

Fact Sheet

Standby Power Use and the IEA "1-watt Plan"

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What is standby power?

Standby power is the electricity consumed by appliances while switched off or not performing their primary functions. For example, televisions continue to draw a little power after the user switches them off with the remote control. All electronic products with external power supplies, such as cordless telephones, also draw standby power.

How large is standby Power?

Standby power consumption for most devices is small – typically ranging from 0.5 to 10 watts—but the number of devices drawing standby power is large. A European, Japanese, Australian, or North American home often contains twenty devices constantly drawing standby power. These include all devices with remote controls and external power supplies (or adapters), permanently illuminated digital displays and LEDs, and many new larger appliances, such as washing machines and air conditioners. As a result, standby power is responsible for 5 – 10% of total electricity use in most homes and an unknown amount in commercial buildings and factories. Standby power is responsible for roughly 1% of global carbon dioxide emissions.

Can standby power be reduced?

New technologies have become available that make it possible to reduce standby power by as much as 90% while maintaining all features that customers want. The most important innovations are higher efficiency power supplies and improved design of circuitry.

What makes standby power unique and why does it deserve international coordination?

Standby power is a significant use of electricity in all developed countries and in many less developed countries. The products that consume standby power are often designed, manufactured, and traded in different countries, so solutions will require coordination across borders.

What is the IEA's one-watt plan?

In 1999, the IEA proposed that all countries harmonise energy policies to reduce standby power use to no more than one watt per device. The proposal contained 3 elements:

- Participating countries would seek to lower standby to below 1 watt in all products by 2010
- Each country would use measures and policies appropriate to its own circumstances
- All countries would adopt the same definition and test procedure

What progress has occurred since the IEA proposed the one-watt plan?

Since the launch of the IEA's aspiration 1-Watt target in 1999, the issue of standby power has gained an international profile. Almost all recent national energy efficiency policy statements mention standby power explicitly, which was not the case 2-3 years ago. Follow-up processes to the G8, APP, APEC and CSD Marrakech accord have all called on Governments to make a greater commitment to the IEA 1-Watt standby target and other programs to tackle standby power.

However, while there has been a steady growth in the implementation of national programs, the geographic and product coverage is still sporadic. This is despite regular international conferences designed to share up-to-date information and provide co-ordination of activities. Most recently these have been held Copenhagen (2005), Seoul (2005) and Canberra (2006), At the last meeting it was proposed that future Conferences should be held in China, India and Brazil in order to stimulate policy development in major developing countries.

An internationally sanctioned definition and test procedure for Standby Power was adopted by the International Electrotechnical Commission (IEC 62301) in 2005, and this is now widely specified and used.

The voluntary endorsement label, Energy Star is the most wide-spread program which targets standby power consumption. In a significant new development, the upgraded specifications for computers and imaging technologies are largely based on test methodologies which take account of all modes in a duty cycle. Similarly,

the mandatory Australian label for dishwashers, clothes washers and dryers now specifically includes standby power as well as on-mode.

A number of countries have adopted regulations, and several are actively considering regulatory approaches to standby. Australia, Korea and Taiwan have indicated that they will implement regulations for standby power consumption in many products over the next few years. Australia has announced its intention to introduce 'horizontal' regulations for all electronic appliances by 2012, starting with home entertainment equipment. A number of products are regulated in Japan through the Top Runner program. The US DoE is working on new national regulations for some electronic appliances which will include standby power, although there is no implementation date.

In Europe, the voluntary Code of Conduct has been expanded to cover standby power in external power supplies, set-top boxes and broadband modems. The EU Eco-Design Directive provides the opportunity to introduce standby regulations in Europe, although this is unlikely to come into force before 2008.

There are a number of databases of energy efficient products, some including standby levels, which aim to provide information to procurers/consumers. It is not known how many governments use this information, but there is anecdotal evidence that several governments use energy performance as a tendering criterion. The US and Korea have mandatory government procurement policies for energy efficient appliances (including standby requirements).

IEA Horizontal Approach to Standby Policies

National standby power programs have tended to identify the products with a standby power mode and individually target policies towards those which consume the most energy. However, there now more than 40 products identified with a standby power component and as this number increases, dealing with each product separately is becoming less cost effective. In addition, for some products the traditional boundaries between devices have become blurred, and it is growing more difficult to define products individually.

The solution proposed by the IEA is to apply a uniform standby power requirement to all products (such as the 1-Watt target) – the so-called “horizontal approach”. This ensures that all devices are included by default, unless specifically excluded. This provides certainty for manufacturers and therefore enables the market for technical solutions to transform faster and at the lowest cost. Administratively, it is easier to define the exceptions to this requirement, than to attempt to specify all the products which are included.

It is proposed that two groups of products will be excluded from the horizontal standard:

- Products already regulated by an efficiency standard, whose test procedure captures standby power use;
- Products with special features that make it “difficult” to immediately achieve the horizontal threshold.

By excluding those products already covered by a standby power regulation avoids possible conflicts with other national efficiency standards.

The second exclusion applies to products where there are technical or economic barriers to complying with the threshold (e.g. 1-Watt). Certain medical products might qualify for this exclusion, where high-voltage and low current must be delivered. There may also be low-voltage, high-current applications needing exclusion. No products should be permanently excluded; instead, a postponement would be granted, with an interim level set in the meantime.

Managing Exceptions to Horizontal Standby Power Criteria

Coordinating the list of exceptions internationally would further reduce costs to governments and manufacturers. IEA Governments are in the process of establishing an IEA Technology Implementing Agreement for Efficient Electrical End-Use Equipment with one annex on Standby Power. It is envisaged that the Implementing Agreement could create a list of recommended exceptions and make this publicly available for reference by all national programs wishing to implement horizontal standby measures. This could apply whether the policy measure were voluntary or mandatory. This internationally coordinated list of exceptions will be agreed by participants in this Annex, who will consider applications for exemption status from manufacturers of internationally traded products. This framework will therefore enhance opportunities for harmonisation while also reducing the burden on national administrators and manufacturers of establishing requirements for individual countries.