Application: A.25-04-XXX
Proceeding: Microgrid Optional Tariff
Exhibit No.: SCG-01
Witness: Jawaad Malik

CHAPTER 1
PREPARED DIRECT TESTIMONY OF
JAWAAD MALIK
ON BEHALF OF
SOUTHERN CALIFORNIA GAS COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

April 16, 2025

TABLE OF CONTENTS

DIRECT TESTIMONY OF JAWAAD MALIK

I. INTRODUCTION

My name is Jawaad Malik, and I am the Chief Strategy & Sustainability Officer of Southern California Gas Company (SoCalGas or Company). My testimony supports the Application for Adoption of a Microgrid Optional Tariff (Application), which would provide the opportunity to leverage microgrids for their energy needs to existing and prospective non-residential customers located in SoCalGas's service territory. The Microgrid Optional Tariff (MOT) is proposed as a fully elective, optional, and non-discriminatory tariff service. The MOT project costs would be recovered from the specific tariff customer with no subsidy from or business risk borne by other ratepayers.

The purpose of my prepared direct testimony is to describe the policy justifications and broader benefits associated with the proposed MOT. The Prepared Direct Testimony of Armando Infanzon, Chapter 2, provides background on microgrids and details about the proposed MOT, including its implementation, management, and potential customer benefits. The Prepared Direct Testimony of Victor Garcia, Chapter 3, summarizes the proposed cost tracking and regulatory accounting treatment of the cost and associated revenue to be collected from MOT customers.

SoCalGas proposes to plan, design, engineer, procure, construct, own, operate, and/or maintain behind-the-meter [1] and off-grid[2] microgrids for eligible customers with associated costs allocated to the tariff customer. Eligible customers who take service under the MOT will benefit from the deployment of a microgrid, which will be composed of a combination of energy production and storage technologies along with a control system and the ancillary equipment necessary to manage the integrated on-site resources of the tariff customer. Tariff customers will have the choice and flexibility to select and procure the fuel type that best aligns with their needs, taking into account the availability of clean fuels, affordability, and sustainability objectives. Tariff customers will pay a negotiated service fee that captures the full system cost, including both capital and operation & maintenance (O&M). Further discussion regarding the

[1] Behind-the-meter microgrids refers to microgrids on the customer's side of the utility meter.

[2] Off-grid microgrids refers to microgrids that are isolated and are able to operate independently of the electric grid.

service fee is included in the Prepared Direct Testimony of Armando Infanzon, Chapter 2. Key targets of this tariff are commercial and industrial customers, including but not limited to: data centers, EV charging, airports, critical facilities such as hospitals, wastewater treatment facilities, emergency services, and any other potential customers interested in more reliability and increased consistency in their energy costs. The MOT is also available to serve customers for separately metered service to common facilities at residential properties (e.g., swimming pools, recreation rooms, saunas, spas, etc.)

II. OVERVIEW

The State of California has ambitious goals for economy-wide decarbonization and electrification over the coming two decades.[3] This is expected to lead to a significant increase in electric consumption and demand. The California Energy Commission's (CEC) planning forecast models show increased electrification in the residential and commercial sectors, mainly due to California Air Resources Board's (CARB) and local Air Quality Management District's (AQMD) zero-emission appliance standards.[4] In addition to general trends toward electrification, the CEC forecasts an increase in load from new sources of demand such as data centers and transportation electrification.[5]

The result of these combined trends is that electricity sales in California are projected to increase over the next 15 years. The CEC anticipates a 33% increase in Southern California Edison's (SCE) planning area by 2040.[6] This has brought serious challenges on various fronts: delayed interconnections as new loads try to connect to the electric grid, reliability challenges during net system peak periods, and costly upgrades needed to the electric grid to accommodate

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[3] CARB, *2022 Scoping Plan for Achieving Carbon Neutrality*, *available at:* https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp-es.pdf.

[4] CEC, *2023 Demand Scenarios Project* (November 20, 2024), *available at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=260156&DocumentContentId=96386.*

[5] CEC, *2023 Integrated Energy Policy Report (IEPR)* (February 14, 2024) at 21-22, *available at:* https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2023-integrated-energy-policy-report.

[6] CEC, *2023 IEPR Demand Forecast, Planning Forecast LSE and BAA Tables* (March 2024), *available at:* https://efiling.energy.ca.gov/GetDocument.aspx?tn=255151&DocumentContentId=90831.

increased and sometimes structurally different electric demand.[7]

Microgrids can be an important solution to many of these challenges, because they can reduce strain on the electric grid by using gaseous fuels, such as natural gas, renewable natural gas (RNG), and clean renewable hydrogen, to generate power on-site. Microgrids can also support the CEC's ambitious load-shifting goal of 7,000 megawatts (MW) by 2030, as directed by Senate Bill (SB) 846.[8,9]

Microgrids are especially beneficial because they provide power during all hours, including during net peak load[10] and power outages, when microgrids can function in "island" mode to provide continuous power to customers and communities. Depending on their configuration, microgrids can also provide decarbonized energy solutions. For example, microgrids can be designed and built to use solar power and clean renewable hydrogen generated onsite via electrolysis. They can also rely on the existing underground pipeline infrastructure to deliver RNG to offer decarbonized solutions for onsite electricity generation. Microgrids can also provide less variable energy costs for microgrid customers, as they are less dependent on (or completely independent from) electric grid prices. Microgrids can support new and existing customers with their growing need for electric capacity and resilience, including data centers, EV charging infrastructure, commercial and industrial facilities, educational and research institutions, critical facilities,[11] and governmental facilities.

The objective of the MOT is to provide microgrid solutions to existing and potential customers in SoCalGas's service territory. These microgrids can help address multiple concerns by providing:

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7 CEC, *2023 IEPR* (February 14, 2024) at 2-9, *available at:* https://efiling.energy.ca.gov/GetDocument.aspx?tn=254463.

8 SB 846 (Dodd, 2022), *available at:* *https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220SB846.*,

9 CEC, *Commission Report on the SB 846 Load Shift Goal Load Shift Goal* (May 26, 2023), *available at:* https://www.energy.ca.gov/publications/2023/senate-bill-846-load-shift-goal-report.

10 Net load is the gross load minus the wind and solar resource generation levels to show the variance between total demand and the amount of resources required later in the afternoon when renewable resources may no longer be generating. The electricity grid's gross load peak occurs in late afternoon when consumers' demand for energy increases. *See* CAISO, *Gross & Net Load Peaks Fact Sheet* (2023), *available at:* https://www.caiso.com/documents/gross-and-net-load-peaks-fact-sheet.pdf.

11 CPUC defines critical facilities in Decisions 19-05-042, 20-05-041, and 21-06-034.

- A solution to support new electric demand and load growth from in critical market sectors
- Enhanced reliability and resilience for the electric grid and customers
- A solution that can address affordability concerns by providing more price certainty and may mitigate increases in electric ratepayer costs for new infrastructure
- Potential environmental benefits and support of customer sustainability goals
- Local community benefits such as backup power for critical facilities, jobs, and air quality improvements

III. POLICY DRIVERS AND BENEFITS OF THE MOT

Over the last few years, electric bills have been generally rising due to higher electricity use and higher overall electricity rates.[12,13] At the same time, California has faced increased wildfires,[14] highlighting vulnerabilities of the state's energy systems. Furthermore, substantial investments in wildfire mitigation, and new or upgraded transmission and distribution infrastructure is needed to meet the state's decarbonization and electrification goals, which may continue to increase electric rates. The confluence of these policies has left customers vulnerable to energy insecurity, high costs, and uncertainties.[15] The MOT can help address these issues by providing a complementary energy solution that benefits customers and ratepayers.

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[12] State of California – The Public Advocates Office, *Q2 2024 Electric Rates Report* (July 22, 2024) at 3, *available at:* www.publicadvocates.cpuc.ca.gov/-/media/cal-advocates-website/files/press-room/reports-and-analyses/240722-public-advocates-office-q2-2024-electric-rates-report.pdf.

[13] CPUC, *2024 Senate Bill 695 Report* (July 2024) at 28-31*, available at:* https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/office-of-governmental-affairs-division/reports/2024/2024-sb-695-report.pdf.

[14] Frontline Wildfire Defense, *California Wildfire History & Statistics*, *available at:* https://www.frontlinewildfire.com/wildfire-news-and-resources/california-wildfires-history-statistics/.

[15] Columbia SIPA – Center on Global Energy Policy, *Out of Control: The Impact of Wildfires on our Power Sector and the Environment* (January 28, 2020), *available at:* https://www.energypolicy.columbia.edu/publications/out-control-impact-wildfires-our-power-sector-and-environment/.

A. Microgrids can provide a solution to support new electric demand and load growth from critical market sectors

As energy consumption and requests for electric interconnection are expected to increase, microgrids established by the proposed MOT can provide a near-term solution to energize new electric demand, help alleviate interconnection delays, and support local electric grid reliability. By providing near term energy solutions to customers, including data centers builders and those electrifying their fleets, MOT can also facilitate economic development in California.

1. Electrification is leading to growing demand on the electric grid

California has set ambitious goals for increased decarbonization, with electrification playing a major role in reaching this goal. The CEC energy demand forecast includes increases from transportation electrification and future load from data centers, among other end-use sectors.[16] Electrifying the transportation sector requires significant charging infrastructure.[17] Despite California withdrawing its request for a waiver and authorization for the Advanced Clean Fleets (ACF) Regulation, the state and local government fleet regulations remain unaffected and will continue to drive the need for MD/HD BEV charging.[18] The electrification of these fleets will continue to drive the increasing energy demand for electric vehicle charging. As an example, Los Angeles Metro continues to invest hundreds of millions of dollars in zero emission buses and related recharging infrastructure in order to comply with the California Air Resources Board Innovate Clean Transit regulations.[19] In addition to these increased electric needs from transportation, data centers are also expanding across California. Based on active applications and project inquiries, SCE's forecasted data center peak demand is expected to grow

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[16] Refer to the California Energy Demand Forecast, *see* CEC, *2023 Integrated Energy Policy Report* (February 2024) at 97, *available at:* https://efiling.energy.ca.gov/GetDocument.aspx?tn=254463.

[17] CEC, *Assembly Bill 2127 Second Electric Vehicle Charging Infrastructure Assessment: Assessing Charging Needs to Support Zero-Emission Vehicles in 2030 and 2035* (February 2024), *available at:* https://efiling.energy.ca.gov/GetDocument.aspx?tn=254869

[18] For the ACF Waiver Update, *see* CARB, *Advanced Clean Fleets*, *available at:* https://ww2.arb.ca.gov/our-work/programs/advanced-clean-fleets.

[19] Metro, *Metro Moves Closer To Zero Emission Buses (Zeb) For The Region* (October 14, 2024), *available at:* https://www.metro.net/about/metro-moves-closer-to-zero-emission-buses-zeb-for-the-region/

to 280 MW by 2028 and additional 400 MW by 2035 and up to 980 MW after 2036.[20] For these needs, and the broader anticipated needs from building electrification, the CEC forecasts over 70 TWh of additional load by 2040.[21]

In an attempt to help address ongoing energization delays, SB 410, known as the "Powering Up Californians Act," was signed into law in 2023 to enhance the efficiency of electrical grid connections in California.[22] The bill required the California Public Utilities Commission (CPUC) to establish a reasonable average and maximum target time for energizing new customers, aiming to expedite the process of connecting to the grid.

In January of 2024, the CPUC issued an Order Instituting Rulemaking (OIR) to Establish Energization Timelines,[23] initiating Rulemaking (R.) 24-01-018 to implement the provisions of SB 410 and Assembly Bill (AB) 50.[24] As described below, several parties' comments in the proceeding describe recent experiences where electric capacity was not available for their projects.

Voltera Power LLC sites, builds, owns, and operates strategically located, fit-for-purpose charging facilities to enable EV deployment and operation at scale. Voltera stated that its projects—as well as those of many stakeholders in the sector—face energization challenges.[25] Voltera provided the following comments:

> Generally, Voltera has seen projects take approximately 18-24 months (or longer) to proceed through the energization process. On multiple occasions, Voltera has ceased the pursuit of projects that have an energization timeline

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[20] CEC, *SCE Data Center Forecast* (February 25, 2025), *available at:* https://efiling.energy.ca.gov/GetDocument.aspx?tn=261975&DocumentContentId=98465

[21] CEC, *2024 California Energy Demand - Annual Consumption and Sales Forecast Results* (December 12, 2024) at 28,*available at:* https://efiling.energy.ca.gov/GetDocument.aspx?tn=260599.

[22] SB 410 (Becker, 2023), *available at:* https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202320240SB410.

[23] *See* R.24-01-018, *Order Instituting Rulemaking to Establish Energization Timelines* (January 30, 2024), *available at:* https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M524/K427/524427971.PDF.

[24] AB 50 (Wood, 2023), *available at:* https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202320240AB50.

[25] R.24-01-018, *Opening Comments of Voltera Power LLC on the Assigned Commissioner's Scoping Memo and Ruling (May 3, 2024)* at 2, *available at:* https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M531/K248/531248909.PDF.

> beyond the 18-24 month threshold, as these projects have been determined to be commercially infeasible for Voltera.[26] …
>
> Projects of substantial size (e.g., larger than 2MW) almost always require some distribution work, which has delayed many of our projects. …
>
> When there is no capacity, Voltera has been informed by utilities that projects may take upwards of 4 to 6 years. Notably, almost all of Voltera's projects to date (both light-duty, as well as M/HD) have exceeded the 2MW threshold.[27] …
>
> It has been Voltera's experience that the timelines for upstream capacity upgrades have triggered delays from some of our projects for up to 4-7 years. Indeed, these limitations have led to service delays for some of our customers and have more broadly informed Voltera's real estate acquisition strategy and customer engagement plans.[28]

Terawatt Infrastructure, a builder of electric vehicle charging stations, states that a major barrier to California accomplishing its transportation electrification goals is the length of time it takes for IOUs to energize projects after a customer submits a request to construct a medium-duty and heavy-duty (MDHD) electric vehicle (EV) charging facility.[29] These delays reduce the availability of charging stations and extend the air quality issues impacting millions of Californians.[30] Terawatt Infrastructure provided the following comments:

> Based on Terawatt's experience with projects ranging from 5 MW to 20 MW, the majority of MDHD EV charging projects take 3-5 years to complete and require unique upstream capacity upgrades.[31]…
>
> [An IOU] has told Terawatt that insufficient capacity exists on the majority of its distribution and sub-transmission systems to quickly energize Terawatt's projects. Terawatt has submitted dozens of energization requests but [the IOU] has stated that there is currently only enough capacity for Terawatt to move forward with six projects and in some cases those

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[26] *Id.* at 6

[27] *Id*. at 6-7.

[28] *Id.* at 11.

[29] R.24-01-018, *Opening Comments of Terawatt Infrastructure, Inc. on Assigned Commissioner's Scoping Memo and Ruling* (May 3, 2024) at 1, *available at:* https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M531/K104/531104323.PDF.

[30] *Id.* at 1.

[31] *Id.* at 4.

> projects only have a fraction, e.g., 10% - 13%, of the power originally requested.[32,33]…
>
> [An IOU] has stated in response to many of Terawatt's requests that it cannot provide power to Terawatt because there are sub-transmission limitations with 5-year constraint mitigation estimates. … [They] informed Terawatt that it will be unable to provide such service until it locates and builds a new substation, a process which takes at least eight years.[34]

The **Industry Coalition**, a group of interested parties comprised of the California Building Industry Association (CBIA), the California Business Properties Association (CBPA), and the California Apartment Association (CAA), stated that they are beginning to encounter regional utility capacity shortfalls within IOU territories which is inconsistent with demand forecasts produced by the CPUC and CEC that indicate that adequate electricity supply exists throughout the State.[35] The Industry Coalition provided the following comments:

> [R]esidential and commercial developers have been told their projects must be placed on hold indefinitely in one IOU territory while regional capacity issues are resolved. There has also been a case in another IOU territory where a 2021 project proposal to install ten EV fast-charging stations was put on hold due to a lack of capacity.[36]…
>
> Supply chain disruptions lasting 12-36 months prevent access to much-needed transformers and other commonly needed distribution infrastructure.[37]…

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[32] *Id.*

[33] R.24-01-018, *Southern California Edison Company's Reply Comments on Assigned Commissioner's Scoping Memo and Ruling* (May 17, 2024) at 10 (in its Reply Comments, SCE states "SCE takes this opportunity to clarify the statement in Terawatt's Opening Comments that it had submitted dozens of energization requests to SCE but there was only enough capacity to move forward on six projects with 10% - 13% of the power requested. First, a number of Terawatt's submissions were study requests—not actual energization requests at issue in this proceeding. Second, for Terawatt's formal energization requests, SCE can serve 45% of Terawatt's requested capacity"), *available at:* https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M531/K769/531769042.PDF.

[34] R.24-01-018, *Opening Comments of Terawatt Infrastructure, Inc. On Assigned Commissioner's Scoping Memo and Ruling* (May 3, 2024) at 4.

[35] R.24-01-018, *Reply Comments of the Industry Coalition on the Assigned Commissioner's Scoping Memo And Ruling (Phase 1)* (May 17, 2024) at 2, *available at:* https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M531/K769/531769031.PDF.

[36] *Id.*

[37] *Id.* at 4.

> A new all-electric home with two EVs in the garage will consume roughly 3-4 times the electricity consumed annually as a typical mixed-fuel home with no EVs.[38]

In September 2024, the CPUC issued Decision (D.) 24-09-020,[39] which established criteria for timely energization services. The decision is intended to expedite the process for connecting homes and businesses, EV chargers, and other loads to the electric grid. However, while the R.24-01-018 addresses timelines for connecting customers to the grid, it does not address capacity constraints and long timelines for capacity upgrades. The adopted statewide capacity upgrade timelines are listed in Table JM-1 below.

TABLE JM-1 – Large Electric IOU Maximum Timelines for Upstream Capacity Upgrade Projects[40]

Type of Capacity Upgrade	Maximum Timeline (calendar days)
New or Upgraded Circuit	684
Substation Upgrade	1,021
New Substation	3,242

2. Microgrids can provide a near-term solution and flexibility for future demand growth

Because of increasing delays and long timelines for the energization for existing and proposed new facilities, customers can use onsite generation as a way to meet power demand before utility connections can be established. Microgrids provided by the MOT can serve exactly this purpose by providing a near-term solution to energize new electric demand for companies facing such delays. Such companies could enroll in the MOT and have a customized on-site energy solution which would not be dependent on electric grid upgrades. Such solutions would typically be completed much more quickly than electric grid infrastructure upgrades.

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[38] *Id.* at 6 (emphasis omitted).

[39] D.24-09-020, *Decision Establishing Target Energization Time Periods and Procedure for Customers to Report Energization Delays* (September 12, 2024), *available at:* https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M540/K806/540806654.PDF.

[40] *Id*. at 47

A recent example of this is an EV charging project where Prologis, a logistics company, deployed EV charging infrastructure for 96 electric vehicle charging ports. This required approximately10 MW of new electricity and would take an estimated three years of electric grid infrastructure build-out. Prologis elected to not wait three years and developed their own microgrid in nine months consisting of ~9 MW of linear generators and battery storage to charge vehicles. The microgrid has been operating successfully since 2024.[41]

As further discussed in the Prepared Direct Testimony of Armando Infanzon, Chapter 2, the MOT can also address the challenges faced by customers who have an interest in behind-the-meter or off-grid microgrids. Reluctance to deploy microgrids resulting from these challenges stands in the way of their accelerated deployment, as noted by the "lessons learned" in the California Energy Commission's EPIC Program Research on Microgrid Projects.[42] Through the MOT, SoCalGas, a trusted provider of energy services for more than 150 years, can provide microgrids to customers as a turnkey solution during this time of growing electricity demand and support customer timelines for the energization of new electric load. SoCalGas also has extensive experience in working with local, regional and state agencies to obtain the necessary permits for the design, construction and operation of energy infrastructure. For example, SoCalGas completed in early 2023 the Hydrogen Innovation Experience (H2IE), an advanced microgrid demonstration located in the city of Downey. H2IE is powered with solar energy and clean renewable hydrogen produced on-site.

B. Microgrids could enhance reliability and resilience for the electric grid and customers

Challenges created by extreme weather events and the increases in power shutoffs to address the threat of devastating wildfires have caused reliability[43] and resilience[44] challenges

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[41] Prologis, *Clean, on-site EV charging infrastructure and prime power generation for a global leader in logistics real estate*, *available at:* https://cdn.sanity.io/files/m8z36hin/production/57fd50e31bd00b303f8b4dec5aaee97c7d996072.pdf.

[42] CEC, *Lessons Learned from Energy Commission Microgrid Projects – Best Practices from EPIC PON-14-301 Grant Recipients* (June 2024) at 42-56, *available at:* https://www.energy.ca.gov/sites/default/files/2024-06/CEC-500-2024-067.pdf.

[43] Electric reliability refers to maintaining the delivery of power under normal operating conditions.

[44] Resilience is the "ability to prepare for and adapt to changing conditions and withstand and recover rapidly from disruptions. Resilience includes the ability to withstand and recover from deliberate

for customers on the electric grid as well as those customers energizing new load. Microgrids can deliver continuous power supply even during power outages. This reliability and resilience makes microgrids a key potential component in addressing the power needs of many industries, allowing customers to maintain continuity of operations.

Although power outages, whether planned or unplanned, or even public safety power shutoff (PSPS) events can be disruptive to all electric customers, they can be particularly disruptive and serious consequential for certain categories of customers. Electrical outages for businesses in SoCalGas's service territory can result in potentially billions of dollars of costs cumulatively.[45] For example, food wholesale and retail businesses such as retailers may experience direct cost impacts from outages due to lost revenues and spoiled goods, while wholesale trade sectors may experience indirect cost impacts if they are unable to deliver goods.[46] For some facilities, like hospitals, power outages must be mitigated because of the safety ramifications. An example of this is the Charge Bliss Renewable Microgrid at the Kaiser Permanente Richmond Medical Center.[47] This facility incorporates solar PV, battery storage, LED lighting, and software and controls to operate the microgrid. The Richmond Medical Center is an important critical care facility in an underserved community that has experienced previous power reliability issues. This microgrid is designed to provide summer peak demand savings (resulting in a 20 percent bill savings) as well as emergency services for a high-occupancy life and safety facility, which was groundbreaking work for Office of Statewide Health Planning and

attacks, accidents, or naturally occurring threats or incidents". *See* the White House – President Barack Obama, *Presidential Policy Directive -- Critical Infrastructure Security and Resilience* (February 12, 2013), *available at*: https://obamawhitehouse.archives.gov/the-press-office/2013/02/12/presidential-policy-directive-critical-infrastructure-security-and-resil/.

[45] Source: Collins, Myles, Michael Sullivan, Josh Schellenberg and Stephanie Bieler (2019). "Southern California Edison: 2019 Value of Service Study." *See also* A.19-08-013, SCE 2021 GRC Workpaper on Grid Modernization, Grid Technology, Energy Storage (Ex. SCE-02, Vol. 04, Part 01, Ch. II, Book A) (August 2019).

[46] A.24-12-011, SoCalGas Direct Testimony of Josh Schellenberg (Chapter 5) – Value of Electric Grid Reliability and Resilience at 9-12, *available at:* https://www.socalgas.com/sites/default/files/alproject/phase2/A.24-12-XXX_TestimonyCh.5-ValueofElecGridReliabilityandResilience_Schellenberg_PDFA.pdf.

[47] CEC, *Lessons Learned from Energy Commission Microgrid Projects* (June 2024) at 26-29, *available at:* https://www.energy.ca.gov/sites/default/files/2024-06/CEC-500-2024-067.pdf.

Development resulting in a better understanding of backup power systems beyond traditional diesel generators.

As a reaction to the systemwide blackouts that occurred in 2020, the California legislature passed several pieces of legislation to address reliability concerns. AB 205, which created the Strategic Reliability Reserve (SRR), sought to expand the resources capable of managing or reducing net-peak demand during extreme events such as wildfires and extreme heat waves.[48] Per AB 205, "As California transitions to a clean energy future and contends with climate impacts and other challenges, sufficient capacity of new and existing generation assets will be required to maintain reliability during extreme events."[49] The new energy infrastructure can serve as on-call emergency supply or load reduction for the State's electrical grid. SRR provides funding to secure conventional generation, efficiency upgrades at existing natural gas plants, demand response, distributed generation, and long-duration storage.[50] One of the programs within the SRR is the Distributed Electricity Backup Assets (DEBA) Program, which incentivizes construction of cleaner and more efficient distributed energy. Another example is SB 846 which extended operations of Diablo Canyon Units 1 and 2 beyond their retirement dates of 2024 and 2025, respectively, as well as established the Clean Energy Reliability Investment Plan (CERIP) to provide additional resources to support grid reliability.[51] However, due to recent budget deficits, funding availability for DEBA and CERIP has been less than anticipated.[52]

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[48] AB 205 (Committee on Budget, 2022), *available at:* https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB205.

[49] Pub. Res. Code § 25790(c).

[50] CEC, *Strategic Reliability Reserve*, *available at:* https://www.energy.ca.gov/data-reports/california-energy-planning-library/reliability/strategic-reliability-reserve.

[51] SB 846 (Dodd, 2022) *available at:* https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220SB846.

[52] Refer to the Legislative Analyst's Office (LAO) 2024-25 Budget overview for Distributed Electricity Backup Assets and Demand Side Grid Support budget revisions in Figure 7. *See* LAO, *The 2024-25 California Spending Plan – Resources and Environmental Protectio*n (September 12, 2024) at Figure 7, *available at:* https://lao.ca.gov/Publications/Report/4928. For a report on CEC DSGS Program participation and compensation *see* CEC, *Presentation - Demand Side Grid Support (DSGS) Program January 23, 2024, Workshop* (January 23, 2024) at 6, *available at:* https://efiling.energy.ca.gov/GetDocument.aspx?tn=254091&DocumentContentId=89410.

[53] State of California – Office of Governor Gavin Newsom, *Executive Order N-5-24* (October 30, 2024), *available at:* https://www.gov.ca.gov/wp-content/uploads/2024/10/energy-EO-10-30-24.pdf.

SoCalGas's MOT can help address these reliability and resilience needs affecting customers and acknowledged by the legislature. Deploying microgrids will support reliability and resilience by providing power to MOT customers as an alternative to the electric grid, including during power outages or periods of high electric prices. This reliability and resilience could protect customers from financial and other losses. The MOT could also bridge the gap left by the state budget cuts to reliability programs by providing additional options for reliability resources to customers not able to participate in the DEBA and CERIP at no cost to ratepayers. Customers that provide essential services to the local community can utilize MOT to stay operational during power outages.

C. Microgrids can address affordability concerns by providing more price certainty and may mitigate increases in electric ratepayer costs for new infrastructure

Commensurate with the expanding electrification and infrastructure needs, utility electric grids will require continuous investment in new transmission and distribution lines and substations to meet growing demand. Microgrids could reduce broader ratepayer costs by avoiding or delaying the need for certain infrastructure expansion and upgrades. On October 30, 2024, Governor Newsom signed Executive Order N-5-24, aimed at addressing the rising costs of electricity in California.[53] The order directs several state agencies to take actions that will help reduce electricity costs for consumers while continuing to support the State's clean energy and climate goals.

Since all MOT project costs are recovered from the tariff customer with no subsidy from or business risk borne by other ratepayers, the MOT could alleviate the rising cost of electricity. The local energy production provided by the MOT can help to reduce the strain on the broader electric grid, delaying or eliminating the need for expensive electric infrastructure projects. As a result, ratepayers can benefit from lower overall costs, as electric utilities can avoid or delay the capital investment associated with certain grid expansions.

The MOT also offers the customer potential economic benefits by providing potential bill savings and ensuring business continuity during a power outage. MOT customers will pay a regular service fee based on all costs for the facility over the life of the microgrid installation.

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[53] State of California – Office of Governor Gavin Newsom, *Executive Order N-5-24* (October 30, 2024), *available at:* https://www.gov.ca.gov/wp-content/uploads/2024/10/energy-EO-10-30-24.pdf.

Therefore, regardless of the price of grid electricity, the MOT service fee will provide more price certainty based on the terms of the MOT agreement.[54] This will protect them from a potential price shock from spiking electric rates and from potential long-term increases in the price of electricity. While rate forecasts have a degree of uncertainty because of underlying uncertainty of volumes of future investments in energy infrastructure, electric rates have greatly increased over the past five years. Statewide average residential electricity rates have increased 29 percent and commercial electricity rates have increased 22 percent in the past 5 years.[55] The combination of more price certainty, potential bill savings, and improved business continuity provides an attractive option to reduce economic and operational risks for customers.

D. Microgrids can provide potential environmental benefits and support customer sustainability goals

California has established ambitious targets for reductions of greenhouse gas emissions. The MOT can support achieving these targets based on the type(s) of fuels the customer selects based on their individual needs. Advancing deployment of microgrids through the MOT can help reduce GHG emissions by giving the option to MOT customers to use renewable energy. Customers can also transition to clean fuels, such as clean renewable hydrogen, as fuels cells and linear generators can easily support these fuels. Microgrids can be an alternative to less environmentally friendly backup power options, such as diesel generators. The MOT also could reduce the land-use requirements of electric infrastructure buildout by having power generated on-site for MOT customers.

California has enacted many laws and policies promoting the reduction of greenhouse gas reductions. California SB 32 sets GHG emission reduction targets to 40 percent below 1990 levels by 2030[56] and the CARB has developed a roadmap to achieve the GHG emissions goals through the Scoping Plan. The 2022 Scoping Plan has identified fuels such as RNG and

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[54] And for those MOT customers using natural gas or RNG, they will pay the cost for their gaseous fuel as well.

[55] The Calculation is based off the CEC Demand Forecast forms, *see* CEC, *California Energy Demand Update 2024 Baseline Forecast – Total State* (January 2025), *available at:* https://efiling.energy.ca.gov/GetDocument.aspx?tn=260931.

[56] SB 32 (Pavley, 2016), *available at:* https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32.

renewable hydrogen as key resources necessary to reduce GHG emissions.[57] These decarbonized fuels are anticipated to be utilized to comply with AB 1279 which requires the State to achieve carbon neutrality no later than 2045 and at least an 85% reduction in GHGs.[58]

Consistent with these laws and policies, microgrids can offer several environmental benefits. First, depending on the particular MOT facility requested by a customer, the MOT can lead to reduction of GHG emissions through the usage of decarbonized fuels such as RNG and clean renewable hydrogen as well as solar plus storage options. Additionally, the emissions reductions can be particularly significant if the MOT is used to replace facilities relying on diesel backup generators. When faced with frequent power outages, electric customers have turned to diesel backup generators (BUGs) which leads to increased GHG emissions and local air pollutants like NOx, CO, and particulate matter.[59] CARB recognizes the issue,[60] and the South Coast Air Quality Management District (SCAQMD) has acknowledged that the increased number of diesel BUGs being used in their region as emergency engines is due to the increased duration and frequency of PSPS events.[61] In its 2021 study, research firm M Cubed found that "The diesel generator population jumped by 22 percent in the SCAQMD in less than three years."[62] The MOT is able to provide energy from natural gas or renewable energy displacing other higher emitting NOx, CO, and PM diesel backup generation.[63]Second, the MOT can encourage increased and faster uptake of transportation electrification. Customers with microgrids may feel more secure in their ability to reliably produce power and, as a result, may

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57 CARB, *2022 Scoping Plan for Achieving Carbon Neutrality* (December 2022) at 72-79, *available at:* https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf.

58 AB 1279 (Muratsuchi, 2022), *available at:* https://legiscan.com/CA/text/AB1279/id/2606946.

59 SCAQMD, *Proposed Rule 1110.4 Emergency Generators* (February 14, 2024) at 11-14, *available at:* https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/pr-1110.4/pr-1110-4-working-group-meeting_1_presentation.pdf?sfvrsn=10.

60 CARB, *Emission Impact: Additional Generator Usage Associated with Power Outage* (January 30, 2020), *available at:* https://ww2.arb.ca.gov/sites/default/files/2020-01/Emissions_Inventory_Generator_Demand%20Usage_During_Power_Outage_01_30_20.pdf.

61 *Id.*

62 Bloom Energy, *New Study Shows a Rapid Increase of Diesel-fueled Backup Generators across California* (October 6, 2021), *available at:* https://www.bloomenergy.com/resource/new-study-shows-a-rapid-increase-of-diesel-fueled-backup-generators-across-california/.

63 Center for Climate and Energy Solutions (C2ES), *Microgrids, available at:* https://www.c2es.org/content/microgrids/.

be less concerned about being able to charge a battery electric vehicle (BEV).[64] Thus, the MOT could encourage more BEV purchases and charging, displacing internal combustion vehicle emissions and their associated tailpipe emissions. In addition, customers with existing renewable resources such as solar panels are often interested in better integration with a microgrid.[65]

Third, the local installation of solar PV on rooftops and carports as part of the MOT could potentially reduce the environmental footprint of additional electricity generation. The use of existing utility pipeline infrastructure could avoid or delay the need to build new and costly electric transmission and distribution lines, decreasing land-use and emissions associated with electric infrastructure buildout. On-site power generation also reduces incremental electricity line losses, resulting in fewer MWhs of electricity needed to be produced in the State overall.[66] The MOT could help reduce the overall environmental impact of electric generation.

E. Microgrids can provide local community benefits such as backup power for critical facilities, job creation, and air quality improvements

In addition to these other benefits, the MOT can also provide benefits to the communities where microgrids are deployed, including keeping critical facilities running, supporting economic growth, and improving air quality.

The MOT can offer community benefits by empowering businesses with greater energy independence and resilience. As discussed above,[67] during times of power outages or grid disruptions due to extreme weather events or otherwise, microgrids can provide backup power. Local communities can benefit from the MOT because critical community services, such as healthcare facilities, emergency services, and wastewater treatment plants, can continue to operate during power outages.

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64 CEC, *Lessons Learned from Energy Commission Microgrid Project, Best Practices from EPIC PON-14-301 Grant Recipients* (June 2024) at 43, *available at:* https://www.energy.ca.gov/sites/default/files/2024-06/CEC-500-2024-067.pdf.

65 *Id.*

66 Lawrence Berkeley National Laboratory, *Locational Value of Distributed Energy Resources* (February 2021) at 6, *available at:*https://eta-publications.lbl.gov/sites/default/files/lbnl_locational_value_der_2021_02_08.pdf.

67 Refer to Section III.A.2, *supra.*

The MOT can also support local economic growth and job creation[68] by investing in energy infrastructure and creating new employment opportunities in the communities where the microgrids are installed. Developing and operating microgrids requires a wide range of services, including planning, engineering, construction and on-going maintenance. Many of these jobs could be supported by qualified contractors in the local community. In addition, by providing a path for facilities with high energy needs to be built in California without waiting for electric infrastructure to come online, job opportunities could grow for those in communities where those facilities are would be sited. As discussed above, facilities like data centers and EV charging infrastructure have high energy needs and it can take years for infrastructure to be available for them. Making them possible in Southern California (and in a more timely manner) would support economic development and new employment opportunities for those in the local communities.

Lastly, as discussed above, the MOT can provide local air quality benefits by reducing the customers' dependency on diesel backup generators and diesel and gasoline vehicles. Diesel backup generators emit harmful pollutants, including NOx, CO, and PM, all of which can contribute to significant negative air quality and public health impacts for the local community.[69] As of 2021, there were over 14,000 backup generators in South Coast Air Quality Management District territory representing about 7,300 MW of capacity; of which, 7,000 MW are diesel generators.[70] The fleet has the potential to emit 13 MT of particulate matter, and about 640 MT of NOx per year. On road vehicles are also a significant source of air pollution releasing 196, 25, and 821 tonnes of NOx, PM, and CO per day in the South Coast Air Basin, respectively.[71] The MOT can provide power through renewable sources, fuel cells and/or linear generators, all of

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[68] Gridscape, *Harnessing the Power of Microgrids for Local Job Creation and Economic Growth* (April 18, 2023), *available at:* https://grid-scape.com/harnessing-the-power-of-microgrids-for-local-job-creation-and-economic-growth/.

[69] SCAQMD, *Proposed Rule 1110.4 Emergency Generators* (February 14, 2024) at 11-14, *available at*: https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/pr-1110.4/pr-1110-4-working-group-meeting_1_presentation.pdf?sfvrsn=10.

[70] Bloom Energy – M.Cubed, *Diesel Back-Up Generator Population Grows Rapidly in the Bay Area and Southern California*, *available at:* https://www.bloomenergy.com/wp-content/uploads/diesel-back-up-generator-population-grows-rapidly.pdf.

[71] CARB, *Emissions by Air District*, *available at:* https://ww2.arb.ca.gov/applications/emissions-air-district.

which would result in an improvement in air quality compared to using diesel backup generators and internal combustion engine vehicles.

IV. OTHER SUPPORTED POLICIES

In addition to the above benefits, the MOT is complimentary with ongoing CPUC proceedings and other state policies.

First, the MOT is consistent with state policy generally supporting the implementation of microgrids. In 2018, SB 1339 was enacted and directed the CPUC, in consultation with the CEC and California Independent System Operator (CAISO), to undertake a number of activities to further develop policies related to microgrids. The legislation was designed to boost microgrid development and streamline what at times had been a lengthy wait to interconnect microgrid and/or generation projects. The MOT is consistent with and supports this direction to boost microgrid development and deployment

To address and implement the requirements of SB 1339, in 2019 the CPUC initiated an "Order Instituting Rulemaking" (OIR) on Resiliency and Microgrids. In opening the rulemaking, the Commission acknowledged that "among other things, SB 1339 found that many electricity customers are seeing the potential benefits of investing in their own onsite energy resources. As part of this, SB 1339 found that microgrids may help electricity customers ensure their own level of reliability, may help an electricity customer manage its needs better, act as an aggregated single entity to the distribution system operator, and may support California's policies to integrate a high concentration of distributed energy resources on the electric grid."[72] The OIR has focused on the acceleration of resilience projects, revised electric service rules, the development and implementation of the Microgrid Incentive Program (MIP), suspension of the Capacity Reservation component of the Standby Tariff charge for microgrids, and the creation of a Multi-Property microgrid tariff for the electric IOU's. All of these changes were made in an effort to make it easier for developers to integrate microgrids into the electric grid, both for in front and behind-the-meter microgrids. The MOT provides a simple option for customers to have microgrids built onsite. As the MOT customer will be the customer of record for utility services,

[72] R.19-09-009, *Order Instituting Rulemaking Regarding Microgrids Pursuant to Senate Bill 1339* (Microgrid OIR) at 3, *available at* https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M314/K274/314274617.PDF.

they can apply for any eligible utility tariff rates, incentives, and programs for which they qualify.

The MOT is consistent with state's self-generation policy. SB 700 authorized ratepayer collections of $166M annually through December 31, 2024, to be administered through January 1, 2026, for the Self-Generation Incentive Program (SGIP). This program continues to incentivize the deployment of renewable generation and energy storage technologies that provide electric grid support, reduce GHGs, and provide resilience for customers and critical facilities impacted by wildfire related outages.[73] The MOT contributes to meeting these objectives, giving an option on an individual basis to customers to have customized microgrids that would support their energy needs.

V. CONCLUSION

For all the reasons discussed above, the MOT provides a multitude of benefits, consistent with the State's energy policies, by providing tariff customers reliable and resilient energy solutions at no cost to other ratepayers.

This concludes my prepared direct testimony.

[73] SB 700 (Wiener, 2018), *available at:* https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB700.

VI. QUALIFICATIONS

My name is Jawaad Malik. My business address is 555 West 5th Street, Los Angeles, California 90013. I am employed by SoCalGas as the Chief Strategy & Sustainability Officer. In my current position my responsibilities include development of a comprehensive strategy and sustainability plan to position SoCalGas as a long-term leader enabling California's clean energy future. The comprehensive strategy focuses on the vital role the gas grid provides to support California's energy system objectives.

I have been employed by the Sempra family of companies since 2007 and have held positions of increasing responsibility, including Vice President, Strategy and Sustainability and Chief Environmental Officer, Vice President of Gas Acquisition, Vice President of Accounting and Finance, Director of Financial and Operational Planning, General Rate Case Program Manager, Financial Planning Manager and Sarbanes Oxley (SOX) and Business Controls Supervisor. Prior to joining the Sempra family of companies, I held various finance and auditing related roles, including Manager of credit risk and risk control at the Los Angeles Department of Water and Power, and as an insurance auditor for the California Department of Insurance. I have a bachelor's degree in accounting from California State University, Los Angeles, and a master's degree in business administration with an emphasis in finance from Pepperdine University. I am also a certified public accountant.

I have over 20 years of experience in electric and gas utilities industry, and I have previously testified before the California Public Utilities Commission.