Mr. Duncan Bees
Chief Technical Officer
Home Gateway Initiative (HGI)
Duncan.Bees@homegateway.org
Mobile +1.604.418.8997
www.homegateway.org

Ms. Una Song
US Environmental Protection Agency
Song.una@epa.gov

January 13, 2009

Dear Una

I would like to thank the EPA for inviting HGI to attend the recent conference call on the Small Network Equipment (SNE) project. HGI feels that much of the work already done within HGI, the work done in creating the *EU Code of Conduct on Energy Consumption of Broadband Equipment (CoC),* as well as current ETSI projects on testing of energy efficiency, could be reused by the SNE project, resulting in a common approach to specification and testing of energy efficiency for SNE. Potential areas for alignment between the SNE project and the HGI/CoC approach include state definitions, power targets for devices, methods for implementation of energy efficiency, and testing requirements.

The EU CoC is a voluntary code of conduct on broadband power which includes HGs. The CoC document, downloadable at
http://re.jrc.ec.europa.eu/energyefficiency/pdf/CoC%20Brodband%20Equipment/Code%20of%20Conduct%20Broadband%20Equipment%20V3%20final.pdf

could form a starting framework for dealing with energy efficiency for SNE. The HGI was heavily involved in its development. Key goals were

- Defining a modular approach that allows overall power targets to be computed for HGs of any configuration.
- Defining modules that correspond to practical grouping of functions at neither too coarse nor too fine a degree of granularity. For example “central functions” groups processor, memory, and certain software functions of the HG.
- Providing non-normative reference values for power targets of subcomponents that when added, sum to the overall power target for the device. An advantage of this approach is that it allows traceability at the subcomponent level to the overall power budget, allowing the subcomponent level (non-normative) and device level (normative) budgets to evolve with technological advances at the subcomponent level.

- Definition of normative device level power states that correspond to the service usage of the device. The device states chosen were:
    - Off-state – the device is switched off or disconnected from mains.
    - Low-Power-state – the device is idle, with all components in their low-power states
    - On-state – All the components are active.
- It was recognised that many intermediate states may exist where selected components are active, dependent on the service required at a particular time. Because of the complexity and possible number of these states the CoC did not cover these.

Within HGI, we are working towards publication of HGI-RD009-R3, *Home Gateway Requirements for Energy Efficiency*. This document sets out goals and methods to achieve energy efficiency for Home Gateways, and defines test methodology. The HG is a routing and interconnection device deployed by Broadband Service Providers to deliver internet services through xDSL, Ethernet, or other WAN-side uplinks. An HG corresponds to the "IHAD" in EPA terms.

HGI-RWD009-R3, a draft version of RD009, is attached for your comment. We could discuss a framework to allow EPA to use this material in the SNE project if this is thought to be appropriate. We are currently finalising requirements for transitions and normative power levels for the HG in intermediate states and would welcome EPA feedback on this.

HGI defined a test procedure in RWD009 for measurement of power consumption. It was applied in the recent HGI Test Event to the measurement of compliance with the CoC Low Power state. HGI has also liaised this procedure to the ETSI EE committee which is developing a standard for HG power testing.

In summary, HGI suggests the following:

- The Energy Star requirements should align wherever possible with the CoC state definitions.
- Implementation requirements should align with RWD009.
- Testing requirements should align with RWD009 and the ETSI EE.

Our next meeting is in Biarritz, France, March 22-26, 2010 and any Energy Star representatives would be welcome to attend.

Sincerely Yours

Duncan Bees