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Public Health, Energy Efficiency, and Climate Adaptation

see attached document

Additional submitted attachment is included below.

DATE: April 22, 2019

TO: CALIFONRIA ENERGY COMMISSION

FROM: Thomas J. Phillips, Healthy Building Research, Davis, CA.
Former member of State Sustainable Building Task Force.
Current technical advisor to CHPS.net and ROCIS.org on environmental health and climate adaptation.

SUBJECT: April 8, 2019 Joint Agency Workshop on Building Decarbonization, Docket #: 19-IEPR-06, Project Title: Energy Efficiency and Building Decarbonization

I commend the CEC, CPUC, and other stakeholders in tackling buildings as a major carbon source in CA, and hope that you can make rapid progress and big changes.

Please consider the overview comments below in designing, implementing, and evaluating your programs in this area. I can provide examples and supporting information if you like.

- **Public health, including indoor exposures to pollutant and thermal stress, need to be factored in to building decarbonization because the non-energy benefits can be substantial**. Reducing indoor and outdoor sources of combustion pollutants and moisture can have health benefits, of course. Include health impact analyses that look at not only outdoor air quality but also indoor environmental quality (including thermal health). Identify buildings and neighborhoods where the greatest health benefits can be obtained. For example, target low-income households with children and multifamily buildings, where gas appliances are more likely to be malfunctioning and/or where gas ovens more likely to be used for space heating. Also, target neighborhoods and buildings, including sensitive populations such as nursing homes and schools. VEIC has done a good job of building health, safety, and comfort into their programs.

- Integrate energy efficiency as the first step, to allow downsizing of all heating and cooling systems, reduce intrusion of outdoor pollutants, and improve kitchen ventilation. This will also allow us to reduce grid impacts, embedded carbon, healthy and safety impacts from to power outages, and urban heat impacts from waste heat from PVs, heat pump, etc. For example, consider the London (UK) Plan for climate adaptation and mitigation.

- Factor in climate change over the building life cycle, e.g., greatly increased cooling demand, less heating demand. Also, consider the time sensitive value of reduce methane and other SLCPs.

- Include neighborhood and regional scale interactions via urban heat islands. This approach allows all the various decarbonization and overheating protection measures to be the most effective, cost and health wise.