



Mr. Joseph Hangerman
U.S. Department of Energy
Building Technologies Program
Sixth Floor
950 L'Enfant Plaza SW.
Washington, DC 20024

June 23, 2014

Re: Physical Characterization of Grid-Connected Commercial and Residential Building End-Use Equipment and Appliances

Docket Number: EERE-2014-BT-NOA-0016

Dear Mr. Hangerman,

Thank you for the opportunity to comment on the Physical Characterization of Grid-Connected Commercial and Residential Building End-Use Equipment and Appliances. Northeast Energy Efficiency Partnerships (NEEP) strongly supports the Department's efforts to develop physical characterization procedures for smart/utility ready appliances. NEEP works to promote efficiency throughout the Northeast and Mid-Atlantic United States and the Smart and Grid-connected device category is one that holds great potential for improving device-level, as well as grid-level efficiency in our region. While smart meter/grid deployment in this region is still in its early stages, the longstanding focus on efficiency and understanding of the potential that connected and smart equipment and appliances may provide is a high priority for regional stakeholders and efficiency program administrators. These comments are framed around the document [EERE-2014-BTNOA-0016-0003.pdf](#) and make reference to slide number where appropriate.

Terminology and Definitions:

Slide 4: "Smart Devices"; we support the proposed definition and encourage the Department to consider adding the word "automatically" to indicate that the devices are modifying their states without user engagement. There could also be further clarification regarding the distinction between smart and connect devices. It appears that smart includes receiving external input signals, as do the connected devices.

End-User and Grid Services:

Slides 11-13: Efficiency should be a significant consideration as both a grid service (decreasing the load at all times), and an end-user service (decreasing the household load and associated costs). In some cases, the appliances or device might be able to operate in a more efficient setting that would provide a service both to the grid and to the end-user but would not necessarily fit into the sample services listed.

Physical Characterization Framework

Slide 18: Framework Content: NEEP supports the concept of creating a systematic approach to characterizing smart/connected devices. Since this space is rapidly evolving, we recommend that examples be used as much as possible to distinguish between different elements of this framework, especially regarding the conceptual model. This should help minimize confusion and maximize the impact of the framework. NEEP also supports the inclusion of reference implementations, device test protocols, and metrics for comparison as part of this framework.

Value, Benefits, and Metrics:

Slide 23: At this point in time, NEEP does not have any studies or pieces of research to share for this effort. NEEP is convening a Home Energy Management System (HEMS) Working Group and through this effort we are expecting to both catalogue existing research as well as potentially perform original



research in this space. As such, we will keep a keen eye to any information we might be able to share with the DOE in this regard.

As part to this Framework, DOE should also include some attempt at quantifying the impact that smartness/connected capabilities may have on the energy use of the devices. By measuring and quantifying this new energy draw, manufacturers will be more conscious of designing these new capabilities to be as efficient as possible. It will also inform DOE's Appliance Standards Programs for how these new services impact energy use of equipment/appliances.

Slide 24: Additional metrics for consideration should be the energy savings and what those savings equate to with respect to displaced power plants. Additionally, there is an opportunity for these devices to play a role in 111-d Clean Air Act compliance, so an orientation towards any air quality metrics would be strongly recommended.

NEEP and our stakeholders across the Northeast/Mid-Atlantic are very excited about the DOE's prioritization of these products and services and are very hopeful of the efficiencies to be gained from these devices and equipment at both an end-use level and grid level. Through NEEP's continued leadership of the Home Energy Management System Working Group, as well as our ongoing efforts in Appliance Standards, we hope to be active participants in this process as it unfolds. We welcome any questions, comments, or clarifications that you might have. Thank you again for your consideration.

Sincerely,

Susan E. Coakley, Executive Director