

Attn: Dockets Unit,
California Energy Commission (docket@energy.ca.gov)

From: Steve Schmidt, President
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Subject: Comprehensive Energy Efficiency Program for Existing Buildings (AB 758)
Draft Action Plan Staff Workshop (docket 12-EBP-1)

To Commissioner McAllister & staff:

Thank you for organizing the workshops to review the Draft Action Plan!

The goal of AB 758 is to “*bring forth large energy savings and greenhouse gas (GHG) emission reductions*” in California buildings. As detailed in comments I submitted last October, the commission’s timing to define new **cost-effective** residential energy efficiency programs for California is fortuitous, converging as it does with **three significant technological advances**:

1. A large majority of California homes now have smart meters;
2. Smart meter data is accessible to third parties; and
3. Third party smart meter disaggregation tools are showing excellent results.

Together these advances enable a **revolutionary approach** to residential energy efficiency for existing homes that is **accurate, cost-effective and highly scalable**.

Against this backdrop, below are my specific comments on the Draft Action Plan.

1. Page 17: “Stakeholders have emphasized that energy performance data should be stored in a central location that is easily accessible...”

Not all stakeholders!

Please note there are two very different categories of this type of energy performance data:

- a. **anonymized** (for use with heat maps, and CSI-like aggregated data stores) and
- b. **personally-identifiable** (for use with individual buildings, e.g. via Green Button Connect).

Some stakeholders need the former, and some the latter. Quoting Comm. McAllister during the workshop, it is critical the CEC does not “*pollute short term issues with the longer term sticky issues*”. I.e, please do not hold up needed progress on **Green Button Connect** because of privacy issues related to a proposed Energy Data Center. They are two different issues serving different needs.

2. Page 18: "Finally, more precise understanding of actual energy savings impacts will ... enhance competition within the energy efficiency marketplace"

It may be useful to cite two such ARRA-funded projects that did just this:

- a. CEC-funded "**High Energy Homes**" project (176 participants), and
- b. DOE-funded "**Energy Upgrade Mountain View**" (927 participants).

Both of programs used actual before & after smart meter data to provide measured savings and cost-effectiveness metrics.

Additionally, participation increases significantly when residents can get accurate information and analysis of their home energy use through a low cost smart meter analysis. This "hurdle" is much lower than a \$400 HERS audit.

3. Page 30: "Target outreach and marketing efforts by prioritizing buildings using the highest amounts of energy. Target other priority customer segments identified by using future data and best practices analyses."

The CEC-funded **High Energy Homes** program focused on homes with the highest energy use. **Energy Upgrade Mountain View** used smart meter data to assign four different programs to different customer segments, including renters, owners, homes with high HVAC costs, and homes with high plug loads.

The governor's energy efficiency advisor **Jean Clinton** commented during the workshop that we need to "*use rifle shots, not buck shot*" for EE outreach, and smart meter analysis allows us to do that.

4. Page 31: "Educate building owners and tenants about plug loads and the value of behavior changes..."

Bravo! At least one ARRA program has proved this approach to be very effective: In our **Energy Upgrade Mountain View** program we sorted users into different categories based on their energy use, including high HVAC energy use, high Behavioral energy use, and high Plug Loads. The latter two categories saved an average of \$169 per year in energy bills, primarily as a result of online education.

5. Page 39: Devon Harman suggests tying rebates to actual energy savings, and Page 40: "Contractors can increase consumer awareness of simple measures to save energy... "

Tying rebates to actual energy savings wasn't possible 5 years ago but can be done today using smart meter disaggregation. This will encourage contractors to focus on the "low hanging fruit", instead of walking past the idling PCs on their way to the furnace.

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6. Page 57: "Including energy efficiency in the property valuation and appraisal processes will require a systematic, reliable, and objective way to compare energy efficiency assets that exist in the building"

Smart meter disaggregation using local weather data allows for an accurate assessment of three primary types of residential energy use in a given home: (1) Heating/Cooling loads, (2) Plug loads, and (3) Behavioral loads.

The Asset Model aligns very closely with the first of these: it is associated primarily with the home itself, and can be tracked in terms of BTUs per degree day per square foot.

The other two categories are dependent on the occupants.

Respectfully submitted on Wednesday, July 3rd, 2013.