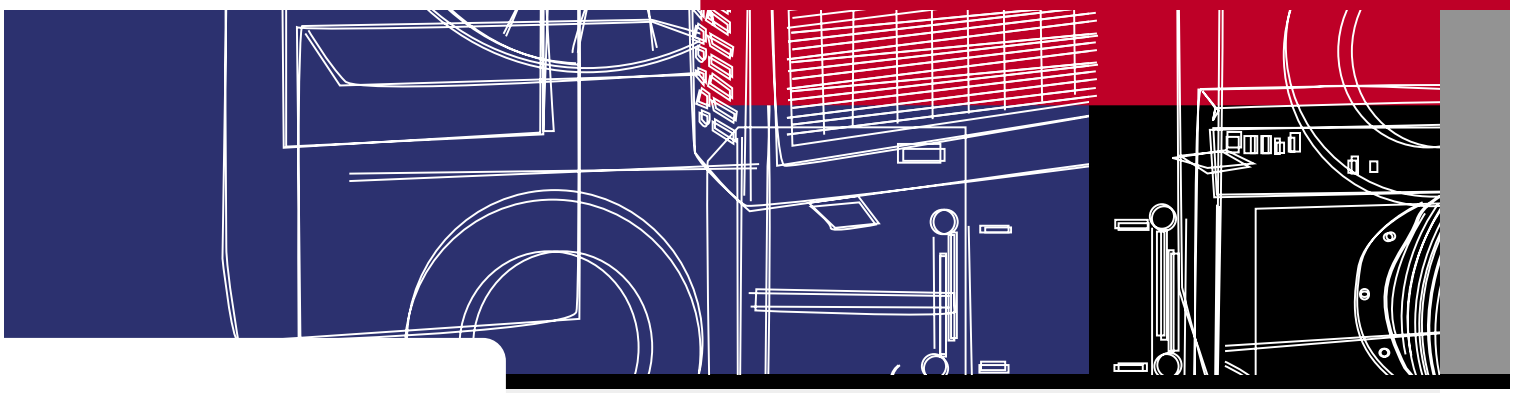
Fact Sheet 01

NATIONAL APPLIANCE AND EQUIPMENT ENERGY EFFICIENCY PROGRAM



MEPS for fluorescent lamp ballasts

This fact sheet outlines the mandatory energy efficiency uorescent lamp ballasts in Australia from 1 February 2003. It provides information of the market context and outlines issues that were considered during the development of minimum energy performance standards (MEPS).

Context

Fluorescent lamp systems are a major energy end use in the commercial sector. Total electricity consumption for fluorescent systems was estimated in 1994 to be as high as 2000 GWh. While fluorescent lamps are a relatively efficient method of providing lighting, typically between 15% to 20% of the total energy used in fluorescent systems is "lost" in the ballast (in the form of heat). The ballast is an essential component to maintain the correct voltage and current to the fluorescent lamp during normal operation but the efficiency of ballasts can vary significantly.

Currently, around 80% of ballasts used in Australia are "ferromagnetic" ballasts of moderate to low efficiency (class C and D ballasts under the European marking scheme). Ferromagnetic ballasts are essentially a small wire-wound inductor which supplies power to the lamp. Losses in ferromagnetic type ballasts can be as small as 3 Watts but as high as 20 Watts (used to supply a nominal 36W 1200mm linear lamp). A small part of the Australian market (a few percent) is supplied with electronic ballasts. Electronic ballasts generally have advantages over ferromagnetic models including the ability to dim, lower overall "losses" and higher lamp efficiency.

The reason for Government intervention

The vast majority of fluorescent lamps are used in the commercial sector and are the dominant form of lighting in retailing and office buildings. In the majority of cases in the commercial sector, tenants lease premises from a building owner or manager. Landlords and speculative builders are interested in minimising total capital costs at the time of construction, so they generally install the lowest cost (which usually means lowest efficiency) lighting system that provides satisfactory lighting service for their tenants.

Where a new building is sold on completion or an office or shop is leased, the lighting system is already installed and the tenant, who pays the energy bills, is not generally in a position to upgrade or replace the lighting system. Replacement is not cost effective if the commercial tenancy period is only short. Economists identify this situation as an example of "market failure" because the owner or purchaser of the equipment does not pay the energy bills.

Ballasts are a long-lived product and once installed, upgrading to a higher efficiency ballast is often not cost effective. Ballasts are usually only replaced if there is a complete refurbishment of the lighting system (which typically occurs 10 to 30 years after commissioning). The small marginal capital cost for a higher efficiency ballast at the time of purchase, however, makes its purchase highly cost effective from a life cycle cost perspective. Governments first became interested in regulatory options for fluorescent lamps ballasts in 1994 and have been working with industry to establish an effective regulatory regime. In 2001, all stakeholder groups (government, luminaire and ballast suppliers and user groups) agreed to a consensus proposal that was recommended to Ministers.

What are the technical requirements?

In March 2002, the Australian Ministerial Council of Energy agreed that MEPS would be introduced for ballasts used with linear fluorescent lamps in the range 15 Watts to 70 Watts. State and territory laws will require all such ballasts to be registered by the manufacturer or importer and their sale will be illegal unless they are registered and comply with the MEPS efficiency requirements.

MEPS applies to all such ballasts manufactured in or imported into Australia from 1 February 2003.

The requirements for ballasts used with linear fluorescent lamps within the scope of the regulation are:

- Each ballast must be capable of meeting the specified minimum Energy Efficiency Index (EEI) when tested in accordance with AS/NZS 4783.1 [MEPS is set at B2 for 230V ballasts with allowances for 240V & 250V models];
- Ballasts must be marked with their EEI;
- The ballast lumen factor (BLF) must be declared;
- The ballast model shall meet the performance requirements set out in IEC60921 (ferromagnetic) or IEC60929 (electronic), as applicable.

The Council agreed that industry could voluntarily mark ballasts used with a wide range of compact fluorescent lamp types. Full MEPS and EEI details are contained in AS/NZS 4783.2.

The Australian MEPS levels are essentially harmonised with the European Commission requirements that were introduced in late 2000 (EU Directive 2000/55/EC). The European MEPS requirements cover a wider range of lamps (ie include most CFLs except integral lamps).

Supplier obligations

From 1 February 2003, it is mandatory that ballasts manufactured or imported into Australia meet MEPS and to be registered for MEPS with a state regulator. (See list of contacts on this page)

AS/NZS 4783.2 sets out the technical requirements for MEPS and provides an application form for MEPS. The test procedure is set out in AS/NZS 4783.1. These standards can be purchased from www.standards.com.au More information on the requirements for ballasts, including technical requirements can be obtained from www.energyrating.gov.au

The impact of Government intervention

National product regulation can only be justified where the benefits outweigh the costs to the community; where the costs of improving ballast efficiency is outweighed by the energy savings made over the lifetime of the product.

Expert modelling suggests that the Australian market will be transformed with lower efficiency "code" ballasts disappearing to be replaced by more efficient ballasts that comply with MEPS. By regulating these ballasts in 2003, the community will save almost $270 million by 2010 (net present value, 10 % discount rate). By 2010, the annual abatement of greenhouse gas derived by this measure will be in the order of 0.35 Mt. Regulating ballasts is good for the environment, good for commercial building tenants who will save energy and should not adversely affect suppliers.

More information

You can obtain more information from the state regulators:

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