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**HEA Comments on IEPR Workshop - August 27, 2018**

*Additional submitted attachment is included below.*

September 5, 2019

Comments from Home Energy Analytics on the Energy Efficiency and Building Decarbonization Workshop – 19-IEPR-06, held August 27 2019

Submitted by Lisa Schmidt, Lisa@hea.com

The need for greater energy reduction undeniable, and runs throughout the IEPR report and workshop presentations. HEA believes residential energy savings can be much higher than projected. The technology exists to achieve these savings, but there significant institutional barriers to employing new methods and technologies.

Current residential EE delivery is broken and it's a process broken in three distinct ways:

- **Poorly understood problem**  
Repeatedly, building envelope and HVAC upgrades are promoted as the “deepest” energy saving measures. This is simply not correct both from a potential for energy savings and as an economically feasible road to significantly reducing energy use in homes. Residential energy use has changed, yet our priorities have not.
- **Inadequate business analytics**  
EE programs should be judged on the ability to deliver energy reductions at a price reflecting the value of the eliminated kWhs and therms. The cost both in time and dollars updating DEER to support deemed savings calculations is a waste. All that effort should be redirected into creating a consistent, reliable method for continuously measuring actual energy savings at the building level via our \$5B investment in smart meters.
- **Perverse incentives**  
TRC, as is currently defined, is the wrong metric for judging the effectiveness of EE programs. The value of an EE program is the cost of saving kWhs and therms at a price that competes with alternative solutions. If EE can't deliver at a competitive price those dollars should be put into purchasing DR, GHG-free generation or storage resources.

HEA believes achieving significant savings at a competitive cost is feasible today, and can become even more cost effective by addressing these three big problems.

To achieve significant energy reduction through EE requires innovation and an understanding of what interventions achieve energy savings at a competitive price. The process needs to be improved to support this.

- **What's really going on in homes?**  
There is an assumption, as reflected in the Potential and Goals study and the typical EE program, that home upgrades are the only way to achieve deep savings. This is simply not the case. Plug loads (MELS) are a growing portion of home energy use and there are opportunities to mitigate them at much lower cost. The larger point is that we need to more clearly understand how energy is being used in homes. Surveys (e.g. RASS) are not the way to do this. Instead of spending more time and money on this outdated method we need to develop methods to take advantage of the wealth of energy data now accessible via smart meters to more accurately understand residential energy

consumption.

- **Continuous monitoring and feedback**

Deemed savings projections have proven consistently inaccurate. Keeping DEER up to date is a losing battle. Yet these are the tools we are using to track the effectiveness of programs. Without moving to more accurate and nimble methods we won't achieve our goals. We need to measure energy reduction automatically following an intervention. CalTRACK is a good first step. But the idea of continuously monitoring energy changes and rewarding programs based on these results needs to be the de-facto standard for the entire process. This means state-approved results are based on automated monitoring of energy changes, not extensive post program review. Smart meters give us the capability of doing this as demonstrated by CalTRACK.

- **Put a price on kWh and therms**

We need only two numbers to determine the success of an EE program: the cost per kWh saved and cost per therm saved. Are these prices competitive with other resources on the grid? EE should be viewed as just another strategy for reducing GHG emissions. If the cost to achieve EE exceeds other resources such as storage, shut it down.

The process for delivering residential energy reductions in CA is broken. We need to inspire creativity and reward innovation. The three suggestions presented above are informed by Art Rosenfeld and his breakthrough approach to refrigeration efficiency: set a number and let the market innovate. We need to set the numbers and let people innovate. And we need to fix the current process so we can quickly measure progress and cost to make quick decisions so we can drive down the cost and increase the effectiveness of residential EE programs.