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Sent: 2/6/2014 2:51:44 PM
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Subject: Follow up to HAN-DR meeting on Friday

Hi Alope & Dave,

Thanks for the good conversation last Friday regarding our HAN-DR plans and roadmaps. There were a couple of items from the meeting on Friday that I want to follow up with all of the ED the attendees on. If you could, please forward this email to the rest of the ED staff that was in attendance on Friday, 1/31.

1. Clarification of HAN-DR scope

There was a discussion on Friday about the if the scope of the HAN-DR project included direct load control. For your reference, I have attached our final AL on this pilot. This AL was approved on 4/8/13 (effective 10/31/12). Direct load control is not in scope for this project.

Advice 4119-E (Supplemental) was filed in compliance with Decision 12-04-045 (Ordering Paragraph 65), *Decision Adopting Demand Response Activities and Budgets for 2012 through 2014*, with a plan to implement a Home Area Network-Demand Response Integration project. PG&E filed Advice 4119-E on October 1, 2012 to submit its Home Area Network-Demand Response Integration project to the Commission. On October 30, 2012, the Energy Division suspended Advice 4119-E for 120 days. On February 12, 2013, in response to the Energy

Division's request, PG&E agreed to supplement Advice 4119-E, and to a further extension of the suspension to April 29, 2013. AL 4119-E-A was approved by the ED on 4/8/13.

The scope of the work was defined in "overview of approach section" beginning on page 1. In this section, PG&E clearly defines the scope, which does NOT include direct load control -- "In light of the evolving role of the utility in the DR marketplace, PG&E is prioritizing the implementation of notification and pricing signals to the premise, whereby a customer can program an automated response, over utility direct load control signals, where the utility determines the device response, (e.g., switching a device on/off or ramping a device temperature). By implementing signals to the premise, customers can choose manual or automated actions in response to the signals and have full control over how to respond to balance between costs and convenience.

2. Results of the HAN Ph1 (initial rollout) report are attached. Key highlights include:

○ Savings -- Using the panel regression method, the **average daily load reduction due to exposure to the IHD is estimated to be 5.6%**. The standard error of this estimate is approximately 1.2%, yielding a 95% confidence interval of +/- 2.4%. This estimated load reduction is statistically significant.

○ Survey Responses include:

- 64% of both initial and exit survey respondents report making changes to the way electricity is used in the home based on information provided by the IHD; exit survey respondents reported taking more energy-saving actions than the initial survey respondents did.
- After 4-6 months of using the IHD, 50% of respondents reported looking at the IHD just as often as they did when they first received it. 46% of respondents reported looking at the IHD less often after 4-6 months of use.
- General preferences for household energy information to be displayed by a standalone device and to be displayed in terms of dollar cost were consistent across both surveys.
- The IHD's "likeability" increased after 4-6 months of use for 25% of customers. 75% of customers reported a decline or no change in how much they liked the IHD after 4-6 months of use
- A number of energy saving actions were reported as being taken by respondents in the exit survey but not in the initial survey, These "new" actions include turning off lights when not in use, installing power strips to control vampire loads, re-programming the thermostat and using

cold water to wash clothes or dishes.

- Customers consistently valued the IHD at \$22 per device.
- Focus Group findings include:
 - Both satisfied and dissatisfied participants reported liking the IHD's real time display of energy usage and cost.
 - Most participants described using the IHD to discover how much electricity individual appliances use. Dissatisfied customers said that they thought the device should be able to display end-use loads without the user having to turn end-use loads on and off and then calculate the difference.
 - Most consumers in both focus groups report: IHD is located in common areas of the home, IHDs still functional, looking at the IHD at least daily
 - The satisfied focus group participants made some household changes as a result of what they learned from their IHDs: turning off unnecessary loads like lighting or appliances not in use and discontinuing use of discretionary appliances with large loads such as radiant electric floor heaters.
 - The dissatisfied focus group participants discussed feeling frustrated about tiered electricity pricing: they could not understand how to schedule their electricity consumption in relation to tiers. Some of these customers reported that, prior to receiving the IHD, they used discretionary loads such as washing machines off-peak. After using the IHDs, they stopped worrying about the time of day of their household's electricity usage.
 - With few exceptions, focus group participants stated a preference for stand-alone IHDs, which can be displayed in common areas of the home for all members of the household, including visitors, to see and discuss.
 - Most participants used the IHD to experiment and discover how much electricity individual appliances use. Dissatisfied customers, however, said that they thought the device should display end-use loads without manual calculation.
 - Most consumers in both focus groups reported that their IHD is located in common areas of the home, that they were in operation at the time of the focus groups and that they continue to monitor them at least daily – sometimes more often.

This report is publicly available on the Calmac website. For information on how to obtain the report from Calmac, please follow up with Redacted.

3. We received Dave Erickson's request on 2/3 (attached) regarding SEP 1.x HAN as

implemented in the smart meter. We can set up a demo, however it would be useful to understand the broader context of the **policy objectives** that you are interested in exploring first to make sure we tee up the meeting correctly and pull in the right folks. This may be best routed through the regular DR meetings that are being set up under our policy team. Alina Koch Lawrence is the key contact for this meeting.

Also, I understand that Redacted are following up with you on several other topics covered during the meeting. These include:

4. Broader look at DR pilots planned and underway at PG&E; including a discussion of the work that PG&E is doing on many other thermostat pilots, which include load control via other means (e.g. AutoDR)
5. Updates on the pilots that other SSN utilities, OG&E and FP&L, are doing and how these are different than DLC via HAN.
6. Similarities and differences between the work PG&E is doing and SCE and SDG&E direct load control pilots. To my knowledge, these pilots are also not utilizing DLC via HAN through the meter. They are utilizing load control via the internet channel. The devices can also connect to the meter, but the direct load control signals do not come from AMI.

Please continue to follow up with Kimberly, Wendy, and the broader DR team on these topics and others. I look forward to re-engaging in 6 months when I return from leave. 😊

Thanks,

Redacted

Principal Product Manager

Demand Response – 3rd Party Data Platforms

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