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## The necessity of residential electrification

Additional submitted attachment is included below.

To CA Energy Commission, March 12, 2024

There is no longer any doubt among scientists that global warming and the looming climate crisis are caused by human emission of greenhouse gases. Since the cause is known, the solution is obvious: we must stop burning fossil fuels as soon as possible.

Electricity, generated by solar panels and wind turbines and backed up by batteries and other storage, provides the cost-effective means to do this. The utility companies understand the urgency to install the necessary infrastructure. Our homes, especially older ones, and our cars are among the major consumers of natural gas (for cooking, heating) and oil products (gasoline, diesel). Therefore, it is imperative that we accelerate the modernization of California's homes to take advantage of carbon-free electricity.

The Inflation Reduction Act (IRA), passed by Congress in 2022, aims to do just that. It provides tax refunds to wealthier, tax-paying homeowners for electrifying their homes with space and water heat-pumps, induction cook-tops and for electric vehicles. However, the less wealthy do not benefit much from this approach; instead, the IRA provides for rebates to be administered by the States.

Electrification not only reduces the impact of climate change, it makes homes and neighborhoods healthier by removing the pollutants that cause lung diseases such as childhood asthma and COPD. Heat-pumps are reversible and will provide cooling in a warming world.

Therefore, I implore you to streamline CA's program to distribute these Federal IRA funds to lower income homeowners, and to the landlords of renters, while requiring minimal and efficient paperwork.

I close with a few words about myself. I am a scientist, recently retired, who enjoyed a career in higher education and research including heat-transfer and energy technology. In retirement, I joined the Silicon Valley Chapter of Climate Reality Project and use my background to make presentations to community groups about the cause, impact and solutions of climate change.

In 2013 my wife and I remodeled our kitchen, installing all-electric appliances, replaced the gas heater with the best heat-pump available at the time and upgraded the insulation. I drive a 10-year-old hybrid car with many years left in it. Therefore, I will benefit little from the IRA. I write because rapid decarbonization is essential for the future of our planet and the health and lifestyles of our children.

With thanks for your time and attention,

Campbell Scott, PhD, FAPS