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**SoCalGas Comments on CEC IEPR Workshop on Building
Decarbonization Embodied Carbon and Refrigerants**

Additional submitted attachment is included below.



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September 9, 2021

Commissioner J. Andrew McAllister
Commissioner Siva Gunda
California Energy Commission
Docket Unit, MS-4
Docket No. 21-IEPR-06
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: Comments on the Integrated Energy Policy Report (IEPR) Workshop on Building Decarbonization: Refrigerants and Embodied Carbon

Dear Commissioners McAllister and Gunda:

Southern California Gas Company (SoCalGas) appreciates the opportunity to provide comments on the California Energy Commission (CEC) Integrated Energy Policy Report (IEPR) Workshop on Building Decarbonization: Refrigerants and Embodied Carbon held on August 25, 2021. As California works to achieve its decarbonization goals, assessing the feasibility of installing and operating clean energy systems is crucial to identify optimal market and policy solutions. SoCalGas's comments focus on: (1) leak detection technologies can help mitigate hydrofluorocarbons (HFCs) leaks and contribute to building decarbonization goals in California and (2) skilled labor must be procured to effectively install and maintain heat pump systems.

1. Leak detection technologies can help mitigate potential HFCs leaks and contribute toward building decarbonization goals in California

As stated by Commissioner McAllister in his opening remarks at the workshop, California is leaning on electrification to achieve decarbonization and the use of heat pumps is expected to grow. The quantity of refrigerants being held in such equipment will increase and consequently, HFCs emissions are expected to increase. To mitigate climate change impacts and reach the State's decarbonization goals, SoCalGas respectfully recommends that the CEC invest in research and development (R&D) to better understand the magnitude of potential climate impacts of HFC leaks and partner with other agencies such as the California Air Resources Board (CARB) to explore potential HFC leak detection technologies. For example, SoCalGas's Aerial Methane Mapping program uses Light Detection and Ranging (LiDAR) technology integrated into a helicopter to identify methane emissions as a "plume of gas." This program allows us to proactively detect potential leaks as well as incomplete combustion that could be associated with gas-fired equipment. LiDAR technologies are not as effective at capturing HFCs leaks, and relatedly, there is less data on the leakage rates

of high global warming potential (GWP) gases associated with electric heat pumps, air conditioners, and refrigerators. More research is needed to help to better understand and develop technologies that can detect and manage any potential leaks from electric heat pumps.

2. Skilled labor must be procured to effectively install and maintain heat pump systems

According to the CEC, the quality of the installation of electric heat pump water heaters and space heaters is widely understood to be essential for the residents to have a successful experience with this equipment.¹ Heat pumps are commonly found throughout the country, however, in California, only five percent of new single-family homes are built with heat pumps, meaning that 95 percent still utilize gas heating.² Accordingly, California does not have a large workforce skilled in the installation of heat pumps and any such gap should be addressed as heat pumps are more widely adopted in the State. Because electric heat pumps increase electric demand, their installation often requires electrical work such as panel upgrades, higher-capacity feeder lines, duct work, and county permitting to be carried out by specialized technicians.³ Contractors can be unfamiliar with the installation process and required permitting as at least one Californian family attempting to install an electric heat pump discovered.⁴ It is not unreasonable to assume that poorly performed installations could result in refrigerant leaks. Thus, quality installations performed by skilled labor will be critical to avoiding and reducing HFC leaks. We look forward to the upcoming CEC IEPR Workshop on Building Decarbonization Quality Installation of Heating and Air Conditioning Equipment to be held on September 10, 2021.

Conclusion

SoCalGas looks forward to collaboratively advancing the initiatives set forth by the CEC to consider the high global warming potential of HFCs. In conclusion, we seek the additional consideration of skilled labor that must be procured to effectively install and maintain heat pumps and implore the consideration of leak detection technologies that can help mitigate potential HFC leaks, while contributing toward the State's building decarbonization goals. We look forward to continuing this discussion with the CEC such that it will help California reach its clean air and climate goals. Thank you for considering our comments.

Respectfully,

/s/ Kevin Barker

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¹ See Notice of IEPR Commissioner Workshop on Building Decarbonization Quality Installation of Heating and Air Conditioning Equipment, available at: <https://efiling.energy.ca.gov/getdocument.aspx?tn=239514>

² See Time for CA to Catch Up on Clean Energy in New Buildings, available at: <https://www.nrdc.org/experts/pierre-delforge/time-ca-catch-clean-energy-new-buildings>

³ An article published by Greentech Media documented a family's effort to switch to all their gas appliances to electric. The directions and quotes the Guays got from electricians were "all over the map. One said it would cost \$3,000 and take six months to install the new feeder line. Another said it would cost \$6,000 for a new 200-amp electrical panel and \$4,000 for the upgraded feeder line. Several electricians even told the Guays they weren't allowed to install tankless water heaters" and would not be able to get a permit from their county for their electric heat pump which turned out to be untrue.³ See What Does It Take to Electrify Everything in Your Home?, available at: <https://www.greentechmedia.com/articles/read/what-does-it-take-to-electrify-everything-in-your-home>.

⁴ *Ibid.*