

Company: Southern California Gas Company (U 904 G)  
Proceeding: 2024 General Rate Case  
Application: A.22-05-015/016 (consolidated)  
Exhibit: SCG-202-E

**REBUTTAL TESTIMONY OF  
DESPINA NIEHAUS AND SHIRLEY ARAZI  
(CLIMATE AND SUSTAINABILITY POLICY)**

**ERRATA**

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



~~May~~ June 2023

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**REBUTTAL TESTIMONY OF  
DESPINA NIEHAUS AND SHIRLEY ARAZI  
(CLIMATE AND SUSTAINABILITY POLICY)**

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**I. INTRODUCTION AND SUMMARY OF DIFFERENCES**

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This rebuttal testimony (1) adopts the direct testimony of Naim Jonathan Peress and Michelle Sim supporting Southern California Gas Company’s (SoCalGas’s) Chapter 1, Climate Policy<sup>1</sup> and Chapter 2, Sustainability Policy and (2) addresses the following testimony from other parties:

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- Environmental Defense Fund (EDF), as submitted by Michael Colvin, Dr. Richard McCann, and Joon Seong (Exhibit (Ex.) EDF-01), dated March 27, 2023.
  - California Environmental Justice Alliance (CEJA), as submitted by Matthew Vespa, Sara Gersen, Sasan Saadat, and Rebecca Barker (Ex. CEJA-01), dated March 27, 2023.
  - Indicated Shippers (IS) as submitted by Michael P. Gorman (Ex. IS-02), dated March 27, 2023.
  - The Protect Our Communities Foundation (PCF), as submitted by Bill Powers, P.E. (Ex. PCF-01), dated March 2023.

As a preliminary matter, the absence of a response in this rebuttal testimony to any issue raised in intervenor testimony does not imply or constitute agreement by SoCalGas with the proposal or contention made by these or any other party. Moreover, my rebuttal testimony responds generally to the above intervenor testimony and will address the importance of clean fuels and carbon management in achieving deep decarbonization, specifically carbon neutrality, as well as SoCalGas’s role and value in advancing the State’s decarbonization goals. Specific rebuttals tied to requests for funding are addressed in the relevant witness’s testimony, who respond to intervenor testimony with greater granularity, specifically with respect to proposed projects and programs, costs, and justifications for funding.

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<sup>1</sup> See May 16, 2022, Direct Testimony of Naim Jonathon Peress (Chapter (Ch.) 1, Climate Policy) and Michelle Sim (Ch. 2, Sustainability Policy), Exhibit (Ex.) SCG-02-R, adopted by Despina Niehaus (Ch. 1, Climate Policy) and Shirley Arazi (Ch. 2, Sustainability Policy).

1 **II. GENERAL REBUTTAL**

2 The direct testimony on Climate Policy (Ex. SCG-02-R) outlines several ongoing and  
3 planned activities reflecting the key role the gas grid plays as a facilitator of greenhouse gas  
4 (GHG) emissions reductions, including activities to assist utility customers (gas users) in  
5 achieving GHG reductions, and activities for consideration by state emissions regulators as they  
6 plan for levels of achievable emissions reductions. As described in the rebuttal testimony of  
7 Overall Policy witness Maryam Brown (Ex. SCG-201), SoCalGas proposes a portfolio of  
8 activities and programs that support the State's decarbonization goals. Direct forecasted costs that  
9 support the State's climate policy goals and the reasonableness of these requests are discussed in  
10 other witness's opening and rebuttal testimony and workpapers.

11 As set forth in Direct Testimony,<sup>2</sup> SoCalGas and other state utilities play an essential  
12 role in the collective effort to address climate change challenges and to achieve California's  
13 carbon neutrality goals. In line with the need for action, in March 2021, SoCalGas announced its  
14 goal to achieve net-zero GHG emissions in its operations and delivery of energy by 2045. This  
15 commitment made SoCalGas the largest gas distribution utility in North America to set a net-  
16 zero target including Scope 1, 2, and 3 GHG emissions, which would eliminate its own direct  
17 emissions and those generated by customers' energy delivered by SoCalGas's energy  
18 infrastructure. In October 2021, SoCalGas released an economy-wide technical analysis  
19 underscoring the essential role that clean fuels like hydrogen and renewable natural gas will play  
20 in a carbon neutral California. "The Role of Clean Fuels and Gas Infrastructure in Achieving  
21 California's Net Zero Climate Goal" examines the complexity of reaching 100 percent net-zero  
22 emissions in California by 2045 and, for the first time, offers detailed solutions that include the  
23 clean fuels infrastructure needed to support and accelerate decarbonization efforts. The analysis  
24 supports existing state climate and energy policies, including resilient and reliable electrification,  
25 and provides solutions for the hard-to-abate transportation and industrial sectors. As explained in  
26 Ex. SCG-02-R, Ch. 2 (Sustainability Policy) and the rebuttal testimony of Shirley Arazi provided  
27 in Section IV below, in January 2022, SoCalGas released its ASPIRE 2045 Sustainability  
28 Strategy which supports SoCalGas's mission to build the cleanest, safest, and most innovative  
29 energy infrastructure company in America (the Sustainability Strategy).

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<sup>2</sup> Ex. SCG-02-R, Ch. 1 (Peress) at NJP-1.

1 As California leads the nation in addressing climate change, the State is increasingly  
2 focused on the imperative to reduce GHG emissions, transition away from reliance on fossil  
3 fuels, improve air quality, and provide safe, reliable, and clean energy to its residents. This is  
4 evidenced by a growing body of legislation and policies aimed at advancing these areas.  
5 Examples include, but are not limited to, Assembly Bill (AB) 32 and Senate Bill (SB) 32  
6 (establishing GHG emission reduction targets), SB 100 (setting an electric renewables portfolio  
7 standard), SB 1383 (addressing short-lived climate pollutants/methane emissions from organic  
8 waste), SB 1440 (establishing renewable gas standard), SB 905 (requiring the California Natural  
9 Resources Board, in consultation with CPUC, to issue a report on CO<sub>2</sub> pipelines and requires  
10 CARB to establish a carbon capture removal utilization and storage framework), Executive  
11 Order B-55-18 (setting the goal to achieve carbon neutrality by 2045), and AB 3232 (requiring a  
12 ~~zero-emissions~~40% reduction in GHG emissions from buildings for residential and commercial  
13 buildings below 1990 levels by 2030), among many other policies, programs, and initiatives.<sup>3</sup>

14 Since the preparation and filing of this GRC, significant additional government and  
15 agency actions have further highlighted the importance of and encouraged investment in clean  
16 energy by companies. To further advance decarbonization efforts in California, the California  
17 Air Resources Board (CARB) adopted its Final 2022 Scoping Plan.<sup>4</sup> The Scoping Plan sets forth  
18 the GHG emission reduction strategy and activities needed to reach the State’s decarbonization  
19 targets. The adoption of the 2022 Scoping Plan is a notable update since submittal of opening  
20 testimony as it highlights the value and the critical role of clean fuels, such as biomethane and  
21 clean hydrogen and the need for carbon management to reach carbon neutrality GHG emission  
22 targets. Indeed, the Scoping Plan specifically identifies carbon capture and sequestration as a  
23 critical tool in the State’s decarbonization strategy, “Carbon capture and sequestration (CCS)  
24 will be a necessary tool to reduce GHG emissions and mitigate climate change while minimizing  
25 leakage and minimizing emissions where no technological alternatives may exist.”<sup>5</sup> The Scoping  
26 Plan also identifies the need to advance the transition to hydrogen, “This Scoping Plan also calls  
27 for accelerating the transition from combustion of fossil fuels to hydrogen. Hydrogen can be

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<sup>3</sup> See Ex. SCG-02-R Ch. 1-2 (Peress/Sim).

<sup>4</sup> CARB, *2022 Scoping Plan for Achieving Carbon Neutrality* (November 16, 2022), available at: <https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf>.

<sup>5</sup> *Id.* at 84.

1 produced through electrolysis with renewable electricity or through steam methane reformation  
2 of biomethane.”<sup>6</sup>

3 Additional recent California legislative and agency actions supporting the deployment of  
4 clean fuels and carbon management include:

- 5 • The California Energy Commission’s (CEC) Integrated Energy Policy Report  
6 (IEPR), which highlights the role of hydrogen in California’s clean energy future  
7 and considers the “current state of play in terms of CEC activities supporting the  
8 use of hydrogen in decarbonization.”<sup>7</sup> The IEPR also encourages the use of both  
9 renewable gas and renewable hydrogen.<sup>8</sup>
- 10 • Executive Order B-48-18 directs that all State entities work with the private sector  
11 to put at least five million zero-emission vehicles on California’s roads by 2030  
12 and spur the construction and installation of 200 hydrogen refueling  
13 stations.<sup>9</sup> CARB also adopted the Advanced Clean Cars II regulations, which  
14 require that all new passenger vehicles sold in California to be zero emissions by  
15 2035.<sup>10</sup>
- 16 • The California Natural Resources Agency’s (CNRA) Report as part of SB 905  
17 emphasizes that “To address the impacts of climate change, California must not  
18 only reduce greenhouse gas emissions, but also remove CO2 from the  
19 atmosphere. CCUS and carbon removal technologies are essential to achieving  
20 California’s carbon removal goals of 20 million metric tons CO2 equivalent by

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<sup>6</sup> *Id.* at 88.

<sup>7</sup> CEC, *Final 2022 Integrated Energy Policy Report Update* (February 2023) at 98, available at: [https://www.energy.ca.gov/sites/default/files/2023-02/Adopted\\_2022\\_IEPR\\_Update\\_with\\_errata\\_ada.pdf](https://www.energy.ca.gov/sites/default/files/2023-02/Adopted_2022_IEPR_Update_with_errata_ada.pdf).

<sup>8</sup> CEC, *Final 2021 Integrated Energy Policy Report Volume III: Decarbonizing the State’s Gas System* at 145-146, available at: <https://efiling.energy.ca.gov/GetDocument.aspx?tn=242233>.

<sup>9</sup> Executive Department State of California, *Executive Order B-48-18 To Achieve Carbon Neutrality* (September 2018), available at: <https://www.library.ca.gov/wp-content/uploads/GovernmentPublications/executive-order-proclamation/39-B-48-18.pdf>.

<sup>10</sup> CARB, *Advanced Clean Cars II Regulations: All New Passenger Vehicles Sold in California to be Zero Emissions by 2035*, available at: <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/advanced-clean-cars-ii>.

1 2030 and 100 million metric tons CO<sub>2</sub> equivalent by 2045 and offer an  
2 opportunity to expand the green economy in California.”<sup>11</sup>

- 3 • CARB’s Clean Fleets Rule provides new rules for medium-and heavy-duty  
4 vehicles, called Advanced Clean Fleets, which require public and private fleets to  
5 begin transitioning those vehicles towards zero emissions starting in 2024 with a  
6 goal of being 100 percent zero-emissions vehicles by 2045, where feasible.<sup>12</sup>
- 7 • SB 100 (The 100% Clean Energy Act of 2018),<sup>13</sup> which directed this Commission  
8 to “plan for 100 percent of total retail sales of electricity in California to come  
9 from eligible renewable energy resources and zero-carbon resources by December  
10 31, 2045.”<sup>14</sup> SB 1020<sup>15</sup> accelerated the mandate for “eligible renewable energy  
11 resources and zero-carbon resources [to] supply 90 percent of all retail sales of  
12 electricity to California end-use customers by December 31, 2035, 95 percent of  
13 all retail sales of electricity to California end-use customers by December 31,  
14 2040, 100 percent of all retail sales of electricity to California end-use customers  
15 by December 31, 2045, and 100 percent of electricity procured to serve all state  
16 agencies by December 31, 2035.”<sup>16</sup>

17 Recent developments at the national level are also noteworthy in their recognition of the  
18 critical role clean fuels and carbon management will play, particularly for hard to electrify  
19 activities. The Inflation Reduction Act of 2022 (IRA) and the Infrastructure Investment and Jobs  
20 Act (IIJA) dedicate funding to support clean fuel and carbon management activities necessary to  
21 enable decarbonization solutions for industrial applications. The IIJA appropriated more than

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<sup>11</sup> CNRA, *Proposal to the Legislature for Establishing a State Framework and Standards for Intrastate Pipelines Transporting Carbon Dioxide* (March 2023) at 14, available at: <https://resources.ca.gov/-/media/CNRA-Website/Files/Initiatives/Transitioning-to-Clean-Energy/SB-905--CO2-Pipeline-Regulatory-Framework--Stds-March-2023.pdf>.

<sup>12</sup> CARB, *Advanced Clean Fleets Resolution 23-13* (April 27, 2023), available at: <https://ww2.arb.ca.gov/sites/default/files/barcu/board/books/2023/042723/prores23-13.pdf>

<sup>13</sup> SB 100 (De León, 2018), available at: [https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=201720180SB100](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB100)

<sup>14</sup> *Id.* at § 1(b) & 5; see also Cal. Pub. Util. Code § 454.53(a).

<sup>15</sup> SB 1020 (Laird, 2022), available at: [https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=202120220SB1020](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220SB1020).

<sup>16</sup> *Id.* at § 4(a); see also Cal. Pub. Util. Code § 454.53(a).

1 \$62 billion to the U.S. Department of Energy (DOE) to create and fund 60 new programs,  
2 including 16 demonstration and 32 deployment programs to catalyze the market for carbon  
3 management and hydrogen hub activities.<sup>17</sup> The IRA pointedly highlights that “the industrial  
4 sector is diverse, hard to decarbonize, and contributes nearly one-third of the nation’s greenhouse  
5 gas emissions [...] Deploying technologies like carbon capture and storage (CCS) at scale will be  
6 critical for decarbonizing many industrial processes.”<sup>18</sup>

7 Recognition around the value of clean fuels and carbon management, and the need to  
8 support funding for clean energy activities included in SoCalGas’s GRC is clear. The ability to  
9 reach carbon neutrality hinges on the feasibility and execution of decarbonizing activities<sup>19</sup>  
10 including hard-to-electrify applications, such as industry, which represent one-third of  
11 California’s GHG emissions.<sup>20</sup> The CPUC recently adopted Resolution E-5254 (Resolution)  
12 which provides a procedural venue for the electric and gas investor-owned utilities to request  
13 cost recovery for match funding and tax liabilities pursuant to any funds received from the  
14 federal IJIA, the Clean Energy Infrastructure Grant Programs administered by the DOE, the  
15 federal IRA, and the federal Creating Helpful Incentives to Produce Semiconductors and Science  
16 Act (CHIPS).<sup>21</sup> Specifically, the Resolution also explicitly permits utilities to seek funding  
17 through their respective GRCs.<sup>22</sup>

18 While intervenor testimony recognizes the critical need to advance the State’s  
19 decarbonization goals, some intervenors express different views on the decarbonization solutions  
20 and approach SoCalGas has set forth. Legislative and policy initiatives, both at the national and

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<sup>17</sup> DOE, *The Infrastructure Investment And Jobs Act: Opportunities to Accelerate Deployment in Fossil Energy and Carbon Management Activities*, available at: <https://www.energy.gov/sites/default/files/2021-12/FECM%20Infrastructure%20Factsheet.pdf>

<sup>18</sup> The White House, *Building a Clean Energy Economy: A Guidebook to the Inflation Reduction Act’s Investments In Clean Energy And Climate Action* (January 2023) at 67, available at: <https://www.whitehouse.gov/wp-content/uploads/2022/12/Inflation-Reduction-Act-Guidebook.pdf>.

<sup>19</sup> CARB, *California Greenhouse Gas Emissions for 2000 to 2020: Trends of Emissions and Other Indicators* (October 26, 2022) at 9, Figure 4, available at: [https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/2000-2020\\_ghg\\_inventory\\_trends.pdf](https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/2000-2020_ghg_inventory_trends.pdf).

<sup>20</sup> *Id.*

<sup>21</sup> Res. E-5254 (April 2023), available at: <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M506/K016/506016078.PDF>.

<sup>22</sup> *Id.* at 19.



1 state level, are sending a clear signal on the need to deploy clean fuels and carbon management  
2 decarbonization solutions. These initiatives recognize the critical system attributes that these  
3 decarbonization tools provide, including their ability to deliver deep decarbonization.  
4 SoCalGas’s proposed decarbonization activities are aligned with and designed to advance the  
5 State’s ambitious climate objectives.

### 6 **III. RESPONSE TO INTERVENOR TESTIMONY**

#### 7 **A. SoCalGas’s Evolving Role in Support of the State’s Decarbonization Goals**

8 Certain intervenors expressed varying levels of opposition to clean fuels and carbon  
9 management-related activities, arguing that such projects represent “new lines of business” for  
10 SoCalGas and are not in the ratepayer interest.<sup>23</sup> Some intervenors also question the role and  
11 value of clean fuels and CCUS in achieving decarbonization targets.<sup>24</sup>

12 The gas grid is an essential enabler for advancing and achieving carbon neutrality – a  
13 goal to which SoCalGas is a key partner and facilitator because of its ability to provide the  
14 capabilities for delivering reliability, resiliency, and the clean molecules necessary for SoCalGas  
15 and its customers to rapidly reduce GHG emissions. The climate imperative, and SoCalGas’s  
16 role in fostering net zero GHG emissions for its operations and customers, is a major theme  
17 within the 2024 GRC, whereby SoCalGas will actuate the gas grid’s unique role to achieve a just  
18 and equitable energy transition in California and help the State achieve economy-wide carbon  
19 neutrality by 2045.

20 The California Legislature, California Governors, and this Commission have also made  
21 clear that SoCalGas and the other California investor-owned utilities are mandated to not only  
22 reduce their own GHG emissions and prepare their own infrastructure to withstand climate  
23 change impacts but also address emissions from customers’ energy use.

24 Decarbonizing supply side energy uses, like the gas grid, provides direct ratepayer value.  
25 The benefit of supply side decarbonization can be clearly seen in the progress the electric sector  
26 has made in its ability to provide increasingly cleaner electrons to facilitate the State’s clean  
27 energy goals. Similarly, the gas system can be leveraged to deliver increasingly clean molecules  
28 and provide carbon management solutions that can leverage the core competencies of the utilities

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<sup>23</sup> Ex. CEJA-01 (Vespa/Gersen/Saadat/Barker) at 26, 30-31.

<sup>24</sup> *Id.* at 31-38.

1 in their extensive knowledge, qualified workforce, and expertise in both utilizing and  
2 repurposing the existing infrastructure and for developing new dedicated pipeline networks to  
3 transport clean molecules and carbon from source to sink.

4 Determining the composition of energy systems more than two decades out is a complex  
5 and unique challenge laden with much uncertainty. Scenario analysis for decarbonization is an  
6 iterative process that must constantly adjust to incorporate and recalibrate based on actual events  
7 and changing trendlines. Market and technology breakthroughs, customer behavior, and  
8 government actions will have direct implications in shaping the energy transition. That said,  
9 consensus around the need for clean fuels and carbon management as necessary to achieve deep  
10 decarbonization is clear. And carbon neutrality by 2045 only provides five GRC cycles to  
11 advance these initiatives to achieve our common goals. Thus, the readiness and adaptation  
12 processes for decarbonization must be initiated in this GRC to study the optimal way to drive  
13 lasting change. This includes advancing research and development, pilots and programs to  
14 accelerate the deployment of clean fuels and carbon management will be critical to ensure these  
15 technologies are available at the scale when needed to deliver the emission reductions to  
16 facilitate net zero GHG emission targets.

17 Indeed, a deeper examination into CARB’s 2022 Scoping Plan underscores the value and  
18 need in leveraging all decarbonization tools, including clean fuels and carbon management to  
19 reach net zero emission targets and the imperative to advance these technologies to be ready at  
20 scale when needed:

- 21 ○ “In the 2030s biomethane blended in pipeline”<sup>25</sup>
- 22 ○ “Renewable hydrogen blended in the fossil gas pipeline at 7% energy  
23 (~20% by volume), ramping up between 2030 and 2040”<sup>26</sup>
- 24 ○ “In the 2030s, dedicated hydrogen pipelines constructed to serve certain  
25 industrial clusters”<sup>27</sup>
- 26 ○ “Carbon capture and sequestration (CCS) will be a necessary tool to  
27 reduce GHG emissions and mitigate climate change while minimizing

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<sup>25</sup> CARB, *2022 Scoping Plan for Achieving Carbon Neutrality* (November 16, 2022) at 78, available at: <https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf>

<sup>26</sup> *Id.*

<sup>27</sup> *Id.*

1 leakage and minimizing emissions where no technological alternatives  
2 may exist.”<sup>28</sup> ”Governor Newsom requested that CARB set a CO2  
3 removal and capture target of 20 MMT for 2030 and 100 MMT for  
4 2045.”<sup>29</sup>

- 5 ○ Increased landfill and dairy digester methane capture<sup>30</sup>
- 6 ○ The “Scoping Plan also calls for accelerating the transition from  
7 combustion of fossil fuels to hydrogen. Hydrogen can be produced  
8 through electrolysis with renewable electricity or through steam methane  
9 reformation of biomethane.”<sup>31</sup>
- 10 ○ The existing gas generation fleet would be retained<sup>32</sup> and an incremental 9  
11 GW of dedicated hydrogen generation fleet should be online by 2045<sup>33</sup>
- 12 ○ CCS will be applied to gas generation by 2045<sup>34</sup>
- 13 ○ Hydrogen and CCS are key decarbonization strategies particularly for  
14 industry, power generation and transport to 2045 GHG goals<sup>35</sup>

15 Despite the overwhelming acceptance of decarbonization tools, some intervenors oppose  
16 the clean hydrogen and carbon capture proposals in this GRC.<sup>36</sup> This opposition is misplaced.

17 The Commission has recognized the potential benefits of clean fuel sources, such as clean  
18 hydrogen. In Decision (D.) 22-12-055 the Commission stated: “Clean renewable hydrogen holds

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<sup>28</sup> *Id.* at 84.

<sup>29</sup> *Id.* at 94.

<sup>30</sup> *Id.* at 79.

<sup>31</sup> *Id.* at 88.

<sup>32</sup> CARB, *2022 Scoping Plan Appendix H: AB 32 GHG Inventory Sector Modeling* (November 2022) at 20, available at: <https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp-appendix-h-ab-32-ghg-inventory-sector-modeling.pdf>

<sup>33</sup> CARB Modeling Information, *AB 32 GHG Inventory Sectors Modeling Data Spreadsheet*, (Retrieved Nov 14, 2022), available at: <https://ww2.arb.ca.gov/sites/default/files/2022-11/2022-sp-PATHWAYS-data-E3.xlsx>.

<sup>34</sup> CARB, *2022 Scoping Plan Appendix H: AB 32 GHG Inventory Sector Modeling* (November 2022) at 20, available at: <https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp-appendix-h-ab-32-ghg-inventory-sector-modeling.pdf>.

<sup>35</sup> CARB, *2022 Scoping Plan for Achieving Carbon Neutrality* (November 16, 2022) at 78, available at: <https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf>.

<sup>36</sup> SCG-02-R, Ch. 2 (Sim) at MS-3-4.

1 promise as a potential solution to decarbonize California’s energy future and bring economic  
2 opportunities and new jobs to the region.”<sup>37</sup> In D.22-12-057, the Commission ordered the  
3 California utilities, including SoCalGas, to propose by application “pilot programs to test  
4 hydrogen blending in natural gas at concentrations above the existing trigger level.”<sup>38</sup>

5 As the UC Riverside Study finds,<sup>39</sup> clean renewable hydrogen can be a beneficial fuel  
6 and energy storage medium that can help California meet its climate goals. The CPUC and other  
7 state agencies, including the California Air Resources Board, the California Energy Commission,  
8 and the Governor’s Office of Business and Economic Development, are examining and  
9 advancing clean renewable hydrogen’s role in California’s energy future through various efforts  
10 including implementation of SB 1075,<sup>40</sup> the development of the new clean renewable hydrogen  
11 demonstration program pursuant to AB 209<sup>41</sup> and AB 179,<sup>42</sup> and the launch of the Alliance for  
12 Renewable Clean Hydrogen Energy Systems (ARCHES) initiative, which SoCalGas is a part  
13 of.<sup>43</sup>

14 The Commission should reject intervenors’ recommendation that do not advance clean  
15 fuels in the State as it is in direct odds with the policies at the state and federal level. Today,  
16 molecules comprise up to 80% of total energy consumption in California.<sup>44</sup> To decarbonize  
17 economy wide at the scale envisioned is unprecedented and will require innovative and diverse  
18 means of decarbonizing molecules. Pursuing programs and studies advancing the use and  
19 applicability of clean fuels and carbon management is prudent and will be critical in the State’s

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<sup>37</sup> D.22-12-055 at 2.

<sup>38</sup> D.22-12-057 at 68-69 (Ordering Paragraph (OP) 7).

<sup>39</sup> R.13-02-008, *CPUC Final Report, Hydrogen Blending Impacts Study* (July 18, 2022) at 114, available at: <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M493/K760/493760600.PDF>.

<sup>40</sup> SB 1075 (Skinner, 2022), available at: [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=202120220SB1075](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220SB1075)

<sup>41</sup> AB 209 (Committee on Budget, 2022), available at: [https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=202120220AB209](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB209).

<sup>42</sup> AB 179 (Ting, 2022), available at: [https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=202120220AB179](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB179).

<sup>43</sup> D.22-12-057 at 41.

<sup>44</sup> CARB Modeling Information, *AB 32 GHG Inventory Sectors Modeling Data Spreadsheet* (Retrieved Nov 14, 2022) available at: <https://ww2.arb.ca.gov/sites/default/files/2022-11/2022-sp-PATHWAYS-data-E3.xlsx>

1 ability to attain the levels of deep decarbonization required to meet carbon neutrality. The  
2 imperative to act is clear. SoCalGas’s Sustainability Strategy, and its proposal in this GRC  
3 proceeding to evaluate and study new solutions for clean fuels and carbon sequestration, are  
4 consistent with California and federal climate change policy.

5 **B. Long Term Implications of Decarbonization on the Gas System and**  
6 **Customer Affordability are Broad Policy Issues that are Currently Within**  
7 **the Scope of Other Commission Proceedings and Outside the Scope of Phase**  
8 **1 of this GRC**

9 Environmental Defense Fund (EDF) is “concerned” that SoCalGas has “failed to  
10 adequately plan for decarbonization.”<sup>45</sup> Embedded in this discussion, EDF states that anticipated  
11 decline in gas demand from the State’s decarbonization policies may potentially create inequities  
12 between customers that remain on the system versus those customers who fully electrify and  
13 depart the gas system.<sup>46</sup> Additionally, EDF recommends changes to proposed depreciation  
14 schedules to align with the 2045 net zero emission target date.<sup>47</sup> Detailed discussion around the  
15 reasonableness of SoCalGas’s customer forecast and the depreciation treatment proposed for this  
16 instant GRC are provided in the rebuttal testimonies of Gas Customer Forecast witness Eduardo  
17 Martinez (Exhibit 235) and Depreciation witness Dane Watson (Exhibit 232), respectively.  
18 Similar to EDF, PCF claims that “[u]nnecessary spending on aspirational future business  
19 prospects for SDG&E and SoCalGas will increase shareholder profits to the detriment of  
20 ratepayers and will fail to reduce greenhouse gas emissions to the extent possible as is necessary  
21 to avoid the most catastrophic climate change impacts.”<sup>48</sup>

22 The issue of affordability of gas rates and long-term gas planning are significant,  
23 challenging, statewide policy issues that are currently within the scope of, and under careful  
24 consideration and litigation in, the Long-Term Gas Planning OIR and SoCalGas’s Cost  
25 Allocation Application.<sup>49</sup> Indeed, the Long-Term Gas Planning OIR, including the most recent

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<sup>45</sup> Ex. EDF-01 (Colvin/McCann/Seong) at 3.

<sup>46</sup> *Id.* at 4.

<sup>47</sup> *Id.*

<sup>48</sup> Ex. PCF-01 (Powers) at 23.

<sup>49</sup> See R.20-01-007, *Order Instituting Rulemaking to Establish Policies, Processes, and Rules to Ensure Safe and Reliable Gas Systems in California and perform Long-Term Gas System Planning* (January 16, 2020).

1 Staff Proposal on Distribution Decommissioning (DDSP)<sup>50</sup> considers proposals around  
2 infrastructure investment scrutinization frameworks, the potential inequity between customers  
3 that depart the gas system versus customers who continue to remain on the gas system, as well as  
4 the affordability implications that may arise from declining gas demand. These are complex  
5 issues deeply intertwined and appropriately considered in the Long-Term Gas Planning OIR.

6 For purposes of this GRC proceeding, gas demand, does not affect the specific requests in  
7 the Test Year 2024 General Rate Case (GRC). In addition, customer attrition and declining  
8 throughput are not linear. The rebuttal testimony of Mr. Martinez, explains how declining gas  
9 demand does not necessarily mean that the utility will experience a decline in its customer  
10 growth, let alone an actual loss of customers. The electrification policies cited by EDF do not  
11 alter the reality that the adoption of electrification end uses, and the pace and penetration of fuel  
12 switching is highly uncertain. Decarbonization studies examining net zero emission end states  
13 typically utilize back-casting models with user defined assumptions around customer adoption of  
14 electric end uses meant to reach a specified level, but typically fail to account for customer  
15 psychology and subsidies required to incentivize such adoption. It is also uncertain as to whether  
16 customers will choose to fully electrify or retain certain gas appliances for lifestyle uses which  
17 presents a material factor when examining affordability implications.

18 Customer evolution, and the pace and penetration of electrification are critical  
19 considerations when determining the appropriate risk mitigation levers to deploy. SoCalGas  
20 agrees that there are important equity and affordability tools that need to be explored to mitigate  
21 the risks of and manage potential cost pressures that may arise with declining gas throughput.  
22 These tools are not limited to accelerated depreciation, but may also include rate restructuring  
23 tools, such as enhanced fixed charges for residential customers, and other cost recovery  
24 mechanisms, such as exit fees, among other options. Indeed, SoCalGas has been proactive in  
25 advancing an enhanced fixed charge to address potential rate pressures that may stem from future  
26 decline in gas demand. This proposal is currently pending before the CPUC in SoCalGas's Cost

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<sup>50</sup> CPUC, *Staff Proposal on Gas Distribution Infrastructure Decommissioning Framework in Support of Climate Goals* (December 21, 2022) available at: <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M500/K158/500158371.PDF>.

1 Allocation Proceeding.<sup>51</sup> An enhanced fixed charge can be an effective rate pressure mitigant in  
2 addressing potential throughput decline as customers may begin adopting certain electrification  
3 end uses, but are much slower, if at all, to fully electrify. SoCalGas sees this as an important step  
4 in maintaining affordability and equity through the energy transition.

5 Financial restructuring tools like accelerated depreciation have direct affordability  
6 impacts, particularly impacting near-term affordability for the benefit of potentially mitigating  
7 the risk of rate increases in the future, the degree to which is highly uncertain. Thus, the timing  
8 of when to pull these risk mitigation levers may vary and needs further examination. Identifying  
9 critical signposts or tipping points that may trigger any one of these levers should be a key part  
10 of the policy discussion and analysis in the Long-Term Gas Planning OIR.

#### 11 **IV. SOCALGAS'S ASPIRE 2045 SUSTAINABILITY GOALS ARE IN ALIGNMENT** 12 **WITH CALIFORNIA POLICY**

13 This section of the rebuttal testimony addresses assertions made by intervenors regarding  
14 SoCalGas's sustainability strategy. The need for balanced investments in near-term  
15 decarbonization activities and in foundational planning, research, and piloting efforts are  
16 addressed in more detail by other SoCalGas witnesses, who will respond to such intervenor  
17 testimony with respect to specific projects, programs and costs proposed by SoCalGas in this  
18 proceeding.

19 In Direct Testimony, Ex. SCG-02-R (Ch. 2: Sustainability Policy), SoCalGas describes  
20 how its overall sustainability strategy<sup>52</sup> and priorities aim to advance California's climate  
21 objectives<sup>53</sup>, align with the United Nations Sustainable Development goals<sup>54</sup>, and support  
22 SoCalGas' operational and safety imperatives. As the nation's largest natural gas distribution  
23 utility<sup>55</sup> serving the needs of over 21 million consumers in our 24,000 square mile service

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<sup>51</sup> See A.22-09-015, *Application of Southern California Gas Company (U 904 G) and San Diego Gas & Electric Company (U 902 G) for authority to revise their natural gas rates and implement storage proposals effective January 1, 2024 in this Cost Allocation Proceeding* (September 30, 2022) (SoCalGas Cost Allocation Proceeding).

<sup>52</sup> Ex SCG-02-R, Appendix B (ASPIRE 2045 Sustainability Strategy).

<sup>53</sup> Ex. SCG-02, Ch. 1 (Peress).

<sup>54</sup> United Nations–Department of Economic and Social Affairs–Sustainable Development, *The 17 Goals*, available at: <https://sdgs.un.org/goals>.

<sup>55</sup> Based on total customers and sales revenues reported in American Gas Association (AGA)'s Utility Rankings by volumes, Revenues and Customers 2021 Report.

1 territory, SoCalGas is in a unique position to support the state’s climate goals and deliver clean  
2 energy to customers who are working to reduce their greenhouse gas emissions. SoCalGas aims  
3 to lead the transition to a resilient and decarbonized clean fuels energy system in California  
4 through innovation, collaboration, and investment in new technologies and by leveraging  
5 existing assets, expertise, and customer relationships.

6 Intervenor discounts the value of SoCalGas’s sustainability objectives. EDF claims that  
7 SoCalGas has not adequately planned for decarbonization and PCF opposes spending on  
8 “aspirational future business prospects,”<sup>56</sup> as addressed above. IS claims that climate and  
9 sustainability protocols are “not related to the cost of providing gas delivery service to retail  
10 customers” and “therefore, these costs should be removed from the revenue requirement in this  
11 proceeding.”<sup>57</sup> CEJA asserts that SoCalGas’s sustainability strategy<sup>58</sup> does not align “with the  
12 state’s climate and public health policies.”<sup>59</sup>

13 SoCalGas disagrees with these statements. SoCalGas has set forth a framework that  
14 focuses on a holistic and broad set of environmental, social, governance (ESG) strategies that  
15 strengthens its commitment in helping the state achieve net-zero GHG emissions by 2045, while  
16 supporting operational and safety imperatives. The timing and importance of this GRC filing to  
17 approve sustainability-driven proposals is vital to accelerate solutions to the pressing climate  
18 challenges ahead of us. SoCalGas recognizes that new technology, regulatory decisions, and  
19 customer choices will require changes to SoCalGas’s approach, and there is a need for flexibility,  
20 partnership and collaboration with business partners, customers, regulatory and policy  
21 stakeholders across sectors. Specifically, SoCalGas’s sustainability strategy sets forth a vision  
22 and framework to advance the State’s many climate and social policies and is aligned with  
23 several of the policies referenced in Section II above. SoCalGas aims to execute on its  
24 sustainability goals in part through the proposals put forth in this GRC. This is why it is  
25 imperative that the Commission authorize these sustainability-advancing programs in this

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<sup>56</sup> Ex. PCF-01 (Powers) at 23.

<sup>57</sup> Ex. IS-02 (Gorman) at 2.

<sup>58</sup> Ex. SCG-02-R, Ch. 2 (Sim).

<sup>59</sup> Ex. CEJA-01 (Vespa/Gersen/Saadat/Barker) 22.



1 GRC<sup>60</sup>. As explained in direct testimony<sup>61</sup>, there are five identified focus areas that provide a  
2 framework for integrating sustainability in the organization. These priorities include:

- 3 a. Accelerating the transition to clean energy
- 4 b. Protecting the climate and improving air quality
- 5 c. Increasing clean energy access and affordability
- 6 d. Advancing a diverse, equitable, and inclusive culture, and
- 7 e. Achieving world-class safety

8 SoCalGas’s ASPIRE 2045 sustainability strategy includes various goals to accelerate the  
9 transition to clean energy, supported by state and federal policies. As explained in further detail  
10 in Section II above, this is evidenced by a growing body of legislation and policies aimed at  
11 advancing these areas. These include policies that establish GHG emission reduction and carbon  
12 neutrality targets, establishing a renewable gas standard, exploring the benefits of carbon  
13 management, and encouraging utilities to purchase from diverse businesses<sup>62</sup>, among a number  
14 of other policies, programs, and initiatives.

15 For example, SoCalGas’s sustainability strategy includes the goal to achieve net zero  
16 greenhouse gas emissions in its operations and the energy delivered to customers by 2045. This  
17 is aligned with California Senate Bill 32 (2016),<sup>63</sup> which ordered the reduction of economy-wide  
18 emissions of 40% below 1990 levels by 2030, and California Assembly Bill 1279 (2022). AB  
19 1279 established state policy to “[a]chieve net zero greenhouse gas emissions as soon as

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<sup>60</sup> See Table MS-1 of Ex. SCG-02-R Chapter 2 Sustainability Policy for list of sustainability actions/investments with cross-departmental sustainability alignment included in this GRC application.

<sup>61</sup> Ex. SCG-02-R, Ch. 2 (Sim) at MS-3-4.

<sup>62</sup> General Order (GO) 156, *Rules Governing The Development Of Programs To Increase Participation Of Women, Minority, Disabled Veteran And Lesbian, Gay, Bisexual And Transgender (Lgbt) Business Enterprises In Procurement Of Contracts From Utilities As Required By Public Utilities Code Sections 8281-8286*, available at: <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/news-and-outreach/documents/bco/utility-supplier-diversity-program/general-order-156.pdf>.

<sup>63</sup> SB 32 (Pavley, 2016)  
[https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=201520160SB32](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32).

1 possible, but no later than 2045.”<sup>64</sup> Additionally, SoCalGas has achieved a 37% reduction<sup>65</sup> in  
2 methane emissions as of 2021 ahead of the schedule established by Senate Bill 1371,<sup>66</sup> which  
3 require utilities to demonstrate 20% reduction in methane emissions by 2025 and 40% by 2030,  
4 from a 2015 baseline. As a leader in natural gas leak detection and reduction, SoCalGas  
5 participates in forums and venues<sup>67</sup> to share best practices and lessons learned to scale methane  
6 emission reduction more broadly.

7 In addition, the CPUC issued a decision<sup>68</sup> in 2020 that discusses climate adaptation in  
8 disadvantaged communities and aims to ensure the energy utilities are prepared to upgrade their  
9 infrastructure, operations, and services to adapt to climate change, while ensuring safe and  
10 reliable energy service to all Californians. SoCalGas is pragmatically and appropriately taking  
11 next steps to propose new feasibility studies and decarbonization pathways to advance  
12 decarbonization and climate objectives through this General Rate Case.

13 The suggestion by certain intervenors that these sustainability investments are  
14 unnecessary or not related to the cost of providing gas delivery is misguided. As described  
15 above, the California legislature and this Commission make clear that the investor-owned  
16 utilities, including SoCalGas, are compelled to advance decarbonizing its infrastructure and help  
17 address emissions from customers’ energy use. This is exactly what SoCalGas is requesting in  
18 this GRC. SoCalGas must actively seek to advance California’s climate goals and explore  
19 pathways to achieve carbon neutrality in a way that maintains reliability, affordability, and a

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<sup>64</sup> Executive Order B-55-18, available at: <https://www.ca.gov/archive/gov39/wp-content/uploads/2018/09/9.10.18-Executive-Order.pdf>; see also Cal. HSC § 38562.

<sup>65</sup> SoCalGas Newsroom, *SoCalGas Surpasses California's 2025 Methane Emissions Reduction Goals, Nears 2030 Goal* (June 16, 2022), available at: <https://newsroom.socalgas.com/press-release/socalgas-surpasses-californias-2025-methane-emissions-reduction-goals-nears-2030-goal#:~:text=SoCalGas%20reported%20that%20in%202021,innovation%20in%20new%20detection%20technologies>.

<sup>66</sup> SB 1371 (Leno, 2014), available at: [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=201320140SB1371](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201320140SB1371).

<sup>67</sup> SoCalGas has participated in forums, organizations and programs such as the U.S. Environmental Protection Agency’s Natural Gas STAR program as a founding member, is a member of the One Future Coalition, a group of natural gas companies working together to voluntarily reduce methane emissions across the natural gas value chain to 1% (or less) by 2025, and participates in a variety of presentations and workshops that share leak abatement best practices.

<sup>68</sup> D.20-08-046.

1 resilient energy system. Not moving forward would slow down progress to advancing these  
2 important climate objectives.

3 Aligned with the state’s policy directives, SoCalGas seeks to accelerate the transition to  
4 clean energy. This includes the goal to deliver 20% renewable natural gas (RNG) to core  
5 customers by 2030 and the diversion of waste streams in support of California’s Short-Lived  
6 Climate Pollutant Reduction Strategy established through Senate Bill 1383.<sup>69</sup> In addition, in  
7 support of advancing the transition to clean energy, SoCalGas aims to establish a hydrogen  
8 industrial cluster by 2030, consistent with the CEC’s IEPR, which highlights the prominent role  
9 of hydrogen in California’s clean energy future<sup>70</sup>, Executive Order B-48-18<sup>71</sup>, which set the goal  
10 to install 200 hydrogen fueling stations by 2030, and Senate Bill 1075, requiring CARB to  
11 prepare an evaluation including policy recommendations regarding the use of hydrogen in  
12 California and strategies supporting hydrogen infrastructure.<sup>72</sup>

13 Furthermore, SoCalGas’s sustainability strategy also addresses other important focus  
14 areas, such as advancing a diverse, equitable and inclusive culture. One such goal is to increase  
15 total annual Disadvantaged Business Enterprise (DBE) spend to 45% by 2025. This goal  
16 supports both SoCalGas’s sustainability focus area and the State’s policy established through  
17 General Order 156 to encourage increased procurement of goods and services from women,  
18 minority, disabled veteran, and LGBT, and/or persons with disabilities business enterprises  
19 (diverse suppliers).<sup>73</sup> SoCalGas’s relationships with its business partners encourage and  
20 strengthen supplier diversity, with a focus on community investments that support safety,  
21 sustainability, and social justice. These tenets have also guided the CPUC’s goals to advance  
22 equity in its programs and policies for environmental justice and social justice communities, as

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<sup>69</sup> SB 1383 (Lara, 2016), *available at*:

[https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=201520160SB1383](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB1383).

<sup>70</sup> California Energy Commission (CEC), *Final 2022 Integrated Energy Policy Report Update* (February 2023) at 98-114, *available at*: [https://www.energy.ca.gov/sites/default/files/2023-02/Adopted\\_2022\\_IEPR\\_Update\\_with\\_errata\\_ada.pdf](https://www.energy.ca.gov/sites/default/files/2023-02/Adopted_2022_IEPR_Update_with_errata_ada.pdf).

<sup>71</sup> Executive Order B-48-18, *available at*: <https://www.library.ca.gov/wp-content/uploads/GovernmentPublications/executive-order-proclamation/39-B-48-18.pdf>.

<sup>72</sup> SB 1075 (Skinner, 2022), *available at*:

[https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=202120220SB1075](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220SB1075).

<sup>73</sup> GO 156, *available at*: <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/news-and-outreach/documents/bco/utility-supplier-diversity-program/general-order-156.pdf>.

1 expressed in the CPUC Environmental and Social Justice Action Plan.<sup>74</sup> Based on the foregoing  
2 and inclusiveness of SoCalGas’s sustainability strategy, intervenor concerns related to the  
3 sustainability strategy are incorrect, unfounded, and contrary to State and federal policy.

4 **V. CONCLUSION**

5 To summarize, it is critical for SoCalGas to provide the capabilities for delivering  
6 reliability, resiliency, and the clean molecules necessary for SoCalGas and its customers to  
7 rapidly reduce GHG emissions. The climate imperative, and SoCalGas’s role to foster net zero  
8 GHG emissions for its operations and customers, is a major theme within the 2024 GRC.  
9 Policies at both the national and state level demonstrate strong support for the advancement and  
10 deployment of clean fuels and carbon management. SoCalGas will actuate the gas grid’s unique  
11 role to help the State achieve economy-wide carbon neutrality by 2045.

12 SoCalGas is proactively taking action to advance California’s climate and social policy  
13 goals. In support of these goals, SoCalGas developed ASPIRE 2045, a sustainability strategy that  
14 establishes a vision and framework aligned with the State’s goals of carbon neutrality, social  
15 equity, and energy safety and reliability. SoCalGas’s portfolio of activities and programs as  
16 described and sponsored by other SoCalGas GRC witnesses reflect its commitment and  
17 alignment with the state’s climate goals and policies. SoCalGas recognizes that there is a need  
18 for flexibility, partnership and collaboration with business partners, customers, regulatory and  
19 policy stakeholders across sectors. With the sense of urgency expressed by the global  
20 community, the timing and importance of this GRC filing to approve the sustainability-driven  
21 proposals herein could not be more vital.

22 This concludes our prepared rebuttal testimony.

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<sup>74</sup> CPUC, *Environmental and Social Justice Action Plan Version 1.0*. See *Executive Summary* (February 21, 2019) at 6-8, available at: <https://www.cpuc.ca.gov/-/media/cpuc-website/industries-and-topics/reports/env-and-social-justice-actionplan-20190221.docx.pdf>.

1 **VI. WITNESS QUALIFICATIONS OF DESPINA NEIHAUS**

2 My name is Despina Niehaus. I am sponsoring this rebuttal testimony, except for Section  
3 IV above. I assumed sponsorship of this area from N. Jonathan Peress. My business address is  
4 555 West 5<sup>th</sup> Street, Los Angeles, CA 90013. My title is Director of Strategic Planning  
5 employed by SoCalGas. My job responsibilities include overseeing the analytical work and  
6 strategy development of the Company's business transformation and decarbonization strategy. I  
7 have been employed by SoCalGas (starting at SDG&E) since November 2006 and have held  
8 previous roles at SDG&E in Strategic Planning and Regulatory Affairs. I hold a BA in  
9 Government and Politics from the University of Maryland, and a JD from California Western  
10 School of Law. I am a member of the State Bar of California.

11 I have not previously testified before the Commission.

1 **VII. WITNESS QUALIFICATIONS OF SHIRLEY ARAZI**

2 My name is Shirley Arazi. I am sponsoring Section IV of this rebuttal testimony. I  
3 assumed sponsorship of this area from Michelle Sim. My business address is 555 West 5<sup>th</sup>  
4 Street, Los Angeles, CA 90013. My title is the Director of Sustainability employed by  
5 SoCalGas. My job responsibilities since November 2022 include leading SoCalGas's  
6 sustainability efforts to set the goals and governance to encourage and support integration of  
7 sustainable business practices across the broader organization to advance SoCalGas's efforts to  
8 achieve net zero GHG emissions by 2045 and support California's carbon neutrality goals.

9 I have been employed by SoCalGas (starting at SDG&E) since June 2006 and have held  
10 numerous roles in Finance, Investor Relations, Procurement, and Regulatory Affairs.

11 I received a Bachelor of Science in Business Administration majoring in Finance and a  
12 minor in Psychology from the University of Arizona in 2006. I also received a Masters in  
13 Business Administration from San Diego State University in 2010.

14 I have previously testified before the Commission.

**APPENDIX A**  
**GLOSSARY OF TERMS**

**APPENDIX A**  
**GLOSSARY OF TERMS**

<b>ACRONYM</b>	<b>DEFINITION</b>
A.	Application
Commission or CPUC	California Public Utilities Commission
D.	Decision
GRC	General Rate Case
SDG&E	San Diego Gas & Electric Company
SoCalGas	Southern California Gas Company
TY	Test Year