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LoadDown

THE STANDBY POWER NEWSLETTER

Efficient Electrical End-Use Equipment
International Energy Agency

ASIA-PACIFIC PARTNERSHIP
BUILDING AND APPLIANCE TASKFORCE

Load Down is published by the Australian Equipment Energy Efficiency Committee. This newsletter is also supported by the International Energy Agency 4E Implementing Agreement and the Asia Pacific Partnership for Clean Development and Climate.

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This edition of Load Down includes an overview of Korea's Standby program, a look at the IEA, results from standby surveys in Hungary and the Czech Republic, as well as a brief insight into what's happening in Europe.

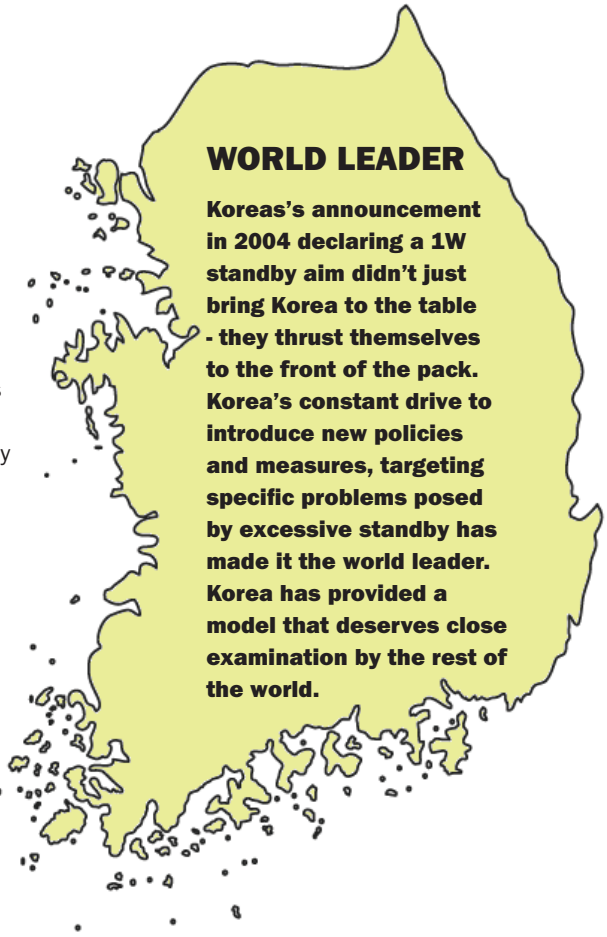
Korea's Standby Program

In 2004 Korea became the 3rd country to announce their plan to implement the IEA standby power target of 1W. Since this time it has introduced several programs to assist in achieving this goal. The Energy Boy program is a voluntary labeling scheme requiring products to consume 1W or less in standby. The label is currently available for 22 different products types including, Televisions, DVD players and recorders, home audio products, home theatre systems, microwave ovens, photocopiers and scanners. The aim of the program has been to reduce standby power consumption by encouraging manufacturers to voluntarily produce and promote the sales of the energy saving products.

에너지절약

In order to enhance the Energy Boy program from 2005 a procurement program was adopted requiring government departments and agencies to give priority to purchasing products with standby power below 1W. Currently the combined effect of these initiatives has seen the energy boy labeled products gain a 14% market share.

While Korea has had success to date the vast majority of products are yet to meet the 1 watt goal. Beginning in 2008 it will become mandatory to report standby energy consumption. Those products that don't meet the 1W standard will be labeled with a warning to consumers that the product is a high consumer of energy. It will also be mandatory for products to have an



WORLD LEADER

Koreas's announcement in 2004 declaring a 1W standby aim didn't just bring Korea to the table - they thrust themselves to the front of the pack. Korea's constant drive to introduce new policies and measures, targeting specific problems posed by excessive standby has made it the world leader. Korea has provided a model that deserves close examination by the rest of the world.

In this Issue

off switch which allows the consumer to turn the appliance into a state of zero consumption. From 28 August 2008, TVs are required have a warning label. It is anticipated that 20 products will be under the warning label scheme by 2011.

In addition to the endorsement label program Korea also has a mandatory comparative labeling system for some appliances. In order to receive the highest award, No. 1 label, products covered by this scheme must also achieve less than 1 watt in standby or off mode. This includes washing machines, dish washers, air cleaners, rice cookers, air conditioners and electric fans. Home networked appliances are also covered by this program however the standby allowance for these products is less than 3 watts. More information on these programs and the Korean standby strategy can be found at www.kemco.or.kr

What's On At The IEA

The International Energy Agency is an alliance between 28 member countries. The aim of the IEA is three fold. Firstly to provide energy security through diversifying energy supply; Secondly to enhance environmental protection by promoting energy efficiency and more environmentally acceptable energy options; thirdly to ensure the stable supply of energy to encourage economic growth.

In 2008, a new IEA Implementing Agreement for a Co-operative Programme on Efficiency Electrical End-use Equipment (4E) was approved by the IEA Board. 4E provides a mechanism, where all participants can share ideas and tackle problems together. Given that standby power is a problem of the global market place, 4E enables members to address issues in an organized and cooperative approach. A group of 8 IEA member countries have joined forces in this implementing agreement to promote wider use of energy-efficient electrical equipment and household appliances, and another 4 countries are in the process of joining.

Initially the 4E Implementing Agreement focused on the areas with the best short-term potential for cutting down electricity consumption. The 4E Implementing agreement aims to share knowledge on a global scale and includes benchmarking and mapping energy saving potential in electrical appliances. The first projects focus on Standby Power, Efficient Motors and the growing energy consumption from Digital Set-top Boxes.

The IEA has established a new website to coordinate the work of the Implementing Agreement, at www.iea-4e.org. Mark Ellis & Associates (MEA) were appointed as the Operating Agent of the 4E Implementing Agreement.

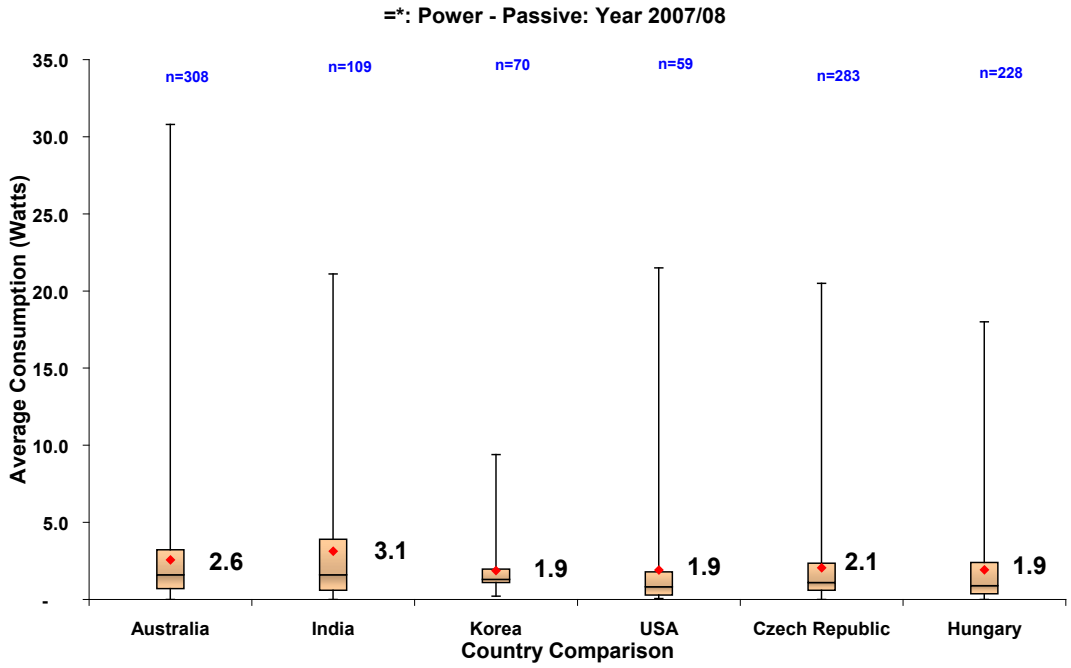
In fact the IEA has been trying to bring attention to the problem of standby power since the early 1990's. It has produced several publications and organized international conferences on the topic. The new 4E Standby Annex is being led by Australia and the USA. The purpose of this Annex is to undertake coordinated activities in support of policies which target the reduction of Standby Power. It is structured into two streams: (1) Support for policies to tackle standby power and (2) Information collection and dissemination. The project will be conducted over 4 years.

Some of the activities relating to the Standby Annex are workshops, research and dissemination of horizontal approaches to policy setting including options by modes, groups of appliances, functions or clusters of functions. It is also planned to assist the development standby power policies by maintaining information on national assessment studies, and providing guidance on how such studies should be undertaken. Further information on the Standby Annex can be obtained from www.iea-4e.org.

Store surveys in Czech Republic and Hungary

In May 2008 standby product surveys were conducted for the first time in stores in Hungary and the Czech Republic. These studies were undertaken as part of the international basket of products project. Over 1000 models were measured covering 27 product types. Average passive standby for all products in Hungary was 1.9 watts with off mode average recorded at 1 watt. In the Czech Republic average passive standby for all products was 2.1 watts with off mode average recorded at 0.6 watts.

In general the measurements were comparable with data recorded in other countries. In the Czech Republic 14 of the 25 products had an average passive standby or off mode reading below 1 watt. In Hungary one third of products, (7 out of 21), averaged readings below 1 watt. Many of these were products are relatively new to the market such as LCD and Plasma televisions and LCD



Hungary

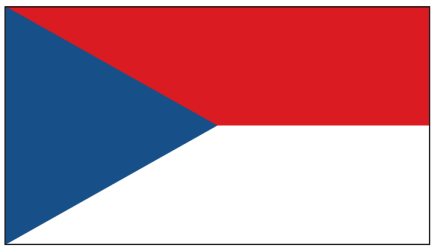
products averaging

<1 watt	>1 watt
Clothes Washer Front Loader	Computers - Laptop
Clothes Washer Top Loader	Computers - Speakers
Computers - Monitor	Cordless Phone Base Station
External Power Supplies	DVD Player
Printer - Laser	DVD Recorder
TV - LCD	Espresso Machine
TV - Plasma	Hard Disk Recorder
	Microwave
	Mobile Phone
	Multi Function Device
	Printer - Inkjet
	Stereo - Integrated
	Stereo - Portable
	TV - CRT

Czech Republic

products averaging

<1 watt	>1 watt
Clothes Washer Front Loader	Computers - Laptop
Clothes Washer Top Loader	Computers - Speakers
Computers - Monitor	Cordless Phone Base Station
Dishwasher	DVD Player
Espresso Machine	DVD Recorder
External Power Supplies	Hard Disk Recorder
Fan	Microwave
Home Theatre System	Multi Function Device
Printer - Inkjet	Set Top Box
Printer - Laser	Stereo - Integrated
Toaster	Stereo - Portable
TV - LCD	TV - CRT
TV - Plasma	

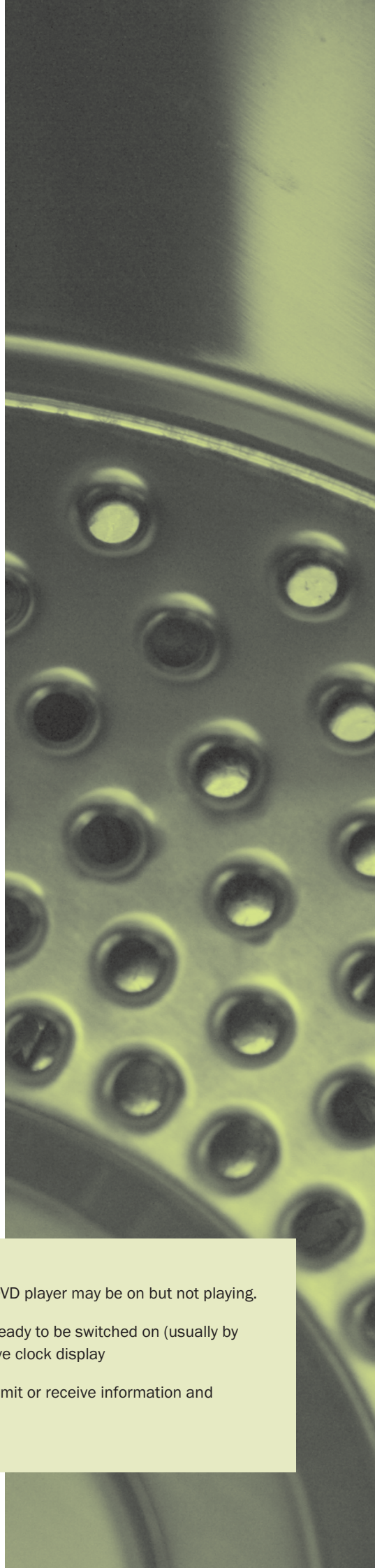


computer monitors. White goods such as clothes washers and dishwashers also averaged below 1 watt in lowest mode. Clothes washers in these two countries were not only low off mode consumers but also had some of the lowest active standby readings, averaging at around 2.5 to 3 watts. External power supplies in both countries had average standby consumption below 0.5 watts.

For those products averaging over 1 watt in standby several, were among the poorest performers when compared with other countries. CRT televisions in passive mode averaged 4.1 watts in the Czech Republic and 4.5 watts in Hungary. Most other countries averaged between 2 and 3 watts for this mode. In Hungary inkjet printers in off mode averaged 1.4 watts with the rest of the countries below 1.1 watts. The Czech Republic had the lowest average at only 0.7 watts. Hungary also had the highest readings for laptops in off mode averaging more than twice as high as other countries at 2.6 watts. Other countries including the Czech Republic had average off mode consumption of around 1.2 watts.

Passive standby was relatively low for DVD players in both countries. In the Czech Republic DVD players averaged a passive standby of 1 watt, while in Hungary it was only 1.2 watts. Both countries also had the lowest active standby for DVD players at 5.7 watts for Hungary and 6.1 watts for the Czech Republic. Hungary also unusually found nearly half its DVD players had an off switch when most other countries found standby to be the lowest possible state. The Czech Republic also had the lowest average passive standby for DVD recorders at 3 watts.

In conclusion the store survey results for the Czech Republic and Hungary show variations across products similar to those found in other countries. The results showed certain product categories returned some of the lowest standby results in the world. This indicates that providing efficient products is not restricted to the major economic regions of the world and that all markets are capable of offering electrical items with low standby to consumers.



Active standby - the appliance is on but not performing its main function; e.g. a DVD player may be on but not playing.

Passive standby - the appliance is asleep, not performing its main function but is ready to be switched on (usually by remote control) or it is performing a secondary function e.g. active clock display

Off Mode - the appliance is connected to a power source but does not transmit or receive information and cannot be woken by a remote control.

What's Happening In Europe

The European Commission proposed the first implementation measure of the Eco-design Directive (Directive 2005/32/EC) on 8 July 2008. This covers standby and off mode in electrical and electronic household and office equipment, which includes: Household and cooking appliances such as washing machines, microwave ovens and electric knives; Information technology equipment; Consumer equipment such as radio and television sets or musical instruments; Toys, leisure and sports equipment such as electric trains, car racing sets and hand-held video game consoles. Using a horizontal approach which sets out maximum consumption levels, it is estimated that the proposed requirements will lead to a reduction across the EU of some 35 TWh electricity per year in 2020. If accepted by the European Parliament, the regulation will only apply to new products which are sold in the EU for the first time after the regulation comes into force.

The regulation sets out a two phase process for the introduction of the standards. One year after the regulation comes into force power consumption in off mode and passive standby (reactivation) mode must be less than 1 watt. An added allowance has been given to products that display information or status while in sleep mode with these products allowed to consume up to 2 watts in standby. Four years after the regulation is declared, products must reduce this consumption to 0.5 watts for off and standby mode and less than 1 watt for standby with display. In addition, at this point products must have an auto power down feature to ensure appliances always return to off or standby mode when not performing their function. All products must also include an off or standby mode in the design of the unit.

In September the commission also proposed a second measure relating to simple set top boxes be approved by the parliament. All the regulations set out in the first measure for off and standby mode consumption apply however additional criteria specific for set top boxes have been applied. In use mode is covered and the features of the unit will determine the level of consumption allowed. Each feature has been given a consumption allowance to be added to the base in use allowance of 5 watts. A set top box with the maximum number of features could be allowed to consume up to 13 watts in use. In the 1st phase set top boxes with a hard disk or 2nd tuners are exempt.

In addition to consumption levels the regulation also requires set top boxes to have an auto power down mode within 3 hours of the last user interaction. An alert message 2 minutes before going into standby mode must be provided to the consumer and the automatic power-down function must be set as the factory default.

In Summary....

Phase 1 Begins 2010

- Covers most electronic products
- Passive and Off Mode <1W
- Passive with Display <2W

Additional Criteria for Simple STB

- Must have power down
- In use must be <5W plus allowances for additional features.

Phase 2 Begins 2013

- Covers most electronic products
- Passive and Off Mode <0.5W
- Passive with Display <1W
- Must have power down

Additional Criteria for STB

- Hard Disk and 2nd Tuner models included
- In use allowances lowered

The European proposal will cover a broad range of products and encompass a large proportion of the global electronics market, requiring many manufacturers to change product design to meet these criteria. Given this, it would seem that the European proposal may provide a base on which to build a global position on standby.

Proposed European Standby Regulations for Electrical and Electronic Household and Office Equipment

Regulations	1 year	4 years
Off Mode Consumption	<1 watt	<0.5 watt
Standby Mode Consumption	<1 watt	<0.5 watt
Standby Mode and Display	<2 watt	<1 watt
Must Have an Off and/or Standby mode	Yes	Yes
Must Have Auto Power Down to off and/or Standby Mode	No	Yes

Proposed European Standby Regulations for Simple Set Top Boxes

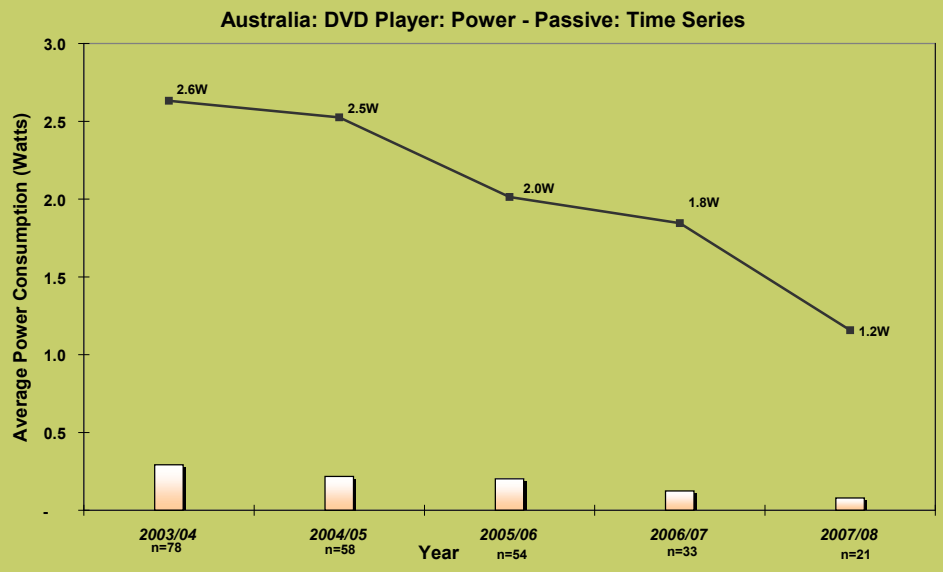
Regulations	1 year	3 years
In Use Mode	<5 watts	<5 watts
Allowance for decoding HD signals	+ 3 watts	+ 1 Watt
Allowance for hard disk	n/a	+ 6 watts
Allowance for 2nd tuner	n/a	+ 1 watt
Off Mode Consumption	<1 watt	<0.5 watt
Standby Mode Consumption	<1 watt	<0.5 watt
Standby Mode and Display	<2 watts	<1 watt
Must Have an Off and/or Standby mode	Yes	Yes
Must Have Auto Power Down to off and/or Standby Mode	Yes	Yes

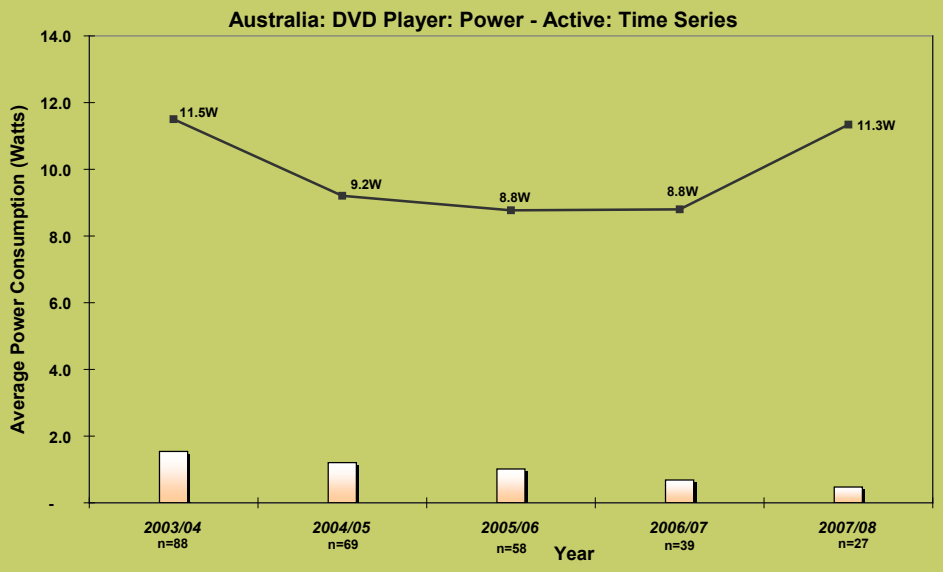
DVD Players–

An Australian Case Study

DVD players are a popular item in most modern homes. In Australia penetration is over 80% of households. Annual surveys have been tracking the standby consumption of this product since it came into the Australian market. As demonstrated in the chart below there has been a constant decline in average passive standby consumption which was 2.6 watts in 2003/04, decreasing to 1.2 watts in 2007/08. However in the area of active standby it would appear little has changed over the last five years with average consumption returning to above 11 watts as it was in 2003/04. Studies monitoring time spent in active standby are inconclusive however an Australian in home survey found at least 7% of appliances were left in this mode.

These results highlight the need to look at consumption in all modes and consider auto power down functions on those products that remain in high consuming standby modes. In attempts to lower overall energy consumption governments will need to look beyond just passive low power mode and ensure policies encompass measures to reduce all energy using phases of a product.





IEA /APP Washington Workshop

The IEA and APP conducted a 2 day standby power workshop in Washington in October 2008. Details of the papers presented can be accessed at the Energyrating website. A summary of the workshop including an in-depth examination of the workshop proposals will be featured in the next edition of *Load Down*.

Next Edition.....

- **Washington Workshop Outcomes**
- **Australia's Mandatory program**
- **Problems with a Horizontal Approach**
- **Comparing Canada and Australia's Data**
- **CEA: Standby the voluntary way**

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