

LIMIT STANDBY POWER

**A simple way for a legislator
to help the environment
and save your country millions of dollars**

Increasingly we are surrounded by electrical appliances in 'standby mode' – computers, fax machines, video recorders, printers, copiers, microwave ovens and many other machines – sitting quietly, doing nothing except awaiting our instructions. But did you know that machines in standby mode are consuming a growing share of the electricity generated in your country – often as much as 5% already? It is costing your citizens millions of dollars, and it is adding hundreds of millions of tons of carbon dioxide to the global emissions that are heating our planet and disrupting our climate.

Without causing consumers any inconvenience at all, parliamentary action now can significantly reduce these financial and environmental costs. This Parliamentary Tool Kit, produced by the e-Parliament Climate and Energy Network, explains how it can be done. There is no need for international treaties. All that is needed is an initiative in your national parliament or congress.

Some governments are already leading the way:

- The **United States**, by requiring a 1 Watt maximum standby power consumption for many different appliances purchased by the Federal Government, will be saving the taxpayer an estimated US\$300 million per year!
- The **Australian** Government is pursuing an active process of voluntary measures involving government and business, backed up with the option of mandatory measures later on.
- The **Danish** Government has pursued a successful campaign combining public education and labeling of appliances to reduce standby power consumption.
- Recently, members of the e-Parliament Climate and Energy Network have taken initiatives in several countries. The relevant committees in the **Brazilian Chamber of Deputies** have approved a measure, now awaiting a full vote in the Chamber, introducing the 1 Watt standard in Brazil. The **European Parliament** has included the 1 Watt standard in a new Eco-Design Directive, and the 1 Watt standard is under consideration in countries like **Ghana** and **Norway**.

This Tool Kit gives you all the information you need to take action in your own legislature. It gives you the facts, summarizes what is already being done in different countries, compares different policy approaches, and leaves the choice to you. It contains the names of expert advisors who are ready to help, and includes model policy tools that can be adapted to your national circumstances.

If you decide to take up this issue, please don't hesitate to contact info@e-parl.net for assistance.

Limit STANDBY POWER to 1 Watt

A TOOLKIT OF POLICY OPTIONS FOR PARLIAMENTARIANS

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INTRODUCTION AND SUMMARY

The energy use of electrical equipment in standby mode is rapidly increasing. In some countries it already amounts to some 5% of total electricity consumption. Since the standby mode on electrical equipment and appliances is becoming ever more common, its share of electricity consumption is bound to increase if no political action is taken.

The purpose of this Tool Kit

The purpose of this e-Parliament Tool Kit is to help parliamentarians take action to reduce the electricity consumption of equipment in standby mode. The Tool Kit, developed by the e-Parliament Climate and Energy Network, offers relevant background information as well as concrete policy proposals. The Tool Kit presents four policy approaches:

- government purchasing policies;
- voluntary agreements;
- information and labeling policies;
- legislative measures.

The four policy options can be used separately or in combination. They all have their pros and cons, and their strengths and weaknesses, depending on the specific situations in which they are used. But all approaches have a track record of proven effectiveness, provided that they are used in the right manner. To illustrate this, you will find in this Tool Kit a description of practical experiences with these policies.

A sustainable energy strategy: renewables and energy efficiency

The adequate provision of energy services in homes, production and transport, and the necessary reductions in CO₂ emissions, can only be achieved through balanced promotion and investment in both renewable energy, and energy efficiency and conservation. In a sustainable energy strategy, energy efficiency and renewable energy are two sides of the same coin. They both help to reduce our dependence on fossil fuels and nuclear energy, and thereby they both help in creating benefits for the economy, security of supply, environmental safety, and jobs.

It is encouraging that the share of renewable energy in total energy consumption is increasing and that clear targets for renewable energy production have been established in many countries, including many EU countries. However, too little

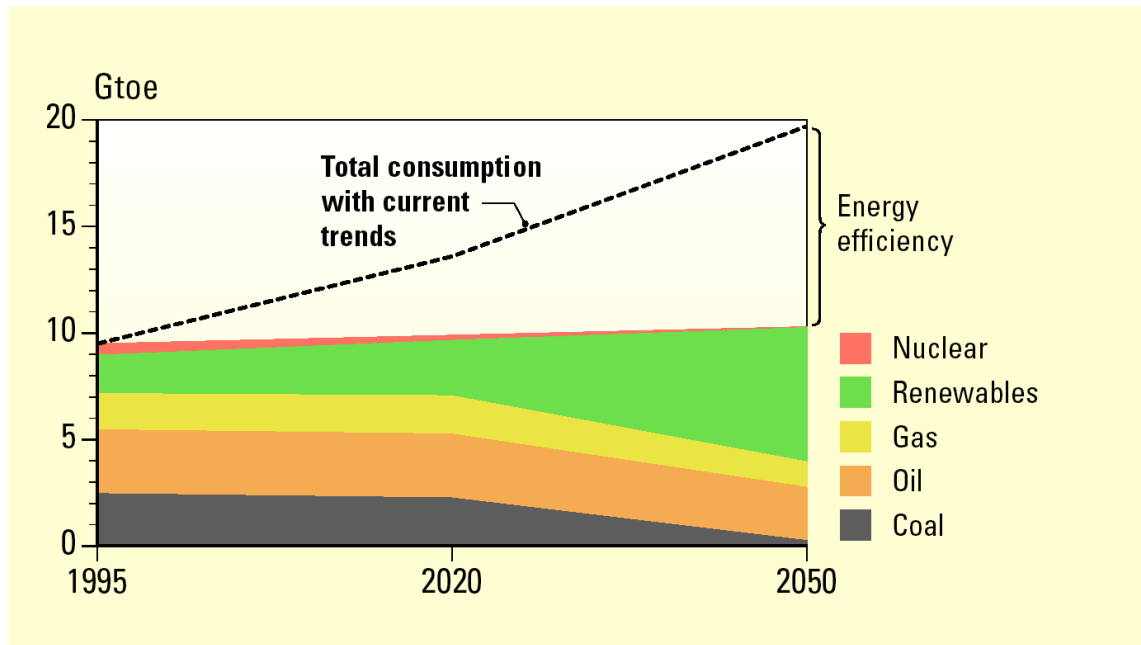
attention has so far been paid to energy efficiency and implementation of energy saving policies. Political interest in promoting energy efficiency measures is often lacking. This is a mistake, which should be addressed urgently.

Energy efficiency needs further attention

The stabilization of the world's climate will require a reduction of worldwide CO₂ emissions by at least 50 % during the next 50 years, yet, current trends are pointing towards a doubling rather than a halving of these emissions. Reversing these trends and reducing growth of energy demand requires that we pay far more attention to energy efficiency in both how we use and produce energy – be it electricity, fuel oil, gasoline, natural gas or district heating. Only if renewable energy is combined with energy conservation policies, the renewable energy sources can achieve a market share of half the world's energy supply by 2050, which is a prerequisite for achieving the required CO₂ reduction.

The e-Parliament Climate and Energy Network has decided to begin its work by focusing on energy efficiency and as a part of this campaign to concentrate on energy savings in electrical equipment in standby mode. In 2004 we will also begin the work on renewable energy, and on the challenge of ensuring access to energy for some 2 billion people who have not as much as a single light bulb in their homes.

GRAPH I



World primary energy consumption by fuel in a sustainable energy scenario compared to current trends (Source: Lovins/Hennicke 1999)
Gtoe = Billions of tons of oil equivalent

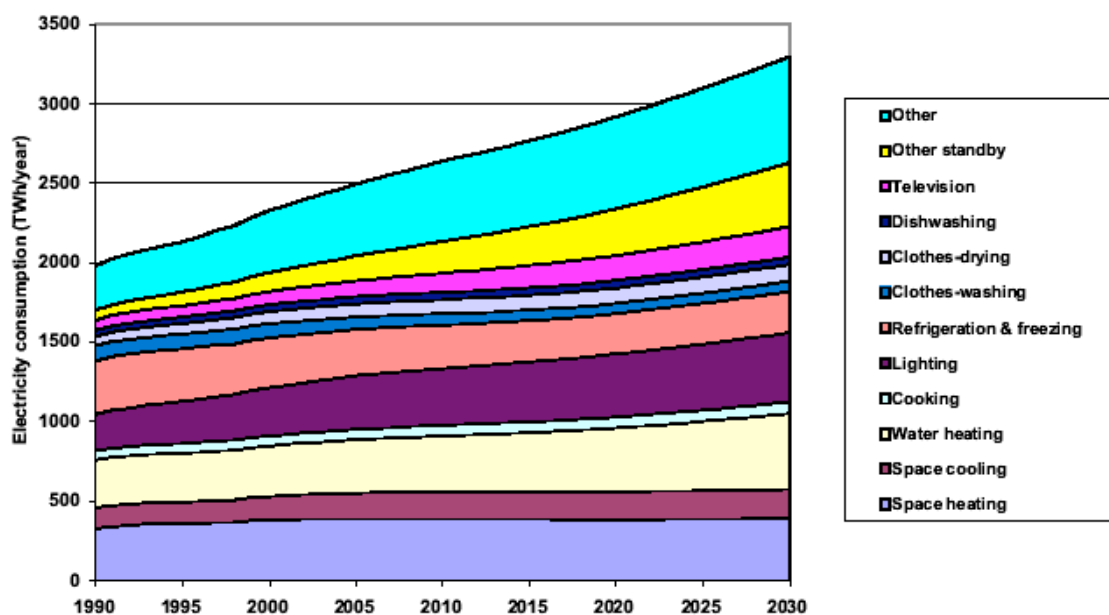
Energy consumption is steadily growing

The growth in consumption, which is likely to occur unless policy action is taken to use the untapped energy efficiency potentials, is indicated by the dotted line in the graph I above. This trend is clear in almost all areas of energy use, but in particular with regard to electricity. Consumption of electricity has increased substantially in

recent years, in households, in offices and in public buildings. The main reason is that both the number of electrical appliances and the length of time they consume energy have increased. Particularly the length of energy consuming time has been considerably affected by the growing number of appliances with standby modes.

Standby mode appliances are not only growing in number, but are also increasing their share of the electricity consumption of private consumers. In graph II, the second bar from above clearly shows the increasing importance of the standby power consumption in OECD countries as an example. This bar is called 'other standby', and refers to electrical equipment other than televisions, such as audio equipment, computers etc.

GRAPH II



Projected OECD residential electricity consumption by end use with current policies (Source: Lebot/Waide 2003)

At present, the use of standby modes is simply wasteful. It increases CO₂ emissions. It has a negative effect on human health, which must cope with growing levels of air pollution from the burning of fossil fuels in electricity production. It is an unnecessary economic burden for households, businesses and public institutions, which pay an up to 10% higher electricity bill than necessary. It is a waste of public money and it causes increasing problems of securing sufficient electricity production capacity. Standby power corresponds to up to 5 % of *all* the electricity consumption in a country, and this percentage is growing.

A 1 Watt maximum for standby power consumption

A 1 Watt maximum would help to address this problem. Graph II clearly indicates that standby power consumption is not a small issue and it deserves urgent political attention. A standard of 1 Watt maximum would save 300 billion kWh per year in households in OECD countries until 2030 – a major potential gain for both the environment and the economy.

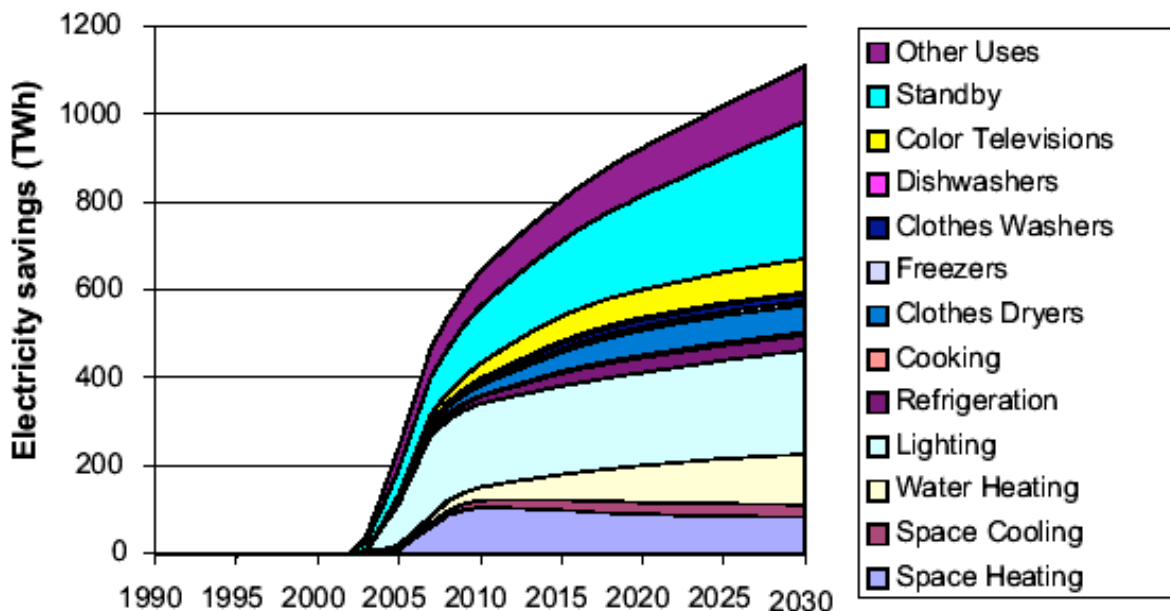
1. HELP THE ENVIRONMENT AND SAVE MONEY

The e-Parliament Climate and Energy Network is seeking to promote a 1 Watt maximum standard for standby power consumption. This is part of the Network's general campaign on energy efficiency. Given the action already taken e.g. by the Australian and USA governments and the size of their markets, there is already a fair amount of appliances available, which meet the 1 Watt standard. Action by other countries will help to speed up the process of making all electrical equipment comply with this standard.

1.1. CO₂ emissions and the standby mode

Reliable data suggest that CO₂ emissions can be reduced substantially by improving the energy efficiency of electrical equipment in the standby mode. In the residential sector of the OECD countries alone, a common effort of industry and consumers, combined with relevant policies to reduce standby power to the economically warranted minimum could save about 300 billion kWh of electricity per year by 2020. With an average OECD emission factor, this saving in kWh is equivalent to **at least 150 million tons of CO₂ emissions that can be avoided each year**. Further savings are possible in commercial IT equipment, and in developing countries and countries in transition. The scale of savings that are possible is illustrated in graph III below.

GRAPH III



Projected OECD residential electricity savings by end use for the Least Life Cycle Cost efficiency levels from 2005 scenario compared with the Current Policies scenario, (Source: Lebot/Waide 2003)

There are different policy approaches that can help to achieve these reductions in the energy consumption of electrical appliances in standby mode:

- Government purchasing policies requiring public institutions and agencies only to buy (if market availability permits) equipment with a standby consumption of 1 Watt can substantially increase the demand for energy efficient electric appliances. If governments around the world would do so, manufacturers of electrical equipment could be convinced to modify all their appliances.
- Voluntary agreements negotiated between governments and producers to improve the performance of equipment can be an important step forward.
- Information campaigns to increase public awareness about standby energy use and how to reduce or avoid it, in combination with labeling of equipment can help to increase the market availability and acceptance of appliances with a low standby power consumption.
- Legislation on mandatory standards for 1 Watt maximum standby power consumption for all new equipment (technological development permitting) can be a powerful complementary instrument.

These policy options are further discussed in sections 2 and 3.

1.2. Facts about potential financial savings

Promoting a 1 Watt standard will not only help to reduce CO₂ emissions, but will also result in substantial financial savings. The USA government purchasing regulations require federal government agencies to purchase equipment complying with a maximum 1 Watt standby consumption per appliance whenever it is available on the market. According to reliable predictions, these regulations are likely to result in annual savings of 4 billion kWh and US\$300 million for the USA as a whole over the next five years. Comparable figures can be expected for other industrial countries. For the whole OECD area, the potential saving of 300 billion kWh per year indicated in graph VI would result in financial savings for the consumers in the OECD countries of some US\$20 to US\$30 billion per year by 2020.

Both the environmental and economic stakes of the increasing standby power consumption are rising, and they only make the case for promoting a 1 Watt standby power standard the more compelling. In the following two sections we look at different policy approaches to promoting a 1 Watt maximum standard.

2. STANDBY POLICY EXPERIENCES: - case studies from the USA, Australia and Denmark.

In this section, we look at some concrete examples of policy measures and experiences. We will employ the *definition of standby power use* proposed in a recent draft standard of the International Electrotechnical Commission (IEC)¹ according to which it is “*the lowest power consumption mode which cannot be switched off by the user ... when an appliance is connected to the main electricity supply and used in accordance with the manufacturer’s instructions*” (IEC 62301: Household Electrical Appliances – Measurement of Standby Power). Standby power is expressed in Watts.

2.1. US government policy on 1 Watt

In 2001, the President of the USA issued an executive order directing all government agencies to buy only equipment with a standby power consumption lower than 1Watt, provided that such equipment is available on the market. Given the fact that the US government is probably the largest single purchaser of computers in the world, this

Current list of maximum allowed standby consumption for Federal government purchases in the USA (valid for 2004)

Product Category	Recommended Standby Consumption (Watts)
	Valid for 2004
Office Equipment	
Laptop Computer	1
Computer Monitor	1
Desktop Computer	2
Workstation	2
Integrated Computer	5
Printer	1
Copier	1
Fax	2
Multifunction Device	1
Scanner	1
Docking station	2
Audio/Visual Products	
TV	1
VCR	2
DVD	1
TV/VCR/DVD Combinations	3
Audio Product	1
Major Appliances	
Microwave oven	2

Source: http://oahu.lbl.gov/level_summary.html

¹ The International Electrotechnical Commission (IEC) is dedicated to the harmonization and voluntary adoption of global consensus standards in the electrotechnical field, supporting the transfer and international trade of electrotechnology goods. The IEC has a membership of 51 countries including most major trading nations. (www.techstreet.com/info/iec.html)

voluntary action to restrict its own purchases to energy-efficient products constitutes a very powerful move to create a new market for innovative suppliers.

The market availability of equipment complying with the 1 Watt standard is far from 100%, which is the whole point of the US presidential order. Therefore, the US government publishes the list shown above with the most stringent requirements currently available. It includes the most common types of entertainment and office equipment of today. It is expected that in a few years all these product categories can meet the 1 Watt requirement.

This list is regularly updated, but is still far from being comprehensive. Each year, new types of standby equipment are brought into the market. Broadband communication equipment (e.g., DSL modems) and digital TV receivers are just two examples of new equipment that is rapidly penetrating the markets, and which should also be covered by a '1 Watt' policy.

For details on legal aspects and the WTO compatibility of this initiative, please see section 4.2. below. Further information sources are also provided in the references section.

2.2. The 10 year 1 Watt strategy in Australia

Australia was the first nation to state publicly that it would pursue the 'one-watt' target. In 2002, Australia decided to develop a ten-year strategy with coordinated product-specific plans to address excessive standby power consumption and attain a 1 Watt limit or even lower targets. This strategy follows a two stage approach, starting with voluntary measures by the manufacturing industries and in government purchasing, with stringent monitoring of the market, followed by an assessment after three years as to whether voluntary measures are adequate or mandatory measures will be necessary as the second stage. The Australian government has announced that it will adopt mandatory measures on standby power consumption, if progress by voluntary actions proves to be inadequate.

Recently, the first detailed assessments of the standby mode of ten products, from DVD players to dishwashers, were published. The government intends to make such assessments for all products on the Australian market, which means that it will still take some years before the assessment of the first stage of the project is completed.

2.3 Danish information campaigns, and voluntary energy labeling.

There are, up to now, no mandatory labels for standby power. This is partly due to the fact that no internationally agreed measurement method existed. This may change in the near future. In the meantime, however, voluntary policies can help to increase market penetration of products with low standby power consumption. Such voluntary policies may take the form of voluntary energy labels and information campaigns.

A good example is the information and labeling campaign by the Danish Electricity Saving Trust (Elsparefonden). It promoted the European voluntary 'Energy' label for information technology and consumer electronics, issued by the Group for Energy-Efficient Appliances². The campaign made use of advertisements on TV, the internet, newspapers, and magazines. The Electricity Saving Trust also offered an online database of products, and it co-operated with shops, which distributed more than 45,000 'Thank you' packages to buyers of TVs, VCRs, and Audio equipment carrying the 'Energy' label. The packages contained an energy meter and information material.

² The Group for Energy-Efficient Appliances (GEEA) seeks to harmonize voluntary informative activities in the field of home electronics and office equipment. The group was formed in March 1996 by government agencies and institutions from Denmark, the Netherlands, Sweden, Switzerland and the European Energy Network, and the membership today includes also Austria, Germany, Finland, and France. The GEEA works closely with the European Commission as well as manufacturers and importers. (www.efficient-appliances.org)

3. STANDBY POLICY OPTIONS COMPARED AND COMBINED

As is indicated above, policy makers can choose from a variety of policy options depending on which policy fits the situation in their own country or their own political views the best.

As noted in the Introduction, we can distinguish four main policy options in terms of instruments to target the 1 Watt standard. They are:

- Government purchasing requirements;
- Negotiated agreements with manufacturers;
- Voluntary labeling and information campaigns;
- Legislation on mandatory schemes and standards.

These options can be considered on their individual merits as stand-alone instruments, but they may also be integrated into a step-by-step approach. One possible sequence of steps would lead from government purchasing policies to create a market, via agreements with manufacturers, and information campaigns combined with voluntary labeling, to mandatory instruments such as legislation imposing a maximum standby power consumption standard in cases where other measures have proven to be or are likely to be ineffective. The use and the timing of each instrument is entirely dependent on the circumstances in each country.

3.1. Strengths and Weaknesses of Each Policy Option

We begin with a short discussion of the potential role, strengths and weaknesses of each instrument.

- **Government purchasing requirements** are a possible first voluntary step in the policy package towards the target of a 1 Watt maximum for standby power.

On the *strong* side, with such a policy the government will be leading by example, and the purchasing requirements can provide an important stimulus for suppliers to change their products, since governments are in most cases among the largest purchasers. These requirements are also very flexible and quickly adaptable to new types of products (e.g., digital TV receivers or DVD recorders).

On the *weak* side, important manufacturers may still choose not to modify their products to comply to the 1 Watt standard if the government institutions are not important enough a market, and in that case the impact on the rest of the market may be limited. The market may still be dominated by cheap and inefficient products.

- **Negotiated, voluntary agreements** with manufacturers and importers to reduce standby consumption below 1 Watt can be a good instrument to improve the market as a whole. They may serve as a preparatory or alternative measure to a mandatory standard. The **European Union** has a voluntary 1 Watt standby power target for audio equipment to be reached in 2007, and another voluntary target to limit standby power consumption of external power supplies (as used, e.g., in

battery chargers or halogen lighting) to well below 1 watt. The **Japanese** government is using an 'administrative guidance' to encourage manufacturers to adapt their products in the direction of lower standby power consumption.

The *strength* of negotiated, voluntary agreements is a higher commitment on the side of those manufacturers and importers, who have been part of the negotiations, and the negotiations and implementation are likely to be much quicker and more flexible than mandatory (legislated) standards.

Their *weakness* is that they too may suffer from non-participation in the negotiations by important manufacturers or importers. They also need a lot of specific information with regard to each type of appliance, and therefore may be more demanding for policymakers.

- **Informational and motivational campaigns** directed at the general public may provide relevant information through labels, databases, and targeted information campaigns to influence the consumers' purchasing decisions.

Voluntary labeling is very flexible, but depending on the environmental preferences of consumers in a market may once again be an approach, which suffers from non-participation by manufacturers. Regarding standby power, the relatively low savings per appliance provide only weak financial incentives for individual consumers, but this may be at least partly compensated by a successful motivational campaign targeting the environmental consciousness of consumers.

Examples of voluntary labels are the European 'Energy' label and the 'Energy Star' label, which is originally from the USA, but is now adopted in many countries. These labels give information on more than one energy-consuming mode (e.g., the normal operation mode of TVs, or the 'sleep' mode of computers) in addition to standby modes. This may lead to skepticism about their effectiveness in specifically targeting the unnecessary power consumption in the standby mode.

- **A mandatory maximum energy consumption standard** created by law can serve as the backstop policy, in case the voluntary policies fail to achieve a major change in the market towards lower standby consumption.

Such a mandatory 1 Watt maximum standard has not been possible in the past, but will be facilitated by the new measurement guidelines IEC 62301 of the International Electrotechnical Commission. Since this measurement standard is general and not appliance-specific, a mandatory standby power standard based on the IEC 62301 methods would also be very flexible, if it covered all appliances powered by the main electricity supply without specifying the types. The law would automatically cover any new type of equipment (such as DVD recorders).

The *strength* of mandatory measures is that legal sanctions will provide a strong incentive to comply.

On the *weak* side of mandatory standards and legislation are the costs of enforcement and the fact that targets and sanctions are imposed, which might

create political resistance by the industry, retail trade, or others. Such political resistance may delay the implementation of necessary measures.

Only two of these four policy instruments require an executive order or legislation: a government purchasing policy and a general, mandatory standard. But parliamentarians can play a crucial role in promoting whichever policy option suits the country or party the best. Help to pursue each of the policy options is provided in four annexes at the end of this Tool Kit.

3.2. Complementary policy instruments on standby

There are two further policy instruments that can be used as complementary measures to the aforementioned four types of instruments:

- A mandatory labeling focusing on standby power consumption could be an instrument to accompany the government purchasing policy, or other voluntary actions, and it may help to promote a general minimum efficiency standard. Because of the relatively small savings per product (see next chapter), a label to promote the 1 Watt standard may not be very effective as a *stand-alone* instrument and particularly not with regard to purchases by individual households, unless combined with public education efforts. Mandatory labeling, like a mandatory standby maximum standard, would require the adoption of the measurement standard IEC 62301.
- Online databases of models fulfilling the requirement can be a powerful information instrument too. An online database has the attraction of being available to anyone in the world with internet access.

4. SOME CRITICAL QUESTIONS

4.1. Why not focus on economic incentives?

Are the four instruments mentioned above the best policy instruments to promote the '1 Watt standard' and to achieve market breakthrough of low standby power products? How do they compare to economic incentives?

General economic incentives (taxes, emission trading etc.) will not be very effective for *this* type of energy efficiency potential. While the savings are large for the economy as a whole, they are small for each product and each individual consumer. To give an example: reducing energy consumption by 10 Watts would result in a maximum saving of 88 kilowatt-hours/year, or 8.8 Dollars/year at a price of 10 Cents/kilowatt-hour. A tax that would increase the electricity price by 10% would only increase the savings by 88 cents/year. These relatively low savings in themselves generally are unlikely to lead to a change in the behavior of consumers and to stimulate more energy-efficient purchasing policies.

Similarly, a special incentive program with tax or cash rebates for the purchase of an appliance with low standby power would not be very effective and may have relatively high costs compared to the savings for *this* type of energy efficiency potential.

Any incentive program will furthermore require that customers can easily compare the standby power consumption of different appliances in a shop – either through a mandatory label or an effective voluntary label.

4.2. Are mandatory policy instruments and government purchasing requirements consistent with WTO rules?

For mandatory policy instruments and for government purchasing requirements, consistency with WTO rules must be checked.

i. Government Purchasing Requirements

Does setting rules for the purchase of energy efficient equipment, particularly if this equipment is more expensive, conflict with the rules of the World Trade Organization (WTO)?

It does not. When one refers to free competition and the lowest economic costs, WTO rules allow basing these costs not only on the purchase price, but also on the costs during and after use. The total of all these purchasing, operating, and recycling or disposal costs are the life-cycle costs. The US rules refer to the life-cycle costs, stating that "Agencies shall adhere to these requirements when life-cycle cost-effective and practicable and where the relevant product's utility and performance are not compromised as a result." (Quoted from: US President's Executive Order 13221 of July 31, 2001 on Energy Efficient Standby Power Devices) A product that is life-cycle cost-effective will have lower or equal total life-cycle costs compared with other products. Therewith, it meets the WTO requirement to select the "economically most

advantageous tender” – which is normally not the tender with the lowest purchasing costs, but the one with the lowest life-cycle costs. In several cases, for example the case of the purchases of city buses in Helsinki, courts have accepted that the ‘most advantageous’ could be interpreted to mean advantageous in financial terms, but also in terms of environmental protection or health protection.

ii. Mandatory Minimum Energy Performance Standards

States are free to restrict the sale of products based on the product’s *environmental* characteristics as long as this is not discriminating against any supplier. Setting a mandatory standard for the sale of all products in a country therefore requires an internationally agreed measurement method to test these product characteristics. For standby power, this will exist once the International Electrotechnical Commission has adopted its new guideline IEC 62301: Measurement of Standby Power. This will be accomplished soon.

Furthermore, mandatory energy efficiency standards for appliances are nothing unusual. Many countries have introduced minimum energy efficiency/maximum energy consumption standards for goods such as refrigerators and freezers, air conditioners, ballasts for electric lighting, electric storage water heaters, etc. They are an easy and inexpensive way to exclude the least energy-efficient models from the market and thus save lots of energy. The precondition is always a measurement standard agreed by the international standardization bodies, and the proof that manufacturers can meet the standard by the time it comes into force, without undue development and production costs. This will be easy, if a number of models on the market already meet the standard by complying with a government’s purchasing policy. Thus, government purchasing policies are important drivers of the technological development in this as well as in other areas. But it is not necessary that there is already a number of models on the market that meet the proposed standard, if it can be shown that the total life-cycle cost to the consumer will be reduced by the standard. This was the case with the 1999 standard for refrigerators in the USA.

4.3. Other modes than standby modes

In addition to standby mode, energy efficiency gains are also possible in other modes such as ‘standby active’ (e.g., a VCR that has been turned ‘on’ with the remote control, but is not playing or recording), and ‘sleep mode’ (e.g., the energy-saving mode that is automatically initiated after some time for a computer and/or its monitor).

It will be an important task to develop labeling that displays the energy consumption of information and telecommunication equipment in *all* operation modes, not just standby. But this is likely to require further international work on measurement standards.

In the meantime, voluntary labeling, such as the European Energy Label by the Group for Energy-Efficient Appliances (GEEA) or the (less stringent) Energy Star label can be effective in taking energy efficiency criteria for multiple energy-consuming modes into account.

LIST OF EXPERTS CONSULTED

Research and drafting of this tool kit has been conducted in close cooperation with the Wuppertal Institute represented by Stefan Thomas, Director of the Research Group Energy, Transport, and Climate Policy, stefan.thomas@wupperinst.org.

In the process, the following experts in the field have been consulted:

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Australia:

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INFORMATION SOURCES USED

General

Lebot, Benoît, and Paul Waide 2003: The actual and potential impact of residential electrical equipment energy efficiency policies in the OECD, in: Time to Turn Down Energy Demand, eceee 2003 Summer Study Proceedings, Stockholm, p. 407 to 412

Lovins, Amory, und Peter Hennicke 1999: Voller Energie, Vision: Die globale Faktor Vier-Strategie für Klimaschutz und Atomausstieg, Frankfurt am Main, New York (in German)

Wuppertal Institute, <http://www.wupperinst.org/energy-efficiency>

USA

USA Executive Order 13221 of July 31, 2001 on Energy Efficient Standby Power Devices: <http://www.eren.doe.gov/femp/resources/exec13221.html>

Current list of maximum allowed standby consumption limits under that order: http://oahu.lbl.gov/level_summary.html or see table on page 8.

Study on saving potentials: at

<http://www.dc.lbl.gov/~harris/GovernmentPurchasing.pdf>

EU

Criteria for the voluntary GEEA label: <http://www.efficient-appliances.org/criteria.html>

Voluntary policies of the European Commission to reduce standby power:

http://energyefficiency.jrc.cec.eu.int/html/standby_initiative.html

Australia

National standby power strategy: <http://www.energyrating.gov.au/standby.html>

ANNEX I:

THE GOVERNMENT PURCHASING OPTION

An internal administrative order could take the following form:

Considerations:

1. There is a need to preserve the environment and to mitigate global climate change, while advancing technological innovation and the improvement of the economic and social conditions of society,
2. Currently up to 5 % of all the electricity consumed in most countries is used for powering electric appliances while they are not performing their main function,
3. It is technically and economically feasible to build and operate electric appliances with a power consumption of 1 Watt or less while they are not performing their main function,

Definition and testing of Standby Power.

(1) The standby power use shall be defined as the lowest power use while connected to the main electricity supply and used in accordance with the manufacturer's instructions. Standby power is expressed in Watts.

(2) The measurement of standby power shall be made in accordance with the test procedure specified in the International Electrotechnical Commission's guideline IEC 62301: Measurement of Standby Power or in its latest draft, as long as it has not yet been formally recognized.

Definition of agencies.

(1) "Agency" means an executive agency of the government.

(2) Independent agencies are encouraged to comply with the same provisions of this order.

(3) The responsible agency for the execution of this order shall be the ...

Energy-efficient standby power devices.

(1) Each government agency, when it purchases commercially available, off-the-shelf products that use external standby power devices, or that contain an internal standby power function, shall purchase products that use no more than one watt in their standby power consuming mode. If such products are not available, agencies shall purchase products with the lowest standby power wattage while in their standby power consuming mode. Agencies shall adhere to these requirements, when life-cycle cost-effective and practicable and where the relevant product's utility and performance are not compromised as a result.

(2) By [date] and on an annual basis thereafter, the responsible agency shall compile and publish a list of products to be subject to these requirements, and shall specify the requirements for each product. The responsible agency shall make a database of models and manufacturers fulfilling these requirements available to all agencies subject to this order and to the public.

ANNEX II

VOLUNTARY AGREEMENTS WITH INDUSTRIES - the Australian approach

In many countries governments have negotiated voluntary agreements with industries on improving the environmental performance of products and production processes. Australia is one of the first to do this specifically for standby.

The Australian Ministerial Council on Energy (MCE) has decided that “Australia will expand its commitment to reducing excessive standby by formulating coordinated product-specific plans to address excessive standby over ten years, 2002 – 2012”. The general idea is to try to reduce standby energy use in close cooperation with industry and using voluntary agreements, including clear identifiable targets. If the targets are not met, public intervention and regulation will follow.

However, the process is aimed at achieving results without government intervention by following a clear step by step procedure. The steps are outlined below (cf. www.energyrating.gov.au/standby.html).

STEP I

Each product will be dealt with in potentially a two-stage action plan, designed to reduce standby to levels acceptable for that product ‘as quickly as economically viable’ The first stage is the development of product profiles for each major product group, the second stage is the negotiation of voluntary agreements and progress in monitoring and market assessments.

In October 2003 the first 10 standby product profiles have been released, ranging from digital video disc players to dishwashers. Also, Australia is surveying market trends in total sales of certain products and their weighted energy consumption.

The product profiles provide an overview of the product in terms of its standby characteristics, the purpose and functionality of their standby function, market status, ownership levels and trends in sales and product types. Standby profiles initiate the development of plans for each of the products. Then, the strategy foresees prioritization in two categories:

- Immediate, for action in the first year of the strategy. These are products with high standby power consumption, which appear to be unnecessary to maintain its functionality, with a potentially high and/or growing ownership, with a wide range of standby levels found with different product marks, demonstrating that reducing standby is technically possible.
- Subsequent, for action within the first three years, for equipment with lower market penetration or without available alternatives.

The Australian government announces the standby target for each product in the product profile. Generally speaking, this target will in many cases be the Energy Star level promoted by the US Environment Protection Agency.

STEP II

The Australian government will then engage in a dialogue with the industry and will try to realize agreements with industry on standby levels for products. If this policy is successful and 'reasonable progress' is made, it will continue with its voluntary agreements with industry. However, regulatory intervention will follow in case that:

- progress on voluntary measures proves to be inadequate;
- foreign experience indicates that voluntary measures are unlikely to be effective;
- the cost-benefit analysis is positive
- the Council of Ministers made the political decision that regulation is necessary to achieve the standby target.

ANNEX III

INFORMATION CAMPAIGNS AND LABELING SCHEMES

As indicated earlier, information campaigns and labeling schemes can promote energy savings. The following examples may provide guidance on how to create a successful policy, although two of them are not focusing on standby power.

The **Thailand Energy Labeling Scheme** for appliances is an example of a successful scheme. Labeling is combined with a very high profile publicity campaign to raise awareness for energy labels and energy efficiency. The scheme is limited to only a number of appliances (like refrigerators, air conditioners). The labels inform the consumer of either energy consumption or power efficiency, but also indicate the average energy consumption per year and the average total electricity costs per year.

A second example of a good combination of an information and labeling scheme is the campaign already mentioned by the **Danish Electricity Savings Trust** (Elsparefonden). It promotes the European voluntary 'Energy' label for information technology and consumer electronics (the most important group of appliances with regard to standby), issued by the Group for Energy-Efficient Appliances. The campaign was successful because of its combination of well targeted advertisements on TV, extensive internet information as well as its online database. The program enjoyed consistent political support. It became especially popular and well known because of some gimmicks (like the surprise presents for people buying energy efficient equipment) and its highly visible campaigns

Another example of an effective information campaign and labeling scheme is the energy labeling and rebate scheme in the **Netherlands**, where the sales rates of A-rated appliances doubled within two years. This success can be attributed partly to the clear and mandatory EU energy labeling system, where for example refrigerators, freezers and washing machines receive clear labels, indicating their energy use, partly also to a big information campaign targeted at both the general public and retailers. However, it should be noted that the scheme would probably not have been so successful, if it had not been combined with a direct financial rebate. The rebate applied, if customers bought energy efficient equipment, ranking among the best available on the market and was directly paid out to the buyer.

Therefore, it should be kept in mind that information and labeling campaigns are important instruments, provided:

- That the financial benefits for the customer are clearly known, because the label has not merely technical information, but gives also concrete financial information, e.g. in the form of potential savings in the first 5 years of the use of the appliance;
- That retail staff and energy company personnel are well trained and prepared to inform the customers;
- That the campaigns are well coordinated between energy companies, retailers, consumer organizations and public agencies.

The examples also show that labeling and information campaigns need to be implemented as a package. A label cannot be effective, unless a campaign makes

the label popular. And a campaign will not be able to influence customers' choices, unless there is a label making an energy-efficient choice easy.

Problems with information and labeling campaigns may remain, if the financial benefits of the higher efficiency of certain appliances are limited, and the pay back time is longer than the time horizons of many consumers.

ANNEX IV

MANDATORY LEGISLATION MODEL for a Minimum Energy Performance Standard for Appliances in Standby Power Mode

The following elements are likely to be needed for such legislation. These elements undoubtedly need to be adapted for adoption in each country. This model legislation simply offers an illustration of how legislation on standby power could be enacted.

Considerations:

1. There is a need to preserve the environment and to mitigate global climate change, while advancing technological innovation and the improvement of the economic and social conditions of society,
2. Currently up to 5 % of the electricity consumed in most countries is used to power electric appliances while they are not performing their main function,
3. It is technically and economically feasible to build and operate electric appliances with a power consumption of 1 Watt or less while they are not performing their main function,

Article 1. Definition and Testing of Standby Power.

(1) The standby power use shall be defined as the lowest power use while connected to the main electricity supply and used in accordance with the manufacturer's instructions. Standby power is expressed in Watts.

(2) The measurement of standby power shall be made in accordance with the test procedure specified in the International Electrotechnical Commission's guideline IEC 62301: Measurement of Standby Power [or make reference to the national standard transforming IEC 62301 into national legislation, if and when that has been done].

Article 2. Energy-Efficient Standby Power Devices, Definition and Responsibilities

(1) The [name of agency] shall be the competent authority to survey the correct implementation of this Law.

(2) Any mains-powered household and commercial appliance, or the mains-powered part of household appliances that use other fuels such as gas or oil, which is sold in [country], must not have a standby power use of more than one watt. By December 31, and on an annual basis thereafter, the competent authority shall compile and publish a list of appliances to be temporarily exempt from this requirement regarding standby power, and specify the requirements for each exempt product. An exemption shall only be possible, if products with a standby power of less than 1 Watt are not available, or proven not to be life-cycle cost-effective or practicable, or if the relevant

product's utility and performances are compromised as a result. In this case, the requirements shall refer to available products with the lowest standby power wattage while in their standby power consuming mode.

(3) The competent authority shall make a database of models and manufacturers fulfilling these requirements available to the public.

(4) Each manufacturer of commercially available, off-the-shelf products that use external standby power devices, or that contain an internal standby power function, or its or his authorized representative established in [country] or the person responsible for placing the product on the market, shall be responsible for ensuring that each such product placed on the market conforms with the requirements referred to in paragraph 2.

Article 3. Product Information

(1) The content of the technical documentation to be submitted by the manufacturer of commercially available, off-the-shelf products that use external standby power devices, or that contain an internal standby power function, or its or his authorized representative established in [country] or the person responsible for placing the product on the market shall comprise:

- (i) The name and address of the manufacturer;
- (ii) A general description of the model sufficient for unambiguous identification;
- (iii) Information, including drawings as relevant, on the main design features of the model and in particular on items which appreciably affect its electricity consumption;
- (iv) The operating instructions;
- (v) The results of power consumption measurements carried out as required by paragraph 3;
- (vi) Details of the conformity of these measurements as compared with the energy consumption requirements referred to in Article 2, paragraph 2.

(2) Technical documentation established for other [country] legislation may be used in so far as it meets these requirements.

(3) Manufacturers of products shall be responsible for establishing the standby power consumption of each product according to the procedures specified in IEC 62301 [or in the national Standard transforming IEC 62301 into national terms], as well as the appliance's conformity with the requirements of Article 2.

Article 4. Non-Compliance

(1) Where the competent authority establishes that a product that uses external standby power devices, or that contains an internal standby power function, does not meet the requirements of Article 2, the manufacturer or his authorized Representative established in [country] shall be obliged to bring the product into conformity with this Law and to end the infringement in accordance with [specify conditions imposed by the Law]. Where neither the manufacturer nor his authorized representative is established in [country], the person responsible for placing the

product on the market shall assume these obligations.

(2) Where the product is not in conformity with this Law, the competent authority shall take all necessary measures pursuant to Article 5 to prohibit the placing on the market and the sales of the product in question.

Article 5. Prohibition on the Placing on the Market or the Sales

(1) Any measure taken by the competent authorities pursuant to this Law, which contains a prohibition on the placing on the market or the sale of a product that uses external standby power devices, or that contains an internal standby power function, shall state the precise grounds on which it is based. The manufacturer, his authorized representative established in [country] or the person responsible for placing the product on the market shall be notified without delay of the measure and shall be informed at the same time of the possibilities and time limits regarding the legal remedies available to it under the laws in force.

Note for Legislators from the European Union

In 2003, the European Commission issued a draft Directive “on establishing a framework for the setting of Eco-Design requirements for Energy-Using Products and amending Council Directive 92/42/EEC” (Eco-Design Directive). This Directive would make it possible to adopt Specific Eco-Design Requirements on the energy efficiency of products by a simplified procedure, which would also include a life cycle cost analysis.

Legislators from the European Union may want to support the rapid adoption of this draft Directive by the European Parliament and Council with any amendments that may be needed to make it even more effective. Parliamentarians may also want to request the Commission to prepare a Specific Eco-Design Requirement for limiting standby power consumption of appliances so that it is ready to be implemented as one of the first actions within the framework Directive as soon as the the Directive is adopted.