

# AUSTRALIA

## 1. GOALS FOR EFFICIENCY IMPROVEMENT

### 1.1. Overall Energy Efficiency Improvement Goals

The Government has established a Multi-Party Climate Change Committee to explore options for the implementation of a carbon price and help to build consensus on how Australia will tackle the challenge of climate change. The introduction of a carbon price would be supported by complementary measures aimed at improving the energy efficiency of the economy by addressing barriers to the uptake of energy efficiency measures.

The Report of the Prime Minister's Task Group on Energy Efficiency was publicly released in October 2010. The Task Group was established to provide advice on options for introducing mechanisms to deliver a step-change improvement in Australia's energy efficiency by 2020 and place Australia at the forefront of OECD energy efficiency improvement. A recommendation of the Report of the Prime Minister's Task Group on Energy Efficiency was an economy wide energy efficiency target. The Government is currently considering the recommendations contained in the report. The Report is available at: <http://www.climatechange.gov.au/publications/energy-efficiency/report-prime-ministers-taskforce-energy-efficiency.aspx>.

### 1.2. Sectoral Energy Efficiency Improvement Goals

The Australian Government is working towards pricing carbon in the Australian economy, which would contribute to energy efficiency incentives across a range of economic sectors.

### 1.3. Action Plans for Promoting Energy Efficiency

The National Strategy on Energy Efficiency (NSEE) is the overarching program of work for promoting energy efficiency in Australia. Details can be found at [http://www.coag.gov.au/coag\\_meeting\\_outcomes/2009-07-02/docs/Energy\\_efficiency\\_measures\\_table.pdf](http://www.coag.gov.au/coag_meeting_outcomes/2009-07-02/docs/Energy_efficiency_measures_table.pdf)

#### a) Objectives

The NSEE is a coordinated, comprehensive approach to energy efficiency in Australia to accelerate energy efficiency efforts across all governments, and to help households and businesses reduce their energy costs. The NSEE aims to address barriers that prevent the optimal uptake of energy efficient opportunities, such as split incentives and information failures.

The NSEE incorporates and builds on measures already agreed by the Council of Australian Governments (COAG) and the Ministerial Council on Energy through the National Framework on Energy Efficiency (NFEE). It aims to accelerate energy efficiency efforts, streamline roles and responsibilities across levels of governments, and facilitate the adoption of more efficient and innovative practices by ensuring that businesses and households are able to make informed decisions about investments in energy efficiency.

#### b) Applicable sectors

The NSEE outlines detailed energy efficiency measures and plans to implement them under:

- Industry and business
- Skills and training
- Advice and education
- Data
- Electricity markets
- Appliances and equipment

- Transport
- Buildings standards
- Commercial building sector
- Residential building sector
- Government working in partnership and leading the way.

**c) Outline**

The NSEE was agreed to by the COAG in July 2009. It is a 10-year strategy to deliver a consistent and cooperative approach to energy efficiency. Measures include:

- Assistance to households to reduce energy use through the provision of information and advice, financial assistance and demonstration programs
- Assistance to business and industry to obtain the knowledge, skills and capacity to pursue cost effective energy efficiency opportunities
- Higher energy efficiency standards to increase the number of highly energy efficient homes and buildings, and the provision of a clear roadmap to assist Australia's residential and commercial building sector in adapting to these standards
- Consistent economy-wide energy efficiency standards for appliances and equipment and a process to enable industry to adjust to increasingly stringent standards over time
- Addressing potential regulatory impediments to the uptake of innovative demand-side initiatives and smart grid technologies
- Governments working in partnership to improve the energy efficiency of their own buildings and operations

**d) Financial resources and budget allocation**

Funding of AUD 88.3 million over four years (2009-10 to 2013-14)

**e) Method for monitoring and measuring effects of action plans**

See answer for NFEE (below).

**f) Expected results**

The expected energy and greenhouse gas emissions savings for appliances and equipment to 2020 (under the E3 MEPS and labelling program) is outlined in the report *Prevention is Cheaper than Cure - Avoiding Carbon Emissions through Energy Efficiency - Projected Impacts of the Equipment Energy Efficiency Program to 2020*. The report is available at [www.energyrating.gov.au/library/details200901-projected-impacts.html](http://www.energyrating.gov.au/library/details200901-projected-impacts.html).

**g) Future tasks**

Continuation of existing work programs.

**Previous action plans for promoting energy efficiency**

The National Framework for Energy Efficiency (NFEE) was the previous arrangement for cooperation on energy efficiency actions in Australia. All NFEE projects and activities now form part of the NSEE.

**a) Objectives**

The NFEE aimed to take advantage of the economic potential associated with increased uptake of energy efficient technologies and processes to help improve Australia's energy efficiency performance to reduce energy demand and lower greenhouse gas emissions.

**b) Applicable sectors**

Stage One of the NFEE was adopted in 2004 and is still ongoing. It contains a comprehensive set of measures that cover the residential, commercial and industrial sectors. Stage Two of the NFEE commenced in July 2008.

**c) Outline**

Stage One of the NFEE consisted of nine policy packages including:

- *Residential buildings*: consistent economy-wide minimum energy efficiency design standards for new buildings and renovations and mandatory disclosure of the energy performance of homes for sale or lease
- *Commercial buildings*: consistent economy-wide minimum energy efficiency design standards for new and refurbished buildings and mandatory disclosure of the energy performance at the time of sale or lease
- *Commercial/industrial energy efficiency*: mandatory energy assessments and public reporting for large energy users (the Energy Efficiency Opportunities program) and coordinated training and accreditation for energy auditors and energy performance contractors
- *Government energy efficiency*: development of consistent standards for measuring and reporting on government energy efficiency programs, introduction of public annual reporting on energy use and progress towards targets by government agencies in all jurisdictions, and the development of best practice models for government agencies to implement energy efficiency programs
- *Appliance and equipment energy efficiency*: broadening the scope of the National Appliance and Equipment Energy Efficiency Program (NAEEEP) through the introduction of mandatory Minimum Energy Performance Standards (MEPS) and introducing new or more stringent MEPS for residential, commercial and industrial products
- *Trade and professional training and accreditation*: undertaking a coordinated effort to integrate energy efficiency concepts into training courses in key professions that influence energy efficiency outcomes, and development of training and accreditation courses for practising tradespersons
- *Commercial/industrial sector capacity building*: development of a coordinated program to generate examples of energy efficient equipment or processes in key industrial sectors and new or refurbished commercial buildings, link industry and government to key centres for energy efficiency research and development, and establish coordinated energy efficiency best practice networks
- *General consumer awareness*: provision of benchmark data on energy bills, development of a coordinated network to facilitate easy and timely access to information, targeted promotional campaigns and the integration of energy efficiency concepts into the school curriculum
- *Finance sector awareness*: raising awareness of the opportunities for and benefits of investment in energy efficiency and the provision of tools to assist in the valuation and risk assessment of proposals.

Stage Two of the NFEE added another five packages, including:

- Improving the evidence base for the development and evaluation of energy efficiency policies. This will be achieved by implementing the plan developed in Phase 1 of the Energy Efficiency Data Gathering and Analysis Project (EEDP) for the collection of data required to fill identified data gaps, and collecting data to inform the development of new policies and refine existing policies.

- Expanding and enhancing the Minimum Energy Performance Standards program
- The Heating, Ventilation and Air Conditioning (HVAC) high efficiency systems strategy
- The phase-out of inefficient incandescent lighting
- Government leadership through green leases
- Development of measures for an Australian hot water strategy, for later consideration.

Examples of action that have been undertaken under the NFEE include:

- *Appliances*: MEPS and energy labelling continued to be developed and implemented through the Equipment Energy Efficiency (E3) Program. There is also agreement to implement Greenhouse and Energy Minimum Standards (GEMS). Around 40 new products have been identified to be targeted for inclusion under MEPS by end of 2011, including some types of home entertainment and office equipment.
- *Lighting*: The Government is phasing out inefficient incandescent light bulbs over a number of years through the Minimum Energy Performance Standards (MEPS). The phase-out commenced with the implementation of an import prohibition on inefficient, traditional pear shaped incandescent bulbs on 1 February 2009, followed by a sales ban in November 2009. Further lamp types have been restricted for sale from October 2010. MEPS for Compact Fluorescent Lamps (CFLs) were also introduced in November 2009 to ensure that only high quality CFLs can be sold in Australia.
- *Buildings*: Under the *Building Energy Efficiency Disclosure Act 2010*, from 1 November 2010 most sellers or lessors of office space of 2000 square metres or more must obtain and disclose an up-to-date energy efficiency rating. Work is continuing with a regulatory impact statement on mandatory disclosure of residential building energy performance due to be released in 2011. All Australian governments have also agreed to enhanced minimum energy standards for new commercial and residential buildings which were incorporated into the 2010 version of the Building Code of Australia. A National Green Lease Policy has been developed to support improved energy efficiency in all government buildings.

#### **d) Financial resources and budget allocation**

The budget for the packages of work under the second stage of the NFEE was AUD 6.21 million for 2008–09 and AUD 9.96 million for 2009–10. Resourcing to implement the Stage Two measures are met separately by the relevant jurisdictions.

#### **e) Method for monitoring and measuring effects of action plans**

Surveys, statistic compilation, end-use information, monitoring and trend analysis are all undertaken, and databases are maintained to assist in program evaluation, meeting international reporting obligations and policy formation.

There are a number of agencies that are responsible for energy efficiency monitoring and reporting.

- The Department of Climate Change and Energy Efficiency (DCCEE), on behalf of the E3 Program, monitors and reports information through its ‘Energy Use in the Australian Residential Sector 1986–2020’ report. The report is the second economy-wide baseline study on residential energy use. It includes private residential dwellings, both those that are separate, such as single detached family homes, and attached, such as townhouses or apartments. The modelling incorporates Australian energy policy programs in place or finalised by mid-2007.
- DCCEE is responsible for the analysis of the projected effects of the Equipment Energy Efficiency Program over the period 2000–2020. Results have been published in the report: ‘Prevention is Cheaper than Cure—Avoiding Carbon Emissions through

Energy Efficiency, Projected Impacts of the Equipment Energy Efficiency Program to 2020’.

- DCCEE administers the National Greenhouse and Energy Reporting Scheme (NGERS). The National Greenhouse and Energy Reporting Act established NGERS in 2008, under which corporations exceeding legislated thresholds must report their annual greenhouse gas emissions, energy production and consumption. For the 2010-11 financial year and subsequent years, corporations must report if their group consumes more than 200 terajoules of energy a year or if a facility in their group consumes more than 100 terajoules of energy a year.
- The Department of Resources, Energy and Tourism (RET) administers the Energy Efficiency Opportunities (EEO) program under which companies report a range of energy use and energy efficiency information to the government.
- RET commissions work on industrial energy intensity (undertaken by the Australian Bureau of Agricultural and Resource Economics and Sciences—ABARES). The most recent report is ‘End use energy intensity in the Australian economy’ published in 2010. ABARE also prepares the ‘Australian Energy Statistics’ on behalf of RET.
- The Australian Bureau of Statistics collects and publishes a wide range of energy use and related statistics.

#### **f) Expected results**

See answer for Energy Efficiency Opportunities (below).

#### **g) Future tasks**

The National Strategy for Energy Efficiency (NSEE) provides specific actions for promoting energy efficiency (see above) over the coming years.

### **1.4. Institutional Structure**

#### **a) Name of organisation**

The Australian Constitution divides legislative powers between the federal and state governments. As such, policy responsibility for energy efficiency actions varies between the levels of government.

At the federal level, direct responsibility for energy efficiency is split between two departments. DCCEE has overarching responsibility for energy efficiency policy and measures. RET is responsible for policy and programs pertaining to industrial energy efficiency. A number of other government agencies have sectoral interests in energy efficiency including the Department of Infrastructure and Transport (DIT) and the Department of Innovation, Industry, Science and Research (DIISR). The NSEE is the main mechanism for coordinating energy efficiency policy, with reports on the progress of activities being provided to COAG by the Senior Officials Group on Energy Efficiency (SOG-EE).

At the state/territory level, there is a range of institutional structures. The following agencies are responsible for energy efficiency:

- New South Wales: Department of Environment, Climate Change and Water
- Northern Territory: Department of Resources — Fisheries
- Queensland: Department of Employment, Economic Development and Innovation—Mines and Energy—Office of Clean Energy
- South Australia: Department for Transport, Energy and Infrastructure and the Essential Services Commission of South Australia
- Tasmania: Department of Infrastructure, Energy and Resources
- Victoria: Department of Primary Industries, Sustainability Victoria and the Essential Services Commission

- Western Australia: Office of Energy.

The Ministerial Council on Energy is comprised of all federal and state and territory energy ministers. A subcommittee of officials, the energy efficiency working group, facilitates inter-jurisdictional cooperation on energy efficiency.

**b) Status of organisation**

All agencies report to the relevant federal or state government minister

**c) Roles and responsibilities**

Vary across departments

**d) Covered sectors**

All sectors of the economy are covered

**e) Established date**

Multiple jurisdictions

**f) Number of staff members**

No information available

### 1.5. Information Dissemination, Awareness-raising and Capacity-building

**a) Information collection and dissemination**

A wide range of information is readily available to Australian energy consumers. For example, the Energy Efficiency Exchange (EEX) website developed under the NFEE is a public source of information on industrial energy efficiency and is being redeveloped to better meet industrial energy user needs. There are also a number of websites containing information on ways to improve residential and building energy efficiency. For the transport sector, the Green Vehicle Guide provides model specific information on the emissions performance and fuel consumption of all vehicles produced since 2004.

**b) Awareness-raising**

There is no economy-wide general energy efficiency awareness-raising program, although awareness campaigns may be undertaken with specific initiatives such as the phasing out of inefficient incandescent lighting. Some states have awareness-raising campaigns.

**c) Capacity-building**

The NSEE includes a number of measures related to capacity building for industry, including supporting businesses to address barriers to improving their energy efficiency and assisting businesses to ensure they have adequate knowledge, skills and capacity to meet the challenges of operating in a low carbon economy. Key elements of these measures include developing targeted outreach information and addressing skills gaps and shortages.

A transitional plumber training program is also being developed and delivered in support of the phase-out of greenhouse intensive water heaters under the NFEE.

A National Energy Efficiency Skills Initiative (NEESI) is being developed under the NSEE. The NEESI will build on the existing processes under the NFEE to ensure that Australia will have the skills and knowledge required to move to a low-carbon economy

The Energy Efficiency Opportunities program engages in significant capacity building activities that reach companies using 45% of Australia's energy end use and a range of energy services providers, providing advice, producing guidance materials, case studies, and holding annual workshops. The program, and its capacity building activities, is to be extended to electricity generators.

The Enterprise Connect Clean Technology Innovation Network works with firms on ways to cut energy, water and material use; plan for change; and adopt new technologies that will reduce their energy use and environmental impact. It supports new products, processes and skills, and builds relationships with research, education and training providers.

### 1.6. Research and Development in Energy Efficiency and Conservation

In general, Australia has a technology-neutral approach to research and development funding, with researchers undertaking work on energy efficiency related projects competing with other projects for funding. However, there are a number of specific programs that support research and development in energy efficiency.

In 2008-09 the Australian government established *Clean Business Australia*, as a partnership with business and industry to support activities aimed at improving energy and water efficiency and increasing sustainability, with a focus on productivity and innovation. This initiative is administered by the Australian Government Department of Innovation, Industry, Science and Research and is comprised of three elements—Climate Ready, Retooling for Climate Change and the Green Building Fund.

The Clean Business Australia—Climate Ready program is a competitive grants program which aims to support the development and commercialisation of innovative products, process and services that address the effects of climate change. The program offered grants from AUD 50 000 to AUD 5 million on a matching funds basis, to small and medium-sized Australian businesses to undertake research and development, proof of concept and early-stage commercialisation activities. A total of 102 projects worth AUD 75.95 million in grant funding proceeded through the four funding rounds. As the effects of climate change will be far-reaching a broad range of project applications for Climate Ready are supported. Funding has been provided for projects that include: wind turbine production; native tree plantations to reduce carbon pollution; water saving solutions; and technology for saving power in standby mode.

The *Clean Business Australia—Green Building Fund* aims to support owners of commercial office buildings in retrofitting existing buildings to improve energy efficiency and reduce greenhouse gas emissions. Grants are allocated through two activity streams. Stream A allocates grants ranging between AUD 50 000 to AUD 500 000 to cover a maximum of half the project cost to assist owners of existing commercial buildings in retrofitting their buildings. Stream B allocates grants of up to AUD 200 000 for up to 50% of project costs to industry associations to develop the knowledge, skills and capacity of those who operate commercial buildings, improve energy efficiency, and reduce greenhouse gas emissions. A total of AUD 90 million has been allocated to the program.

The Australian Government's *Green Car Innovation Fund* is also administered by the Australian Government Department of Innovation, Industry, Science and Research. The Fund is an AUD 900 million, 10-year competitive grants program. The object of the Fund is to enhance the research and development and commercialisation of Australian technologies that significantly reduce fuel consumption and/or greenhouse gas emissions of passenger motor vehicles.

Research on energy efficiency is a major component for energy efficiency improvement in Australia and is carried out through federal and state government networks. Funding mechanisms and involvement with the private sector are conducted on a need-only basis. States and territories also have a number of demonstration programs for business energy efficiency.

## 2. MEASURES FOR ENERGY EFFICIENCY IMPROVEMENTS

### 2.1. Government Laws, Decrees, Acts

#### 2.1.1. Energy Efficiency Opportunities Act

##### a) Name

Energy Efficiency Opportunities Act 2006 (EEO)

##### b) Purpose

The EEO legislation is designed to result in improved identification and uptake of cost effective energy efficiency opportunities, improved productivity and reduced greenhouse gas emissions, and greater scrutiny of energy use by large energy consumers.

##### c) Applicable sectors

The EEO program applies to all large energy users across all sectors except electricity generation (it is to be extended to generators) and electricity and natural gas networks. This mainly covers the mining, resource processing, manufacturing, transport and commercial sectors.

##### d) Outline

Participation in EEO is mandatory for businesses that use more than 0.5 petajoules of energy a year (equivalent to the energy used by approximately 10 000 households). The businesses (more than 280 participants on 25 October 2010) registered for the program account for more than 60% of the total energy use of business, around 45% of all energy end-use, and around 30% of primary energy use in Australia. Extension to electricity generators will increase coverage to around 60% of primary energy use.

The businesses registered for EEO are required to carry out a comprehensive and rigorous energy assessment to identify efficiency opportunities with up to a four year payback. There is a rolling five year assessment cycle. Companies are supported with advice, capacity building workshops and guidance materials.

They are then required to publish an annual report on their identification and implementation of cost effective energy saving opportunities. A number of these reports have gained media attention, highlighting the scrutiny from the Australian public on business actions relating to climate change. Companies also make a more detailed report to the Government approximately every three years.

Implementation of opportunities is not mandatory but is at the discretion of the business.

##### Financial resources and budget allocation

AUD 16.9 million was allocated to the program from 2004–05 to 2008–09. A similar level of funding has been allocated for 2010-2013.

##### e) Expected results

Abatement and energy efficiency improvements from the program are significant. 199 companies with trigger years 2005-06 and 2006-07 reported at the end of 2009 on progress over the first three years of the program. They reported that they had assessed 82% of their energy use. From these assessments they had identified energy efficiency opportunities with annual savings of 113.7 petajoules (PJ) or 8.3% of energy use assessed. These potential savings are worth a net annual benefit of over AUD 1 billion, and the Government estimates this will save 8.9 million tonnes of CO<sub>2</sub> equivalent or 1.5% of Australia's 2007-08 total emissions if implemented. 93 PJ of these opportunities have a better than 4 year payback.

From these identified opportunities, companies reported they were committed to implementing annual energy savings of 61.5 PJ, or 54% of the identified savings. This is worth more than AUD 650 million a year in net financial benefits, saving an estimated 5.4

million tonnes of CO<sub>2</sub> equivalent a year or 1% of Australia's 2007-08 total emissions. 60.3% of savings with a payback of better than 4 years are being adopted by companies.

Companies implementation commitments for savings with a better than four year payback rose 64% from 34.1 PJ to 56 PJ of annual savings from 2008 to 2009.

Savings to be implemented represent an average net abatement saving of approximately AUD 110 per tonne of CO<sub>2</sub> reduced. This means that companies are getting a large financial return, not a cost, for saving greenhouse emissions from their energy efficiency opportunities.

Another 32% of opportunities (36.1 PJ) were under further investigation and 14% (15.8 PJ) were not to be implemented at the reporting date. The report '*Continuing Opportunities – A Look at Results for the Energy Efficiency Opportunities Program 2006-2009*' is available on the Department's website at: <http://www.ret.gov.au/energy/efficiency/eeo/pages/default.aspx>.

### 2.1.2. Hot Water Phase Out Program

#### a) Name

Phase out of greenhouse intensive (electric) hot water heaters

#### b) Purpose

Households must replace their existing greenhouse-intensive hot water systems as they fail with high efficiency solar, gas or electric heat pump systems. The phase out is a jointly run scheme between federal and state governments.

#### c) Applicable sectors

The phase out applies to the residential sector only. It is being implemented through standards prescribed in the Building Code of Australia (BCA) covering new buildings and regulations within State Government plumbing codes for existing buildings.

#### d) Outline

The phase-out forms a central element within the National Hot Water Strategic Framework. The Framework sets out a ten year pathway for the hot water industry to move to a low emission future and comprises a mix of regulatory and industry development elements.

The phase out of the installation of greenhouse intensive electric hot water heaters in new and existing homes with access to reticulated natural gas will be completed in the following stages:

(i) Phase-out for new dwellings is planned to be implemented through the Building Code of Australia. State and Territory governments have undertaken to implement the new residential standards no later than May 2011.

(ii) Stage 1 (2010) for existing homes is being implemented on a State by State basis. Queensland and South Australia have already commenced. Stage 2 (2012), will require that electric hot water systems are no longer installed in any existing detached, terraced and town houses except where an exemption applies.

#### e) Expected results

Approximately 78.7 million tonnes of greenhouse gas emissions over 20 years are expected to be saved by the phase-out. (51.1 million tonnes over 10 years).

### 2.1.3. Mandatory Disclosure of Commercial Building Energy Efficiency

#### a) Name

Building Energy Efficiency Disclosure Act 2010

**b) Purpose**

Commercial Building Disclosure (CBD) is an economy-wide program designed to improve the energy efficiency of Australia's large office buildings.

**c) Applicable sectors**

Commercial buildings sector

**d) Outline**

Under the program, from 1 November 2010 most sellers or lessors of office space of 2000 square metres or more will be required to obtain and disclose an up-to-date energy efficiency rating. Certain exceptions and exemptions apply (see Exemptions). There is a transition period for the first year of the program where a valid National Australian Built Environment Rating System (NABERS) energy base or whole building rating can be disclosed. From 1 November 2011 a full Building Energy Efficiency Certificate (BEEC) will need to be disclosed. BEECs are valid for 12 months, must be publicly accessible on the online Building Energy Efficiency Register, and include:

- a NABERS Energy star rating for the building
- an assessment of tenancy lighting in the area of the building that is being sold or leased
- general energy efficiency guidance.

**e) Financial resources and budget allocation**

AUD 5 million was allocated to the program from 2009–10 to 2012–13.

**f) Expected results**

The Commercial Building Disclosure program will stimulate investment in energy efficiency improvements to existing commercial buildings. It will do this by providing purchasers and lessees with credible information about the energy efficiency of large commercial office buildings at the point of sale, lease and sublease. The program will lead to more informed purchasers and lessees and help transition the commercial office market to a low-carbon future.

**2.2. Regulatory Measures****2.2.1. Minimum Energy Performance Standards and Labelling****a) Name**

Mandatory Minimum Energy Performance Standards (MEPS) and Labelling

**b) Purpose**

To specify mandatory requirements for the minimum energy performance standards and energy labelling of appliances, including offences and penalties for non-compliance. Further information is available at [www.energyrating.gov.au](http://www.energyrating.gov.au).

**c) Applicable sectors**

Appliances, lighting and equipment in the residential, commercial and industrial sectors.

**d) Outline**

Mandatory MEPS and energy efficiency labelling are covered by the Equipment Energy Efficiency Program (E3), which is co-funded by the Australian Government, state and territory governments and the New Zealand Government. Products are included in the program based on whether the community would benefit from their regulation.

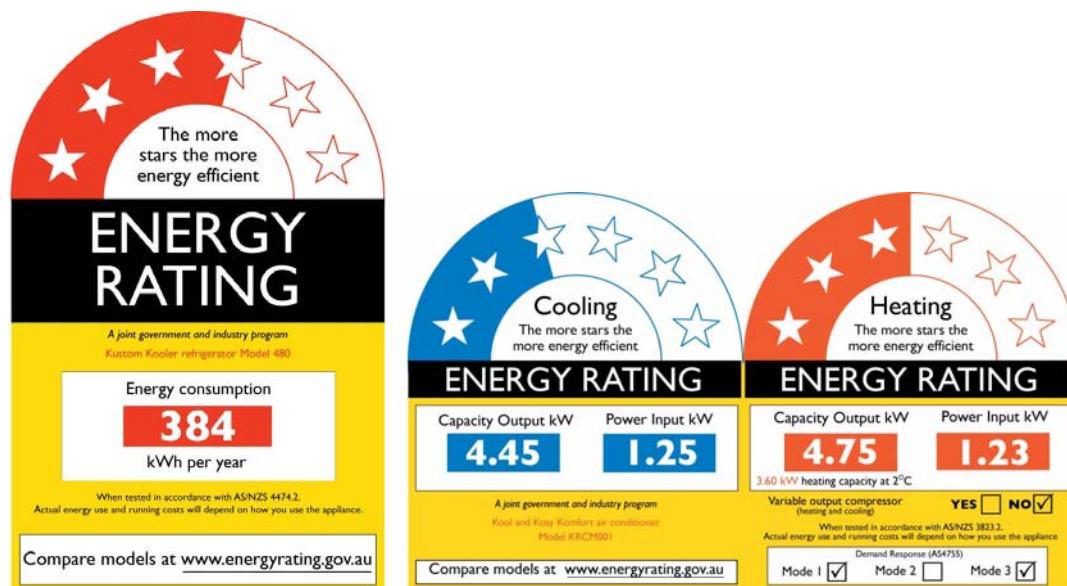
The establishment of MEPS and labelling requirements in Australia is a cooperative process between government and industry. Technical and economic analyses are undertaken in the

development and negotiation of targets and timetables. MEPS, labelling and test method standards that are called up by regulation are Australian (in conjunction with New Zealand where appropriate) and are set to be the equivalent of world's best practice where possible.

The energy-rating label allows consumers to compare the energy efficiency of domestic appliances, thereby providing manufacturers with an incentive to continuously improve the energy performance of their appliances. The label has two main features. It rates the energy efficiency of an appliance on a scale of 1 to 10 stars or 1 to 6 stars (in half-star increments), the more stars the more efficient it is compared with models of similar size and capacity. The label also displays an estimated energy consumption figure based on typical use of the appliance (usually kWh/year).

The star system is regularly re-graded to achieve a better spread in energy efficient products (taking into account improvements in energy efficiency that occur over time and to allow room for further improvement).

All manufacturers that produce or import appliances for the Australian market must submit their products to an approved testing agency.



Labelling is mandatory for the following electrical products offered for sale in Australia:

- Refrigerators and freezers
- Clothes washers
- Clothes dryers
- Dishwashers
- Air conditioners
- Televisions.

As of October 2010, the following products are also regulated on the basis of MEPS—this means that they have regulated minimum energy efficiency labels.

- Refrigerators and freezers (from 1 October 1999, revised 1 January 2005, revision proposed for 2010)
- Mains pressure electric storage water heaters (from 1 October 1999)
- Small mains pressure electric storage water heaters (<80L) and low pressure and heat exchanger types (from 1 October 2005)
- Three-phase electric motors (0.73kW to <185kW) (from 1 October 2001, revised April 2006)

- Single-phase air conditioners (from 1 October 2004, revised 1 April 2006 and 2007, revision proposed for 2011)
- Three-phase air conditioners up to 65kW cooling capacity (from 1 October 2001, revised 1 October 2007, revision proposed for 2011)
- Distribution transformers (from 1 October 2004)
- Ballasts for linear fluorescent lamps (from 1 March 2003). In addition to MEPS, ballasts also have to be marked with an energy efficiency index (EEI)
- Linear fluorescent lamps - from 550mm to 1500mm inclusive with a nominal lamp power >16W (from 1 October 2004)
- Commercial refrigeration (self-contained and remote systems) (from 1 October 2004)
- Incandescent lamps (from November 2009)
- Compact fluorescent lamps (from November 2009)
- External power supplies (from 1 December 2008)
- Set top boxes (from 1 December 2008)
- Televisions (from 1 October 2009)
- Commercial building chillers (from July 2009)
- Close control air conditioners (from July 2009)
- Transformers and electronic step-down converters for ELV lamps (from June 2010).

### 2.2.2. Building Energy Codes

#### a) Name

Building Code of Australia (BCA)—Energy Efficiency Provisions

#### b) Purpose

The aim of the BCA—Energy Efficiency Provisions is to improve the energy efficiency of the design and construction of new buildings. The BCA Energy Efficiency Provisions project was endorsed under the NFEE. Details can be found at [www.abcb.gov.au/](http://www.abcb.gov.au/).

#### c) Applicable sectors

Residential and commercial

#### d) Outline

Energy efficiency provisions for housing were first introduced in 2003 following an extensive consultation process. The provisions are produced and maintained by the Australian Building Codes Board (ABCB) on behalf of the Australian government and state and territory governments (through COAG). The 'deemed to satisfy' provisions vary according to the climate zone in which the building will be located. The original provisions included: the ability of the roof, walls and floor to resist heat transfer; the resistance to heat flow and solar radiation of the glazing; the sealing of the house; the provision of air movement for free cooling, in terms of openings and breeze paths; and the insulation and sealing of air conditioning ductwork and hot water piping.

The provisions were developed to achieve a nominal level of energy efficiency equivalent to a 3.5 to 4 star rating under the Nationwide House Energy Rating Scheme ([www.nathers.gov.au/](http://www.nathers.gov.au/)). Following the implementation of the provisions, some states indicated that they wanted to increase the stringency of the provisions. As such, provisions were developed by the ABCB to increase the nominal level of energy efficiency equivalent to 5 stars under NATHERS. Enhanced housing provisions were introduced in 2006. The most significant changes were made to the provisions on building fabric and external glazing.

In April 2009, COAG requested that the ABCB develop more stringent provisions to allow for a 6 star home rating to be included in the 2010 BCA. The new proposals must be subject to a

regulatory impact assessment (cost-benefit analysis) and be cost effective. The 2010 BCA energy efficiency provisions for residential and commercial buildings were agreed by the states and territories for adoption from 1 May 2010.

Under the National Strategy on Energy Efficiency, the Australian, state and territory governments agreed to develop a National Building Energy Standard-Setting, Assessment and Rating Framework. Its aim is to establish a consistent economy-wide approach to increasing the energy efficiency of residential and commercial buildings over time, underpinned by new economy-wide measurement and reporting metrics for rating the environmental performance of buildings.

#### e) Financial resources and budget allocation

AUD 1.535 million from the Australian government to the ABCB for 2009/2010

#### f) Expected results

Reduction in energy consumption, predominantly associated with thermal comfort, in new residential and commercial buildings, i.e. heating and cooling energy consumption.

### 2.2.3. Fuel Efficiency Standards

#### a) Name

Fuel consumption labelling standard (ADR81/02) and fuel consumption label

#### b) Purpose

Mandated fuel consumption labelling to enable new car purchasers to compare vehicles on a common basis and incorporate vehicle fuel use in their decision making. More information can be found at

<http://www.greenvehicleguide.gov.au/GVGPUBLICUI/Information.aspx?type=FuelConsumptionLabel>.

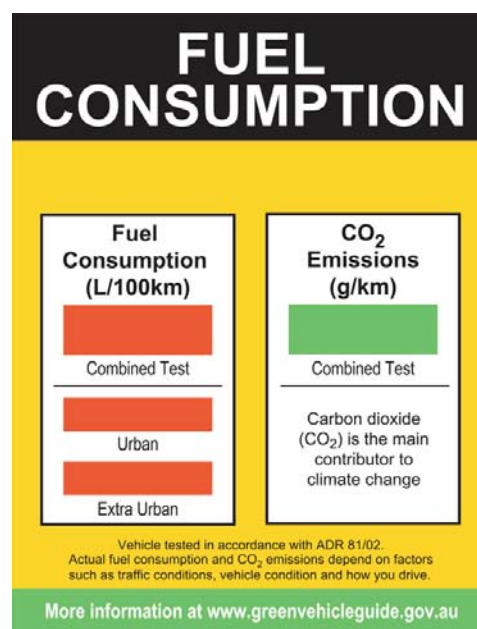
#### c) Applicable sectors

Transport

#### d) Outline

The fuel consumption labelling standard was introduced in 2004 (ADR81/01) and was subsequently updated in 2008 (ADR81/02). The standard requires all new vehicles up to 3.5 tonnes (which includes passenger cars, four wheel drive vehicles and light commercial vehicles) to display a model-specific removable fuel consumption label on the front windscreen.

The label indicates the fuel used (in litres) to travel 100 kilometres and the amount of CO<sub>2</sub> emissions (in grams) the vehicle emits for each kilometre travelled. The updated version of the label that took effect from October 2008 also displays figures for urban and extra-urban usage. The lower the numbers, the better the fuel efficiency and emissions of the vehicle.



In 2010, a revised version of the label (right) was developed for ADR81/02 to suit electric vehicles and plug-in hybrids. The new label uses the same format as the existing label, but recasts it as an Energy Consumption label, so as to enable the listing of the test results for energy consumption and range on the vehicle. The label includes fuel consumption and CO<sub>2</sub> emissions boxes as well, with pure electric vehicles displaying “0” and plug-in hybrids displaying the results from testing. A cross reference to the Green Vehicle Guide website

([www.greenvehicleguide.gov.au](http://www.greenvehicleguide.gov.au)) is provided to address the potential for CO<sub>2</sub> emissions from recharging.

Further measures are being developed under the NSEE.

**e) Financial resources and budget allocation**

No information available

**f) Expected results**

No information available

### 2.3. Voluntary Measures

Australia has a number of voluntary initiatives for improving energy efficiency. For example, the Australia Energy Star provides an international standard for energy efficient office equipment, including computers, printers and photocopiers, and home electronics, including televisions, audio products and DVD players. Products that display the Energy Star label have energy saving features enabled. See [www.energystar.gov.au/](http://www.energystar.gov.au/) for more details.

In addition, the Australian Government and the Federal Chamber of Automotive Industries (FCAI) agreed to a voluntary average fuel consumption target in 2003. The aim of the target is to progressively improve fuel consumption of new passenger vehicles to average 6.8 litres per 100 kilometres by 2010 (around 162 grams CO<sub>2</sub> a kilometre). In 2005, the FCAI developed a new industry target of 222 grams CO<sub>2</sub> a kilometre by 2010. The revised target incorporates a broader range of vehicles—passenger, sports utility vehicles (SUVs), light trucks etc.—and fuels.

A number of other projects have been developed with the support of the Australian government such as:

- WERS—Window Energy Rating Scheme
- EDG—Environmental Design Guides
- Building Design Association of Australia (BDAA) Marketing Sustainable Design Workshops
- Australian Council of Building Design Professions (BDP) Making Energy Pay
- Housing Industry Association (HIA) Greensmart Professional Accreditation Course
- Master Builders Association (MBA) Energy Wise—Dollar Wise Training Course
- Lighting Best Practice Project
- WELS—Water Efficiency Labelling and Standards.

### 2.4. Financial Measures Taken by the Government

#### 2.4.1. Tax Measures

Expenditure on capital equipment, which may improve energy efficiency, is generally deductible under capital allowance provisions. The Government has also committed to develop and implement additional tax incentives under the Tax Breaks for Green Buildings program. Businesses that invest in eligible assets or capital works to improve the energy efficiency of their buildings will be able to apply for a one-off bonus tax deduction. Approved projects will be able to claim a bonus tax deduction of 50% of the eligible assets or capital works on proof of performance levels being met. The program is expected to provide a boost of up to AUD 1 billion over its life to incentivise business to undertake major energy efficiency retrofits. The program is scheduled to commence from 1 July 2011.

#### 2.4.2. Low-Interest Loans

No information available

### 2.4.3. Subsidies and Budgetary Measures

There are a number of budgetary measures for energy efficiency improvement programs at the federal and state levels. One example is provided below.

**a) Name**

Low Carbon Communities

**b) Purpose**

Low Carbon Communities will provide AUD 80 million to support local councils and operators of community facilities to implement energy efficient upgrades to street and traffic lights, council buildings and community facilities.

**c) Applicable sectors**

Local government, community, sport and recreation.

**d) Outline**

The program will provide funds for energy efficiency including:

- Small scale matched funding grants for councils up to AUD 500 000 to retrofit council operated buildings and upgrade outdoor lighting.
- Large matched funding grants up to AUD 5 million for operators of community facilities with the support of their local council. Community facilities may include stadiums, education facilities, town halls or nursing homes. Funded projects could include the installation of cogeneration facilities or upgrades to heating and air conditioning systems and will be selected on the basis of: value for money; environmental outcomes; and demonstration of best practice in the deployment of cost-effective and integrated energy retrofits.

**e) Expected results**

The Government's objective is to support local councils and communities to reduce emissions and energy costs by stimulating investment in energy efficient upgrades to street lighting, community facilities and council buildings. Funded projects will also act as information hubs to motivate communities to take other actions to improve their energy efficiency.

### 2.4.4. Other Incentives

The Australian Government provides a number of rebates to improve energy efficiency in the agriculture, transport, residential, commercial, power and government sectors.

For a detailed description of Australian rebates for individuals see:

<http://www.livinggreener.gov.au/rebates-assistance> and for businesses see

<http://www.business.gov.au/BusinessTopics/Grantsandassistance/Pages/default.aspx>

## 2.5. Energy Pricing

The pricing mechanism for fuels and electricity in Australia is market-based—although some states apply retail price caps on social welfare grounds. The government's primary mechanism to drive improvements in energy efficiency will be placing a price on carbon.

## 2.6. Other Efforts for Energy Efficiency Improvements

### 2.6.1 Energy Efficiency in Government Operations Policy 2006

This policy aims to improve the energy efficiency of Australian government operations with particular emphasis on building energy efficiency. It commits to a progressive improvement of overall agency energy performance through minimum efficiency requirements and regular energy reporting.

A key objective of the policy is for Government office buildings to achieve specific energy efficiency targets by June 2011. Progress towards targets is tracked on an annual basis.

A major component of the policy is the Green Lease Schedule (GLS), through which Australian Government tenants and their building owners commit to working collaboratively to maintain and maximise the energy efficiency of the building. The GLS management framework enables agencies to incorporate required energy efficiency standards into their leases and other procurement activities.

### **2.6.2 Cooperation with Non-Government Organisations**

The government cooperates with non-government organisations to stimulate energy efficiency improvements as appropriate.

### **2.6.3 Cooperation through Bilateral, Regional and Multilateral Schemes**

The government cooperates with other economies through the Asia Pacific Partnership on Clean Development and Climate (APP). The APP brings together Australia, Canada, China, India, Japan, the Republic of Korea and the United States to address the challenges of climate change, energy security and air pollution in a way that encourages economic development and reduces poverty.

The International Partnership for Energy Efficiency Cooperation (IPEEC) is a high level international forum that provides global leadership on energy efficiency by identifying and facilitating government implementation of policies and programs that yield high energy-efficiency gains. IPEEC also aims to promote information exchange on best practices and facilitate initiatives to improve energy efficiency.

Founded in May 2009, IPEEC is a voluntary forum of developed and developing countries that represent the major economies of the world. As of October 2010, IPEEC members include Australia, Brazil, Canada, China, the European Union, France, Germany, India, Italy, Japan, Mexico, Russia, South Korea, United Kingdom and USA.

Relevant international standards are taken into account in the development of Australian MEPS.

### **2.6.4 Other Cooperation/Efforts for Energy Efficiency Improvements**

Australia is a member of the International Energy Agency and is involved in various working groups, including the Energy Efficiency Working Party. It is involved in discussions relating to better data collection and development of energy efficiency indicators.

Domestically, the Australian Government is engaging with the business sector through a series of public-private partnerships under the auspices of the Australian Carbon Trust Limited. The Australian Carbon Trust Limited (the Trust) was established in 2010 as a Commonwealth-owned company, with an independent Board of Directors. The Trust is operating as a revolving fund with over AUD 100 million in initial funding from the Australian government. In partnership with businesses and the wider community, the Australian Carbon Trust will provide financial support and advice to promote investment in energy efficiency technologies and building retrofits.

The Trust also administers the Carbon Neutral Program under the Australian Government's National Carbon Offset Standard (NCOS). The NCOS Carbon Neutral Program is a voluntary scheme which certifies products or organisations as carbon neutral and provides a trade mark for participants to use to promote their carbon neutral status. This helps consumers and businesses trust such claims and so give them another way to take effective action on climate change and energy efficiency.