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October 26, 2015

Abigail Daken
US Environmental Protection Agency
Climate Protection Partnerships Division
Washington DC 20460

Subject: Draft ENERGY STAR[®] Connected Thermostats Grid Responsiveness Criteria

Dear Ms. Daken:

This letter comprises the comments of the Pacific Gas and Electric Company (PG&E), Southern California Gas Company (SCGC), San Diego Gas and Electric (SDG&E), and Southern California Edison (SCE) in response to the United States Environmental Protection Agency (U.S. EPA) request for comments on the draft ENERGY STAR[®] Connected Thermostats Grid Responsiveness Criteria. The signatories of this letter, collectively referred to herein as the California Investor Owned Utilities (CA IOUs), appreciate the opportunity to provide feedback on the draft Connected Thermostats Grid Responsiveness Criteria.

The CA IOUs represent some of the largest utility companies in the Western United States, serving over 35 million customers. As energy companies, we understand the potential of appliance efficiency programs to cut costs and reduce consumption while maintaining or increasing consumer utility of the products. We have a responsibility to our customers to advocate for voluntary program requirements that accurately reflect the climate and conditions of our respective service areas, so as to maximize their positive effects.

A well-crafted ENERGY STAR specification could help utilities across the country implement demand response (DR) and energy efficiency programs that rely on the control strategies enabled by connected thermostats. Our comments aim to encourage U.S. EPA to adopt specifications that will harmonize with a variety of utility program requirements and realize energy savings for our customers.

Strengthen Requirements for Use of Open Standards

The CA IOUs support U.S. EPA’s effort to develop requirements that improve interoperability and minimize the risk of stranded assets.¹ Thermostats and service providers’ offerings will evolve over time. To ensure that the energy benefits (energy efficiency and peak demand reductions) persist, it is important that customers maintain the ability to manage heating and cooling loads and respond to DR events even if the device manufacturer or original service provider goes out of business or the

¹ We refer to stranded assets as devices and systems that are rendered useless if the device manufacturer goes out of business or the building occupant does not renew contracts with the original service provider.

building occupant wishes to switch service providers. Thermostats and their control strategies should not depend on a specific manufacturer or service provider's proprietary communications protocols.

The draft grid responsiveness criteria address some of these concerns about interoperability and stranded assets. However, the CA IOUs recommend that U.S. EPA modify the criteria to strengthen the requirements further. The criteria should require certification of every device to an open standard (such as an OpenADR 2.0a certified products). The criteria should also clearly state that, at a minimum, connected thermostat systems must be capable of using open standards for bi-directional communication between the entity that sends the DR signal and the component(s) of the control system within the building that would modulate temperature setpoints or other settings in response to a DR event. In other words, an open communication pathway should be available along the entire pathway of communication – not just a portion of the pathway. There should not be any exceptions to this requirement. Device manufacturers and service providers would have the option of using proprietary communications technologies or protocols, as long as the system can also communicate using open standards.

The note in section 3.B.5 is unclear and may be inconsistent with the goals described above. The note currently reads “Note: Products that enable direct, on-premises, open-standards based interconnection are preferred, but alternative approaches, where open-standards connectivity is enabled only with use of off-premise services, are also acceptable.” U.S. EPA should clarify or delete this note. We assume that the term “off-premise services” refers to connected thermostat service providers, and we recognize that these service providers can potentially play an important aggregator role in DR programs. We assume that “direct, on-premises, open-standards based interconnection” refers to a customer's ability to receive a DR signal from the signaler, or from an aggregator of their choice, via their router or utility meter. We recommend that U.S. EPA encourage products that enable participation for a broad range of utility programs by providing end customers a full range of options.

Response Time Requirements for DR Signaling Criteria

We encourage U.S. EPA to work with utilities to determine the type of DR signaling requirements that will best accommodate utility needs and market capabilities.

Clarify that DR Strategies Can be Customized

The criteria should clarify that the two default response strategies for Type 1 and Type 2 events do not preclude device manufacturers or service providers from providing additional DR settings, including settings that are less strict than the proposed default settings. Devices can come pre-programmed with additional DR strategies and/or service providers can work with building occupants and utilities to develop customized DR strategies.

Customization is especially important, because utility DR programs vary significantly across the country and the criteria should encourage devices and services that are capable of performing well in a number of utility programs. The CA IOUs encourage U.S. EPA to explore whether there are also other opportunities to modify the specification to serve a wide range of utility service areas.

Revise Default Setting of Type 1 and Type 2 Responses

Many customers have difficulties maintaining a control strategy for four hours. Participants in DR programs have been requesting programs that require shorter duration responses, which is consistent with the trend towards faster DR. The CA IOUs recommend that the U.S. EPA reconsider the proposed Type 1 default setting that would specify a response duration of four hours or longer. We understand that response settings can be customized, but including a default setting that calls for a four hour response duration is not consistent with the direction the market is heading and could hinder progress towards faster DR. We suggest considering, for instance, a two hour response time. The CA IOUs also recommend that U.S. EPA harmonize with California utilities and clearly state that customers can override or customize the minimum and maximum temperatures in the default settings and as part of customized response settings.

Reconsider Exception that Would Prevent Gas Savings

The DR strategies for both Type 1 and Type 2 events include exceptions that state that heating control strategies do not need to be deployed if the building does not have electric heating. The CA IOUs understand that DR programs typically aim to just reduce electrical load, and that connected thermostats can enable natural gas savings (as well as oil and propane) through enhanced building controls that can be deployed throughout the year – not just during demand response events. However, we encourage U.S. EPA to modify the default Type 1 and Type 2 response setting to include a heating response, regardless of the type of heating used in the building. Including a heating response in the default settings may result in buildings that have gas heating reducing gas usage during DR events – which may help alleviate electricity DR events tied to natural gas availability for power plants. Customers will still have the option to customize their response strategies if they do not wish to include natural gas heating as part of their DR response strategy.

In conclusion, we would like to reiterate our support for U.S. EPA in developing an ENERGY STAR Connected Thermostat Specification that aims to improve energy efficiency and facilitate participation in DR events, including price signals. We thank U.S. EPA for the opportunity to be involved in this process and encourage U.S. EPA to carefully consider the recommendations outlined in this letter.


Sincerely,



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