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More focus on health, well-being, and productivity

Buildings are for people and most of the energy that is used in buildings is for services aimed at creating a safe, healthy, comfortable and productive indoor environment. Some energy saving strategies, like reducing fresh air flow rates or incorrectly modifying indoor temperature, that may reduce the health, well-being, productivity and performances of occupants. On the contrary, there are several energy saving technologies (such as radiant systems, personal comfort systems, external shadings, human-in-the-loop control, displacement ventilation, etc.) that can lead to energy saving and increased occupant well-being. The effectiveness of energy saving strategies should be assessed also on their positive, neutral or negative effect on people.

The proposed draft subthemes under Theme 1 of the next CEC EPIC 2018-2020 Triennial Investment Plan commendably recognize that we need healthy and comfortable buildings (S1.2). However, there are three major limitations:

(a) The goals of healthy and comfortable buildings should be applied to all the solutions that may have an influence on people. For example, Sections S1.3 (HVAC systems), S1.4 (Control and automation), S2.1 (Efficient communities), S3.1 (demand response), S8.1 and 8.2 (disadvantaged communities) do not take into explicit account the building occupants and how they may respond to the proposed solution. I suggest to have "health and comfort" in the titles of the sections above, in particular for S1.3 and S1.4.

(b) The issue of human productivity is ignored. In commercial buildings, the cost of employees is roughly two orders of magnitude higher than the cost of energy, and building management knows this. When applied to commercial buildings, the CEC should assess the impact of energy efficient technologies on worker productivity. This is a key parameter that the private sector would like to know because an energy efficient solution that may have a real (or perceived) negative impact on people will not be implemented. Conversely, if any of a number of types of productivity gain can be documented, a technology will gain an irresistible market driver assuring widespread implementation. I suggest adding productivity as a metric and/or performance indicator in all the solutions that could be applied to commercial buildings and that may have an influence on people.

(c) Only occupant satisfaction is present as a "Metrics and/or Performance indicators" in S1.2. People well-being, comfort and productivity metrics should be present in all the sections mentioned above.