



MEPS and Labelling for Air Conditioners

Overview

This fact sheet outlines energy efficiency requirements for air conditioners in Australia. It provides information of the market context and outlines issues that were considered during the development of minimum energy performance standards (MEPS).

Context

Air conditioning (AC) systems are a major energy end use and contributor to peak load growth in the commercial and residential sectors. Total electricity consumption estimates for heating, ventilation and air conditioning (HVAC) systems in the commercial and residential sectors are 66 PJ in 1990, 91.7 PJ in 2000 and 119.4 PJ in 2010 (Regulatory Impact Statement on MEPS for Packaged Air Conditioners Public Comment, Draft GWA 2000). Air conditioning is driving the peak electricity load growth in the eastern States. In Victoria, VENCORP states "Growth in peak summer load sensitive to temperature is dominated by increased sales and use of refrigerative air conditioning" with a 2,600MW load increase (30%) likely between 2001 and 2011 (Annual Energy and MD Forecasts 2001-2011, 2001).

The reason for Government intervention

The lifetime electricity cost represents a large component – in most cases the major part – of the cost of owning and operating air conditioning systems. Prior to energy labelling, part of the air conditioner market appeared to be subject to information failure – where users do not have access to accurate and consistent information about product energy efficiency or the full costs of owning and operating products. In the case of single user systems, the purchaser is usually the



user, the information problem was partly overcome by mandatory energy labelling. Energy labelling has been mandatory for smaller systems typically used in households and small commercial premises since 1987.

Where the purchaser of a product is unlikely to be the operator (e.g. where the equipment is installed in small to medium sized industrial or commercial premises which are typically leased), mandatory labelling is unlikely to influence their purchasing decisions. Purchase price is likely to be the main consideration. In this case, mandatory MEPS is the most effective policy to overcome the market failure regarding whole-of-life costs and to meet the objectives of both increasing energy efficiency and reducing greenhouse gas emissions. Hence MEPS have been introduced for small to medium sized systems typically used in commercial and industrial premises.

National product regulation can only be justified where the benefits outweigh the costs to the community; where the costs of improving efficiency is outweighed by the energy savings made over the lifetime of the product. Packaged air conditioning MEPS are projected to save 14.6 Mt CO₂e from 2000 to 2015 and save the community \$400 million (NPV - 10% discount). The benefits exceed costs by a factor of 6:1.

What are the technical requirements for MEPS and energy labelling?

Since 1 October 2001, three phase air conditioners with a cooling capacity of up to 65kW manufactured in or imported into most states in Australia must comply with the MEPS requirements set out in AS/NZS 3823.2-2001. MEPS covers non-ducted or ducted air conditioners of the vapour compression type. It covers only those units with a single outdoor unit and a single control such as single packaged units, packaged ducted units, double and triple split systems and single split systems. It does not cover multi-split systems (multiple indoor units with separate controls), portable systems without an exhaust duct or evaporative coolers. Multi-compressor systems on a single refrigeration circuit are also excluded. Manufacturers can choose to label three phase air conditioners, but this is not mandatory.

Single phase room air conditioners must carry the mandatory energy label in Australia. This includes all single phase non-ducted or ducted room air conditioners of the vapour compression type intended for household or similar use. It does not cover multi-split systems, portable systems without an exhaust duct or evaporative coolers.

Full technical details are contained in:

- AS/NZS 3823: Performance of household electrical appliances- room airconditioners Part 1.1: Non ducted airconditioners and heat pumps - Testing and rating for performance
- AS/NZS 3823: Performance of electrical appliances- air conditioners and heat pumps Part 1.2: Test Methods - Ducted airconditioners and air-to-air heat pumps - Testing and rating for performance
- AS/NZS 3823: Performance of electrical appliances- air conditioners and heat pumps Part 2: Energy labelling and minimum energy performance standard (MEPS) requirements
- AS/NZS 3823: Performance of electrical appliances- air conditioners and heat pumps Part 3: Calculation of performance for minimum energy performance standard (MEPS) requirements

These standards can be purchased from www.standards.com.au

Supplier obligations

The following product types must be registered with a state regulator:

- Single phase air conditioners - energy labelling (since 1987);
- Three phase packaged air conditioners (PAC) with a cooling output up to 65kW – MEPS (since 2001)
- Three phase packaged air conditioners (PAC) with a cooling output up to 65kW – where the manufacturer chooses to affix an energy label (since 2001).

The scope of energy labelling changed from 7.5kW cooling to single phase in 2001.

Note that three phase heating only units (with no cooling function) are not required to be registered for MEPS, but single phase heating only units must be registered for energy labelling.

More information

You can obtain more information from the state regulators:

New South Wales:

Mr Tim Aldrich
Energy & Utilities Policy Division
Ministry of Energy & Utilities, NSW
PO Box 536
St Leonards, NSW 2065

Ph: (02) 9901 8837, Fax: (02) 9901 8403
E-mail: aldricht@energy.nsw.gov.au

Victoria:

Mr Michael Grubert
Office of the Chief Electrical Inspector
PO Box 262
Collins Street West Post Office
Melbourne, Vic 3006

Ph: (03) 9203 9741, Fax: (03) 9686 2197
E-mail: mgrubert@ocei.vic.gov.au

Queensland:

Mr Alan Faulks
Manager Utilisation
Department of Industrial Relations
Electrical Safety Office
GPO Box 995
Spring Hill, QLD 4004

Ph: (07) 3237 0278 , Mob: 0417 761 187,
Fax: (07) 3237 0229
E-mail: alan.faulks@dir.qld.gov.au

South Australia:

Mr Brian King
Approvals Officer
Officer of the Technical Regulator
Level 19, 30 Wakefield Street
Adelaide, SA 5000

Ph: (08) 8226 5530, Fax: (08) 8226 5531
E-mail: king.brian@saugov.sa.gov.au

More information on air conditioner MEPS and labelling, including technical requirements, can be obtained from:

General AC requirements:

<http://www.energyrating.gov.au/manufacturers/rac1.html>

MEPS levels:

<http://www.energyrating.gov.au/manufacturers/pac1.html>