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A rapid prudent approach to decarbonizing buildings

Building decarbonization is vital in meeting California's greenhouse gas reduction goals. As a utility engineer since 1982, I've been working on the energy transition for several decades. My experience supports the RMI study (page 21): 1) new construction is cheaper without gas and 2) replacing gas with electric appliances and heating in existing homes is cost effective when the systems are older and the project is more extensive. Given the urgent need for rapid reductions in greenhouse gas emissions, every effort needs to be made at the state level to make electrifying buildings economical, cost-effective, and commonplace. Please assist in removing barriers to and increasing incentives for electrification of all of our building stock.

I have several comments to strengthen the report:

- 1) Include reference to the October 9, 2018 UN IPCC report's recommendations for accelerated rates of greenhouse gas emission reduction (45% below 2010 levels by 2030) and discuss methods for potentially meeting or exceeding these recommended rates. Just this fall the state adopted several new goals for addressing climate change. However, the new IPCC report begs for even more and unfortunately their predictions have tended to be extremely optimistic suggesting that even 45% by 2030 is too little too late. (Page 1)
- 2) Develop a pathway for organized and systematic removal of aging gas infrastructure in cities and suburbs. With the need for rapid decarbonization of our buildings, upgrading gas delivery infrastructure in our neighborhoods makes no economic sense. Policies should be developed to use funds earmarked for pipe upgrades and repairs instead to electrify buildings. We need your leadership in the orderly contraction of the gas to buildings industry, or it may become a chaotic spiral of stranded assets and bad news. (Page 17)
- 3) Update the building efficiency standards to fully reflect the GHG emissions of gas and electricity in all aspects of the standards and in all of the underlying assumptions. This includes numbers for leakage rates from gas infrastructure and a global warming potential estimate based on a shorter 20 year window of impacts for methane. (Page 25)
- 4) Gas and electricity rate design needs to reflect their proportionate GHG emissions and their societal costs. As the electricity supply has become cleaner and leaks in the gas delivery infrastructure have become more evident, the imbalance in the impacts of these two fuels has not been adequately reflected in rates. (Page 27)
- 5) Set aggressive deadlines for phasing out high global warming potential refrigerants, but without interfering with electrification. The technology already exists and in many cases is commercially available in other countries for meeting all of our refrigerant needs with safe and low global warming potential refrigerants. Provide an avenue for these products to quickly enter the California market. (Page 32)
- 6) Eliminate the 3 prong test. This test seems to be a relic from an era when the societal impacts of gas and electricity were thought to be equal. At this point it operates primarily as a significant barrier to providing energy efficiency rebates to customers decarbonizing their buildings and to building decarbonization. (Page 36)

Please also incorporate these comments into the list of recommendations on page 46.

Thank you so much for all your thoughtful and meticulous work.

Sincerely,

Tom Kabat
Energy Engineer