

DOCKETED

Docket Number:	22-IEPR-01
Project Title:	2022 Integrated Energy Policy Report Update
TN #:	247840
Document Title:	SoCalGas Comments on the CEC Draft 2022 IEPR Update
Description:	N/A
Filer:	System
Organization:	Southern California Gas Company
Submitter Role:	Public
Submission Date:	11/30/2022 4:16:49 PM
Docketed Date:	11/30/2022

*Comment Received From: Southern California Gas Company
Submitted On: 11/30/2022
Docket Number: 22-IEPR-01*

SoCalGas Comments on the CEC Draft 2022 IEPR Update

Additional submitted attachment is included below.



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

November 30, 2022

Vice Chair Siva Gunda
California Energy Commission
Docket Unit, MS-4
Docket No. 22-IEPR-01
715 P Street
Sacramento, CA 95814-5512

Subject: Comments on the CEC Draft 2022 IEPR Update

Dear Vice Chair Gunda,

Southern California Gas Company (SoCalGas) appreciates the opportunity to provide comments on the California Energy Commission's (CEC) Draft 2022 Integrated Energy Policy Report (IEPR) Update released on November 8, 2022. We look forward to participating in the IEPR process and to continue collaborating with the CEC and stakeholders. In 2022, we submitted 25 comment letters in response to IEPR workshops and various other CEC proceedings; 40 internal subject matter experts contributed to comments.

As the State works towards achieving carbon neutrality across the economy by 2045, alignment and collaboration on the federal and state level will be critical. Thus, a recurring emphasis in our comments is the need for interagency collaboration, not just between the CEC, California Public Utilities Commission (CPUC), and California Air Resources Board (CARB), but also with federal agencies such as the U.S. Department of Energy (DOE) so that all agencies are developing policy recommendations using the same underlying assumptions. In addition, public-private efforts, such as the Alliance for Renewable Clean Hydrogen Energy Systems (ARCHES) consortium, should be considered and included in the conversation.

It is in the public interest that energy policy development be transparent and accessible to the public. Thus, our comments focus on the importance of transparency in the assumptions used for the CEC's demand forecast, especially for future hydrogen demand. Our comments also focus on increasing the transparency of procurement, development, and connection of energy resources. The California Energy Planning Library is a great step in the right direction, and we hope our suggestions help to create a Planning Library that is both transparent and helpful to stakeholders.

To provide constructive feedback that aligns with the CEC's statutory requirements in the IEPR, SoCalGas respectfully provides the following comments in the Appendix:

- 1) A hydrogen classification system based on carbon intensity would directly assist California in implementing clean fuels programs;
- 2) The hydrogen future demand forecast should consider, align, and reconcile with other forecasts on hydrogen from U.S. DOE, CARB, and ARCHES;
- 3) Hydrogen used for power generation should be included in a hydrogen demand growth model;
- 4) SoCalGas suggests the CEC consider and reference other sources such as the U.S. DOE in its assessment of future opportunities for hydrogen decarbonization;
- 5) The CEC's analysis of the September 2022 extreme heat event should include an assessment of the use of diesel backup generators and an analysis of available, cleaner alternatives that could support electric reliability;
- 6) A technology-neutral approach should be considered when developing policies and programs for distributed energy resources (DERs);
- 7) A holistic and integrated long-term planning framework is needed for energy infrastructure in the State;
- 8) Realistic fuel switching scenarios need to be incorporated into the IEPR electricity demand forecast to better reflect likely switching from natural gas to electricity in residential and commercial sector end use;
- 9) Universal access to the California Energy Planning Library should continue to be prioritized for all stakeholders;
- 10) Collective bargaining and transferable skills are important considerations in the Equity and Environmental Justice framework for economic opportunity and workforce; and
- 11) SoCalGas's commitment to supplier diversity supports Energy Efficiency Programs that promote workforce and small business development in disadvantaged communities.

Keeping in mind that 2022 is an IEPR Update year and next year's IEPR will be much more substantial, we have framed our comments considering the work the CEC will be undertaking in 2023. We hope our comments contribute to a nuanced discussion of California's energy future while emphasizing safety, reliability, resiliency, and affordability. We look forward to continuing to collaborate with the CEC Commissioners and staff. Thank you for your consideration of our comments.

Respectfully,

/s/ Jawaad A. Malik

Jawaad A. Malik
Vice President, Strategy and Sustainability & Chief Environmental Officer

Appendix

1) A hydrogen classification system based on carbon intensity would directly assist California in implementing clean fuels programs

In the Draft 2022 IEPR Update's¹ discussion of hydrogen, the CEC notes various classification options for hydrogen, as well as some of the inconsistency that exists between these approaches. The discussion also notes several solutions that could help clarify hydrogen terminology. One option is to move away from the color scheme entirely and use a different set of terminology such as the term “clean hydrogen” which is clearly defined. The utilization of a classification system identifying the amount of carbon dioxide-equivalent produced is also discussed, noting as an example, the Inflation Reduction Act (IRA) where hydrogen production credits are provided based upon the carbon emissions, further clarifying “clean hydrogen” projects are ones in which the lifecycle greenhouse gas (GHG) emission rate is not greater than 4 kilograms of carbon dioxide-equivalent per kilogram of hydrogen produced. SoCalGas supports the effort to identify a hydrogen classification system that can be applied across the U.S. that better tracks and identifies the lifecycle emissions and impacts of the various types or sources of hydrogen. This type of classification system would bridge the many programs that are being, or will be, implemented across the U.S., and directly assist California in implementing clean fuels programs that support California's climate goals.

2) The hydrogen future demand forecast should consider, align, and reconcile with other forecasts on hydrogen from U.S. DOE, CARB, and ARCHES

The Draft 2022 IEPR Update significantly underestimates opportunities for hydrogen demand growth. Figure 21 suggests that demand for hydrogen will be roughly 1.4 MMT/yr. in 2040 and less than 1.8 MMT/yr. in 2045.² When comparing these to U.S. DOE's predictions for future demand, these estimates suggest CEC predicts California will represent just 7 percent of U.S. hydrogen demand in 2040 and likely an even lower share in 2045 or 2050. Such a small share would constitute a sharp decline from California's current hydrogen footprint. U.S. DOE's Hydrogen Roadmap states, “Based on several models and analyses for the United States, DOE lays out the opportunity for hydrogen, as shown in the figure below.³ DOE aims to increase clean hydrogen production from nearly zero today to 10 MMT per year by 2030, 20 MMT per year by 2040, and 50 MMT per year by 2050.”

¹ See CEC 2022 Draft IEPR Update, November 9, 2022, p. 69, available at: <https://efiling.energy.ca.gov/GetDocument.aspx?tn=247338>.

² *Ibid.*, CEC 2022 Draft IEPR, p. 76.

³ See U.S. DOE, “DOE National Clean Hydrogen Strategy and Roadmap (Draft),” September 2022, p. 20, available at: <https://www.hydrogen.energy.gov/pdfs/clean-hydrogen-strategy-roadmap.pdf>.

SoCalGas recommends the CEC refer to and consider other federal and state-level hydrogen demand estimates provided by the U.S. DOE, CARB’s Final Scoping Plan, as well as ARCHES⁴ in its models of future hydrogen demand. The State-led ARCHES partnership is prospectively expressing broad geographic and economy-wide use of hydrogen as it advances hydrogen hub development and deployment. The effort envisions, major deployment clusters in the Los Angeles Basin and Bay Area and extend into the Central Valley, Inland Empire, and other regions (and possibly neighboring states) with high renewable resources, geologic storage possibilities, key transportation corridors, and need for clean energy and reduced pollution.⁵ The ongoing and expanding use of and interest in hydrogen as a low carbon energy source strongly suggests that the Draft 2022 IEPR Update may be underestimated future hydrogen demand and utilization. SoCalGas also requests the CEC run new Demand Forecast scenarios to include BIL and IRA assumptions for a revised hydrogen demand forecast.

Figure 1: U.S. DOE estimate of the opportunity for clean hydrogen in the U.S. (Figure 5 as published in the DOE Draft National Clean Hydrogen Strategy & Roadmap)⁶

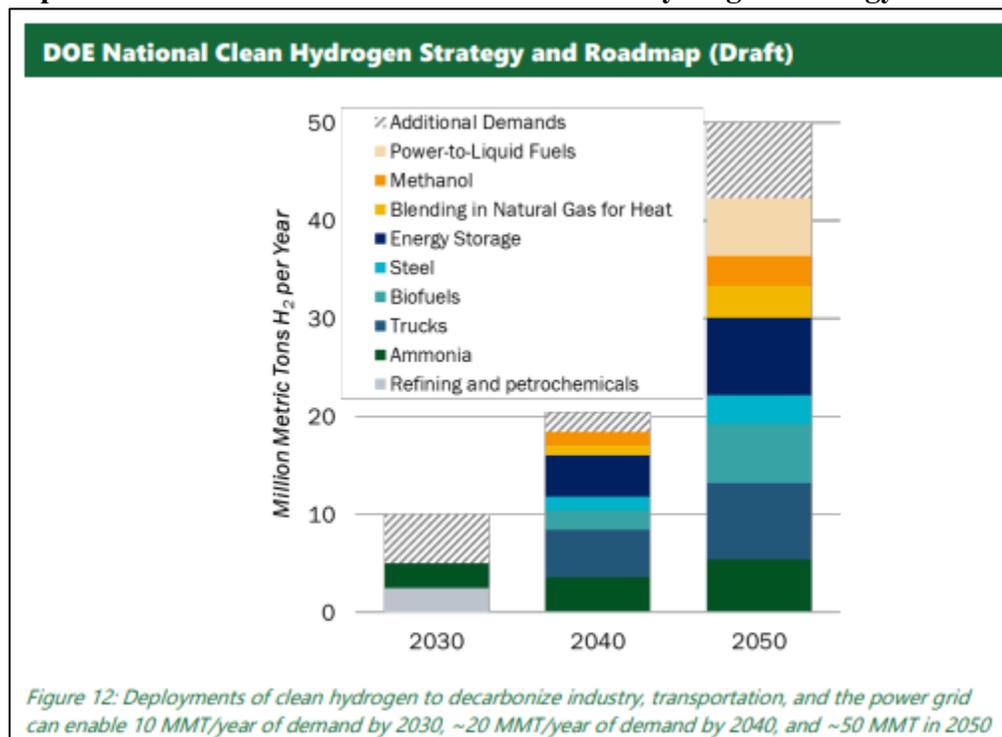


⁴ See Alliance for Renewable Clean Hydrogen Energy Systems (ARCHES), available at: <https://archesh2.org/>.

⁵ *Ibid.*, ARCHES.

⁶ *Ibid.*, U.S. DOE Hydrogen Roadmap, p. 21.

Figure 2: DOE estimates of U.S. clean hydrogen deployments in 2030, 2040 & 2050 (Figure 12 as published in the DOE Draft National Clean Hydrogen Strategy & Roadmap)⁷



At present, California represents an outsized portion of U.S. hydrogen demand. For example, U.S. DOE’s Energy Information Administration (EIA) pointed out this year that nearly all of the nation’s hydrogen vehicle fueling stations are located in California.⁸ U.S. DOE earlier noted in 2018 that, “Nationally and globally, California is on the ‘cutting edge’ in the adoption of fuel cell vehicles (FCVs) and hydrogen fueling infrastructure as a means of improving air quality and reducing greenhouse gas emissions.”⁹ A 2020 U.S. DOE report noted that the National Renewable Energy Laboratory (NREL) was evaluating 38 fuel cell buses, of which 31 were in California.¹⁰ NREL’s list of its current (Q4 2022) Zero-Emission Bus Evaluations shows that 43 of those 45 buses are in California.¹¹ A 2021 NREL report on fuel cell buses in U.S. transit fleets referenced CARB’s Innovative Clean Transit regulation, noted that implementation plans from 11 California transit agencies included fuel cell bus purchases. NREL stated that, “Analysis of the future bus plans indicate that more than 1,800 fuel cell electric buses (FCEBs) will be purchased by these

⁷ *Ibid.*, at 30.

⁸ See DOE, U.S. Energy Information Administration (EIA), “Hydrogen explained: Use of hydrogen,” updated January 20, 2022, available at: <https://www.eia.gov/energyexplained/hydrogen/use-of-hydrogen.php>.

⁹ See DOE Office of Energy Efficiency & Renewable Energy (EERE), “State of the States: Fuel Cells and Hydrogen in the United States,” January 2018, p. 13, available at: https://www.energy.gov/sites/default/files/2018/06/f53/fcto_state_of_states_2017_0.pdf.

¹⁰ See DOE EERE and Argonne National Laboratory, “2019 Fuel Cell Technologies Market Report,” (ANL-20/58), September 2020, p. 30, available at: <https://publications.anl.gov/anlpubs/2021/08/166534.pdf>.

¹¹ See National Renewable Energy Laboratory (NREL), “Fuel Cell Electric Bus Evaluation: Hydrogen and Fuel Cells,” accessed November 18, 2022, available at: <https://www.nrel.gov/hydrogen/fuel-cell-bus-evaluation.html>.

agencies in California from 2020 through 2040,” adding that more FCEBs beyond those 1,800 would be purchased by other California transit agencies still determining their needs.¹² A hydrogen energy map tracker prepared by the Pillsbury law firm tallied 20 low-carbon hydrogen projects across the U.S., of which seven are in California.¹³

3) Hydrogen used for power generation should be included in a hydrogen demand growth model

Senate Bill (SB) 1075 calls upon CEC to model the potential growth of hydrogen and its role in decarbonizing the electrical and transportation sector. In various sections, the Draft 2022 IEPR Update discusses the use of hydrogen for power generation. For example, page 79 references Governor Newsom’s July 22, 2022, letter that urges fossil gas plant transition planning and notes, “The lower use of gas plants and access to inexpensive hydrogen — assuming cost reductions are achieved as predicted by 2050 — would enable expanded repowering with hydrogen. ... Given technology development trends, new engines and turbines will have the ability for higher blends of hydrogen, thus filling the need for dispatchable zero-carbon resources.”¹⁴ It further cites projects underway by Los Angeles Department of Water and Power and the Northern California Power Agency that are working toward upgrading gas turbines for hydrogen combustion. At p. 100, the Draft 2022 IEPR Update suggests expanding SB 100 work to evaluate in-state, low-carbon hydrogen production and the use of hydrogen to decarbonize fossil gas-fired power plants.¹⁵

The Draft 2022 IEPR Update's Figure 21 references hydrogen demand modeled by CARB in its 2022 Draft Scoping Plan Proposed Scenario.¹⁶ While there is currently no discussion of demand for hydrogen for power generation in the Draft 2022 IEPR Update, we understand that there are efforts underway, by CEC in future IEPRs and by CARB in the Final Scoping Plan, to model future power sector hydrogen demand and to further hone demand for hydrogen in other sectors. SoCalGas commends efforts by CEC and CARB to collaborate in efforts to develop thorough and robust estimates for this promising decarbonization approach. The resulting shared data will not only help CEC fulfill its SB 1075 obligation, but it will also help meet a growing national and global pursuit for greater understanding of the decarbonization benefits and opportunities from hydrogen. SoCalGas appreciates CEC’s efforts and looks forward to its continuing work with CARB on thorough modeling for hydrogen use.

¹² See Leslie Eudy and Matthew Post, NREL, “Fuel Cell Buses in U.S. Transit Fleets: Current Status 2020,” (NREL/TP-5400-75583), March 2021, p. 4, available at: <https://www.nrel.gov/docs/fy21osti/75583.pdf>.

¹³ See Pillsbury Winthrop Shaw Pittman LLP, “The Hydrogen Map,” accessed November 18, 2022, available at: <https://www.thehydrogenmap.com/>.

¹⁴ *Ibid.*, CEC 2022 Draft IEPR, p. 79.

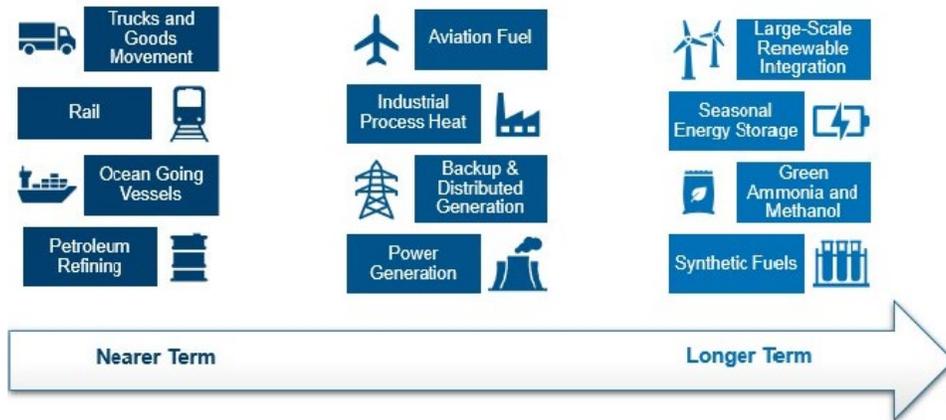
¹⁵ *Ibid.*, CEC 2022 Draft IEPR, p. 100.

¹⁶ *Ibid.*, CEC 2022 Draft IEPR, p. 76.

4) SoCalGas suggests the CEC consider and reference other sources such as the U.S. DOE in its assessment of future opportunities for hydrogen decarbonization

In the Draft’s discussion regarding hydrogen, the CEC notes that hard-to-electrify transportation, industrial processes, and grid reliability are key areas with potential for increased hydrogen use, further noting that this is consistent with hydrogen growth modeled in the California Air Resources Board’s (CARB’s) Draft 2022 Scoping Plan. The CEC then highlighted these opportunities in the Draft 2022 IEPR Update as Figure 22 below.¹⁷

Figure 3: Draft 2022 IEPR Update representation of future opportunities for clean hydrogen (Figure 22 as published in the Draft 2022 IEPR Update)¹⁸



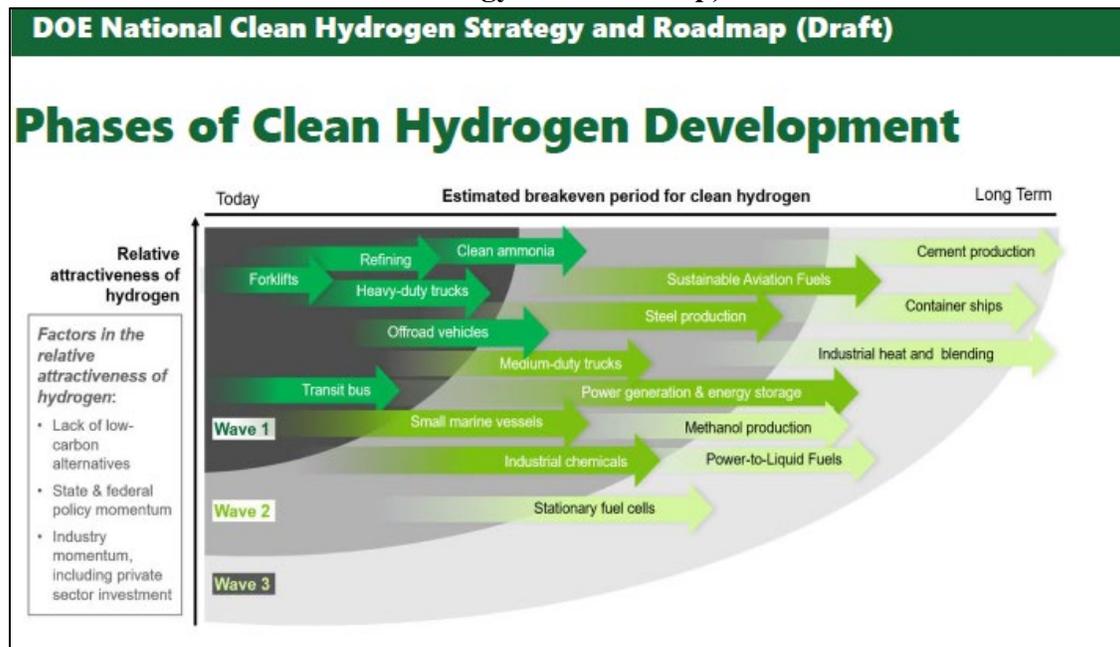
Along the same lines as with the CEC’s future hydrogen demand forecast, SoCalGas suggests the CEC consider and reference other sources such as the U.S. DOE in its assessment of future opportunities for hydrogen decarbonization. For example, the U.S. DOE has compiled a comprehensive roadmap describing its estimate of the phases of clean hydrogen development opportunities in its National Clean Hydrogen Strategy and Roadmap report.¹⁹ This is shown in Figure 39 of the report (shown as Figure 4 below). In this figure, U.S. DOE envisions three application adoption phases or “waves” for clean hydrogen use in the United States for near and longer-term deployment based on the relative attractiveness in each end-use application. Consideration and integration of the U.S. DOE Figure 39 would help align strategy around hydrogen opportunities between California and U.S.

¹⁷ The figure is replicated in the Draft 2022 IEPR Update Executive Summary as Figure ES-4, at p.7.

¹⁸ See *supra*, CEC Draft 2022 IEPR Update, Fig. 22, at p.77. See also footnote 17.

¹⁹ *Ibid.*, U.S. DOE Hydrogen Roadmap, p. 90.

Figure 4: U.S. DOE graphic of predicted timeline flow for clean hydrogen development and deployment (Figure 39 as published in the U.S. DOE Draft National Clean Hydrogen Strategy and Roadmap)²⁰



5) The CEC’s analysis of the September 2022 extreme heat event should include an assessment of the use of diesel backup generators and an analysis of available, cleaner alternatives that could support electric reliability

As Secretary Wade Crowfoot of the California Natural Resources Agency (CNRA) stated during the Extreme Heat Symposium held on October 18, 2022, the September extreme heat event was “the hottest, longest heatwave in our state’s history literally breaking thousands of temperature records across our State.”²¹ The Reliability chapter of the Draft 2022 IEPR Update²², as well as other assessments of the September 2022 heat wave previously presented,^{23,24} have thus far omitted details on the large number of diesel backup generators (BUGs) that were turned on during the course of the extreme heat event and where these BUGs were predominately used. The CEC did identify that temporary generators were part of the 2,000 MW of contingencies that helped to

²⁰ *Ibid.*

²¹ See Governor’s Office of Planning and Research and California Natural Resources Agency, “California Extreme Heat Symposium,” October 18, 2022, at 00:02:43 available at: <https://youtu.be/-PKtyxqQXE0>.

²² *Ibid.*, CEC 2022 Draft IEPR, p. 55.

²³ See CEC, Business Meeting Presentation on State’s Response to September Heat Wave, held October 12, 2022, available at: <https://efiling.energy.ca.gov/GetDocument.aspx?tn=246473>.

²⁴ See CEC Presentation on Lead Commissioner Workshop on Clean Energy Alternatives for Reliability Session 2, held October 28, 2022, available at: <https://efiling.energy.ca.gov/GetDocument.aspx?tn=247061>.

shed load during the heat wave.²⁵ The CEC should work with local air districts to understand how BUGs were used during the heat wave; such an understanding could be helpful in working with stakeholders to facilitate other contingencies or availability of cleaner alternatives during similar events in the future.

At the same Symposium, Vice Chair Siva Gunda highlighted how “every” diesel BUG which was available in California was paid to be turned on in order to reduce electric load during the heat wave and these diesel BUGs were often in disadvantaged communities.^{26,27} According to the California Air Resources Board (CARB), “Of particular concern are health effects related to emissions from diesel back-up engines. Diesel particulate matter (DPM) has been identified as a toxic air contaminant, composed of carbon particles and numerous organic compounds, including over forty known cancer-causing organic substances. The majority of DPM is small enough to be inhaled deep into the lungs and make them more susceptible to injury.”²⁸ According to the Mount Sinai Selikoff Center for Occupational Health, long-term exposure to diesel exhaust can cause the worsening of existing lung conditions, such as asthma.²⁹ Even more concerning is that many of the diesel generators are located within disadvantaged communities and can potentially burden these residents with high levels of carcinogenic pollutants.³⁰

SoCalGas suggests the heat wave assessment include an equity and environmental justice component as there is a clear link between the use of diesel backup generators in disadvantaged communities and health impacts such as asthma. There is a need to identify clean energy technologies that can be implemented feasibly to provide energy resilience and limit the use of diesel backup generators.³¹ This analysis should be included in both the 2022 IEPR Update and the CEC’s full assessment of the State’s response to the heat wave due in January 2023.

²⁵ See California Energy Commission (CEC) Presentation on Lead Commissioner Workshop on Clean Energy Alternatives for Reliability Session 1, held October 28, 2022, available at: https://energy.zoom.us/rec/play/BhA2hyp1W6aln8cOFm6YsFndIRYajmuFMvW2gXGHq_GwTgkY6YdTC5EXD-nJZy9TzcYgHSETjbfXVil.hFs33PYdSUJWEQrv?continueMode=true&_x_zm_rtaid=WGq7SUIKRime_RH2i04jR_A.1667232035132.f3e19ac9acd72dd4230ca20867e0bc04&_x_zm_rhtaid=446.

²⁶ Vice Chair Siva Gunda stated, “The sobering part of the [heat wave] story is we’ve turned on every backup generator we had available in the State. We paid them to be turned on, and those are diesel backup generators, oftentimes in disadvantaged communities.”

²⁷ See Governor’s Office of Planning and Research and California Natural Resources Agency, “California Extreme Heat Symposium,” October 18, 2022, at 1:24:00, available at: <https://youtu.be/-PKtyxqQXE0>.

²⁸ See California Air Resources Board (CARB) “Use of Back-up Engines for Electricity Generation During Public Safety Power Shutoff Events,” October 25, 2019, p. 2, available at: https://ww2.arb.ca.gov/sites/default/files/2019-10/PSPS_Back-up_Power_Guidance.pdf.

²⁹ See Mount Sinai Selikoff Centers for Occupational Health, “Diesel Exhaust Exposure,” accessed November 21, 2022, available at: <https://www.mountsinai.org/files/MSHealth/Assets/HS/Patient%20Care/Service-Areas/Occupational%20Medicine/Diesel%20Exhaust%20Exposure.pdf>.

³⁰ See M. Cubed, “Diesel Back-Up Generator Population Grows Rapidly in the Bay Area and Southern California,” accessed November 21, 2022, available at: <https://www.bloomenergy.com/wp-content/uploads/diesel-back-up-generator-population-grows-rapidly.pdf>.

³¹ *Ibid.*, CEC 2022 Draft IEPR, p. 28.

6) A technology-neutral approach should be considered when developing policies and programs for DERs

As a continuation of the foregoing point, SoCalGas supports microgrid paired with a variety of distributed energy resources (DERs), such as fuel cells or linear generators, as potential clean energy technologies that can be placed in low-income and disadvantaged communities to improve energy resilience. Fuel-cell microgrids and other technologies like linear generators have already supported the electric grid, while improving air quality. Currently, SoCalGas is powering its two largest Los Angeles facilities with Bloom Energy’s “AlwaysOn” Microgrids to reduce air pollution, GHG emissions and electricity costs while increasing reliability and resiliency for the facilities.³² Further, in 2019, SoCalGas partnered with Mainspring (formerly EtaGen) and the CEC to develop and deploy a near-zero emissions linear generator that can quickly alternate between traditional gas and renewable fuels to provide energy resiliency. Since then, Mainspring has garnered additional funding to scale up its operations across the country and expand to 30 grocery stores.³³

Moreover, clean fuel flexible microgrids can help expedite the State’s clean transportation goals by providing reliable hydrogen and electric vehicle charging. With the adoption of electric vehicles, the increase in unmanaged electric peak load will create a huge challenge for the electric grid and energy management.³⁴ Well placed and designed microgrids can generate electricity on demand without stressing the grid. When fueled with renewable fuels, one microgrid can provide renewable electricity to charge electric vehicles (EVs), which can avoid 1,400 metric tons of carbon emissions.^{35,36} In some instances, storing the over-generation of renewable electricity from the grid can be converted into hydrogen for hydrogen vehicle fueling. In both cases, microgrids can provide incremental environmental benefits as well as customer resiliency and increase levels of consumer confidence.³⁷ As the Zero Emissions Vehicle (ZEV) market advances, having a clean fuels microgrid that can support a DC fast charging station can help these charging stations serve as a critical facility by providing EV charging in the case of an emergency and/or grid outage.

³² See Southern California Gas Company (SoCalGas) Press Release, “SoCalGas Now Powering Two Los Angeles Facilities with Bloom Energy AlwaysON Microgrids,” July 17, 2022, available at: <https://www.prnewswire.com/news-releases/socalgas-now-powering-two-los-angeles-facilities-with-bloom-energy-alwayson-microgrids-301095300.html>.

³³ See Green Tech Media (2021), “Mainspring Energy Lands \$150M Deal to Deploy Its Linear Generators with NextEra,” available at: <https://www.greentechmedia.com/articles/read/mainspring-energys-linear-generators-to-roll-out-through-150m-deal-with-nextera>.

³⁴ See Grid Scape (2022), “How microgrids are transforming EV charging infrastructure?” available at: <https://grid-scape.com/how-microgrids-are-transforming-ev-charging-infrastructure/>.

³⁵ See Mainspring Energy, “Our Vision: The Grid of the future” accessed November 21, 2022, available at: <https://www.mainspringenergy.com/vision/>

³⁶ Each 250 kilowatt Mainspring product, in the footprint of a parking space, can save up to 450 metric tons of carbon emissions per year compared to the U.S. average grid running on natural gas, or the rough equivalent of removing 100 passenger cars from the road or installing 375 kW of rooftop solar. When running on 100% renewable gas it can save 1,400 metric tons, or more than three times as much. At scale, the numbers can be transformative while adding critical resilience and cutting costs for households and businesses alike.

³⁷ *Ibid.*, Mainspring Energy.

Further, the same microgrid can export capacity into the grid during emergency events to support system reliability, thereby avoiding the use of diesel backup generation.

7) A holistic and integrated long-term planning framework is needed for energy infrastructure in the State

Vice Chair Gunda stated during the May 2022 Workshop on Midterm Electric System Reliability that the climate agenda is at risk if the State is not able to maintain energy reliability.³⁸ Complex planning issues will continue to arise through the energy transition, and adopting and prioritizing decarbonization options for the gas system compels the development of a methodology that holistically looks at energy infrastructure investments and programs for both gas and electric grids impacts as they become increasingly interdependent. An integrated, long-term planning framework will facilitate and support systematic assessment of energy infrastructure implementation that is aligned with the shared goals of carbon-neutrality and energy system safety, reliability, and resiliency at affordable rates.

Until firm, dispatchable zero-carbon resources and long-duration storage technologies mature, securing electric reliability in the face of unprecedented peak demand will become even more difficult than it is today. California must plan for a pathway to expand and decarbonize the electric grid while simultaneously maintaining reliability for all Balancing Authority Areas (BAAs) with varying footprints in an affordable and equitable manner.

We understand that traditionally reliable resources, such as natural gas generation, would likely be dispatched less frequently in the future as their need will shift to critical days and hours when renewables and batteries are unable to meet the State's electricity demand. As we undertake that transition, it is critical that California takes a conservative approach to ensuring reliability related resources, such as dispatchable fuel-based generation, remain available to support steady and continued progress in adopting zero-carbon resources. SoCalGas agrees that California needs to transition to cleaner fuels and resources; however, in order to retire existing resources, California needs a sufficient supply of clean fuels or other clean, firm dispatchable resources and the infrastructure to support their delivery.

³⁸ See California Energy Commission (CEC), Staff Workshop on Summer and Midterm Reliability on updating the outlook for summer 2022 through 2026 and midterm electric system reliability, May 20, 2022, available at: https://energy.zoom.us/rec/play/tbt4ob2AKJR-kjTGsxbbaBc7tWuQWQn1NjHAZmZp5skFoFydhD3qDCnaof75yxfC21-FpczJqpf-C0o.Ve1MEq77fdT5L9W-?continueMode=true&_x_zm_rtaid=JLVip0ynSP2pMnz-trL6oA.1669051253180.33b20ba60b40d806364a816d636133a4&_x_zm_rhtaid=131.

8) Realistic fuel switching scenarios need to be incorporated into the IEPR electricity demand forecast to better reflect likely switching from natural gas to electricity in residential and commercial sector end use

SoCalGas notes that the CEC used higher additional achievable fuel substitution (AAFS) scenarios (3 and 4) for the Draft 2022 IEPR Update's Planning Forecast and Local Reliability Scenario (former Mid-Mid and Mid-Low scenarios, respectively) than what was used by investor-owned utilities (IOUs) in the 2022 California Gas Report (AAFS scenario 2). While reasonable for electricity system planning and reliability purposes, use of AAFS scenarios 3 and 4 may overstate fuel substitution from natural gas to electricity that will likely materialize during the 2022 IEPR forecast period. From a gas system planning perspective, it is also prudent to be conservative and be prepared to serve gas load if assumed scenarios of electrification do not materialize. Forecast uncertainty is further increased because CARB's State Implementation Plan (SIP)³⁹ calls for zero-emission space and water heating equipment standards for post-2030 sales, but those standards have yet to be developed or approved in Local Reliability Scenarios. SoCalGas encourages the CEC to continue exploring reasonable assumptions underlying AAFS scenarios in the 2023 IEPR process to reflect realistic fuel switching assumptions and policy mandates in final IEPR forecasts.

9) Universal access to the California Energy Planning Library should continue to be prioritized for all Stakeholders.

SoCalGas reiterates its appreciation of the CEC's willingness to provide data transparency and information to all stakeholders. Universal access to updated, uniform data allows stakeholders and California residents to use a fact-based approach in developing solutions for carbon neutrality in an informed, reliable, equitable, and affordable way. The new Planning Library would enable the CEC to strengthen its role as the State's Energy Data Repository, and as such, we provide the following comments on this topic:

- A. Regarding SoCalGas' comments submitted on May 18, 2022, from the CEC 2022 IEPR Update California Planning Library Workshop,⁴⁰ we reiterate the products or datasets that our organization most frequently uses, including the forecast of long-term carbon prices, Thermal Efficiency of Natural Gas-Fired Generation in California reports, Public Safety Power Shutoff (PSPS) event data, and GHG emissions from wildfires; we request the inclusion these data elements in subsequent phases of the rollout of the California Energy Planning Library. As of now, it is unclear when these datasets are intended to be released as a part of this effort.

³⁹ Adopted on Sep 22, 2022.

⁴⁰ See Southern California Gas Company (SoCalGas), "SoCalGas Comments on the CEC IEPR California Planning Library Workshop," May 18, 2022, available at: <https://efiling.energy.ca.gov/GetDocument.aspx?tn=243133>.

- B. We are encouraged by the planned feedback period included in the IEPR language. Specifically, we are referring to the "open feedback window."⁴¹ We are seeking clarification on whether feedback on the Planning Library is only limited to once per year, as it says "annual basis" in the IEPR language. For a data tool to be successful, more frequent input and feedback should be solicited from all stakeholders.
- C. SoCalGas respectfully requests the integration of data and other key performance metrics across various agencies as part of the Planning Library. These data elements could include, but are not limited to, grid interconnection requests and interconnection project queuing data regarding both electric and gas utilities to be included as part of an interactive dashboard.⁴² The inclusion of such metrics from the dashboard can help policymakers track the energy resources planning and procurement goals for the state including projects under construction, to be commissioned, and grid interconnection backlog for future projects. This information supports an urgent build out of clean, firm, dispatchable electricity generating resources and supporting infrastructure, maintaining existing resources until clean reliable substitutes are operational, and encourages electric grid reliability modeling.
- D. Federally funded external data should be included in the Planning Library's initial or subsequent rollout phases to ensure key policies and data are available to help stakeholders advance the development and transportation of clean fuels and other clean energy resources. More specifically, building a national hydrogen delivery network infrastructure is a challenge in which the U.S. DOE is currently engaged,⁴³ and delivery infrastructure resources will vary by region and types of market. For instance, urban, interstate, or rural markets have different needs. As infrastructure options evolve and the demand for clean hydrogen grows, delivery constructs for clean hydrogen will also continue in their development. In this case, hydrogen pipeline infrastructure data among neighboring States is important to include.⁴⁴ Federal agencies, such as the U.S. DOE, award significant amounts of funding in the form of grants to support research in clean energy technologies and innovation. Each grant produces large volumes of data from tens of thousands of researchers and scientists annually. To keep track of it all and share the benefits of the research with all California stakeholders, the CEC should also include such data in the Planning Library.

⁴¹ *Ibid.*, CEC 2022 Draft IEPR, p. 37.

⁴² SoCalGas recommends the CEC work with the California Independent System Operator (CAISO) to obtain this data.

⁴³ See U.S. DOE, "Hydrogen Delivery, Hydrogen and Fuel Cell Technologies Office," accessed November 21, 2022, available at: <https://www.energy.gov/eere/fuelcells/hydrogen-delivery>.

⁴⁴ *Ibid.*

10) Collective bargaining and transferable skills are important considerations in the Equity and Environmental Justice framework for economic opportunity and workforce.

SoCalGas commends the CEC on its comprehensive analysis of equity and environmental justice, especially on the assessment of economic opportunity and workforce. SoCalGas supports the Draft 2022 IEPR Update’s assertion that collective bargaining is a “key component for job quality, economic stability, health, and many other positive workforce impacts [and] the most impactful workforce training programs focus on transferable skills.”⁴⁵ SoCalGas has highlighted in previous comments that implementing a clean fuels network will help retain current gas workers and update workforce skill sets to engineer, implement, and innovate clean energy technologies in the future.⁴⁶ An equity and environmental justice framework for the energy transition should consider the quality of jobs in terms of pay, benefits, and whether the jobs will be unionized. Thus, SoCalGas appreciates the CEC acknowledging and including this important point in the Draft 2022 IEPR Update.

11) SoCalGas’s commitment to supplier diversity supports Energy Efficiency Programs that promote workforce and small business development in disadvantaged communities

SoCalGas’s Energy Efficiency Programs align with the CEC’s Energy Equity Indicators, goals of which are to:

- Identify opportunities to improve access to clean energy technologies for low-income customers and disadvantaged communities
- Increase clean energy investment in those communities
- Improve community resilience to grid outages and extreme events⁴⁷

As the energy system transitions, consideration must be given to new and current third-party jobs that support the gas and electric grids. For instance, the gas system workforce supports a diverse demographic and ecosystem of suppliers and contractors. In 2021, SoCalGas spent \$972.6 million with more than 570 minority, women-owned, service-disabled veteran or LGBT-owned businesses. This total represents 42 percent of the company’s spending last year and marks the 29th consecutive year SoCalGas exceeded the CPUC goal of procuring 21.5 percent of total goods and services from diverse suppliers.⁴⁸ Additionally, 91 percent of our diverse suppliers are located

⁴⁵ *Ibid.*, CEC 2022 Draft IEPR, p. 23.

⁴⁶ See Southern California Gas Company (SoCalGas), “SoCalGas Comments on the CEC IEPR Commissioner Workshop on Centering Equity and Environmental Justice Throughout CEC Efforts,” August 8, 2022, available at: <https://efiling.energy.ca.gov/GetDocument.aspx?tn=244375&DocumentContentId=78434>.

⁴⁷ *Ibid.*, CEC 2022 Draft IEPR, p. 28.

⁴⁸ See Southern California Gas Company (SoCalGas) Newsroom, “Diverse Businesses Awarded Over \$972 Million in SoCalGas Contracts in 2021, 42% of Total Spending,” March 15, 2022, available at: <https://newsroom.socalgas.com/press-release/diverse-businesses-awarded-over-972-million-in-socalgas-contracts-in-2021-42-of-total>.

in California.⁴⁹ Given the importance of high-quality clean energy jobs in the future, the CEC should continue to consider the role of the existing gas and clean fuels network, as well as the third-party jobs that support the network as these trained individuals could aid in reducing displacement that may arise as a result of changes to the State's energy system.

SoCalGas's energy efficiency programs can be included in the CEC's Energy Equity Indicators Tracking Progress Report given their track records for promoting equity throughout the communities in California. For example, SoCalGas' Integrated Energy Efficiency Training program promotes workforce development by delivering high-quality integrated educational seminars to train members of the energy efficiency workforce, including entry-level contractors, disadvantaged community members, university and community college students, architects, food service facility designers and operators, HVAC engineers, equipment installers, manufacturers, developers, and commissioning agents. This program will be expanding services to small businesses in disadvantaged communities. Another SoCalGas multi-family residential program works with trade allies that provide a documented commitment to provide job access to disadvantaged workers measured by six unique criteria: 1) Workforce training programs; 2) Hiring from high unemployment areas; 3) Paying family-supporting wages; 4) Hiring from designated training providers; 5) Providing health care insurance to employees; and 6) Employing a diverse workforce.

⁴⁹ See Southern California Gas Company (SoCalGas) "SoCalGas 2021 Supplier Diversity and 2022 Annual Plan," March 2022, p. 3, available at: https://www.socalgas.com/sites/default/files/2021-02/SupplierDiversity_AnnualReport.pdf.