Date: 4/28/17
From: Oracle America
To: CPUC, Energy Division

Subject: Oracle Comments re "2015 DRAFT Home Energy Reports- Cost-effectiveness memo"

Background

Oracle (formerly Opower, Inc) appreciates this opportunity to comment on the 2015 Draft Home Energy Reports Cost-effectiveness Memo ("Draft Memo"). Oracle implements HER programs in more than 30 states and in more than 10 countries worldwide, and our programs have been in place since 2007. Based on this experience we offer the following comments on the Draft Memo.

HER costs must be disaggregated from Home Energy Advisor.

Throughout Opower's history implementing HER programs, it has been common (albeit not universal) practice to examine the cost-effectiveness of the program. California has been an exception to this, and we welcome the opportunity to shine a light on the overall costs and benefits of these programs. While assessing the savings from HERs is relatively straightforward from an evaluation standpoint, the *costs* are not nearly as simple to isolate in California. This is almost entirely due to the treatment of HERs as part of the utilities' "Home Energy Advisor" (HEA) program. HEA encompasses a myriad of different "measures" that vary somewhat by utility. For example, the universal audit tool (UAT) and Home Energy Efficiency Surveys are bundled along with other items in SCE's HEA program bucket. This makes isolating the costs of HERs as a measure challenging to identify.

Another complicating factor in this exercise is the fact that for most of the IOUs, the same vendor (Opower/Oracle) provides HERs and UAT, oftentimes in the same contract. Isolating HER costs is possible; however, it requires coordination between evaluators, Energy Division, the IOUs, and the HER vendor (e.g. Oracle). HER costs

cannot be derived from utility portfolio filings, as they are not disaggregated from all of the other HEA activities. Therefore, if one were to simply divide the evaluated savings in a given year by the HEA reported costs, there would be a very large amount of non-HER costs being allocated to the HER cost-effectiveness analysis.

More transparency and coordination are necessary to accurately assess costs and benefits of HERs.

Oracle highly recommends that there be substantially increased coordination between ED, DNV-GL, the IOUs, and Oracle in order to align on the correct inputs into this analysis. It is not clear from the Draft Memo where the cost inputs were specifically derived from, and the savings do not appear to align in a 1:1 fashion with those found in DNV-GL's historic evaluations of the HER programs in CA. It should be noted that this is the second attempt in the past year to assess the TRC values of HERs, and the level of collaboration amongst the relevant parties did not appear to improve. At a minimum, it would be helpful for DNV-GL to document the data sources used to calculate the outputs, particularly on the cost side of the equation. The Draft Memo simply footnotes, "Where 2013 or 2014 cost data was not provided, it was estimated using derived per household costs"; however, the critical question of *how* these per household costs were derived is not answered.

Additionally, there does not appear to be any connection between this effort to assess HER cost-effectiveness and the analysis being conducted by Navigant as part of the BROs potential study. The inputs to that study are equally opaque and arrive at very different TRC values from those in this Draft Memo. Oracle highly recommends that ex-post evaluation efforts are aligned and coordinated where the outputs of these analyses have obvious applications in related activities (e.g. potential studies).

The measure end use curve assumption should incorporate the efforts underway to develop an empirical savings shape.

After determining the savings values and cost inputs for HERs, the most important component of a TRC calculation is arguably the measure end use curve, as TRC values can vary by orders of magnitude depending on the timing of savings. DNV-GL correctly alludes to ongoing efforts to identify a more accurate load shape than the flat shape that had been assumed previously. In fact, PG&E has worked with Opower, Energy Division, and E3 to develop a blended load shape in which two approved DEER load shapes are combined in order to derive a shape which much more closely aligns with the actual savings measured through AMI data. By allocating the HER savings in a given year to two different load shapes in proportions determined by the E3 tool developed for this purpose, we expect that all the electric IOUs in California will have their own measure end use curve developed and ready for use in future evaluations. PG&E is the first utility to complete this process and is using the new load shape in their 2016 annual savings claim. While the methodology for deriving the new load shapes will be identical, each IOU will have a different shape in order to reflect significant differences in geography, climate zones, and other varying characteristics of HER recipient cohorts.

Based on these developments, Oracle highly recommends that the measure end use curve applied to the analysis in the Draft Memo be replaced with the newly developed and more accurate measure end use curves before the Memo becomes finalized or public.

Savings and cost data points for SCE contain additional potential flaws.

In the Draft Memo, DNV-GL concludes that only SCE's HER deployments are not cost-effective, and it is also noted that after 2013, HER costs double while savings decline. While there are a number of program design variables that contributed to lower than average savings performance, Oracle is concerned that neither the savings, nor the costs are being accurately portrayed in this analysis. First, the attempt to isolate HER costs are hampered by all of the above-mentioned reasons, and it is unclear how DNV-GL arrived at the per household cost figures. For example,

in 2014, the scope of Opower's work with SCE increased significantly to include many non-HER activities (e.g. UAT), which would show up in the HEA program bucket as increased costs. Furthermore, a third SCE wave was launched in 2015 that was not included in the recent 2015 evaluation. It is entirely possible that the costs for this wave were included in this cost-effectiveness analysis without any accounting of the associated savings, though we cannot confirm this without any documentation of the sources for cost inputs. This further highlights the need for more transparency and collaboration in determining inputs to this analysis.

Oracle Recommendations

In conclusion, Oracle recommends the following:

1. This analysis should not become "final" or public until a more accurate and thorough investigation of HER costs is completed. Such review must involve the IOUs, DNV-GL, Energy Division, and Oracle.

2. Before finalizing this analysis, DNV-GL, Energy Division, the IOUs, and Oracle should align on the appropriate measure end use curve to apply to HER savings, as the TRC estimates will not be accurate until this is determined.

3. Once finalized, Energy Division should align these findings with related activities that use these values as inputs into other analyses (e.g. potential studies)

4. Future efforts to assess characteristics of HERs should involve the HER vendor, the IOUs, evaluators, and Energy Division *early in the process* in order to expeditiously arrive at the most accurate outcomes possible. Without better collaboration, individual actors will be working with limited information and, as has been the case three times in the past year, draft conclusions will not be reflective of reality.

Oracle thanks Energy Division for the opportunity to provide these comments, and we look forward to working with all parties involved to improve the accuracy of this analysis.

Charlie Buck

Manager, Regulatory Affairs and Market Development
Oracle Utilities Global Business Unit