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Comments of Environmental Defense Fund on IEPR Vol III

Additional submitted attachment is included below.

Comments of Environmental Defense Fund on the Draft 2021 Integrated Energy Policy Report (Draft 2021 IEPR), Volume III: Decarbonizing the State's Gas System.

Environmental Defense Fund (EDF) respectfully submits these comments on the Draft 2021 IEPR Vol III, Decarbonizing the State's Gas System. EDF was pleased to participate in the workshop process informing this chapter of the IEPR and appreciates the holistic approach taken in this document. EDF supports the main recommendations in this draft report, and we offer some specific comments on a few of the recommendations contained within the document.

Comments on Recommendation 1: Creation of a Long-Term, Comprehensive Gas Planning Process for California

EDF agrees that the creation of this planning process will be critical to decarbonize the gas system.

First, EDF suggests that the state would benefit from clearly saying what the overall gas decarbonization goal is and on what time frame. The plan can then establish a clear target for each major end use of gas in the system, and allow for different options to emerge. Decarbonizing the gas system will not be a "one size fits all" approach, and different strategies will be needed for core residential customers, larger commercial and electric non-core customers, and electric generators.

EDF thinks that the scope of the plan should include a determination of what is an appropriate expected useful life for future investments that align with climate objectives. Given that the gas system will be in transition during the next few decades, being clear about how long each component of the system is expected to be "used and useful" will be essential because:

1) It acknowledges that the gas system will be used (perhaps significantly differently from today's operational profile) in the out years. Being clear on how different parts of the gas system will function will give confidence in future investments; and

2) It acknowledges that we may need different investments (and different investment timelines) for small distribution customers vs. electric generators vs. larger gas commercial/industrial customers. For example, the plan may indicate that it is reasonable to

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recover funds from residential customers for 10-15 years while different investments to support electric generators will be needed for 15-20 years.

Establishing these timelines will enable the right models of financial recovery, depreciation, engineering, etc.

A statewide plan that is clear on the overall decarbonization strategies of the gas system will be key to establish a set of financial mechanisms to adequately reward gas utility shareholders based on early retirement of assets, avoidance of capital investment through non-pipeline alternatives, or incorporation of other decarbonization strategies into their business models. Decarbonizing the end uses of the gas system will require prudent management[1]; and this plan will be critical to establish the prudency standards for the operations of the system.

For the investor-owned gas utilities Pacific Gas & Electric (PG&E), Southern California Gas Company (SoCalGas), and Southwest Gas (SWG), new gas investments are proposed by the utility in a general rate case before the Public Utilities Commission. These general rate cases are a short time frame look ahead, while the state climate goals need to be achieved in 2030 and 2045. Gas planning often focuses on meeting peak usage and demand needs, which are usually forecasted to be static or growing based on dated assumptions and policies. Acknowledging that the state's long-term plan will need to identify future needs to drive investments that can then be filtered into individual GRCs is critical.

EDF wishes to emphasize how critical stakeholder outreach will be for the development of this plan. EDF thinks that the Energy Commission could play a vital role in identifying key groups and convening community representatives via public participation hearings in addition to more formal stakeholder convenings. This could include direct community engagement, presentations to the low-income oversight board, the disadvantaged communities advisory groups, and other forums to determine community impact.

EDF also supports the effort to plan for and minimize impacts from extreme weather events. While it is critical to understand the impacts that such events have had elsewhere, EDF considers that winter reliability measures in California and the state's preparedness for extreme weather events are fundamentally different from that of other states like Texas. So EDF suggests that it take the lessons learned from the Texas event and translate them to the California market, knowing that our state is likely to experience very different extreme weather events including wildfires.

A recent paper[2] authored by EDF agrees that the intermittency of solar and wind power will require dispatchable resources to meet daily peak demand. This will shift as we add more renewables to the system and that shift will be further compounded as we electrify more end uses of the economy. Another factor to consider is that solar and wind power have a much higher output during the summer months. Therefore, as the state invests in solar and wind to meet its

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[1] See Karas, Colvin et al., "Aligning Gas Regulation with Climate Goals: A Road Map for State Regulators" *The Electricity Journal*, 2021.

[2] See Long, Baik et al., "Clean Firm Power is the Key to California's Carbon-Free Energy Future" *Issues in Science and Technology*, 2021. Available online at https://issues.org/california-decarbonizing-power-wind-solar-nuclear-gas/.

decarbonization goals, the variance and need for clean firm power resources (including those that could be provided by the gas system) will be both variable during the day and variable on a seasonal basis. The need for dispatchable resources will increase during the colder months of the year since solar output is lower. This need will be compounded by the larger gas demand for heating during the winter season. Further, the future demand patterns for electricity will increasingly vary because of the expected rise of prolonged heat periods and extreme weather events such as wildfires which will make gas production needs more unpredictable. All the above means that as the state moves forward with its decarbonization strategies, it should account for the inevitable seasonal variances in the production of renewable power and how this will impact the state's need for gas.

Last, the draft recommendation specifically calls out the Aliso Canyon gas storage facility. Given the high-profile nature of the leak at the storage facility and the specifics of this facility's configuration in the system, this emphasis is appropriate. However, EDF believes that a long-term plan should have a broader conversation on all gas storage facilities. Specifically, the long-term plan should ask what the public benefit of gas storage is as we move to fully decarbonize the economy. Currently, the Aliso Canyon gas storage field provides both operational and economic benefits. The current recommendation focuses on the implications if the gas storage facility is shut down. That is appropriate but there also should be included a connection to the lost economic benefits if that storage facility were to go away. Storage fields provide a hedge against price volatility. If any gas storage facility (such as Aliso Canyon) were to be decommissioned, the long-term plan should specify how gas utilities will give ratepayers comparable value on both operations and economic benefits. This recommendation does include language on expanding the use of gas price forecasting and demands, and EDF encourages that a scenario of that forecasting be done with/without Aliso canyon. Similarly, this recommendation should also examine the substitutability of alternative fuels in the gas storage fields (could they store a zero-carbon fuel such as hydrogen or renewable natural gas?) and potential other uses, such as carbon sequestration.[3]

Overall, EDF endorses the need for this long-term plan and stands ready to contribute to its development.

Comments on Recommendation 2: Gas Issues to Support Building Decarbonization

One of the largest recommendations contained in the document is the consideration of the obligation to serve. Broadly speaking, EDF agrees that the utility's obligation to serve needs to be updated to be reconciled with the state's climate objectives. A similar update was called for in a 2020 paper by Gundlach and Stein with respect to New York's climate laws and gas regulatory policy.[4] As a matter of principle, the state may want to consider how it can update the utility's

[3] See https://ccst.us/reports/natural-gas-storage/ for more information on gas storage recommendations.
[4] See Gundlach and Stein, "Harmonizing States' Energy Utility Regulation Frameworks and Climate Laws: A Case Study of New York" 2020. Available online at

obligation to serve to provide needed services to all customers, including heat, light, and power in a decarbonized manner. The IEPR could do preliminary research on how substitute fuels could be used as the basis for updating the utility's obligation to serve. The IEPR may want to consider updates as outlined in the 2020 Stanford paper on this topic.[5] The obligation to serve may also be parsed out based on customer end use – the obligation may be satisfied differently for residential vs non-residential customers, for example. The IEPR could play an organizing role in determining strategies based on each end use of gas.

EDF agrees that there are economic shifts that can be done to promote building electrification in some instances, and appreciates the IEPR's recommendation that the state should eliminate line extension allowances for new gas hookups as currently being considered in Rulemaking 19-01-011. EDF is a party to that proceeding and submitted joint comments[6] in that docket. As we said in those comments: "The implications are clear: ratepayer subsidies that encourage new gas investments, which may eventually become stranded assets, will only exacerbate the equity and affordability challenges of the gas transition. Pumping the brakes on these gas subsidies is long overdue." EDF encourages the IEPR to consider other incentive strategies to help vulnerable customers electrify when possible and to develop other decarbonization strategies when electrification cannot occur.

Comments on Recommendation 3: Role of Clean Fuels in Utility Gas Systems

EDF appreciates the identification of both biomethane (termed in the IEPR as renewable natural gas) and renewable hydrogen in this IEPR. However, before "encouraging" their use as a matter of state policy, EDF thinks that additional foundational work is needed in this area. Simply put, EDF agrees with the sentiment of this chapter that there is tremendous potential in both of these alternative fuels,[7] but we remain concerned that the science is not fully clear if that potential will translate into customer and climate benefit.

EDF agrees with some of the components of this recommendation, including the emphasis on research, demonstration, and deployment work through the EPIC program before scaling up to a statewide solution. EDF's own preliminary research indicates that more science is needed and thinks this is an appropriate step forward.

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https://policyintegrity.org/files/publications/Harmonizing_States_Energy_Utility_Regulation_Frameworks_Gundlach_and_Stein.pdf.

[5] See Wallace, Zerbe et al., Removing Legal Barriers to Building Electrification, Stanford Law School, Mills Legal Clinic, Environmental Law Clinic, 2020.

[6] See https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M432/K773/432773561.PDF for our jointly submitted opening comments and https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M440/K090/440090579.PDF for our jointly submitted reply comments.

[7] See Farbes, Haley et al. "Marginal Abatement Cost Curves for U.S. Net-Zero Energy Systems" 2021. Fuels decarbonization, including hydrogen and liquids fuels, could save a little over one gigaton of CO_2 in the U.S. by 2050 – roughly 20% of the way to net-zero CO_2 emissions from industry and energy use.

For renewable natural gas/biomethane, our preliminary research indicates that the production source of the biomethane could be a significant source of new methane and cause climate harm, or it could enable significant climate benefit,[8] depending on the circumstances. EDF notes that not all biomethane is created equal[9] and that the state should be very clear on what type of biogas is being encouraged, from what source, and what the climate assumptions are behind that usage. EDF thinks that the EPIC program could help inform standards on methane leaks at the production source and be critical to giving guidance before major new investments occur. EDF agrees that work could be done with the Low Carbon Fuel Standard to update incentives for non-transportation uses, but thinks that this could be done after the EPIC work has been concluded.

When considering renewable hydrogen, EDF first acknowledges that there is not yet an adopted definition of "renewable hydrogen." This is a foundational matter and EDF thinks that the Energy Commission, in consultation with the Air Resources Board and other agencies, should acknowledge that the definition has to consider the embedded carbon content of the energy used to produce the hydrogen, the feedstock used to make the hydrogen, and the leakage of the hydrogen during transportation from production to end use. EDF recognizes that hydrogen itself is a short-lived climate pollutant and that measurements on the GWP 100 scale may not adequately capture the fuel's impact. Further, if the goal of this recommendation is to consider hydrogen in the gas pipeline system, EDF thinks that foundational work needs to be done to consider impacts to the existing gas pipeline system, including leakage, embrittlement, pressurization changes, changes needed to end use appliances, etc. It may be more appropriate to *not* use the existing gas distribution system and to use *new* dedicated hydrogen pipelines that go from production facility to end use. Given all these factors, EDF thinks that it is premature for the Energy Commission to determine whether hydrogen is an appropriate fuel for the existing pipeline network, and that determination itself should be made before its usage is encouraged.

Thus for both parts of this recommendation, EDF suggests revising the language to not "encourage" but to "explore" or "consider" the usage of these alternative fuels.

CONCLUSION

Overall, EDF thanks the IEPR team for their tremendous work on developing the recommendations in this draft volume. We appreciate the opportunity to comment on this draft and we hope that these comments will be reflected in the final adopted version of the report.

Respectfully submitted,

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[8] *Id.* See Figure 3 at p. 17 and Figure 13 at p. 36.
[9] See https://blogs.edf.org/energyexchange/2019/04/15/not-all-biogas-is-created-equal/.