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HEA strongly supports all the goals and strategies in the action plan. In particular, we applaud the strong emphasis on utilizing AMI data to inform energy efficiency choices, reduce costs and educate consumers. The following comments apply to residential energy use.

We encourage the commission to consider two steps to enhance the plan:
1. Utilize AMI data to characterize actual energy use in a variety of representative California homes across different climate zones.
2. Develop a standard protocol for measuring disaggregated energy changes using AMI data to create an accurate method of monitoring the efficacy of energy efficiency measures.

Characterize actual energy use of a variety of CA homes
A general assumption is that home retrofits achieve the greatest possible energy savings. This view is naturally reflected in the action plan. But based on smart meter analysis of over 3,500 homes HEA has found retrofits frequently do not achieve the greatest energy savings, especially in the temperate costal zones. Heating and cooling consistently represent less than 30% of energy used in a single family home, and even less in multi-family. Though the plan indicates other energy saving measures will be pursued, emphasis is placed on retrofits and HVAC upgrades. AMI data provides the opportunity to more accurately measure how energy is used, in particular, separating energy used for HVAC from energy used for other purposes, including plug loads.

Our understanding is that breakdowns of energy use in homes have been established primarily through two methods: in-home surveys conducted by the EIA and modeling of home assets. These methods were essential prior to the availability of AMI data but more accurate characterizations of home energy use are now available through the analysis of AMI data. Characterizing the energy use of a variety of California homes would provide invaluable insight into actual energy use and help prioritize EE measures. Remote disaggregation of a homeâ€™s energy into major categories -- heating, cooling, plug loads and â€œalways onâ€ -- utilizing AMI data and then verifying those energy use categories through in-home measurements would set a standard in remote energy use measurement. Not only would this provide invaluable insight into actual energy use and prioritize energy efficiency programs, it would create a standard to be used as the basis to develop innovative remote analysis software which has the potential to drastically improve the cost effectiveness of energy efficiency programs in California.

Set a Standard for Measuring Energy Savings utilizing AMI data

Measuring energy savings is crucial to fairly compensate program administrators, evaluate the efficacy of new EE programs and accurately track statewide energy reduction goals. But the current methods using deemed savings is cumbersome and constrains innovation because setting the deemed savings for new EE measures has not and can not keep pace with changes in equipment and building energy use. Energy service providers have been prohibited from utilizing new, potentially valuable products and methods (smart strips, hot water recirculation pump timers, behavioral programs, etc), even if they could achieve greater energy savings, until the the specific measure has been added to the DEER database or otherwise evaluated in great detail. More comprehensive home retrofits are expensive and a bigger investment in time and money than a homeowner wants to engage in. And finally, existing methods only estimate energy changes and performing the M&V to verify savings is costly and time consuming. A

much better solution is to utilize the new AMI data to measure savings actually achieved by any given measure.

AMI data can be used to accurately measure energy savings but open, standard certification methods need to be established for major load categories so that any organization can develop software tools that can help achieve the stateâ€™s aggressive EE goals. A standard needs to be established to resolve questions around analytic techniques such as: normalizing for weather, disaggregating major load types such as heating and cooling, comparing rolling yearly energy averages instead of having to wait a full 12 months, how to attribute energy savings when significant changes such as occupancy or EV charging occur, and other issues.

Creating a standard for measuring energy changes will take input from a number of stakeholders, should be an open process and will take some time to accomplish but the benefits will be significant.
Setting a disaggregation standard based on AMI data provides a range of valuable benefits:
1. It will facilitate innovation in creating remote audit tools. Software providers will know their tools can be used as long as they conform to the standard.
2. It will facilitate innovation in EE program design because program providers and administrators know they will receive compensation for actual energy savings based on measured data.
3. M&V of EE programs will be much quicker and less expensive because it can be based on analyzing actual changes in energy use.
4. The state is freed from having to choose one software tool or package. EE service providers and program administrators could choose any software package certified as conforming to the standard, which will foster competition among software vendors to continue to improve the tools.

While not a perfect analogy, the IRS has chosen a similar path by certifying software for tax preparation and submission. TurboTax, H&R Block and other vendors provide software for filing tax returns. The IRS certifies that the software package conforms to a standard and users are free to choose. Utilizing an online method for submitting tax returns has provided benefits for both citizens and the government by speeding up the process and guaranteeing a greater degree of accuracy.

In conclusion, we believe utilizing AMI data to characterize actual energy use and set a standard for measuring energy changes will demonstrate the power of the stateâ€™s large investment made in smart meters by:
â€¢ Reducing the cost of administering EE programs;
â€¢ Improving the accuracy of EE program measurement; and
â€¢ Encouraging innovative methods to achieve the stateâ€™s energy savings goals.

Additional submitted attachment is included below.

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