



# LoadDown

THE STANDBY POWER NEWSLETTER



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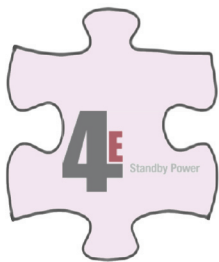
**This edition of *Load Down* includes**

- **Network Standby – Putting the pieces together**
- **Network standby field measurements – Is simulation possible?**
- **Korea marching ahead on Network Standby**
- **Networking in Stockholm - International Workshop Outcomes**

## Network Standby – Putting the pieces together

### 4E Standby Power Annex

The 6th meeting of the standby power annex was held in Stockholm Sweden during May. The Annex confirmed that it will be focussing on



projects that work toward developing a policy framework capable of addressing energy

wastage in network standby as well as those that enhance horizontal approaches to standby power policy. The Annex has also committed to producing several documents with the aim of providing communication

tools and disseminating the policy messages in a clear and concise manner. These documents include policy briefs, overviews of recent research and reports explaining the history and context of both standalone and network standby. All these documents should be available within the next 6 months.

In taking a lead role in developing a framework for network standby the Annex committed to working closely with SEAD and formalised this with a statement of cooperation which promises to share and seek input to all work as it progresses. The Annex contribution to unravelling the network standby puzzle will include further development of horizontal approaches, developing

a policy framework position and disseminating the messages to those outside the technical field.

### SEAD Network Standby Collaboration Group

The SEAD Network Collaboration Group met in Stockholm finalising the



scope of works for projects it will undertake in 2012. The projects are Standardized Definitions for

Network Standby & the Application to Televisions and an investigation into Networked Standby Real World Usage

*continued overleaf*

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in homes. Through these projects SEAD will help piece together the tools required for the development of global policy approaches and test these in practical settings.

## IEA Network Standby Project

After the success of the Stockholm workshop, the IEA network standby project will be forging ahead to develop a comprehensive publication detailing the types of



issues policy makers need to consider when tackling network standby

energy waste. The project team will draw on the research being undertaken by both 4E and SEAD, as well as advice from other experts in industry, standardisation and non-participant governments. The research into a framework for network standby policy being undertaken by the 4E standby annex, combined with the IEA Guiding principles for energy efficiency in networked products will form the basis of this work. The project has also initiated its own research into network standby measurement possibilities.

The piece of the puzzle the IEA is bringing to the table will include

crafting possible solutions to network standby waste including presenting a range of policy options and outcomes available to tackle the issue.

## 2013 Network Standby Conference

While each of these international organisations are working on their own unique aspect, they are committed to sharing research outcomes and putting together each piece of the network standby puzzle. There is a common end goal in sight, to have a suite of policy options that can be readily adopted globally. September 2013 has been set as the target date when the puzzle will finally come together culminating in a conference where all the research outcomes will be showcased for stakeholders, policy makers and technical experts alike and policy prospects to reduce energy wastage in networked products can be delivered.



## Network standby field measurements – Is simulation possible?

The IEA in conjunction with IT Energy Denmark have begun a project investigating the possibility of simulating a network connection in appliances for the purpose of measuring consumption in network standby modes.

This “proof of concept” project is hoping to deliver a software tool that can be easily disseminated and used globally, has automatic protocol update and is ready for practical application in laboratory or field power testing environments.

The goal is to develop basic software which will allow a PC to force an appliance into a required network standby mode, enabling the measurement of electricity consumption in that mode, without a requirement for physical access to LANs or WANs.

The work is using the store survey methodology developed by APP and SELINA as a basis and is hoping that the tool will be a simple addition to this, rather than a radical redesign of data collection. If successful this tool will save time and resources not just by allowing field measurements but also speeding up the laboratory testing process. Results from this study are likely to be available early in 2013.

## Upcoming publications

The 4E standby Annex is currently working on a series of briefing papers to assist governments understand the latest developments and the implications of new research in the policy arena. The first policy briefs to be released will include:

- Standby Annex overview – a simple paper outlining who and what the annex is and why policy makers should be interested in the Annex work.
- Global Cooperation in Action – Based on the Standby benchmarking report this will discuss how consistent and concerted efforts from governments over the longer term bring positive results.
- TV’s – An example of standby success. – This will look at the decline in standby for televisions demonstrating that regulation increases the rate at which the market improves. These briefings will be available for download on the annex website in October.

Additionally the IEA 4E submitted a report “Standby trends for televisions” to the Clean Energy Ministerial Meetings in London in April 2012. This report describes trends in standby power for televisions and is the result of collaboration between the IEA 4E Annexes on Standby and Mapping and Benchmarking. The report is available for download on the 4E website.

## Korea marching ahead on Network Standby

The Korean Government has released a report, *Korea's Energy Standards & Labeling: Performance improvements during the first 19 years and a vision for the future*. This report identifies the establishment of energy saving measures for home networked products as one of 3 major targets to be addressed by 2015. The plan includes support for R&D into near zero standby power technology particularly for smart household and network appliances. Also highlighted is the incorporation of network standby power limits into the current efficiency label and e-standby programs. This is already underway however the range of products, covered by network standby power limits is likely to be expanded.

Incorporation of network standby mode power limits into energy label programs has been implemented

for 11 products. Korea has used the EuP Lot 26 study's definition of network standby mode "Networked standby modes are conditions, in which the equipment provides reduced functionality, but retains the capability to resume applications through a remotely initiated trigger via network connection. Networked standby modes may distinguish different levels of network availability and by that different resume-times-to-application as well as power consumption." Under the energy efficiency labeling program 7 products have network standby power limits which must be achieved to receive the highest efficiency rating of 1. The products are listed in table 1

Korea's e-standby program, allows manufactures to voluntarily label products that meet efficiency

standards in standby power modes. Network standby mode limits have been included for 12 products in the e-standby scheme as shown in Table 2.

In addition to these initiatives the Smart Convergence Household Appliances Forum was launched in Korea in 2011. The forum has members from the major electronics companies, education institutions and R&D labs. They are working together to establish standard platforms and protocols to allow different brands of network products to communicate and operate within a smart house or home network. The forum is hoping to achieve easier user interfaces and be able to promise an interoperability guarantee.

[http://www.kemco.or.kr/nd\\_file/kemco\\_eng/KoreaEnergyStandards&Labeling.pdf](http://www.kemco.or.kr/nd_file/kemco_eng/KoreaEnergyStandards&Labeling.pdf)

**Table 1**

Target Product Energy Efficiency Label Scheme	Networked Standby Mode Power Limits
Air Conditioners	≤ 1W (Passive Standby) ≤ 3W (Active Standby)
Gas Boilers	≤ 3W (Sleep Mode)
Water Heaters	≤ 3W (Sleep Mode)
Washing Machines	≤ 2W (Active Standby)
Drum Washing Machines	≤ 2W (Active Standby)
Dish Washers	≤ 3W (Active Standby)
TVs (Effective July 1 in 2012)	≤ 1W (Passive Standby) ≤ 2W (Active Standby)

Source: Korea's Energy Efficiency Program in terms of Networked Standby presentation by Sangguk Jung at IEA International Workshop on Network Standby, Stockholm May 8 2012.

**Table 2**

Target Product e-standby program	Networked Standby Mode Power Limits
Computers (Effective July 1 in 2012)	TEC including sleep mode
Printers, Fax Machines, Copiers, Scanners, Multifunction devices	Various on Off Mode and Sleep Mode
Door Phones, Cord/Cordless Phones	≤ Various (Standby Mode)
Set-Top Boxes	≤ 1W (Optional, Passive Standby) ≤ 10~20W (Active Standby)
Modem	≤ 0.75W (Off Mode) ≤ Various (Standby Mode)
Home Gateways	≤ 10~20W (Sleep Mode)

Source: Korea's Energy Efficiency Program in terms of Networked Standby presentation by Sangguk Jung at IEA International Workshop on Network Standby, Stockholm May 8 2012.

Have you visited the 4E Standby Power Annex website?

<http://standby.iea-4e.org/>

## Networking in Stockholm - International Workshop Outcomes

### Networked Standby Data Collection Methodology & Policy Development Workshop

A joint IEA, 4E and SEAD workshop on network standby was held in Stockholm 7-8 May. During the two days, 40 experts from around the globe, representing industry, standardisation organisations, governments and research institutes met to discuss challenges and possible solutions surrounding network standby energy waste. The two key focus areas were methodologies and approaches needed to measure, collect and analyse network standby energy consumption and the data requirements for policy development and implementation.

The workshop highlighted that ICT and network connectivity can contribute to energy efficiency improvements and greenhouse gas emission reductions, however the predicted increase in the uptake of networked appliances is more

likely to lead to an overall increase in energy consumption. Expert estimations indicate that by 2025 the number of networked products could reach 50 billion. Networked homes i.e. apartments where appliances are linked to and controlled via a network already exist. Globally, the standby energy consumption of networked products is projected to reach 850 TWh per year by 2020. The savings potentials are in excess of 550 TWh.

To stay connected to a network, most products today need to be in on mode to receive network signals. This means that they do not power down to lower power modes and use the same amount of energy irrespective of if they are being used or if they are just waiting. The challenge is - how to get these appliances to go to sleep i.e. power down to low energy modes while still providing necessary network capability. There are technical solutions that are available or could be developed, but there is a need to create incentives to ensure that energy efficiency considerations are integrated into product and network design.

There is furthermore a clear need to accelerate work on developing technical standards that promote energy efficient solutions. Proprietary communication protocols were seen as a barrier to developing and implementing energy efficient solutions and there is an urgent need for standardisation in this area. Efforts are being made to develop policies to limit standby power consumption of networked products, notably in the EU and Korea. However, much still remains to be done in terms of creating a firm basis for developing and implementing effective measures, including developing methodologies for data collection and product testing. It was emphasised that progress in this area requires holistic approaches and concerted international action.

The workshop outcome will feed into a broader IEA/4E project aimed to bring together stakeholders, promote data collection and develop actionable policy guidance. A full workshop report will be available on the IEA and 4E Standby Power Annex website in July.

Next Edition.....  
November 2012

- > **Regulation Roundup – update on the status of standby policy around the globe**
- > **4E Network Standby Report Overview**
- > **Research update – Project outcomes**
- > **2013 Network Standby workshop and Global Conference**

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