


# National Appliance and Equipment Energy Efficiency Committee (NAEEEC)

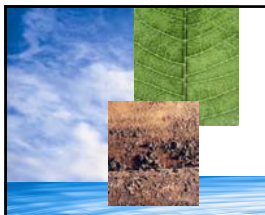
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Prepared by  
Robert Foster - Energy Efficient Strategies

## MEPS and Energy Labelling for Packaged Air Conditioners and Electric Motors



AUSTRALIAN  
Greenhouse  
Office




## Who are we?

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The National Appliance and Equipment Energy Efficiency Committee (NAEEEC) comprises representatives from two levels of government agencies:

- State and Territory regulatory agencies responsible for administering mandatory energy efficiency labelling and minimum energy performance standards; and
- Commonwealth, State and New Zealand agencies with a mandate to encourage sustainable energy use to reduce greenhouse gas emissions.

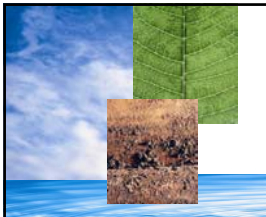


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# Labelling & MEPS Background

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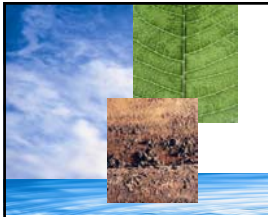


## The Issue

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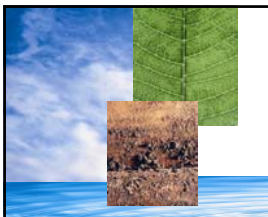
- **Australia's greenhouse emissions equate to about 1.4% of the total world emissions (in 1998, around 455 Mt, excluding land use).**
- **In 1990 energy use in buildings accounted for 40% (81 Mt) of Australia's non transport energy emissions.**
- **These emissions are projected to increase to 148% of their 1990 levels by 2010.**





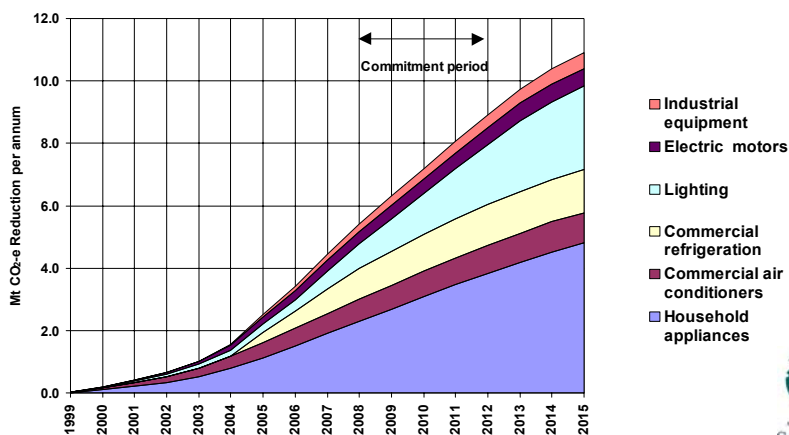
## How appliances and equipment fit in

- **Energy labelling commenced in 1986**
- **State Territory and Commonwealth government endorsed a National Greenhouse Response Strategy in 1992 and a NGS in 1998**
- **Codes and standards programs are amongst the most cost effective and widely used measures used to combat greenhouse emissions throughout the world. In 2000, 25 of the 29 OECD countries have either a standards or labelling code program**



## Estimated Program Savings

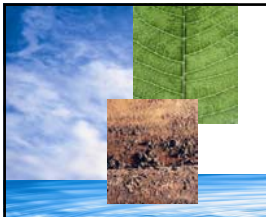
Combined projected impacts of programs covered in this report





# How The Program Operates

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# Program Features

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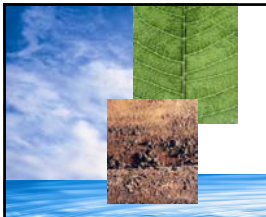
- **Energy Efficiency regulations are contained in state and territory laws (not a Federal system)**
- **Mandatory standards, levels and test procedures are published by Standards Australia (national standards body)**
- **Regulators control the standards setting process for mandatory energy efficiency requirements (eg the levels for labelling and minimum standards) but not the test procedure**





# MEPS for air- conditioners & motors

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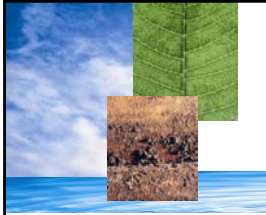


## History 1

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- **April 1994 - as part of the original National Greenhouse Response Strategy a number of equipment types were identified for consideration for MEPS, including PAC's & Motors**
- **1997 - the proposed levels were first released officially for public comment.**
- **1999 - officials wrote to industry and key stakeholders to advise that they intended to recommend to ANZMEC that MEPS start from 1 March 2001.**

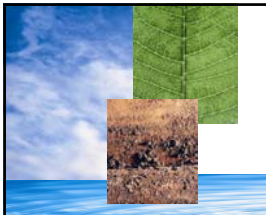




## History 2

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- **1 March 2000** - the air conditioning Standard was republished including the proposed MEPS levels (the same levels as were released in 1997).
- **1 April 2000**, the electric motor standard AS/NZS 1359.5 was published including the proposed MEPS levels (adjusted from 1997 levels).
- **September 2000** - a draft RISs were released for public comment for motors and PACs.
- **February 2001** – MEPS recommendation for approval forwarded to ANZMEC
- **13 July 2001** – ANZMEC approves MEPS for PAC's and motors



## What is to be Regulated?

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- **The new products to be regulated are:**
  - *three-phase ducted and non-ducted air conditioners, of the vapour compression type, and with a cooling capacity of up to 65kW - must meet MEPS.*
  - *Single phase air conditioning units of any size used for residential applications must be labelled.*
  - *Three phase cage induction electric motors rated from 0.73kW up to 185kW*

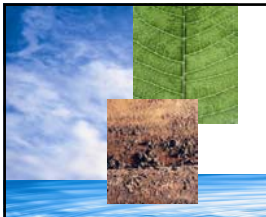




## When do Regulations come into effect?

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- **MEPS for PACs and Motors commence in all Australian jurisdictions from 1 October 2001 using the levels published in AS/NZS 3823.2:2001 and AS/NZS 1359.5:2000.**
- **The MEPS levels to remain unchanged for at least 4 years.**



## How the MEPS levels will be set in future

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### **Government officials:**

- 1) **confirm a country from which MEPS levels are drawn;**
- 2) **propose possible levels translated to take account of Australian circumstances; &**
- 3) **confirm that the final levels are cost effective (RIS)**

### **Stakeholders:**

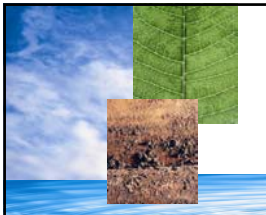
- 1) **identify errors and omissions in the above analyses; &**
- 2) **"sign off" on consensus levels.**





# Registering Appliances Air Conditioners

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## Registration Procedure

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- **All Air conditioners (up to 65kW) manufactured after 30 September 2001 must be registered if offered for sale.**
- **Applications must be in accordance with the format in AS/NZS 3823.2:2001.**
- **Applications must be submitted to one of four regulators – SA, VIC, NSW or Qld.**
- **Electronic registration forms (as per standard) are available on [www.energyrating.gov.au](http://www.energyrating.gov.au) (PDF or Word)**
- **Also [www.energyefficient.com.au](http://www.energyefficient.com.au) for the moment**





## Testing Requirements

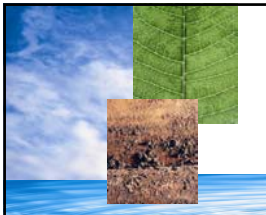
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### **MEPS**

- **Physical or simulation tests may be used.**
- **Claims of compliance with MEPS require only one supporting test to be submitted.**

### **LABELLING**

- **Labelling for three phase systems is voluntary but if appliances are to be labelled, this should be on the same basis as single phase.**

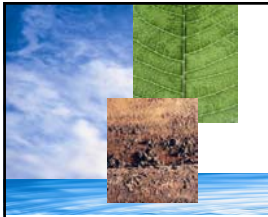


## The Test Standards

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- **AS/NZS 3823.1.1:1998 – Testing and rating for performance of non ducted air-conditioners**
- **AS/NZS 3823.1.2:2001 – Testing and rating for performance of ducted air conditioners and air to air heat pumps**
- **AS/NZS 3823.3:2001- Calculation of performance for MEPS requirements (simulation Method)**

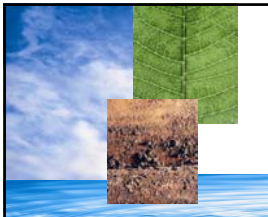




# MEPS and Labelling Requirements

## AS/NZS 3823.2:2001 – Energy Labelling and MEPS

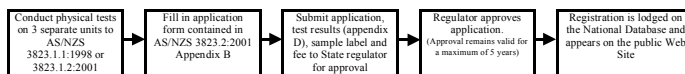
- Calculations for labelling
- Performance criteria
- Format for making applications
- Formats for labels
- Rules for compliance (checktesting)



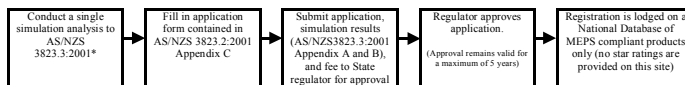
# Air Conditioner Registration Procedure Summary

### PROCESS DIAGRAM FOR REGISTRATION OF AIR CONDITIONERS FOR MEPS AND OR ENERGY LABELLING

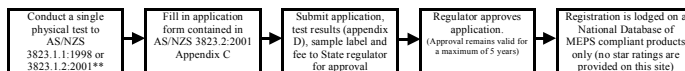
#### Single Phase Units for Residential application – Energy Labelling (mandatory)



#### 3 Phase Units (up to 65 kW) – MEPS Compliance Only Using Simulation Testing



#### 3 Phase Units (up to 65 kW) – MEPS Compliance Only Using Physical Testing



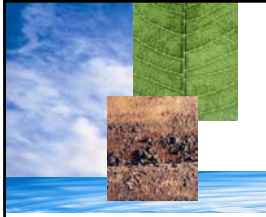
#### 3 Phase Units (up to 65 kW) – MEPS Compliance and Energy Labelling (labelling is voluntary)

Process as per Single Phase Units for Residential Application (see above)

\* Research has shown that simulation analysis will usually return a slightly better performance result compared to a physical test. Borderline passes using a simulation test should be used with caution.

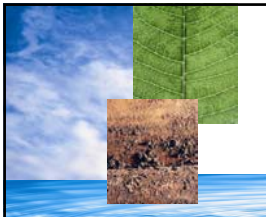
\*\* Whilst a single test is the minimum requirement it should be understood by the applicant that a single sample may not provide a result representative of the population (this will largely be dependant upon production line tolerances). Borderline passes using a single test should be used with caution.





# Registering Appliances Electric Motors

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## Registration Procedure

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- **All three phase induction electric motors (0.73kW to 185kW) manufactured after 30 September 2001 must be registered if offered for sale.**
- **Applications must be in accordance with the format in AS/NZS 1359.5:2000.**
- **Applications must be submitted to one of four regulators – SA, VIC, NSW or Qld.**
- **Electronic registration forms (as per standard) are available on [www.energyrating.gov.au](http://www.energyrating.gov.au) (PDF or Word)**
- **Also [www.energyefficient.com.au](http://www.energyefficient.com.au) for the moment**

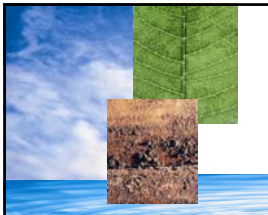




## Registering Families of Motors

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- **For Bulk applications - fees can be reduced by registering families of motors under the one application.**
- **A family of motors should attract a single application fee only.**
- **Applications for families of motors must include a motor data spreadsheet in a prescribed format, all submitted together –**  
**[www.energyefficient.com.au](http://www.energyefficient.com.au)**



## Families of Motors -Definition

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- **A Family of Motors is defined as “A motor series of the one brand and of the same -**
  - *Brand Name*
  - *Design*
  - *Enclosure (IP rating)*
  - *Rated Voltage and Frequency*
  - *Winding Insulation Class***and where each motor has EITHER:**
  - **the same rated output (in kW) OR**
  - **the same frame size”**

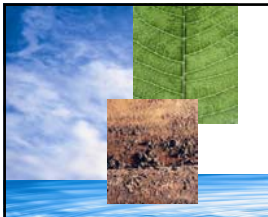




## Testing Requirements/Standards

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- **Test Method A – AS/NZS 1359.102.3:2000**
- **Test Method B – AS/NZS 1359.102.1:1997**
- **Supporting Test reports to be produced on request**



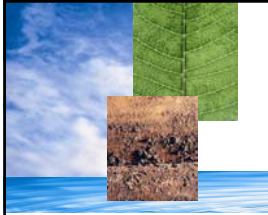
## MEPS Requirements

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**AS/NZS 1359.5:2000 – Three Phase Cage induction motors – High efficiency and minimum energy performance standards requirements**

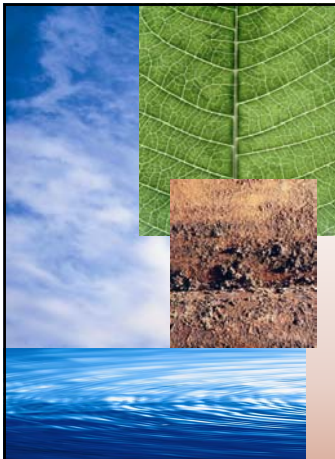
- **Performance criteria**
- **Format for making applications**
- **Rules for compliance (checktesting)**





## The Future – On line Registrations

- **Applications will be lodged on a secure web site.**
- **Electronic application forms will be of a standardized format compliant with the standard and acceptable to regulatory authorities.**
- **Electronic forms will come with checks and balances to ensure the completeness and integrity of application data.**
- **Incomplete applications can be re submitted following advice from the regulatory authority.**



## NAEEEC MEMBERS

**The Australian Greenhouse Office - Commonwealth**

**The Ministry of Energy and Utilities – NSW**

**The Sustainable Energy Development Authority – NSW**

**The Office of Chief Electrical Inspector – VIC**

**The Sustainable Energy Authority – VIC**

**The Department of Mines and Energy – QLD**

**The Office of Sustainable Energy - QLD**

**The Office of Energy – WA**

**The Office of the Technical Regulator – SA**

**The Tasmanian Office of Energy – TAS**

**The Department of Urban Services - ACT**

**The Department of Industries and Business - NT**

**Energy Efficiency and Conservation Authority – NZ**



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