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SoCalGas Company Technical Comments on AB 3232

Additional submitted attachment is included below.

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October 9, 2020

Commissioner Andrew McAllister
California Energy Commission
Dockets Office, MS-41516
Ninth Street Sacramento, CA 95814-5512

Subject: Comments on Assembly Bill (AB) 3232 Decarbonization Study

Dear Commissioner McAllister:

Southern California Gas Company (SoCalGas) appreciates the opportunity to provide additional technical comments regarding the Fuel Substitution Scenario Analysis Tool (FSSAT) being used by the California Energy Commission (CEC) to inform the Assembly Bill (AB) 3232 Report. In addition to our comments submitted in June, we are addressing concerns submitted to the docket by other parties in recent weeks.

SoCalGas supports the State's important efforts to address climate change and recognizes that we have a key role to play in reducing greenhouse gas (GHG) emissions from the building sector. We believe that an integrated approach, utilizing all energy sources and technologies to meet our climate goals, will best serve Californians and those that follow our lead.

In response to the webinar and recently submitted comments, SoCalGas provides the following comments and recommendations:

1. **Renewable gas should be part of California's climate change strategy**

Natural gas and renewable gases (such as hydrogen, synthetic natural gas, and biomethane/renewable natural gas) are clean, reliable, affordable, and resilient sources of energy that should be part of the solution to California's energy portfolio. As noted during the June workshop, Guidehouse should expand their scenarios to include all Renewable Gases (RG). There is growing global awareness that we cannot limit ourselves to a single technology. In fact, the European Union recently released an announcement emphasizing the importance of a portfolio approach to decarbonize the European energy system.[1]

> *"Today's energy system is still built on several parallel, vertical energy value chains, which rigidly link specific energy resources with specific end-use sectors. For instance, petroleum products are predominant in the transport sector and as feedstock for industry. Coal and natural gas are mainly used to produce electricity and heating. Electricity and*

[1] EU Strategy for Energy System Integration. July 2020. Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1259

gas networks are planned and managed independently from each other. Market rules are also largely specific to different sectors. This model of separate silos cannot deliver a climate neutral economy. It is technically and economically inefficient and leads to substantial losses in the form of waste heat and low energy efficiency.

Energy system integration – the coordinated planning and operation of the energy system 'as a whole', across multiple energy carriers, infrastructures, and consumption sectors – is the pathway towards an effective, affordable and deep decarbonisation of the European economy in line with the Paris Agreement and the UN's 2030 Agenda for Sustainable Development."

In the United States and California, similar themes on optionality and diversification of energy supply have been shared by researchers from Energy Futures Initiative (EFI), California Institute of Technologies, University of California Irvine (UCI) at workshops on Carbon Neutrality conducted by the California Air Resources Board.[2]

Studies by EFI and Lawrence Livermore National Laboratories (LLNL) have emphasized the importance of leveraging existing energy systems to achieve deep decarbonization goals. EFI emphasized the need for the State to pursue a building decarbonization strategy that allows California to maintain a diverse portfolio of energy options. "Energy efficiency, defined broadly, is likely to be the most cost-effective approach to decarbonization in the energy end-use sectors in California."[3] The authors identify the best emissions reduction pathways for the building sector as those that promote optionality and flexibility: energy efficiency of building end use technologies, increased use of renewable natural gas, and expanded deployment of combined heat and power units in large commercial facilities.[4] LLNL advises against a drive to phase-out all existing natural gas infrastructure from a climate mitigation standpoint, noting the existing gas distribution infrastructure could provide a platform to broaden the use of carbon-neutral or carbon-negative renewable gases.[5] Additionally, LLNL recognizes that California has the largest renewable gas potential of any state and reducing short-lived climate pollutants is key to reach climate goals.[6]

2. The FSSAT model should include technically-sound renewable gas scenarios

During the June workshop, the FSSAT team indicated they would develop a scenario based on a 2020 Energy and Environmental Economics (E3) study on Renewable Natural Gas. While, SoCalGas agrees RGs should be part of the FSSAT tool, we are concerned with use of the E3 study assumptions.[7] The E3 analysis contained many incorrect assumptions about the cost of electricity and the cost of and supply availability of renewable gas.[8] SoCalGas recommends the use of the American Gas Foundation December 2019 study on 'Renewable Sources of Natural

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[2] August 2019 Public Workshop to Discuss Carbon Neutrality: Scenarios for Deep Decarbonization. Available at: https://ww2.arb.ca.gov/our-work/programs/carbon-neutrality/carbon-neutrality-meetings-workshops.
[3] EFI. Optionality, Flexibility, & Innovation. Pathways for Deep Decarbonization in California. 2019. At p. xiv. Available at: https://energyfuturesinitiative.org/.
[4] *Ibid.*
[5] Information summarized from Lawrence Livermore National Laboratory. Comments in response to the CEC's Workshop on The Natural Gas Infrastructure and Decarbonization Targets. At p.2. Available at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=228811&DocumentContentId=60143.
[6] *Ibid.*
[7] SoCalGas provided detailed comments on the E3 draft study. November 2019. TN 230668.
[8] While the E3 study was published in March 2020, the analysis is based on data collected in 2018-early 2019. It includes many outdated assumptions.

Gas'[9] and the June 2020 CEC/UCI study on 'Roadmap for the Deployment and Build Out of Renewable Hydrogen Production Plants in California.'[10]

Further, SoCalGas recommends Guidehouse consider multiple Renewable Gas scenarios, including scenarios that utilize renewable and decarbonized hydrogen in buildings. The UCI study[11], for instance, provided examples from the European Union on how they were looking at multiple decarbonization scenarios for different fuels – renewable natural gas, electrolytic hydrogen, electrification as approaches to reduce emissions from buildings.

3. The FSSAT tool should account for current and continued methane emission reductions

SoCalGas' natural gas system has one of the lowest methane emission rates in the country, despite our system being the largest in the country – a system that includes more than 100,000 miles of pipeline, spans 20,000 square miles and serves 21 million consumers. SoCalGas is a leader in developing and deploying many new technologies that allow the company to detect and repair leaks expeditiously. Some of these technologies include: using infrared cameras to check for leaks after new pipelines are installed; special fiber optic cables that detect methane leaks and third-party damage to pipelines; infrared "point" sensors that can detect leaks before they can be smelled by people; and employing algorithms that use our Advanced Meter system to identify unusual levels of natural gas consumption that could indicate a leak at customers' homes or businesses.

Furthermore, current State regulations and policies ensure methane emissions continue to decline. For example, CARB's Oil and Gas Rule regulates emissions from oil and natural gas production, processing and storage, and transmission stations. Senate Bill (SB) 1371 requires commission regulated pipeline facilities to develop best practices to minimize leaks to achieve climate goals and reduce hazards. The Low Carbon Fuel Standard (LCFS) incentivizes methane capture and using it in vehicles by providing credits to those who displace their high carbon intensive fuels with lower carbon intensive fuels. reduces GHG emission associated with the life cycle of California's transportation fuels. Lastly, SB 1383 mandates a 40% statewide reduction of Short-Lived Climate Pollutants (SLCPs) from 2013 levels in various sectors. SoCalGas recommends that these regulations and policies aimed at methane emission reductions be reflected in the FSSAT.

Guidehouse discussed the use of either a 100-year or 20-year Global Warming Potential (GWP) for methane in the FSSAT. AB 3232 is intended to support achieving California's 2030 goals. As such, it is important that the GWP used to calculate GHG emissions reductions in buildings is consistent with the Scoping Plan. This will ensure that we can achieve the legislative goal and compare the effectiveness of different strategies considered in the Scoping Plan.

Several parties have called for the inclusion of upstream methane emissions for natural gas appliances in the FSSAT scenarios. However, the CEC projects the continued use of natural gas electric generation for the foreseeable future. In fact, the recent heat waves caused electric

[9] ICF. Renewable Sources of Natural Gas: Supply and Emissions Reduction Assessment. December 2019. Available at: https://gasfoundation.org/2019/12/18/renewable-sources-of-natural-gas/.
[10] Roadmap for the Deployment and Buildout of Renewable Hydrogen Production Plants in California. June 2020. Available at: https://cafcp.org/sites/default/files/Roadmap-for-Deployment-and-Buildout-of-RH2-UCI-CEC-June-2020.pdf.
[11] *Ibid.*

generation load to increase over residential customers.[12] If the FSSAT includes upstream methane emissions, it must also include emissions from electricity generated using natural gas. Otherwise, the GHG emissions for both electric and natural gas appliances will be misrepresented.

Further, the CARB inventory for methane leakage is based on the amount and type of materials in the natural gas system and is not throughput dependent. Fuel switching of individual appliances in the home or even a single home in a neighborhood would not result in significant changes to the natural gas distribution system by 2030. As such, it would be inaccurate to represent that fuel switching to electricity would materially reduce the methane inventory in 2030 associated with the natural gas system as maintained by CARB.

4. **The cost of removing barriers for electric panel upgrades should be included given the age of California's housing stock**

When assessing the economic impacts of wide-scale residential appliance upgrades, the age of California's housing stock needs to be considered. Sixty percent of California's housing units were built before 1980.[13] Of the 8.4 million housing units in California constructed before 1980, 46 percent (3.9 million) are in the four-county region of Los Angeles, Orange, Riverside and San Bernardino.[14] These 3.9 million housing units in Southern California face an array of physical barriers that increase the cost of installing a new gas or electric appliance. For example, a home may need electrical rewiring, reconfigured or upgraded plumbing, or other physical alterations to accommodate a modern, high-efficiency water heater or heating system. Many homes built before 1980 also include asbestos containing materials, including thermal and electrical insulation materials, ducting, wall board, and ceiling tiles that may require removal and containment prior to retrofitting heating and cooling systems including furnaces, air handlers, and vent systems.

Based on feedback from field contractors providing energy-efficiency measures for residential customers, barrier issues impact a significant number of homes and prevent the successful expansion of energy-efficiency measures in many older homes. For example, the cost to replace/upgrade an electrical system in an older home could cost as low as $6,000 to over $10,000 depending on the size and condition of the home.[15] To more accurately account for the cost of these issues, SoCalGas recommends including scenarios that account for potential barrier removal costs.

5. **Electric rates will rise due to climate policy implementation and infrastructure investments to meet rises in peak demand**

The average California household pays one of the highest electricity rates in the nation, about $1,700 per year, despite using about half as much energy as the average American household.[16]

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[12] Prepared by the California Gas and Electric Utilities. 2020 California Gas Report. Available at: https://www.socalgas.com/sites/default/files/2020-10/2020_California_Gas_Report_Joint_Utility_Biennial_Comprehensive_Filing.pdf.

[13] As of 2016, California has 13.9 million housing units. See U.S. Census, American Community Survey, 2016 5-year estimates. Table DP04 Available at: https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml.

[14] *Ibid.*

[15] Through SoCalGas' Energy Savings Assistance (ESA) Program, we help residential customers save energy and money through professional home improvements. These home improvements are at no cost to the customer. Further cost information related to SoCalGas' ESA Program is available at request.

[16] Robert Bryce. The High Cost of California Electricity Is Increasing Poverty. Available at: https://freopp.org/the-high-cost-of-california-electricity-is-increasing-poverty-d7bc4021b705.

It is unlikely that gas rates will increase faster than electric rates given SB 350 mandates, wildfire hardening, and the fact that most households do not charge their electric vehicles during the day, wash their clothes at night, or wait to turn on the A/C and cook after 9:00 pm.

The economic implications of significantly increasing seasonal peak demand cannot be ignored in the FSSAT tool. For example, Guidehouse should provide an assessment of the incremental investment required to meet the new, higher summer peaks.[17] Further, they must evaluate the rate impact of this incremental transmission and generation investment on electric rates. To overlook this significant finding could cause significant harm to consumers, including low income households who are already challenged by some of the highest electricity rates in the country.

Conclusion

SoCalGas is committed to decarbonizing the energy sector and built environment. Our vision aligns with California's carbon reduction goals and we endeavor to meet the State's goals in a thoughtful, reasoned, studied, and cost-effective way. We can decarbonize buildings by decarbonizing both electricity and natural gas supplies—not just electrifying end uses. We look forward to participating in additional FSSAT workshops that thoughtfully consider an integrated approach to decarbonize buildings

Sincerely,

Tim Carmichael

/s/ Tim Carmichael
Agency Relations Manager
Southern California Gas Company

[17] On slide 63, Guidehouse notes there will be incremental summer load due to housing units adding air conditioning in their scenarios, which was not previously considered. However, they did not elaborate on the magnitude of this change and the required investment to meet the additional load. This is a significant finding that Guidehouse should elucidate in their report.