]	Actual Costs	Variance
SoCalGas's Facility	3,127	3,386	259

Changes in the engineering scope of work, as outlined in the Engineering section above, resulted in an increase in equipment and material costs for the Facility. The additional Equipment and Material resulted in a variance of $.0259 million above the authorized amount of $3.386 million, see Table – 5 above. The Facility design required the installation of a power distribution center, piping material for pipe supports due to vibrations from the compressors and for the compressor/pipeline laterals, additional instrumentation and controls material/equipment, and additional instrument air compressor package. SoCalGas mitigated cost wherever possible including bundling the procurement of long lead equipment such as separators and compressors.

[17] Cost estimates were completed in 2018, but the revenue requirement submitted in AL 5398-A was not authorized until 2019. Authorized amount includes $0.277 million in escalation.

In addition, SoCalGas collaborated with multiple internal departments and utilized an established criteria to review and analyze competitive material bid packages.

The primary scope change and the approximate cost impact is provided in Table – 6 – Equipment and Materials Cost Impact Matrix below, with detailed information available in the supporting Facility workpaper (Section IV.C.2. Equipment and Materials).[18]

Table – 6 – Equipment and Materials Cost Impact Matrix

Cost Impact Matrix		
Scope Change	**Description**	**Cost Impact**
Power Distribution Center Material Costs	The preliminary estimate assumed an electrical shelter similar to an RNG site would be utilized for the project site. Due to the additional equipment and electrical load requirements to operate the compressors and the methane detection system, the Project required the installation of a power distribution center (PDC).	$445,000

3. Construction Component

Table-7
Summary of Construction Contractor Costs (in $000s)

Scope	Authorized Amount (2019)[19]	Actual Costs	Variance
SoCalGas's Facility	2,813	6,031	3,218

Increase in construction costs are primarily attributed to the refined project scope which required: (1) additional electrical scope of work; (2) additional mechanical and civil/structural scope of work; and (3) additional installation requirements resulting from detailed engineering, design, and change orders. The additional construction activities resulted in a variance of $3.218 million above the authorized amount of $6.031 million, see Table – 7 above. A summary of these scope changes and their approximate cost impacts are provided in Table – 8 Construction Cost Impact Matrix below, with detailed information available in the supporting Facility workpaper (Section IV.C.3. Construction).[20]

[18] The associated indirect costs are captured in Section II.C.6. below.

[19] Cost estimates were completed in 2018, but the revenue requirement submitted in AL 5398-A was not authorized until 2019. Authorized amount includes $0.277 million in escalation.

[20] The associated indirect costs are captured in Section II.C.6. below.

Table - 8 – Construction Cost Impact Matrix

Cost Impact Matrix		
Scope Change	**Description**	**Cost Impact**
Increased Electrical Construction Costs Identified during Detailed Design	During design after the estimate was created, it was determined that the electrical requirements were significantly greater than RNG projects as this project site incorporated compressors and a methane detection system. This required the construction of a complex Power Distribution Center (PDC), which is approximately four times the size and weight of a typical RNG electrical shelter, along with the associated electrical installation needed to power the site.	$886,000
Increased Civil and Structural Construction Costs Identified during Detailed Design	During detailed design SoCalGas completed geotechnical analysis and determined that the soil conditions required the foundations for the compressors to be significantly larger than estimated, increasing construction costs.	$222,000
Unidentified Communication Lines Encountered During Construction	SoCalGas identified a conflict between the proposed pipeline alignment and existing communication lines. To resolve this, the alignment was shifted to the roadway edge, resulting in increased costs due to additional backfill, grading, and paving.	$598,000
Additional Instrumentation Infrastructure	Additional instrumentation work was identified during construction which included building above ground instrumentation pipe racks, installations of panels, additional cabling, and more.	$97,000
Additional Electrical Infrastructure	The increased electrical requirements scope identified during design required duct bank installation to house the electrical conduit, increasing construction costs.	$55,000
Environmental Monitoring Support	SoCalGas determined in detailed design that a full time dust control monitor would be required for the construction duration which increased construction costs.	$58,000
Permit Requirements	Additional driveways and entryways improvements were needed per the encroachment permits issued from the county, increasing construction costs.	$39,000

The preliminary cost estimate did not reflect the Facility's final scope of work as it was based on early design assumptions prior to initiating FEED. Once the Facility design reached approximate 90% maturity, SoCalGas performed a constructability review with the support of a Construction Contractor to finalize project scope. The finalized scope was included in the construction bid package which incorporated key design adjustments and additional equipment installations that were not included in the preliminary estimate. The additional electrical, mechanical, and civil/structural scopes of work were driven by the scope changes outlined in the

above Engineering Section. These scope changes included additional equipment and material installations required to be completed by the Construction Contractor, listed in the Equipment and Material Sections.

During construction, SoCalGas encountered several unforeseen conditions that necessitated additional construction activities including unidentified substructures, additional electrical and instrumentation infrastructure, and permit required activities. These changes identified during construction were managed through a structured review and approval process. This included evaluation of the identified cost impacts, review of justification documentation, and final approval by appropriate project stakeholders.

In addition, the Facility construction schedule was approximately three times longer than originally estimated in 2018. Construction for the Facility started August 24, 2020 and was completed on August 27, 2021. The extended schedule was driven by the increased scope (*e.g.* installing a larger and more complex electrical system; installing additional electrical and instrumentation and controls equipment/materials; installing additional piping and valves due to the electrical and instrumentation detailed design requirements; and the pressure betterment). The longer schedule in turn increased costs for project management, inspections, and AFUDC (interest during construction), as discussed in Section II.C.5. Other Construction Management Costs and Section II.C.6. Indirect Costs

Throughout the construction of the Facility, SoCalGas took action to reduce costs. For example, SoCalGas re-sequenced tasks and shared resources between the dairy pilot projects to reduce idle time, where possible. SoCalGas monitored contractor performance and cost with regular project status meetings, progress payments tied to milestones, and onsite inspection to confirm work was done efficiently and safely. For instance, SoCalGas avoided costs, where possible, by strength testing piping in place rather than off-site and as a result decreased construction contractor labor and transportation costs.

4. Company Labor Component

Table-9
Summary of Company Labor (in $000s)

Scope	Authorized Amount (2019)[21]	Actual Costs	Variance
SoCalGas's Facility	704	1,161	457

The increase in Company Labor was primarily due to additional engineering, project management, field operations and construction management required to support the increase in scope of work as outlined in the Engineering and Construction sections above. The additional Company Labor activities resulted in a variance of $0.457 above the authorized amount of $0.704 million, see Table –9 above. With the construction schedule extended three times longer than estimated and the encountered unforeseen site conditions, SoCalGas required additional project management, construction management, and engineering oversight personnel. The evolving scope changes required an increase of support for material oversight, engineering design, agency coordination, vendor interfacing, promoting a safe work environment, coordinating with contractors, and document management. The additional company personnel are integral in maintaining project governance for changes to the project's scope, budget, and schedule. The primary scope change and the approximate cost impact is provided in the Table – 10 Company Labor Cost Impact Matrix below, with detailed information available in the supporting Facility workpaper (Section IV.C.4 Company Labor).[22]

[21] Cost estimates were completed in 2018, but the revenue requirement submitted in AL 5398-A was not authorized until 2019. Authorized amount includes $0.277 million in escalation.

[22] The associated indirect costs are captured in Section II.C.6. below.

Table – 10 - Company Labor Cost Impact Matrix

Cost Impact Matrix		
Scope Change	**Description**	**Cost Impact**
Additional Project Management Support for extended Construction Duration	The project scope increased as it became more defined during the detailed engineering design phase, which led to an extension of the construction schedule. As a result, additional internal company labor was required to support the extended construction duration. The majority of this increase was driven by the Project Management and Field Engineering, whose continued involvement was essential due to the project's complexity. In addition, internal support groups such as Gas Engineering provided technical assistance for addressing information inquiries throughout the construction phase.	$164,000

5. Other Construction Management Costs

Table-11
Summary of Other Construction Management Costs (in $000s)

Scope	Authorized Amount (2019)[23]	Actual Costs	Variance
SoCalGas's Facility	1,284	1,861	577

Increases in the scope of work and schedule as outlined in the sections above resulted in an increase in other construction management costs as the project duration was approximately three times longer than originally estimated. The additional Company Labor activities resulted in a variance of approximately $0.577 million above the authorized amount of $1.284 million, refer to Table – 11 above. Additional construction support was needed during the extended construction duration, including third-party field engineering services necessary to verify materials and design meet project specifications, inspection teams tasked with monitoring construction means and methods adhere to industry standards, specialized third-party non-destructive examination (NDE) to assess weld integrity without causing damage, and NDE oversight required during construction. These construction management services are essential to maintaining safety and construction quality throughout the project. The primary scope change and the approximate cost impact is provided in the Table – 12 Other Construction Cost Impact

[23] Cost estimates were completed in 2018, but the revenue requirement submitted in AL 5398-A was not authorized until 2019. Authorized amount includes $0.277 million in escalation.

Matrix below, with detailed information available in the supporting Facility workpaper (Section IV.C.5. Other Construction Management).[24]

Table – 12 – Other Construction Cost Impact Matrix

Cost Impact Matrix		
Scope Change	**Description**	**Cost Impact**
Additional Construction Management Support for extended Construction Duration	The construction duration was approximately three times longer than the originally estimated durations due to the additional equipment and associated piping required along with their installation complexities. SoCalGas required additional third-party field engineering, inspection teams, non-destructive examination (NDE), and NDE oversight during this extended construction duration, resulting in increased costs.	$350,000

6. Indirect Costs Component

The Indirect Costs category includes SoCalGas overheads, Allowance for Funds Used During Construction (AFUDC), and ad valorem taxes. The Indirect Costs are estimated as a function of the Facility direct costs. The Facility scope changes that increased the direct cost categories discussed above also increased the Indirect Cost category.

Table-13
Indirect Costs (In $000s)

Scope	Authorized Amount (2019)[25]	Actual Costs	Variance
SoCalGas's Facility	2,233	3,131	898

a. SoCalGas Overhead Costs

The Capital costs of completing a project consist of both direct costs and indirect costs (or overhead), in sum, the fully-loaded cost. Overhead allocations are those activities and services that are associated with direct costs and benefits, such as payroll taxes and pension and benefits, or costs that cannot be economically direct-charged, such as Administrative and

[24] The associated indirect costs are captured in Section II.C.6. below.

[25] Cost estimates were completed in 2018, but the revenue requirement submitted in AL 5398-A was not authorized until 2019. Authorized amount includes $0.277 million in escalation.

General overheads. Overhead allocations are based on direct capital costs, consistent with their classification as Company Labor, Contract Labor, or Purchased Services and Materials.

On a monthly basis, the Affiliate Billing and Costing teams at SoCalGas review overhead activity and set overhead rates that take into account the particular overhead's loading base, pool activity, and historical and budgeted data. Once reviewed and approved, overhead rates are input into SoCalGas's accounting system. Through the accounting system, overhead rates are applied to Capital and O&M direct costs monthly in accordance with their classification. Increases in overhead costs are due to the increases in direct capital costs described above.

b. Allowance for Funds Used During Construction

Any changes to direct costs, AFUDC rate, and project timeline from when estimated costs are developed to when actual costs are incurred can lead to change in AFUDC costs. Capitalized property tax represents property tax incurred during construction.[26] The property tax rate is updated annually and developed using the full assessed value of the entire plant and the total amount of assessed property taxes. The formula for calculating monthly property tax is: Current Month CWIP Balance x (Annual Property Tax Rate/12). Any variance between estimated and actual costs, as well as changes to a project timeline, can increase or decrease property tax costs.

c. Ad Valorem

The Code of Federal Regulations specifies that ad valorem taxes on physical property during a period of construction shall be included in the capital construction costs.[27]

This concludes my prepared direct testimony.

[26] Capitalization of property tax for SoCalGas was ordered by the CPUC in D.13-05-010.

[27] Components of Construction, 18 C.F.R. §367.51(a)(16) (2007).

III. QUALIFICATIONS

My name is Maritza Pacheco. My business address is 555 West Fifth Street, Los Angeles, California. I am currently employed by SoCalGas as a Manager, Complex Project Delivery Department. Since starting with SoCalGas 2006, I have held various positions of increasing responsibility in the areas of Engineering, Aboveground Storage, Storage Integrity Management and Complex Projects. I received my Bachelor of Science degree in Mechanical Engineering from the California State University, Northridge.

My current management responsibilities include oversight of Aboveground Storage, Transmission, RNG complex projects.

I have not previously provided testimony before the California Public Utilities Commission.