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California Energy Commission E-mail Response to:

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Thank you for your recently submitted comments to the Energy Commission's Docket process for the preparation of the 2013 Energy Efficiency Standards development process. The Standards development team uses the Warren Alquist Act guidelines to determine if a measure should be adopted into the Standards or not; for newly constructed buildings in California these measures include, but not limited to;

- daylighting;
- heating ventilation and air conditioning systems;
- lighting;
- domestic hot water;
- building envelope measures including fenestration solar heat gain coefficient and U-factors and now Visual Transmittances (VT);
- alternative energy systems such as solar energy for space heating and water heating; and
- load management strategies.

We are also required to use life cycle costing (LCC) and Time Dependent Valuation (TDV) methodologies, as well as product availability and technical feasibility to evaluate the cost feasibility of the proposed measure. We use California's 16 Climate Zones Weather Data to evaluate the proposed measures; we do not use the IECC Climate Zones.

The proposed 2013 Solar Heat Gain Coefficient values for commercial or nonresidential buildings listed in Table 140.3-C have been developed through the Codes and Standards Enhancement Initiative (CASE) sponsored by California utilities. The CASE reports use the same life cost analysis (LCC) and TDV criteria mentioned above; The CASE authors look at the product availability, useful life, energy persistence and maintenance, and performance verification to measure proposed components.

The request to change Solar Heat Gain (SHGC) to match 2012 IECC or ASHRAE 90.1 SHGC values are not possible because as mentioned above, California uses the LCC and TDV methodologies that are unique to California. The CASE study through LCC analysis and performance runs has determined the proposed values are cost effective in California. Furthermore, there is no accurate mapping of IECC and California Climate Zones; IECC generalizes California's Climate Zones in larger geographical areas and

are less accurate to determine the correct and appropriate fenestration SHGC values.

California has many diverse Climate Zones that are separated by large chain of mountains separating coastal, valley, foothills and the Sierras Mountains. Each of these areas has its own unique weather characteristics and is broken into their own climates zones, hence 16 Climate Zones. Additionally, California's methodology does not necessarily apply to ASHRAE, IECC, or other areas because the TDV energy savings and cost effectiveness calculation is unique to California in the way it weights electricity vs. heating fuels based on our local circumstances.

In summary, our LCC and TDV methodologies, coupled with the 16 California Climate Zones, makes the IECC and ASHRAE requirements not always relevant to California and vice versa; measures that may not be cost effective under IECC can be found to be cost effective under our criteria, and vice versa. Using these criteria, the proposed SHGC and U-factors are cost effective in 15 of the 16 climates zones; the Climate Zone 1 cost effectiveness is marginal; however, since this is a relative small Climate Zone with very little construction activity a separate exception is not warranted.

Please let us know if you have any other questions. In addition, I attached the most recent version of Section 140.3, note this is still in review mode which includes track changes. For better viewing I suggest to be in Review in the Final version mode.

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