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SOUTHERN CALIFORNIA EDISON®

(U 338-E)

Direct Testimony Supporting Southern California Edison Company's Application for Authority to Increase Rates for its Catalina Gas Utility

Before the

Public Utilities Commission of the State of California

Rosemead, California
December 15, 2023

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I.
INTRODUCTION

A. Overview

Southern California Edison Company (SCE) submits in this application its Test Year 2025 General Rate Case (GRC) for its propane-fueled gas operations on Santa Catalina Island (Catalina). In this Catalina Gas Test Year 2025 GRC application (Application) and direct testimony, we describe our current gas operations on Catalina and discuss and support: our 2025 Test Year and 2026-2028 attrition years funding requirements; our plan for continuing to provide safe, reliable, and affordable service to Catalina customers; and our plan to exit the gas distribution business completely, utilizing an approach to prudently, cost-effectively, and opportunistically begin the necessary steps to transition gas customers to all-electric service over a managed transition period forecasted to be 20 years or less, if feasible. This GRC application presents recorded capital since the last GRC, which was filed in September 2008,[1] and an evaluation of recorded costs and a forecast of Test Year 2025 and attrition years 2026-2028 base rates. SCE also presents proposed changes to its tariffs requesting no new gas service connections be allowed (except for safety or an emergency), an advice letter (AL) mechanism to review and approve, on a case-by-case basis, electrification if a portion of gas infrastructure needs to be repaired, replaced, and/or relocated and the cost to electrify customers served by that gas infrastructure will be the same or less expensive, rate design changes, and addresses changes proposed in its Catalina Water 2022 GRC[2] that also affect the gas operations.

In this Application, SCE asks the California Public Utilities Commission (CPUC or Commission) to authorize a 2025 gas base revenue requirement of $2.062 million. This represents a $0.261 million increase over 2025 estimated present rate revenues. While the 2025 base revenue requirement is increasing by approximately 42% since SCE's last authorized amount of $1.451 million in 2009, the rate impact to the average residential and non-residential customer in 2025 will be much smaller, approximately 7%, due to a large portion of the revenue requirement increase being collected

[1] *See* Application (A.)08-09-019.
[2] *See* A.20-10-018.

from a single gas customer: SCE Electric, which requires gas service to fuel the electric generation facilities on Catalina. SCE requests that the proposed Catalina 2025 gas base rate increase be fully reflected in gas customers' rates effective January 1, 2025.[3] SCE also requests base revenue requirements attrition years increases of $0.247 million in 2026, $0.048 million in 2027, and $0.045 million in 2028.

B. Background

Catalina is located approximately 26 miles off the southern California coast. It is a 22-mile-long, 8-mile-wide, geographically isolated, sparsely populated, topographically rugged, and semi-arid island. It is a place where all gas must be imported by boat, but with high service requirements due to the large influx of annual visitors that require gas utility service largely for heating and cooking. Many of these characteristics contribute to heightened vulnerabilities on Catalina, including to climate change and other emergencies. Consequently, it is a very challenging and costly place to operate a gas utility business.

As the sole regulated utility provider to the island, SCE provides electric, water, and gas service on Catalina and has done so since 1962.[4] SCE serves approximately 1,400 commercial and residential gas customers on Catalina (as contrasted with approximately 2,500 electricity customers and 1,900 water customers across Catalina). While the electric and water utilities serve the entire island, the gas utility only provides service to customers within the City of Avalon. Catalina is the only location where SCE provides gas utility service; consequently, it is a tiny rate base. Since acquiring the gas utility in 1962, SCE has requested and received authorized increases in gas base rates only four times: for Test Years 1979, 1987, 2005, and 2009.[5] In the 1979 GRC, SCE was authorized to establish a Gas Cost Adjustment Clause (GCAC) that permits SCE to pass through to customers, biannually, its wholesale

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[3] As is typical in GRCs, SCE may file a motion to establish a memorandum account to record the difference between the revenues at the higher proposed rate and the present rate revenues beginning January 1, 2025 until a final decision is issued in this GRC and in the event this proceeding is not finalized by November 2024.

[4] Decision (D.) 64420 authorized SCE to purchase all of the gas, water, and electric utility service facilities on Catalina.

[5] *See* D.92059, D.87-07-019, D.04-12-018, and D.09-09-034.

cost of gas purchased, including fuel transportation costs. Authorized base rates, however, have not changed since the 2009 GRC.

In two of SCE's previous Catalina Gas GRCs, the Commission considered its jurisdiction to regulate Catalina Gas's rates in light of the fact it is a propane utility, and found it had jurisdiction in both cases.[6] SCE is not requesting the Commission re-examine its jurisdiction over Catalina Gas in this proceeding. If the Commission wishes to re-examine its jurisdiction, SCE notes two changed conditions since its last Catalina Gas GRC: SCE is no longer the only retail vendor of tanks or propane refills on the island and SCE believes there is no possibility that the gas plant will be converted back to a liquid petroleum gas (LPG)/butane mix as SCE intends to exit the gas distribution business.[7]

C. Current Operations

SCE's propane-fueled gas production and distribution system serves approximately 1,400 residential and commercial customers who reside primarily within the Avalon city limits, including Pebbly Beach Village. Since December 2011, propane gas has also served SCE's electric customers by feeding 23 microturbines[8] that generate electricity at SCE's Pebbly Beach Generating Station (PBGS) in Avalon. LPG, in the form of propane, is delivered to Catalina by barge in 9,000-gallon tanker trucks once or twice per week and offloaded at PBGS via a delivery system that consists of a liquid trap and a propane gas compressor, all protected by an emergency shutoff system. When a delivery is made, hoses are connected from the tanker truck to the propane gas compressor discharge and liquid line to one of three[9] 30,000-gallon LPG storage tanks. Other major components of the gas production operation

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6 *See* D.92059, pp. 6-9 and D.04-12-018, pp. 5-6. The Commission first addressed the jurisdictional question in the 1979 Gas GRC, concluding that since butane at that time was the principal ingredient in the butane/propane mix, the California Public Utility Code (P.U.C.) § 221 exclusion would not apply to SCE's Catalina gas operation. Since that time, the Commission in four cases involving very small gas operations has deemed a utility's all-propane service unregulated, except for safety requirements (*see* D.83-03-004, D.93-06-089, D.95-02-026, and D.01-04-031).

7 In D.04-12-018 at p.6, the Commission stated: "In view of these considerations – in particular, the monopolistic nature of the utility service and the possibility that the gas plant will be converted back to an LPG mix if prices or other conditions warrant – we conclude that SCE's Catalina gas service is distinguishable from other propane operations that would be deregulated under Pub. Util. Code § 221."

8 At present, four of the 23 microturbines installed are permanently out of service and cannot be returned to operation.

9 There is a total of four LPG storage tanks at PBGS; however, one was intentionally removed from service to meet fire code requirements.

include three electric heaters that heat and vaporize the LPG to change it from a liquid to gas, a 1,000-gallon surge tank, leak detectors, and a fire-suppression system.

The propane gas feeding the distribution system is mixed with air to create a substitute for natural gas, which is used to serve gas customers in Avalon through approximately 9.5 miles of distribution pipeline segments and approximately 1,000 service laterals.[10] The propane gas/air mixture is supplied to customers at a pressure of approximately six pounds per square inch (psi) with a maximum heating value of 1,350 British thermal units (BTUs) and a maximum allowable operating pressure (MAOP) of 10 psi. Under federal regulations, the distribution pipeline system is considered a "low pressure distribution system."[11] Other major components of the distribution system include approximately 100 gas valves, a corrosion protection system (comprised of four impressed current rectifiers and galvanic anodes), a pressure-monitoring unit, a gas specific gravity analyzer, a gas chromatograph, a gas pressure transducer, and approximately 1,400 gas meters. The most common gas meter on Catalina is the American Meter AC-250 (250 cubic/feet [ft^3] capacity). Distribution pipe sizes range from 0.5- to 8-inch diameter pipe. Most of the distribution pipeline was installed in 1963 and 1964 when SCE rebuilt the gas system. The distribution pipeline currently consists of both steel and polyethylene (plastic) pipe.

[10] A gas service lateral is the section of pipe that connects from the distribution main in the public street or easement to the service riser located on the applicant's premise.

[11] 49 Code of Federal Regulations (CFR) § 192.3.

II.

OPERATIONAL, REGULATORY, AND POLICY CHANGES SINCE SCE'S LAST GAS GENERAL RATE CASE

SCE last filed a Catalina Gas GRC in 2008 for a 2009 Test Year rate increase. In that GRC, the Commission authorized a base rate revenue of $1.451 million, an approximate 60% revenue increase over the then-current base rate revenue.[12] Residential rates were increased, on average, by approximately 18% and phased in over three years. Major changes to operational practices, regulatory requirements, customer behavior, and local, state, and federal policy have taken place since 2009. This section describes these changes to provide greater context for SCE's proposals in this application.

A. Enhanced Gas Safety Requirements

The last Catalina Gas GRC was prior to the San Bruno pipeline explosion. This single event, which occurred in September 2010, caused a paradigm shift in the operation and maintenance of gas pipelines not just in California, but throughout the United States. The California Legislature and the Commission acted quickly in response, passing new laws, and promulgating new rules and requirements to significantly improve gas pipeline safety.[13] Even though SCE does not operate transmission gas pipelines on Catalina, and the Catalina Gas System is a low-pressure system, many of these new requirements apply to it. For example, pursuant to statute and Rulemaking (R.)11-02-019, SCE Catalina Gas submitted its Gas Safety Plan in June 2012 (which Commission Staff approved in June 2013). In addition to P.U.C. Sections 961 and 963, the Gas Safety Plan addresses the requirements of Assembly

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[12] *See* 2009 Gas GRC decision (D.09-09-034), pp. 2-4 that describes the magnitude of the revenue requirement increase compared to the 2005 Gas GRC decision.

[13] For example, California Senate Bill (SB) 705, signed into law on October 7, 2011, codified P.U.C. §§ 961 and 963. Section 961 requires that each gas corporation in California develop a plan for the safe and reliable operation of its gas pipeline facility and requires that the Commission accept, modify, or reject the plan by year-end 2012. Section 963, among other things, establishes that it is the policy of the State that the Commission and each gas corporation place safety of the public and gas corporation employees as the top priority. On April 19, 2012, the Commission approved D.12-04-010, which amended the scope of the Commission's Pipeline Safety Rulemaking (R.11-02-019) to include complying with the requirements of P.U.C. Sections 961 and 963. The Commission directed each of the State's gas corporations to submit a proposed gas system operator safety plan (Gas Safety Plan), with documentation of the workforce comment process described in the decision, by June 29, 2012.

Bill (AB) 56, chaptered on October 7, 2011, which codified P.U.C. § 956.5.[14] The Commission's stated purpose of the Gas Safety Plan is "to motivate a gas utility to reflect upon its existing methods and for it to change, to optimize, or to enhance the existing methods,… and the lessons learned from the San Bruno incident, as appropriate, to ensure that the gas utility has a prudent plan in place to protect public safety and worker safety."[15] SCE's Gas Safety Plan has led to improvements in worker and community safety through changes in our Standard Procedures (SPs) and increased inspection methods beyond regulatory requirements. For example, from October 2012 through March 2014, SCE installed 2,288 bar holes[16] along approximately 8.7[17] miles of its propane gas main line. These bar holes provide additional sampling points for the annual leakage surveys because the specific gravity of propane gas is heavier than air (i.e., it tends to settle in low places). The bar holes were installed consistent with the United States Department of Transportation (USDOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) Gas Leakage Control Guidelines for LPG systems.[18]

In June 2014, Commission Staff issued a Hazard Analysis & Mitigation Report on Aldyl A Polyethylene (PE) Gas Pipelines in California (Report).[19] The Report examined the status of the danger of potential failure due to slow crack growth associated with early-generation Aldyl A PE pipes. In response to this Report, SCE sent two samples of Aldyl A pipe in its gas distribution system to a lab for testing and analysis.[20] The purpose of the testing was to determine the material vintage of the Aldyl

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[14] P.U.C. § 956.5 requires operators to review, at least once each calendar year, emergency contingency plans with local fire departments having jurisdiction over the area where intrastate transmission and distribution lines are located.

[15] *See* D.12-04-010 at p. 19.

[16] A bar hole is made in the soil or paving for the specific purpose of testing the subsurface atmosphere with a combustible gas indicator to detect traces of leaked gas.

[17] The propane gas main lines on Catalina extend approximately 9.5 miles; however, some portions of the main line are located just beneath the ground surface or entirely above ground and are therefore ineligible for bar hole testing.

[18] The USDOT PHMSA Gas Leakage Control Guidelines for LPG systems recommend, but do not require, best practices for LPG leak detection, including the use of bar holes spaced 20 feet apart.

[19] In March 2012, Commission staff issued a report regarding 17 hazards that indicated early vintage Aldyl A pipes were a major potential hazard affecting gas pipeline safety which ultimately led to this specific Report.

[20] SCE estimates that it has approximately 0.47 miles of Aldyl A pipe in its gas distribution system. One of the samples was taken from a development known to comprise the vast majority (approximately 70 percent) of Aldyl A pipe within the Catalina gas distribution system. The second sample, in another location, was the result of an opportunistic removal of Aldyl A pipe through routine operations and maintenance.

A pipe sections, installed in the 1970s, and determine whether or not the samples had a low-ductile inner wall (LDIW).[21] As a result of the report and lab testing, SCE modified its SPs to (1) opportunistically replace Aldyl A pipe encountered in the field, (2) replace Aldyl A pipe that has been squeezed off, (3) conduct a field test for Aldyl A pipe opportunistically replaced in the field, and (4) continue the practice to send selected samples of Aldyl A pipe found in new field locations to a lab for analysis.[22]

In 2011, pursuant to PHMSA regulations,[23] SCE implemented its Distribution Integrity Management Plan (DIMP) for Catalina Gas. The DIMP is a comprehensive document that focuses on threat assessment and reduction and risk evaluation and prioritization. The DIMP includes performance measures, results monitoring, and reporting of threats including additional and/or accelerated measures to address risks. SCE has also developed other plans, such as its Emergency Response Plan and Community Gas Emergency Plan, to meet increasing regulatory requirements since the San Bruno event. Additionally, the Safety and Enforcement Division of the CPUC conducts operational and maintenance audits of SCE's Catalina Gas system and plans approximately every 36 months. SCE regularly updates its SPs and plans based on recommendations from CPUC staff auditors.

In summary, since the Catalina Gas 2009 GRC, gas regulations and compliance requirements have substantially increased, resulting in enhancements to existing (and new) plans, practices, and procedures for the Catalina Gas system and increased costs.

B. Electric Generation Partially Fueled By Propane

Catalina is a closed electrical system in that the electricity generated and distributed on the island is isolated and self-contained. Electricity is not obtained from the mainland. Six diesel generators[24] at PBGS, with a combined capacity of 9.325 megawatts (MW), provide approximately 97 percent, on

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[21] The final report from the lab indicated that both samples "do not appear to have a low ductile inner wall (LDIW)." Additionally, one of the samples was identified as likely being produced in Tulsa, Oklahoma on September 12, 1974 and both samples were likely produced from DuPont's Alathon 5043 material, after the time period LDIW pipe was manufactured. Additionally, neither sample showed obvious signs of micro-cracking of the surface of the inner wall upon bend back.

[22] SCE is in the process of contracting with a new lab because the lab it previously used is no longer in business.

[23] *See* 49 CFR Part 192, Subpart P - Gas Distribution Pipeline Integrity Management.

[24] The diesel electric generators serving Catalina date back to as early as 1958 and have been retrofitted over time with emissions-control systems to comply with increasing emissions regulations while meeting the variable loads of the island's largely tourism-based economy.

average, of delivered electricity to Catalina. Additional sources of electricity generation and storage at PBGS include propane-fueled microturbines (with a combined capacity of 1.5 MW) and one sodium-sulfur battery energy storage system (BESS) (with a 1.0 MW capacity and 7.5-megawatt hour (MWh) total energy output).

In 2002, the South Coast Air Quality Management District (SCAQMD) provided the microturbines to SCE as part of a program to determine whether their use could help reduce criteria pollutant emissions from the diesel generators. Microturbine use at PBGS began in 2003 as a single-unit test.[25] Pursuant to a 2009 settlement agreement with SCAQMD regarding alleged air pollution violations, SCE agreed, among other items, to commence operation of a BESS and microturbines at PBGS by December 31, 2011. As such, in December 2011, SCE began generating a portion of the electricity for Catalina from its 23 propane-fueled microturbines.[26]

SCE operates its electric generating resources at PBGS under a Clean Air Act Title V facility permit issued by the SCAQMD. In 2020, SCE launched its Catalina Repower Project to evaluate various options to repower Catalina with new, clean diesel generators and alternative generation technologies that are compliant with new emissions regulations[27] and conform to the State's goals of reducing greenhouse gas emissions and increasing renewable energy deployment. In November 2022, the CPUC approved an all-party settlement with SCE, The Utility Reform Network (TURN), and the Public Advocates Office at the CPUC (Cal Advocates) that establishes a process to obtain future Commission review and approvals for the Catalina Repower Project once the SCAQMD completes a rulemaking that affects future stages of the project and issues the necessary permits.[28] The parties

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[25] Following years of experimentation, additional units were installed and commissioned by August 2011.

[26] SCAQMD permits require SCE to ensure that the BESS, or at least 50% of the operating capacity of the microturbines, or both, be integrated with the generating system at all times, except during necessary maintenance and repairs and for SCE to generate at least 635,000 kWh (annually) from the propane-fueled microturbines.

[27] For example, in 2018, the SCAQMD lowered emissions limits for electricity generating facilities, including PBGS (Rule 1135, Emissions of Oxides of Nitrogen from Electric Power Generating Systems). In January 2022, SCAQMD adopted changes to Rule 1135 requiring SCE to meet new NOx emission limits on both a per-unit and facility-wide basis. Also, in January 2022, the SCAQMD approved an Abatement Order, which authorized SCE to continue operation of Unit 15 (newest diesel generator installed in 1995) while evaluating the feasibility of various PM-reduction measures and submitting a plan for compliance.

[28] *See* D.22-11-007.

agreed to three phases in the settlement agreement. Phase 1A includes the installation of two new diesel units to replace the existing Units 8 and 10. Phase 1B includes the replacement, retrofit, or retirement of existing Unit 15. Phase 2 includes launching the Catalina Clean Energy All-Source Request for Offers (RFO) for renewable, zero-carbon, and near-zero emission generation resources. SCE launched Catalina's RFO on December 21, 2022, to solicit offers from interested parties, including project sponsors and developers, for commercially viable energy solutions to complement Phase 1 and SCE's long-term clean energy strategy for Catalina. Offers are due to SCE by January 5, 2024.

Consistent with the November 2022 settlement Phases 1A and 1B, SCE is actively pursuing the permits for three U.S. EPA Tier 4 Final (T4F) certified diesel engines; two of which have already been procured and are in a storage facility until proper permits are received. Installing new T4F diesel engines will significantly reduce emissions of nitrogen oxides (NOx) and other criteria pollutants in the short term. The SCAQMD is in the process of amending its Rule 1135 to significantly reduce NOx and particulate matter (PM) emissions from electricity generating facilities, advocating for near-zero and zero-emission technologies, and assessing the possibility of incremental propane-fueled generation on Catalina. As a part of its Catalina Repower Project, SCE performed an extensive Grid Stability Study to evaluate feasible clean energy technology options that would support SCE's obligation to provide reliable electric utility service for this isolated electric system considering the unique island characteristics. The study confirmed the critical need for three T4F-certified diesel engines and identified key limitations on the use of propane for power generation at PBGS: the need to allocate most of the propane for gas utility service; fire suppression and safety regulations that limit the amount of storage available; and the physical condition of the aging microturbines (which are currently being used at their maximum capacity). SCE's long-term Catalina strategy includes replacing the aging microturbines with near-zero/zero-emission propane technology once it becomes commercially available. The benefits of gas electrification (described in more detail in Chapter III) include freeing up additional propane for power production.

C. Climate Vulnerability

Since the last GRC, Catalina has experienced real impacts due to climate change. Findings from SCE's 2022 Climate Adaptation Vulnerability Assessment (CAVA) identified gas utility infrastructure that could be exposed to hazards such as sea level rise, storm surge, and precipitation (and ensuing debris flow). Other climate hazards like wildfire and drought pose challenges to Catalina which may lead to other direct and indirect adverse impacts to the gas utility.

Sea level rise and storm surge threaten the gas utility given the proximity of PBGS and Pebbly Beach Road to the shoreline. Pebbly Beach Road connects PBGS and adjacent developments with the rest of Avalon; it also contains underground piping delivering gas from PBGS to Avalon. In August 2014, Tropical Storm Maria battered the southern shoreline of Catalina demolishing piers, knocking boats from their stands, and eroding a section of beach adjacent to SCE's saltwater wells. In August 2023, Tropical Storm Hilary was forecast to impact Catalina at a similar and more destructive level as the 2014 Tropical Storm Maria, prompting emergency preparations and evacuations days before the forecasted event. Emergency preparations included closure of Pebbly Beach Road, sequestering of PBGS employees, and the installation of a temporary surge barrier between the shoreline and PBGS utility infrastructure (LPG tank farm, LPG piping system, PBGS Control Room).

Precipitation and debris flow threaten the gas utility given the rugged terrain and steep topography adjacent to PBGS and Pebbly Beach Road. In February 2019, precipitation caused debris flow through Avalon, notably the streets and sidewalks adjacent to gas service lines feeding residential and non-residential meter set assemblies. In 2023, during routine firebreak maintenance activities, a large rock broke loose at an elevation of 100 feet and continued to fall until impaling PBGS's perimeter fence. Also, in 2023, heavy precipitation in "Roaring Canyon" caused substantial debris flow downstream, in some areas adding substantial fill material to the surface; this also caused the storm channel intersecting PBGS to completely fill with material.

Catalina has experienced its share of wildfires and wildfire exposure remains high for Catalina, given its remote and largely undeveloped vegetation area, limited utility redundancy and interconnections, concentrated residential population in Avalon, and high influx of visitors.

In November 1915, a fire burned half of the buildings in Avalon. In 2007, the Island Fire fueled by high winds and dry brush burned 4,750 acres, destroyed a number of structures, and required an urgent evacuation of hundreds of island residents and tourists. The Island Fire also burned and destroyed SCE water and electrical infrastructure. In 2017, Catalina was designated a Tier 3 High Fire Threat District (HFTD) where there is an extreme risk (including likelihood and potential impacts on people and property) from utility related wildfires.[29] Catalina being recently designated a Tier 3 HFTD has unique wildfire vulnerabilities that do not exist on the mainland as noted above (e.g., limited utility redundancy).[30]

Drought also impacts Catalina's utilities. The recent historic drought experienced by the state was particularly impactful to the Catalina Water system and its customers.[31] During the historic drought, with no feasible options to import water, Catalina Water and its customers experienced significant challenges, including water rationing, trucking water to remote distributions, and installing emergency water supplies. Much of SCE's workforce supporting the gas utility responded to the incremental demands brought on by drought. During Stage 2 Mandatory 25% Rationing, customers reduced water use by an average of 40% helping to stave off Stage 3 Mandatory 50% Rationing for several months.[32] Over this period, gas consumption also curtailed compared to historical trends.

Catalina is subject to climate change risks and adaptation to these risks plays an important role in protecting SCE's electric, gas, and water utilities on the island. SCE has identified several climate

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[29] *See* D.17-01-009, p. 2.

[30] SCE has been hardening its electrical infrastructure on the island consistent with its Wildfire Mitigation Plan and will continue to mitigate the risk of its utility infrastructure causing a wildfire as well as the risk to its utility infrastructure of being damaged by wildfires.

[31] After a near normal precipitation year of 10.11 inches during the 2011-2012 season, rainfall levels fell to 7.56 inches, 5.15 inches, and 5.49 inches during the next three years, plunging the island into a historic drought. As a result, SCE activated Stage 1 Mandatory Conservation in June 2013, Stage 2 Mandatory (25%) Rationing in August 2014, and Stage 3 Mandatory (40-50% and greater in some cases) Rationing in August 2016. In November 2016, SCE recorded a historic low water level of 121 acre-feet in its Middle Ranch Reservoir. Rainfall increases to 8.13 inches in 2015-2016 and 15.78 inches during 2016-2017 were not enough to pull the island out of the drought, and a decade low rainfall of 4.20 inches in 2017-2018 further exacerbated it. Only after a substantially greater-than-normal rainfall year of 17.31 inches in 2018-2019 were all Stages of SCE's water conservation and rationing lifted.

[32] SCE is in the process of enhancing its desalination systems to ensure additional water is available to serve its customers while planning for extended droughts in the future. Several other water projects are also in process and being planned to ensure SCE meets water quality and supply requirements and environmental regulations.

vulnerabilities Catalina Island is susceptible to, such as precipitation/flooding, sea level rise, hurricanes, persistent drought, and wildfires. The island's remote location and rural setting increase its vulnerability and pose unique challenges that require adaptation planning to respond to climate risks and other emergencies. Having a small, unique, and remote system creates higher risks when responding to emergencies. For example, when an emergency hits, the water and gas services do not have the same immediate access to critical restoration resources compared to SCE's electric service, which may challenge service restoration. Furthermore, while the Catalina electric and water utilities have redundant distribution supply connections to Avalon's distribution system, offering resiliency in the event one source becomes inoperable, the gas utility has a single distribution supply line connected to Avalon located beneath Pebbly Beach Road that abuts the Pacific Ocean for approximately one mile. The cost of investing in climate adaptation is far less than the cost of inaction – both for the economy and public health and safety. As society decarbonizes in a changing climate, we need modernized planning and investments to ensure safe, reliable, and affordable utility services for the communities we serve in an uncertain future.

D. State Policy

Since California's Greenhouse Gas (GHG) policy was originally codified in 2006 with AB 32, targeting reducing GHG emissions by 2020 to 1990 levels, the state has significantly increased its GHG reduction policies. For example, in 2016, SB 32 advanced the target to reduce emissions by 40 percent below 1990 levels by 2030. In 2017, the California Air Resources Board (CARB) emphasized the importance of integrating building and appliance electrification to reduce both GHG and air pollution,[33] and acknowledged these targets can be achieved through utility incentives, rebates, and other programs.[34] In 2018, Executive Order (EO) B-55-18 further advanced the target by establishing a statewide goal to achieve carbon neutrality by 2045. In the same year, SB 100 set policy to require that 100 percent of total retail electricity sales in California come from renewable energy and zero-carbon

[33] CARB, California 2017 Climate Change Scoping Plan, p. ES 11, *available at* https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf.

[34] *Id.* at p. 65.

resources by 2045. In 2019, SCE published a whitepaper "Pathway 2045," which provides a feasible and economical route to achieve climate neutrality by 2045, reflecting the state's climate change commitment. Pathway 2045 finds that decarbonization can be cost-effectively achieved through powering customers' energy needs with carbon-free electricity, and electrifying transportation and buildings.[35]

In 2021, the California Energy Commission (CEC) published the AB 3232 Building Decarbonization Assessment, stating that residential and commercial buildings account for approximately 25% of California's GHG emissions, and that around 40% of buildings-related emissions — 10% of the state total — are due to onsite combustion, primarily of fossil gas.[36] Also in 2021, to advance the State's ability to meet its GHG policy goals, SCE filed its Building Electrification Application for approval of building electrification programs.[37]

In 2022, SB 1020 further advanced these goals by providing that renewable energy and zero-carbon resources supply 90 percent of all retail electricity sales to end-use customers by 2035, 95 percent of all retail electricity sales to end-use customers by 2040, and 100 percent of all retail electricity sales to end-use customers by 2045. It also requires that renewable energy and zero-carbon resources supply 100 percent of electricity procured to serve state agencies by 2035. Also, in 2022, AB 1279 codified into law the state's 2045 net-zero goal, requiring direct GHG emissions reduction of 85% by 2045.

To help support California's air quality and climate goals and associated policies and regulations, each air district sets regional air quality plans. These plans call for substantial improvements, such as significant reductions in smog-causing NOx and particulate matter ("PM") emissions, to help address areas of extreme and serious nonattainment of the National Ambient Air Quality Standards and California Ambient Air Quality Standards– by 67% more than is required by adopted rules and

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35 California SCE, Pathway 2045, *available at* https://www.edison.com/our-perspective/pathway-2045.

36 California Energy Commission, Final Commission's Report California Building Decarbonization Assessment, (Aug. 2021) p. 33, *available at* https://efiling.energy.ca.gov/GetDocument.aspx?tn=239311.

37 *See* A.21-12-009.

regulations in 2037. The only way to achieve the required NOx reductions is through extensive use of near-zero and zero-emission technologies across all stationary and mobile sources.

In September 2023, SCE published a whitepaper "Countdown to 2045" that builds upon the most affordable and feasible path identified in Pathway 2045, refining the necessary steps to achieve the state's newest, more ambitious decarbonization goals given technology advancements and adoption, deeper understanding of future climate impacts and improved reliability analysis.[38] A key finding in this whitepaper includes the need for more extensive building electrification.

[38] California SCE, Countdown to 2045, *available at* https://download.newsroom.edison.com/create_memory_file/?f_id=6508e6633d63325f2e763f1b&content_verified=True.

III.
CATALINA GAS ELECTRIFICATION

A. Introduction

SCE is a large electric utility, serving approximately five million customers in Southern California, including on Catalina. As the sole regulated utility provider to the island, SCE provides electric, water, and gas service on Catalina and has done so since 1962. SCE serves approximately 1,400 commercial and residential gas customers on Catalina (as contrasted with approximately 2,500 electricity customers and 1,900 water customers across Catalina). While the electric and water utilities cover the entire island, the gas utility only provides service to customers within the City of Avalon. As discussed in Section II.D, it is the State of California's policy to reduce GHG emissions and SCE has determined that decarbonization can be cost-effectively achieved through powering customers' energy needs with electricity. Furthermore, SCE has performed a preliminary feasibility analysis via a Catalina Zonal Electrification Study (CZES), described below. Based on forecast customer savings, environmental and indoor air quality benefits, climate vulnerabilities, and the high cost of service for a tiny rate base combined with being the sole gas utility owned and operated by SCE, SCE proposes to electrify its gas services on Catalina.

Operating a small gas utility and small water utility on a semi-arid (desert) island over rural and rugged terrain is very costly: Catalina is likely the highest-cost district in all of California in which to provide utility services. SCE does not have other gas or water district operations that would normally allow rates to be cross-subsidized by customers in lower-cost districts.[39] With these constraints, in SCE's Catalina Water 2022 GRC Application,[40] SCE proposed a large, approximately $30.5 million, cross-subsidy with SCE's five million electric customers to equitably balance cost-of-service ratemaking

[39] SCE has also explored opportunities to consolidate both the water and gas utility distribution operations on Catalina. In 2007, SCE decided to sell the water and gas systems on Catalina because they are not part of SCE's core business. SCE sent out information packets to companies that expressed an interest in bidding. In 2008, SCE received bids from three companies: California American Water (Cal Am), California Water Service (Cal Water) and Corix. SCE initially began negotiations with Cal Water; however, they backed out in 2009. SCE then reached out to Corix to see if they were still interested, and they expressed interest. SCE tried to negotiate a sale to Corix from 2009 to 2016 and was unsuccessful. SCE has not received any other interest to purchase the water and gas utilities since negotiations with Corix ended in 2016.

[40] A.20-10-018.

principles while maintaining just, reasonable, and affordable rates for its water customers. While this case is still pending at the time of this writing, in the ALJ's Proposed Decision (PD), the Commission rejects SCE's electric subsidy proposal and instead, while recognizing the affordability concern, orders large water rate increases because the Commission believes there is no other readily available option to recover the Catalina water operation costs.[41]

SCE's Catalina Gas operation can be electrified to help the state meet its goals and does not have to face the same fate of repeated significant but necessary future long-term rate increases that SCE's Catalina Water operation faces.[42] Unlike SCE's small Catalina water operation, an alternative exists for SCE's even smaller Catalina Gas operation that aligns with state electrification goals: transitioning customers from gas to electric service. Exiting Catalina's gas distribution operations can be accomplished cost-effectively through a managed gas transition to electric operations. Moreover, the benefits beyond avoiding significant gas system costs and improved customer affordability include: (1) increased safety and reliability; (2) reduced GHG and air pollution emissions over time, helping meet state goals and aligning with SCE's efforts to clean Catalina's long-term power generation mix; and (3) increased public health benefits from avoiding indoor propane gas use.

SCE has already proposed funding to advance Catalina Gas Electrification through its Building Electrification (BE) Ready Catalina program that is currently pending with the Commission.[43] SCE's electrification proposal as part of this application is based on the CZES that is a preliminary high-level analysis of the costs and benefits of electrifying Catalina Gas.

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41 *See* ALJ Toy's Catalina Water PD at p. 79 that states, "The projected rate increases authorized in this decision would increase the AR20 for CARE Catalina Island customers to 10.34 percent in 2024, climbing to 13.51 percent in 2028. For non-CARE customers, the AR20 in 2024 is 16.25 percent, and 32.79 percent in 2028. These increased ratios reflect an affordability concern on Catalina Island, but such rate increases are necessary to pay for water system maintenance, and there exists no other readily available option from which to recover costs."

42 While SCE's requested gas rate increase in this application is not close to the rate increase requested or likely to be authorized in the Catalina Water GRC, if SCE does not electrify the Catalina Gas system it is only a matter time before large capital expenditures will be necessary to replace Catalina Gas' aging gas distribution infrastructure and adding significant new infrastructure to protect it from climate change risks.

43 *See* A.21-12-009.

SCE's electrification proposal in this application does not seek cost recovery now to electrify the gas operations, but, as discussed below, SCE is seeking: (1) the establishment of a memorandum account in this GRC that will allow SCE to gradually, cost-effectively, and opportunistically begin the necessary steps to transition gas customers to all-electric service, (2) a simplified process via a Tier 2 AL to review and approve cases where instead of repairing, replacing, and/or relocating gas infrastructure, SCE can electrify customers in a cost-neutral or cost-effective way, and (3) revisions to certain gas tariffs to prohibit new gas service connections or upgrades unless an exception is granted by SCE for safety or emergency reasons. In addition, as detailed below, SCE seeks approval of Phase 1 of a multi-phase zonal electrification plan, and support to completely exit the gas distribution business by 2045 or sooner. SCE's proposal strikes a reasonable balance between the customer interests in maintaining reasonable gas rates while safely maintaining a reliable gas system in the short term, and moving towards electrification over the medium-term by pursuing a broader strategy to refine the analyses and develop a detailed plan to electrify all gas customers by 2045 or sooner.

B. Catalina Zonal Electrification Study

The CZES[44] examines two scenarios and compares these to a Business-As-Usual (BAU) scenario. These two scenarios include: (1) Policy-Based Electrification; and (2) Rapid Electrification. SCE describes the three scenarios below, the outcome of the study, and its recommendation and reasons to act on the Policy-Based Electrification scenario.

1. Business As Usual

In the BAU scenario, the study assumes there are no major projects to significantly change the current gas utility infrastructure in the near term. Although with gas service expected to continue to 2045 and beyond, more substantial infrastructure investment is anticipated in the long term, including meter replacements, valve replacements, distribution pipeline replacements, storage tank improvements, and gas vaporizer improvements. Additionally, as further discussed below, SCE assumes that in the long term, it would need to either install an additional distribution source line to

[44] *See* WPSCE-01 for the Catalina Gas Zonal Electrification Study.

Avalon or a new gas supply in Avalon to mitigate the risk of climate vulnerabilities causing the current, single-source line from PBGS to Avalon being inoperable for a period of time.

2. Policy-Based Electrification

The Policy-Based Electrification scenario assumes full customer electrification by 2045 (or sooner) minimizing if not eliminating the need for the early retirement of gas infrastructure and customer appliances and equipment. This scenario includes electrification at a rate that is estimated to align with state and local policies. For example, one policy assumption is that SCAQMD will impose a NOx emissions limit of zero for HVAC equipment, water heaters, residential stoves, and dryers sold in California by 2029.[45] Therefore, the assumption of zero NOx for those latter appliance types is optimistic. The assumption of zero-NOx HVAC and water heating by 2029 is somewhat conservative since CARB includes zero-emission appliance standards for that equipment in its 2022 State Strategy for the State Implementation Plan.

For the Policy-Based Electrification scenario, the schedule for equipment replacement is informed by equipment useful life in years, customer preference, or both. No early retirement of gas appliances is included as it is expected that all equipment will be electrified near the end of its useful life. If electrification is required by a policy or program, then the incremental customer cost is still included but it is categorized as a separate line item (e.g., space and water heating after 2030 due to CARB requirements). With formal communication in 2024 and 2025, adequate time exists to help take proactive steps to avoid any need for early retirement. Customer surveys can help provide customer preference, and detail the inventory for Avalon gas appliances, electrical wiring and panel upgrades, and remaining gas equipment life. For Policy-Based Electrification, all equipment is electrified at a slower rate initially, with the rate continually ramping up with experience gained, through the end of the program (2045 forecast).

[45] SCAQMD has outlined its approach to these policies in its 2022 Air Quality Management Plan (AQMP) by stating that it is considering strict NOx emissions standards for all these equipment types, *available at:* www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/final-2022-aqmp/final-2022-aqmp.pdf?sfvrsn=16.

3. Rapid Electrification

The Rapid Electrification scenario includes electrification of all buildings in Avalon by 2030. Since the target date is highly ambitious, this scenario would require CPUC approval of significant customer funds either paid directly to customers or as incentives for the early retirement of gas equipment. For Rapid Electrification, all equipment is electrified at a roughly linear rate from 2025 to 2030.

4. Study Results

The study forecasts the Present Value of Revenue Requirements (PVRR) and Non-Utility requirements as summarized in Table III-1 below. The table also identifies the proportion of the PVRR to the current customer rate base. The BAU scenario coincides with SCE's gas rate base, compared to zonal electrification options coinciding with SCE's electric rate base.

Table III-1
Gas Utility Electrification Scenarios Forecast
(Nominal $000)

Scenario	Utility				Non-Utility*
	Capital	O&M	PVRR	PVRR % of Rate Base	
Business As Usual	$82,117	$33,994	$44,178	1014.65%	$11,618
Rapid Electrification	$32,434	$45,572	$49,057	0.09%	$6,648
Policy-Based Electrification	$35,360	$43,055	$34,272	0.06%	$11,874

**By customer, or state, or federal rebate.*

The study forecasts emission rates as summarized in Table III-2 and Table III-3 below. BAU coincides with emissions both at PBGS, located in the industrial zone of Avalon, and within the buildings of Avalon's epicenter. In contrast, the zonal electrification options consolidate all of Catalina's emissions associated with current electric generation and gas distribution within SCE's PBGS, roughly 1.1 miles from Avalon's epicenter, under a permit from SCAQMD; refer to Figure III-1. While there are improvements in terms of emissions with the zonal electrification options, a more impactful outcome is eliminating emissions from residential and non-residential buildings, and eliminating ignition sources from Avalon buildings, in an area with elevated fire risks and consequences.

When considering emissions associated with SCE's PBGS and the dual serviced electric and gas buildings in Avalon, zonal electrification of SCE's Catalina Gas operation forecasts 17% lower NOx emissions, 67% lower PM emissions, and 0.25% higher GHG emissions. The higher GHG emissions results even with approximately 2.4% less diesel generation; this is due to Renewable Diesel (R99) being utilized as the diesel generation fuel source; with traditional diesel being utilized, the GHG emissions forecast is 1.8% lower in the zonal electrification scenario. Furthermore, with the full adoption of Renewable Propane to meet on-island propane demands, the GHG emissions forecast is 1.9% lower in the zonal electrification scenario.

Table III-2
Catalina Annual Energy Emissions Forecast (0% Renewables)

Scenario	Avalon Buildings				PBGS		
	Ignition Sources*	NOx (lb)	Particulate Matter (lb)	CO2e (MT)	NOx (lb)	Particulate Matter (lb)	CO2e (MT)
Business As Usual	4,047	7,242	158	3,273	46,722	95	2,642
Rapid Electrification	0	0	0	0	46,224	93	5,934
Policy-Based Electrification	0	0	0	0	46,224	93	5,934

**Attributed to gas utility building appliance*
Note: Factors R99 Renewable Diesel

Table III-3
Catalina Annual Energy Emissions Forecast (30% Renewables)

Scenario	Avalon Buildings				PBGS		
	Ignition Sources*	NOx (lb)	Particulate Matter (lb)	CO2e (MT)	NOx (lb)	Particulate Matter (lb)	CO2e (MT)
Business As Usual	4,047	7,242	158	3,273	33,359	68	2,556
Rapid Electrification	0	0	0	0	32,878	66	5,841
Policy-Based Electrification	0	0	0	0	32,878	66	5,841

Figure III-1
Catalina Gas Utility, Including PBGS Gas Plant
and Proximity to Distribution Epicenter

C. SCE Recommends the Implementation of a CZES Phase 1 Project

Based on the preliminary feasibility analysis that SCE has conducted in the CZES, SCE recommends a phased approach to transitioning gas customers to an all-electric service. The implementation plan currently comprises of five phases. As part of the first phase, SCE will conduct community outreach, electrify a small sample of residential and non-residential services, and incorporate the data and experience gained into the CZES results, including the remaining program phases.

1. CZES Phase 1

As detailed in SCE's preliminary draft of the CZES and summarized in the section above, the recommended path to meet current gas energy demands in the future is via zonal electrification of the Catalina Gas distribution system over a managed transition period that is preliminarily forecasted to be 20 years. However, as a part of SCE's proposed Phase 1 project, SCE intends to validate key

assumptions, and collaborate with Catalina community stakeholders to develop a more informed forecast and programmatic approach for the transition of customers to electric utility service. The Phase 1 electrification project forecasts to begin in 2024 and be completed in 2026. At the conclusion of this Phase, SCE will leverage the experience gained to inform the development of a programmatic approach to transition existing gas customers to electric service, and will prepare that recommendation as part of SCE's next Gas GRC filing or a separate application. This programmatic approach will focus on customer affordability, environmental and indoor air quality benefits, as well as climate adaption and resiliency benefits achieved through the recommended programmatic approach to transition customers to electric utility service. This approach helps refine key assumptions to ensure Catalina's unique characteristics are appropriately factored; for example, assumptions like average residential demand can be skewed from the high proportion of vacation rentals in Avalon. The CZES further describes the preliminary background, benefits, and alternatives considered for SCE's recommendation for zonal electrification. The Phase 1 project overview, vendor selection, and project details (cost and timing) are described below. SCE is not proposing to recover the costs associated with Phase 1 in this application and instead proposes to track costs in a memorandum account as further described in Chapter VII.

a) Project Overview

Phase 1 includes conducting community outreach (including surveys), electrifying a small sample of residential and non-residential services, and updating the preliminary draft CZES with the data and experience gained, including providing our final recommendations on a programmatic approach to transition customers to electric service and associated timelines to accomplish this. The community outreach will help further incorporate customer preference into the imminent electrification plan. Customer segments with high gas consumption profiles (non-residential) will be prioritized in the evaluation of service needs. Approximately ten residential and one to two non-residential services are targeted in Phase 1. The residential services will prioritize an array of building vintages and will consider an option to include electric vehicle (EV) charging infrastructure.

Data to be collected as part of Phase 1 includes:

- Energy usage one year prior and one year after the retrofit

- Resident survey before, during, and post installation to understand customer satisfaction
- Feet of gas line retired and gas meters removed
- Total costs to utility and customer
- Customer adoption barriers and logistical challenges

CZES areas that SCE anticipates updating upon Phase 1 completion include:

- Line item and unit cost of Phase 1
- Demonstration of electrification cost effectiveness over gas line repair
- Cost reduction of pipeline removal
- Catalina case studies of the program for communication plan
- Environmental impacts
- Lessons learned informing future phases
- Formal zonal electrification program recommendations with identified key milestones for the retirement of the gas distribution system

b) <u>Vendor Selection and Project Management</u>

Contract labor, SCE labor, and materials (equipment) are necessary to complete Phase 1. The contracts awarded to third-party vendors securing equipment or performing the necessary, engineering, planning, permitting, external outreach, construction, and commissioning/de-commissioning will follow SCE procurement standards. SCE will project manage the work and closely coordinate with internal and external stakeholders. The City of Avalon is anticipated to be a primary external stakeholder recognizing that all of the gas utility infrastructure and on-island delivery occurs within its jurisdiction.

c) <u>Project Cost and Timing</u>

The CZES projects Phase 1 completion over a 3-year period (2024-2026). A total project cost of $830,000 is forecast, covering the items summarized in Table III-4 below.

Table III-4
CZES Phase 1 Cost Forecast Elements

ID	Item
1	Community survey
2	(10) Residential services
3	(1) Non-Residential services
4	Engineering Report/Study Update
5	Project Management

D. Tariff Changes and New Advice Letter Process

SCE requests the Commission authorize changes to SCE's Catalina Gas Tariff Rules 3, 13, 15, and 16 to effectuate the process of zonal electrification and to exit the gas distribution business on Catalina. SCE also requests approval of a Tier 2 AL process to proceed with electrification if the cost of opportunistically electrifying one or more customers is less than or equal to the cost to repair/replace/relocate gas infrastructure. In order to exit the gas distribution business, SCE needs a clear rule forbidding new gas service connections, except for safety reasons or in an emergency. Additionally, common-sense polices and mechanisms to electrify when it is clearly cost-neutral or cost-effective to do so should be put in place now. Essentially, SCE is requesting that no new gas service connections be allowed on Catalina and if there are situations where a portion of gas infrastructure needs to be repaired, replaced, and/or relocated and the cost to electrify customers served by that gas infrastructure will be the same or less expensive, an AL mechanism should be put in place to quickly review and approve these types of gas-to-electric transitions.[46]

As noted above, SCE's gas distribution system serves approximately 1,400 customers in Avalon whereas SCE provides water and electric service in and beyond Avalon. These water and electric customers that do not receive SCE gas service either already operate on all electric or use a combination of SCE's electric service and their own propane supply.[47] New developments and/or upgrades to existing buildings in Avalon can be designed so that all load is served by electric generation, or by a

[46] To be clear, SCE will continue to operate and maintain all existing service connections, meters, etc. including, for example, replacing existing service laterals and meters, as needed.

[47] SCE does not supply propane to anyone on the island except through its plant operations and distribution system and customers with their own propane tanks have those refilled through other sources.

combination of electric generation and private propane supply, subject to City of Avalon building codes. SCE's request to not allow new gas service connections will have little to no impact on current gas customers given that new housing and/or business development on Catalina and Avalon, in particular, is minimal due to geography, terrain, existing development, persistent drought and water availability, and the fact that 88% of Catalina is protected and maintained by the Catalina Island Conservancy (CIC).[48] Since 2010, customer accounts have fluctuated between a low of 1,349 to a high of 1,402,[49] or within approximately 4%. Since 2018, the range has been considerably less, with a 0.5% difference.[50] Given SCE's plan to exit the gas distribution business on Catalina, the fact that there is little new development in Avalon, and that there is little to no additional customer cost with making these tariff changes, any new development or building upgrade requiring additional gas should be designed for all electric service. SCE thus requests approval of proposed changes to its gas tariff rules to eliminate new gas service connections and additional gas supply to existing buildings that are being upgraded.

Additionally, it makes sense now to allow SCE to transition gas customers to electric service where it would cost the same or more to replace, repair, and/or relocate gas infrastructure compared to providing electric service. While SCE is not proposing any significant gas infrastructure replacement program in this GRC, there are situations that can arise during this GRC period that would require SCE to repair, replace, and/or relocate gas infrastructure. Because of the gas distribution system age and other adjacent utility infrastructure, when the City of Avalon plans and makes improvements to streetscapes, sewer lines, or other City infrastructure, SCE has been required to repair, replace, and/or relocate its facilities to accommodate those projects. SCE also takes advantage of these projects to opportunistically replace aging infrastructure. Additionally, SCE has also discovered compliance issues during such projects that required replacement and/or relocation of utility infrastructure.[51]

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[48] The CIC is a nonprofit organization established in 1972 to protect, restore, and be an exemplary steward of Catalina through a balance of conservation, education, and recreation (https://catalinaconservancy.org/).

[49] *See* WPSCE-01 Annual Gas Reports.

[50] This includes gas customer accounts of 1,392 in 2018, 1,387 in 2019, 1,385 in 2020, 1,386 in 2021, and 1,387 in 2022.

[51] For example, in August 2015, during the replacement of a sewer main along private property in the City of Avalon, SCE discovered that there was insufficient separation between the potable water piping and the

(*Continued*)

SCE is already aware of a few potential electrification opportunities that may occur over this GRC period. For example, in one case, the City of Avalon desires to replace a set of stairs that connect East Whitley to Whitley Avenue. This section is known as Bonita Way. Due to the potential re-construction of Bonita Way, SCE may be required to replace approximately 300 linear feet of water and gas main along with replacing service connections to approximately 15 homes. As another example, the City of Avalon is planning to expand the Cabrillo Mole wharf to accommodate more restaurants, shops, etc. The expansion will require new electric, water, and gas services and may require extension and/or replacement of gas main lines. Because much of the utility infrastructure in Avalon was built in the 1960s and many of the utility services were placed in common trenches, these types of projects can be expensive and it may be more cost-effective to switch gas service to electric. Additionally, these types of projects may impact only a small number of customers which lessens the cost to electrify compared to projects that could impact dozens or hundreds of customers.

SCE proposes a process to assess these types of projects on a case-by-case basis as they arise through the filing of a Tier 2 AL. The AL would include the scope of the gas infrastructure to be replaced, repaired, etc., the scope of the electrical infrastructure needed to electrify including customer equipment and appliances, the cost of these two options including who is responsible for the costs pursuant to gas and electric Rule 15 and 16, and a cost-effectiveness comparison. Should the cost to construct the gas infrastructure be the same or greater than the cost to provide all electric service and the time to install all necessary equipment to electrify not impact the larger project, the Commission should direct SCE to file a Tier 2 AL with the requisite information and should direct Staff to review and approve the AL within 30 days to streamline the process and ensure the transition to electric will not delay the larger project.

E. Operating Safely, Reliably and Affordably Over this GRC Period

Although SCE fully intends to eventually exit the gas distribution business on Catalina, until that exit occurs SCE must operate the gas distribution system safely, reliably, and affordably. SCE's O&M

City's sanitary sewer piping systems. To mitigate the threat of contamination and come into compliance with separation requirements with utility infrastructure, SCE relocated the freshwater distribution piping.

and capital requests in this GRC are intended to keep the gas system safe and reliable while also affordable for gas customers. SCE has not included any major infrastructure replacement program in this GRC like it did in its 2009 Catalina Gas GRC to, for example, begin replacing the aged distribution system piping. While the majority of the Catalina gas distribution piping system is 60 years old, distribution pipeline surveys, inspections, and maintenance indicate the aged pipes are in good condition. SCE plans to maintain its existing distribution pipeline without replacing large sections over the planned electrification period. In 2024, SCE plans to conduct an asset management assessment of its main pipeline to further inform on its condition and ability to deliver safe, reliable, and affordable gas service to customers through 2045.

Other aspects of the distribution system include gas valves, a corrosion protection system, a pressure-monitoring unit, a gas specific gravity analyzer, a gas chromatograph, a gas pressure transducer, and gas service laterals, manifolds, meters, and regulators. As discussed in Chapter V, SCE has replaced and plans to continue to replace gas valves, its corrosion protection system, and meters according to its existing practices as these components of the gas distribution are necessary for safe and reliable operations. However, SCE will not be proposing smart meters or other advanced equipment for its distribution system. SCE expects that the gas plant system will remain in service beyond the gas distribution system, as it currently serves the microturbines used by SCE's electric utility for power generation. SCE's proposed retirement of the gas distribution system will free up gas capacity which can then be optimized for increased propane-fueled generation. However, any increase in propane-fueled generation would require the replacement of SCE's existing propane-fueled electric utility assets (microturbines), considering the age of these assets. Any future propane-fueled generation asset replacement would need to be considered as a part of SCE's future electric GRC applications. In the future, SCE sees the retirement of the gas distribution system as the only feasible and sustainable opportunity to increase propane-fueled generation for Catalina. However, currently, SCE does not anticipate any changes to its operations and maintenance practices for its gas plant facilities. SCE further describes its approach to operate safely and reliably while transitioning customers to electric service in Chapters IV and V.

IV.
OPERATIONS AND MAINTENANCE (O&M) EXPENSE

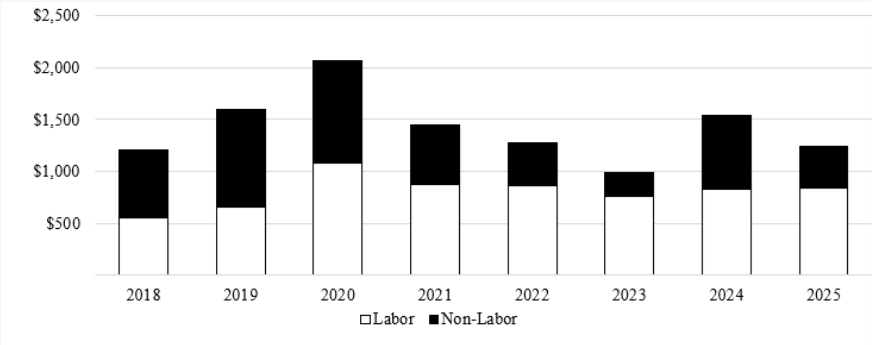
A. Introduction

This chapter demonstrates SCE's 2025 O&M forecast for Catalina gas. The testimony within this chapter summarizes the scope of work, key drivers of the work, and any regulatory mandates that impact the level of O&M requests for Catalina gas. Figure IV-2 below displays the combined five-year recorded expenses for years 2018-2022, as well as the forecast for Test Year 2025. Section B of this chapter provides the: (1) description of the work performed, (2) reason for the 2025 O&M requests, and (3) recorded expense variance explanation, as well as the analysis supporting the forecast methodology utilized to develop the Test Year 2025 forecast.

The Test Year 2025 forecast for Catalina gas O&M expense is $1.240 million. This estimate includes labor expense of $0.845 million, and non-labor expense of $0.395 million. SCE's Test Year 2025 O&M request represents a 2% decline from the 2022 recorded and adjusted expense amounts, and a 17% increase above the last Commission-authorized amount of $1.057 million in 2009, escalated to 2022 constant dollars.[52] The 2025 Test Year forecast of $1.240 million is essential to ensure that SCE is able to cost effectively, safely, and reliably operate and maintain the Catalina gas production and distribution system in compliance with state and federal regulations as we transition to an all-electric future.

[52] *See* WPSCE-01- Authorized Escalated to 2022 Constant.

Figure IV-2
Catalina Gas O&M Expenses[53]
Recorded and Adjusted 2018-2022/Forecast 2023-2025
(Constant 2022$ in $000)



	Recorded					Forecast		
	2018	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Labor	$550	$652	$1,080	$870	$863	$755	$824	$845
Non-Labor	$661	$944	$985	$576	$408	$236	$713	$395
Total Expenses	**$1,212**	**$1,597**	**$2,065**	**$1,447**	**$1,272**	**$991**	**$1,537**	**$1,240**

The primary cost driver of O&M expense is to maintain and manage the gas production and distribution system. SCE's current authorized O&M expense is based on 2006 operating data for a 2009 Test Year. Since the current authorized O&M expense of $1.057 million[54] was adopted in September 2009, there have been no base rate increases for the Catalina gas utility. As a result, SCE has not been able to recover the increased operating expenses it has experienced due to increased regulatory and operating requirements (as well as significant inflation experienced in the intervening years).

SCE began the process of estimating Test Year 2025 Catalina Gas O&M expenses by analyzing recorded data from 2018 through 2022. The recorded data was then escalated to 2022 constant dollars for an accurate spend comparison. In determining the appropriate forecast method, SCE reviewed the historical data in an averaging analyses of three, four, or five years, as well as last recorded year. SCE considered the activities in each operation and maintenance account, then separately decided on a forecast method for labor and non-labor expenses. The testimony below describes the forecast method utilized in greater detail.

[53] *See* WPSCE-01- Operation and Maintenance Workpapers.
[54] In 2009 SCE was authorized $0.769 million, this value was escalated to 2022 constant to align with the 2025 request.

B. Summary and Overview of O&M Request

O&M expenses for Catalina operations are unique in that much of the labor and non-labor expenses to run the system are shared by two of the utilities on the Island - gas and water. For example, the labor force on Catalina dedicated to gas and water production and distribution activities represents approximately 11 out of the 45 total employees; the remaining employees support utility operations on Catalina Island.[55] Because much of the labor is shared between the two utilities for common positions such as utilitymen that support operations on an as-needed basis, the water and gas crews charge their time to unique water and gas orders (cost centers) when performing field work. Approximately 15% of the gas and water crews' time, on an average annual basis, is spent supporting the gas utility, whereas 85% of their time is spent supporting the water utility. The sharing of labor results in Catalina customer cost savings compared to having separate staff for water and gas operations and is a valuable approach for Catalina gas operations.

The non-labor expenses for Catalina gas operations include maintenance and material expense to operate and maintain the gas production plant and distribution system in accordance with the utility's DIMP. In addition, the expenses also include required annual training, in addition to operator evaluation and certification to maintain a safe working environment for both employees and customers, as well as traditional administrative and general expense (A&G) necessary to support the operations. Catalina gas operations also undergoes a comprehensive operation and maintenance inspection CPUC audit every three years on the distribution system. SCE was informed that the next audit, which will occur in 2026, will also include its production system and incorporate the results of additional maintenance plans and reporting implemented over the 2023-2026 period. This increase in the scope of audit will require additional O&M resources.

1. Work Description

On a daily basis the water and gas operator mechanics maintain the Gas Distribution System, which is a low-pressure system. The Gas Distribution System consists of looped and dead-end

[55] *See* WPSCE-01- Catalina Organization Chart.

gas mains and service lines, 1,400 gas meters, and 4 rectifiers with impressed current anode beds. Operators perform customer service requests, leak detection and repairs, pipeline surveys and surveillance for exposed above ground pipe, valve operation and exercising, odorization tests, investigate accidents and failures, and install and upgrade gas services.

Inside PBGS, operators monitor gas plant controls and processes, adjust gas regulator valves, and ensure proper Wobbe Index[56] gas thresholds. Mechanics and technicians are responsible for calibrating, testing, and/or maintaining: the gas leak detection system and instruments, gas metering equipment, solenoid valves, the heat trace system on all vapor lines, gas piping system, pressure relief valves, and the fire suppression system.

2. Need for Activity

SCE's operations and maintenance of the Catalina gas utility are done in compliance with federal and state regulations and the company's DIMP. Both federal and state regulations require that any facility that stores or uses flammable material above a threshold quantity of 10,000 pounds have in place a formal risk management plan to ensure adequate operations and maintenance oversight of the facility and to prevent accidental release of flammable materials.[57] Our gas production facility stores a maximum of 99,000 gallons (equal to approximately 435,600 pounds) of propane, which exceeds the minimum threshold quantity of flammable material. The DIMP includes personnel training, periodic testing of the propane tanks,[58] collecting and reporting of data to the Commission, conducting emergency drills, and ensuring that emergency shut-down operations are working properly.[59]

The required annual training and certification activities are designed to increase and maintain the knowledge and expertise of our field personnel to match industry standards. Regulations require "the employee has the required knowledge, skills, and abilities to safely carry out the duties and responsibilities as provided in the operating procedures."[60] These regulations require SCE to develop

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[56] The Wobbe Index is utilized as an indicator to measure gas combustion energy output of the gas in the system. The values should range between 1,125 to 1,185 BTU/SCF.
[57] *See* Title 40 CFR, Part 68(g) and California Health and Safety Code, Chapter 6.95.
[58] *See* General Order (GO) 58-A (24).
[59] *See* GO 58-B.
[60] *See* Title 40 CFR, 68.54.

comprehensive operating procedures and formalized training programs. To meet these requirements, SCE, with the assistance of outside consultants, created detailed operating procedures and training manuals and established formal employee training programs.

As part of the regulatory required Operator Qualification Program, there are 47 tasks that the Gas Operators are required to be certified in at all times in order to perform work on the gas distribution system. The required task involves online training courses, online examinations as well as a hands-on evaluation conducted by a certified evaluator. These procedures and programs are reviewed and revised annually to ensure that SCE continues to comply with changing regulatory requirements.

3. Scope of Forecast Analysis

SCE's routine maintenance of the gas production and gas distribution systems will require increased labor hours as the systems age over time. The costs of materials and supplies increase over time as well and have doubled in many cases. Table IV-5 below displays the historical recorded costs, as well as the 2023-2025 forecasts.

Table IV-5
Catalina Gas O&M Expenses
Recorded and Adjusted 2018-2022/Forecast 2023-2025
(Constant 2022$ in $000)

	Recorded					Forecast		
	2018	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Labor	$550	$652	$1,080	$870	$863	$755	$824	$845
Non-Labor	$661	$944	$985	$576	$408	$236	$713	$395
Total Expenses	**$1,212**	**$1,597**	**$2,065**	**$1,447**	**$1,272**	**$991**	**$1,537**	**$1,240**

a) Historical Analysis

SCE's recorded O&M expenses over the last five years have fluctuated; 2022 recorded total expenses represent a 5 percent increase when compared to 2018.[61] Comparing 2022 to 2018, the increase in total O&M is solely attributable to labor, which represents a: (1) natural state of escalation progression year over year, excluding 2020, which was anomalous due to Covid-19; (2) continued compliance with various state and federal regulations; and (3) increased maintenance, testing,

[61] *See* Figure IV-2 above.

and repair of gas pipelines. SCE plans to continue operating and maintaining the gas production and distribution systems at the recorded/adjusted 2022 spending level in the 2025 Test Year.

(1) Labor

In 2019 there was a 19% increase from 2018 recorded as a result of a change in personnel. In 2018, two Water and Gas Foreman with over 65 years of combined service with SCE on Catalina retired. These two Foremen positions were backfilled internally by two Water and Gas System Mechanics. SCE then opened two Apprentice Water and Gas Operator Mechanic positions, one of which was filled internally while the other was filled externally. In 2020 there was a 66% increase from 2019 recorded as a result of required maintenance, and the impact of Covid-19. The labor accrual increased substantially as employees were not taking time off to ensure the system operated to support gas customers. In 2021, there was a 19% decrease from 2020 as operations started to slowly return to normalcy and employees started to utilize vacation days.

(2) Non-Labor

In 2019, there was a 43% increase from 2018 recorded as a result of the increase in maintenance to align with environmental and safety requirements associated with the gas production plant. In 2021 and 2022, we experienced a decline in non-labor O&M of 41% and 29%, respectively, as a result of the apprentices described in the labor section above becoming active which led to a decline in gas distribution contractor work. In addition, during the historical review of the O&M detail, it was discovered that approximately $0.432 million of the expenses belonged to capital projects and were incorrectly charged to O&M.[62] Processes have been established to mitigate this accounting error in the future.

b) O&M Test Year Forecast

SCE is requesting $1.240 million in the 2025 Test Year for O&M expense; a slight decrease over the 2022 base year. This request represents a five-year historical average forecast

[62] *See* WPSCE-01- Capital Projects Charged to O&M.

method based on 2018-2022 for labor, and a last year recorded forecast method based on 2022 for non-labor.

(1) Labor

SCE is requesting $0.845 million in the 2025 Test Year for Labor, which is based on a five-year average forecast mechanism with an increase to cover the change in employee compensation program. Due to high inflation and new base pay transparency laws, it has become increasingly critical that SCE offer competitive base pay. Consumer prices increased 9.1 percent over the 12-months ending June 2022, which was the largest increase in forty years.[63] These price increases have a significant impact on the cost of living for employees. A study by the consulting firm Mercer found that covering monthly expenses became the top unmet need of employees in 2022, up from ninth place in Mercer's 2021 study; 75 percent of employees say that the high inflation and market volatility in 2022 significantly increased their financial stress.[64] Based on various models and studies reviewed and conducted by SCE, for the 2025 Test Year, and consistent with SCE's systemwide employee compensation changes, approximately five percent of the short term incentive plan (STIP) target conversion for employees was moved into base labor.[65]

(2) Non-Labor

SCE is requesting $0.395 million in the 2025 Test Year for non-labor which is equal to the 2022 base year, less the capital projects erroneously charged to O&M.[66] As stated above in non-labor historical analysis, we anticipate maintaining operations as we continue to manage the aging gas production and distribution system. This forecast will allow required training and

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63 Consumer prices up 9.1 percent over the year ending June 2022, largest increase in 40 years, July 18, 2022, *available at* https://www.bls.gov/opub/ted/2022/consumer-prices-up-9-1-percent-over-the-year-ended-june-2022-largest-increase-in-40-years.htm.

64 Mercer, "Rethinking What We Need from Work," p. 9, https://www.mercer.us/content/dam/mercer/attachments/private/us-2022-inside-employees-minds-report.pdf.

65 Specifically, for exempt employees in pay grades 8-12, the existing weighted average STIP target of 9.7 percent was capped at 5 percent and the remaining 4.7 percent was moved into base labor. For exempt employees in pay grades 13-18, the existing weighted average STIP target of 17.2 percent was capped at 12.2 percent and the remaining 5 percent was moved to base labor. For a detailed description of these changes, please see SCE's 2025 electric GRC at Exhibit SCE-06, Vol.04.

66 *See* WPSCE-01- Capital Projects Charged to O&M.

certifications to occur to keep employees and customers safe, enable SCE to purchase the necessary materials and supplies to maintain the gas production and distribution system, and enable SCE to operate within the federal and state regulations.

V.
CAPITAL PROJECTS

A. Introduction

This chapter describes $2.4 million of recorded direct[67] capital additions since (and not included in) SCE's last gas GRC submission in 2008, which cover the period 2010-2022, and $2.7 million in direct capital expenditures that SCE expects to incur during the 2023-2028 period. These expenditures are vital to ensuring that SCE continues to provide safe and reliable gas service to its customers on Catalina as we transition to an all-electric future.

B. Plant-in-Service, Not in Authorized Rate Base 2010-2022

SCE filed its last Gas GRC in 2008 for test year 2009. The 2009 GRC included a capital forecast through 2011. SCE has completed multiple capital projects to support the safe and reliable delivery of gas to Catalina customers since then. The projects in this section are used and useful and benefit gas customers. A description of each in-service project that is not yet in authorized rate base is provided in the following subsections.

1. LPG Storage Tank Pressure De-Rate Project

a) Background and Project Need

The four 30,000 gallon LPG storage tanks at PBGS were originally set to 250 pounds per square inch (psi). However, SCE determined that the LPG tanks' shell thickness did not meet the requirement for the current working design pressure of 250 psi. Therefore, to meet regulatory requirements, SCE de-rated the four LPG tanks to 232 psi at 125°F. This provided a corrosion allowance of 0.020 inches, which is acceptable under the applicable fire regulations (National Fire Protection Association (NFPA) 59, Utility L-P Gas Plant Code). The purpose of the de-rate was to reduce the allowable operating pressures, which increased the corrosion allowance on the tanks in order to maintain compliance.

[67] Direct costs exclude Corporate Overheads, such as A&G and P&B, and Allowance For Funds Used During Construction (AFUDC). Corporate Overheads and AFUDC are discussed in Chapter X.

b) Project Overview

Prior to de-rating the tanks, SCE had to obtain approval from the State of California, Department of Industrial Relations, Division of Occupational Safety & Health (Cal OSHA). SCE submitted its request in April 2013 and Cal OSHA approved in September 2013. To derate the tanks, SCE had to de-gas the tanks and perform internal inspections on each tank. De-gassing the tanks had to be done one tank at a time to keep the gas system operating and required permits from the SCAQMD. Once de-gassed, inspected, and cleaned as deemed necessary, SCE installed two new 4" Class 300 raised face long-weld neck flanges on each tank to accommodate new manifold assemblies that were installed with relief valves set at 232 psi. Each manifold assembly was rated for 17,050 SCFM (air at 120%) at 232 psi. Both manifolds provide a combined capacity of 34,100 SCFM which exceeded the minimum required flow rate of 26,046 SCFM. SCE also changed all the internal valves and reading gauges for each tank.

c) Project Alternatives

The only alternative to the de-rate project was replacing the tanks. The existing tanks would have needed to be retired and disposed of and new tanks installed, which would trigger new building, seismic, and fire code requirements. Installing new tanks would have required additional setback from the power plant and switchyard facilities, likely requiring moving the facility to another location on the island (which is infeasible due to zoning restrictions and the scarcity of land for sale). Additionally, the installation of new tanks would change the existing foundation and piping of the LPG tanks. The existing tanks would also have to be removed and disposed of on the mainland. In total, this option would have been considerably more costly. Modifying instead of replacing the tanks was more cost-effective and allowed for the continued safe operational service life of the existing tanks.

d) Vendor Selection and Project Management

For this project, SCE procured contractors based on the following vendor selection criteria: contractor must have a R-stamp certificate,[68] contractor must meet the project's scope of work in a timely manner, contractor must have past experience with pressure vessels, contractor must have a welding and safety program (must have welding certifications), contractor must have a confined space plan, and contractor must have detailed quality control and quality assurance methods. Vendors that were qualified and invited to bid on the project included ARB Inc., Irwin Industries, Kiewit Infrastructure West, Basic General Construction, Evans Industrial, and TRS – Turbine Repair Services. Upon a financials and technical evaluation, ARB Inc's fixed price bid was selected and provided necessary supervision, labor, material, tools, and equipment to perform modifications; provided R-1 forms and all necessary filling; and installed nameplates on four LPG tanks in support of a de-rating of the pressure vessels from the original design. LP Gas Systems provided valves, connectors, and labor associated with the installation. Other vendors included TEECO Products, Inc., Outten Engineering, and WESCO, which provided engineering and construction services and materials for the project.

e) Project Schedule and Cost

The de-rating of the propane tanks began in 2013 and was completed in 2014. The cost of the project was $896,600. The total direct costs including all internal and external labor, materials, and equipment are detailed in Table V-6 below.

[68] The 'R' stamp is issued by The National Board of Boiler and Pressure Vessel Inspectors for the alterations or repairs of steam boilers. This certification helps ensure that such alterations or repairs are only done by capable fabricators who can meet the requirements of the code.

Table V-6
LPG Storage Tank Pressure De-Rate Project
(Nominal $000)

Cost Component	2014	Total
Labor	$ 47	$ 47
Contract Materials	$ 845	$ 845
Allocations / Other	$ 4	$ 4
Total	**$ 897**	**$ 897**

2. LPG Deluge System and Firewall

a) Background and Project Need

The fire protection system that protects the LPG storage tanks and offloading areas (Deluge System) consisted of a series of sprinklers that activate in the event of a fire to cool the LPG tanks, propane heaters and relief valve area, and truck unloading area. The purpose of the Deluge System is to cool the LPG infrastructure sufficiently during a fire to prevent breaching the tank walls and releasing propane gas. The Deluge System design is governed by two NFPA standards: 59 (Utility LP Gas Plant Code) and 15 (Standard for Water Spray Fixed Systems for Fire Protection). The design basis flow for the system, as required by NFPA 15, is 0.25 gallons per minute (gpm) per square foot of surface area of each tank. In 2014, SCE conducted flow tests and inspected the Deluge System to assess its compliance with the applicable NFPA code requirements. The required total flow was determined to be 1,860 gpm for the configuration of the LPG tanks. The system flow test results ranged from a low of 1,538 gpm (well under the 1,860 gpm threshold) to a high of 2,499 gpm. The results also indicated that the system failed to meet the NFPA 59 requirement to have an additional two-hour supply of 1,000 gallons/minute of water for hand-hose streams. Additionally, the LPG tank storage area configuration was assessed and was determined to require changes to meet code requirements.

b) Project Overview [69]

The recommended solution to make the Deluge System compliant with NFPA code requirements[70] was to reduce the amount of gas storage by removing one of the four LPG storage tanks from service and to redesign and replace the Deluge System. The system was redesigned to separate the tank deluge system from the truck offloading deluge system. The two changes allowed for better management of the limited water source available for the deluge system. It also enhanced safety by increasing time available to manage potential emergencies. The Deluge System redesign included:

- Replacing the existing system with one that meets NFPA requirements;
- Removing and replacing the existing truck unloading Deluge System and supports with a new separate Deluge System and piping rack;
- Installing a new two-hour rated firewall between the LPG storage tanks and the propane truck unloading station;
- Installation of yard piping and deluge monitor[71] stations at three locations around the LPG storage tanks;
- Electrical work, control, and instrumentation equipment; and
- Applying protective coating on all piping, supports, appurtenances, fittings, and all other bare steel items installed, modified, or otherwise impacted for this project.

The firewall was designed as a two-hour fire rated assembly approximately 70-feet long by 14-feet high located between the unloading equipment and the closest LPG storage tank. The firewall meets all applicable code requirements for seismic and wind loads and complies with NFPA 15 and 59. The design complies with the requirements of NFPA 13 for system components.

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69 *See* WPSCE-01 - Deluge and Firewall Project Scope of Work

70 The one exception is for 1,000 gpm hose allowance requirement. Because the current water utility infrastructure cannot support this amount, the Avalon City Fire Department granted a variance allowing the installation of three fire monitors that are operated independently from the deluge system. The three fire monitors will supply 1,500 gpm of water and will be capable of reaching all locations within the Gas Plant, Desalination Plant, and Diesel Fuel Tank Farm.

71 A fire monitor is an aimable controllable high-capacity water jet used for manual firefighting or automatic fire protection systems.

The fire rating also meets the California Building Code design for rated firewalls because it is a fire barrier assembly approved/listed by a nationally recognized testing laboratory.

The Deluge System redesign included two independently actuated deluge fire sprinkler systems: one for the three in-service 30,000-gallon propane tanks (including the adjacent heaters/vaporizers and relief valves), and one for the propane truck unloading area. These systems were designed per plans and hydraulic calculations from Greco Fire Protection, Inc., a recognized industry leader in fire protection system design. The new deluge system was designed to provide 0.25 gpm per square foot of surface area for the three 30,000-gallon tanks, including heads over the heaters/relief valves east of the tanks. The unloading area system was designed to provide 0.25 gpm for the entire area.

The unloading area has a support structure for sprinkler piping to protect an area approximately 20 feet by 70 feet (intended to protect a propane tractor trailer approximately 60 feet long centered under the area). Flow test results conducted on site and documented by plant personnel show a static of 152 psi, residual of 55 psi flowing 1,851 gpm. The total available flow at 20 psi is 2,200 gpm.[72]

c) Project Alternatives

SCE assessed the following alternatives: enlarging the deluge system to protect the then-in-service four LPG storage tanks; and requesting a variance from the Avalon Fire Department that would have allowed future operation of the then-existing system. Redesigning the Deluge System to protect all four LPG tanks would have required significant upgrades to the water facilities to meet the water flow requirements. This alternative was determined to be infeasible because it would have required larger water piping feeding the system and additional facilities, such as water tanks, to protect all four LPG storage tanks. SCE also considered requesting a variance from the Avalon Fire Department to allow continued operation of the system but rejected this alternative on safety grounds. (As explained in footnote 69 above, SCE did seek a variance from the Avalon Fire Department from the hand-hose stream requirement because the water system could not provide the required flow.)

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[72] *See* WPSCE-01 – Deluge Flow Test History.

d) Vendor Selection and Project Management

SCE used a competitive bid process to select the contractors for this project. The bid evaluation was based on a scoring method attributed to superintendent qualifications and resume, C16 license, lead handling qualifications, subcontractor qualifications, past work experience at PBGS, and contractors' safety programs. SCE hired several contractors to complete this project. SCE selected AECOM Technical Services to do the assessment, engineering, and design. CMAC provided necessary supervision, labor, material, tools, and equipment. COSCO provided inspections of the propane tank farm deluge and the truck unloading deluge systems. Greco Fire Protection's scope of work included reviewing, redesigning and value engineering, hydraulic calculations, modifying existing drawings, and providing revised drawings for the existing unloading rack and three propane tanks. Irwin Industries was selected to perform excavation, installation of a new concrete foundation, installation of the new firewall, pipe fabrication, pipe installation, scheduled tie-ins, electrical installation, and testing. Parsons reviewed existing engineering drawings and provided engineering support and construction quality assurance services for the removal of the existing deluge system piping as well as replacement with the new components. Parsons also utilized existing supports to eliminate welding in the LPG area, installed a new master control valve, replaced all valves with new valves, and provided engineering drawings and recommendations to support replacement of the deluge system and valves for the LPG truck off-loading rack. Parsons also reviewed the engineering and the construction package for the new firewall installation. Outten Engineering revised piping plans, created demolition piping isometric drawings, and created new piping isometric drawings for shutoff valve removal.

e) Project Cost and Schedule

The project was initiated in 2013, engineering and design were completed in 2014, construction was completed in 2015, and final commissioning was completed in late 2015. The total direct cost to install the new Deluge System and firewall was $836,076. The total direct costs including all internal and external labor, materials, and equipment are detailed in Table V-7 below.

Table V-7
LPG Deluge System and Firewall
(Nominal $000)

Cost Component	2013	2014	2015	2016	Total
Labor	$ 0	$ 6	$ 9	$ 0	$ 16
Contract Materials	$ 11	$ 85	$ 699	$ 7	$ 802
Allocations / Other	$ 1	$ (0)	$ 17	$ 0	$ 18
Total	**$ 12**	**$ 91**	**$ 725**	**$ 7**	**$ 836**

3. Gas Plant Chromatograph System

a) Background and Project Need

The gas chromatograph system is necessary to monitor the quality of gas composition of the propane at PBGS before the propane-air mixture gets delivered to the distribution system. The system monitors the specific gravity and heating value of the propane/air mixture and calculates the Wobbe Index. The system is comprised of the chromatograph, a measuring device, controller, and a danalyzer, a recording and output device. The chromatograph system was failing as it was providing missing and poor-quality data that is required for the propane-air mix distribution system.

b) Project Overview

The scope of the project included replacing the failing, end-of-life chromatograph equipment with a new chromatograph system, and bringing the production system back into compliance. Once installed, the equipment was programmed, calibrated, and commissioned by the manufacturer in accordance with SCE's production facilities specifications.

c) Project Alternatives

SCE assessed repairing the failing system by just replacing failing parts. Upon research, this option was determined to be not feasible because the then current system's parts were obsolete and not available on the market. Taking no action would have created a safety issue because SCE would not be able to monitor the quality of the propane gas being delivered to customers and would have resulted in SCE being out of compliance with applicable regulations.

d) Vendor Selection and Project Management

To complete this project, SCE retained Emerson/Rosemount as the vendor because they are the sole provider for this specialty equipment. The vendor provided the materials and installed the new chromatograph system. SCE personnel oversaw project execution.

e) Project Cost and Timing

The project started and was completed in 2017. The total direct costs including all internal and external labor, materials, and equipment are detailed in Table V-8 below.

Table V-8
Gas Plant Chromatograph System
(Nominal $000)

Cost Category	2017	Total
Labor	$ 3	$ 3
Contract/Materials	$ 55	$ 55
Allocations	$ 0	$ 0
Total	**$ 59**	**$ 59**

4. Tremont System Rectifier

a) Background and Project Need

The gas distribution steel piping is protected by an impressed current cathodic protection system, and on areas that are not electrically continuous with the steel gas mains, galvanic anodes. The cathodic protection system consists of four (4) rectifiers and associated anodes that provide corrosion protection for the gas distribution steel pipelines. This cathodic protection system was originally installed in 1970. The original Tremont gas rectifier was mounted on a wooden pole that had become unstable and posed a public safety risk due to its age and degraded condition. The base of the pole the rectifier was mounted on had become loose in the soil and presented a risk to pedestrians in the area. This became a major driver for replacing the rectifier with a safer design at a nearby location. The former pole-mounted rectifier also did not meet current utility standards, did not have metered electrical power, and because of its age was no longer supported by our repair vendors.

b) Project Overview

The original rectifier and pole were removed and a new, pad mounted cathodic protection rectifier was installed nearby. The new rectifier was connected to the existing anode beds. These beds are degraded and are scheduled to be replaced during work being coordinated with the City of Avalon's Five Corner City Project.

c) Project Alternatives

The cathodic protection system rectifier and associated anodes provide corrosion protection for the steel gas distribution pipelines. The alternatives are to not protect the distribution steel pipe or replace the steel pipe with polyethylene pipe. The first option would cause deterioration of the steel pipeline and lead to pipe failure. The second option to replace the steel pipe with polyethylene pipe would be significantly more expensive.

d) Vendor Selection and Project Management

Farwest Corrosion Control Company (Farwest) was the recommended vendor for cathodic protection systems and was chosen to provide the equipment and commissioning for the new pad-mounted rectifier, and a future anode bed. C.D. Lyon, Incorporated (CD Lyon) was the contractor selected to perform the civil and foundation construction work for the concrete pad and the excavation work for the future anode beds. CD Lyon also supported the demolition of the old equipment. Project management and oversight functions were performed by SCE personnel.

e) Project Cost and Timing

The new pad-mounted Tremont rectifier was commissioned for service in June 2021. Total direct project costs including all necessary internal and contract labor, materials, and equipment necessary to execute the project are detailed in Table V-9 below.

Table V-9
Tremont System Rectifier
(Nominal $000)

Cost Category	2021	Total
Labor	$ 4	$ 4
Contract/Materials	$ 37	$ 37
Allocations	$ 0	$ 0
Total	**$ 42**	**$ 42**

5. Lower Terrace Rectifier and Anode Bed Replacements

a) Background and Project Need

As explained above, the gas distribution steel piping is protected by an impressed current cathodic protection system, and on areas that are not electrically continuous with the steel gas mains, galvanic anodes. The original Lower Terrace gas system rectifier and anode bed cathodic protection system began to have lower than normal current output, indicating that the anodes were beyond their useful life. The original anode bed was in service for approximately 20 years. SCE's monthly inspection records showed consistent drops in the cathodic protection readings. The original rectifier, mounted on a wooden electrical distribution utility pole, also did not meet utility standards, was no longer supported by the vendor, was not using metered electrical power, and presented safety issues to the public and technicians servicing this equipment.

b) Project Overview

The original rectifier and exhausted anode bed were removed. A new, pad-mounted cathodic protection rectifier was installed nearby. A new anode bed and a new conductor lead for the gas distribution system were also installed. The new system complies with current utility standards and is receiving metered electrical power. This is an area that required archeological monitoring at stages of the construction process. The project also involved biological and cultural monitoring resources.

c) Project Alternatives

The cathodic protection system rectifier and associated anodes provide corrosion protection for the steel gas distribution pipelines. The alternatives are to not protect the distribution steel

pipe or replace the steel pipe with polyethylene pipe. The first option would cause deterioration of the steel pipeline and lead to pipe failure. The second option to replace the steel pipe with polyethylene pipe would have been significantly more expensive.

d) Vendor Selection and Project Management

Farwest, a specialized cathodic protection contractor, was chosen to provide the equipment and commissioning for the new pad mounted rectifier, and anode bed. CD Lyon was the contractor selected to perform the civil and foundation construction work for the concrete pad and the excavation work for the anode beds. Project management and oversight functions were performed by SCE personnel.

e) Project Cost and Timing

The project began in late 2018 and was largely completed in 2019. The new Lower Terrace rectifier and anode bed were commissioned in 2020. Total direct project costs including all necessary internal and contract labor, materials, and equipment necessary to execute the project are detailed in Table V-10 below.

Table V-10
Lower Terrace Rectifier and Anode Bed
(Nominal $000)

Cost Component	2018	2019	2020	2021	Total
Labor	$ 2	$ -	$ -	$ -	**$ 2**
Contract Materials	$ 2	$ 62	$ 3	$ 0	**$ 67**
Allocations / Other	$ 0	$ 0	$ 0	$ (0)	**$ 0**
Total	**$ 4**	**$ 62**	**$ 3**	**$ 0**	**$ 69**

6. Gas Valve Installs and Replacements

a) Background and Project Need

There are approximately 100 isolation valves throughout the gas distribution system. These valves function to control the routing of gas so that pipe sections may be taken offline for periodic or emergency maintenance with minimal customer service interruption. SCE conducts an exercise (operates the valves) and inspects these valves annually (not to exceed 15 months) and upon

installation of a new gas distribution service. During inspections, three valves were identified as needing replacement and a new valve was identified to appropriately sectionalize a portion of the existing gas distribution system for safe and reliable operation.

b) Project Overview

The project consisted of replacing three valves and installing a new valve. The gas valve replacements and new valve installation involved material, contractor labor, and supervision to saw cut asphalt and remove paving, excavate and expose the gas distribution pipeline and valves, weld-fitting to install a supply by-pass, cut, fit, and replace the valves, perform Non-Destructive Testing (Dye Penetration Test) on all welds, grease and wrap each valve, and backfill with sand slurry and restoring the asphalt and paving. The work was also performed in a manner that enabled the gas distribution system to remain in service. Moreover, it avoided the need for unsafe air-entrainment explosion hazard and in the gas distribution system, it avoided the need to bleed customer distribution gas service, customer appliance relights, and other customer service interruptions. The project also involved environmental reviews, and biological and cultural monitoring resources.

c) Project Alternatives

Once gas valves are identified as problematic/difficult to operate per the annual gas valve inspection and exercise program, have failed, or are identified with having a poor performance history, replacement or rebuild of the valves are essentially the only option to ensure reliability. Due to low material cost for the valve, rebuilding a degraded valve is generally not cost-effective. The majority of the cost for valve replacements is tied to the labor/contractor of the actual installation and the environmental setting.

d) Vendor Selection and Project Management

SCE procured valves from Envent, a reputable valve supplier with proven material performance. SCE utilized CD Lyons, a strategically-sourced construction contractor for the removal and installation work scope. Due to specialized tasks being required, such as hot-tap welding, air purging, dye penetration testing, other contractors were also sourced to support the work under the prime construction contractor. In addition, for safety, quality, and service reliability, field inspection

and quality control supervision were performed by a qualified vendor. Project management and operational oversight functions were performed by SCE personnel.

e) Project Cost and Timing

Gas valves were safely installed during 2020 to enable the gas distribution system to continually operate safely and reliably throughout the City of Avalon without customer service interruption. Total direct project costs including all necessary internal and contract labor, materials, and equipment necessary to execute the project are detailed in Table V-11 below.

Table V-11
Gas Valve Installs and Replacements
(Nominal $000)

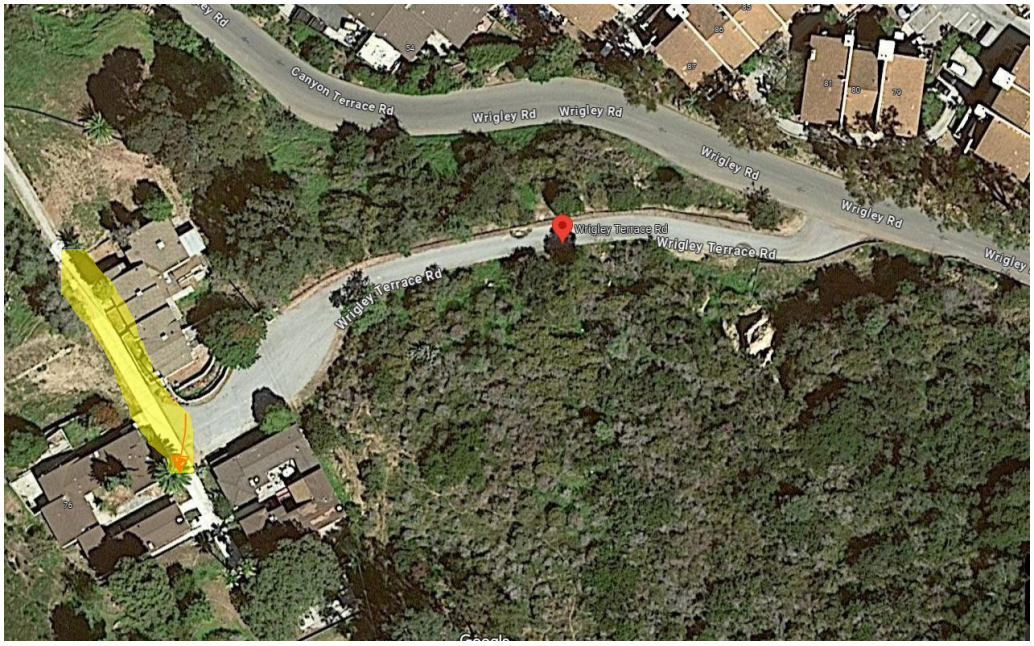
Cost Component	2020	2021	Total
Labor	$ 12	$ 2	**$ 14**
Contract / Material	$ 290	$ 12	**$ 302**
Allocations / Other	$ 2	$ 0	**$ 2**
Total	**$ 304**	**$ 14**	**$ 318**

7. Wrigley Terrace Gas System Service and Replacements

a) Background and Project Need

The gas pipeline servicing Wrigley Terrace customers became a priority for assessment given the proximity to vegetation and due to the road area exhibiting wet subsurface conditions. Assessment showed deteriorating infrastructure due to these adjacent vegetation and soil conditions. The assessment also noted insufficient separation between sewer, fresh water, saltwater, and gas utility infrastructure as well as some service lines in sub-optimal locations due to the proximity to living spaces, further heightening a public hazard. Additionally, meters, installed in the 1940s, showed signs of corrosion.

Figure V-3
Work Location



b) Project Overview

The project included replacing existing untraced Aldyl A gas pipe with approximately 500 feet of new 2" high-density polyethylene (HDPE) gas pipeline buried below ground and within the existing roadway to create the required separation between the saltwater, fresh water, and sewer lines. This included the fabrication and installation of the new 2" HDPE gas main, service line laterals, line-tracing, gas meter risers, and replacement meters.

Gas meters were relocated to situate them in safer locations. The replacement main was tied into the existing 1-1/2" carbon steel gas main at Clarissa and Wrigley Terrace. A new 2" HDPE valve was installed at the lower tie-in point. While not included in this project's costs, the sewer lines were also replaced. Public hazards of deteriorated and sub-optimal gas pipeline locations, due to proximity to living space, were also mitigated with this project. Replacement of Aldyl A pipe with HDPE gas line is a best management practice and consistent with SCE's Aldyl A policies.

c) Project Alternatives

Alternatives to replacing the gas pipelines with HDPE pipe included replacing with polyethylene (PE) pipe, steel pipe or taking no action. Taking no action was not an option due to

the observed public hazards. HDPE pipe was chosen over PE pipe because it is more resistant to corrosion and has better durability, flexibility, and ease of installation.

d) Vendor Selection and Project Management

CD Lyon was the contractor selected to perform the construction work for the Wrigley Terrace Gas and Water Main Relocation and the removal of the old infrastructure. Project management and oversight functions were performed by SCE personnel.

e) Project Cost and Timing

The project was initiated in 2018 and completed in 2020. Total direct project costs including all necessary internal and contract labor, materials, and equipment necessary to execute the project are detailed in Table V-12 below.

Table V-12
Wrigley Terrace Gas System
(Nominal $000)

Cost Category	2018	2019	2020	Total
Contract / Material	$ 9	$ 46	$ 36	**$ 90**
Allocations / Other	$ 0	$ 0	$ 0	**$ 0**
Total	**$ 9**	**$ 46**	**$ 36**	**$ 91**

8. Triana Gas System Service and Replacements

a) Background and Project Need

Triana is a large affordable housing development that was designed, engineered, and constructed in phases from 2010 to 2012. This new development required a gas main extension, new gas isolation valves, manifolds, and new service connections and meters. Pursuant to Catalina Gas Rules 15 and 16, the developer paid for the new gas infrastructure. Given the complexity of the project including its multiple phases, SCE hired a consultant to review drawings to ensure the design and engineering met Catalina Gas specifications. SCE labor also inspected the construction work and tested the system.

b) Project Overview

The scope of this project was design, engineering, inspection, and testing oversight for developer-constructed gas infrastructure as part of a large affordable housing development.

c) Project Alternatives

Alternatives discussed with the developer included SCE performing the design, engineering, and contracting out the construction of the new gas infrastructure. The developer paying the full extension of the main and service laterals with SCE oversight was the most cost-effective solution for all parties.

d) Vendor Selection and Project Management

The consultant hired to review the design and engineering of the new gas infrastructure was Blair, Church, and Flynn Consulting Engineers, Inc. SCE hired them as they provide services to SCE's hydro operations and they have specific gas design and engineering expertise. Catalina gas crews inspected and tested the system and the project was managed SCE personnel.

e) Project Cost and Timing

The project was initiated in 2010 and completed in 2012. The design and engineering review was completed in 2010. Catalina gas crews' inspection and testing occurred in 2010, 2011 and 2012 as the phases of the development were completed. Total direct project costs including all necessary internal and contract labor, materials, and equipment necessary to execute the project are detailed in Table V-13 below.

Table V-13
Triana Gas System Service and Replacements
(Nominal $000)

Cost Component	2010	2011	2012	Total
Labor	$ 1	$ 1	$ 0	**$ 3**
Contract / Material	$ 11	$ -	$ -	**$ 11**
Allocations / Other	$ 0	$ -	$ -	**$ 0**
Total	**$ 12**	**$ 1**	**$ 0**	**$ 14**

9. Mountainview Control Room Remote Workstation

a) Background and Project Need

SCE has managed the operation control room at PBGS since 1962. Upgrades have been made over time to monitor the electric, water, and gas operations. For example, as part of the Catalina Generation Automation Project, in 2017, SCE installed the Ovation Control System for the Catalina electric system. During COVID-19, SCE identified a risk, such as a COVID-19 outbreak, to the Catalina gas operations of not being able to staff the control room and monitor / operate the gas utility system. To mitigate this risk, SCE determined it could leverage the Ovation Control System by setting up a remote workstation at the Eastern Operations Generation Control Center (EOGCC) on the mainland (within Mountainview Generating Station, in Redlands, Ca.) to remotely monitor utility systems that are part of the Ovation Control network, including parts of the Catalina Gas system. The Ovation Control System monitors the Catalina Gas system at PBGS including pressure, temperature, Wobbe Index, and specific gravity.

b) Project Overview

SCE performed the engineering, installation, and commissioning. Existing operating platforms reduced the scope and allowed for seamless commissioning. New hardware was procured and installed at SCE's EOGCC location. To accommodate additional users, additional Emerson software licenses were procured. Because this work was completed as part of a Catalina Electric Generation project, a portion of the costs were allocated to the gas utility.

c) Project Alternatives

An alternative to this project would be to defer and complete it as part of a stand-alone project, and not part of a larger SCE Electric Generation project. As a stand-alone project, the gas utility would incur higher costs to achieve remote system monitoring since it would not be able to take advantage of project management, software or hardware overlaps with the electric utility. The alternative to take no action, and not achieve remote monitoring of the gas utility system, was not considered viable based on experience gained during COVID-19.

d) Vendor Selection and Project Management

This project relied primarily on SCE labor to complete, including project management. It also utilized existing systems and refurbished hardware when available. Emerson provided the additional software licenses. Agile One provided supplementary Information Technology labor.

e) Project Cost and Timing

The project began and was completed in 2021. Total direct project costs including all necessary internal and contract labor, materials, and equipment necessary to execute the project are detailed in Table V-14 below. The costs trail the installation due to lags in vendor invoicing and the allocation of a portion of the costs to the gas utility occurring after the work was completed and all invoices were processed.

Table V-14
Eastern Operations/Mountainview Control Center Remote Workstation
(Nominal $000)

Cost Component	2021	2022	Total
Labor	$ 0	$ 7	**$ 7**
Contract / Material	$ 2	$ 5	**$ 6**
Allocations / Other	$ 0	$ 1	**$ 1**
Total	**$ 2**	**$ 12**	**$ 14**

10. Versify Operator Rounds and Logs

a) Background and Project Need

SCE is subject to several monitoring and recordkeeping requirements in operating and maintaining the gas plant and distribution system on Catalina. Gas system operators log and record data for gas pressure and other variables. These logs are manually recorded in a series of logbooks covering facilities at PBGS and sites throughout the gas system. Periodically, the information recorded in the logbooks is manually converted into electronic format (i.e., Excel). This manual process creates the potential for data handling errors and does not properly allow for a centralized repository of operating records.

In 2008, SCE initiated use of eSOMS (Electronic System Operations Monitoring System), a software application installed on handheld devices to document and log operator rounds at the San Onofre Nuclear Generating Station (SONGS). Shortly thereafter, the SCE Power Production division commenced using eSOMS at SCE's other electric generation facilities. This application enables SCE personnel to efficiently capture data, images, audio, and video information on mobile electronic devices at the applicable site and document the real-time status of systems and equipment. By automating the collection of data, the application facilitates the collection of a broader range of information than manual log sheets during operator rounds, improves data accuracy, and avoids manual data entry. It also allows the electronically captured data to be uploaded into a centralized database that facilitates monitoring and assessment of equipment performance. The use of eSOMS to document and log operator rounds has not extended to the water utility to date.

Due to subsequent advances in technology, the then 12-year-old version of eSOMS became obsolete and was no longer supported by its vendor. The system could only be run on Pocket PC devices that are no longer manufactured or supported by their manufacturer. Additionally, it was only compatible with Windows 7, which is also no longer supported by its vendor. The continued use of eSOMS delayed SCE's company-wide migration to Windows 10, resulting in additional licensing and maintenance costs. The continued use of eSOMS was also constraining SCE's decommissioning of the Lotus Notes platform, resulting in additional costs. As a result, SCE replaced the version of eSOMS with an updated Versify system that is Windows 10 compatible, can work on larger variety of mobile devices, and meets the other functionality requirements of SCE's Electric Generation facilities. Although SCE did not originally extend use of eSOMS to the gas utility, SCE extended the new Versify system to its Catalina Gas and Water systems to improve operational recordkeeping and data management. By extending these functionalities to the gas utility, the project is anticipated to improve operational recordkeeping and datalogging capabilities for the gas utility.

b) Project Overview

The scope of this project was to replace the obsolete version of eSOMS with the Versify shift operations management system at all SCE Electric Generation facilities and extend its functions to the Catalina gas and water utility facilities. SCE obtained a perpetual license and support contract for the Versify tool covering the appropriate gas department positions. In addition to the user license, several tablets were purchased and implemented to allow gas department personnel to log data while performing rounds throughout the system.

c) Project Alternatives

SCE identified five alternative systems as candidates to replace eSOMS and the possibility of not taking any action. SCE evaluated these alternatives based on several criteria, including: 1) optimized spend efficiency, 2) strategic alignment for SCE generation, 3) operational risk,

4) complexity and risk, and 5) cost. As a result of this evaluation, SCE identified the Versify application as the preferred alternative based on a balancing of the five criteria.[73]

d) Vendor Selection and Project Management

CMG Energy Solutions (CMG) was the vendor SCE selected to implement the Versify application. CMG installed the Versify application at all applicable SCE facilities. SCE then separately purchased other devices required to operationalize the Versify application. SCE personnel supported the Versify installation and performance testing.

e) Project Cost and Timing

SCE completed the portion of the project for the Catalina utilities in 2021 as part of a larger SCE Electric Generation project. A small portion (one-fifth) of the larger project costs were allocated to the Catalina utilities (electric, water and gas). One-third of the Catalina combined cost was then allocated to the gas utility as the Catalina-related costs were assigned equally across the three utilities. SCE allocated $98,824 to the gas utility. Total direct project costs including all necessary internal and contract labor, materials, and equipment necessary that were assigned to Catalina Gas are detailed in Table V-15 below.

Table V-15
Versify Operator Rounds and Logs
(Nominal $000)

Cost Component	2021	2022	Total
Contract / Material	$ 97	$ (0)	**$ 97**
Allocations / Other	$ 1	$ (0)	**$ 1**
Total	**$ 99**	**$ (0)**	**$ 99**

C. Capital Forecast 2023-2028

SCE forecasts six gas system projects and three gas infrastructure replacement programs between 2023 and 2028 to support the continued safe, compliant, and reliable operation of the Catalina Gas system as we gradually transition to electrification. The impact of these projects on rate base is described in Chapter XI, below. SCE plans to replace an aged vaporizer, deteriorating manifolds and

[73] *See* WPSCE-01- GEN Logs & Rounds Analysis.

pressure safety valve (PSV) systems on each LPG tank, anode beds, an anode probe, and a rectifier. Programmatic infrastructure replacements/upgrades include meters, regulators, valves, pipeline segments and other facilities. Additionally, a permanent catwalk is planned to be installed around the LPG tanks. The capital projects/programs proposed to be completed from 2023 through 2028 are summarized in Table V-16 below.

Table V-16
Capital Expenditure Forecast 2023-2028 [74]
(Nominal $000)

Project / Program Name	In Service Date	2023	2024	2025	2026	2027	2028	Total
PB Anode Bed and Anode Probe Replacement (Cathodic Protection)	Jun-24	$ 80	$150	$ -	$ -	$ -	$ -	**$ 230**
Tremont Gas System Anode Bed Replacement	Dec-24	$ -	$ 50	$ -	$ -	$ -	$ -	**$ 50**
Gas Valves and Piping Relocation (Five Corners City Project)	Dec-24	$ 20	$260	$ -	$ -	$ -	$ -	**$ 280**
Gas Vaporizer Replacement	Jun-25	$ -	$ -	$238	$ -	$ -	$ -	**$ 238**
LPG Storage Tank Permanent Catwalk	Dec-24	$ 60	$240	$ -	$ -	$ -	$ -	**$ 300**
LPG Storage Tank PSV/Manifold Replacement	Jan-24	$ -	$180	$ -	$ -	$ -	$ -	**$ 180**
Gas Valves Replacement	Blanket	$ -	$ -	$238	$ -	$290	$ -	**$ 528**
Gas Meters Replacement	Blanket	$ -	$ 16	$ 17	$ 18	$ 19	$ 21	**$ 92**
Gas Piping and Other Facility Replacements	Blanket	$ -	$ -	$179	$196	$217	$242	**$ 834**
Total		**$160**	**$896**	**$672**	**$214**	**$526**	**$263**	**$2,732**

1. Pebbly Beach Anode Bed and Anode Probe Replacement

a) Background and Project Need

The cathodic protection rectifier and anode bed at Pebbly Beach for the Catalina Gas Utility is inoperable and needs to be replaced to ensure the main gas line from PBGS to Avalon is protected from corrosion. The current asset is out of service and not performing its design function and properly protecting the system.

[74] *See* WPSCE-01 – Capital Workpapers Summary.

b) Project Overview

The project is to abandon the currently out of service Pebbly Beach Anode Bed and Rectifier in its current location and install a new pad mounted gas rectifier and a new anode bed in a safer location to perform its design function.

c) Project Alternatives

The gas distribution system was designed to have a rectifier located at the Pebbly Beach area to ensure the gas main distribution line from PBGS to customers was protected from corrosion. An alternative to replacing the Pebbly Beach rectifier and anode bed would be to replace the gas distribution line with polyethylene HDPE pipe. The removal of the existing steel main line and replacement with buried plastic pipe would be substantially more expensive and require multiple outages.

d) Vendor Selection and Project Management

CD Lyon has been selected for the civil construction to complete the foundation for the new gas rectifier and anode bed installation. Farwest, a specialized corrosion protection contractor, has been selected for the supply and commissioning of the new gas rectifier and new anodes and connection to the gas utility. Both companies were chosen due to their experience and expertise on performing cathodic protection and civil work for Catalina Gas. Both companies previously installed and commissioned similar assets for the Tremont and Lower Terrace gas rectifiers and anode bed. Project oversight will be managed by SCE personnel.

e) Project Cost and Timing

Construction on this project is expected to begin in Q1 2024 and projected to be completed in Q2 2024. SCE forecasts a cost of $230,000 to complete this project. Project oversight will be managed by SCE personnel. Total project direct costs including all necessary internal and contract labor, materials, and equipment to effectively execute the project are estimated in Table V-17 below.

Table V-17
Pebbly Beach Anode Bed and Anode Probe Replacement
(Nominal $000)

Cost Category	2023	2024	Total
PB Anode Bed and Anode Probe Replacement	$ 80	$ 150	$ 230
Total	**$ 80**	**$ 150**	**$ 230**

2. LPG Storage Tank Permanent Catwalk

a) Background and Project Need

There are six PSVs mounted on a manifold protecting each LPG storage tank in the event of over pressurization. The PSVs currently installed on the tanks are due for replacement and once replaced, preventative maintenance activities are required to perform routine (weekly, monthly) inspections of components on the PSVs to ensure they are not in a degraded condition and will perform their design function. Temporary scaffolding has been erected to access these PSVs at each tank. The temporary scaffolding does not provide the proper safety and rigor to protect the Operators to perform the frequent inspections given the marine environment, seismic concerns, or in emergency situations. Scaffolding is not meant to be erected as a permanent structure and the current scaffolding will not suffice when Operations must replace the PSVs or perform maintenance on the valves.

b) Project Overview

The project scope includes the design and construction of a permanent catwalk structure around the LPG storage tanks to allow Operations to safely perform monthly/weekly surveillance of the PSVs on the LPG storage tanks and assist in the maintenance and replacement of the PSVs.

c) Project Alternatives

Alternatives to a permanent catwalk on the LPG storage tanks for accessibility and maintenance of the LPG tanks PSVs is to construct scaffolding. Scaffolding is meant to only be used temporarily and is not a robust design to withstand the marine environment. With the replacement of the LPG PSVs, there will be increased accessibility for routine operator inspections and maintenance.

Scaffolding, though low cost, will increase the risk of an operator becoming injured performing their normal tasks or during an emergency event.

d) Vendor Selection and Project Management

SCE contracted an engineering vendor to design a permanent catwalk structure that would meet the objectives of allowing operations personnel to perform the frequent inspections and maintenance activities. The structure will be designed to withstand the marine environment and provide safety measures in the event of emergency situations (e.g., fire, seismic event, etc.). SCE followed its procurement competitive bidding process of the engineered design and specifications to solicit bids from several construction vendors. Project oversight will be performed by a dedicated SCE project manager.

e) Project Cost and Timing

Construction of the project is expected to begin and be complete in Q2 2024 with a forecast cost of $300,000. Total project direct costs including all necessary internal and contract labor, materials, and equipment to effectively execute the project, and are detailed in Table V-18 below.

Table V-18
LPG Storage Tank Permanent Catwalk
(Nominal $000)

Cost Category	2023	2024	Total
PG Storage Tank Permanent Catwalk	$ 60	$ 240	$ 300
Total	**$ 60**	**$ 240**	**$ 300**

3. LPG Storage Tank PSV/Manifold Replacement Project

a) Background and Project Need

There are three in-service LPG storage tanks located at PBGS that store liquid propane. These tanks are protected from over pressurization by a manifold assembly, composed of six PSVs, located on the top of each of the tanks. These PSVs are designed to lift/open at their designed setpoint in the event the internal pressure of the tanks increases to prevent catastrophic failure of the tanks. The PSVs were originally installed in 2014. American Petroleum Institute (API) 510 requires these valves be tested, inspected, and potentially replaced every five years or less, depending on

corrosion rates and other factors, to ensure the valves will meet their design function. SCE conducted its first inspection of these valves in 2017. In 2022, SCE contracted with Team Industrial Services to perform an external/on-stream inspection on the propane storage tanks to meet the mechanical integrity requirements of the various state and federal agencies following guidelines set forth in API 510 and API 572. Pursuant to the 2022 inspection report, the manifold assemblies (and PSVs) are rusted and pose safety and reliability risk and therefore must be replaced as soon as possible. Though the probability of a boiling liquid expanding vapor explosion (BLEVE) or over-pressurization of the tanks is low, the consequence to employee and public safety and plant operation is extremely high and catastrophic. Due to the degraded condition of the manifolds that the PSVs are mounted to, the manifolds must also be replaced requiring the complete de-gassing of each tank before these components can be removed and replaced.

b) Project Overview

This project will replace the manifold and (6) PSV assemblies on the three in-service LPG storage tanks while keeping the gas production system in-service. This work will require emptying each tank, one at a time, flaring excess gas in the tanks, and then replacing the manifold and PSV assembly on each tank. AQMD permits will be required to flare the excess gas which will be managed by a third-party flare vendor. A third-party construction vendor and the PSV original equipment manufacturer (OEM) supplier will perform the manifold and PSV assembly replacement. The gas supply will be configured to allow the gas production system to remain in-service during the construction of this project.

c) Project Alternatives

An alternative that was considered included only replacing (1) of the manifolds that contains (3) PSVs on each tank. It was determined that no cost savings would be associated with this alternative and it would not fully mitigate the risk of the tank over pressurization. The tank would only be partially protected since the other manifold/PSVs are degraded and the risk for potential gas leak would remain.

d) Vendor Selection Process and Project Management

Due to procurement issues with the PSV OEM (Teeco), a construction vendor (CD Lyon) that is familiar with PBGS was chosen to replace the valves with the PSV OEM present as technical advisors/oversight. A South Coast Air Quality Management District (SCAQMD) qualified vendor (Envent) will also assist with the project to properly de-gas each tank allowing for the removal of the installed manifold/PSV assembly and installation of the new assembly. Project oversight will be managed by SCE personnel.

e) Project Cost and Timing

The project is scheduled to be completed in January 2024. The project is forecast to cost $180,000. Total project direct costs including all necessary internal and contract labor, materials, and equipment to effectively execute the project are detailed in Table V-19 below.

Table V-19
LPG Storage Tank PSV/Manifold Replacement
(Nominal $000)

Cost Category	2024	Total
LPG Storage Tank PSV/Manifold Replacement	$ 180	$ 180
Total	**$ 180**	**$ 180**

4. Gas Valves and Piping Relocation (Five Corners City Project)

a) Background and Project Need

SCE uses valves throughout the gas distribution system for flow control applications. These valves are required for system operations to safely distribute and isolate the gas distribution system for continuous and reliable customer service. SCE routinely inspects and exercises these valves to ensure they are in good working condition. As a result of these inspections, valves are identified for corrective action and/or replacement. In addition, the City of Avalon has a Five Corners Pedestrian and Road Improvement Project (Five Corners City Project) that involves infrastructure improvements that conflict with the existing location of the sub-grade gas distribution valves and appurtenances at the City's Five Corners intersection. SCE is partnering with the City of Avalon to

coordinate sub-grade gas valve and associated appurtenance replacements and relocations. Gas valves and associated appurtenances are critical gas system components to provide continued safe and reliable gas distribution service for SCE customers, and the synergistic benefits of coordinating this work with the City's Five Corners Project is mutually beneficial to SCE customers.

b) Project Overview

The project involves replacement of two four-inch control valves and two two-inch control valves and installation of two four-inch valves and one inch-and-a-quarter valve as identified in Table V-20 below.

Table V-20
Five Corners City Project – Gas Valve Replacements

Replace as part of Five Corners Project	Size	Reason for Replacement/Installation
Valve #23 – Replace in-place	2"	Proximity to City project, valve is original, opportunistic
Valve #24 – Replace with Valve #101	4"	Conflict with new City utilities, new alignment of gas main
Valve #25 – Replace in-place	4"	Hard to turn, within City work area
Valve #50 – Replace in-place	2"	Unrepairable, within City work area
New Installation		
Valve #102	4"	Bypass line tie-in, isolation for Avalon Canyon Road
Valve #103	1.25"	Isolation valve for service line to Country Club
Valve #104	4"	Isolation valve for Tremont main and bypass

c) Project Alternatives

While the City's proposed project presents risks it also provides opportunities to replace SCE's aging gas infrastructure within the project area. Coordinated design and construction pre-planning mitigates the risk. Additionally, scheduling the gas infrastructure replacements will reduce the likelihood of future excavations for gas facilities maintenance/repairs in the newly surfaced streets. SCE appreciates the opportunity to work with the City to develop a mutually beneficial plan to coordinate work, environmental review, and the cost of new facilities in concert with the City's street improvement project. Project alternatives include not coordinating this work with the City of Avalon's project, which would be more costly and risky. Zonal electrification of this area is also an alternative; however, because of the location of the gas infrastructure impacted by the work, the timing of when the

work is forecast to begin, and the fact that there are a number of non-residential and residential services connected to this system, it likely makes this option not feasible.

d) Vendor Selection and Project Management

SCE has strategically sourced and competitively bid engineering contracts for engineering services to support the design and planning of this project. As standard for Government/municipal projects, the City of Avalon will competitively bid the material acquisition and construction portion of the project. The bidding process involves multiple contractors submitting proposals, and the owner selecting the proposal that best meets its needs based on various criteria, including cost, experience, and qualifications.

e) Project Cost and Timing

The project is forecast to be completed in completed in 2024. Project costs including all necessary engineering, design, project management and contract negotiations, material, and construction are estimated to be $280,000. Total project direct costs including all necessary internal and contract labor, materials, and equipment to effectively execute the project are detailed in Table V-21 below.

Table V-21
Gas Valves and Piping Relocation (Five Corners City Project)
(Nominal $000)

Cost Category	2023	2024	Total
Gas Valves and Piping Relocation (Five Corners City Project	$ 20	$ 260	$ 280
Total	**$ 20**	**$ 260**	**$ 280**

5. Tremont Gas System Anode Bed Replacement

a) Background and Project Need

As described in Section V.B.4 above, the original pole-mounted Tremont rectifier was removed and a new, pad mounted gas rectifier was installed/commissioned nearby. The original anode bed at Tremont was identified to be almost depleted with two anodes of the total six anodes

remaining. SCE determined a new anode bed would also be needed to extend the life and add the cathodic protection needed to ensure the gas pipeline is properly protected from corrosion.

b) Project Overview

The project scope includes installing a new anode bed with new anodes at a nearby location and connecting it to the Tremont rectifier. The location of the new anode bed will be identified upon the final design and engineering plans of the Five Corners City Project. Once the Five Corners City Project construction begins, anticipated to begin in 2024, SCE will coordinate construction with the City to install the new anode bed with new anodes.

c) Project Alternatives

The gas distribution system was designed to have a rectifier located at the Tremont Street location to ensure the gas main distribution lines in this zone of the system was fully protected from corrosion. The new rectifier has been installed but is only connected to the existing (2) anodes in the old anode bed which are almost depleted. An alternative to completing this project by installing a new anode bed would be to replace the gas distribution line with plastic pipe. Plastic piping would remove the need for cathodic protection thereby no longer needing anodes or rectifiers to protect the lines. The removal of the existing steel line and replacement with buried plastic pipe would be more expensive than replacing and relocating the rectifier and anode bed.

d) Vendor Selection and Project Management

CD Lyon has been selected for the civil construction support for the foundation for the new gas rectifier and anode bed installation. Farwest, a specialized corrosion protection contractor, has been selected for the supply and commissioning of the new gas rectifier and new anodes and connection to the gas utility. Both companies were chosen due to their experience and expertise on performing cathodic protection work for Catalina Gas. Both companies previously installed and commissioned similar assets for the Lower Terrace gas rectifier and anode bed.

e) Project Cost and Timing

The pole mounted gas rectifier was removed and the new pad mounted gas rectifier was installed and commissioned in June 2021. Due to scope synergy, the new anode bed is

forecast to be installed in 2024 during the Five Corners City Project. SCE estimates a cost of $50,000 to complete this project. Total project direct costs including all necessary internal and contract labor, materials, and equipment to effectively execute the project are detailed in Table V-22 below.

Table V-22
Tremont Gas System Anode Bed Replacement
(Nominal $000)

Cost Category	2024	Total
Tremont Gas System Anode Bed Replacement	$ 50	$ 50
Total	**$ 50**	**$ 50**

6. Gas Vaporizer Replacement

a) Background and Project Need

Catalina Gas has a triple-redundant vaporizer assembly to heat and vaporize the LPG to change it from a liquid to gas. Each of the three vaporizers has the capacity to supply required heating to meet the needs of the gas distribution system as well as the propane to fuel the microturbine generators. The vaporizers were manufactured in 2003 by Ransome Manufacturing. Each vaporizer has the capacity to vaporize 400 gallons per hour (gph) at a rate of 234 SCFM. Heaters in each vaporizer are 480V – 60hz 3 phase, requiring a maxim of 144 amps. Each vaporizer also has an independent control and measuring system that is sensitive to system pressure.

In 2023, SCE performed a condition assessment of the vaporizers to understand performance history and verify the need for replacement. A physical inspection of the vaporizers was completed, including interviews with supervisors, operators, and other personnel familiar with the equipment's operation and maintenance. A maintenance history review was also utilized in forming a condition score. SCE followed standard assessment criteria modeling and scoring criteria. The assessment considered age, operational performance, maintenance history, existing preventative maintenance, and a physical inspection of the equipment.[75]

[75] *See* WPSCE-01 – Vaporizers Baseline Condition Assessment.

A highlight of the assessment scoring is that the triple-redundant vaporizer assembly is nearing the end of its useful life. The vaporizer assembly is 20 years old, as evidenced by the equipment tags stamped with a 2003 manufacturer date. The vaporizer has no moving parts and is a low-pressure vessel. The working component is a heating element. The rudimentary control system includes three redundant pressure sensors and three heating elements, one per train. The expected useful life of the equipment is 30 years; however, the control system has a useful life between 10 to 15 years. Due to concerns tied to increased maintenance and availability of spare parts/obsolescence, SCE proposes replacing the Gas Vaporizer.

b) Project Overview

In 2024, SCE will perform an engineering study to identify replacement equipment options. This effort will examine current technology for potential replacement options to improve the reliability and longevity of the system. The outcome of this engineering study will provide a recommended replacement equipment. In 2025, SCE will replace the equipment.

c) Project Alternatives

There are no other alternatives except to maintain the existing equipment which SCE has determined is too risky given the age of the equipment. Electrification is also not an alternative as the vaporizer is a critical asset that also serves the propane-fueled generation.

d) Vendor Selection and Project Management

Construction vendor and work scope has yet to be defined. As noted above, an engineering study with the assistance of engineering contractors, if needed, is scheduled for 2024 to identify potential replacements or technology alternatives. Upon the completion of this study, the installation/construction phase will be scheduled and SCE will hire a contractor to perform this work.

e) Project Cost and Timing

The engineering study is scheduled to be completed in 2024 with construction/installation of the vaporizer replacement to be completed by Q4 2025. SCE has estimated this project will cost approximately $230 thousand. With escalation, the total project direct costs

including all necessary internal and contract labor, materials, and equipment to effectively execute the project are estimated in Table V-23 below.

Table V-23
Gas Vaporizer Replacement
(Nominal $000)

Cost Category	2025	Total
Gas Vaporizer Replacement	$ 238	$ 238
Total	**$ 238**	**$ 238**

7. Gas Meter Infrastructure Replacement

a) Background and Project Need

There are approximately 1,400 gas meters throughout the gas distribution system. These meters function to track gas consumption of the end user. Proper meter consumption, maintenance, and replacement is essential to maintain billing integrity and to be a responsible purveyor. Meter replacements typically become identified from meter inspections or a Statistical-Based Accuracy Performance Test. Annually, SCE crews inspect gas meters for corrosion and utilize data from larger gas meter testing agencies to determine overall gas meter function and replacement frequency. Additionally, SCE responds to customer requests, including to inspect their meters. During gas meter inspections, SCE may identify a meter that requires replacement. GO 58-A, Section 13(a) mandates that no gas meter shall be allowed to remain in service for more than 10 years from the date when last tested without being retested. However, Section 13(c) allows for the verification of compliance by way of a statistical meter control program. The CPUC has granted SCE authorization to use statistical methods to comply with GO 58-A.[76] As such, a large portion of gas meter replacements is determined by an overall percentage of meters failing a Statistical-Based Accuracy Performance Test performed by larger gas agencies on a grand scale. Gas meters that are utilized by Catalina Gas are identical to meters utilized by San Diego Gas & Electric (SDG&E) and Southern California Gas (SoCal Gas). Due to the small scale of the Catalina Gas system, the CPUC allows SCE to utilize accuracy testing of larger utilities to

[76] *See* CPUC letter granting SCE authority, included in workpapers.

determine if the meter, based on manufacture and year, performed unsatisfactorily, and should be scheduled for replacement.

b) Project Overview

Once meters are identified for replacement, they are ordered, scheduled, and then either a Catalina Gas crew or contractor(s) will perform the replacement. This project excludes new meter assembly installations due to new service connections consistent with SCE's proposal to cease new service connections, as described in Section III.D.

c) Project Alternatives

Once a meter has been identified for replacement, it needs to be replaced with a new gas meter (like for like) or the gas service disconnected and replaced with electric service (zonal electrification). Not replacing the meter via like for like while maintaining gas service would lead to a public health risk due to an elevated gas leak risk going unmitigated and/or inaccurate customer usage data. See Section III.A.4 for more information regarding operating safely and reliably while phasing in electrification.

d) Vendor Selection and Project Management

Gas meter replacement is typically completed by SCE's in-house labor resources. Contractors may assist SCE staff in the event it is needed.

e) Project Cost and Timing

SCE forecasts 50 meter assemblies to be replaced per year (or 250 in total over the 2024-2028 period). This project estimates approximately $300 per meter assembly replacement (2023 dollars); this includes SCE labor, contractor, and material costs. This coincides with a total project cost of approximately $92 thousand including escalation over the period. Total project direct costs including all necessary internal and contract labor, materials, and equipment to effectively execute the project are estimated in Table V-24 below.

Table V-24
Gas Meter Infrastructure Replacement
(Nominal $000)

Cost Category	2024	2025	2026	2027	2028	Total
Gas Meter Infrastructure Replacement	$ 16	$ 17	$ 18	$ 19	$ 21	$ 92
Total	**$ 16**	**$ 17**	**$ 18**	**$ 19**	**$ 21**	**$ 92**

8. Gas Valve Infrastructure Replacement

a) Background and Project Need

There are approximately 100 isolation valves throughout the gas distribution system. These valves are located in periodic and strategic locations throughout the distribution system for safe and efficient operational purposes. These valves function to control the routing of gas so that pipe sections may be taken offline for periodic maintenance if needed, and/or in the event of emergencies to safely isolate sections of the distribution system to troubleshoot and minimize customer service interruption. SCE conducts an exercise (operates the valves) and inspects these valves annually (not to exceed 15 months) and upon installation of a new gas distribution service.

b) Project Overview

Operations performs an annual gas valve exercise program; during which troublesome and degraded distribution gas valves are identified for replacement. This exercise as well as performance history of gas valves helps to define valve replacement work scope as part of the capital valve replacement program. Once gas valves have been identified as problematic and difficult to operate per the annual gas exercise program, have failed, or have been identified as having a poor performance history, replacement or rebuild of the existing valves are the only options to ensure reliability. Due to low material cost for the valve, rebuilding a degraded valve is not cost effective. The majority of costs for valve replacements is tied to the labor to perform the installation.

c) Project Alternatives

Once gas valves have been identified as problematic and/or difficult to operate per annual gas exercise program, have failed, or identified with having a poor performance history, replacement or rebuild of the existing valves are essentially the only options to ensure reliability.

As discussed in Section III.B, gas valves need to be maintained or replaced through the electrification process as faulty or inoperable valves could lead to public health and safety risks.

d) Vendor Selection and Project Management

SCE approved valve suppliers and distributors are selected for the valve material and contractor selection for the removal and installation work scope will be competitively bid.

e) Project Cost and Timing

SCE projects the need to replace valves in 2025 and 2027. The cost to replace valves is based on historic valve replacement spend. Including escalation, SCE estimates a total cost of approximately $528 thousand over this GRC period. Total project direct costs including all necessary internal and contract labor, materials, and equipment to effectively execute the project are estimated in Table V-25 below.

Table V-25
Gas Valve Infrastructure Replacement
(Nominal $000)

Cost Category	2025	2026	2027	Total
Gas Valve Infrastructure Replacement	$ 238	$ -	$ 290	$ 528
Total	**$ 238**	**$ -**	**$ 290**	**$ 528**

9. Piping And Other Facility Infrastructure Replacement

a) Background and Project Need

In 2021, SCE initiated a Risk and Asset Management Plan for its gas assets by conducting a system-wide assessment that documented critical gas assets, identified potential risk events and observed conditions of its aging gas assets, and established a risk score to prioritize subsequent detailed asset assessments.[77] Several of the recent and near-term capital projects were initiated as a result of findings and observations of these initial and detailed asset assessments. SCE is continuing its asset assessments. For example, in 2024, a detailed asset assessment of the steel and polyethylene pipelines will be performed. Due to the age of the gas system, SCE forecasts a need to replace some

[77] *See* Catalina Gas Utility Asset Assessments in workpapers.

pipeline, e.g., Aldyl A, and replace/upgrade other assets necessary to maintain safe and reliable service over this GRC period. Replacements/upgrades will be based on asset assessments that will be conducted over this GRC period. For example, the initial condition assessment of the LPG receiving station, the only means of off-loading LPG and is a critical asset, identified this asset as having a high vulnerability due to the equipment age (being over 10 years) and the current configuration (no redundancy). Failure of this asset would limit or prevent Catalina Gas from supplying heating fuel to the Island. In the event of a failure, Catalina Gas must be able to recover and return the equipment to service within a few days at most. If the receiving station is disabled for any reason this would limit the ability to off load LPG. Due to the critical nature of the asset, SCE will conduct a detailed asset assessment to determine if replacement and/or redundancy are needed. Similarly, in 2024, SCE will assess the need to improve its remote monitoring and control capabilities of the gas system to improve resiliency of the gas system. Lessons learned from Hurricane Hilary, in August 2023, identified a risk with SCE's ability to operate the gas system remotely. The ability to monitor the gas system with the utilization of the Ovation Control System improves SCE's readiness in the event of emergencies; however, SCE is not able to operate critical gas components remotely.

This program is intended to fund the replacement/upgrade of assets that are a safety risk, aged and could fail if not replaced and are critical to safe and reliable operation of the gas system, and, over the short term, when zonal electrification is more expensive. As described in Chapter III, SCE proposes a gradual, phased approach to electrification that anticipates a ramp up occurring after this GRC period. This program will also fund equipment that breakdown and need to be replaced.

b) Project Overview

This program will fund the replacement/upgrade of assets critical to the gas system to provide safe and reliable service. The scope of the replacements/upgrades will be based on inspections, asset assessments, and/or equipment breakdown.

c) Project Alternatives

Alternatives include not replacing assets that are near failure or fail and zonal electrification. As described in Chapter III, zonal electrification will be conducted per a phased

approach; however, over this GRC period, SCE's electrification proposal is limited to pilots and opportunistic situations that are cost neutral or cost effective.

d) Vendor Selection and Project Management

SCE anticipates contracting a third-party vendor to lead several detailed asset assessments. SCE also expects to contract the work to complete replacements and upgrades based on the recommendations from these detailed asset assessments. Once an asset has been identified for replacement or upgrade, SCE will identify the scope, estimated cost, and schedule to complete the work, and will either competitively bid the work or direct source a contractor.

e) Project Cost and Timing

This program includes funds beginning in 2025 and annually thereafter. Based on recorded costs and management judgement, SCE estimates it needs approximately $150,000 per year, plus escalation. The program is estimated to cost approximately $834,000 over the five-year period. Total project direct costs including all necessary internal and contract labor, materials, and equipment to effectively execute the program are estimated in Table V-26 below.

Table V-26
Gas Piping and Other Facility Infrastructure Replacements/Upgrades
(Nominal $000)

Cost Category	2025	2026	2027	2028	Total
Gas Piping and Other Facility Infrastructure Replacements/Upgrades	$ 179	$ 196	$ 217	$ 242	$ 834
Total	**$ 179**	**$ 196**	**$ 217**	**$ 242**	**$ 834**

VI.
RESULTS OF OPERATION

A. Purpose

This section presents SCE's test year 2025 Results of Operations (RO) at proposed and present rates for Catalina Gas operations. We request that the Commission adopt a test year 2025 Catalina Gas revenue requirement of $2.062 million. This represents a $0.611 million increase over the current authorized revenue requirement of $1.451 million.

B. Results of Operations At Proposed Rates

Table VI-27 below summarizes the revenues, operating expenses, and plant-related expenses identified and discussed in accompanying sections. It presents SCE's Catalina Gas RO at proposed rates for test year 2025 and attrition years 2026 through 2028. The RO at proposed rates shows that SCE will need $2.062 million, $2.309 million, $2.357 million, and $2.402 million in revenue requirements in the years 2025, 2026, 2027, and 2028, respectively, to cover the cost of service and to realize earnings at the Commission authorized rate of return. SCE's cost of service covers operations and maintenance (O&M) expense, administrative and general (A&G) expense, capital costs associated with rate base amounts, and a Commission-authorized rate of return. SCE's authorized rate of return on rate base is 7.44 percent.[78]

The Catalina Gas revenue requirement also includes franchise fees and uncollectible (FF&U) expenses. Franchise fees are calculated by multiplying the currently authorized Catalina Gas franchise fee rate of 1 percent by the revenue requirement request.[79] Similarly, uncollectible expenses are calculated by multiplying the proposed rate from SCE's 2025 electric General Rate Case (GRC) of 0.191 percent by the revenue requirement request.[80] SCE requests that the Commission adopt these rates for franchise fees and uncollectible expenses.

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[78] D.22-12-031, Ordering Paragraph 2, p. 53.

[79] Section 4 of City of Avalon Ordinance No. 435, dated May 17, 1962, established the current franchise fee rate of two percent of "gross annual receipts" (i.e., operating revenues); in no event shall such payment be less than one percent of revenues derived from gas sales within the City of Avalon.

[80] A.23-05-010, Exhibit SCE-03, Vol. 01, p. 2.

Table VI-27
Test Year 2025 Gas GRC
Results of Operations At Proposed Rates
(Nominal in $000s)

Summary of Earnings | 2025 - 2028		CPUC			
Line	Item	2025	2026	2027	2028
1.	**Total Operating Revenues**	**2,062**	**2,309**	**2,357**	**2,402**
2.	**Operating Expenses:**				
3.	Production O&M	1,220	1,220	1,220	1,220
4.	Uncollectibles	4	4	5	5
5.	Administrative & General	199	199	199	199
6.	Franchise Requirements	21	23	24	24
7.	Revenue Credits	–	–	–	–
8.	Escalation	129	167	206	246
9.	**Total O&M**	1,573	1,614	1,653	1,695
10.	**Depreciation**	**205**	**215**	**222**	**227**
11.	Taxes Other Than On Income	86	92	98	103
12.	Taxes Based On Income	(110)	55	37	53
13.	**Total Taxes**	**(25)**	**148**	**136**	**156**
14.	**Total Operating Expenses**	**1,754**	**1,977**	**2,011**	**2,078**
15.	**Net Operating Revenue**	**308**	**332**	**346**	**324**
16.	Rate Base	4,142	4,464	4,652	4,354
17.	Rate of Return	7.44%	7.44%	7.44%	7.44%

C. Results of Operations At Present Rates

SCE's Catalina Gas RO at present rates for the recorded year 2022 and estimated years 2023 through 2028 is presented in Table VI-28. SCE's Catalina Gas RO at present rates depicts the expected rate of return on operations absent the rate relief requested in this proceeding.

Table VI-28
Test Year 2025 Gas GRC
Results of Operations At Present Rates[81]
(Nominal in $000s)

		Recorded	Estimated					
Line	Item	2022	2023	2024	2025	2026	2027	2028
1.	**Total Operating Revenues**	**1,259**	**1,427**	**1,729**	**1,801**	**1,801**	**1,894**	**1,907**
2.	**Operating Expenses:**							
3.	Production O&M	1,251	979	1,514	1,220	1,220	1,220	1,220
4.	Uncollectibles	–	3	3	3	3	4	4
5.	Administrative & General	264	256	267	199	199	199	199
6.	Franchise Requirements	28	14	17	18	18	19	19
7.	Revenue Credits	–	–	–	–	–	–	–
	Escalation	–	67	108	129	167	206	246
8.	**Total O&M**	**1,544**	**1,319**	**1,910**	**1,570**	**1,608**	**1,648**	**1,689**
9.	**Depreciation**	**258**	**262**	**273**	**205**	**215**	**222**	**227**
10.	Taxes Other Than On Income	79	67	75	86	92	98	103
11.	Taxes Based On Income	(184)	(69)	(242)	(173)	(89)	(89)	(84)
12.	**Total Taxes**	**(105)**	**(3)**	**(168)**	**(88)**	**4**	**10**	**19**
13.	**Total Operating Expenses**	**1,697**	**1,578**	**2,015**	**1,688**	**1,826**	**1,879**	**1,936**
14.	**Net Operating Revenue**	**(438)**	**(151)**	**(287)**	**113**	**(26)**	**15**	**(28)**
15.	Rate Base	3,026	2,975	3,208	4,142	4,464	4,652	4,354
16.	Rate of Return	(14.46%)	(5.08%)	(8.93%)	2.73%	(0.58%)	0.31%	(0.65%)

D. Four-Factor A&G Allocation

SCE is a large energy utility with substantial company resources and robust central support services, including separate departments focused on environmental services, business resiliency, information technology, local public affairs and corporate communications, regulatory affairs, finance, and law. Catalina Gas customers benefit from the availability of these resources, and thus, a portion of SCE's companywide A&G costs need to be recovered from those customers.

SCE uses the four-factor allocation method to allocate a portion of its companywide A&G expense to the gas (and water) utilities. The guidelines for allocating A&G expense using the four-factor method are provided in Standard Practice U-6-W.[82] In accordance with Standard Practice U-6-W,

[81] *See* WPSCE-01 for SCE's calculated Present Rate Revenues.
[82] Standard Practice U-6-W Allocation of Administrative and General Expenses and Common Plant and the Four-Factor Allocation Method. *Available at* https://docs.cpuc.ca.gov/WORD_PDF/REPORT/113899.pdf

SCE utilizes the following four factors to allocate indirect A&G expenses to the Catalina Gas utility: 1) number of customers; 2) number of employees; 3) O&M expense; and 4) gross plant.

SCE proposes to allocate $0.266 million or 0.017% of SCE's companywide A&G expense for recovery from Catalina Gas customers.[83] SCE applied a capitalization factor of 32.40 percent to its total eligible Catalina Gas-related A&G expense of $0.266 million to calculate the amount of A&G to be capitalized ($0.086 million). The current A&G allocation proposal is reasonable and consistent with the methodology included in SCE's Catalina Water 2022 GRC,[84] and it should be approved by the Commission.

[83] *See* WPSCE-01 for SCE's calculated four-factor A&G allocation rate.
[84] *See* A.20-10-018, Exhibit SCE-06, p. 5.

VII.
RATEMAKING PROPOSAL

This chapter provides (1) a brief overview of SCE's existing ratemaking structure, including the recovery of SCE's authorized revenue requirements, which SCE proposes to modify in this GRC cycle with the establishment of the Gas Base Revenue Requirement Balancing Account (GBRRBA) to account for the revenue impacts resulting from variances in recorded sales and the approval of an attrition year ratemaking mechanism, and (2) SCE's proposal to establish two new memorandum accounts, as follows:

1. Catalina Electrification Transition Memorandum Account (CETMA) – to record incremental costs associated with the electrification of SCE's infrastructure; and
2. Catalina Gas Federal Grant Memorandum Account (CGFGMA) - to record match funding for projects seeking and/or awarded federal grant funding that have a match funding requirement.

A. Current Ratemaking Structure

For SCE's Catalina Gas Customers, SCE's current rate structure comprises the following bill components:

1. Customer Charges
2. Base Usage Rate
3. Gas Cost Adjustment Billing Factors

Authorized CPUC-jurisdictional revenue requirements are recovered from customers through a combination of customer charges where the amount collected is dependent on the meter size at the property, and base rates that cover the costs of the annual revenue requirement and sales forecast of the test year that is presented in Chapter VIII. However, SCE's Catalina Gas revenues are not currently decoupled from base rates, so actual revenues differ from the CPUC-authorized revenue requirement. SCE proposes to implement decoupling as part of this GRC with the establishment of the GBRRBA, as further discussed in the next section.

SCE incorporates the Gas Cost Adjustment Billing Factors, which are designed to account for fluctuations in the cost of liquefied petroleum used in the production of the propane gas-air, as well as associated transportation expenses. In D.82-04-010, Ordering Paragraph (OP) 2, the Commission authorized SCE to submit Gas Cost Adjustment Clause (GCAC) filings by AL for every 6-month period, with March 1 and September 1 being the regularly scheduled revision dates. For example, on August 1, 2023, SCE submitted Advice 257-G to decrease the GCAC Billing Factors that account for 1) gas expense for the Forecast Period of September 1, 2023 through August 31, 2024, and 2) amortization of the estimated September 1, 2023 balance in the GCAC balancing account over the forecast period.

B. Proposed New Balancing and Memorandum Accounts

1. Establishment of Gas Base Revenue Requirement Balancing Account (GBRRBA)

The current gas rates were designed to recover an authorized base rate revenue requirement of $1.45 million, approved in the Catalina Gas 2009 GRC decision.[85] Since then, SCE has consistently under-collected revenues from 2010 to 2022, resulting in approximately $1.5 million in total lost revenues. One factor contributing to lost revenues is the decrease in the amount of therms sold versus the authorized sales forecast used to develop the rates set from the 2009 GRC. Since 2010, SCE's recorded therms sold through 2022 averaged 18 percent lower than authorized (i.e., the number of therms used to set rates), with 2018 having the most significant variance between actual and authorized sales with the number of therms sold coming in at 27 percent below authorized. Based on gas sales data since 2000, customer gas usage began to decrease when SCE implemented the 2005 Gas GRC rate increase (that was phased in from 2005 to 2008), and continued reductions with the 2009 GRC rate increase (that was phased in from 2010 to 2012, including deferred revenue since January 2009).[86] SCE anticipates a decline in sales compared to recent years, in part due to rate increases proposed in this GRC and, over time, the impact of electrification. Table VII-29 below compares the revenue

[85] D.09-09-034 at p. 2.

[86] While reductions in gas sales are observed in the periods immediately after the rate increases went into effect, sales were further reduced from 2016-2018, with modest increases in 2019, 2021, and 2022. SCE believes this additional reduction from 2016-2018 was a result of the conservation Catalina customers exercised during the historic drought over this same period. Gas sales still have not approached the level seen prior to 2005, and we do not anticipate they ever will.

requirement SCE was authorized in its last GRC versus the revenue collected from customers less the purchased gas expense for customers.

Table VII-29[87]
Comparison of Recorded Revenues less Purchased Gas v. Authorized

Year	Total Revenue	Purchased Gas Expense	Revenues Less Purchased Gas	Authorized Revenue Requirement	Difference
	(A)	(B)	(C) = (A) - (B)	(D)	(E) = (C) - (D)
2010	2,467,442	1,431,404	1,036,038	1,450,000	(413,962)
2011	3,311,324	1,687,894	1,623,430	1,450,000	173,430
2012	3,011,359	1,477,485	1,533,874	1,450,000	83,874
2013	2,717,387	1,217,356	1,500,031	1,450,000	50,031
2014	2,273,803	1,186,345	1,087,458	1,450,000	(362,542)
2015	2,129,932	708,640	1,421,292	1,450,000	(28,708)
2016	2,101,751	863,732	1,238,019	1,450,000	(211,981)
2017	2,285,119	1,045,775	1,239,344	1,450,000	(210,656)
2018	2,341,789	1,008,744	1,333,045	1,450,000	(116,955)
2019	2,663,735	1,087,854	1,575,881	1,450,000	125,881
2020	2,291,947	817,674	1,474,273	1,450,000	24,273
2021	2,324,002	1,291,846	1,032,156	1,450,000	(417,844)
2022	2,849,305	1,590,501	1,258,804	1,450,000	(191,196)
Grand Total					**(1,496,355)**

To remedy the discrepancy between SCE's authorized revenue requirement and the amount of revenue actually recovered, SCE proposes to establish the GBRRBA decoupling mechanism, which is similar to SCE's electric Base Revenue Requirement Balancing Accounts (BRRBA), to reduce the over/undercollection caused by sales variability and to increase the likelihood of maintaining recovery of authorized revenues between GRC cycles. The purpose of the GBRRBA is to record the difference between SCE's authorized GRC base revenue requirement (excluding any GCAC-related revenues) to be collected from Catalina Gas Customers and recorded revenues from authorized rates. The proposed balancing account will ensure that SCE recovers no more and no less than its authorized revenue requirement by recovering any revenue shortfall (i.e., undercollection) in the following year or returning any revenue overcollection in the following year. SCE proposes to facilitate the recovery or return of any under- or overcollection via a Tier 1 annual gas true-up AL that will be submitted by

87 The amounts shown in table are derived from SCE's Annual Gas reports.

March to align with the GCAC beginning year filing.[88] As noted above, the GCAC mechanism is designed to account for fluctuations in the cost of liquefied petroleum used in the production of petroleum gas-air, as well as associated transportation expenses, and the revenues that are collected within SCE's GCAC will not be incorporated in the calculation of the GBRRBA.

2. Establishment of Catalina Electrification Transition Memorandum Account (CETMA)

As discussed in Chapter III, in support of California's decarbonization goals, SCE proposes a gradual, phased electrification of gas customers forecast to 2045. Phase 1 starts the electrification transition in 2024 with a ramp up through 2028 and includes conducting community outreach (including surveys), electrifying a small sample of residential and non-residential services, and updating the preliminary draft CZES with the data and experience gained. Additionally, as proposed in Section III.A.3, when viable opportunistic electrification options are available and are either cost neutral or cost-effective compared to gas infrastructure replacements, relocations, etc., SCE will submit a Tier 2 AL for Staff to review and approve the electrification project. For Phase 1, SCE forecasts $830,000 to perform customer outreach, surveys, and to pilot electrification with approximately 10 residential customers and one to two non-residential customers. SCE does not include a forecast for potential opportunistic electrification. Therefore, in this GRC cycle, SCE proposes to establish a new memorandum account, the CETMA, to record all costs associated with the electrification of SCE's gas infrastructure. The CETMA will track O&M expenses and the capital-related revenue requirement (consisting of depreciation, applicable taxes, and the then-current authorized rate of return) associated with the capital expenditures incurred beginning January 1, 2025 and forward for activities related to the implementation of electrification projects.[89] SCE proposes to submit the costs tracked in the CETMA for reasonableness review and recovery in SCE's electric GRC(s). Upon a finding of reasonableness by

[88] Pursuant to OP 2 of D.82-04-010, the Commission authorized SCE to submit GCAC Filings by AL for every 6-month period, with March 1 and September 1 as the regularly scheduled revision dates. SCE proposes to align the GBRRBA annual true-up AL with the March 1 filing of the GCAC to reduce the number of rate changes that will occur throughout the calendar year.

[89] Projects eligible for tracking via the CETMA are separate and distinct from the BE Ready Catalina program currently pending before the Commission in A.21-12-009.

the Commission, SCE proposes to transfer the balance in the CETMA, including accrued interest, to the distribution sub-account of the electric BRRBA-D to be recovered from SCE's electric customers via distribution rates. SCE will transfer the ongoing capital-related revenue requirement associated with the approved capital expenditures from the CETMA to BRRBA-D on an annual basis every December 31 until the remaining ongoing capital-related revenue requirement is included in electric base rates.

3. Establishment of Catalina Gas Federal Grant Memorandum Account (CGFGMA)

On April 10, 2023, the Commission issued Resolution E-5254 (Resolution), which adopted procedural mechanisms for review and approval of cost recovery requests related to participation in the Infrastructure Investment and Jobs Act (IIJA), Inflation Reduction Act (IRA), or the Creating Helpful Investment to Produce Semiconductors and Science Act (CHIPS) funding opportunities, including incremental costs incurred during the preparation of the grant applications. The 2021 IIJA appropriated more than $62 billion to the U.S. Department of Energy to create and fund 60 new programs, including 16 demonstration and 32 deployment programs. The IIJA federal funding opportunities align with the Commission's goals of improving energy infrastructure through the support of zero carbon emissions, grid reliability, safety, and bill affordability for electric and gas customers by potentially displacing the need for future ratepayer funding for awarded projects.[90]

In this Application, SCE proposes to establish the CGFGMA with an effective date of January 1, 2025 to record match funding costs, such as O&M expenses and capital-related revenue requirements, for projects seeking and/or awarded federal funding that have a match funding requirement. In addition, SCE proposes to record preparation costs for unsuccessful projects as long as they are recorded into the account as expenses to be consistent with the federal grant memorandum account that SCE established for its electric service.[91] OP 2 of Resolution E-5254 requires the establishment of a sub-account within the new grant memorandum accounts to track the tax impacts of the federal grant awards, including tax liabilities related to the federal grant awards and any related tax

[90] On June 9, 2023, SCE submitted Advice 5047-E to establish electric Preliminary Statement Part N.76, the Federal Grant Memorandum Account, in accordance with OP 1 of Resolution E-5254, with an effective date of April 6, 2023.

[91] *See* Advice 5047-E.

benefits such as the impact on depreciation. SCE proposes to seek recovery of the costs recorded in the CGFGMA via a Tier 3 AL. Once approved, SCE will transfer the amounts recorded in the CGFGMA to the GBRRBA to be collected from customers.

C. Attrition Year Ratemaking

The GRC framework provides for an annual mechanism for adjustments to the test-year revenue requirements in the post-test year (PTY) time periods. Attrition mechanisms should provide consistent and reasonable budgets for O&M expenses and capital investments between GRC cycles. These adjustments are needed to recover the change of costs caused by inflation, capital investments on the gas distribution system, and changes in customer growth. With the unforeseen changes of these costs, incorporating the attrition year ratemaking mechanism allows SCE a reasonable opportunity to earn its authorized rate of return after 2025.

As stated in Section VI.C, SCE is proposing $2.062 million, $2.309 million, $2.357 million, and $2.402 million in revenue requirements in the years 2025, 2026, 2027, and 2028, respectively, to cover the cost of service and to realize earnings at the Commission authorized rate of return. The estimated attrition years increases are largely based on cost escalation (Chapter IX) and the capital forecast (Section V.C). SCE also proposes to update the PTY revenue requirements through an annual Tier 1 AL that will be submitted on or before December 1 to update the authorized revenue requirements. The resulting customer rate adjustment that will recover the updated revenue requirement would be effective the following January 1. The AL will contain all the necessary calculations to update the revenue requirement for the following year. SCE proposes to set forth its attrition year ratemaking mechanism in a new tariffed preliminary statement, similar to its electric Preliminary Statement Part AAA (Post-Test Year Ratemaking Mechanism).

VIII.
FORECAST OF GAS SALES

A. Purpose

The purpose of this chapter is to describe the forecast of Catalina Gas sales for the years 2023 to 2028. It consists of a summary of the forecast and a brief description of the methodology used to produce the forecast. The overall sales forecast increases over the 2023-2028 period are mostly due to billing SCE Electric for the propane used to fuel the microturbines. In 2022, total sales were approximately 517,000 therms. Sales are forecast to increase to 693,000 therms in 2025 and to 763 thousand therms in 2028.

B. Methodology

The Catalina Gas sales forecast is constructed by combining separate forecasts of residential, non-residential, and microturbine gas consumption. The residential and non-residential forecasts consist of two parts: a customer forecast, which is based on the number of active service connections recently recorded, and annual gas consumption per customer. Non-residential sales consist primarily of commercial customers. The microturbine gas consumption forecast is based on average recorded usage plus expected increased utilization of the microturbines once the T4F diesel generators are in service.

The usage per customer forecast that is used to create the residential and non-residential forecasts is based on five-year historical averages. For residential, the most recent five years, 2019-2023,[92] were used. However, due to the impact of COVID-19 on commercial activity on the island, 2020 was excluded from the five-year average for the non-residential usage per customer forecast. For each year, average usage per customer was calculated by taking the total annual usage and dividing it by the average number of customers on the system across the year. These values were then multiplied by recent residential and non-residential customer counts on the island in order to derive the final annual forecast for each sector.

A three-year average, 2019-2021, was used to develop the microturbine gas usage forecast from 2024 through 2026. SCE did not use 2022 nor 2023 microturbine recorded gas usage because the BESS

[92] For 2023, SCE used recorded data through October and forecast November and December usage.

experienced a significant outage in 2022 and was out of service for several months in 2022 and 2023, causing a greater reliance on the microturbines to balance the load served by the BESS-propane-diesel generation configuration.[93] SCE Catalina Gas will begin billing SCE Electric on March 1, 2024 for gas service to the microturbines.[94] The 2024 forecast, while not at issue in this GRC, is based on the 3-year average applied for 10 months. In 2027, SCE forecasts an increase in gas usage for the microturbines due to its Catalina Repower Plan and projected replacement of three existing diesel units with T4F diesel generators.[95] The new T4F generators allow for greater operational flexibility than the existing diesel units and SCE has committed to the SCAQMD to increase the microturbine generation once the new units are in production.

To capture the seasonality of the distribution gas usage on the island, we created a monthly forecast as well. For residential and non-residential usage, this was created by creating a monthly scaling factor based on usage over the same period used to create the annual forecast. By normalizing this shape, we ensured that the monthly forecasts summed to equal the annual forecast values.

C. Gas Sales Forecast

As shown in Table VIII-30 below, residential gas consumption is forecast to decrease by 2.5% between 2023 to 2025. During this same period, non-residential consumption is expected to decrease by 4.9%. This is largely due to the abnormally high usage recorded in January – October of 2023. When factoring in other years in recent history, the average usage is expected to regress towards the mean.

However, when factoring the microturbine usage into the total gas forecast, we see a large increase. Since the microturbine usage was not counted in the baseline, the total usage in 2023 was only

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[93] When the BESS is available, it is dispatched with priority over running the microturbines. The microturbines were not designed to independently support grid frequency. Instead, like the BESS, they are used to complement the diesel units either during periods of low demand or to help meet peak demand while avoiding having to start up another diesel generator.

[94] Currently, SCE Electric pays for the cost of the gas (including transportation) used for the microturbines but does not pay any of the costs of gas facilities the electric utility also uses. The cost of the LPG (including transportation) used to fuel the microturbines is recovered in SCE's Energy Resource Recovery Account (ERRA) Forecast of Operations annual filings (*see*, e.g., A.23-06-001, SCE-06 Updated Testimony, Public Version, pp. 53-57). S*ee* Chapter XIV for further details.

[95] SCE submitted the permit application to replace diesel Units 8, 10, and 15 with new T4F generators to the SCAQMD on April 30, 2021. The permitting process is still pending.

556 thousand therms. When adding the forecasted 160 thousand therms of usage expected from the microturbines in 2025, the total forecast reaches 693 thousand therms. This represents a net increase in billed usage of nearly 25% over that time period. The residential and non-residential gas forecast is held constant over the GRC period (2025-2028).

D. Number of Customers

As mentioned above, the number of customers used in the calculation of the residential and non-residential natural gas usage forecast is based on recent customer counts from the island. The customer counts have been very consistent over the last five years. Average residential customers per year have remained within 1% of the current 2023 average (1,387) since 2019. For non-residential customers, the average annual count has moved from 110 in 2019 to 114 in 2023. As such, using recent recorded customer counts, collected in 2023, provides the best estimate of the number of customers that will be active moving forward. These counts are 1,387 residential customers and 114 non-residential customers.

Table VIII-30
Forecasted Gas Sales (Therms)

Year	Residential	Non-Residential	Microturbines	Total
2023*	222,000	334,000	0	556,000
2024	216,000	317,000	133,000	666,000
2025	216,000	317,000	160,000	693,000
2026	216,000	317,000	160,000	693,000
2027	216,000	317,000	195,000	728,000
2028	216,000	317,000	230,000	763,000

* 2023 forecast usage is based on recorded data through October 2023 and forecast for November and December.

IX.
COST ESCALATION

A. Introduction

The purpose of this chapter is to explain and justify the escalation rates we used in developing our forecast of O&M and A&G expenses for the years 2018 through 2028. It also explains and supports the escalation rates used to forecast the inflationary effects on capital expenditures.

We estimated O&M labor escalation rates, O&M non-labor escalation rates (for the following functional categories related to Catalina gas service: production, distribution, customer accounts, and administrative and general), as well as capital escalation rates. These escalation rates are summarized in the following three sections below.

1. O&M Labor

Table IX-31
O&M Labor Escalation Rates

Index	Description	SCE AHE					S&P Global Market Intelligence Blended O&M Labor Escalation					
		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Labor Index	Inflation Index	0.901	0.927	0.936	0.961	1.000	1.055	1.092	1.126	1.159	1.193	1.227
	Deflation Index	1.110	1.078	1.068	1.041	1.000	0.948	0.916	0.888	0.862	0.838	0.815
	Percent Change	2.28%	2.89%	0.94%	2.65%	4.09%	5.50%	3.53%	3.08%	2.98%	2.87%	2.83%

2. O&M Non-Labor

Table IX-32
O&M Non-Labor Escalation Rates

Index	Description	S&P Global Market Intelligence O&M Non-Labor Escalation Rates										
		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Production Index	Inflation Index	0.804	0.821	0.814	0.875	1.000	1.040	1.027	1.027	1.042	1.058	1.074
	Deflation Index	1.244	1.217	1.228	1.143	1.000	0.961	0.974	0.973	0.960	0.945	0.931
	Percent Change	5.92%	2.21%	-0.89%	7.47%	14.31%	4.04%	-1.32%	0.08%	1.40%	1.52%	1.58%
Distribution Index	Inflation Index	0.756	0.775	0.775	0.856	1.000	1.049	1.014	1.000	1.006	1.019	1.033
	Deflation Index	1.322	1.291	1.290	1.169	1.000	0.953	0.986	1.000	0.994	0.982	0.968
	Percent Change	3.70%	2.40%	0.04%	10.41%	16.86%	4.88%	-3.28%	-1.46%	0.68%	1.20%	1.39%
Customer Accounts Index	Inflation Index	0.825	0.850	0.844	0.895	1.000	1.050	1.046	1.068	1.091	1.114	1.138
	Deflation Index	1.211	1.177	1.185	1.118	1.000	0.952	0.956	0.937	0.917	0.898	0.879
	Percent Change	3.15%	2.95%	-0.67%	6.01%	11.76%	5.00%	-0.40%	2.08%	2.16%	2.11%	2.19%
Administrative and General Index	Inflation Index	0.880	0.899	0.907	0.945	1.000	1.043	1.055	1.072	1.092	1.114	1.137
	Deflation Index	1.137	1.112	1.103	1.058	1.000	0.959	0.948	0.933	0.915	0.898	0.880
	Percent Change	1.77%	2.21%	0.86%	4.27%	5.77%	4.26%	1.15%	1.68%	1.87%	1.99%	2.04%

1. Capital

Table IX-33
Capital Escalation Rates

Index	Description	S&P Global Market Intelligence Capital Escalation Rates										
		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Plant Index	Inflation Index	-	0.695	0.739	0.860	1.000	1.146	1.096	1.087	1.098	1.107	1.116
	Deflation Index	-	1.439	1.354	1.163	1.000	0.873	0.912	0.920	0.911	0.903	0.896
	Percent Change	-	-	6.25%	16.45%	16.27%	14.56%	-4.34%	-0.83%	1.02%	0.86%	0.76%
Gas Meters Index	Inflation Index	-	0.943	0.889	0.885	1.000	1.065	1.071	1.069	1.068	1.060	1.059
	Deflation Index	-	1.061	1.124	1.130	1.000	0.939	0.934	0.935	0.936	0.943	0.944
	Percent Change	-	-	-5.65%	-0.48%	12.96%	6.54%	0.51%	-0.16%	-0.10%	-0.76%	-0.06%

B. Methodology and Estimates

The escalation rates were developed using three sources of information:

a. Average Hourly Earnings (AHE) based on recorded SCE payroll data, including hours worked and wages paid.

b. Collective Bargaining Agreements that specify wage increases for represented employees, and Merit Target Increases for non-represented employees.

c. S&P Global Market Intelligence (Third-quarter 2023 published October 2023) for historical data and forecasts of wages and prices for the U.S. economy.

The following sections explain how this information was used to develop escalation rates for the historical period (2018-2022) and the forecast period (2023-2028). The methodology used in this proceeding was developed concurrently with the escalation methodology for SCE's 2025 electric GRC.[96]

1. O&M Labor Escalation

a) Historical Years – 2018 Through 2022

SCE historical labor escalation is based on actual AHE at the employee level across the company. We have recorded payroll data that include wages paid for straight-time labor, overtime labor, double-time labor, and corresponding hours by these categories. To calculate the AHE, effective hours are calculated as the sum of (i) straight-time hours, (ii) overtime hours multiplied by one-

[96] A.23-05-010.

half, and (iii) double-time hours multiplied by two. Wages are summed across the three categories and are then divided by effective hours worked to calculate average hourly earnings. This method removes the effect of year-to-year variations in overtime and double-time hours worked.

This methodology is consistent with the one we use in SCE's 2025 electric GRC for calculating historical labor escalation rates. In this proceeding, we apply the same wage increases for gas workers that electric workers receive since both groups belong to the same union and are bound by the same labor contracts, or otherwise have similar labor costs.

b) Forecast Period – 2023 Through 2028

For 2023, 2024, and 2025, Collective Bargaining Agreements specify wage increases for represented employees at 5.5%, 3.25%, and 3.0%, respectively. For 2026-2028, SCE has no Collective Bargaining Agreement in place, therefore the represented employee labor escalation rate is based on S&P Global Market Intelligence forecasts.

Our non-represented employees received wage increases in 2023 that vary by job classification and individual employee, but that were targeted to average 5.5% overall. Labor escalation for 2023 reflects the weighted average of these wage increases. For 2024-2028, non-represented employee labor escalation is based on S&P Global Market Intelligence forecasts.

The S&P Global Market Intelligence labor cost projections are national projections and are not specific to the Western U.S. or Southern California.

The respective weights for the different labor escalation forecasts for "Professional and Technical Workers," "Managers and Administrators," and represented "Physical Workers," are detailed in Table IX-34 below. The weighting is based on the total wages paid by the specific employee categories in 2022.

Table IX-34
O&M Labor Escalation Weighting

Employee Category	S&P Global Market Intelligence Variable	Share of Total Wages
Professional and Technical Workers	ECIPWPARNS.A.FOP2 - United States, Wages and Salaries, Private, Professional and Related	44.32%
Managers and Administrators	ECIPWMBFNS.A.FOP2 - United States, Wages and Salaries, Private, Management, Business, Financial	17.65%
Physical Workers (represented employees)	CEU4422110008.A.FOP2 - United States, Average Hourly Earnings, Electric Power Generation Transmission and Distribution	38.03%
Total		100.00%

2. O&M Non-Labor Escalation

a) S&P Global Market Intelligence Indices

For historical and forecast non-labor escalation rates, SCE is using indexes provided by S&P Global Market Intelligence. S&P Global Market Intelligence provides indexes of O&M combined materials and services costs by functional categories. In this proceeding, we use cost escalation estimates for O&M that are aligned with corresponding functional cost escalation estimates in electric O&M. To provide relevant indexes, SCE re-bases the indexes to equal 1.000 in 2022, the last recorded year.

b) A&G Non-Labor Escalation Excludes Health Care Costs

Because SCE treats health care cost trends separately (balancing accounts provide more certainty around the volatility of health care costs), the effect of health care changes is removed from the administrative and general (A&G) non-labor escalation rates. This was done by utilizing A&G non-labor escalation rates from S&P Global Market Intelligence that specifically exclude the effect of health care cost escalation. Therefore, there is no double-counting of escalation rates.

3. Capital Escalation

Historical and forecast capital escalation rates are based on S&P Global Market Intelligence. S&P Global Market Intelligence includes a "Gas Utility Construction – Total Plant" cost index for the Pacific region, and a "Gas Meters" national cost index. To provide relevant indexes, SCE re-bases the indexes to equal 1.000 in 2022, the last recorded year.

X.
UTILITY PLANT

This chapter provides a summary of utility plant balances for recorded year 2022 and forecast years 2023 through 2028 for Catalina gas operations. Capital spending for Catalina is described in Chapter V.

A. Summary of Plant-In-Service

Utility plant in service, as shown in Table X-35 below, is presented in a weighted average format. It reflects recorded plant balances as of December 31, 2022 and forecast monthly plant balances through December 2025. Weighted average balances are calculated based on a 13-month weighted average basis[97] from December to December of each year. The weighted average plant balances are included in the rate base calculation, as discussed in Chapter XI.

Table X-35
Weighted Average Plant-in-Service[98]
2022 Recorded/2023-2028 Forecast
(Nominal $000)

Line		Recorded	Forecast					
No.	Asset Type	2022	2023	2024	2025	2026	2027	2028
1.	Catalina Gas - Intangibles	14	87	111	111	110	109	109
2.	Catalina Gas Holders	1,891	1,885	1,886	2,170	2,156	2,143	2,130
3.	Catalina Gas	4,726	4,795	5,081	5,650	6,056	6,337	6,526
4.	Total Gross Plant	6,631	6,767	7,078	7,930	8,322	8,589	8,764

B. Plant Additions and Retirements

Forecast plant additions for the 2023-2028 period are based on the construction work in progress (CWIP) as of year-end 2022 and the latest capital expenditure forecast, discussed in Chapter V. Each CWIP balance and project in the capital expenditure forecast is assigned a "closing" date, which represents the date the project is expected to be placed in service. The year-end 2022 CWIP and estimated capital expenditures become plant additions in the month they are expected to be in service. Using these forecast plant additions, a monthly plant balance is calculated.

[97] Thirteen-month averages are calculated using a CPUC-prescribed methodology. This methodology sums all monthly balances from December of the prior year to December of the current year. This amount is reduced by one-half of the first and last months' balances and divided by 12 to arrive at the average for the period.

[98] *See* WPSCE-01 – 2022 Weighted Average Gross Plant-in-Service by month and year-end balances.

In addition to the monthly plant additions, the monthly plant balance is adjusted for forecast retirements. Forecast plant retirements are estimated based on historical plant retirements relative to plant balance. Estimated plant retirements are derived by applying an estimated retirement rate to depreciable plant balances throughout the year.

C. Allowance for Funds Used During Construction (AFUDC)

Accruing for AFUDC is the generally accepted regulatory accounting procedure to capitalize the cost of debt and equity funds used to finance capital projects.[99] The annual estimated AFUDC rates are developed from estimates of costs of debt and equity required to fund the forecasted construction estimates. The estimated amount of AFUDC to include in the estimated plant additions is determined by applying the estimated AFUDC rates to the accumulated capital costs, similar to a compounding monthly interest calculation. See Section E, below, for a more detailed discussion of AFUDC.

D. Capitalized Overheads

Capitalized corporate overheads are indirect corporate charges attributable to capital projects, such as A&G, Pensions & Benefits (P&B), Payroll Taxes, Property Taxes, and Injuries & Damages. Labor driven capitalized corporate overheads for P&B, Payroll Taxes, and Injuries & Damages are allocated to capital projects based on their proportional share of SCE's labor costs. Other non-labor driven overheads for A&G and Property Taxes are allocated to capital projects based on their proportional share of SCE's construction costs. Please refer to Section VI.D for the amount of A&G allocated to capital projects per the four-factor A&G allocation.

E. Discontinuance of Common Plant Facilities

SCE proposes to discontinue the allocation of Catalina common plant across the electric, water, and gas utilities on Catalina.[100] Rather, SCE proposes to transition to an operating rent structure where

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[99] FERC 18 CFR, Part 101, Electric Plant Instruction 3 – Components of Construction Cost, subparagraph 17 – Allowance for Funds Used During Construction.

[100] SCE made an identical proposal in its 2022 Catalina Water GRC (A.20-10-018) which is still pending with the Commission. In ALJ Toy's Catalina Water GRC PD, issued on November 9, 2023, SCE's common plant proposal would be approved (*see* pp. 18-19). Given that this request is identical to the request in its Catalina Water GRC and that a final decision in that proceeding is expected near the filing date of this application, should the Commission's final decision differ from the PD and/or from SCE's proposal here, SCE will either amend its testimony or further discuss this issue in Rebuttal.

the gas utility will rent office and other operating space from the electric utility. Under this new structure, all Catalina common costs will be charged directly to the electric utility with no subsequent allocation to the gas and water utilities. This proposed change will reduce the rate base impacts of electric plant improvements and operating costs on the gas and water utilities, lessening the financial impact on the small gas customer base and supporting annual budget processes.

Consistent with SCE's proposal in its 2022 Catalina Water GRC (that the pending PD therein would approve), SCE proposes to establish an operating rent for the gas utility of $692 per month. This amount will be paid by the gas utility to the electric utility each month. Under the previous methodology, the estimated revenue requirement of SCE's common plant is $0.161 million per year or $13,000 per month.

On a monthly basis, SCE will perform a journal entry to transfer the authorized operating rent from the gas utility to the electric utility. This journal entry will be recorded as a debit to a gas general ledger expense account and a credit to an electric general ledger expense account. The use of journal entries is typical for similar non-energy billing and transferring charges between accounts within SCE's operating units.

XI.

RATE BASE

Rate Base is the net amount of capital provided by investors to serve SCE's customers. The major components are described in this section and include: 1) Net Plant-in-Service, 2) Working Cash, and 3) Accumulated Deferred Income Taxes. Table XI-36 is a summary of SCE's Rate Base for recorded year 2022 and forecast years 2023-2028.

Table XI-36
Weighted Average Rate Base (Total Company)
2022 Recorded/2023-2028 Forecast
(Nominal $000)

Line No.	Item	Recorded 2022	Forecast 2023	2024	2025	2026	2027	2028
	Net Plant In Service							
1.	Gross Plant	6,631	6,767	7,078	7,930	8,322	8,589	8,764
2.	Accumulated Depreciation	(3,317)	(3,501)	(3,545)	(3,545)	(3,592)	(3,645)	(3,846)
3.	Total Net Plant	3,313	3,266	3,533	4,385	4,730	4,944	4,918
4.	Working Cash	214	189	163	236	194	198	203
5.	Accumulated Deferred Income Taxes	(501)	(481)	(488)	(479)	(460)	(491)	(767)
6.	**Total Rate Base**	3,026	2,975	3,208	4,142	4,464	4,652	4,354
7.	**Depreciation**	258	262	273	205	215	222	227

A. Summary of Net Plant-In-Service

Net Plant-in-Service is Gross Plant-in-Service minus Accumulated Depreciation of SCE's Gas Plant investment. Net Plant-in-Service is also adjusted for contributions received from third parties, as applicable. Table XI-37 is a summary of the weighted average Net Plant-in-Service for recorded year 2022 and forecast years 2023-2028.

Table XI-37
Weighted Average Net Plant-in-Service
2022 Recorded/2023-2028 Forecast
(Nominal $000)

Line No.	Item	Recorded 2022	Forecast 2023	2024	2025	2026	2027	2028
	Net Plant In Service							
1.	Gross Plant	6,631	6,767	7,078	7,930	8,322	8,589	8,764
2.	Accumulated Depreciation	(3,317)	(3,501)	(3,545)	(3,545)	(3,592)	(3,645)	(3,846)
3.	Total Net Plant	3,313	3,266	3,533	4,385	4,730	4,944	4,918

B. Working Cash

Working Cash is the capital provided by SCE investors to meet day-to-day utility operational requirements by bridging the gap between the time expenses are incurred for services and the time revenues are collected for those services. It is included in Rate Base to compensate investors for this capital investment. Consistent with the methodology authorized in the 2009 Gas GRC Decision,[101] SCE estimates its Working Cash requirement based on the 1/8th rule approach. As shown in Table XI-38, this approach approximates the forecast Working Cash as 1/8th of the estimated O&M expenses. These amounts represent the costs incurred by SCE that are funded by investors during the time lag until revenues are received (in approximately 45 days or 1/8th of the calendar year). This is a method adopted by FERC and commonly used for estimates of Working Cash in lieu of detailed lead-lag studies.

Table XI-38
Weighted Average Working Cash
2022 Recorded/2023-2028 Forecast
(Nominal $000)

Line No.	Item	Recorded 2022	Forecast 2023	2024	2025	2026	2027	2028
1.	Annual O&M Expense	1,710	1,516	1,302	1,889	1,549	1,586	1,625
2.	Working Cash Multiplier[1]	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%
3.	Working Cash	214	189	163	236	194	198	203

C. Depreciation Reserve

The 13-month weighted average depreciation reserve balances are shown in Table XI-36.

[101] D.09-09-034.

D. Accumulated Deferred Income Taxes

Rate Base is adjusted by the accumulated deferred income taxes (ADIT) balance associated with differences in book treatment and tax treatment of several property- and non-property related items: Plant, Contributions In Aid of Construction (CIAC) and Vacation Accrual. The discussion of Accumulated Deferred Income Taxes is addressed in Chapter XII of this Exhibit. Forecast information extracted from the analyses presented in that chapter is accumulated by years and used to develop the weighted average balances as shown in Lines 1 through 6 of Table XI-36 above.

XII.
TAXES

This chapter supports SCE's proposed forecast tax benefit of $25 thousand for test year 2025, and its proposed ADIT adjustments to rate base. The chapter is organized into three sections. Section A supports SCE's taxes based on income. Section B describes assumptions and methodologies to forecast payroll taxes. Section C covers forecast property taxes.

The computations of total tax expense and ADIT are consistent with the overall approach taken for other cost of service and rate base items in this general rate case. If the Commission adopts cost-of-service expenses, capital expenditures or labor levels that differ from SCE's requested revenue requirement, then SCE's income, payroll and property tax expense will need to be recalculated to incorporate such changes. SCE's tax forecast is based on federal, state, and local tax laws enacted through the date of this GRC filing. Table XII-39 below summarizes the tax expense for recorded 2022 and estimated expense for 2023 through 2028.

Table XII-39
Summary of Total Taxes[102]
(Nominal $000)

Line No.	ITEM	Recorded 2022	Estimated 2023	2024	2025	2026	2027	2028
1	Taxes On Income (Table A - 1)	(184)	89	(33)	(110)	55	37	53
2	Payroll and Other Taxes (Table B - 1)	26	28	29	29	30	31	32
3	Ad Valorem Taxes	53	39	46	57	62	67	71
4	Total Taxes	(105)	155	41	(25)	148	136	156

A. Taxes Based on Income

1. Income Tax Methodology

a) Income Tax Methodology

Income tax expense for ratemaking purposes is a function of revenue requirement, cost-of-service amounts and capital expenditures adopted by the Commission, as adjusted to comply

[102] *See* WPSCE-01 Summary of Taxes.

with income tax rules. The computation of income tax expense to be included as a cost of service for ratemaking purposes must comply with both (1) federal and state tax rules, and (2) Commission-prescribed policies and procedures. Total income tax expense is equal to the current federal and state income tax expense plus the deferred income tax expense.

Current income tax expense is computed by multiplying taxable income by the applicable income tax rate. Taxable income is computed by adjusting book net operating revenue authorized in this rate case to conform with federal and state tax rules. Adjustments that convert book income into taxable income are commonly referred to as "Schedule M adjustments."

Schedule M adjustment amounts that are subject to the tax normalization method of accounting treatment required by the tax rules[103] or that are authorized by the Commission to be normalized (hereinafter simply referred to as "normalization") are multiplied by the applicable income tax rate to compute the deferred income tax expense. Specifically, the tax normalization rules of the Internal Revenue Code (I.R.C. or Tax Code) and related guidance state that, for ratemaking purposes, if the depreciation method permitted by the Tax Code differs from the book depreciation method used for ratemaking purposes, then a taxpayer is required to credit the resulting amount of taxes deferred to a reserve for deferred taxes, *i.e.*, to an ADIT balance sheet account.[104] Furthermore, the tax rules limit the amount of ADIT that can be used to reduce rate base.[105] In this GRC, rate base is reduced by the applicable ADIT balance consistent with the tax normalization rules.

Schedule M adjustment amounts not subject to normalization are accorded "flow-through" tax treatment. Under flow-through treatment, any tax benefit or detriment associated with Schedule M adjustments flow directly into rates without any offsetting deferred income tax expense or benefit. Only the current income tax expense would be affected by the Schedule M adjustment. Accordingly, under flow-through ratemaking, tax positions that reduce current income tax expense benefit current ratepayers as SCE claims accelerated tax deductions.

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[103] See, e.g., Internal Revenue Code §§ 168(f)(2), 168(i)(9)(A)(i) and the Treasury Regulations promulgated under former § 167(l).

[104] Treas. Reg. §1.167(l)-1(h)(1)(i)(b).

[105] Treas. Reg. §1.167(l)-1(h)(6).

b) Schedule M Adjustments

This section describes the major Schedule M adjustments required under the applicable tax rules. It also indicates whether the adjustments follow normalization or flow-through ratemaking treatment. Table XII-40 and Table XII-41 below, list the federal and state Schedule M adjustments forecast in this volume and explained in the following sections.

Table XII-40
Federal Schedule M Adjustments[106]
(Nominal $000)

Line No.	ITEM	Recorded 2022	Estimated 2023	2024	2025	2026	2027	2028
	Add. tax deduction/(income)							
1	Tax Depreciation	130	124	185	264	294	320	322
2	Uniform Capitalization (Table A - 6)	(3)	(6)	(12)	(3)	(4)	(4)	(5)
3	Ad Valorem Lien Date Adjustment	(1)	(0)	7	4	2	3	1
4	Removal Costs	4	66	235	182	78	150	89
5	Repair Deduction	0	8	193	82	63	74	77
6	Interest	62	56	61	78	84	88	82
7	Total	192	248	669	607	517	630	568

Table XII-41
State Schedule M Adjustments[107]
(Nominal $000)

Line No.	ITEM	Recorded 2022	Estimated 2023	2024	2025	2026	2027	2028
	Add. tax deduction/(income)							
1	Tax Depreciation	188	186	210	238	243	249	168
2	Uniform Capitalization (Table A - 6)	(3)	(6)	(12)	(3)	(4)	(4)	(5)
3	Ad Valorem Lien Date Adjustment	(1)	(0)	7	4	2	3	1
4	Removal Costs	4	66	235	182	78	150	89
5	Repair Deduction	0	8	193	82	63	74	77
6	Interest	62	56	61	78	84	88	82
7	Total	249	310	695	581	466	559	414

106 *See* WPSCE-01 – Federal Schedule M Items.
107 *See* WPSCE-01 – State Schedule M Items.

(1) Tax Depreciation

(a) General

For Federal income tax purposes, assets placed in service after 1980 are depreciated using either the Accelerated Cost Recovery System (ACRS) or the Modified Accelerated Cost Recovery System (MACRS) under I.R.C. Section 168. ACRS and MACRS generally provide greater annual depreciation deductions in the early years of an asset's life than typically allowed for financial reporting (*i.e.*, "book") purposes. SCE utilizes ACRS/MACRS depreciation to the extent permitted by the I.R.C.[108] and has reflected these depreciation amounts in this GRC. Differences between tax depreciation and depreciation expenses for ratemaking and book purposes are subject to normalization.

Assets placed in service prior to 1981 are depreciated under the Asset Depreciation Range System (ADR). California has never adopted ACRS/MACRS depreciation and instead uses the ADR methodology. The ADR rules are not subject to the normalization requirements. Therefore, flow-through tax treatment applies to federal tax depreciation adjustments on pre-1981 assets and most state tax depreciation differences.

(b) Average Rate Assumption Method (ARAM)

On December 22, 2017, the Tax Cuts and Jobs Act (TCJA) was signed into law, reducing the Federal corporate income tax rate from 35 percent to 21 percent. A secondary impact of this rate reduction was the creation of excess deferred income taxes (EDIT). As explained earlier, accelerated tax deductions (including ACRS and MACRS depreciation) are a timing difference which results in a deferral of income tax expense. This deferred tax expense is recorded as a liability commonly referred to as accumulated deferred income taxes or "ADIT." ADIT unwinds over time and the unwinding occurs when book depreciation exceeds tax depreciation. However, when there is a reduction in tax rates, the "unwinding" of the deferred tax will not equal the ADIT as originally recorded. The solution for this mismatch is an adjustment known as the average rate

[108] The 2017 Tax Cuts and Jobs Act repealed bonus depreciation for public utilities after December 31, 2017.

assumption method, or "ARAM. The TCJA specifies that compliance with the normalization provisions requires utilities to return EDIT to customers using ARAM. This return is accomplished as an annual amortization of the EDIT and results in a tax benefit to ratepayers. This GRC is SCE's first opportunity to return to gas customers EDIT that originated on December 31, 2017 and the 2025 rates incorporate the cumulative benefits from 2018 through 2025. The tax expense (or refund) shown in Table XII-39 reflects the ARAM benefit for the 2025 through 2028 rate years.

(2) Uniform Capitalization of Interest

I.R.C. Section 263A requires that interest expense and indirect costs be capitalized to the cost basis of self-constructed assets. To comply with these rules, SCE reverses amounts capitalized to book basis for ratemaking purposes and capitalizes interest to tax basis.

For ratemaking purposes, SCE capitalizes financing costs of self-constructed assets based on Commission-approved AFUDC rates. For tax purposes, these capitalized financing costs are reversed, and interest calculated pursuant to Section 263A(f) is added. The capitalized interest amount is based on long-term interest rates.

Differences between book and tax basis attributable to AFUDC Debt are accorded normalization ratemaking treatment while differences attributable to book AFUDC Equity are accorded flow-through tax ratemaking treatment. Book and tax basis differences attributable capitalized tax interest is normalized.

(3) *Ad Valorem* Lien Date Adjustment

For income tax purposes, property taxes are deductible in their entirety on their lien date. For book purposes, property taxes are accrued and expensed ratably over the period to which they relate. Flow-through tax treatment is utilized for these differences.

(4) Removal Costs

Removal costs are deductible for income tax purposes when they are incurred. For book purposes, removal costs are estimated and accrued over the life of the asset as a component of book depreciation expense. While removal costs associated with assets depreciable under I.R.C. Section 168 are not required to be normalized, these deductions have been normalized consistent

with prior ratemaking. Removal costs associated with assets not depreciable under I.R.C. Section 168 (generally, pre-1981 vintages and California tax treatment) are generally subject to flow-through tax treatment, consistent with prior ratemaking.

(5) Repairs Deduction

The Schedule M adjustment for repairs deduction is the difference between the book and tax treatment of expenditures made to maintain, repair, replace and improve gas plant property. For tax purposes expenditures that keep property in its ordinarily efficient operating condition may be deducted as repairs for tax purposes. For financial reporting purposes, these same expenditures are required to be capitalized. SCE has flowed through to customers the tax benefits of its projected repairs deduction, both for Federal and California purposes.

(6) Synchronized Interest

This Schedule M deducts the interest expense associated with the rate-of-return debt component on rate base. SCE utilizes flow-through tax treatment for this deduction.

B. Payroll Taxes

Payroll taxes, which include federal, state, and miscellaneous taxes, are forecasted using 2022 recorded taxable wages and then adjusted for changes in employee head count and other labor factors. Only the payroll taxes levied on the employer are included for recovery in this proceeding.

1. Old-Age, Survivors, and Disability Insurance (OASDI) Tax

OASDI is a component of the Federal Insurance Contribution Act (FICA) and is levied at the rate of 6.2 percent of applicable wages paid to employees. The OASDI program limits the amount of earnings subject to taxation for a given year. The total OASDI forecast used here is reduced for the capitalized portion based on the capitalized Pension & Benefit rates.

2. Hospital Insurance (HI) Tax

HI tax is the other component of the FICA and generally is levied at a rate of 1.45 percent. Wages used to derive this tax are calculated in the manner described above for OASDI, and because HI does not have a limit, total applicable wages are subject to this tax.

3. Federal Unemployment Tax Act (FUTA) Tax

FUTA tax is levied on employers and applies to the first $7,000 of wages earned by each employee. The statutory rate is 6.0 percent, although the rate is offset by taxes paid to a state unemployment fund that reduces the rate to 0.6 percent.

4. State Unemployment Insurance (SUI) Tax

In addition to FUTA, California levies on employers an unemployment tax on the first $7,000 of wages earned by each employee. The tax rate depends on each employer's unemployment experience. SCE's 2022 SUI rate is 6.2 percent. For estimating purposes, the 2022 rate has been used in the forecast years.

5. California Employment Training (CET) Tax

California levies an employment training tax on in-state employers at a rate of 0.1 percent of the first $7,000 of wages earned by each employee.

C. Property Taxes

1. Methodology

This section describes SCE's obligation to pay *ad valorem* (property) taxes in California.[109] SCE pays property taxes to various counties in the state of California, including Los Angeles County. The calculations of the amounts are shown in the workpapers[110] and a description of the methodology used is provided below. Table XII-42 provides a summary of SCE's property taxes for recorded year 2022 and forecast years 2023-2028, on a calendar year basis, applicable to the Catalina Gas utility.

[109] *See* WPSCE-01 Summary of Taxes.
[110] *See* WPSCE-01 Summary of Taxes.

Table XII-42
Summary of Property Taxes[111]
(Nominal $000)

Line No.	Item	Recorded 2022	Forecast 2023	2024	2025	2026	2027	2028
1.	Expense	53	39	46	57	62	67	71
2.	Capital	-	3	2	1	2	3	3
3.	**Total**	**53**	**41**	**47**	**58**	**65**	**70**	**74**

a) California Property Taxes

The California State Board of Equalization (SBE) derives both a Cost Indicator and a Capitalized Earnings Indicator of market value. The two indicators are then correlated by the SBE to derive a unitary market value corresponding to our utility property. Once market value has been determined, the SBE allocates the unitary value to the various counties based upon the Reconstruction Cost New Less Depreciation (RCNLD) of the property. The counties use these allocated values to determine the taxes payable by SCE.

For purposes of this proceeding, SCE derived the ratio of the Cost Indicator to the SBE adopted market value for the most recent fiscal year. This ratio was then applied to the forecast Cost Indicators to estimate the corresponding adopted market value. In California, the BOE determines the market value of our assets. Therefore, the assessed value and the market value of SCE's property are equal.

Property taxes are recorded for ratemaking and financial reporting purposes during the fiscal property tax year beginning July 1 and ending June 30 of the following year. Property taxes related to CWIP are capitalized and collected through the work order system as part of overheads.

Total property taxes are estimated by multiplying the total estimated assessed value by the system average tax. Property tax rates for forecast years reflect a trended value based upon the prior five recorded fiscal years. The fiscal year amounts are converted to a calendar year basis and capitalized taxes are subtracted to derive the property tax expense. The difference between the fiscal year expense and the calendar year expense is referred to as the lien date adjustment. The fiscal year

[111] *See* WPSCE-01 Summary of Taxes.

expense is deductible on SCE's income tax return; therefore, the lien date adjustment is used to determine the revenue requirement associated with property taxes.

XIII.
DEPRECIATION EXPENSE

The purpose of this chapter is to present our book depreciation expense and book accumulated depreciation ("depreciation reserve") for the recorded period 2022 and forecast years 2023 through 2028. Straight-line remaining life depreciation rates were developed which were used to compute depreciation expense and reserve for test-year 2025 and attrition years.

A. Overview

Depreciation is the recovery of the original cost of fixed capital less estimated net salvage (gross salvage less cost of removal) over the useful life of the property. The depreciation reserve is the cumulative sum of the depreciation accrual charges adjusted for plant retirements and net salvage. This is standard utility practice and consistent with what was adopted in SCE's prior cases.

B. Depreciation Rates

The depreciation expense reported in this chapter was computed using depreciation rates based on the straight-line method and remaining life technique. Depreciation rates were developed using recorded plant and depreciation reserve as of December 31, 2022. SCE proposes as part of this proceeding that it be authorized to use these new depreciation rates beginning in test year 2025.

A review of the Average Service Lives and Net Salvage for all plant accounts indicated that no change to the currently authorized Average Service Lives or Net Salvage estimates is required. Thus, the change in depreciation rates is solely due to the updated recorded plant and accumulated depreciation.

C. Depreciation Expense

Depreciation expenses for recorded year 2022 and forecast years 2023 through 2028 are shown in Table XIII-43 below. Depreciation expenses for forecast years 2023 through 2024 were computed using presently authorized depreciation rates while the depreciation expense for test-year 2025 and attrition years was computed using the proposed depreciation rates.[112]

[112] *See* WPSCE-01 – Proposed Depreciation Rates.

Table XIII-43
Depreciation Expense[113]
2022 Recorded/2023-2028 Forecast
(Nominal $000)

Line No.	Asset Type	Recorded 2022	Forecast 2023	2024	2025	2026	2027	2028
1.	Catalina Gas - Intangibles	-	-	-	5	5	5	5
2.	Catalina Gas Holders	49	49	49	56	56	56	56
3.	Catalina Gas	208	213	224	144	154	161	167
4.	Total Depreciation Expense	258	262	273	205	215	222	227

D. Weighted Average Depreciation Reserve

The weighted average depreciation reserves for recorded year 2022 and forecast years 2023 through 2028 are presented in Table XIII-44 below. The weighted average depreciation reserve is also included in the rate base calculation, as discussed in Chapter XI. Retirement Work in Progress represents dollars that have been identified to be retired, but not yet recorded. Therefore, it results in a reduction to the depreciation reserve for Rate Base purposes.

Table XIII-44
Weighted Average Accumulated Depreciation[114]
2022 Recorded/2023-2028 Forecast
(Nominal $000)

Line No.	Asset Type	Recorded 2022	Forecast 2023	2024	2025	2026	2027	2028
1.	Catalina Gas - Intangibles	0	0	(0)	1	6	10	14
2.	Catalina Gas Holders	846	876	869	877	920	963	1,012
3.	Catalina Gas	2,471	2,625	2,676	2,666	2,666	2,673	2,819
4.	Total Accumulated Depreciation	3,317	3,501	3,545	3,545	3,592	3,645	3,846

[113] *See* WPSCE-01 -- 2022 Annual Depreciation Expense by month.
[114] *See* WPSCE-01 -- 2022 Weighted Average Accumulated Depreciation by month and year-end balances.

XIV.
RATE DESIGN

A. Purpose

This chapter describes the development of base rates design for gas service on Catalina. Proposed rate levels are designed to recover SCE's gas base rate revenue requirement for 2025 through 2028, as proposed in Chapter I, and to meet the baseline service requirements described below.

SCE proposes a rate increase for Test Year 2025, designed to recover SCE's proposed revenue requirement. To offset the expected rate increase, SCE proposes to apply the G-2 rate to gas utilized by SCE's electric generation operations (the Electric Plant) to recover costs associated with the production of electricity. As discussed in subsection C below, this common plant treatment has the effect of reducing bill impacts for residential and commercial customers by shifting a portion of revenue recovery to SCE's Electric Plant. The rate adjustments are proposed to be effective January 1, 2025.

SCE proposes to continue its California Alternate Rates for Energy (CARE) and increase the discount level from 20% to 32.5%, to match the level for SCE's current electric rate discount. SCE also proposes to increase the amount of revenue collected during the summer to better reflect the seasonal pattern of island visitors that triple the island's population during the summer months. The increased recovery in the summer months relieves pressure on winter heating bills associated with residential (i.e., G-1) customers and on bills for the commercial (i.e., G-2) segment during the months with lower island visitation. The seasonal rate adjustments will be accomplished through new seasonal volumetric rates for G-2 customers and through new seasonal meter charges for G-1 and G-2 customers.

B. Present Rate Levels

Currently effective rate schedules for gas service on Catalina consist of Schedule G-1, Domestic Service; Schedule DE, Domestic Service to Utility Employees; Schedule GM, Domestic Service – Multifamily Accommodations; Schedule G-2, General Service; Schedule SE, Service Establishment Charge; and Schedule RF-GF, Surcharge to Fund Public Utilities Commission Reimbursement Fee. Currently, the residential class (G-1) pays 36% of the base rates revenue, and the commercial class (G-2) 64%. For the commercial class, 54% of base rates revenues are recovered in the summer months.

For the residential class, approximately 44% of base rates revenues are recovered in the summer months. The illustrative rates associated with the G-1 and G-2 schedules are included in Appendix B.

C. Proposed Rate Design

1. Summary

SCE's policy regarding Catalina gas rate design is intended to provide the greatest level of affordability to islanders by shifting revenue recovery to two key drivers of costs associated with gas service. These drivers include SCE's Electric Plant and vacationing visitors to the island who avail themselves of both residential and commercial services. By designing rates with these two drivers in mind, SCE is able to reduce the overall revenue requirements applicable to general G-1 and G-2 customers by directly recovering costs attributable to the generation of electricity from the Electric Plant through common plant treatment where the Electric Plant is billed for its gas service at the G-2 rate and from tourism/visitation through an increased allocation to the summer months. Currently, SCE's Electric Plant pays for the cost of the gas (including transportation) used for the microturbines but does not pay any of the costs of gas facilities the electric plant also uses. The inclusion of SCE's Electric as a Catalina Gas G-2 customer will have an immediate beneficial impact on gas customer affordability. Vacationers visiting Catalina are the second key diver of costs. Gas usage increases in the summer months as the number of visitors exceeds the number of permanent residents.[115] By allocating a majority of revenue recovery to the summer months in both residential and commercial settings we achieve the effect of reducing winter bills for permanent residents and businesses during the slower winter months while appropriately shifting a portion of the revenue responsibility to visitors as businesses and vacation rentals adjust to the new rates.

An additional rate design measure that ensures affordability is the increase of the CARE discount to reflect a 32.5% difference relative to a non-CARE bill with comparable usage. The increase from the current 20% discount, along with other affordability measures described above, will ensure the

[115] For perspective, approximately 3,000 individuals permanently reside on Catalina Island. In an average year, the island receives approximately 1 million annual visitors, with approximately 800,000 of these visits occurring in the summer months. Therefore, a typical summer day may see three times as many visitors as there are permanent residents.

most vulnerable populations receive affordable gas even as the overall revenue requirement increases. Customers in the G-1CARE segment are expected to see an 11% bill decrease on average for TY 2025. In addition, SCE will continue to offer the Medical Baseline discount to eligible customers.

2. Baseline / Non-baseline Allowances

Pursuant to P.U.C. Section 739, SCE is required to set baseline quantities of gas for all residential rate schedules that are between 50 to 60 percent of average residential consumption in the summer season and 60 to 70 percent in the winter season. A baseline quantity of gas is designed to supply a significant portion of the reasonable energy needs of the average residential customer. The current Catalina Gas residential baseline allowances were established in SCE's 1987 Gas GRC.

SCE has recalculated Catalina Gas residential baseline allowances using the "bill frequency" methodology used by SCE in development of baseline allowances for electric service, as adopted by the Commission in D.83-12-065, based on recorded residential consumption in 2021 and 2022. SCE proposes to set summer baseline quantities at the lower bound (50%) allowed by the P.U. Code while maintaining the Winter baseline quantity at the upper bound (70%). Table XIV-45 shows SCE's current and proposed baseline allowances for residential service.

Table XIV-45
Catalina Gas Residential Baseline Allowance

Season	Current	Proposed
Therms / Month		
Summer	16	7
Winter	41	20
Therms / Day		
Summer	0.526	0.230
Winter	1.348	0.658

3. Customer Charges ($/month Meter Charges)

Currently effective customer charges consist of varying rates based on meter size. The charges for varying meter sizes are reflective of cost of service with the higher charges being associated with greater usage and allocation of costs. The current fixed charge for the standard 175 cubic-feet-per-hour meter is $12.68 per month. As an affordability measure, SCE is proposing to

introduce seasonal customer charges for residential and commercial customers. The seasonal meter charges will complement the proposed seasonal volumetric charges for commercial customers and updated baseline allowances for residential customers to allocate more revenue recovery to the summer months. In setting the seasonal adjustment, SCE will first scale the current customer charges proportional to the proposed increase in the Test Year revenue requirements with 19% of the revenues recovered through the Customer Charge and 81% recovered through volumetric charges. This step maintains the current revenue allocation between meter and volumetric rates. In a second step, SCE proposes to apply a 1.5:1 ratio to establish the difference between summer and winter Customer Charges. Catalina Gas rate design is based on embedded costs, where the majority of costs are associated with fixed infrastructure. SCE's determination of the fixed versus volumetric cost recovery proportion and the use of the 1.5:1 ratio for summer winter allocation is therefore driven by our policy of reducing bill impact effects for the greatest proportion of the Catalina customer population.
The proposed Customer Charges for standard meters range from $22.81 per summer month and $15.21 per winter month for the smallest size meter, to $649.26 per summer month and $432.84 per winter month for the largest meter. As illustrated in the bill impact histograms in Appendix B, SCE's Customer Charge proposal helps to mitigate the impact of the overall revenue change by relieving the upward pressure on moderate-to-low-usage residential and commercial customers.

4. Residential Baseline & Non-Baseline Volumetric Rates

P.U.C. Section 739 requires that rates for residential gas service be designed with baseline quantities that take into account climatic and seasonal variations in the consumption and availability of the underlying gas commodity. The baseline quantities reflect a "significant portion of the reasonable energy needs of the average residential customer."[116] The baseline quantities are used to establishes the amount of usage applicable to lowest block rate (i.e., baseline rate) in an inclining block rate structure. The fundamental purpose of the baseline quantity and inclining block rate structure is to

[116] P.U.C. 739(b).

minimize bill volatility for residential customers and provide a measure of affordability by ensuring that an essential usage amount of gas is charged at the lowest available volumetric rate.

To maintain the same proportion of overall base revenue recovery between current Catalina Gas residential and commercial customers, SCE proposes to allocate 16% of Catalina Gas volumetric base revenue requirement to residential customers, down from the current level of 26%. The base rate differentials are designed to maintain the existing 1:1.15, which ensures a gradual[117] differential between rate blocks that consist of utility-specific volumetric charges (i.e., the Base and GCAC components). Charges such as the CARE surcharge and PUCRF are not included when establishing the differential. The PUCRF and CARE surcharge amounts, on a $/therm basis, are added to the volumetric charges after the initial differential has been established for a final rate differential of 1:1.46.

Baseline allowances have been a part of residential gas rates for a considerable time, and thus do not represent a new concept for customers nor a new structure to be developed in the billing system. SCE proposes to decrease the summer allowances to the lower limit of 50%, as stated above, and maintain the winter allowance at statutory maximum allowance of 70%. The result will marginally increase the average rate during the summer months as less of the monthly usage will be at the lower baseline rate, while in the winter the higher baseline allowance will have the effect of applying more of the monthly usage to the lower baseline rate with the result of a marginally lower average bill compared to a bill with the current allowances.

5. <u>Commercial Seasonal Volumetric Rates</u>

SCE is proposing to introduce seasonal volumetric rates, on $/therm basis, in the G-2 class. This proposal, in combination with seasonal meter charges proposed in the previous section, are intended to allocate more revenue recovery in the months with a greater contribution to costs, while providing relief in the winter heating months that are more closely associated with the islanders' usage patterns.

[117] P.U.C. 739(d)(1) requires a gradual differential between rate blocks.

The introduction of a new seasonal pricing signal is the result of our goal of enhancing existing residential seasonal price signals and introducing new commercial seasonal price signals with the least number of changes to the rate structures and to SCE's billing system. The use of a new seasonal volumetric charge ($/therm) is not being used in the residential class as a seasonal fixed charge is more appropriate given the fixed cost nature of gas facilities and the lower usage patterns in the residential class during the summer. Rates for the residential class already incorporate a seasonal baseline allowance that can be used to contribute to the more effective seasonal meter charge cost recovery.

Commercial rates do not incorporate the baseline usage structure. Thus, SCE will introduce a seasonal rate that will differentiate pricing for the volumetric portion of the Base rate. The summer season rates will be applied during the six summer months of May through the end of October, with the winter season rates applied during the balance of the year. SCE proposes to differentiate summer and winter commercial volumetric rates by a ratio of 1.15:1, mirroring the baseline / non-baseline rate ratio for residential gas customers.

6. Multi-Family Rates

Schedule GM, for multi-family service, provides a baseline allowance for each single-family unit within the multi-family accommodation. The baseline allowances are the same as those used for single-family dwellings. The applicable baseline and non-baseline rates are calculated as described in the previous section.

7. Domestic CARE Rates

SCE initially established the residential CARE discounted rates for gas in its 2005 Catalina Gas GRC. The program was established consistent with then-similar CARE discount for electric service. In this proceeding SCE proposes to update the gas CARE discount to reflect a 32.5% line-item discount on the non-CARE gas bill, up from the current gas CARE discount of 20%. The discount provided through the CARE program will be recovered through a CARE surcharge on all Catalina Gas non-CARE bills. Customers qualifying for the electric or water service CARE programs are automatically enrolled in the gas CARE program, Schedule G-CARE.

SCE has identified approximately 169 existing Catalina gas customer who are taking service under Schedule G-CARE. Based on the forecasted usage for these customers, the estimated revenue deficiency associated the CARE discount is $46,779, which in combination with the Catalina Gas DE discount deficiency of $8,157, resulting in a surcharge of $0.08245-per-therm for non-CARE customers.

8. GCAC Rates

SCE includes GCAC in this application for illustrative purposes; GCAC-related costs are not adjudicated in Catalina Gas GRCs. The GCAC rates are set at the levels currently in effect for residential and commercial service. The inclusion of these rates allows SCE to assess the overall bill impacts as accurately as possible and to establish relationships between rate levels in an inclining block rate structure. The actual GCAC rates will continue to be set semi-annually, on March 1st and September 1st, based on the procedures currently in effect. Current GCAC update procedures already introduce seasonality into residential and commercial GCAC rates that track with seasonal changes in costs, thus SCE will not propose changes to GCAC rate setting to introduce additional seasonal price signals.

D. Proposed Rate Levels and Bill Comparisons

Proposed rate levels for Test Year 2025 are summarized below:

Table XIV-46
Base Rates Comparison

Customer Charge - Per Meter Per Day Commercial and Residential				
Meter Size	**Current**		**Proposed Summer**	**Proposed Winter**
175cfh	$0.417		$0.750	$0.500
305cfh	$0.727		$1.307	$0.871
400cfh	$0.953		$1.712	$1.142
675cfh	$1.609		$2.892	$1.928
1000cfh	$2.383		$4.283	$2.855
2000cfh	$4.751		$8.539	$5.693
3000cfh	$7.124		$12.804	$8.536
4000cfh	$9.499		$17.074	$11.382
5000cfh	$11.876		$21.346	$14.230
Base Volumetric Charge - $/Therm				
Customer Class	**Current**		**Proposed Summer**	**Proposed Winter**
Residential				
Baseline	$1.24844		$1.06998	
Non-Baseline	$1.69013		$1.47499	
Commercial	$2.59866		$3.33364	$2.49122

SCE's rate design proposals result in the same proportion of revenue allocation as the current Catalina gas residential and commercial rate design (36% residential, 64% commercial). The proposed seasonal price signals increase residential summer base rate revenue from 44% to 49%, with commercial customer revenue recovery increasing from 54% to 57%. For Test Year 2025, SCE expects an average of 16% bill increase for current Catalina Gas residential and commercial customers during the summer months, and close to zero percent increase during the winter months.

Table XIV-47
Average Bill Impact for Test Year 2025

Segment	Average Summer Bill Change	Average Winter Bill Change	Average Annual Bill Change
G-1	15%	0%	7%
G-1 CARE	-3%	-16%	-11%
G-2	15%	-1%	7%

Table XIV-48
Average Bill Impact for Attrition Year 2028

Segment	Average Summer Bill Change	Average Winter Bill Change	Average Annual Bill Change
G-1	25%	8%	16%
G-1 CARE	6%	-10%	-3%
G-2	16%	0%	9%

Appendix A

Witness Qualifications

SOUTHERN CALIFORNIA EDISON COMPANY

QUALIFICATIONS AND PREPARED TESTIMONY

OF SHUE CHENG

Q. Please state your name and business address for the record.

A. My name is Shue Cheng, and my business address is 8631 Rush Street, Rosemead, California 91770.

Q. Briefly describe your present responsibilities at the Southern California Edison Company.

A. I am the Senior Manager of the Rates Operations Group within SCE's Strategy and Regulatory Affairs Department. My responsibilities include coordinating the development of revenue allocation and rate designs in support of the Catalina Gas General Rate Case and other regulatory proceedings that involve pricing and forecasting activities.

Q. Briefly describe your educational and professional background.

A. I received a Bachelor of Science degree in Management Science from University of California San Diego (UCSD) in 2004. I completed all three levels of the CFA program and have been a CFA charter holder since 2012. I joined SCE in 2008 as a Financial Analyst in the Rate Design Group. In that capacity, I was involved in all aspects of revenue allocation and rate design.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony in this proceeding is to sponsor portions of SCE's 2025 Catalina Gas General Rate Case, Exhibit SCE-01 *Direct testimony Supporting Southern California Edison Company's Application for Authority to Increase Rates for its Catalina Gas Utility*, as identified in the Table of Contents thereto.

Q. Was this material prepared by you or under your supervision?

A. Yes, it was.

Q. Insofar as this material is factual in nature, do you believe it to be correct?

A. Yes, I do.

Q. Insofar as this material is in the nature of opinion or judgment, does it represent your best judgment?

A. Yes, it does.

Q. Does this conclude your qualifications and prepared testimony?

A. Yes, it does.

SOUTHERN CALIFORNIA EDISON COMPANY
QUALIFICATIONS AND PREPARED TESTIMONY
OF MARK W. CHILDS

Q. Please state your name and business address for the record.

A. My name is Mark W. Childs and my business address is 2244 Walnut Grove Avenue, Rosemead, California, 91770.

Q. Briefly describe your present responsibilities at the Southern California Edison Company.

A. I am the Director of Tax for Southern California Edison Company. In this capacity, I am responsible for managing and directing all of the tax accounting and tax regulatory functions for the Company including all tax matters in the CPUC rate filings made by the Company.

Q. Briefly describe your educational and professional background.

A. I hold a Bachelor of Science degree in Accounting from Pepperdine University. I joined the Southern California Edison Company in 2010 and was then promoted to my current role shortly after joining the Company. Prior to joining the Company, I spent sixteen years with Mattel, Inc. most recently as the Senior Director of Tax. My primary responsibilities there included the tax implementation and continued compliance with Sarbanes-Oxley as well as managing and directing all of the tax accounting functions.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony in this proceeding is to sponsor portions of SCE's 2025 Catalina Gas General Rate Case, Exhibit SCE-01 *Direct Testimony Supporting Southern California Edison Company's Application for Authority to Increase Rates for its Catalina Gas Utility*, as identified in the Table of Contents thereto.

Q. Was this material prepared by you or under your supervision?

A. Yes, it was.

Q. Insofar as this material is factual in nature, do you believe it to be correct?

A. Yes, I do.

Q. Insofar as this material is in the nature of opinion or judgment, does it represent your best judgment?

A. Yes, it does.

Q. Does this conclude your qualifications and prepared testimony?

A. Yes, it does.

SOUTHERN CALIFORNIA EDISON COMPANY

QUALIFICATIONS AND PREPARED TESTIMONY

OF ANTHONY R. HERNANDEZ

Q. Please state your name and business address for the record.

A. My name is Anthony R. Hernandez, and my business address is 2244 Walnut Grove Avenue, Rosemead, California 91770, General Office 1 Quad 1A.

Q. Briefly describe your present responsibilities at the Southern California Edison Company.

A. I am the Director of Catalina Operations & Strategy team in the Generation Department at Southern California Edison Company. In this position, I lead a team responsible for the operations of the electric, water, and gas systems, special projects, and overall strategy for the long-term sustainability of the island operations. I have held this position since July 18, 2022.

Q. Briefly describe your educational and professional background.

A. I hold a Master of Science in Engineering Management (Combined Master's degree: MBA & Industrial Engineering) and a Bachelor of Science in Electrical Engineering, both from California State Polytechnic University, Pomona. I am also a licensed Professional Electrical Engineer in the State of California, and a LEED® Accredited Professional. Prior to my present position, I have held many leadership roles throughout SCE's Customer Service, and Energy Procurement & Management organizations. In Energy Procurement & Management, I led a team responsible for the negotiation and execution of short-term, mid-term, and long-term structured energy procurement transactions and power purchase agreements (PPAs) on behalf of SCE's customers. In Customer Service I have led teams responsible for the successful management and implementation of various Demand Side Management (DSM) products and services. I also led teams responsible for the evaluation, development, and launched emerging DSM products and services. I have also led teams responsible for successful support of our billing and call center operations, as well as, teams responsible for customer program

eligibility and technical support, working directly with our non-residential customers to address their energy management goals and needs.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony in this proceeding is to sponsor portions of SCE's 2025 Catalina Gas General Rate Case, Exhibit SCE-01 *Direct Testimony Supporting Southern California Edison Company's Application for Authority to Increase Rates for its Catalina Gas Utility*, as identified in the Table of Contents thereto.

Q. Was this material prepared by you or under your supervision?

A. It was prepared under my supervision.

Q. Insofar as this material is factual in nature, do you believe it to be correct?

A. Yes, I do.

Q. Insofar as this material is in the nature of opinion or judgment, does it represent your best judgment?

A. Yes, it does.

Q. Does this conclude your qualifications and prepared testimony?

A. Yes, it does.

SOUTHERN CALIFORNIA EDISON COMPANY
QUALIFICATIONS AND PREPARED TESTIMONY
OF MELISSA HESTER

Q. Please state your name and business address for the record.

A. My name is Melissa Hester and my business address is 2244 Walnut Grove Avenue, Rosemead, CA 91770-3714.

Q. Briefly describe your present responsibilities at the Southern California Edison Company.

A. I am currently a Financial Advisor in Regulatory Finance within the Finance organizational unit of Southern California Edison (SCE). As such, I am responsible for running the Results of Operations (RO) Model to produce the revenue requirement forecast for General Rate Case proceedings and other stand-alone applications.

Q. Briefly describe your educational and professional background.

A. I earned a Bachelor of Science degree in Business Administration with a concentration in Finance from California Polytechnic State University, San Luis Obispo . I joined Southern California Edison's Financial Planning & Analysis team in 2017, where I contributed to modeling long-term financial forecasts that helped inform internal decision making and external communications to shareholders. In 2021, I transitioned to my current role in Regulatory Finance, where I have supported revenue requirement modeling for regulatory proceedings such as the 2021 General Rate Case, 2025 General Rate Case, Catalina Water Rate Case, and various stand-alone applications.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony in this proceeding is to sponsor portions of SCE's 2025 Catalina Gas General Rate Case, Exhibit SCE-01 *Direct Testimony Supporting Southern California Edison Company's Application for Authority to Increase Rates for its Catalina Gas Utility*, as identified in the Table of Contents thereto.

Q. Was this material prepared by you or under your supervision?

A. Yes, it was.

Q. Insofar as this material is factual in nature, do you believe it to be correct?

A. Yes, I do.

Q. Insofar as this material is in the nature of opinion or judgment, does it represent your best judgment?

A. Yes, it does.

Q. Does this conclude your qualifications and prepared testimony?

A. Yes, it does.

SOUTHERN CALIFORNIA EDISON COMPANY
QUALIFICATIONS AND PREPARED TESTIMONY
OF RONALD HITE

Q. Please state your name and business address for the record.

A. My name is Ronald Hite, and my business address is 1 Pebbly Beach Rd. Avalon, California 90704.

Q. Briefly describe your present responsibilities at the Southern California Edison Company.

A. I am the Production Manager for the SCE Catalina Gas, Pebbly Beach Generating Station, and Catalina Water operations.

Q. Briefly describe your educational and professional background.

A. I have a UCI project management certification and significant amounts of utility-specific education. I began working for SCE in 1988 and spent the majority of my career in the Generation Department in various positions ranging from Plant Equipment Operator to Project Manager. I resigned my employment with SCE to join Edison's O&M Services (EOMS) in 1999 as a Project Manager to support the Guam Power Authority's Enterprise Resource Planning implementation program. In 2001, I was appointed Edison's Regional Manager for the Asia/Pacific region. My responsibilities were primarily focused on utility management for the isolated island utilities in the Asia/Pacific region. I returned to SCE in 2003 as a Senior Project Manager tasked with supporting SCE's Catalina Island utilities (electric, water, and gas). In 2010, I was appointed to the position of District Manager for SCE's Catalina Island utilities responsible for the entire organization. In 2017, Catalina Island Utilities were reorganized, and I was retained as Production Manager for the assets assigned to Generation—Eastern Operations, including Catalina Gas, Pebbly Beach Generating Station, and Catalina Water.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony in this proceeding is to sponsor portions of SCE's 2025 Catalina Gas General Rate Case, Exhibit SCE-01 *Direct Testimony Supporting Southern California Edison Company's Application for Authority to Increase Rates for its Catalina Gas Utility*, as identified in the Table of Contents thereto.

Q. Was this material prepared by you or under your supervision?

A. Yes.

Q. Insofar as this material is factual in nature, do you believe it to be correct?

A. Yes, I do.

Q. Insofar as this material is in the nature of opinion or judgment, does it represent your best judgment?

A. Yes, it does.

Q. Does this conclude your qualifications and prepared testimony?

A. Yes, it does.

SOUTHERN CALIFORNIA EDISON COMPANY
QUALIFICATIONS AND PREPARED TESTIMONY
OF BRUNO MIRANDA

Q. Please state your name and business address for the record.

A. My name is Bruno Miranda, and my business address is 2244 Walnut Grove Avenue, Rosemead, California, 91770.

Q. Briefly describe your present responsibilities at the Southern California Edison Company.

A. I serve as a Senior Advisor in the Regulatory Economics Group within the Treasurers organization at the Southern California Edison Company. My present responsibilities include driving SCE's efforts in various CPUC and FERC proceedings in coordination with Regulatory Affairs, Legal, and third-party economic experts. I also apply economic and financial analysis to regulatory issues for internal corporate purposes in support of many operating groups throughout the company. Lastly, my responsibilities also include monitoring and driving investment analysis across the several investment trusts within the company to set asset allocations aligned with investment goals and risk tolerances.

Q. Briefly describe your educational and professional background.

A. I hold a PhD in Finance from Anderson School of Management at University of California Los Angeles, a Masters degree in Mathematics from University of California Los Angeles, and a Bachelors degree in Economics from Catholic University of Lisbon. I am an Enrolled Agent with the Internal Revenue Service. I have joined the Southern California Edison Company in 2022 in the Regulatory Economics group. Prior to joining Edison in 2022, I worked in academia from 1997 to 2006 in the areas of Economics and Finance, first teaching Economics at Catholic University of Lisbon, and later as teaching assistant and research assistant while pursuing the Finance PhD at Anderson School of Management at University of California Los Angeles. From 2006 to 2008, I worked in risk management in the areas of credit risk, counterparty risk, interest rate risk, and prepayment risk, in the banking industry, lastly with Bank of America. From 2008 until joining Southern California Edison, I worked in Investment Management and Taxes, with 11 out of those 14 years with the investment firm First Quadrant.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony in this proceeding is to sponsor portions of SCE's 2025 Catalina Gas General Rate Case, Exhibit SCE-01 *Direct Testimony Supporting Southern California Edison Company's Application for Authority to Increase Rates for its Catalina Gas Utility*, as identified in the Table of Contents thereto.

Q. Was this material prepared by you or under your supervision?

A. Yes, it was.

Q. Insofar as this material is factual in nature, do you believe it to be correct?

A. Yes, I do.

Q. Insofar as this material is in the nature of opinion or judgment, does it represent your best judgment?

A. Yes, it does.

Q. Does this conclude your qualifications and prepared testimony?

A. Yes, it does.

SOUTHERN CALIFORNIA EDISON COMPANY
QUALIFICATIONS AND PREPARED TESTIMONY
OF JACOB MOON

Q. Please state your name and business address for the record.

A. My name is Jacob Moon and my business address is 2244 Walnut Grove Avenue, Rosemead, CA 91770-3714.

Q. Briefly describe your present responsibilities at the Southern California Edison Company.

A. I am currently a Senior Advisor in Capital Asset Analytics Group within the Finance organizational unit of Southern California Edison (SCE). As such, I am responsible for the capital asset recovery (e.g., rate base and depreciation) portion of regulatory proceedings, the analysis and data gathering for corporate budgeting and forecast process, and the jurisdictional cost separation of transmission and distribution plant reported in SCE's prior year FERC Form 1 filing between CPUC and FERC by performing an annual study.

Q. Briefly describe your educational and professional background.

A. I earned a Bachelor of Science degree in Mathematics and Applied Science with an emphasis in Actuarial Science from the University of California, Los Angeles and a Master of Business Administration degree from the A. Gary Anderson Graduate School of Management at the University of California, Riverside. While there in November of 2000, I joined SCE as a Professional Aide. Since joining Edison, I have held various positions in the T&D Financial Planning and Analysis, EIX Corporate Financial Planning, and Operational Finance departments. My responsibilities have included long-term capital plan, long-term earnings forecast, stock-based payment (FAS 123(R)) pricing, and the development of O&M and capital ratemaking proposals for numerous regulatory proceedings before the California Public Utilities Commission and the Federal Energy Regulatory Commission. I have previously testified before the CPUC and the FERC.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony in this proceeding is to sponsor portions of SCE's 2025 Catalina Gas General Rate Case, Exhibit SCE-01 *Direct Testimony Supporting Southern*

California Edison Company's Application for Authority to Increase Rates for its Catalina Gas Utility, as identified in the Table of Contents thereto.

Q. Was this material prepared by you or under your supervision?

A. Yes, it was.

Q. Insofar as this material is factual in nature, do you believe it to be correct?

A. Yes, I do.

Q. Insofar as this material is in the nature of opinion or judgment, does it represent your best judgment?

A. Yes, it does.

Q. Does this conclude your qualifications and prepared testimony?

A. Yes, it does.

SOUTHERN CALIFORNIA EDISON COMPANY
QUALIFICATIONS AND PREPARED TESTIMONY
OF ERIN PULGAR

Q. Please state your name and business address for the record.

A. My name is Erin Pulgar and my business address is my business address is 8631 Rush Street, Rosemead, California 91770.

Q. Briefly describe your present responsibilities at the Southern California Edison Company.

A. I am the Principal Manager of Cost Recovery within the State Regulatory Operations organizational unit of Southern California Edison (SCE). As such, I am primarily responsible for managing and overseeing SCE's CPUC-related cost recovery activities.

Q. Briefly describe your educational and professional background.

A. I hold a Bachelor's degree in Public Relations and Political Science from the University of Southern California. I have over ten years of experience working at SCE. Prior to my current role in Cost Recovery, I managed SCE's 2018 GRC Phase 2 and TOU Rate Design Window proceedings. I've also worked in SCE's Regulatory Tariffs group and in the Revenue Services Organization, where I was responsible for operational compliance with SCE's billing-related tariffs. Before joining SCE, I worked six years for AeroVironment, Inc. as a program manager responsible for implementing engineering projects related to electric vehicle charging and other energy-related areas. I have previously testified before the California Public Utilities Commission.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony in this proceeding is to sponsor portions of SCE's 2025 Catalina Gas General Rate Case, Exhibit SCE-01 *Direct Testimony Supporting Southern California Edison Company's Application for Authority to Increase Rates for its Catalina Gas Utility*, as identified in the Table of Contents thereto.

Q. Was this material prepared by you or under your supervision?

A. Yes, it was.

Q. Insofar as this material is factual in nature, do you believe it to be correct?

A. Yes, I do.

Q. Insofar as this material is in the nature of opinion or judgment, does it represent your best judgment?

A. Yes, it does.

Q. Does this conclude your qualifications and prepared testimony?

A. Yes, it does.

SOUTHERN CALIFORNIA EDISON COMPANY
QUALIFICATIONS AND PREPARED TESTIMONY
OF HONGYAN SHENG

Q. Please state your name and business address for the record.

A. My name is Hongyan Sheng, and my business address is 2244 Walnut Grove Avenue, Rosemead, California 91770.

Q. Briefly describe your present responsibilities at the Southern California Edison Company.

A. I am the Principal Manager of the Demand and DER Forecasting Group within the Resource & Environmental Planning & Strategy Division in Edison's Strategy and Regulatory Affairs Business Organization. My primary responsibilities include supervising the preparation of corporate's long-term sales forecast update, managing the integration of the impacts from Demand-Side Management Programs, electric vehicle and transportation electrification development, and future regulatory and policy changes into the long-term demand forecast, support the regulatory proceedings such as the Generate Rate Case (GRC), Integrated Energy Policy Report (IEPR), Integrated Resource Planning (IRP), Distributed Resource Planning (DRP), Resource Adequacy (RA), and Energy Resource Recovery Account (ERRA).

Q. Briefly describe your educational and professional background.

A. My educational background includes a Master of Arts Degree in Mathematical Behavioral Science (1997) and a Ph.D degree in Economics (1999) from University of California, Irvine. I received the Chartered Financial Analyst Designation in 2004. I have over 20 years of experience in various aspects of long-term resource and strategic planning, power procurement, market operations, and risk management. I assumed my current responsibilities in May 2016. Prior to my current position, I was the manager of Long-term Demand Forecasting Group.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony in this proceeding is to sponsor portions of SCE's 2025 Catalina Gas General Rate Case, Exhibit SCE-01 *Direct Testimony Supporting Southern California Edison Company's Application for Authority to Increase Rates for its Catalina Gas Utility*, as identified in the Table of Contents thereto.

Q. Was this material prepared by you or under your supervision?

A. Yes, it was.

Q. Insofar as this material is factual in nature, do you believe it to be correct?

A. Yes, I do.

Q. Insofar as this material is in the nature of opinion or judgment, does it represent your best judgment?

A. Yes, it does.

Q. Does this conclude your qualifications and prepared testimony?

A. Yes, it does.

SOUTHERN CALIFORNIA EDISON COMPANY
QUALIFICATIONS AND PREPARED TESTIMONY
OF ALAN VARVIS

Q. Please state your name and business address for the record.

A. My name is Alan Varvis. I am the Principal Manager of Capital Asset Analytics in the Treasurers Department at Southern California Edison Company ("SCE"). My business address is 2244 Walnut Grove Avenue, Rosemead, California 91770.

Q. Briefly describe your present responsibilities at the Southern California Edison Company.

A. In my current position as Principal Manager of Capital Asset Analytics, I am responsible for the forecasting and budgeting related to plant-in-service, book depreciation, and regulatory cost recovery.

Q. Briefly describe your educational and professional background.

A. I received a Bachelor of Science degree in Business Administration, with an emphasis in Accounting and a Masters of Business Administration from California State Polytechnic University, Pomona. I have been certified as a Certified Depreciation Professional (CDP) by the Society of Depreciation Professionals. I joined Southern California Edison in the Transmission and Substation Division in 1993 as a business analyst. I was promoted to Supervisor of Material & Accounting in 1995 where my responsibilities included supervising the processing and handling of work orders related to transmission line and substation capital equipment replacements. In 1996, I accepted a supervisor position in the Power Grid Business Unit where my primary role was to provide budgeting and regulatory finance support. In 2003, I received a promotion to a manager position and, from 2003-2015, held a variety of manager roles in the areas of budgeting, regulatory finance, reporting, and financial system functions supporting the Transmission & Distribution Business Unit. In 2015, I accepted a position in my current role as Principal Manager of Capital Asset Analytics.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony in this proceeding is to sponsor portions of SCE's 2025 Catalina Gas General Rate Case, Exhibit SCE-01 *Direct Testimony Supporting Southern California Edison Company's Application for Authority to Increase Rates for its Catalina Gas Utility*, as identified in the Table of Contents thereto.

Q. Was this material prepared by you or under your supervision?

A. Yes, it was.

Q. Insofar as this material is factual in nature, do you believe it to be correct?

A. Yes, I do.

Q. Insofar as this material is in the nature of opinion or judgment, does it represent your best judgment?

A. Yes, it does.

Q. Does this conclude your qualifications and prepared testimony?

A. Yes, it does.

Appendix B

Current and Proposed Rate Schedules and Bill Impact Histograms

SOUTHERN CALIFORNIA EDISON COMPANY

2023 **SANTA CATALINA ISLAND 2023 GRC - Current Tariffs**

SCHEDULES G-1, GM

Meter Charge	
Meter Size	**$/meter/day**
G-175CFT	$0.417
305cfh	$0.727
G-400CFT	$0.953
G-675CFT	$1.609
G-1000CFT	$2.383
G-2000CFT	$4.751
G-3000CFT	$7.124
4000cfh	$9.499
5000cfh	$11.876

	Total Energy Charge to be added to Meter Charge - $/therm
Baseline	$4.00284
Non-Baseline	$4.60327

	ENERGY CHARGE COMPONENTS - $/therm			
	BASE	**GCAC**	**PUCRF**	**CARE Surcharge**
Baseline	$1.24844	$2.68836	$0.00300	$0.06304
Non-Baseline	$1.69013	$2.84710	$0.00300	$0.06304

SCHEDULE G-2

Meter Charge	
Meter Size	**$/meter/day**
G-175CFT	$0.417
305cfh	$0.727
G-400CFT	$0.953
G-675CFT	$1.609
G-1000CFT	$2.383
G-2000CFT	$4.751
G-3000CFT	$7.124
4000cfh	$9.499
5000cfh	$11.876

	Total Energy Charge to be added to Meter Charge - $/therm
All therms	$5.78964

	ENERGY CHARGE COMPONENTS - $/therm			
	BASE	**GCAC**	**PUCRF**	**CARE Surcharge**
All therms	$2.59866	$3.12494	$0.00300	$0.06304

SOUTHERN CALIFORNIA EDISON COMPANY

2025 SANTA CATALINA ISLAND 2023 GRC - Proposed Tariffs

SCHEDULES G-1, GM

Meter Charge		
Meter Size	**$/meter/day - Summ**	**$/meter/day - Winter**
G-175CFT	$0.750	$0.500
305cfh	$1.307	$0.871
G-400CFT	$1.712	$1.142
G-675CFT	$2.892	$1.928
G-1000CFT	$4.283	$2.855
G-2000CFT	$8.539	$5.693
G-3000CFT	$12.804	$8.536
4000cfh	$17.074	$11.382
5000cfh	$21.346	$14.230

	Total Energy Charge to be added to Meter Charge - $/therm	
Baseline	$3.84392	-4%
Non-Baseline	$4.40767	-4%

	ENERGY CHARGE COMPONENTS - $/therm			
	BASE	**GCAC**	**PUCRF**	**CARE Surcharge**
Baseline	$1.06998	$2.68836	$0.00300	$0.08258
Non-Baseline	$1.47499	$2.84710	$0.00300	$0.08258

SCHEDULE G-2

Meter Charge		
Meter Size	**$/meter/day - Summ**	**$/meter/day - Winter**
G-175CFT	$0.750	$0.500
305cfh	$1.307	$0.871
G-400CFT	$1.712	$1.142
G-675CFT	$2.892	$1.928
G-1000CFT	$4.283	$2.855
G-2000CFT	$8.539	$5.693
G-3000CFT	$12.804	$8.536
4000cfh	$17.074	$11.382
5000cfh	$21.346	$14.230

	Total Energy Charge to be added to Meter Charge - $/therm	
Summer	$6.54416	13%
Winter	$5.70174	-2%

	ENERGY CHARGE COMPONENTS - $/therm			
	BASE	**GCAC**	**PUCRF**	**CARE Surcharge**
Summer	$3.33364	$3.12494	$0.00300	$0.08258
Winter	$2.49122	$3.12494	$0.00300	$0.08258

SOUTHERN CALIFORNIA EDISON COMPANY

2026 SANTA CATALINA ISLAND 2023 GRC - Proposed Tariffs

SCHEDULES G-1, GM

Meter Charge		
Meter Size	**$/meter/day - Summ**	**$/meter/day - Winter**
G-175CFT	$0.839	$0.559
305cfh	$1.463	$0.975
G-400CFT	$1.918	$1.278
G-675CFT	$3.239	$2.159
G-1000CFT	$4.796	$3.198
G-2000CFT	$9.563	$6.375
G-3000CFT	$14.339	$9.559
4000cfh	$19.118	$12.746
5000cfh	$23.903	$15.935

	Total Energy Charge to be added to Meter Charge - $/therm	
Baseline	$3.98819	0%
Non-Baseline	$4.57285	-1%

	ENERGY CHARGE COMPONENTS - $/therm			
	BASE	**GCAC**	**PUCRF**	**CARE Surcharge**
Baseline	$1.20939	$2.68836	$0.00300	$0.08744
Non-Baseline	$1.63531	$2.84710	$0.00300	$0.08744

SCHEDULE G-2

Meter Charge		
Meter Size	**$/meter/day - Summ**	**$/meter/day - Winter**
G-175CFT	$0.839	$0.559
305cfh	$1.463	$0.975
G-400CFT	$1.918	$1.278
G-675CFT	$3.239	$2.159
G-1000CFT	$4.796	$3.198
G-2000CFT	$9.563	$6.375
G-3000CFT	$14.339	$9.559
4000cfh	$19.118	$12.746
5000cfh	$23.903	$15.935

	Total Energy Charge to be added to Meter Charge - $/therm	
Summer	$6.92417	20%
Winter	$6.03281	4%

	ENERGY CHARGE COMPONENTS - $/therm			
	BASE	**GCAC**	**PUCRF**	**CARE Surcharge**
Summer	$3.70879	$3.12494	$0.00300	$0.08744
Winter	$2.81743	$3.12494	$0.00300	$0.08744

SOUTHERN CALIFORNIA EDISON COMPANY

2027 SANTA CATALINA ISLAND 2023 GRC - Proposed Tariffs

SCHEDULES G-1, GM

Meter Charge		
Meter Size	**$/meter/day - Summ**	**$/meter/day - Winter**
G-175CFT	$0.857	$0.571
305cfh	$1.494	$0.996
G-400CFT	$1.958	$1.306
G-675CFT	$3.306	$2.204
G-1000CFT	$4.896	$3.264
G-2000CFT	$9.761	$6.507
G-3000CFT	$14.636	$9.758
4000cfh	$19.516	$13.010
5000cfh	$24.400	$16.266

	Total Energy Charge to be added to Meter Charge - $/therm	
Baseline	$4.01182	0%
Non-Baseline	$4.60054	0%

	ENERGY CHARGE COMPONENTS - $/therm			
	BASE	**GCAC**	**PUCRF**	**CARE Surcharge**
Baseline	$1.23648	$2.68836	$0.00300	$0.08398
Non-Baseline	$1.66646	$2.84710	$0.00300	$0.08398

SCHEDULE G-2

Meter Charge		
Meter Size	**$/meter/day - Summ**	**$/meter/day - Winter**
G-175CFT	$0.857	$0.571
305cfh	$1.494	$0.996
G-400CFT	$1.958	$1.306
G-675CFT	$3.306	$2.204
G-1000CFT	$4.896	$3.264
G-2000CFT	$9.761	$6.507
G-3000CFT	$14.636	$9.758
4000cfh	$19.516	$13.010
5000cfh	$24.400	$16.266

	Total Energy Charge to be added to Meter Charge - $/therm	
Summer	$6.74886	17%
Winter	$5.87992	2%

	ENERGY CHARGE COMPONENTS - $/therm			
	BASE	**GCAC**	**PUCRF**	**CARE Surcharge**
Summer	$3.53694	$3.12494	$0.00300	$0.08398
Winter	$2.66800	$3.12494	$0.00300	$0.08398

SOUTHERN CALIFORNIA EDISON COMPANY

2028 SANTA CATALINA ISLAND 2023 GRC - Proposed Tariffs

SCHEDULES G-1, GM

Meter Charge		
Meter Size	**$/meter/day - Summ**	**$/meter/day - Winter**
G-175CFT	$0.874	$0.582
305cfh	$1.522	$1.014
G-400CFT	$1.996	$1.330
G-675CFT	$3.368	$2.246
G-1000CFT	$4.990	$3.326
G-2000CFT	$9.948	$6.632
G-3000CFT	$14.916	$9.944
4000cfh	$19.889	$13.259
5000cfh	$24.865	$16.577

	Total Energy Charge to be added to Meter Charge - $/therm	
Baseline	$4.03402	1%
Non-Baseline	$4.62656	1%

	ENERGY CHARGE COMPONENTS - $/therm			
	BASE	**GCAC**	**PUCRF**	**CARE Surcharge**
Baseline	$1.26187	$2.68836	$0.00300	$0.08079
Non-Baseline	$1.69567	$2.84710	$0.00300	$0.08079

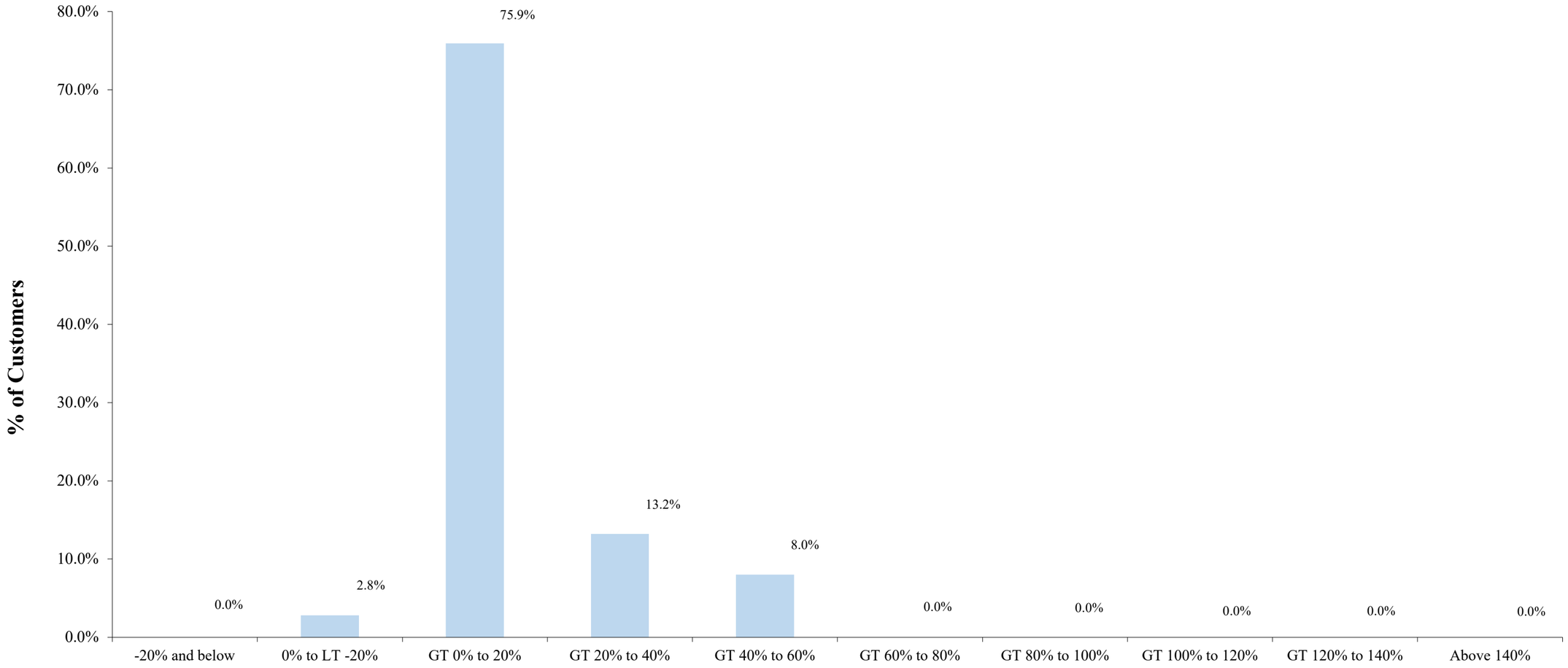
SCHEDULE G-2

Meter Charge		
Meter Size	**$/meter/day - Summ**	**$/meter/day - Winter**
G-175CFT	$0.874	$0.582
305cfh	$1.522	$1.014
G-400CFT	$1.996	$1.330
G-675CFT	$3.368	$2.246
G-1000CFT	$4.990	$3.326
G-2000CFT	$9.948	$6.632
G-3000CFT	$14.916	$9.944
4000cfh	$19.889	$13.259
5000cfh	$24.865	$16.577

	Total Energy Charge to be added to Meter Charge - $/therm	
Summer	$6.59184	14%
Winter	$5.74296	-1%

	ENERGY CHARGE COMPONENTS - $/therm			
	BASE	**GCAC**	**PUCRF**	**CARE Surcharge**
Summer	$3.38311	$3.12494	$0.00300	$0.08079
Winter	$2.53423	$3.12494	$0.00300	$0.08079

Catalina Gas G-1 Customers Bill Impact 2025



Annual Bill Impact - %

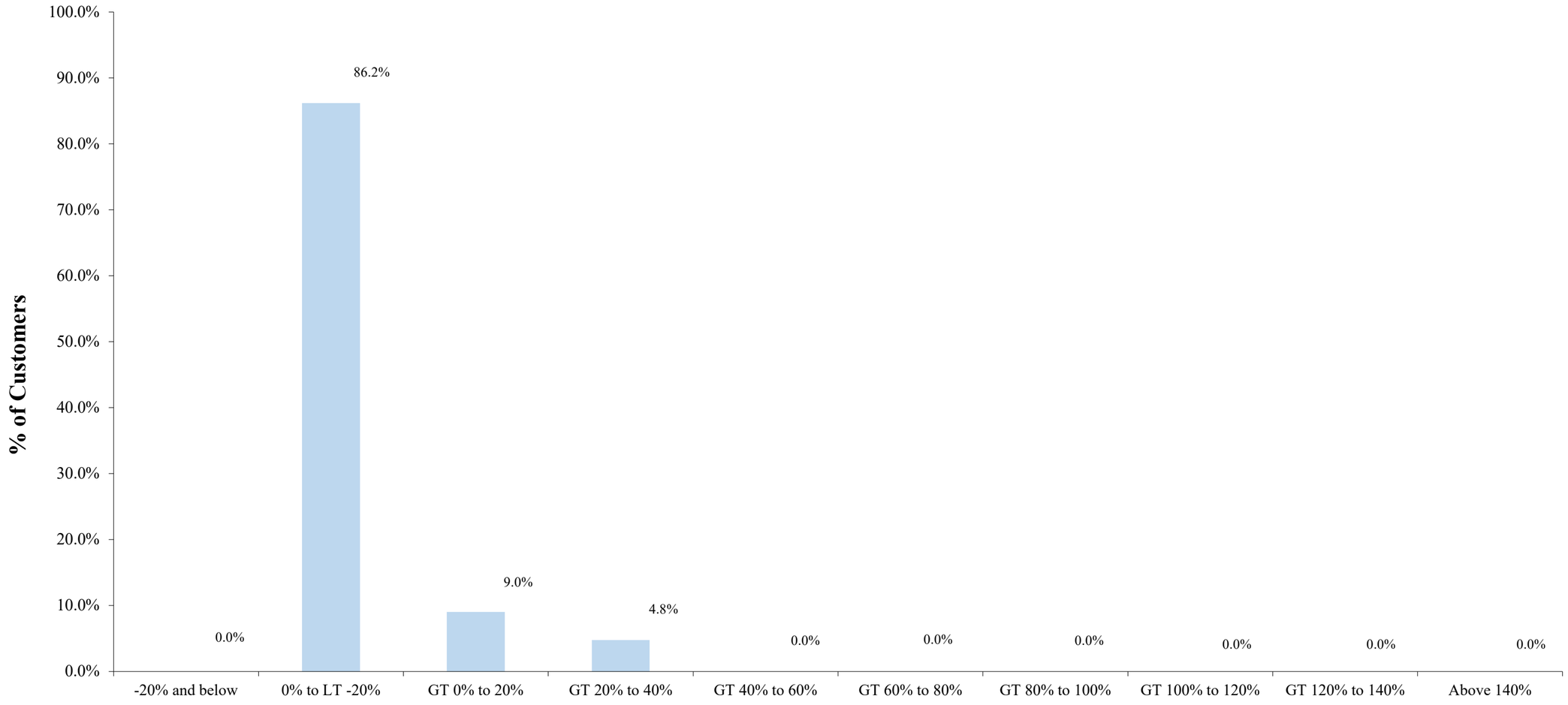
G-1 Bill Impact

Annual Bill Impact - %	Average		Average Seasonal Bill Impact ($/mo.)						Annual Average Rates ($/Therm)		
	% of Customers	Monthly Therm	Current Summer	Current Winter	Proposed Summer	Proposed Winter	Summer Bill Impact %	Winter Bill Impact %	Current	Propose	Average Rate Impact (%)
-20% and below	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
0% to LT -20%	2.8%	87	$353	$449	$353	$434	0%	-3%	$4.6	$4.5	-1.8%
GT 0% to 20%	75.9%	13	$59	$75	$68	$75	15%	0%	$5.0	$5.4	6.5%
GT 20% to 40%	13.2%	2	$23	$23	$33	$25	43%	9%	$9.2	$11.6	26.5%
GT 40% to 60%	8.0%	0	$15	$15	$27	$18	75%	19%	$76.9	$113.4	47.4%
GT 60% to 80%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
GT 80% to 100%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
GT 100% to 120%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
GT 120% to 140%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
Above 140%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
Total	100.0%	13	$59	$74	$68	$74	15%	0%	$5.2	$5.5	6.8%

* Final bill impacts are dependent on customers' actual usage and the final rates adopted by the Commission.

-14%

Catalina Gas G-1-CARE Customers Bill Impact 2025

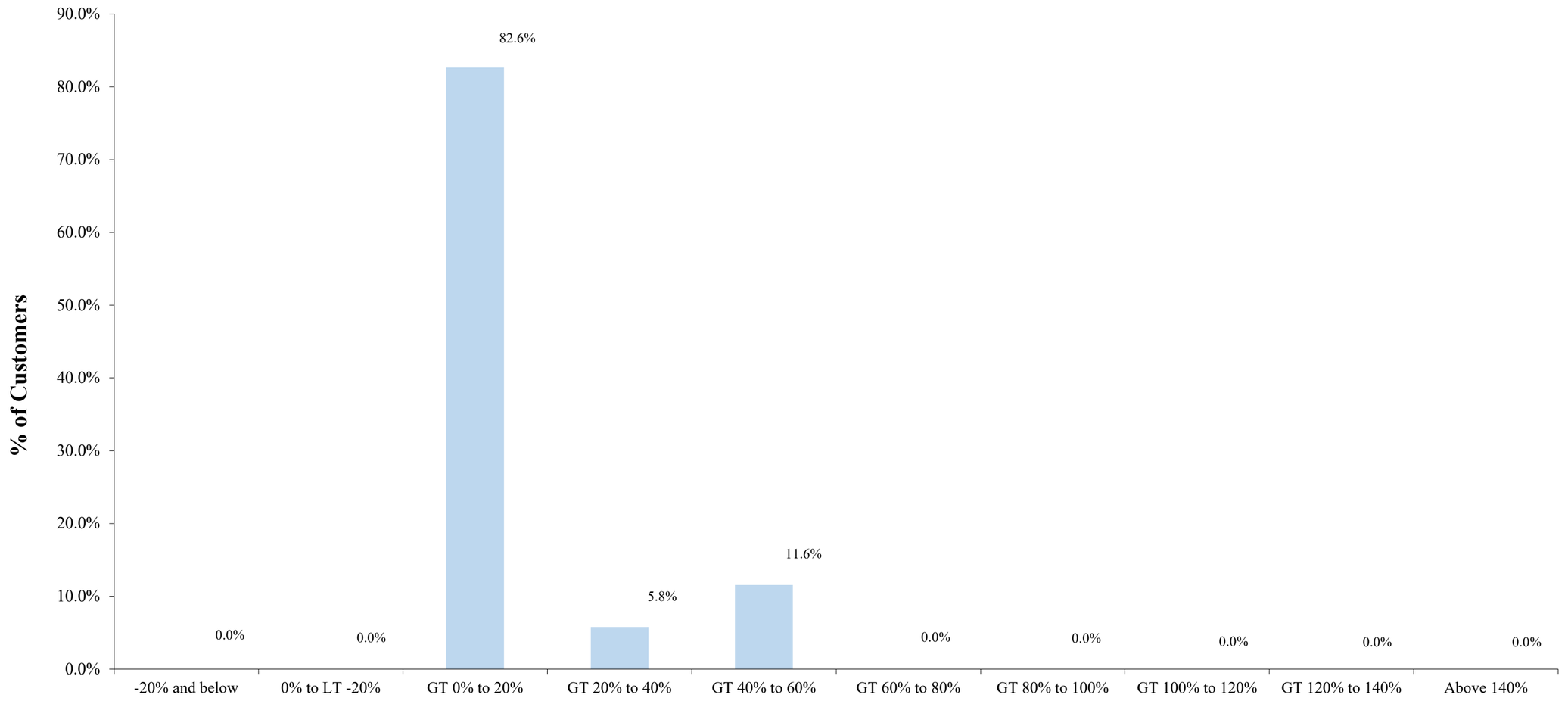


G-1-CARE Bill Impact

Annual Bill Impact - %	Average		Average Seasonal Bill Impact ($/mo.)						Annual Average Rates ($/Therm)		
	% of Customers	Monthly Therm	Current Summer	Current Winter	Proposed Summer	Proposed Winter	Summer Bill Impact %	Winter Bill Impact %	Current	Propose	Average Rate Impact (%)
-20% and below	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
0% to LT -20%	86.2%	13	$47	$58	$45	$48	-5%	-17%	$4.0	$3.5	-11.5%
GT 0% to 20%	9.0%	2	$18	$18	$22	$17	20%	-9%	$7.3	$7.7	5.9%
GT 20% to 40%	4.8%	0	$10	$10	$16	$10	51%	0%	$112.5	$141.1	25.4%
GT 40% to 60%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
GT 60% to 80%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
GT 80% to 100%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
GT 100% to 120%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
GT 120% to 140%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
Above 140%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
Total	100.0%	12	$43	$52	$41	$44	-3%	-16%	$4.1	$3.7	-10.5%

* Final bill impacts are dependent on customers' actual usage and the final rates adopted by the Commission.

Catalina Gas G-2 Customers Bill Impact 2025

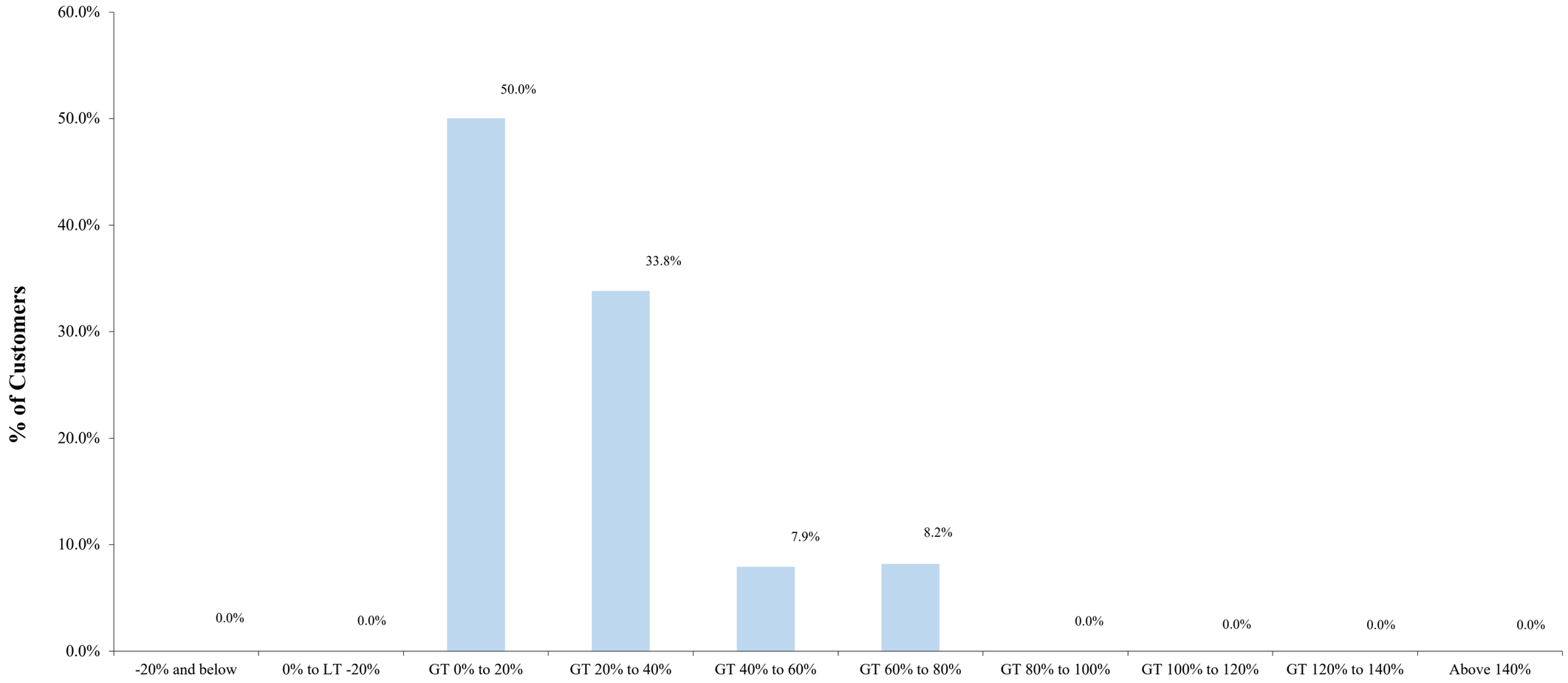


G-2 **Bill Impact**

Annual Bill Impact - %	Average		Average Seasonal Bill Impact ($/mo.)						Annual Average Rates ($/Therm)		
	% of Customers	Monthly Therm	Current Summer	Current Winter	Proposed Summer	Proposed Winter	Summer Bill Impact %	Winter Bill Impact %	Current	Propose	Average Rate Impact (%)
-20% and below	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
0% to LT -20%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
GT 0% to 20%	82.6%	305	$1,941	$1,680	$2,222	$1,664	14%	-1%	$5.9	$6.4	7.3%
GT 20% to 40%	5.8%	3	$39	$30	$54	$33	39%	9%	$10.2	$12.9	25.9%
GT 40% to 60%	11.6%	0	$24	$24	$43	$28	80%	20%	$994.4	$1,489.6	49.8%
GT 60% to 80%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
GT 80% to 100%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
GT 100% to 120%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
GT 120% to 140%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
Above 140%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
Total	100.0%	253	$1,609	$1,393	$1,845	$1,380	15%	-1%	$5.9	$6.4	7.4%

* Final bill impacts are dependent on customers' actual usage and the final rates adopted by the Commission.

Catalina Gas G-1 Customers Bill Impact 2028



Annual Bill Impact - %

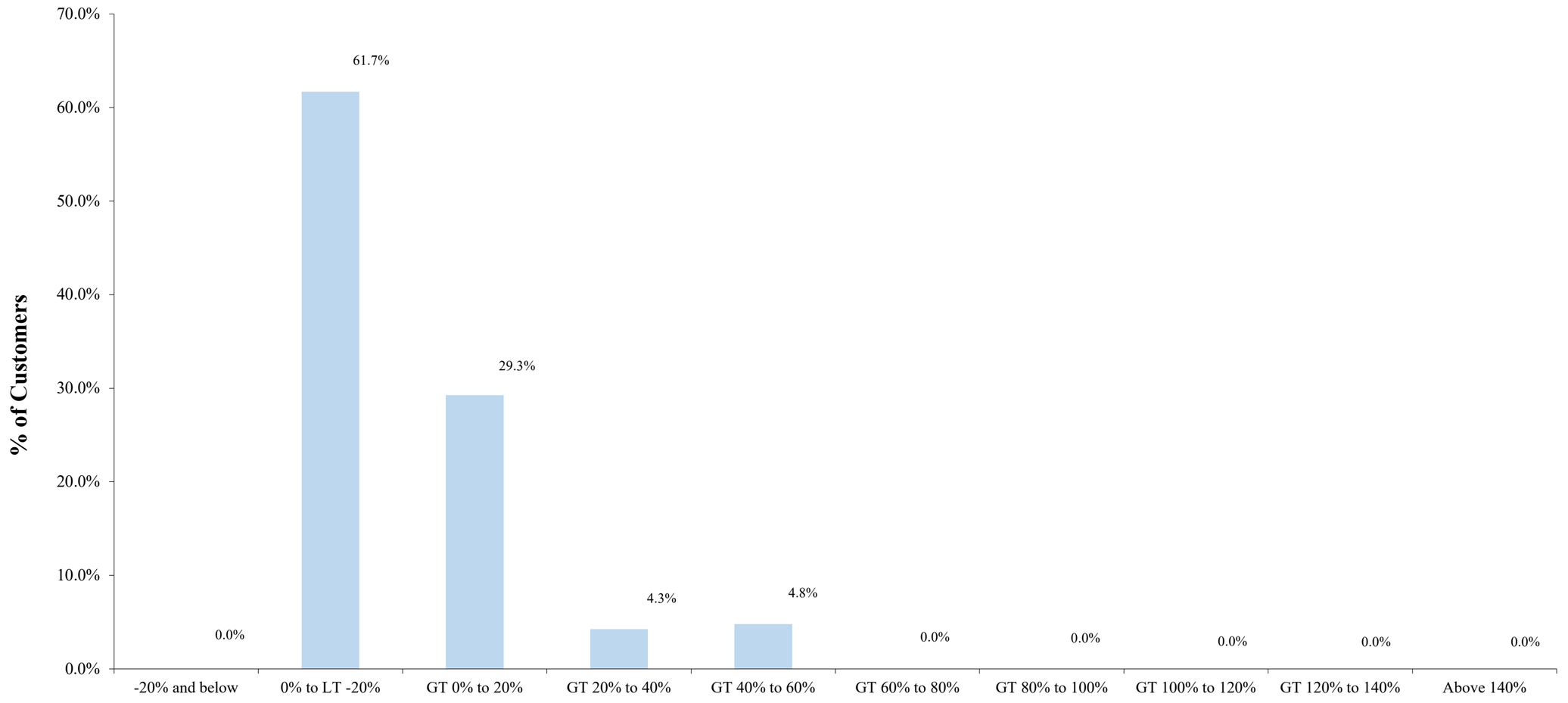
G-1 **Bill Impact**

Annual Bill Impact - %	Average		Average Seasonal Bill Impact ($/mo.)						Annual Average Rates ($/Therm)		
	% of Customers	Monthly Therm	Current Summer	Current Winter	Proposed Summer	Proposed Winter	Summer Bill Impact %	Winter Bill Impact %	Current	Propose	Average Rate Impact (%)
-20% and below	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
0% to LT -20%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
GT 0% to 20%	50.0%	21	$89	$116	$104	$122	17%	5%	$4.8	$5.3	10.5%
GT 20% to 40%	33.8%	6	$36	$39	$50	$44	40%	14%	$6.1	$7.7	26.4%
GT 40% to 60%	7.9%	2	$21	$20	$35	$25	68%	26%	$10.9	$16.1	47.6%
GT 60% to 80%	8.2%	0	$15	$15	$31	$21	103%	38%	$72.2	$123.3	70.9%
GT 80% to 100%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
GT 100% to 120%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
GT 120% to 140%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
Above 140%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
Total	100.0%	13	$59	$74	$74	$80	25%	8%	$5.2	$6.0	15.5%

* Final bill impacts are dependent on customers' actual usage and the final rates adopted by the Commission.

-8%

Catalina Gas G-1-CARE Customers Bill Impac 2028



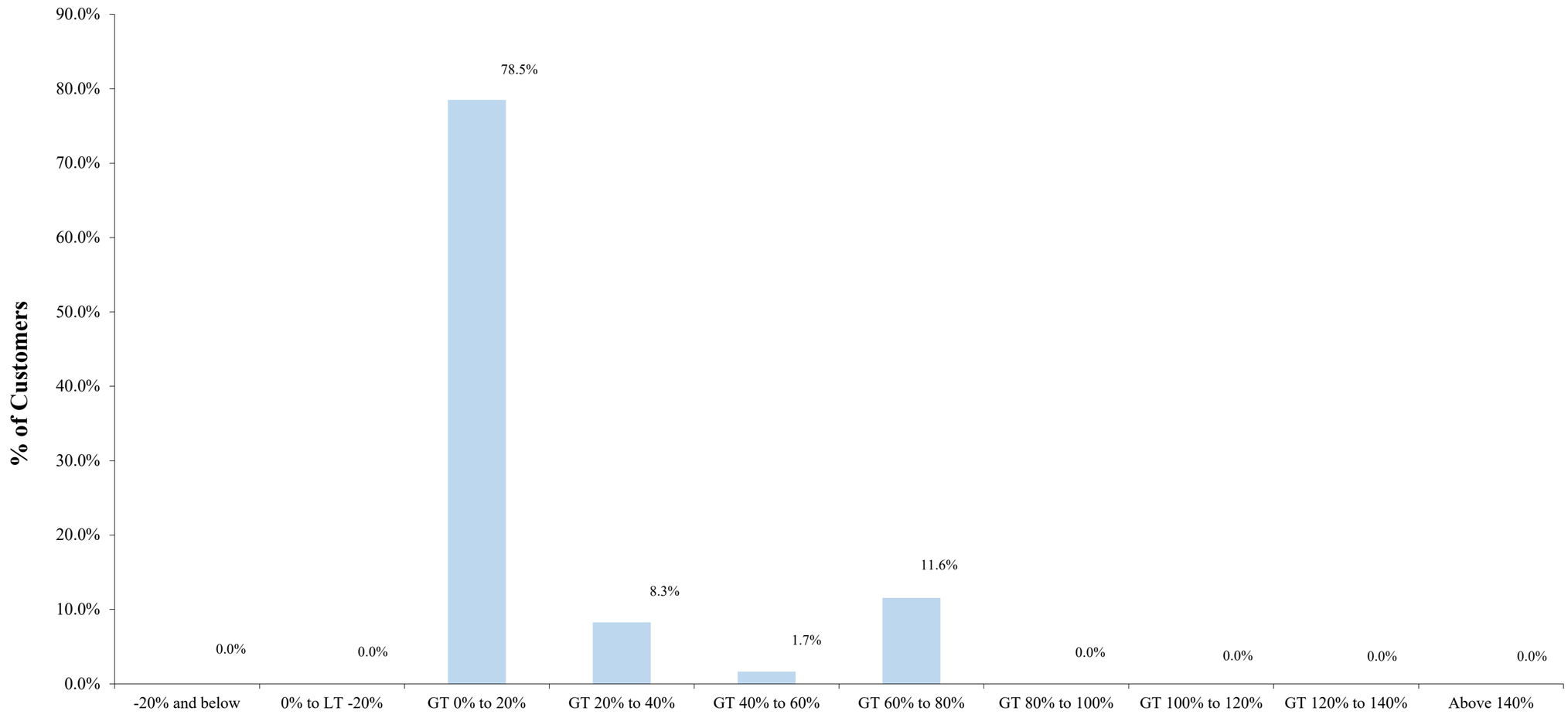
Annual Bill Impact - %

G-1-CARE Bill Impact

Annual Bill Impact - %	Average		Average Seasonal Bill Impact ($/mo.)						Annual Average Rates ($/Therm)		
	% of Customers	Monthly Therm	Current Summer	Current Winter	Proposed Summer	Proposed Winter	Summer Bill Impact %	Winter Bill Impact %	Current	Propose	Average Rate Impact (%)
-20% and below	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
0% to LT -20%	61.7%	16	$53	$67	$54	$60	1%	-12%	$3.9	$3.7	-5.9%
GT 0% to 20%	29.3%	7	$30	$33	$35	$31	16%	-6%	$4.8	$5.0	4.6%
GT 20% to 40%	4.3%	2	$15	$15	$22	$16	45%	7%	$9.6	$12.2	26.3%
GT 40% to 60%	4.8%	0	$10	$10	$18	$12	75%	17%	$112.5	$164.1	45.9%
GT 60% to 80%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
GT 80% to 100%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
GT 100% to 120%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
GT 120% to 140%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
Above 140%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
Total	100.0%	12	$43	$52	$45	$47	6%	-10%	$4.1	$4.0	-2.9%

* Final bill impacts are dependent on customers' actual usage and the final rates adopted by the Commission.

Catalina Gas G-2 Customers Bill Impact 2028



Annual Bill Impact - %

G-2 Bill Impact

Annual Bill Impact - %	Average		Average Seasonal Bill Impact ($/mo.)						Annual Average Rates ($/Therm)		
	% of Customers	Monthly Therm	Current Summer	Current Winter	Proposed Summer	Proposed Winter	Summer Bill Impact %	Winter Bill Impact %	Current	Propose	Average Rate Impact (%)
-20% and below	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
0% to LT -20%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
GT 0% to 20%	78.5%	321	$2,038	$1,763	$2,361	$1,766	16%	0%	$5.9	$6.4	8.6%
GT 20% to 40%	8.3%	9	$72	$72	$101	$79	41%	11%	$8.1	$10.2	25.8%
GT 40% to 60%	1.7%	3	$41	$33	$66	$41	63%	25%	$13.3	$19.5	46.1%
GT 60% to 80%	11.6%	0	$24	$24	$50	$33	109%	39%	$994.4	$1,734.6	74.4%
GT 80% to 100%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
GT 100% to 120%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
GT 120% to 140%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
Above 140%	0.0%	0	$0	$0	$0	$0	0%	0%	$0.0	$0.0	
Total	100.0%	253	$1,609	$1,393	$1,869	$1,397	16%	0%	$5.9	$6.5	8.8%

* Final bill impacts are dependent on customers' actual usage and the final rates adopted by the Commission.