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Application of San Diego Gas & Electric Company (U 902-E) for Approval of Palomar Decarbonization Demonstration Project	Application 25-12-009

OPENING BRIEF OF THE PUBLIC ADVOCATES OFFICE ON SAN DIEGO GAS & ELECTRIC COMPANY'S APPLICATION FOR APPROVAL OF PALOMAR DECARBONIZATION DEMONSTRATION PROJECT

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I. INTRODUCTION

The Public Advocates Office at the California Public Utilities Commission (Cal Advocates) files this opening brief in the *Application of San Diego Gas & Electric Company for Approval of Palomar Decarbonization Demonstration Project* (Application)[1] filed on December 16, 2025, pursuant to Rule 13.12 of the California Public Utilities Commission (Commission)'s Rules of Practice and Procedure (Rules). This brief is filed in accordance with the *Assigned Commissioner's Scoping Memo and Ruling*,[2] and *Email Ruling Granting UCAN Request for Schedule Extension and Revising Procedural Schedule*.[3]

In its Application, San Diego Gas & Electric Company (SDG&E) requests that the Commission approve the Palomar Decarbonization Demonstration Project (the Project) and associated cost recovery.[4] SDG&E describes the Project as an integrated hydrogen system located at the Palomar Energy Center (PEC) that consists of onsite hydrogen production, hydrogen storage, hydrogen blending into turbines, and onsite fueling for hydrogen vehicles.[5] SDG&E fails to demonstrate the reasonableness of the Project and its costs, as explained below. The Commission should deny all cost recovery associated with the Project.

II. BACKGROUND

SDG&E first requested approval for the Project in its 2024 Test Year General Rate Case (GRC) Application (A.22-05-016).[6] SDG&E requested $17.502 million in capital

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[1] Application (A.) 25-12-009, *Application of San Diego Gas & Electric Company for Approval of Palomar Decarbonization Demonstration Project* (Application), filed December 16, 2025.

[2] *Assigned Commissioner's Scoping Memo and Ruling* (Scoping Memo), filed May 28, 2026, at 6.

[3] *Email Ruling Granting UCAN Request for Schedule Extension and Revising Procedural Schedule*, filed July 31, 2026, at 3.

[4] Application at 1.

[5] Application at 1.

[6] A.22-05-016, *Application of San Diego Gas & Electric Company (U 902 M) for Authority, Among Other Things, to Update its Electric and Gas Revenue Requirement and Base Rates Effective on January 1, 2024*, filed May 16, 2022.

expenditures in the years 2021-2024 for the 2022 Project."[7] The Commission denied SDG&E's request for the 2022 Project in D.24-12-074.[8] However, D.24-12-074 states that, "SDG&E may pursue building the hydrogen system at the Palomar Energy Center as a stand-alone application with more robust information, leveraging public funding sources and lowering ratepayer costs."[9]

In its discussion denying the 2022 Project, D.24-12-074 highlights critical facts that A.22-05-016 lacked that were necessary to assess the Project's reasonableness.[10] In particular, D.24-12-074 notes that information on the 2022 Project's actual cost to ratepayers, capability of expansion, ability to provide unique insights that could not be obtained elsewhere, and federal incentives available to leverage were absent from the GRC application.[11] In addition, D.24-12-074 encourages SDG&E to explore public-private partnerships that could reduce ratepayer costs for the 2022 Project.[12]

On December 16, 2025, SDG&E filed the instant Application seeking approval and cost recovery for $17.4 million in capital costs and future O&M for the Project.[13] The Project, which is the subject of the December 16, 2025 Application, is the same as the 2022 Project (the 2022 Palomar Hydrogen Systems Project) which was denied in D.24-12-074. The Project consists of an integrated hydrogen system at the PEC that includes onsite hydrogen production, storage, blending into turbines, and fueling of hydrogen vehicles.[14] And, here again, SDG&E seeks approval of the Project and associated cost recovery after the Project has already been built and has been in operation

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[7] In A.22-05-016 the Project was referred to as the "Palomar Hydrogen Systems Project." A.22-05-016, Exhibit (Ex.) SDG&E-14, *Prepared Direct Testimony of Daniel S. Baerman (Electric Generation)*, Table DSB-5 (Capital Expenditures Summary of Costs) at DSB-15.

[8] Decision (D.) 24-12-074, *Decision Addressing the 2024 Test Year General Rate Cases of Southern California Gas Company and San Diego Gas & Electric Company*, issued December 23, 2024, at 404.

[9] D.24-12-074 at 404.

[10] D.24-12-074 at 404-406.

[11] D.24-12-074 at 404-406.

[12] D.24-12-074 at 406 and 938.

[13] Application at 1-2.

[14] Application at 1-2.

(since 2023).[15] SDG&E states that its Application is consistent with D.24-12-074's grant of permission for SDG&E to pursue building the hydrogen project at PEC in a stand-alone application.[16]

D.24-12-074 notes "[t]he IOUs are aware that without prior authorization, any recovery for [the Palomar Hydrogen System and the Hydrogen Home] projects cannot be assumed, and the mere fact that money was spent on a project is not a sufficient basis to grant recovery."[17] Given that there has been no prior authorization, SDG&E must show that the costs of the Project are just and reasonable in order to recover costs associated with the Project.[18]

III. BURDEN OF PROOF

As the applicant, SDG&E has the "burden of affirmatively establishing the reasonableness of all aspects of its application."[19] Consistent with Commission precedent, SDG&E bears the burden of proving, by a preponderance of the evidence, that it is entitled to the relief it is seeking.[20] Where the Commission entertains a reasonable doubt as to the applicant's position, the applicant has not met its burden of proof.[21] Therefore, SDG&E must prove that the Project and associated cost recovery is reasonable to receive Commission approval.

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[15] Ex. SDGE-02, *Prepared Direct Testimony of Pooyan Kabir and Kevin Counts on Behalf of San Diego Gas & Electric Company, Chapter 2 – Operations* (SDG&E Chapter 2 Testimony), Attachment B at WP2-1.

[16] Application at 4.

[17] D.24-12-074 at 938.

[18] Public Utilities Code § 451. "All charges demanded or received by any public utility … shall be just and reasonable."

[19] D.08-12-058*, Decision Granting a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project,* issued December 24, 2008, at 17, quoting D.06-05-016*, Opinion on Southern California Edison Company's Test Year 2006 General Rate Increase Request,* issued May 11, 2006, at 7.

[20] D.18-10-019, *Decision Modifying the Power Charge Indifference Adjustment Methodology*, issued October 19, 2018, at 31.

[21] D.18-10-019 at 31, quoting D.87-12-067, 27 CPUC2d 1, 22.

Public Utilities Code Section 451 provides, in part, that "all charges demanded or received by any public utility … shall be just and reasonable."[22] SDG&E must therefore establish, by a preponderance of the evidence, that its requested cost recovery for the Project is just and reasonable.

IV. DISCUSSION

SDG&E fails to demonstrate that the Project serves the public interest. Specifically, SDG&E does not show that the Project will provide information that is unique and necessary to inform California's pursuit of hydrogen as a clean energy strategy, that the Project will reduce GHG emissions, or that entities other than SDG&E benefit from the Project. In addition, SDG&E fails to justify the reasonableness of the Project costs. Finally, SDG&E fails to demonstrate any ratepayer benefits for the Project. Therefore, the Commission should deny all costs related to the Project.

A. The Project does not serve the public interest.

SDG&E fails to demonstrate that the Project serves the public interest. SDG&E fails to show that the information learned from the Project is unique and valuable and provides distinct insights that cannot be obtained from the efforts of others. In addition, SDG&E fails to show that the Project meaningfully contributes to greenhouse gas (GHG) emissions reductions. Finally, SDG&E fails to demonstrate that any entity, other than itself, will benefit from the Project.

1. SDG&E does not demonstrate that the information will provide information that is unique and necessary to inform California's pursuit of hydrogen as a clean energy strategy.

SDG&E fails to demonstrate that its Project provides unique information that is critical to California's incorporation of hydrogen as a clean energy strategy. The denial of the Project in D.24-12-074 was partially based on the fact that "SDG&E did not discuss how its pilot program would provide unique insights that could not be obtained

[22] Public Utilities Code § 451.

from the efforts of others."[23] D.24-12-074 also states that it was not persuaded that SDG&E's Project would be more effective than participating in an Electric Power Research Institute (EPRI) initiative, which would cost far less.[24] In this Application, SDG&E again fails to demonstrate that the Project provides unique information needed to further the use of hydrogen in clean energy.

First, the Project does not test novel technologies or industrial processes. The only new or unique aspect of the Project is that it co-locates several elements of electrolytic hydrogen production, compression, and storage at PEC to support its existing 588 megawatt (MW) combined cycle gas turbine power generation plant.[25] The plant has always required hydrogen in order to cool the generator.[26] SDG&E claims that the Project is necessary to experience "real-world operation in a California combined-cycle plant, under California permitting, safety, workforce, and grid conditions."[27] However, SDG&E fails to illustrate how the Project provides learnings that will expand California's knowledge base or capability to decarbonize its energy needs.

Second, while SDG&E asserts that the Project provides distinct areas of knowledge, the majority of the purported categories of learnings are not exclusive to California or even SDG&E's service territory.[28] SDG&E lists twelve categories of learnings provided by the Project,[29] eight of which—engineering, codes and standards, valves, piping, venting, safety requirements, material specifications, and metering—represent general fields that are not innovative or novel in any way to entities that have

[23] D.24-12-074 at 405.

[24] D.24-12-074 at 405.

[25] Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC-1; Application at 3.

[26] Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC-3.

[27] Application at 5-6.

[28] Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC-20 to PK_KC-22.

[29] Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC-20 to PK_KC-22. The twelve categories are: Engineering, system design, codes and standards, controls integration, valves, piping, venting, safety requirements, material specifications, metering, performance data, and best practices.

experience working with hydrogen.[30] In fact, SDG&E admits that the Project's design "was accomplished by consulting the third-party design and engineering firms where space constraints, operational constraints of power plant, major equipment upgrades considerations and storage configuration were part of the design process."[31] Moreover, O&M costs for the Project include equipment service contracts to cover long-term maintenance for the different elements of the Project by their vendors.[32] These third-party engineers and vendors therefore already possess the operational knowledge that SDG&E boasts as new learnings from the Project. In other words, the operational learnings from the hydrogen equipment may be new to SDG&E, but the knowledge is already possessed by others. As such, the Project does not generate new information as to the operation of the hydrogen equipment; that information is accessible elsewhere.

Third, SDG&E fails to produce evidence that the information that the Project may generate regarding hydrogen blending at 2% to 5% cannot be obtained elsewhere. For instance, to support its claim that the Project could potentially blend up to 5% hydrogen, SDG&E cites to another gas turbine of the same model, located in Ohio, that has blended hydrogen since April 2022.[33] SDG&E also cites to an Environmental Protection Agency (EPA) document that reports the Los Angeles Department of Water and Power (LADWP)'s plans to convert its 297-MW generating station to a 346-MW combined cycle turbine capable of co-firing at least 30% low-GHG hydrogen by late 2029.[34] As

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[30] Ex. CalAdvocates-01, *Testimony on San Diego Gas and Electric Company's Application for the Palomar Decarbonization Demonstration Project* (Cal Advocates Testimony) at 6.

[31] Ex. CalAdvocates-01, Cal Advocates Testimony, Attachment SDG&E Response to DR 03, Question 3, at 3.

[32] Ex. SDGE-02, SDG&E Chapter 2 Testimony, Attachment B at WP2-2.

[33] Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC-10 n.8, citing Ohio Capital Journal, World science community watching as natural gas-hydrogen power plant comes to Hannibal, Ohio (August 27, 2021). Available at https://www.newsbreak.com/news/2353447988792-world-science-community-watching-as-natural-gas-hydrogen-power-plant-comes-to-hannibal-ohio.

[34] Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC-10 n.10, citing U.S. Environmental Protection Agency, Hydrogen in Combustion Turbine Electric Generating Units Technical Support Document (May 23, 2023) at 8. Available at: https://www.epa.gov/system/files/documents/2023-05/TSD%20-%20Hydrogen%20in%20Combustion%20Turbine%20EGUs.pdf. .

there are already existing and planned projects that demonstrate hydrogen blending in a gas turbine, the Project does not demonstrate unique hydrogen blending research that cannot be obtained elsewhere.

Fourth, SDG&E does not appear to prioritize data gathering for the Project, which renders the ability to produce unique or novel information even less likely. The Project has been in operation since 2024, yet SDG&E is still in the process of developing a data collection framework with the University of California, Irvine Combustion Laboratory.[35] Furthermore, SDG&E does not currently meter several data points, including hydrogen used for cooling, and hydrogen leakage as well as water consumption volume and total power consumption for the electrolyzer.[36] SDG&E's lack of prioritization of data gathering for the Project undermines its claim that the Project will provide meaningful learnings.

2. The Project might increase GHG emissions.

SDG&E characterizes the Project as a "Decarbonization Demonstration Project,"[37] yet the asserted GHG emissions reductions for the Project are trivial. SDG&E claims that the Project will decrease carbon dioxide in three ways: "(1) by replacing trucked-in gray hydrogen with clean hydrogen generated onsite; (2) by replacing natural gas in one of the turbines with up to 2% hydrogen by volume; (3) by fueling hydrogen fuel cell vehicles that replaced gasoline-powered vehicles." However, the record shows that SDG&E overstates the GHG emissions reductions that will result from the Project.

First, SDG&E estimates that replacing the gray hydrogen PEC used previously with "green" hydrogen produced onsite results in 12 tons less carbon dioxide emissions per year.[38] SDG&E also estimates that utilizing the hydrogen fuel cell vehicles (FCEVs)

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[35] As of December 2025. *See* Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC-22.

[36] Ex. CalAdvocates-01, Cal Advocates Testimony, Attachment SDG&E Response to DR 01, Question 20, at 12, Question 22, at 13, Question 2h, at 3 and Question 2c, at 2-3.

[37] Application at 1.

[38] Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC 17.

will result in a reduction of 6 metric tons of carbon dioxide annually.[39] UCAN points out that these estimates rely on the assumption that the hydrogen is carbon free.[40] However, the Project generates hydrogen using solar energy and electricity from the grid, which does not account for the carbon emissions when solar energy is unavailable.[41] D.24-12-074 recognizes this fact in its discussion denying the Project, adding that under Public Utilities Code section 398.4(k)(3), SDG&E "may not make any clean energy or GHG claims for the hydrogen produced at Palomar using grid or fossil energy that only becomes 'green' due to the separate purchase of unbundled RECs."[42] SDG&E admits that it plans to do exactly that.[43] UCAN also estimates that the Project increased GHG emissions in 2025 by approximately 76 tonnes by providing electricity to the electrolyzer to produce hydrogen rather than supplying that same electricity to the grid.[44] Therefore, SDG&E overestimates the GHG reductions for the Project by incorrectly assuming that the hydrogen utilized for the Project is zero-emission, and record evidence shows that the Project likely increases GHG emissions.

Second, SDG&E claims that blending up to 2% hydrogen by volume into one of PEC's gas turbines could reduce carbon dioxide emissions from that turbine by approximately 0.617%.[45] This reduction is miniscule. Furthermore, the reduction is only at the point of combustion, which as UCAN highlights, means that the electricity consumed to make the hydrogen would have displaced more emissions had it been delivered to the grid.[46] Therefore, the Project increases GHG emissions relative to the

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[39] Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC 17-18.

[40] Ex. UCAN-01, *Prepared Testimony of Tyson Siegele on Behalf of Utility Consumers' Action Network* (UCAN Testimony) at 39.

[41] Ex. UCAN-01, UCAN Testimony at 39.

[42] D.24-12-074 at 406.

[43] Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC-6.

[44] Ex. UCAN-01, UCAN Testimony at 40.

[45] Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC-17; Ex. UCAN-01, UCAN Testimony at 9, n.30.

[46] Ex. UCAN-02, *Prepared Rebuttal Testimony of Tyson Siegele on Behalf of the Utility Consumers' Action Network* (UCAN Rebuttal Testimony) at 3.

alternative of not constructing the Project or storing renewable electricity in batteries.[47] A project that increases GHG emissions runs counter to California's GHG emissions reduction goals and is therefore not in the public interest.

3. SDG&E is the only entity that stands to benefit from the Project.

The only concrete benefit that SDG&E demonstrates regarding the Project is the operational knowledge SDG&E itself has gained from the Project. For example, SDG&E states that the Project has allowed it to "develop internal safety capabilities for hydrogen operations rather than relying solely on vendor knowledge" and gain "experience establishing hydrogen-specific operating and safety practices and [develop] internal knowledge regarding the safe design, operation, and maintenance of hydrogen equipment."[48] SDG&E also states that the Project allows SDG&E to gain operational experience with "hydrogen production, compression, dispensing, and vehicle fueling."[49]

SDG&E repeatedly touts the operational knowledge it has gained from the Project, but SDG&E's learnings do not serve the public interest unless they provide unique knowledge that other entities can utilize that cannot be obtained elsewhere. In response to TURN's showing that SDG&E fails to explain how the Project is a more effective approach than participating in EPRI,[50] SDG&E states that to do so would not achieve the *fundamental objectives* of the Project:

> [I]t would not provide: operating experience on SDG&E assets; operational data from PEC equipment; development of utility workforce training and operational procedures; maintenance experience; permitting experience; integration of hydrogen with SDG&E plant controls; utility safety program

[47] Ex. UCAN-02, UCAN Rebuttal Testimony at 3.

[48] Ex. SDGE-06, *Prepared Rebuttal Testimony of San Diego Gas & Electric Company* (SDG&E Rebuttal Testimony) at 32.

[49] Ex. SDGE-06, SDG&E Rebuttal Testimony at 23.

[50] Ex. TURN-01, *Prepared Testimony of William A. Monsen (Public Version)* (TURN Testimony) at 20.

development; or utility-specific emissions and performance data.[51]

SDG&E essentially admits that the Project was built first and foremost for its own benefit. In other words, rather than learn about hydrogen activities from available research produced by other organizations at far less cost, SDG&E chose to spend $17.4 million to construct the Project to gain primarily the same knowledge.

In sum, SDG&E fails to provide evidence that the Project will produce information that is unique and necessary to inform California's goal of utilizing hydrogen as a clean energy strategy. SDG&E also fails to show that the Project will meaningfully reduce GHG emissions, if at all. Finally, the only clear beneficiary of the Project is SDG&E itself. Therefore, SDG&E fails to demonstrate that the Project is in the public interest. SDG&E fails to demonstrate that the Project is in the public interest or that it fixed the deficiencies that caused the denial of the Project in D.24-12-074. The Commission should deny SDG&E recovery of all costs associated with the Project.

B. SDG&E does not justify the Project costs.

SDG&E requests $17.4 million in capital and future O&M costs for the Project.[52] However, SDG&E does not provide capital or O&M costs for the individual components of the Project. Further, SDG&E does not provide justification for the individual Project components. As such, SDG&E fails to demonstrate that the Project costs are just and reasonable.[53]

1. SDG&E fails to provide capital or O&M costs for the individual project components.

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[51] Ex. SDGE-06, SDG&E Rebuttal Testimony at 20-21 (emphasis added).

[52] Application at 2.

[53] Public Utilities Code § 454. "[N]o public utility shall change any rate or so alter any classification, contract, practice or rule as to result in any new rate, except upon a showing before the commission and a finding by the commission that the new rate is justified." *See also D.08-12-058, Decision Granting a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project, issued December 24, 2008, at 17, quoting D.06-05-016, Opinion on Southern California Edison Company's Test Year 2006 General Rate Increase Request, issued May 11, 2006, at 7* and Public Utilities Code § 451.

SDG&E does not provide capital or O&M costs for the individual Project components, which include: the electrolyzer, hydrogen storage system, hydrogen dispensing equipment, and hydrogen fueling station in its testimony or Application.[54] When asked for these individual costs, SDG&E stated that costs could not be broken down by component, and instead provided Cal Advocates with the aggregate capital and O&M costs for the Project without identification of the costs associated with individual Project components.[55] In rebuttal testimony, SDG&E contradicts its prior claim that aggregate costs could not be broken down by component and states that a contract it provided to intervenors during discovery contains individual cost component information for the electrolyzer, hydrogen compressor, and hydrogen refueling station.[56] However, the contract lacks price information for the hydrogen storage and dispenser, as well as a breakdown of O&M costs. Further, SDG&E requests recovery based on aggregate Project costs, but attributes different operational purposes and benefits to different components of the Project.[57] Without a *complete* breakdown of Project costs by individual component, SDG&E fails to demonstrate that the purported benefits of each component justify the cost proposed for recovery.[58]

2. SDG&E fails to justify the costs of the individual components.

SDG&E fails to identify benefits or present a cost-benefit analysis for each component or otherwise justify the individual component costs.

a) Electrolyzer

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[54] Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC--23; Application at 3.

[55] Ex. CalAdvocates-01, Cal Advocates Testimony, Attachments SDG&E Response to DR 2, Question 3, at 2, Final WP 1-Capital Costs, and Final WP 2 – O&M Costs.

[56] Ex. SDGE-06, SDG&E Rebuttal Testimony at 21.

[57] Ex. CalAdvocates-01, Cal Advocates Testimony at 3-4.

[58] *See* Public Utilities Code §§ 451 and 454 and *D.08-12-058, Decision Granting a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project, issued December 24, 2008, at 17, quoting D.06-05-016, Opinion on Southern California Edison Company's Test Year 2006 General Rate Increase Request, issued May 11, 2006, at 7.*

SDG&E requests recovery of costs associated with a proton exchange membrane (PEM) electrolyzer to produce hydrogen onsite.[59] SDG&E provides a detailed technical description of the electrolyzer and its operation[60] but fails to demonstrate that onsite hydrogen production provides sufficient benefits to justify the investment.

Prior to constructing the Project, PEC obtained the hydrogen it used for generator cooling from commercial suppliers.[61] SDG&E admits that it has not conducted the cost-comparison analysis necessary to determine whether its replacement of commercially supplied hydrogen with onsite hydrogen production represents a reasonable or cost-effective investment.[62] Similarly, SDG&E provides no analysis that demonstrates that onsite production improves plant reliability, reduces long-term operating costs, or provides any other measurable benefits that might justify the significant costs required to install the electrolyzer. The benefits touted by SDG&E are that the Project provides operational experience with gas turbine combustion, heat rate impacts, emissions monitoring, and utility-scale power plant operations.[63] However, SDG&E does not show that this operational knowledge from a single 1.25 MW electrolyzer[64] at one combined-cycle generating station will materially advance California's clean energy strategy. Therefore, SDG&E fails to demonstrate that the installation of the electrolyzer for onsite hydrogen production provides incremental benefits sufficient to justify the costs.

b) Hydrogen Storage System

SDG&E requests recovery of costs associated with a hydrogen storage system consisting of ten American Society of Mechanical Engineers (ASME)-certified pressure

[59] Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC-6-7.

[60] Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC-7.

[61] Application at 3.

[62] Ex. CalAdvocates-01, Cal Advocates Testimony, Attachment SDG&E Response to DR 3, Question 8, at 9.

[63] Ex. CalAdvocates-01, Cal Advocates Testimony, Attachment SDG&E Response to DR 3, Question 2, at 2.

[64] Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC-7.

vessels.[65] As stated above, SDG&E did not specify the capital and O&M costs associated with the storage system. SDG&E does not demonstrate that the size, configuration, or capabilities of the storage system provide benefits sufficient to justify its cost recovery.

SDG&E claims that the storage system can maintain approximately six hours of operation at a 2% hydrogen blend.[66] SDG&E states that approximately 1.8 kilograms of hydrogen are required per day to cool the generator during normal operations, with approximately 60 kilograms required to refill the cooling system after plant outages.[67] The Project's hydrogen storage system holds approximately 250 kilograms of hydrogen.[68] The hydrogen storage system is therefore substantially larger than necessary to satisfy PEC's existing operation need for generator cooling.[69] This indicates that the storage system was designed principally to facilitate the demonstration of hydrogen blending rather than to satisfy existing operational needs.[70] SDG&E does not present analysis or quantify the additional benefit achieved from storing hydrogen for blending compared to maintaining only the amount necessary to cool the generator. By failing to illustrate the incremental benefits of the extra hydrogen storage capability, SDG&E fails to establish that the cost of the hydrogen storage system is reasonable.

c) Hydrogen Compressor

SDG&E requests recovery of costs associated with a two-stage diaphragm hydrogen compressor that increases hydrogen pressure from approximately 30 bar at the electrolyzer to 450 bar for storage.[71] SDG&E does not explain how it selected the size, technology, or pressure capability of the compressor or provide an analysis of cost comparison with smaller compressors, alternative technologies, leased equipment,

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[65] Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC-9.

[66] Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC-9.

[67] Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC-9.

[68] Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC-4.

[69] Ex. CalAdvocates-01, Cal Advocates Testimony at 9-10.

[70] Ex. CalAdvocates-01, Cal Advocates Testimony at 10.

[71] Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC-8.

delivered compressed hydrogen, or other potentially lower-cost configurations. Furthermore, while hydrogen compression is necessary to operate SDG&E's chosen system configuration, its reasonableness relies entirely on the reasonableness of the electrolyzer and hydrogen storage system that it enables to operate. As SDG&E fails to justify the costs of the electrolyzer and hydrogen storage system components of the Project, it cannot justify the cost of the hydrogen compressor.

d) Hydrogen Fueling Station

SDG&E requests recovery of costs associated with a hydrogen fueling module and dispensing station to fuel FCEVs.[72] Two Toyota Mirai FCEVs authorized in D.24-12-074 currently fuel at PEC.[73] D.24-12-074 explicitly denies capital and O&M costs for the hydrogen fueling station, finding that SDG&E could fuel its hydrogen-powered vehicles at public stations using the $15,000 fuel cards it received with the FCEVS.[74] SDG&E states in rebuttal that it only received one fuel card for the FCEVS,[75] but identifies no material change in circumstances to warrant a different outcome than D.24-12-074. Further, SDG&E presents no evidence that public hydrogen fueling infrastructure is no longer available, operationally inadequate or imposes unreasonable costs or reliability concerns. In addition, SDG&E fails to analyze or quantify incremental costs, operational benefits, or reliability improvements associated with constructing and operating the PEC onsite fueling station as opposed to utilizing existing public refueling infrastructure. Therefore, SDG&E fails to justify the costs of the Project's hydrogen refueling system.

SDG&E fails to provide a complete cost breakdown of the individual Project components and fails to provide justification for the costs of the individual Project components. Without the detailed, complete cost breakdown and justification for each component of the Project, it is unreasonable for ratepayers to fund the Project. The

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[72] Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC-11.

[73] Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC-12.

[74] D.24-12-074 at 394.

[75] Ex. SDG&E-06, SDG&E Rebuttal Testimony at 23.

Commission should therefore deny SDG&E recovery of all costs associated with the Project.

3. SDG&E fails to leverage public and private funding sources.

As stated previously, D.24-12-074 encourages SDG&E to reconsider its proposal for the Palomar Hydrogen Systems Project "with a fresh perspective to take advantage of private institutions that want to test their technology and other public funding sources to help reduce costs to ratepayers."[76] SDG&E identifies three revenue offsets associated with the Project: Investment Tax Credit (ITC), Low Carbon Fuel Standard (LCFS) credits, and Renewable Energy Certificate (REC) revenue.[77]

SDG&E does not show that it followed the Commission's direction in pursuing external funding sources for the Project. First, the RECs generated by the Project do not equate to external funding. The RECs generated by the onsite photovoltaic system are retired to satisfy the IRS' annual matching requirements associated with the Section 45V hydrogen production tax credit.[78] In the absence of those RECs, SDG&E would instead purchase eligible RECs from the market to satisfy the same requirement.[79] In other words, the RECs function primarily as an avoided operating expense instead of a funding source.

Second, the ITC and LCFS benefits are merely available tax incentives for qualifying projects. The receipt of such tax incentives does not equate to pursuing grants, cost-sharing agreements, research partnerships, or any other third-party funding mechanisms described in D.24-12-074.[80] Finally, SDG&E fails to produce evidence that it sought funding through federal hydrogen demonstration programs, Department of

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[76] D.24-12-074 at 406.

[77] Ex. CalAdvocates-01, Attachment SDG&E Response to DR 2, Question 4, at 3-4.

[78] Ex. SDGE-01, *Prepared Direct Testimony of Ari Beer on Behalf of San Diego Gas & Electric Company, Chapter 1 – Policy* (SDG&E Chapter 1 Testimony) at AB-31.

[79] Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC-6.

[80] D.24-12-074 at 406.

Energy grant opportunities, California Energy Commission programs, California's Greenhouse Gas Reduction Fund, public-private partnerships, industry collaborations, or other state and federal funding sources that support hydrogen research, development, and demonstration projects. Therefore, SDG&E fails to demonstrate that it followed the D.24-12-074 recommendation to leverage external funding in order to reduce financial burden on ratepayers.

In short, SDG&E fails to provide the costs of the individual Project components, fails to provide sufficient justification for the individual Project components, and fails to demonstrate pursuit of external funding for the Project to lower ratepayer burden in accordance with D.24-12-074. As such, SDG&E fails to meet its burden to establish that the Project costs are just and reasonable. The Commission must therefore deny recovery of all costs associated with the Project.

C. SDG&E fails to demonstrate that the Project will benefit ratepayers.

SDG&E requests $17.4 million in ratepayer reimbursements for the Project yet fails to show that the Project will benefit ratepayers. First, as explained in Section A. above, SDG&E fails to demonstrate that the Project is in the public interest, so SDG&E cannot demonstrate that ratepayers would receive even general societal benefits from the Project. For example, ratepayers do not benefit from a $17.4 million dollar Project that might reduce GHG emissions by 0.617%, let alone from a Project that will likely *increase* GHG emissions.[81]

Second, SDG&E states that it "would be performing a disservice to ratepayers by not preparing for a future where hydrogen is more commonly used."[82] SDG&E seems to argue that ratepayers benefit from the Project because it contributes to SDG&E's preparation for a speculative and assumed increased use of hydrogen in the future. Yet, even if hydrogen use does increase in California in the future, it is unclear how the

[81] *See* Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC-17, lines 6–8; Ex. UCAN-01, UCAN Testimony at 40; and Ex. UCAN-02, UCAN Rebuttal Testimony at 3.

[82] Ex. SDG&E-06, SDG&E Rebuttal Testimony at 15.

ratepayer benefit of "preparing for a future where hydrogen is more commonly used" applies to a Project incapable of expansion and scheduled to sunset within ten years. Indeed, the end book life of the PEC plant is 2036.[83] SDG&E fails to show how investing in a Project that will expire in ten years prepares for future increases in hydrogen usage.

Furthermore, it is unreasonable to burden ratepayers with costs for assets that will be out of use in ten years. In addition, the record evidence shows that the Project is not scalable in that there is no room at PEC to significantly expand the infrastructure necessary to utilize more hydrogen.[84] D.24-12-074highlights these as concerns in its denial of the Project:"[w]e do not know if the pilot facility has room for expansion due to space limitations and the decommissioning dates of its generation units…"[85] As such, SDG&E again fails to show that the Project prepares for a future of increased hydrogen usage that will benefit ratepayers.

In its Application, SDG&E fails to demonstrate how ratepayers will benefit from the Project. It is unreasonable for ratepayers to fund a Project from which they do not benefit. Therefore, the Commission should deny SDG&E's request for approval of the Project and associated cost recovery.

V. CONCLUSION

The Commission should deny the Application because SDG&E fails to demonstrate that the Project serves the public interest, to justify the Project costs, and to demonstrate that the Project benefits ratepayers. As the benefits to the Project, if any, are outweighed by the $17.4 million in cost to ratepayers, SDG&E fails to show that the Project costs are just and reasonable. Further, SDG&E chose to expend the funds despite the Commission's denial in a previous application, and before they received Commission approval in the present application. The Commission should not make ratepayers pay for

[83] Ex. SDGE-02, SDG&E Chapter 2 Testimony at PK_KC-23.

[84] Ex. CEJA-01, *Prepared Testimony of Sara Gersen on Behalf of CEJA* (CEJA Testimony) at 3.

[85] D.24-12-074 at 405.

SDG&E's speculative project which still, despite a second bite at the apple, fails to meet the minimum requirements established by the Commission. The Commission must therefore deny the Project and its associated cost recovery.

Respectfully submitted,

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