

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**



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Application of Southern California Gas Company (U904G), San Diego Gas & Electric Company (U902), Pacific Gas and Electric Company (U39G) and Southwest Gas Corporation (U905G) to Establish Hydrogen Blending Demonstration Projects.

Application 22-09-006
(Filed September 8, 2022)

SIERRA CLUB OPENING BRIEF

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On Behalf of Sierra Club

Dated: May 4, 2026

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SUMMARY OF RECOMMENDATIONS

Sierra Club recommends that the Commission deny the Joint Amended Application in full because the Joint Applicants have failed to meet their respective burdens of proof to demonstrate:

1. That authorizing their requested revenue requirements would be prudent and would result in just and reasonable rates (Scoping Issues 1 and 3);
2. That their proposed projects are consistent with Commission and State policies regarding climate, energy affordability, and public health (Scoping Issues 1, 3, 4, and 5);
3. That their proposed projects comply with all requirements of D.22-12-057 (Scoping Issues 1, 2, 3, 4, and 5);
4. That their proposed projects are well-designed and will result in useful and additive data that would close the knowledge gaps identified in the University of California Riverside Study (Scoping Issues 1, 2, and 3);
5. That their proposed projects do not present unreasonable safety risks (Scoping Issues 1 and 4); and
6. That their proposed projects are consistent with the Environmental and Social Justice Action Plan (Scoping Issues 1 and 5).

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SIERRA CLUB OPENING BRIEF

Pursuant to Rule 13.12 of the California Public Utilities Commission (“Commission”) Rules of Practice and Procedure and the March 9, 2026 E-Mail Ruling Directives and Guidance for Final Briefing, Sierra Club submits this Opening Brief.

I. INTRODUCTION

In this proceeding, the Commission confronts a proposal to spend more than \$200 million to try a building decarbonization strategy that likely has no role in affordably achieving California’s climate goals. In an era of acute affordability concerns, it would be especially unjustified to pour such a significant amount of money into a dead-end climate strategy. An abundance of analysis from both California agencies and independent experts shows that electrification is the least-cost option for decarbonizing the end-uses that currently rely on the gas system. Gas utilities and certain other market participants have an interest in using ratepayer funds for hydrogen blending, despite its high and unnecessary costs. It is the Commission’s responsibility to maintain just and reasonable rates by rejecting proposals that promote the interests of gas utility shareholders to the detriment of ratepayers. This is precisely what regulators in Colorado and Massachusetts

have done when they denied proposals to pilot hydrogen blending, observing that this technology has no clear role in achieving those states' ambitious climate goals.

Moreover, the pilots before the Commission in this amended application fail to adhere to the Commission's directives in D.22-12-057, and even if authorized, will not close the significant knowledge gaps around hydrogen blending impacts identified in the Commission's 2022 UC Riverside Study.¹ Each of the specific pilot proposals has fatal flaws that warrant their rejection. This brief discusses the failings of Pacific Gas & Electric's ("PG&E") pilot, Southwest Gas' ("SW Gas") pilot, Southern California Gas Company's ("SoCalGas") pilot at UC Irvine, and San Diego Gas & Electric Company's ("SDG&E") pilot. Sierra Club supports Leadership Counsel for Justice and Accountability and Orange Cove United's ("LCJA/OCU") explanation of why the Commission should reject SoCalGas' pilot in Orange Cove, and Wild Tree Foundation's explanation of why the Commission should reject SDG&E's pilot.

The Commission should not be distracted by policy statements supporting the potential use of hydrogen in hard-to-decarbonize sectors. Even if California's hydrogen industry has the potential to develop and serve these niche use cases, this has no bearing on the prudence of spending significant ratepayer funds on hydrogen blending in situations where electrification is an available, lower-cost decarbonization pathway. Here, the Commission need not consider the viability of delivering pure hydrogen to customers in hard-to-decarbonize sectors because this application only deals with hydrogen

¹ Exh. SCG-07 at 131–132.

blending, which displaces a small amount of gas in the methane pipeline system that serves residential and small business customers.² Accordingly, the Massachusetts Department of Public Utilities decided to look no further at hydrogen blending,³ while allowing utilities to propose hydrogen demonstration projects for targeted, hard-to-decarbonize end uses that meet cost-effectiveness standards.⁴ Regardless of the viability of hydrogen for other end-uses, the weak economics of hydrogen blending render these pilots imprudent.

II. LEGAL STANDARD

Public Utilities Code Section 451 requires all utility charges demanded or received to be “just and reasonable.”⁵ In an application proceeding, the applicant “bears the burden of affirmatively establishing the reasonableness of all aspects of its application” by “a [p]reponderance of evidence.”⁶ The Commission has defined preponderance of the evidence “in terms of probability of truth, *e.g.*, ‘such evidence as, when weighed with that opposed to it, has more convincing force and the greater probability of truth.’”⁷ In other words, “[a]n applicant utility must present more evidence that supports the result requested than would support an alternative outcome.”⁸

² Exh. EDF-01 at 15 (“per a PG&E data request response, there are *no* locations on PG&E’s gas system where blending hydrogen into the transmission level pipe does not then flow into the distribution pipe”).

³ Exh. SC-01 at 26:4–16.

⁴ Exh. SC-01, Attach. 17, Mass. D.P.U. 20-80-B, Order on Regulatory Principles and Framework, at 84. Hydrogen blending does not support a transition to pure hydrogen for hard-to-electrify customers. Exh. SC-01 at 37:17–38:2.

⁵ Cal. Pub. Util. Code § 451.

⁶ D.24-01-004 at 17.

⁷ *Id.* (citation omitted).

⁸ D.24-12-074 at 17.

The Commission has made clear that a utility’s failure to meet its ultimate burden of proof can result from a failure to make an adequate direct showing, or where the utility has failed to overcome reasonable doubts raised in other parties’ showings.⁹ Crucially, “[o]ther parties do not have the burden of proving the unreasonableness” of a utility applicant’s showing.¹⁰ And where the Commission is unable to determine that the costs are just and reasonable, including because the utility failed to meet its burden of proof, it “can and must disallow those costs: that is, unjust or unreasonable costs must not be recovered in rates from ratepayers.”¹¹

In dismissing the first Joint Utility proposal for hydrogen blending pilots, the Commission reiterated that any future proposals for ratepayer-funded hydrogen blending research must be “just and reasonable,” but also stated that they must be “efficient” and “cost-effective.”¹² In addition to these general requirements, the Commission set forth specific requirements for these pilot proposals in D.22-12-057.¹³

III. DISCUSSION

A. The Commission Should Deny the Application Because All the Pilots Are an Imprudent Use of Ratepayer Funds and Inconsistent with State Policy.

The record evidence does not justify spending \$206 million to pilot hydrogen blending. This spending would be imprudent without persuasive evidence that such a

⁹ See, e.g., D.24-01-004 at 17; D.09-03-025 at 8; D.06-05-016 at 7.

¹⁰ D.09-03-025 at 8.

¹¹ D.18-07-025 at 5 (quoting D.14-06-007).

¹² D.21-07-005 at 22.

¹³ D.22-12-057 at 34 (directing the Joint Utilities to file a Joint Application for hydrogen blending tests and directing that “[t]he Joint Application shall be consistent with the other adopted courses of action specified in this decision for pilot projects relevant to leakage, reporting, heating value, system safety, environmental considerations, etc.”); *id.* at 22–23, 25, 27, 29–30, 31–33, 34–35, 37–39, 43, 47–49 (the referenced “adopted courses of action”); 68–70, OP #7.

substantial investment of ratepayer funds is likely to advance California’s climate goals. There is no such evidence in the record; rather, there *is* extensive evidence that it will not.

For similar reasons, none of the projects are consistent with bedrock regulatory requirements. Specifically, approving the pilots would be incompatible with the Commission’s duty to approve only just and reasonable rates. In this era of acute energy affordability concerns,¹⁴ it would be particularly unjust to force California’s ratepayers to bear the cost of demonstrating a technology with dubious benefits for them when lower-cost alternatives are available.

Additionally, all the pilots are fatally flawed because they are inconsistent with several state policies that are designed to ensure Californians experience a stable climate, affordable energy bills, and equitably distributed environmental benefits and risks. The utilities have not offered evidence that could reconcile their proposals with California’s long-term climate and affordability goals, and the cursory policy arguments in their joint application do not withstand scrutiny. It would be profoundly unreasonable for the Commission to approve hundreds of millions of dollars in ratepayer spending on hydrogen blending without persuasive evidence that it is a viable part of a cost-effective energy transition.

1. Scoping Issue 3: Are the pilots prudent? No.

It is imprudent to spend more than \$200 million to pilot a technology that has no viable role in meeting California’s long-term energy needs. Decisions from utility

¹⁴ See D.24-12-074 at 2 (“California ratepayers are facing an affordability crisis with record-high arrearages and utility bills.”).

regulators in Colorado and Massachusetts exemplify this commonsense approach to prudence, while policymakers in other jurisdictions agree that hydrogen blending is not a cost-effective decarbonization strategy. The record in this case shows that spending ratepayer funds on hydrogen blending pilots would be just as wasteful in California.

In 2024, the Colorado Public Utilities Commission (“Colorado PUC”) denied ratepayer funding for a hydrogen blending demonstration because it would be imprudent to pilot a strategy without evidence that it could scale responsibly. Colorado’s large investor-owned gas utility failed to outline “a clear path . . . for the blending of green hydrogen on the gas system to be a least-cost, emissions-reducing clean heat resource.”¹⁵ The Colorado PUC was troubled that there was no “realistic vision of the role that green hydrogen would or could play as a safe and cost-effective solution on the system at large.”¹⁶ Consequently, the PUC found it unclear how “the demonstration project would be helpful or a prudent use of ratepayer dollars, in pursuit of a deeply decarbonized future system.”¹⁷ In that decision, the Colorado PUC rejected a proposal to spend \$26 million on hydrogen blending, while approving other clean heat investments that did not have this defect.¹⁸ This is an order of magnitude less than the revenue requirement the applicants have requested for hydrogen blending in this case. Thus, even with a much smaller amount of money at stake, the Colorado PUC deemed it imprudent to approve a revenue

¹⁵ Exh. SC-01, Attach. 16, Colo. Pub. Util. Comm’n Decision No. C24-0397, at 82.

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ *Id.* at 49, 51.

requirement to develop a technology with no clear role in a least-cost decarbonization scenario for achieving the state’s climate goals.

Similarly, the Massachusetts Department of Public Utilities (“DPU”) rejected their own consultant’s recommendation to pilot hydrogen blending due to “uncertain[ty] about the viability of . . . hydrogen technologies and their potential as economical long-term solutions for ratepayers.”¹⁹ The Massachusetts regulators refused to force ratepayers to bear the cost of hydrogen blending technologies “until they prove to be a viable alternative to the business-as-usual model and support the Commonwealth’s climate targets.”²⁰ The Massachusetts DPU found other promising building decarbonization technologies warranted ratepayer-funded pilots.²¹ Likewise here, the record casts serious doubts on the viability of hydrogen blending as an economical long-term solution. The Commission should align with Colorado and Massachusetts regulators by protecting customers from paying unjustified hydrogen blending costs and focus scarce ratepayer funds on strategies with a clear role in meeting California’s ambitious climate targets.

Policymakers in other jurisdictions agree that hydrogen blending is not a cost-effective use of scarce climate funding. In 2023, the European Parliament found that “blending of hydrogen into the natural gas system *should be a last resort solution*, as it is less efficient compared to the use of hydrogen in its pure form and diminishes the value of hydrogen” and recommended that “*all efforts* should be *made to avoid the use of*

¹⁹ Exh. SC-01, Attach. 17, Mass. D.P.U. 20-80-B, Order on Regulatory Principles and Framework, at 79.

²⁰ *Id.* at 71–72.

²¹ *See e.g., id.* at 87 (ordering feasibility studies to support targeted electrification pilots).

*hydrogen for applications with regard to which more energy-efficient alternatives exist, such as the heating of buildings, and the production . . . of low-grade heat for industrial processes.”*²² The Oregon Department of Energy also concluded that “[b]lending renewable hydrogen into a natural gas pipeline may not be a cost-effective end use for hydrogen if greenhouse gas emission reductions are the primary goal,” based on a review of technical studies in its 2022 policy brief on transforming the natural gas sector to meet the state’s climate goals.²³ It is not prudent for the Commission to direct hundreds of millions of ratepayer dollars toward a strategy that is not cost-effective.

There is ample, undisputed evidence that hydrogen blending is incompatible with achieving California’s long-term climate goals at least cost. A fatal flaw in the pilots is that the utilities seek to demonstrate a method for reducing 6.3% of the carbon emissions from burning pipeline gas, without a pathway for abating the remaining 93.7%.²⁴ Researchers have described hydrogen blending as a “dead-end” strategy because there is no credible means of decarbonizing the rest of the gas in the pipeline after full implementation of hydrogen blending.²⁵ Experts treat 7% energy content as the feasible limit for hydrogen blending because higher blends would likely require widespread infrastructure and appliance upgrades.²⁶ Thus, hydrogen blending reduces the carbon emissions from gas end-uses by, at most, 6–7%, and lacks complementary strategies for

²² Exh. SC-01 at 5:6–12 (emphasis in original).

²³ *Id.* at 27:3–17.

²⁴ Joint Amended Application at 10.

²⁵ Exh. SC-01 at 20; Exh. UCAN-01R at 4:6–8:7; Ex. SC-02 at 5:8–6:5.

²⁶ *See, e.g.*, SC-01, Attach. 8, CEC, The Challenge of Retail Gas in California’s Low-Carbon Future, at 40; SC-01, Attach. 18, Oregon Department of Energy, 2022 Biennial Energy Report, at 443.

fully decarbonizing pipeline gas, as discussed in the next paragraph. A strategy with such limited potential is incompatible with California’s climate policy, which demands “net zero greenhouse gas emissions as soon as possible, but no later than 2045.”²⁷

It is imprudent to devote scarce ratepayer resources to the proposed pilots when it is likely impossible to achieve California’s net zero greenhouse gas policy through a hydrogen blending strategy²⁸—at least not without sacrificing affordability. There is simply not enough biomethane available to decarbonize the gas pipeline through a strategy that combines hydrogen blending and biomethane procurement. Even under the gas industry’s most ambitious scenarios, biomethane from waste streams could only replace about 9% of the fossil gas used in the United States, and the industry acknowledges a low-resource potential scenario with less than half as much biomethane available from waste.²⁹ That is why the California Energy Commission’s (“CEC”) reports recommend prioritizing biomethane for hard-to-electrify sectors.³⁰ Even if it were theoretically possible to decarbonize the gas pipeline through a combination of hydrogen and other fossil gas alternatives, it would be exorbitantly expensive.³¹ It would be imprudent to force ratepayers to spend over \$200 million on these pilots, when there is nothing in the record that can reconcile hydrogen blending’s limited potential with California’s ambitious climate policies and affordability goals.

²⁷ Cal. Health and Safety Code § 38562.2(c)(1).

²⁸ Exh. UCAN-01R at 4:6–8:7.

²⁹ Exh. SC-01 at 22.

³⁰ *Id.* (citing Attach. 8, CEC, The Challenge of Retail Gas in California’s Low-Carbon Future).

³¹ *Id.* at 22–23; Exh. UCAN-01R at 20:9–21:8.

The proposed pilots are especially imprudent because there are established alternatives to decarbonize California’s building sector that do not suffer from hydrogen blending’s fatal flaws. Specifically, heat pumps and other electric appliances are already available at lower cost than hydrogen blending *and* these electric technologies offer a viable pathway to complete decarbonization.³² The cost savings from relying on electrification instead of hydrogen can be dramatic: a review of thirteen consumer cost studies found that the cost of hydrogen heating ranged from 27%–650% higher than electrification pathways for home heating, with a median of 86% higher.³³ Consequently, even if the pilots “succeed” at demonstrating the technical feasibility of hydrogen blending, this demonstration would not advance California’s ability to achieve its climate policies at a reasonable cost.³⁴

The dismal economics of hydrogen blending as a decarbonization strategy for residential and small business customers will persist regardless of the broader fate of California’s hydrogen industry. In detailed testimony and exhibits, intervenors show that the economic disadvantages of hydrogen blending stem from inherent physical properties that make hydrogen a far less efficient means of using renewable energy than electric appliances.³⁵ These inherent challenges explain why hydrogen blending is no more worthy of ratepayer support in California than it is in Colorado, Massachusetts, or any other jurisdiction that responsibly shepherds scarce resources.

³² Exh. SC-01 at 4–9; Exh. UCAN-01R at 21:9–22:5.

³³ Exh. SC-01 at 9.

³⁴ Exh. UCAN-01R at 42:25–43:13.

³⁵ Exh. SC-01 at 5–9; Exh. UCAN-01R at 3–21; Exh. EDF-01 at 11–15.

Consistent with the independent experts who see no economic role for hydrogen in building decarbonization,³⁶ California’s policymakers have recognized that widespread building electrification is the best way to decarbonize the building sector.³⁷ For instance, a 2024 joint agency report from the Commission, California Air Resources Board (“CARB”), and CEC staff found that “[e]lectrification is the best fit for decarbonizing homes and commercial buildings” and does not list hydrogen blending among its noted approaches for building decarbonization.³⁸ Likewise, the CEC’s 2021 Integrated Energy Policy Report identified building electrification as a “perfect pathway to decarbonize buildings” and does not even mention hydrogen blending as a potential solution for residential and commercial buildings.³⁹ In the CEC’s 2021 California Building Decarbonization Assessment, the “Aggressive Electrification” scenario is the only one that aligns with California’s climate goals.⁴⁰ A scenario that assumes the availability of “low cost” synthetic gas achieves about one seventh the carbon reduction at a far higher cost per ton of carbon abatement.⁴¹ It is imprudent to force ratepayers to support pilots in pursuit of a doubtful building decarbonization solution when California’s leaders have already identified another more cost-effective option.

Although D.22-12-057 continued the Commission’s process for consideration of hydrogen blending, several developments since 2022 have settled that the proposed pilots

³⁶ Exh. UCAN-01R at 24:22–32:15, 42:25–43:13.

³⁷ *Id.* at 22:6–24:4.

³⁸ Exh. SC-01 at 9–10.

³⁹ *Id.* at 10.

⁴⁰ *Id.* at 10–11 (citing Attach. 7, CEC’s California Building Decarbonization Assessment).

⁴¹ *Id.* at 10–11.

do not align with California’s energy affordability goals, which have grown more critical in the ensuing years. For instance, while the Commission once hoped that the federal government might offset the cost of hydrogen blending, the utilities could not find any such federal funding opportunities, which is consistent with the 2023 National Clean Hydrogen Strategy and Roadmap’s call to “[t]arget strategic, high-impact uses for clean hydrogen.”⁴² Likewise, the Alliance for Renewable Clean Hydrogen Energy Systems submitted a hydrogen hub application that did not include any hydrogen pipeline blending.⁴³ Further, while the Commission may have assumed in 2022 that green hydrogen costs would significantly decrease, this has not occurred.⁴⁴ Meanwhile, recent independent studies confirm that electrification is still the most cost-effective decarbonization solution for the building sector.⁴⁵ Accordingly, the 2024 Joint Agency Report from the Commission, CARB, and CEC identified electrification as the best fit for building decarbonization.⁴⁶ It would be unjust and unreasonable for the Commission to increase rates to further pursue hydrogen blending now that additional analysis from independent and agency experts identifies more cost-effective options for decarbonizing equipment on the gas distribution system and it has become clear that federal support will not defray the unnecessary costs of hydrogen blending.⁴⁷

⁴² *Id.* at 41. Similarly, the DOE’s 2023 report on pathways to commercial liftoff for clean hydrogen recommended several actions to invest in the development of midstream distribution infrastructure, none of which involve blending hydrogen in the gas system. *Id.* at 36.

⁴³ Exh. SC-01 at 43.

⁴⁴ Exh. UCAN-01R at 16:8–18:6.

⁴⁵ Exh. SC-01 at 40–41.

⁴⁶ Exh. SC-01, Attach. 6, R.20-01-007, 2024 Joint Agency Staff Paper: Progress Toward a Gas Transition, at 14.

⁴⁷ Exh. UCAN-01R at 16:13–18:6, 43:7–13.

The pilots in this case are no more prudent than the hydrogen blending initiatives that regulators in Colorado and Massachusetts rejected as imprudent. Hydrogen blending would be an unnecessarily expensive strategy for achieving incremental carbon reductions in the building sector, which is why California agencies have zeroed in on electrification as the best decarbonization strategy for that sector.⁴⁸ It is doubtful that hydrogen blending could play a role in meeting California’s long-term climate goals at any cost, as there is no feasible way to decarbonize the rest of the gas pipeline after reaching the limits of this dead-end solution. Moreover, it would not be prudent to invest ratepayer funds in pilots that conflict with California’s energy, affordability, and climate policies by encouraging further capital investments in the gas distribution system, undermining electrification, and perpetuating or increasing health-harming emissions.⁴⁹ For these reasons, all the pilots in the application are imprudent.

2. Scoping Issue 1: Do the pilots conform to regulatory requirements? No.

California law requires the Commission to set rates that are just and reasonable.⁵⁰ The Commission has recently recognized that the prohibition on unjust and unreasonable rates precludes approving a revenue requirement when an applicant fails to demonstrate that their proposed project offers the most cost-effective solution to a problem. In D.24-12-074, the Commission rejected a request for a \$5.252 million hydrogen energy storage system for a microgrid because “SDG&E’s failure to demonstrate that hydrogen is the

⁴⁸ *Id.* at 22:6–24:4.

⁴⁹ See Section III.A.3.

⁵⁰ Cal. Pub. Util. Code § 451.

most cost-effective storage option for ratepayers raises concerns about cost reasonableness under Section 451.”⁵¹ In this case, the applicants have failed to show the pilots are part of a cost-effective strategy for serving customers or achieving state goals—with even greater costs to ratepayers on the table than the storage system that was rejected in D.24-12-074.

The just and reasonable standard tests whether a utility’s actions are expected “to accomplish the desired result at the lowest reasonable cost consistent with good utility practices.”⁵² The Commission found Southern California Edison’s (“SCE”) proposal for a building electrification program failed to meet this standard because the utility did “not show by a preponderance of evidence that it will achieve the estimated [greenhouse gas] emissions reductions at least cost.”⁵³ The Commission emphasized that “[i]t is vital to refrain from spending limited ratepayer resources without a high degree of confidence that the dollars spent will achieve the best outcome.”⁵⁴ Similarly, the Commission cannot approve this application unless the applicants show by a preponderance of the evidence that the hydrogen blending pilots would enable least-cost greenhouse gas reductions.

The gas utilities do not meet their burden of proof because they fail to provide any persuasive evidence that the proposed pilots are part of a least-cost greenhouse gas emissions reduction strategy. Meanwhile, Sierra Club’s analysis found that even under optimistic scenarios for hydrogen pricing, and even ignoring all of the other costs

⁵¹ D.24-12-074 at 1056, COL #113.

⁵² D.24-01-004 at 16 (quoting D.17-11-033 at 10).

⁵³ *Id.* at 42.

⁵⁴ *Id.*

associated with blending hydrogen into the gas system, carbon abatement costs for hydrogen blending would be at lowest, \$283.50/metric ton, compared to the CEC's estimates of \$142/metric ton for efficient, aggressive electrification strategies.⁵⁵ Thus, the record shows that a revenue requirement for these pilots would devote ratepayer funds to a decarbonization strategy that is less cost-effective than available alternatives.

Finally, the high cost of these pilots makes it particularly difficult to reconcile them with the Commission's duty to ensure just and reasonable rates. In D.21-07-005, the Commission rejected an application for a \$31.8 million dollar hydrogen blending program partly due to concerns that cost recovery would result in charges that are not just and reasonable.⁵⁶ Here, the utilities propose a hydrogen blending research program that would cost more than six times as much as the program it rejected in 2021. These expensive and unnecessary projects are inconsistent with just and reasonable rates.

3. Scoping Issue 1(c): Does each pilot project align with broader state energy and climate goals? No.

Each of the pilot projects conflicts with important state energy, climate and equity policies. Meanwhile, the utilities fail to show that the pilots advance state goals.

⁵⁵ It would not be enough to show that the pilots are a cost-effective means of studying hydrogen blending because hydrogen blending is not an end unto itself. Hydrogen blending is a potential strategy for reducing carbon emissions from the end-uses that currently rely on the gas system. Electrification accomplishes this goal at a lower carbon abatement cost than hydrogen, even if the analysis only considers the cost of procuring renewable hydrogen and ignores all other costs to implement hydrogen blending. Exh. SC-01 at 12–13.

⁵⁶ D.21-07-005 at 10.

a. All of the proposed pilots contravene important state policies.

First, the pilots do not align with California achieving a comprehensive transition away from fossil gas. Second, the pilots are inconsistent with California’s affordability policies, largely because they test a strategy that would undermine the state’s efforts to minimize investment in the gas system to control rates as gas throughput declines. Third, the pilots are inconsistent with the Commission’s Environmental & Social Justice (“ESJ”) Action Plan because they fail to prioritize measures that could reduce the inequitable health burdens of the gas system and threaten to saddle vulnerable ratepayers with unnecessary new gas system costs. Fourth, the pilots would undermine efforts to scale up building electrification, which is the strategy that California-specific analysis has identified as best suited to decarbonize the state’s residential and small business end uses.

First, the pilots threaten to disrupt California’s energy policy and goals because the state is planning for “a comprehensive transition off fossil gas.”⁵⁷ The pilots would test a strategy for displacing up to about 7% of the energy content from fossil gas in the applicants’ pipeline systems.⁵⁸ As explained in Section III.A.1, there is no feasible way to displace the remaining fossil fuels. As a result, a gas pipeline with a hydrogen blend is nonetheless a pipeline that delivers fossil fuels.

Second, the pilots are inconsistent with California’s energy affordability policies. The Legislature’s intention is that the Commission “reduce rates for electricity and

⁵⁷ Exh. SC-01 at 34:18–35:1 (citing Attach. 6, 2024 Joint Agency Report at 6).

⁵⁸ Exh. EDF-01 at 9.

natural gas to the lowest amount possible.”⁵⁹ The pilots do not align with this state energy policy because they would unnecessarily bloat gas rates.⁶⁰

The pilots are the first step in a hydrogen blending strategy that would disrupt the state’s efforts to achieve its energy affordability goals while it transitions off fossil fuels by curtailing investment in the gas system. The 2024 Joint Agency Report explained: “Minimizing new investments in infrastructure that could become stranded assets is important to reducing ratepayer costs during the gas transition.”⁶¹ The Legislature has also found that active planning is needed to “avoid new capital investment in the gas system that may become stranded assets and to reduce upward pressure on gas rates,” which have a disproportionate burden on vulnerable customers.⁶² More recent CEC modeling has shown that controlling gas rates as throughput declines will require the gas utilities to significantly reduce—not just flatline—their revenue requirements.⁶³ Contrary to this affordability imperative, the pilots would test a strategy that would likely require significant avoidable capital investment in the gas system.⁶⁴ For instance, experts for CARB estimated hydrogen blending would require \$500 million in new capital investment in hydrogen compression and injection infrastructure, but did not examine potential upgrades to existing infrastructure.⁶⁵ Analysis for a Spanish gas utility with half as many pipeline miles as the California gas system found that a 20% hydrogen blend

⁵⁹ Cal. Pub. Util. Code § 747.

⁶⁰ See Section III.A.1.

⁶¹ Exh. SC-01 at 35 n.118 (citing Attach, 6, 2024 Joint Agency Report at 34).

⁶² SB 1221 § 1(a)(3)–(4) (Cal. 2024).

⁶³ Exh. EDF-01 at 16–18 (citing CEC analysis from 2025).

⁶⁴ See Exh. SC-01 at 14–19.

⁶⁵ *Id.* at 15:7–10.

would require 703€ million of investment to adapt existing infrastructure—over \$800 million at current exchange rates.⁶⁶ Therefore, the revenue request in this application is one piece of a scheme that does not align with California’s energy affordability goals.

Third, the pilots also contravene the Commission’s ESJ Action Plan in multiple ways. Goal 2 of the ESJ Action Plan is to “[i]ncrease investment in clean energy resources to benefit ESJ communities, especially to improve local air quality and public health.”⁶⁷ This goal requires deploying technologies in pollution-burdened communities that will reduce health-harming air pollution, such as zero-emission electric appliances. Indeed, California’s air regulators have found that the state’s polluted air basins will not achieve health-based air quality standards without a wholesale transition to zero-emission equipment.⁶⁸ Unlike electrification, hydrogen blending fails to eliminate emissions of nitrogen oxides (“NOx”) and other dangerous pollution from end-use equipment.⁶⁹ Experts warn that hydrogen blending could increase NOx emissions because hydrogen burns at a higher flame temperature than methane.⁷⁰ NOx emissions, in turn, increase the air pollutant ozone.⁷¹ California is already home to the only two ozone extreme non-attainment zones in the United States.⁷² It is inconsistent with the ESJ Action Plan to

⁶⁶ *Id.* at 15:14–17. *See also* U.S. Dept. of Treasury, *FiscalData: Currency Exchange Rates Converter*, <https://fiscaldata.treasury.gov/currency-exchange-rates-converter/> (last visited May 1, 2026).

⁶⁷ Exh. SC-01 at 75.

⁶⁸ *Id.* at 44.

⁶⁹ *Id.* at 45.

⁷⁰ *Id.* at 46–47.

⁷¹ Exh. UCAN-01R at 14:7–15:25.

⁷² *Id.*

spend hundreds of millions of dollars on unnecessary hydrogen blending pilots instead of prioritizing projects that deliver health benefits to ESJ communities.

In addition, the pilots do not align with the ESJ Action Plan’s specific affordability policies. The ESJ Action Plan recognizes that gas system costs pose a threat to energy affordability in ESJ communities, as they risk being borne by “a smaller number of households, likely lower income households who cannot afford to upgrade their existing household appliances to energy efficient and/or all electric, becoming increasingly financially responsible for maintaining legacy infrastructure.”⁷³ The pilots are inconsistent with the imperative to minimize gas system investments.

Fourth, investing over \$200 million of ratepayer funds in hydrogen blending demonstration projects would not just be a wasteful burden on ratepayers—such an investment threatens to undermine the least-cost electrification strategies that California agencies have identified as necessary for state goals. There are at least five mechanisms by which the pilots could thwart state policy to scale cost-effective solutions.

1. They could divert scarce resources away from more cost-effective solutions, particularly in an era when alternative climate funding is under threat and pressing needs compete for the Commission’s internal resources.⁷⁴ As far as Sierra Club is aware, the requested revenue requirement for hydrogen blending would exceed the cumulative ratepayer funding that the Commission has approved for all building

⁷³ Exh. SC-01 at 75–76.

⁷⁴ *Id.* at 29–30.

electrification programs to-date.⁷⁵ Few ratepayer-funded incentives are available and the Commission’s most significant building electrification incentive programs rely on alternative funding sources with uncertain futures.⁷⁶ The revenue requirement request in this case is for a very significant amount of money that could transform the Commission’s existing electrification efforts if directed toward more cost-effective electrification programs.⁷⁷ In the context of scarce ratepayer resources, the Commission cannot assume that lavishing funds on hydrogen blending will not have an adverse impact on the ability of more cost-effective electrification efforts to continue unimpeded.

2. A huge investment in hydrogen blending disrupts market certainty for building electrification, which is why the UK Climate Change Committee specifically urged governments to confirm there will be no role for hydrogen in homes.⁷⁸ It would send a dangerous signal to the market for the Commission to spend more ratepayer funds on hydrogen blending than electrification.

⁷⁵ The largest single source of ratepayer revenue to support building electrification appears to be energy efficiency market transformation initiatives that are designed to transform the market for certain heat pump and induction cooking equipment that can be installed without triggering electric capacity upgrades, and which prioritize disadvantaged communities. The Commission approved a six-year budget of \$114.6 million for these programs in D.25-11-023. D.25-11-023 at 2. Ratepayer support for electrification has often come through small, one-off decisions, such as the Commission’s authorization to spend up to \$5 million annually through 2029 to upsize electric service lines for qualified under-resourced customers who electrify homes or businesses. D.25-06-034 at 2.

⁷⁶ The Commission oversees a suite of electrification incentives through the Technology and Equipment for Clean Heating (“TECH”) Initiative, which has received no funding from ratepayers and relied instead on a mix of cap-and-trade allowance proceeds and General Fund tax revenue. D.23-02-005 at 1.

⁷⁷ For instance, could approximately double the total historic funding for the TECH program, which is comprised of \$120 million from cap-and-trade allowance proceeds, \$50 million from General Fund tax revenue, and an additional \$40 million of SoCalGas’ fines from the Aliso Canyon Recovery Account pursuant to A.B. 157 (2024). D.23-02-005 at 1; D.25-06-034 at 79.

⁷⁸ Exh. SC-01 at 30:18–31:11.

3. Diverting renewable electricity generation resources to produce hydrogen could drive up the cost of decarbonizing the electric grid, where these renewables provide much more cost-effective greenhouse gas reductions.⁷⁹
4. One leading expert observed that the bulk of the support for hydrogen blending comes from the gas industry, with the purpose of “confusing [the] public and policy-makers, slowing down electrification and prolonging the life of their assets.”⁸⁰ Indeed, SoCalGas has lobbied against local electrification measures by citing the Commission’s evaluation of hydrogen blending.⁸¹
5. From a hydraulic perspective, hydrogen’s lower heating value than methane means “its introduction into a natural gas system lowers the energy capacity of the system.”⁸² Thus, hydrogen blending could undermine zonal electrification efforts because “[w]ith this reduced energy capacity, it may be more difficult to retire rather than replace pipelines as part of an electrification strategy,” since “there will be pressure to replace the pipelines to retain capacity needed to offset the reduction in capacity from hydrogen blends.”⁸³

The pilots’ misalignment with state policy is sufficient reason to deny the application.

⁷⁹ *Id.* at 31:14–32:8.

⁸⁰ *Id.* at 32:11–33:8 (quoting Michael Liebreich, *The Case Against Hydrogen Blending*).

⁸¹ *Id.* at 33:13–23.

⁸² Exh. SC-02 at 9:5–6 (citing POWER Engineers (Feb. 25, 2025), <https://www.powereng.com/library/6-things-to-remember-about-hydrogen-vs-natural-gas>).

⁸³ *Id.* at 17:9–17.

b. The utilities fail to show that any of the proposed pilots are consistent with state energy goals.

The joint applicants provide no record evidence that their pilots are designed to help California affordably achieve its energy or climate goals. Their expert testimony merely attempts to show that the pilots would support the purpose of demonstrating and collecting data about hydrogen blending.⁸⁴ However, hydrogen blending is not an end unto itself. It would be irrational to devote significant resources to this strategy without evidence that it could cost-effectively contribute to a decarbonized economy.

In their amended application, the utilities make perfunctory attempts to show that the pilots align with state policy, but these non-record allegations are unpersuasive. For instance, the joint amended application relies on a throwaway remark in the UC Riverside Study to argue that hydrogen blending is an important approach for decarbonization.⁸⁵ However, the UC Riverside Study provides no citations or affordability considerations to support the idea that blending is worth further investment, which was not an issue in the scope of work for that analysis.⁸⁶ The utilities also speculate that hydrogen blending could be used to deliver hydrogen to hard-to-electrify customers who will extract pure

⁸⁴ See, e.g., Exh. SCG-01R at 1:24-26 (“The purpose of this Closed System Project is to demonstrate operational, live blending and collect system performance data for blending from 5% to 20% hydrogen gas by volume in an isolated portion of a medium pressure steel and plastic distribution pipeline system.”) (footnotes omitted).

⁸⁵ Joint Amended Application at 8 (quoting the Commission’s observation that “The UC Riverside Study comments that hydrogen blending can be an important decarbonization strategy for the energy and transportation sectors”); Exh. SCG-07 at 129 (summary section of the UC Riverside Study stating vaguely and without citations that hydrogen blending “has the potential to increase the output from renewable energy facilities, increase the share of green hydrogen in the energy mix, and provide the means for the delivery of hydrogen for power and transportation applications.”).

⁸⁶ SC-01 at 35:7–36:1 (citing the scope of work in the Commission’s contract with UC Riverside).

hydrogen from the pipeline blend.⁸⁷ There is no evidence that this is a viable option for industrial customers. The Commission cannot be so credulous as to assume that producing renewable hydrogen, blending it in methane pipelines, and extracting it will be a cost-effective strategy, especially as the use of those pipelines is expected to decline as other users electrify. A European Union assessment found that “the blending of hydrogen with natural gas is not considered a suitable means for the bulk delivery of hydrogen.”⁸⁸ Finally, the utilities’ suggestion that hydrogen blending is an appropriate means to build a market for hydrogen is an inappropriate attempt to force captive ratepayers to cover costs of scaling a technology they do not need.⁸⁹ In addition to these equity concerns, independent experts opine that hydrogen blending is not an effective means of spurring deployment of hydrogen production and infrastructure where it is needed for industry.⁹⁰

The record demonstrates significant misalignment between the proposed pilots and California’s energy and climate goals. The utilities fail to present evidence that could assuage these concerns or make a compelling case that the pilots align with state policy.

B. The Applicants Have Not Met Their Individual Burdens to Demonstrate Each Project’s Compliance, Usefulness, and Equity Considerations.

In addition to the issues discussed above, each of the applicants has failed to justify their projects at an individual level. Sierra Club joins LCJA/OCU’s briefing regarding the SoCalGas Orange Cove Project, and joins Wild Tree Foundation’s opening

⁸⁷ Joint Amended Application at 9.

⁸⁸ Exh. SC-01 at 36:8–10.

⁸⁹ *Id.* at 36–37.

⁹⁰ *Id.* at 37–38.

brief regarding SDG&E's project. This section discusses specific failings in PG&E's pilot, SW Gas' pilot, SoCalGas' UC Irvine ("UCI") pilot, and the SDG&E project.

1. PG&E's Pilot Fails to Meet Regulatory Requirements and Presents Significant Equity Concerns.

PG&E's pilot has two specific, profound flaws. First, PG&E openly flouts D.22-12-057's requirement to use clean renewable hydrogen. Second, PG&E's pilot proposal is inequitable because the company inappropriately asks residential and small business customers to pay for a project that is not designed to benefit them. Accordingly, the Commission should reject PG&E's pilot proposal.

a. PG&E's Proposal Violates the Mandate to Use Clean Renewable Hydrogen (Scoping Issue 1(a)).

PG&E's pilot proposal first fails to comply with D.22-12-057 by failing to use clean renewable hydrogen. In D.22-12-057, the Commission adopted the following definition of clean renewable hydrogen:

Hydrogen which is produced through a process that results in a lifecycle (*i.e.*, well-to-gate) GHG emissions rate of not greater than 4 kilograms of CO₂e per kilogram of hydrogen produced and does not use fossil fuel as either a feedstock or production energy source.⁹¹

The Commission made clear throughout the decision that this interim definition "applies to the pilot programs," and is "the definition of, and terminology for hydrogen authorized for the pilots."⁹² The Commission also unambiguously requires pilots to be "consistent with *all directed courses of action specified in this decision* relevant to

⁹¹ D.22-12-057 at 48, 67, OP 4.

⁹² *Id.* at 48, 52.

leakage, reporting, heating value, system safety, environmental considerations, end-use emissions, and *all other elements enumerated in this decision.*”⁹³ Underscoring the clear meaning of the decision, Energy Division leadership and the Assigned Commissioner for this proceeding have both stated in public presentations regarding the proposed pilots that the pilots, if approved, “are required to transport only ‘clean renewable hydrogen.’”⁹⁴

Despite the Commission’s clarity regarding the clean renewable hydrogen requirement, PG&E does not plan to procure hydrogen that meets this standard. PG&E plans to procure hydrogen from the Northern California Power Agency (“NCPA”) and concedes that this hydrogen “does not technically meet this definition.”⁹⁵ While PG&E noted that “[s]hould NCPA not be able to meet PG&E’s needs, PG&E would engage with entities supplying hydrogen in northern California to participate in a Request for Proposal (RFP),” it has not provided any assurances that it will use this RFP process to cure the deficiencies with its hydrogen procurement proposal.⁹⁶ Indeed, PG&E has not suggested, let alone demonstrated, that such an RFP would require clean renewable hydrogen.⁹⁷

PG&E’s noncompliance with the requirement to use clean renewable hydrogen undermines the usefulness of the pilot and threatens to increase greenhouse gas emissions. Without complying with the requirement to demonstrate blending with clean

⁹³ *Id.* at 34; 69, OP 7(f) (emphasis added).

⁹⁴ Exh. SC-01 at 50:1–51:7.

⁹⁵ Exh. PG&E-004 at 16. PG&E also states: “PG&E and NCPA are mindful of the method of production and associated impacts,” and that NCPA “is exploring options to power the hydrogen production process using carbon-free energy resources.” Exh. PG&E-003, PG&E Rebuttal Testimony, at 10:15–20.

⁹⁶ Exh. PG&E-004 at 16.

⁹⁷ *Id.* at 16–17 (providing no assurance that the RFP would require clean renewable hydrogen and explaining why PG&E believes it could not procure clean renewable hydrogen for its project—including through an RFP—within its currently proposed multimillion dollar annual project budget).

renewable hydrogen, PG&E cannot demonstrate that a utility can procure such hydrogen and gain experience integrating its supply chain into the utility's operations—which would be necessary (but not sufficient) steps to establishing a role for hydrogen blending in decarbonization strategies.⁹⁸ PG&E's failure to identify an affordable and reliable source of clean renewable hydrogen for its pilot is a red flag that it could not accomplish widespread blending with clean renewable hydrogen—calling the purpose of the pilot into question. Further, non-compliant hydrogen procurement would likely cause an increase in carbon pollution because hydrogen produced from sources like grid electricity is even more carbon-intensive than fossil gas.⁹⁹ PG&E argues that “[a]llowing flexibility in the hydrogen production method and its carbon intensity is not expected to significantly impact overall greenhouse gas emissions,” but provides no support for this position.¹⁰⁰ Not only is this noncompliant with the Commission's decision to require clean renewable hydrogen, but the claim that PG&E does not expect this ten-year project to significantly increase the economy's total greenhouse gas emissions is so vague that it can provide exceedingly little comfort regarding the magnitude of the emissions impact.

b. PG&E's Cost Recovery Proposal is Inequitable (Scoping Issue 5).

PG&E's proposed pilot also raises significant equity concerns around the allocation of costs versus benefits of the project. PG&E asks the Commission to adopt a total revenue requirement of \$94.2 million for the project.¹⁰¹ PG&E proposes to recover

⁹⁸ Exh. SC-01 at 56:17–57:4.

⁹⁹ *Id.* at 52:5–53:15.

¹⁰⁰ Exh. PG&E-04 at 17.

¹⁰¹ Exh. PG&E-02 at 5–6.

the revenue requirement from both core and noncore customers.¹⁰² The company's approach would allocate significant costs to residential and other core customers, who collectively take about 43% of PG&E's gas throughput but would not benefit from this transmission-focused pilot.¹⁰³ PG&E has not met its burden to demonstrate benefits to ratepayers that justify these substantial costs.

PG&E's pilot seeks to examine impacts on gas transmission assets, rather than distribution assets.¹⁰⁴ For the reasons discussed in Section III.A, residential and commercial customers who take service from the gas distribution system will not benefit from a hydrogen blending strategy and thus will not benefit from any incremental knowledge gains regarding hydrogen blending in the methane gas system that serves them. PG&E defends its pilot by arguing that "[e]ven if distribution blending proves challenging, transmission-level hydrogen could still enable important pathways for hard-to-electrify sectors."¹⁰⁵ Indeed, the pilot's infrastructure investments appear designed to benefit one specific transmission-level off-taker: NCPA's Lodi Energy Center.¹⁰⁶ Thus, to the extent PG&E's knowledge gains from the project offer any potential benefits, those benefits would likely only accrue to select transmission-level industrial customers.¹⁰⁷ Even those benefits are dubious.¹⁰⁸ Regardless, it is inappropriate to force residential and

¹⁰² *Id.* at 6.

¹⁰³ *See* D.19-09-025 at 273, Table 34.

¹⁰⁴ Exh. PG&E-01 at 1:19-20.

¹⁰⁵ Exh. PG&E-03 at 13:11-13.

¹⁰⁶ Exh. PG&E-01 at 9:10-10:2, 10:9-10 (contemplating providing a hydrogen blend to the Lodi Energy Center for electricity generation via pipeline in the future).

¹⁰⁷ *See* Exh. SC-01 at 36:21-37:16.

¹⁰⁸ *Id.* at 37:17-18; Exh. UCAN-01R at 25:15-26:5, 28:11-29:14.

commercial customers to foot the bill for massive capital investments and expenses to enable hydrogen injection for transmission-level customers.

It is inconsistent with the Commission's equity and affordability policies to impose Research and Development ("RD&D") costs on core customers that are disproportionate to their potential benefits. For instance, in Resolution G-3601, the Commission denied SoCalGas' request to fund research on industrial process equipment and off-road vehicles in its RD&D program because the proposed spending would "not provide benefits to the vast majority of RD&D ratepayers."¹⁰⁹ Recovering the exorbitant costs of PG&E's proposed project from residential and commercial gas customers violates the Commission's Rate Design Principles that "[r]ates should be based on cost-causation principles" and that "[r]ates should generally avoid cross-subsidies, unless the cross-subsidies appropriately support explicit state policy goals."¹¹⁰ There is no explicit state policy that merits this cross-subsidy between core customers and the few industrial transmission customers who might benefit from PG&E's project if other theoretical developments allow delivery of hydrogen blends to hard-to-electrify customers.¹¹¹

Additionally, as Cal Advocates points out, PG&E's proposed research in response to D.22-12-057 "is only one among many planned uses for the [\$64.2 million capital expenditures worth of] new infrastructure constructed as part of the proposed Project,"

¹⁰⁹ Resolution G-3601 at 26, 32 (applying Pub. Util. Code § 740.1(a)'s direction that "projects should offer a reasonable probability of providing benefits to ratepayers").

¹¹⁰ D.15-07-001 at 28.

¹¹¹ Exh. PG&E-03 at 13:20–29 (discussing the potential for PG&E to deliver gas to hard-to-electrify customers via the transmission system "if the gas distribution system is eventually phased out" or after modifying its transmission system to selectively deliver gas to those customers while preventing downstream flow into the distribution network).

which will “benefit third-parties, potentially during and long after the 10-year pilot Project duration.”¹¹² Sierra Club agrees that “[t]his is especially concerning since the outside parties and other government entities that PG&E suggests would also benefit from the proposed Project, declined to provide funds for a proposed Project.”¹¹³ It would not be equitable for PG&E’s captive customers to cover the full costs of a facility that serves vendors and other members of the “global industry.”¹¹⁴

The Commission should reject PG&E’s proposed pilot because it fails to meet the requirements of D.22-12-057, fails to demonstrate benefits to ratepayers that justify the cost, presents substantial concerns regarding cross-subsidies among customer types and allocation of costs to ratepayers who do not stand to benefit from the project, and proposes an inappropriate use of ratepayer funds to pay for a project that PG&E could not convince non-ratepayer stakeholders was worth private or government investment.

2. SW Gas’ Project Fails to Comply with D.22-12-057, is Not “Useful and Well-Designed,” and is Not Aligned with the Commission’s Equity and Ratepayer Protection Policies.

The Commission should reject SW Gas’ proposed project because it fails to meet multiple requirements enumerated in D.22-12-057, it is unlikely to produce any additive and useful knowledge, and it presents significant equity and ratepayer protection issues.

¹¹² Exh. CADV-01 at 4-6:10–4-7:2.

¹¹³ *Id.* at 4-7:17–19.

¹¹⁴ *See* Exh. PG&E-001 at 2:11–12.

a. SW Gas’ Project Does Not Comply with D.22-12-057 (Scoping Issue 1).

SW Gas’ proposed project fails to comply with D.22-12-057 in three ways. First, SW Gas, like PG&E, does not plan to comply with the Commission’s mandate in D.22-12-057 that the pilots transport “clean renewable hydrogen.” Second, SW Gas fails to comply with leakage safeguard requirements. Third, SW Gas’ proposal fails to meet requirements to protect end users’ health and safety through emissions monitoring and control. Fourth, it fails to avoid equipment malfunctions.

i. SW Gas Violates the Mandate to Use Clean Renewable Hydrogen (Scoping Issue 1(a)).

SW Gas intends to supply its project with hydrogen produced by an onsite electrolyzer, and proposes to power its electrolyzer with Truckee’s grid electricity, which it admits is only “~60% renewable” at this time.¹¹⁵ Hydrogen produced through grid-powered electrolysis carries a higher lifecycle carbon intensity than simply burning fossil gas.¹¹⁶ As Sierra Club has shown, this is true even when the grid has higher penetrations of renewable electricity than the power mix SW Gas would rely on to produce hydrogen for its pilot.¹¹⁷ SW Gas’ proposed use of grid-powered electrolysis thus fails to satisfy D.22-12-057’s clean renewable hydrogen standard both by exceeding the 4 kgCO₂e per kg of hydrogen threshold and by using fossil fuel as a production energy source. SW Gas has not rebutted this evidence. Instead, SW Gas’ rebuttal testimony admits that it is not

¹¹⁵ Exh. SWG-03 at 8:6–19.

¹¹⁶ Exh. SC-01 at 52:6–53:15.

¹¹⁷ *Id.* at 52:13–53:3.

trying to meet the clean renewable hydrogen standard.¹¹⁸ Similar to PG&E, SW Gas’ failure to demonstrate clean renewable hydrogen procurement means this project cannot show the feasibility of actually reducing emissions with hydrogen blending.

SW Gas’ flouting of the requirement to use clean renewable hydrogen also undermines the integrity of its mandatory stakeholder engagement efforts. D.22-12-057 required the utilities to take stakeholder comments into account.¹¹⁹ Despite planning to use emissions-intensive hydrogen in its pilot, SW Gas repeatedly marketed the project to local Community-Based Organizations (“CBOs”) as advancing hydrogen as a “carbon neutral energy source.”¹²⁰ This messaging is misleading and deprives stakeholders of a meaningful opportunity to provide feedback on the need to use hydrogen that does not increase emissions.

ii. *SW Gas’ Proposed Project Fails to Provide the Leakage-Related Safeguards Required by D.22-12-057.*

SW Gas’ proposed project also fails to meet D.22-12-057’s requirements to “demonstrate[] the ability to reliably detect leakage” and “describe[] rigorous hydrogen leak testing protocols.”¹²¹ SW Gas has made no effort to comply with either requirement prior to filing its project proposal. Rather than demonstrate or describe any rigorous protocols for leak detection or testing, SW Gas simply states that it will engage “a reputable and scientific third-party expert” at an unspecified future time.¹²² SW Gas

¹¹⁸ Exh. SWG-03 at 8:10–12.

¹¹⁹ D.22-12-057 at 69, OP #7(h).

¹²⁰ Exh. SWG-03 at 8:10–11 (“The Truckee Pilot does not seek to qualify hydrogen under [sic] clean renewable hydrogen definition.”); Exh. SC-01 at 62:19–63:7.

¹²¹ D.22-12-057 at 70, OP #7(k).

¹²² Exh. SWG-01 at 12:16–17.

asserts that it is “well-positioned to demonstrate its ability to reliably detect leakage of hydrogen, methane, or hydrogen/methane blends.”¹²³ However, it does not do so. Instead, SW Gas states that it “commits to developing leak detection protocols” in “Phase 1 of this project.”¹²⁴ This general statement of intent does not provide a reasonable basis for the Commission to approve a project to move forward because there is no opportunity for Commission or stakeholder review of the actual plans. D.22-12-057 does not require a “commitment” to describe rigorous testing protocols and demonstrate the ability to reliably detect leaks sometime in the future after project approval. Rather, it requires these elements to be present in the application or supporting materials.

SW Gas’ failure to provide any actual plans for leakage monitoring that the Commission or stakeholders could assess is meaningful because hydrogen leakage creates significant potential climate risks. As Environmental Defense Fund (“EDF”) explained, “hydrogen can cause around 12 times more warming than carbon dioxide over a 100-year period following emissions of equal mass, and around 37 times more warming over a 20-year period.”¹²⁵ The Commission should deny this pilot for failing to take the required steps to avoid climate impacts from hydrogen leaks.

¹²³ *Id.* at 25:12–16.

¹²⁴ *Id.* at 25:17–18.

¹²⁵ Exh. EDF-01 at 7:14–17. EDF also noted that hydrogen has a “greater leakage tendency,” with a 2024 study showing “hydrogen can leak through plastic piping at rates four to five times higher than natural gas.” *Id.* at 5–6.

iii. SW Gas's Proposed Project Fails to Include Emissions Monitoring Protocols that are Needed for Health and Safety.

SW Gas' pilot does not comply with the Commission's mandate that projects "must provide for testing to control local emissions."¹²⁶ This requirement is essential because of the potential for hydrogen blends to spike emissions of health-harming NO_x pollution.¹²⁷ D.22-12-057 makes clear that it is not sufficient to monitor the emissions impacts of the pilot to advance academic understanding of the impact of hydrogen blending on local emissions. Rather, the utilities must plan mechanisms to **control** emissions impacts. SW Gas' opening testimony and disclosures in discovery show that the company has shirked its responsibility to protect end users from local emissions, such as NO_x. SW Gas' opening testimony provides an "Illustrative Data Collection Plan" that lists a plan for "End-use equipment checks for emissions, including NO_x," as "Measure emissions from the fuel cell."¹²⁸ The reference to a "fuel cell" is alarming because SW Gas' pilot does not involve a fuel cell, raising questions about whether the company copy/pasted a plan from another utility instead of deliberating to develop an emissions monitoring plan that meets the needs of its specific pilot. Setting that issue aside, the planned frequency for emissions monitoring is listed as "[t]o be determined."¹²⁹ In response to a data request, SW Gas admitted that it "did not include air quality monitoring and reporting as a component of its hydrogen blending project" because it

¹²⁶ D.22-12-057 at 37, 61, COL #10, 69, OP #7(f).

¹²⁷ Exh. SC-01 at 46:1–47:9.

¹²⁸ Exh. SWG-01 at 8, Table 2. Notably, SW Gas has not identified a fuel cell as known end use equipment present within the site of its proposed project.

¹²⁹ *Id.*

believes such monitoring is not required.¹³⁰ Thus, SW Gas’ proposal fails to provide a meaningful plan for testing—let alone controlling—local emissions impacts of its pilot.

SW Gas’ shifting narratives cannot overcome the failures in its application. In rebuttal testimony, SW Gas adopted a new position that its pilot “includes emissions monitoring,” without filling in any of the gaps in its direct testimony regarding the basic elements of its monitoring plan.¹³¹ The company also noted that “Southwest Gas retains immediate shutoff capability if appliance performance or emissions present safety concerns and/or risk.”¹³² SW Gas does not explain how end users would identify safety concerns from emissions, when the company has no specific plan to monitor them. SW Gas’ vague gesture toward future plans is not sufficient to meet its burden of proof to the Commission that its pilot proposal meets the end user safety and emissions control requirements of D.22-12-057.

iv. SW Gas’s Proposed Project Fails to Protect Customers’ End Use Equipment Malfunctions.

SW Gas’ proposed project violates D.22-12-057’s requirements to “[a]void[] end user appliance malfunctions” and to be “consistent with all directed courses of action specified in this decision.”¹³³ SW Gas proposes only to protect its own gas-fueled generator. Specifically, SW Gas plans to bypass the generator to avoid a damaging phenomenon called “engine knock” observed in some lab tests of hydrogen blends in

¹³⁰ Exh. SC-01, Attach. 15, SW Gas Data Request Responses, at PDF p. 3.

¹³¹ Exh. SWG-03 at 9:10–12.

¹³² *Id.* at 9:10–15.

¹³³ D.22-12-057 at 69, OP #7(c), (f).

combustion chambers designed for methane.¹³⁴ SW Gas does not propose any protective measures for end user equipment in the buildings involved in the pilot that it does not own, which include a California Highway Patrol office and a commercial development with as-yet undetermined occupants.¹³⁵ SW Gas' statement that it "retains immediate shutoff capability if appliance performance . . . present[s] safety concerns and/or risk"¹³⁶ does not show that it met its duty to propose a pilot that *avoids* end user appliance malfunctions,¹³⁷ particularly when the Company has no plan to monitor those appliances.

**b. SW Gas' Proposed Project is Not "Useful and Well Designed"
(Scoping Issues 1, 2, and 4).**

Scoping Question #2 asks whether the proposed pilots are "useful and well designed," probing whether the pilots will fill specific knowledge gaps and would provide useful enough data to "move from a pilot project to full implementation."¹³⁸ SW Gas' application fails to demonstrate the project's usefulness beyond the reasonable doubts raised by intervenors, due both to issues with what design *is* presented and due to a lack of specificity with regard to critical project elements, preventing the Commission and stakeholders from assessing the quality of the design.

¹³⁴ Exh. SC-01, Attach. 15, SW Gas Data Request Responses, at PDF pp. 11–12, 16–17.

¹³⁵ See Exh. SWG-03 at 4:1–14; Exh. SWG-01 at 4:18–22; Exh. CADV-01 at 1-4:10–12 (noting that both SoCalGas' UC Irvine pilot and the SW Gas pilot will put end use appliances at higher risk for malfunction due to their higher blend percentages, and citing supporting scientific literature).

¹³⁶ Exh. SWG-03 at 9:10–15.

¹³⁷ D.22-12-057 at 69, OP #7(c).

¹³⁸ Scoping Memo at 11.

i. *The Commission Cannot Reasonably Find SW Gas' Project is Well Designed Because the Project Design Is Incomplete.*

Almost all details of SW Gas' project are still to be determined. For "Phase 0," SW Gas has offered an "illustrative data collection plan," which was apparently copied from another project.¹³⁹ For "Phase 1," SW Gas has offered only a general timeline for the project, which it clarified in discovery does not necessarily correspond to the seasons when they would actually blend the different volumetric percentages of hydrogen.¹⁴⁰ For "Phase 2," the phase in which the actual testing and demonstration will occur, SW Gas simply reiterates that it "will actively engage with one or more independent third-party expert(s) to conduct rigorous scientific testing and analysis."¹⁴¹ While Sections III.B.2.a.ii and III.B.2.a.iii provide a more complete discussion of the scant planning around leakage and emissions monitoring, the failure to conduct detailed planning for the pilot is an issue that permeates many key elements of the proposal. The Commission cannot reasonably make a finding that an experimental project is "useful," "well-designed," or "[p]roposes rigorous testing protocols" based on general statements from the applicant that it will hire someone to "conduct rigorous scientific testing and analysis."¹⁴²

ii. *SW Gas' Project Design Is Unlikely to Generate Significant Valuable Information.*

SW Gas purports that its pilot is valuable for testing hydrogen blends in cold weather, without first investigating whether other pilots present the same information or

¹³⁹ Exh. SWG-01 at 7–8; Exh. SDGE-01 at 10–11.

¹⁴⁰ Exh. SWG-01 at 9; Exh. SC-05 at 21–22, SW Gas Response to Data Request SC-SWG-08, Q.1.

¹⁴¹ Exh. SWG-01 at 10:14–18.

¹⁴² *Id.* at 10:14–18; D.22-12-057 at 69, OP #7(g).

designing a pilot that would successfully fill its assumed information gap. SW Gas claims that its project “is reasonably likely to generate new and valuable insights into the safe and cost-effective delivery of hydrogen-blended gas under cold climate conditions.”¹⁴³ However, SW Gas has not met its burden to prove that its pilot would produce useful and additive information.

As Sierra Club witness Rick Brown noted, “there have already been pilots performed in cold climates,” including the Fort Saskatchewan and Enbridge pilots in Canada highlighted by the Joint Utilities in their testimony and at the first stakeholder workshop.¹⁴⁴ Sierra Club asked in discovery whether SW Gas had “attempted to learn about metering algorithms, energy corrections, and Wobbe Index windows related to delivery of a hydrogen blend in cold weather conditions” from the Fort Saskatchewan pilot. SW Gas did not provide a responsive answer. Instead, SW Gas stated that it “is not aware of any publicly available data from the ATCO Fort Saskatchewan hydrogen blending project.”¹⁴⁵ It would be inappropriate to fund a SW Gas project to explore the impacts of hydrogen in cold weather without the company showing it has done basic due diligence regarding the availability of projects that address this issue.

SW Gas attempted to explain its lack of inquiry into the other cold-weather pilots by stating that it is “unaware of specific technical data that would make a comparative evaluation between results obtained in Canada and conditions and environmental

¹⁴³ Exh. SWG-05 at 5.

¹⁴⁴ Exh. SC-02 at 16:1–10.

¹⁴⁵ Exh. SC-05 at 23, SW Gas Response to Data Request SC-SWG-08, Q. 2(a).

considerations in California scientifically reliable at this juncture.”¹⁴⁶ However, this statement is incongruent with the Joint Utilities’ Compendium Report and “IOUs’ Chapter Summaries” preamble, which draw a wide range of conclusions about hydrogen blending impacts on materials, systems, and human health based on international studies.¹⁴⁷ SW Gas has not identified specific differences between the Fort Saskatchewan conditions and materials (or, for that matter, other pilots in cold regions, such as the Enbridge pilot it references in testimony) and its own and explained why those differences make it impossible to draw any “scientifically reliable” conclusions or comparisons.¹⁴⁸ And as the applicant, SW Gas bears the burden of showing how its proposed \$10.21 million pilot would produce useful additive information, including affirmatively establishing the pilot would not be duplicative of existing studies.¹⁴⁹

To the extent it is prudent to gather more information about hydrogen blends in cold weather, SW Gas has not properly designed its pilot to do so. The design of SW Gas’ pilot includes “switching the blend range levels every three to five months, thereby

¹⁴⁶ Exh. SC-05 at 23, SW Gas Response to Data Request SC-SWG-08, Q. 2(a).

¹⁴⁷ See generally Exh. SCG-08. The Joint Utilities also filed a Petition for Modification of D.22-12-057 that cites numerous foreign studies and pilots of hydrogen blending (including the ATCO pilot) as support for their argument that there is a sufficient basis for understanding safety implications of up to 5% hydrogen blends in California. See generally R.13-02-008, Petition for Modification of Decision 22-12-057 by Southern California Gas Company, San Diego Gas & Electric Company, and Southwest Gas Corporation, Attach. A-1 (Feb. 3, 2026).

¹⁴⁸ Indeed, the Fort Saskatchewan pilot—which the Joint Utilities featured at a stakeholder workshop for this proceeding—was conducted “primarily” on polyethylene distribution-pressure pipe. Exh. SC-01, Attach. 31, slide 56. SW Gas also intends to employ only polyethylene pipe in its pilot. Exh SC-02, Attach. 4, SW Gas Response to Data Request SC-SWG-05, Q. 2.

¹⁴⁹ See D.22-12-057 at 10–11 (explaining its reasoning for dismissing the utilities’ first hydrogen blending application and noting that applicants should “focus on coordinating with the existing studies and stakeholders to ensure that the Program does not duplicate, but rather supplements and complements, already funded research); Exh. SWG-02 at 1–2.

resulting in some blend range levels not experiencing the higher flows that occur during the colder months.”¹⁵⁰ SW Gas intends to conduct blending over an 18-month period and switch between four different volumetric blending ranges (0–5%, up to 10%, up to 15%, and up to 20%).¹⁵¹ No matter what time of year SW Gas starts the project, inevitably a substantial portion of the data will be generated during months where the weather is warm, and some blend ranges will not experience the cold weather conditions.¹⁵² Thus, there is a profound mismatch between the stated purpose of this pilot and its design.

Altering the project schedule to test all blend levels in cold weather would not be sufficient to ensure the usefulness of this pilot because SW Gas has not established any specific risks related to cold weather that a pilot needs to examine. When asked whether it believes that “winter temperatures in its service territory could cause hydrogen blends to behave in ways that affect its infrastructure differently” than in warmer climates, SW Gas responded that “[g]as usage (volumetric) in colder climates is generally higher than in warmer climates,” meaning “system demand, capacity, and planning must be considered differently than in warmer climates.”¹⁵³ To the extent that higher customer gas demand is the critical difference between warmer and colder climate gas delivery that SW Gas intends to study, it has not explained why higher demand could not be simulated in a different pilot setting, including a mock-up or laboratory setting, nor has it provided

¹⁵⁰ Exh. SC-02 at 9:26–10:2.

¹⁵¹ Exh. SWG-01 at 10:12, Table 2.

¹⁵² See Exh. SC-05 at 21–22, SW Gas Response to Data Request SC-SWG-08, Q.1.

¹⁵³ Exh. SC-02, Attach. 4, SW Gas Response to DR SC-SWG-01, Q. 9.

any specific evidence about the extent to which the demand from the three buildings in its pilot would be adequate to assess these differences.

Beyond cold climate data, SW Gas’ project offers negligible opportunities for unique information-gathering, because the end-use equipment and pipeline materials and vintages it proposes to test on are not unique. SW Gas cites inclusion of a “back-up generator, gas lights, radiant heaters, boilers, furnaces, and water heaters” as potential end use equipment that would receive the hydrogen blend.¹⁵⁴ But these equipment types are not unique—in addition to the research cited in the Compendium Report, SoCalGas’ proposed projects would also serve commercial buildings and commercial end-use equipment.¹⁵⁵ Similarly, SW Gas’ project site includes only polyethylene pipe, with vintages dating only to 2003.¹⁵⁶ As the UC Riverside Report observed, “[a] single injection standard that applies systemwide would have to consider the most susceptible conditions observed throughout all infrastructure components.”¹⁵⁷ A study on exclusively polyethylene pipe that is less than 25 years old will not meaningfully close knowledge gaps around distribution system vulnerabilities.

c. SW Gas’ Proposed Project Poses Equity and Ratepayer Protection Issues (Scoping Issues 1, 3, and 5).

The Commission should reject SW Gas’ pilot because it conflicts with the Commission’s equity policies. First, SW Gas has not met the Commission’s requirements for stakeholder engagement. Second, SW Gas proposes significant bill increases to fund

¹⁵⁴ Exh. SWG-05 at 2.

¹⁵⁵ See Exh. SCG-08 at PDF p. 37; Exh. SCG-01R at 3:22–24; Exh. SCG-02 at 3:29–4:3.

¹⁵⁶ Exh. SC-02, Attach. 4, SW Gas Response to SC-SWG-05, Q. 2.

¹⁵⁷ Exh. SCG-07 at 4.

the project, which are wholly inappropriate during an affordability crisis for a project of unproven usefulness in a community that opposes it.

- i. SW Gas failed to account for stakeholder feedback and stymied community participation by providing misleading information about the project.

D.22-12-057 required the utilities to take stakeholder feedback into account.¹⁵⁸ All the utilities were required to submit a plan in the hydrogen blending pilot application that would “detail how stakeholder input will be considered for incorporation into pilot project design and execution.”¹⁵⁹ SW Gas did not just fail to provide a plan for how to incorporate stakeholder feedback. It proposed a pilot that contravened stakeholder feedback on one of the basic elements of project design: the project location.

The Town of Truckee opposes SW Gas’ proposed project and the utility has disregarded the Town’s efforts to engage. Emails between the Town and SW Gas show that in 2022, the Town expressed “concerns that we wanted to explore further” with SW Gas.¹⁶⁰ As of July 2025, SW Gas had not met with representatives of the Town or otherwise addressed its concerns.¹⁶¹ In February 2023, municipal representatives notified SW Gas that the Town submitted a formal comment to the docket explaining that it does not support SW Gas’ project because “the proposed project will increase customer rates with little to no GHG reduction benefit and unknown safety risks.”¹⁶² There is no evidence SW Gas met the Commission’s requirement to consider stakeholder feedback.

¹⁵⁸ D.22-12-057 at 43, 69, OP 7(f), (h).

¹⁵⁹ *Id.* at 38.

¹⁶⁰ Exh. SC-01 at 60:23–61:3.

¹⁶¹ *Id.* at 61:3–9.

¹⁶² Exh. SC-01, Attach. 15, SW Gas Data Request Responses, at PDF pp. 5–8.

Further, despite SW Gas’ attempts to mislead CBOs by telling them the pilots would advance a “carbon-neutral energy source,”¹⁶³ community members who are engaged in climate action are not fooled. One community member at the public participation hearing who identified herself as “colead of two local climate related organizations” stated that local residents had hoped SW Gas would pursue an SB 1221 zonal decarbonization project in their community but had received disappointing responses from SW Gas.¹⁶⁴ As that community member stated, “we would like them to not be blending hydrogen but to be considering other alternatives, which we have started to discuss with them. I don’t think we have gotten a very good reaction, but that’s what our desire as a town is.”¹⁶⁵ SW Gas’ failure to make any effort to address the concerns of its proposed project’s host community—and failure to engage with their feedback about what types of pilots the town *would* support—is a “negative community impact,” as described by Scoping Issue 5, raises questions around Scoping Issue 4(e)’s inquiry into “informed consent” of project participants,¹⁶⁶ and is a red flag regarding SW Gas’ ability to meaningfully practice “ongoing community engagement.”¹⁶⁷

¹⁶³ Exh. SC-01 at 62:19–63:7.

¹⁶⁴ Public Participation Hearing Transcript, Vol. II: Truckee, at 183:20–185:21 (Aug. 20, 2025).

¹⁶⁵ *Id.* at 185:12–16.

¹⁶⁶ Indeed, in SW Gas’ case, there is scant documentation of “informed consent” and repeated documentation of informed opposition to the project.

¹⁶⁷ Scoping Memo at 12–13.

ii. *Expected Bill Impacts from SW Gas' Project are Unreasonably and Prohibitively High.*

SW Gas proposes to raise individual residential customer bills by up to \$3.64 per month in 2027 to fund this project.¹⁶⁸ Bill impacts of this magnitude on individual residential accounts are exorbitant for a project of dubious benefits. Authorizing SW Gas' requests would be unreasonable during California's current energy affordability crisis.

The Commission has held other proposals with similar bill impacts to exacting standards to avoid unreasonably interfering with affordability. In A.21-12-009, the Commission heavily scrutinized and ultimately rejected a building electrification pilot proposal that would have resulted in \$4 to \$5 temporary monthly increases in commercial customers' bills.¹⁶⁹ There, the Commission concluded that while it "supports the important and worthy goals of SCE's Proposal to reduce GHG emissions through building electrification," it could not authorize the proposal "without SCE doing a better job of its due diligence to ensure ratepayer money will be spent thoughtfully to obtain the most benefits at the least cost."¹⁷⁰ SW Gas' hydrogen blending project should be subject to no less scrutiny. Even if the Commission finds hydrogen blending projects generally to be worth pursuing, the Commission should reject this project because it would substantially burden SW Gas' residential customers in a community that openly opposes the project, and would deliver little to no useful data for the price.

¹⁶⁸ Exh. SWG-05 at 9 (listing the lowest impact in its Southern California rate jurisdiction, where residential customers would see a \$1.97 per month increase in 2027).

¹⁶⁹ D.24-01-004 at 46.

¹⁷⁰ *Id.* at 51.

3. SoCalGas’ UC Irvine Project Fails to Meet Regulatory Requirements, Presents Safety Risks, and Will Cause Negative Community Impacts that are Not Aligned with the Commission’s Equity Policies.

SoCalGas’ UCI Project would produce hydrogen with an onsite electrolyzer, blends of 5–20% hydrogen by volume for about 18 months, and supply the blended gas to one campus building: the Anteater Recreation Center (“ARC”).¹⁷¹ The UCI Project fails to comply with regulatory requirements (Scoping Issue 1), carries unwarranted safety risks (Scoping Issue 4), presents unique equity concerns due to its location on a college campus (Scoping Issue 5), and has not demonstrated it will be “useful and well-designed” (Scoping Issue 2). Accordingly, the Commission should deny the UCI project.

a. The UCI Project Fails to Comply with D.22-12-057’s Emissions-Related Requirements and Carries Unreasonable Safety Concerns (Scoping Issues 1 and 4).

SoCalGas has also failed to demonstrate that its UCI Project incorporates adequate end use emissions monitoring, particularly for NO_x. NO_x is a health-harming air pollutant associated with respiratory and other multisystem negative health impacts.¹⁷² Combustion of fossil gas creates NO_x, and research has found that blending hydrogen into methane gas can result in increased combustion emissions of NO_x.¹⁷³ As discussed in Section III.B.2.a.iii, D.22-12-057 requires projects to provide adequate end-use emissions monitoring to *control* local emissions.¹⁷⁴ SoCalGas’ plan to “[p]erform measurement on emissions from heating and cooking equipment” on a monthly basis is

¹⁷¹ Exh. SCG-01R at 3:13–16; 11:1, Table 2: Estimated Project Schedule.

¹⁷² Exh. SC-01 at 43:12–44:10, 44:24–45:17.

¹⁷³ *Id.* at 45:19–47:9.

¹⁷⁴ D.22-12-057 at 69, OP 7(f); *id.* at 37.

not sufficient to “control local emissions.”¹⁷⁵ The Commission should be particularly concerned with SoCalGas’ failure to control NO_x emissions in this project because cooking equipment like the stoves present in the ARC’s cooking classroom will expose users directly to the combustion emissions within an enclosed, indoor space. A monthly measurement risks hazardous conditions for building occupants persisting for weeks undetected. These conditions affect not only students but also ARC staff, who will have no choice but to spend significant time in the ARC for work. Further, SoCalGas has not offered evidence that the monthly measurement protocol would capture typical operating conditions of the end-use equipment or reflect the locations or times when peak pollution exposure is expected to occur (such as in the cooking classroom during classes), nor has it articulated any protocol for shutdown of blending if NO_x increases were detected.

The safety impacts of SoCalGas’ inadequate monitoring and emissions control protocols will fall on students and staff using the ARC, who risk being exposed to higher levels of health-harming NO_x. Scoping Issue 4(e) asks, with regard to project safety, how “informed consent” has been documented in communities potentially affected by each pilot. As discussed further in subsection (d), the UCI Project’s siting in a college recreation center makes informed consent to safety risks of the project nearly impossible, as SoCalGas has no way to know which students, staff, and other community members will use the ARC—including those who will be in the cooking classes hosted at the ARC during the blending period, and directly exposed to the cooking emissions from hydrogen

¹⁷⁵ Exh. SCG-01R at 13:3, Table 3; Exh. SCG-06 at 30.

combustion. In any event, there is no evidence that SoCalGas has made any effort to identify affected ARC users or establish protocols for obtaining their informed consent. The Commission should deny the project because SoCalGas has failed to demonstrate it can control local emissions and safety hazards to occupants of the ARC.

b. The UCI Project Fails to Comply with D.22-12-057’s Leakage-Related Requirements. (Scoping Issue 1)

The UCI Project fails to comply with D.22-12-057’s requirements to “demonstrate[] the ability to reliably detect leakage of any hydrogen, methane, or hydrogen/methane blends” and to “describe[] rigorous hydrogen leak testing protocols.”¹⁷⁶ SoCalGas plans to conduct leak surveys of the pipeline segments and end-use equipment only on a monthly basis during the demonstration,¹⁷⁷ and includes “automatic and remote shut down capabilities” triggered by leakage only at the outdoor hydrogen production, storage, and blending site.¹⁷⁸ As discussed in Section III.B.2.a.ii, hydrogen leakage creates climate risks. Further, as the UC Riverside Study noted, “[l]eaks are of high importance for safety reasons particularly in confined spaces.”¹⁷⁹ The UC Riverside Study’s authors cited safety as a “major concern with hydrogen blending” in large part due to the “probability of ignition in the case of large gas blend leaks or gas blend accumulation in confined spaces.”¹⁸⁰ As with its monthly emissions surveys,

¹⁷⁶ D.22-12-057 at 69–70, OP 7(f), 7(k).

¹⁷⁷ Exh. SCG-01R at 13:3, Table 3.

¹⁷⁸ Exh. SCG-06 at 30. SoCalGas also intends to install “gas detection alarm systems where indoor equipment is housed,” but does not specify whether these systems would detect hydrogen leakage or only methane leakage. Exh. SCG-01R at 16; Exh. SCG-06 at 30.

¹⁷⁹ Exh. SCG-07 at 125.

¹⁸⁰ *Id.* at 7.

SoCalGas’ plan to survey the project system for leakage on only a monthly basis means a leak could sit undetected for weeks before being addressed. Because SoCalGas has chosen to propose testing hydrogen blends in a busy campus building rather than in a mock-up of real-world conditions, rigorous leakage monitoring may be more logistically difficult, but it is critical to avoid risks to unknowing participants.¹⁸¹

c. SoCalGas Has Not Demonstrated the UCI Project is Useful and Well-Designed. (Scoping Issue 2)

The Commission should deny the UCI Project because it subjects building occupants to unreasonable risks while promising negligible knowledge gains. Because SoCalGas has chosen to site its project on a college campus, there is inherent tension between the usefulness of the data it can generate and the risk it would expose campus community members to. For example, SoCalGas proposes to confirm that the entire system receiving the blend is “leak-tight” prior to beginning blending.¹⁸² While a leak-tight baseline is prudent to protect the safety of building occupants, it compromises the usefulness of leakage data collected during the pilot because “a leak tight system is not consistent with actual gas systems, which do have leaks.”¹⁸³ The inconsistency between real-world systems and the necessarily-safer system SoCalGas intends to conduct its pilot in means that “conclusions [SoCalGas] might draw about system hydrogen leakage rates based on the pilots are expected to be lower than those that would occur in an actual

¹⁸¹ See Exh. SC-02 at 12:3–4 (“Performing R&D in occupied buildings when hydrogen is expected to leak at higher rates than methane alone, warrants consideration of significantly more safety monitoring.”).

¹⁸² *Id.* at 10:17–18 (citing SoCalGas Response to Data Request SC-SCG-06, which is included in Attach. 2).

¹⁸³ *Id.* at 10:20–11:1.

distribution system that is not leak tight.”¹⁸⁴ By planning its project in an occupied campus building rather than a “mock up of a real-world system,” SoCalGas compromises its project with regard to both safety and usefulness, both of which are nonnegotiable.

Additionally, SoCalGas asserts that the UCI Project will provide useful information by testing steel pipe, which it states is “necessary because steel is a common material used for pipeline mains in SoCalGas’s distribution pipeline system,” comprising “25,913 miles . . . [which is] approximately 49.9% of [SoCalGas’] distribution pipeline mains.”¹⁸⁵ However, the only steel pipe that would be tested in the UCI Project is 1,400 feet of brand new steel pipe.¹⁸⁶ The UC Riverside Study recommended that blending demonstration projects “include the commonly present materials, vintages, facilities, and equipment of the generic California natural gas infrastructure.”¹⁸⁷ SoCalGas cannot draw meaningful conclusions about the impacts of hydrogen blending on the state’s tens of thousands of miles of vintage steel pipe—some of which dates back to pre-1940 installation—based on observed impacts on a quarter mile of brand new steel pipe exposed to hydrogen blends for 18 months.¹⁸⁸

d. The UCI Project’s Siting Presents Equity and Community Impacts Concerns. (Scoping Issue 5)

In addition to raising questions about informed consent under Scoping Issue 4, SoCalGas’ stakeholder engagement for the UCI Project has failed to incorporate

¹⁸⁴ *Id.* at 11:3–6.

¹⁸⁵ Exh. SCG-01R at 2:3–6.

¹⁸⁶ *Id.* at 9:24–28.

¹⁸⁷ Exh. SCG-07 at 133.

¹⁸⁸ *See id.* at 29.

community feedback, and the project will carry “negative community impacts,” as contemplated by Scoping Issue 5, if approved.¹⁸⁹ Public comments to the Commission in the docket and at the Public Participation Hearing indicate significant safety and stakeholder engagement concerns from UCI students, faculty, and other community members who use the ARC, including concerns about the safety of children who use the ARC.¹⁹⁰ When SDG&E received similar feedback from the UC San Diego community regarding its initial plans to conduct a pilot on their campus, they revised their project in response: first, by moving the project out of graduate student housing and into an outdoor fuel cell, and ultimately, by moving the project off campus to SDG&E’s own facility.¹⁹¹ SoCalGas has not provided similar consideration to the concerns of UCI community members. SoCalGas’ failure to account for stakeholder feedback conflicts with the Commission’s equity policies and violates D.22-12-057.¹⁹² The Commission should not approve this project over the objections of its unwilling participants.

4. SDG&E’s Pilot Is Not Useful and Fails to Meet CPUC Requirements.

First, SDG&E’s pilot is not designed to produce useful new information. SDG&E would test a hydrogen blend on a single piece of end-use equipment (a fuel cell), whose

¹⁸⁹ Scoping Memo at 12–13.

¹⁹⁰ Exh. SC-01 at 59:18–60:4; *see also, e.g.*, Public Participation Hearing Transcript, Vol. I: Irvine, at 80:16–82:15 (July 1, 2025) (UCI student opposing the project due to climate and safety concerns, and noting that holding the public participation hearing “while everybody is on summer break and nobody at school knows about this is actually quite shameful,” and “against the democratic process of our university”), 146:6–149:25 (UCI employee and SoCalGas customer expressing health and safety concerns about the project and noting that “in the ARC, we have many camps that serve our children. Children will be present in the ARC . . . Children will be directly affected at the ARC.”).

¹⁹¹ Exh. SC-01 at 65:24–66:16.

¹⁹² D.22-12-057 at 69, OP 7(h).

manufacturer has already certified it to accept a blend of at least 20% hydrogen.¹⁹³ The manufacturer's testing eliminates any benefit from SDG&E's redundant testing.¹⁹⁴ Similarly, SDG&E claims that lab studies indicate that the PE pipe in the pilot can handle blends of 20% hydrogen without degrading.¹⁹⁵ If true, SDG&E would not generate meaningful knowledge by testing 300 feet of brand-new pipe in this material.¹⁹⁶ Moreover, the brand-new PE pipe is unrepresentative of pipeline in SDG&E's system.¹⁹⁷

Second, SDG&E's plan to potentially power its electrolyzer with grid power conflicts with D.22-12-057's mandate for the pilots to use clean renewable hydrogen.¹⁹⁸ In addition, SDG&E's plan to greenwash this grid power with unbundled Renewable Energy Credits ("RECs") is contrary to State policy.¹⁹⁹

Third, the record suggests SDG&E has not conducted community outreach for the current site of its planned pilot.²⁰⁰ Thus, SDG&E failed to show community stakeholders were included in planning the current iteration of its pilot (Scoping Issue 5.c).

IV. CONCLUSION

For the reasons set forth above, Sierra Club respectfully requests that the Commission deny the Joint Amended Application in full.

¹⁹³ Exh. SDGE-03 at 16:20–23.

¹⁹⁴ Exh. SC-02 at 15:21–25.

¹⁹⁵ Exh. SDGE-03 at 6:28–7:2.

¹⁹⁶ Exh. SC-02 at 15:16–21.

¹⁹⁷ *Id.* at 12:20–13:6.

¹⁹⁸ Exh. SC-01 at 55:5–56:11.

¹⁹⁹ D.21-06-005 at 34 (requiring hydrogen production for SGIP program to rely on onsite renewables or renewable procurements with bundled RECs); Cal. Code of Regs. tit. 20, §1393.1(l) (SDG&E and other retail suppliers cannot use unbundled RECs to claim decreases in GHG emissions intensity in the Power Source Disclosure Program); Cal. Pub. Util. Code §398.4(k)(3) (prohibiting SDG&E from making marketing claims that are inconsistent with Power Source Disclosure Program methodology).

²⁰⁰ Exh. SC-01 at 65:3–20.

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