4E Efficient Electrical End-Use Equipment International Energy Agency

iea Energy Technology Network

ENERGY EFFICIENCY POLICY BRIEF

Network Standby: Finding Solutions to Energy Waste

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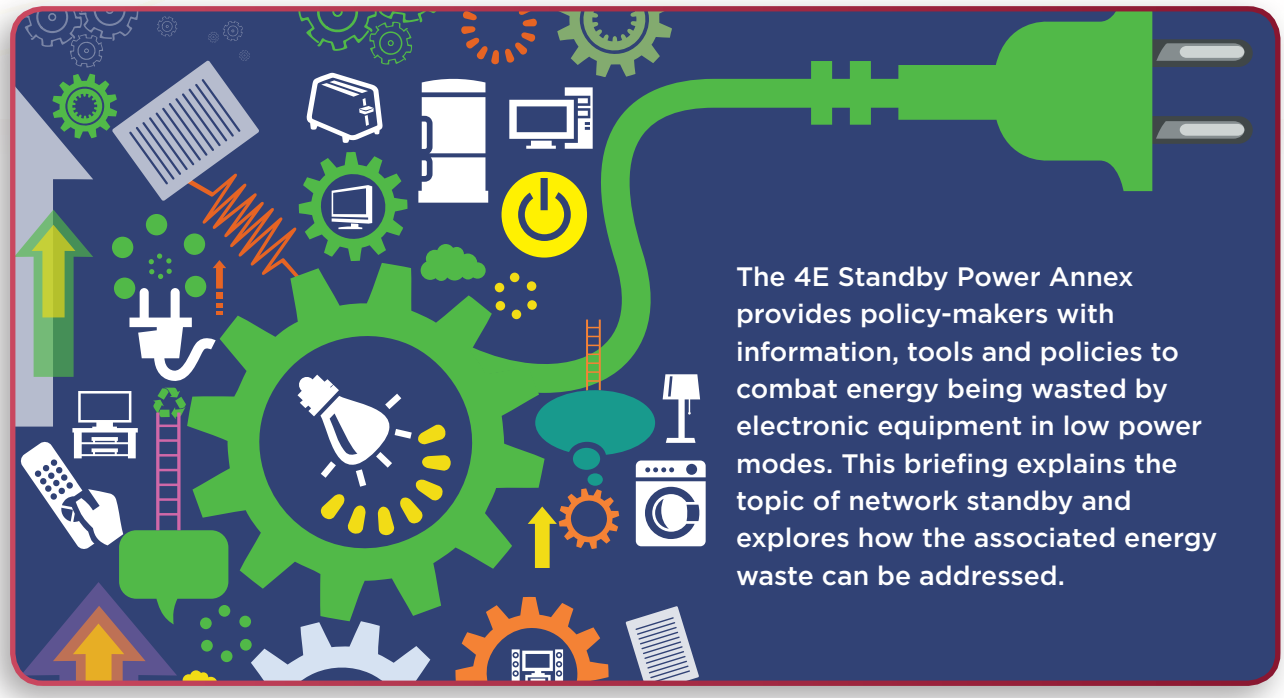

The 4E Standby Power Annex provides policy-makers with information, tools and policies to combat energy being wasted by electronic equipment in low power modes. This briefing explains the topic of network standby and explores how the associated energy waste can be addressed.

Key Messages

- **Estimated global energy consumption of networked products** is likely to reach at least 850 TWh per year by 2020. Efficiency measures have the potential to save more than half this (in excess of 550 TWh per year)
- **Government's need to act quickly** to address this issue to minimise waste and ensure efficiency gains in standby power are not undermined
- **Governments and industry, including technology developers** should work together and make a commitment to the IEA Guiding Principles for Energy Efficiency in Networked Products
- **Investment into developing test procedures and methodologies** will allow for the implementation of effective policy
- **Clean Energy Ministerial endorsement of network standby** as a topic requiring urgent international collaboration would greatly assist efforts to reduce waste.

More Information

More information about network standby can be found in the following reports, available on the Annex website.

Energy Efficient Strategies 2010, *Standby Power and Low Energy Networks - Issues and Directions*, report for APP and IEA 4E Standby Annex.

Maia Consulting 2012, *Staying Connected: Unravelling energy waste issues in network standby*, prepared for the Australian Government, Department of Climate Change and Energy Efficiency.

All publically available documents produced by the annex can be accessed on the Annex website **http://standby.iea-4e.org.** The Annex also produces a Newsletter providing regularly updates on international standby issues and events. Free subscription is available via the website.

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Since the 1990s 4E Annex member governments and others have substantially reduced standby power energy waste through successful policy intervention and engagement with industry. However, products are increasingly communicating to each other via the internet and other networks. This change in appliance functionality often prevents products entering low power saving standby modes, undermining existing government policies and their energy savings. Instead many products now sit idly wasting energy in a state known as network standby.

Network Standby is the energy used by a product when it remains connected to a network even though no primary function is being performed.

What is Network Standby?

Network standby is the energy consumed by a product when it remains connected to a network even though no primary function is being performed. Network standby applies to both networked products, such as home entertainment, ICT, lighting or white goods that use the network, and devices that drive the network, such as modems and routers.

Several related trends have contributed to the growth in network standby waste including:

- increased consumer demand for traditionally networked equipment and growing consumer expectations of this type of functionality across all equipment types.
- increased power consumption in lower power modes to maintain network links.
- increased power demands to enable faster speeds and higher bandwidth when effective power management is absent.

As a result, it is estimated that by 2020 global energy consumption of networked products will reach 850TWh per year.[1] However available efficiency measures have the potential to save in excess of 550 TWh. This saving would roughly equate to 5% of current global electricity use, positioning it above current global domestic refrigeration consumption.

What's being done?

Existing policy and testing procedures for dealing with standby power are not directly transferable to network standby. Networked products have multiple modes of operation beyond a simple on/off and therefore the current policy approach of setting simple power limits by mode needs to be adapted to cater for more complex energy requirements.

Governments need to act promptly to address network standby and avoid unnecessary energy waste. Since the technology that drives the network and most network products belong to the global market place, international cooperation and the pooling of resources amongst governments is likely to be the most effective approach. This will enable co-ordinated investment to develop test procedures and methodologies, as well as further research into the precise operations and energy requirements of networked products.

The 4E Standby Power Annex has endorsed the *IEA Guiding Principles for Energy Efficiency in Networked Products* to encourage energy efficiency to be better considered in network design and policy development. The Annex is working with key international organisations, including the Super-Efficient Equipment and Appliance Deployment (SEAD) initiative and the IEA, in producing a suite of policy options for global implementation. It is envisaged that this policy framework will be released at the International Network Standby Conference in September 2013.

[1] BIO Intelligence Service (2011), *Estimate of Energy Wasted by Network-connected Equipment*, prepared for the Australian Government, Department of Climate Change and Energy Efficiency.