Comment Letter #68



Jawaad A. Malik
Vice President, Strategy and Sustainability &
Chief Environmental Officer
555 West 5th Street
Los Angeles, CA 90013
Tel: (213) 200-4084
Jawaad.Malik@socalgas.com

July 5, 2022

Wayne Nastri
Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Subject: Comments on the Draft 2022 Air Quality Management Plan (AQMP)

Dear Mr. Nastri:

Southern California Gas Company (SoCalGas) appreciates the opportunity to provide public comments on the Draft 2022 AQMP released in May 2022. As the Draft 2022 AQMP notes, most nitrogen oxide (NOx) emissions in the South Coast Air Basin are from heavy-duty trucks, ships and other mobile sources that are beyond South Coast Air Quality Management District's (South Coast AQMD) regulatory control. While NOx emissions in the South Coast Air Basin have reduced significantly in recent years, almost all these reductions come from sources under California Air Resources Board (CARB) and South Coast AQMD authority. In contrast, NOx emissions from federal sources are increasing. In 2037, the attainment year for South Coast AQMD to meet the 2015 8-hour ozone standard of 70 parts per billion, sources that are under South Coast AQMD control will account for less than 20 percent of total NOx emissions, while sources under CARB control will account for 39 percent of the emissions, and sources under federal control will account for 42 percent of emissions.

Given this, South Coast AQMD has concluded that attainment is not possible without addressing those federal sources even if all emissions under South Coast AQMD's and CARB's control were eliminated.³ Requiring significant reductions from these non-federal sources places an

-

¹ See South Coast AQMD, "Draft 2022 Air Quality Management Plan (AQMP)" available at <u>draft2022aqmp.pdf</u> (aqmd.gov).

² See AQMP, p. ES2-ES3.

³ See AQMP, p. ES6.

undue burden on them, given that in most cases they are already strictly regulated.⁴ Given the magnitude of emissions reductions necessary to meet the 2015 8-hour ozone standard, SoCalGas supports South Coast AQMD's efforts to compel emissions reductions from federal sources. Such efforts advance the public interest and could reduce the need for AQMP measures that address disproportionately small stationary source emissions at a very high cost.

With a focus on informing the planning process and addressing certain longstanding foundational elements for advancing public welfare in undertaking ozone attainment planning, our comments are as follows:

- 1) Fuel cells should be a cornerstone of South Coast AQMD's NOx emissions reduction strategy for buildings to ensure equitable access to clean air and resilient energy;
- 2) A fuel card program can help displace Heavy-Duty (HD) diesel trucks today and provide a pathway for zero-emission fueling infrastructure; and,
- 3) Proposed stationary source measures, if applied at SoCalGas and SDG&E facilities could delay emission reductions, potentially impact energy system reliability, and result in over \$1B in stranded assets, including as necessary for delivering increasingly cleaner fuels.
- Fuel cells should be a cornerstone of South Coast AQMD's NOx emissions reduction strategy for buildings to ensure equitable access to clean air and resilient energy

The Draft 2022 AQMP proposes zero emission standards for space heating, water heating, and cooking appliances for installation in new buildings and replacement at the end of useful life for units in existing buildings.⁵ Providing resilient, increasingly cleaner energy for all Californians should continue to be a critical aspect of California's climate, energy, and clean air goals. The State recognizes the current planning shortfalls of electricity, which under one circumstance is as great 3,500 MW for the summer of 2022.⁶ Consequently, the Governor's May Revise Budget includes \$4.2 billion to procure and take out of the market 5,000 MW of electric generators for emergency purposes.⁷ There is concern that, due to supply chain issues and costs of transportation, this shortfall could be exacerbated over time. This leads to the potential of further increasing adverse reliance on gasoline and diesel backup generation to ensure electric reliability as expressed in the recent University of California, Irvine (UCI) presentation to the South Coast AQMD Governing Board.⁸ The UCI presentation illustrates the potential significant air quality degradation

⁵ See South Coast AQMD, "Policy Brief: Residential and Commercial Building Appliances", available at combined-residential-and-commercial-buildings-appliance.pdf (aqmd.gov)

2

⁴ See AQMP, p. ES5.

⁶ https://www.scientificamerican.com/article/california-faces-summer-blackouts-from-climate-extremes/

⁷ Governor's May Revise Budget, available at https://www.ebudget.ca.gov/2022-23/pdf/Revised/BudgetSummary/ClimateChange.pdf

^{*} See "Energy Future for South Coast Air Quality Management District" Jack Brouwer (University of California, Irvine), May 12, 2022, available at: http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2022/spec-mtg--brd-retreat-agenda-may-2022.pdf?sfvrsn=24.

and increased public health costs in disadvantaged communities from residential, commercial, and industrial gasoline and diesel backup generation during Public Safety Power Shutoff (PSPS) events in the South Coast Air Basin. These impacts have also been top of mind for the Disadvantaged Communities Advisory Group (DACAG), the 11-member group that reviews California Energy Commission (CEC) and California Public Utility Commission (CPUC) policies. In 2021, the DACAG recommended reducing the use of diesel generators, improving communication about the scope and duration of Public Safety Power Shutoff (PSPS) events, and exploring ways the grid can remain energized through islanding in PSPS event communities with no wildfire risk. 11,12

Fuel cells present an optimal tool for achieving California's air quality, public health, equity, climate, and energy goals. The Draft 2022 AQMP recognizes "fuel cells as an alternative to traditional ICE engines reduces NOx emissions with a co-benefit of reducing other criteria pollutants, toxics, and GHGs."13 Fuel cells could displace gasoline and diesel backup generation from PSPS events by providing continuous power for electric appliances or equipment. Since fuel cells do not combust the feedstock when generating electricity, they produce negligible to zero associated NOx emissions, 14 and when fueled with 100 percent renewable fuel, they can have negative greenhouse gas emission impacts.¹⁵ Fuel cells could also mitigate strain on the electric grid as more buildings and transportation segments electrify by offsetting electric demand through running "grid parallel" or "islanding." Beyond cleaner air and resilient power, fuel cells could result in cost-savings for residents by reducing their electricity bills. To this end, SoCalGas is engaged in two key efforts to help develop the fuel cell market. Utilizing funding from the 2016 AQMP, SoCalGas is completing lab testing for a small Solid Oxide Fuel Cell (SOFC) and planning to field test four units in the South Coast Air Basin. Each unit will be retrofitted to a single-family home to power electric appliances. In addition, SoCalGas is developing new energy resilience projects for its customers to be deployed across its service territory to spur customer energy resilience investments. This program focuses on providing power resilience and reliability solutions to customers located in Tier 2 or Tier 3 High Fire Threat Districts during unplanned outages or when electric utilities de-energize powerlines during Public Safety Power Shutoff

⁹ Ibid

¹⁰ See Disadvantaged Communities Advisory Group at https://www.cpuc.ca.gov/dacag/

¹¹ See "DACAG 2021 Annual Report," CEC, p. 8, available at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=240542.

¹² See McNamara et al. (2022), "Seeking energy equity through energy storage", The Electricity Journal 35 (2022), available at https://www.sciencedirect.com/science/article/pii/S1040619021001548#bib5

¹³ See South Coast AQMD, "Draft 2022 AQMP Appendix IV-A" available at http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/appiv-a.pdf?sfvrsn=18
¹⁴ See "Catalog of Combined Heat & Power (CHP) Technologies, Section 6. Technology Characterization – Fuel Cells," U.S. Environmental Protection Agency (EPA) CHP Partnership, March 2015, p. 6-1, 6-7, available at: https://www.epa.gov/sites/default/files/2015-

^{07/}documents/catalog of chp technologies section 6. technology characterization - fuel cells.pdf.

15 See "2016 - 2017 Self-Generation Incentive Program (SGIP) Overall Program Impact Evaluation," CEC, section 6.3.1, p. 6-12 to 6-14 and December 7, 2018, available at: https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/demand-side-management/self-generation-incentive-program.

(PSPS) events to mitigate the risk of wildfires. ¹⁶ These behind-the-meter microgrids will include a long duration fuel cell plus battery storage solution with islanding capabilities. SoCalGas anticipates incorporating hydrogen into this program in the future.

Given the benefits enumerated above, it is in the public interest for South Coast AQMD to accelerate the fuel cell market in California through the 2022 AQMP. To ensure equitable access to clean air and reliable energy, the 2022 AQMP should include fuel cells as a cornerstone of reducing NOx emissions from residential and commercial buildings and should allocate fuel cell incentives on par with electric appliance turnover incentives, especially in disadvantaged communities, and should not require a mitigation fee for fuel cells providing power for electric appliances.

A fuel card program can help displace heavy-duty diesel trucks today and provide a pathway for zero-emission fueling infrastructure

The Draft 2022 AQMP states that "incentive funds can facilitate the replacement of older, higheremitting vehicles and equipment with the cleanest vehicles and equipment commercially available."17 In your August 3, 2021 letter to environmental justice and advocacy groups, you stated that actions to make progress toward climate goals and reduce air pollution "can and must go hand-in-hand."18 The letter further stated that heavy-duty trucks fueled with Renewable Natural Gas (RNG) are commercially available today, can "provide substantial GHG emission reductions," and are "at least 90 percent cleaner than new diesel trucks on NOx and 100 percent cleaner on cancer-causing diesel particulate matter." In addition, a peer-reviewed study recently published by the University of California, Riverside, in the journal "Transportation Research Part D" reinforces this point by stating that heavy-duty trucks fueled with RNG should be rapidly deployed in the 2020-2040 timeframe to achieve GHG and NOx emission reduction targets, and "accelerating [the diesel trucks] fleet turnover is a more important NOx control strategy than dividing up vehicle replacements...between near-zero-emissions and zero-emissions vehicles."20 Unfortunately, CARB's Clean Truck rule does not require all diesel trucks to meet the standard of 0.02 grams of NOx per brake horsepower-hour until 2027 - deferring emission reductions from what can be achieved today by RNG trucks.21

¹⁶ See SoCalGas, "Risk Assessment and Mitigation Phase Cross-Functional Factor Energy System Resilience", May 17, 2021 available at https://www.socalgas.com/sites/default/files/SCG-CFF-2_RAMP-Cross-Functional-Chapter-Climate_Change_62.pdf

¹⁷ See South Coast AQMD, "Draft 2022 Air Quality Management Plan (AQMP)" available at http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plans/2022aqmp.pdf?sfvrsn=12.

¹⁸ Nastri, Wayne. "Letter to Partners in Environmental Justice and Environmental Health" August 3, 2021.

²⁰ See Achieving NOx and Greenhouse gas emissions goals in California's Heavy-Duty transportation sector, Transportation Research Part D: Transport and Environment, Volume 97, 2021, August 2021, available at: https://www.sciencedirect.com/science/article/pii/S1361920921001826.

²¹ See CARB Formally Adopts Low-NOx Omnibus Rule, Transport Topics, August 28, 2020, available at: https://www.ttnews.com/articles/carb-formally-adopts-low-nox-omnibus-rule.

However, California may be reaching an inflection point as it now leads the nation in highest onroad diesel prices at nearly \$7/gallon as compared to about \$4/gallon a year ago.²² Given that RNG prices are currently \$2.14/diesel gallon equivalent, the time is now for a fuel card program that can help accelerate the turnover of diesel trucks.²³ By stating that "[p]rograms and projects that accelerate the commercialization of vehicles and alternative and renewable fuels including <u>buy-down</u> programs through near-market and market-path deployment"²⁴ are eligible for funding through the Alternative and Renewable Fuel and Vehicle Technology Program, the Legislature has recognized the importance of scaling renewable transportation technologies.

A fuel card program could help offset the upfront costs of owning and operating a Natural Gas (NG)/RNG HD truck to complement existing incentive programs that CARB and air quality management districts manage. This program is similar to how Toyota and Hyundai offer free fuel cards to customers who purchase a Mirai or Nexo to help incentivize leases of new hydrogen fuel cell electric light-duty vehicles. Customers who purchase a new HD class 8 NG NZE truck or hydrogen fuel cell electric truck can be provided with a fuel card pre-loaded with a balance at an amount designed to improve economics and encourage adoption. For example, for an HD Class, 8 NZE truck with a \$60,000 incremental cost (compared to Diesel) and traveling 72,000 miles per year, a fuel card of \$10,000 could improve the payback period from about 4.4 years to 2.5 years.²⁵, ²⁶ This is akin to the Natural Gas Vehicle Incentive Program funded out of the Clean Transportation Program, which provided incentives up to \$25,000 per vehicle purchased.²⁷ The difference here would be encouraging NZE natural gas trucks to utilize RNG to simultaneously reduce both their criteria pollutant and GHG emissions greatly. Such a program can also lay the foundation for offsetting the cost of owning a fuel cell HD truck as that technology is commercialized. In conversations with SoCalGas, South Coast AQMD, the San Joaquin Valley Air Pollution Control District (SJVAPCD), and CARB have expressed support for a fuel card program. Such programs have the potential to help further public health and clean air goals, especially in disadvantaged communities located near major trucking corridors and would support South Coast's goal in the 2022 AOMP to "ensure that Environmental Justice (EJ) areas are able to access advanced technologies and also benefit from the transition to zero emission technologies."28

²² On-Road Diesel Price per gallon as of June 9, 2022. https://www.eia.gov/petroleum/gasdiesel/

²³ 100% RNG Prices are 0.____\$/kWh. If you choose a 5,10 25, or 50 percent lend, the cost could be lower.

²⁴ See Cal. Health & Safety Code section 44272(e)(7).

²⁵ See Advanced Clean Fleets - Cost Workshop Cost Data and Methodology Discussion Draft, CARB, p. 3, available at: https://ww2.arb.ca.gov/sites/default/files/2020-12/201207costdisc_ADA.pdf

²⁶ See Average Annual Vehicle Miles Traveled by Major Vehicle Category, Available at: https://afdc.energy.gov/data/10309.

²⁷ See The Natural Gas Vehicle Incentive Program, available at: https://afdc.energy.gov/laws/11647

²⁸ See South Coast AQMD "Draft 2022 Air Quality Management Plan (AQMP)" available at http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/draft2022aqmp.pdf?sfvrsn=12.

3) Proposed stationary source measures, if applied at SoCalGas and SDG&E facilities could delay emission reductions, potentially impact energy system reliability, and result in over \$1B in stranded assets, including as necessary for delivering increasingly cleaner fuels.

SoCalGas/SDG&E submitted permit applications in 2020, 2021, and 2022 to the South Coast AQMD for retrofit/replacement projects for compliance with Best Available Retrofit Control Technology landing rules associated with the sunset of the NOx Regional Clean Air Incentives Market (RECLAIM) program. More specifically, these projects are being implemented to comply with the requirements in Rules 1110.2/1100 for engines and Rule 1134 for gas turbines.

In addition to the retirement of nine natural gas compressors engines, SoCalGas and SDG&E are collectively retrofitting 18 natural gas engines to comply with Rule 1110.2's 11 ppm NOx limit.²⁹ The retrofit of one compressor gas lean burn engine is currently in the construction phase. In addition, Permits-to-Construct (PTCs) have been issued for the retrofit of the seven existing rich-burn engine generators and two existing rich-burn engine wet gas compressors. The PTC application packages for the retrofit of the eight-compressor gas lean burn engines are currently being processed by the South Coast AQMD. Should the NOx limit be lowered to six ppm as discussed in the draft AQMP, six compressor gas lean burn and rich burn engines would likely need a higher ammonia limit to achieve compliance with this lower NOx limit. Three of the compressor gas lean burn engines will not be able meet a lower NOx limit of six ppm even with a higher ammonia slip limit.

Furthermore, SoCalGas and SDG&E have each proposed modernization projects that go above and beyond the South Coast AQMD requirements by proposing to install a hybrid configuration of natural gas and electric driven compressors. In addition, pending CPUC approval, these projects propose to install advanced renewable energy components including hydrogen electrolyzers and fuel blending equipment to integrate green hydrogen into compressor combustion fuel, new green hydrogen vehicle fleet fueling stations for company vehicles, solar photovoltaic panels, an energy storage system, and hydrogen fuel cells. ³⁰ These projects seek to achieve measurable air quality benefits for SoCalGas' 2045 ASPIRE goals, ³¹ SDG&E's Path to Net Zero goals, ³² as well as California's climate goals. Given that PTC applications for these projects were submitted in June 2021 and June 2022 and the design and engineering of these facility modernization projects is well underway, we request that ongoing major capital projects being conducted in support of the sunset

6



²⁹ SDG&E is retrofitting one compressor gas lean-burn engine at the Moreno Compressor Station; the other units are being retrofit by SoCalGas. SDG&E has also proposed the Moreno Compressor Modernization project to retire five compressor gas lean-burn engines and four turbine compressors and replace them with two turbine compressors and two electric driven compressors.

³⁰ The implementation of the project components related to advanced renewable energy which include hydrogen electrolyzers, hydrogen storage, and fuel blending equipment to integrate green hydrogen into compressor combustion fuel, as well as a new green hydrogen vehicle fueling station for company vehicles is anticipated to occur subsequent to California Public Utility Commission (CPUC) review and approval via the General Rate Case submitted to CPUC on May 16, 2022.

³¹ See SoCalGas, "ASPIRE 2045", available at SoCalGas Sustainability Strategy final.pdf

³² See SDG&E, "The Path to Net Zero: A Decarbonization Roadmap for California", available at NetZero | San Diego Gas & Electric (sdge.com)

of RECLAIM be given consideration regarding the equipment life of new assets costing SDG&E and SoCalGas ratepayers over \$1.3 billion over the next few years. Should the South Coast AQMD decide to require electrification for equipment associated with these ongoing facility modernization projects, SDG&E and SoCalGas may be left with expensive stranded assets as the life of this new equipment will also extend well beyond 2037.

Moreover, converting compressor stations from all gas or hybrid configurations to 100 percent electric-driven compressor configurations is not feasible from a reliability perspective. SoCalGas/SDG&E are required by law to provide natural gas service to customers within the entire service area which includes large volumes of deliveries to large base-loaded natural gas fired power plants, as well as natural gas-fired peaker plants which are needed to maintain electric grid reliability. The reliability of compressor stations is critical to meet that obligation. If our compressor stations were equipped with only electric compressors, this could impact customers due to the potential inability to deliver high volumes of gas in short periods of time for electric generators. This demand includes gas engine-driven water pumping for fire suppression and flood control, as well as gas-driven emergency generators at hospitals and other critical care facilities. With increasing frequency, PSPS events on the electric grid destabilize the energy delivery system and compromise reliability. Additionally, wildfire risk is an ever-present threat. To be able to reliably provide gas to our customers, even during power outages, sufficient electrical back-up equipment to operate the compressors would need to be accessible to a compressor station if it were to be operated with 100 percent electric driven compressors. This magnitude of electrical back-up equipment is not currently available. A compressor station's ability to continue to serve customers at a rate sufficient to avoid a widespread disruption is paramount. A comprehensive list of SoCalGas' questions and comments regarding proposed large source measures (L-CMB-03, L-CMB-04, and L-CMB-05) can be found in Appendix A.

Conclusion

SoCalGas appreciates the opportunity to comment on the Draft 2022 AQMP. It is imperative that ozone attainment and air quality policies, especially those adopted for widespread implementation and with equally widespread effects, are developed with a thorough and fact-based understanding of prospective consequences and results. A diversified decarbonized energy supply will assure equitable and sustained emission reductions for both stationary and mobile sources in the South Coast Air Basin. SoCalGas looks forward to collaboratively pursuing our shared interest of achieving both climate and air quality goals in California.

Respectfully,

/s/ Jawaad A. Malik

Jawaad A. Malik Vice President, Strategy and Sustainability & Chief Environmental Officer CC: Sarah Rees, PhD

Aaron Katzenstein

Michael Krause

Ian MacMillan

Chairman Ben Benoit

Vice-Chair Vanessa Delgado

Council Member Michael Cacciotti

Supervisor Andrew Do

Gideon Kracov

Supervisor Sheila Kuehl

Mayor Larry McCallon

Veronica Padilla-Campos

Supervisor V. Manuel Perez

Councilmember Nithya Raman

Vice Mayor Rex Richardson

Council Member Carlos Rodriguez

Supervisor Janice Rutherford

8

APPENDIX A:

SoCalGas Comments and Questions Regarding Proposed Large Source Measures (L-CMB-03, L-CMB-04, and L-CMB-05)

- 1. L-CMB-03: Do the existing projects to replace/retrofit for compliance with Rules 1110.2/1100 satisfy this control measure or will additional NOx control projects be required for these new/retrofit engines? In other words, is the equipment included in our proposed RECLAIM Sunset projects for which we have submitted PTC applications included or excluded from this control measure? Which units are included in the phrase "older, higher emitting engines"?
- L-CMB-03: What are the District's thoughts regarding the proposed 6 ppm NOx limit, (the 0.29-0.31 tpd NOx reduction in 2037 appears to be from the 2019 amendment), and what timeline would be for rulemaking (as it currently is written, it appears to be based upon natural turn-over).
- L-CMB-03: A potential lower NOx emission limit in Rule 1110.2 will have challenges for the compressor engines to meet due to variable load operations. Additionally, higher ammonia slip limits will be the trade-off to achieve lower NOx emission limits. Longer averaging times will be needed for the lower NOx limit
- 4. L-CMB-04: Exemptions or accommodations for emergency power to natural gas utilities during electrical outages should be considered. We are supportive of replacing older diesel engines with natural gas engines. We are also supportive of installing other technologies such as fuel cells and linear generators to support auxiliary base load electricity needs and thereby reduce emergency power to peaking needs at locations where these options are feasible.
- 5. L-CMB-05: Does the current project at Moreno (PTC application submitted in June 2021) to replace the existing turbines with new turbines in order to comply with Rule 1134 satisfy this control measure or will additional NOx control projects be required? In other words, is the equipment included in our proposed RECLAIM Sunset project for which we have submitted PTC applications included or excluded from this control measure? Which units are included in the phrase "older, higher emitting turbines"?
- 6. L-CMB-05: On page IV-A-106, the AQMP language for L-CMB-05 mentions that "staff assumes that approximately 10 percent of the total wattage of Rule 1134 units will be replaced by zero emission technologies." Would it be possible for AQMD to specify which category or categories of turbines are being included in that 10 percent. For example, could AQMD list the units by their size/wattage, age, emissions (since there are 75 units currently covered by the rule) that would be generating the estimated emissions reductions needed by 2037? What is the rulemaking/rule implementation timeline to achieve these

- emissions so that the reductions will contribute to attainment (i.e., they are needed well before 2037)?
- 7. What is the duration of equipment life being considered by AQMD for each of the equipment categories?