

# AUSTRALIA

## 1. GOALS FOR EFFICIENCY IMPROVEMENT

### 1.1. Overall Energy Efficiency Improvement Goals

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 released its response as part of the Clean Energy Future package in July 2011. The Report is available at: <http://www.climatechange.gov.au/publications/energy-efficiency/report-prime-ministers-taskforce-energy-efficiency.aspx>.

The Clean Energy Future package contains a number of elements, including a price on carbon from 1 July 2012 and initiatives to encourage energy efficiency in Australia (discussed below). Further details on the Clean Energy Future package are available at [www.cleanenergyfuture.gov.au](http://www.cleanenergyfuture.gov.au)

### 1.2. Sectoral Energy Efficiency Improvement Goals

From 1 July 2012 the Australian Government will introduce a price on carbon in the Australian economy, which will contribute to energy efficiency incentives across a range of economic sectors. Further details on the carbon price are available at [www.cleanenergyfuture.gov.au](http://www.cleanenergyfuture.gov.au)

### 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 2012-13)

### 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 <http://www.energyrating.gov.au/resources/program-publications/?viewPublicationID=2204>.

### 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. 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 and electricity generators using more than 0.5 petajoules (PJ) of energy in a year must identify and report on energy efficiency opportunities both publicly and to the government.
- RET commissions work on industrial energy intensity (undertaken by the Australian Bureau of Resource and Energy Economics — BREE). 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 Industry, Innovation, Science, Research and Tertiary Education (DIISRTE). 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 and Climate Change
- 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 has terminated and it is intended that two new councils will be formed to assume the roles and responsibilities of the MCE: the Standing Council on Energy and Resources (SCER); and, the Select Council on Climate Change (SCCC).

It is intended that if formed, the SCCC will generally assume responsibility for matters of energy efficiency. However, an exception may apply in the case where matters of energy efficiency have an impact or are related to the National Energy Market.

Recently formed, SCER is comprised of all federal, state and territory energy and resources ministers.

#### **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 and will be available for use in early 2012. 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, was extended to electricity generators from 1 July 2011. Work is currently underway to expand EEO to include energy transmission and distribution networks as well as covering the design phase of major greenfield and expansion projects. Inclusion of transmission and distribution networks in EEO could see significant reductions in network losses, which would lower carbon pollution from electricity use and put downward pressure on energy prices. The Government is also considering a voluntary program for medium sized energy users. Such a voluntary scheme will allow the significant resources and information available under the existing program to be tailored to these energy users, a key element of which will be training, mentoring and help with program management.

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 July 2011 the Australian Government announced the Clean Energy Future package (CEF). CEF has four main elements: a carbon price, renewable energy, energy efficiency and action on the land (such as the storing of soil carbon, revegetation and forest conservation).

The carbon price scheme comes in two phases. The first phase will be a fixed-price period and the second phase, a market based emissions trading scheme. The fixed price period will last for 3 years and will commence on 1 July 2012 (subject to legislation passing through the federal parliament).

In addition to a price on carbon, there are a number of energy efficiency specific initiatives under CEF.

##### *National Energy Savings Initiative*

In its 2010 report, the Prime Minister's Task Group on Energy Efficiency recommended the introduction of a national Energy Savings Initiative (ESI). The Government has committed to develop a national ESI as part of the Clean Energy Future package.

The Australian Government is currently undertaking further work on the costs and benefits of a national scheme to replace existing State-based schemes which operate in South Australia, Victoria and New South Wales. This would reduce complexity and duplication and allow energy consumers in states without existing schemes to benefit. A national ESI would place obligations on energy retailers to help households, businesses and industry install energy efficient goods and technologies.

Subject to the findings of economic modelling and regulatory impact analysis, the Australian Government will make a final decision on whether to adopt a national ESI. A national ESI

would be conditional on the agreement of the Council of Australian Governments and the abolition of existing and planned state schemes.

#### *Clean Energy Finance Corporation*

A new \$10 billion Clean Energy Finance Corporation is to be established that will be independent from the Australian Government and will invest in the commercialisation and deployment of renewable energy, low-pollution and energy efficiency technologies. It will also invest in manufacturing businesses that provide inputs for these sectors. Investments will be divided into two streams, a renewable energy stream and a clean energy stream, each with half of the allocated funding. This program does not include investment in carbon capture and storage (CCS) which is already catered for through a number of other programs such as the Global CCS Institute and the CCS Flagships program.

#### *Clean Technology Program*

The Clean Technology Program (CTP) is a \$1.2 billion program to help directly improve the energy efficiency of manufacturing industries and support research and development in low-pollution technologies. Of that funding, \$150 million will be targeted at the food processing industry, and \$50 million for the metal forging and foundry industries.

The CTP will provide funding for the Clean Technology Innovation Program, a \$200 million investment in further support for businesses for research and development in the areas of renewable energy, low-pollution technology and energy efficiency.

The CTP will also provide funding for the Clean Technology Investment Program, providing \$800 million in grants to manufacturers to support investments in energy-efficiency capital equipment and low-pollution technologies, processes and products. Manufacturing businesses with facilities that use more than 300 megawatt hours of electricity or five terajoules of natural gas per year, or are covered by the carbon pricing mechanism, will be eligible to apply for grants under this program.

#### *Steel Transformation Plan*

The Steel Transformation Plan will provide assistance worth up to \$300 million over five years to encourage investment and innovation in the Australian steel manufacturing industry. The Steel Transformation Plan is designed to improve the environmental outcomes of steel manufacturing and promote the development of workforce skills.

#### *Clean Energy Skills Program*

Funding of around \$32 million will help educational institutions and industry develop the materials and expertise needed to promote clean energy skills. The Clean Energy Skills Program will provide the foundation for the new type of workplace skills that will become increasingly more valuable as Australia moves to a clean energy economy. Tradespersons and professionals alike will be eligible for assistance under this program to develop the skills needed to deliver energy efficiency services, clean energy projects and low pollution products to Australian households, communities and businesses.

#### *Energy Efficiency Information Grants*

The Energy Efficiency Information Grants program will provide \$40 million in grants over four years to industry associations and non-government organisations which have established relationships with small businesses and community organisations to deliver information about



the implications of the Government's Clean Energy Future package and how to reduce energy costs.

### *Living Greener*

The Living Greener initiative will provide a website and household advice line that gives householders information on living sustainably and will connect to all Commonwealth, state and territory energy efficiency and climate change programs. The website will include information on how households can improve energy efficiency to save dollars and cut carbon pollution.

### *Low Carbon Communities*

The Government's Low Carbon Communities program will be expanded to provide funding through competitive grants to local councils and communities to improve energy efficiency in council and community-use buildings and facilities, and to assist low-income households. Funding for the program will be increased from \$80 million to \$330 million.

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.

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## **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 and natural gas networks. This mainly covers the mining, resource processing, manufacturing, transport and commercial sectors.

##### **d) Outline**

Participation in EEO is mandatory for corporations and electricity generators 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 300 participants on 6 December 2011) registered for the program account for around 60% of all energy end-use. Extension to electricity transmission and distribution networks will increase coverage to around 65% of total energy end 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. The *Clean Energy Future* package outlines further funding for the program out to 30 June 2017.

### **e) Expected results**

Abatement and energy efficiency improvements from the program are significant. The latest program results show that in 2009–10, 207 companies reported that they had assessed 85% of their energy use. From these assessments they had identified energy efficiency opportunities with annual savings of 141.9 petajoules (PJ) or 9.8% of energy use assessed. From these identified opportunities, companies reported they will implement savings of 75.5 PJ, or 53% of the identified savings. This is worth more than AUD 650 million a year in net financial benefits, saving an estimated 6 million tonnes of CO<sub>2</sub> equivalent a year or 1% of Australia's total greenhouse gas emissions.

Another 30% of opportunities (43.0 PJ) are under further investigation and 17% (23.4 PJ) were not to be implemented at the reporting date. The report '*Continuing Opportunities – A Look at Results for the Energy Efficiency Opportunities Program 2006–2010*' is available on the Department's website at: <http://www.ret.gov.au/energy/efficiency/eeo/pages/default.aspx>.

Savings to be implemented represent an average net abatement saving of approximately AUD 117 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.

## **2.1.2. Hot Water Phase Out Program**

### **a) Name**

Phase out of greenhouse intensive (electric resistance) 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 has begun and is being implemented through the Building Code of Australia. Restrictions are now in place on the installation of greenhouse intensive water heaters in new detached, terrace, row and town houses. Stage 1 (2010) for existing homes is being implemented on a State by State basis in areas with access to reticulated gas. Queensland and South Australia have already commenced.

(ii) 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. The phase out is expected to extend across the country (except Tasmania) during 2012.

Research is currently being undertaken into the feasibility of extending the program to cover new apartments, flats and high rise buildings from 2013.

**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, most sellers or lessors of office space of 2000 square metres or more are required to obtain and disclose a current Building Energy Efficiency Certificate (BEEC). 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

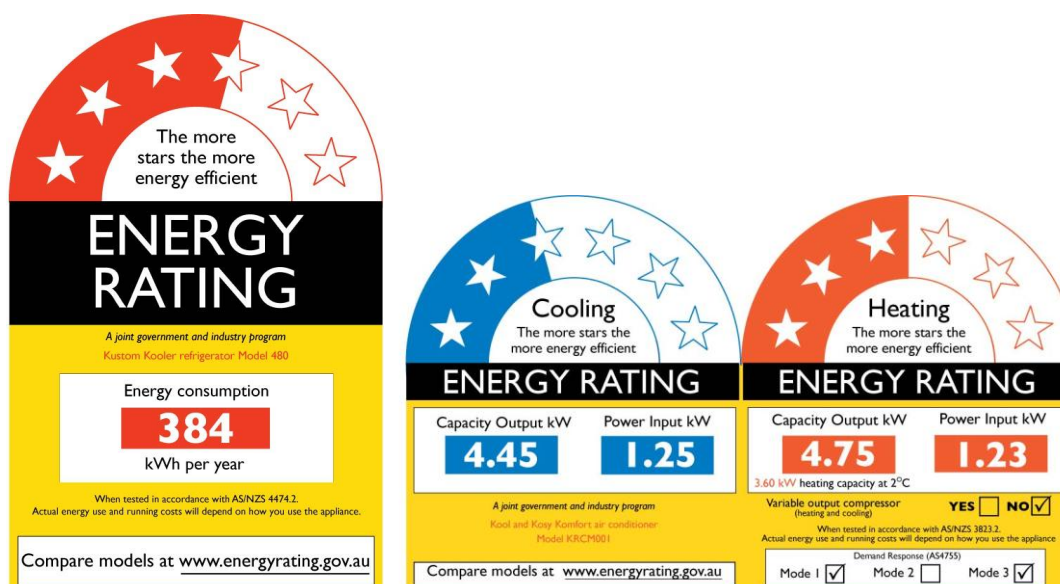
Mandatory MEPS and energy efficiency labelling are covered by the Equipment Energy Efficiency Program (E3), which is co-funded by the Australian Government, state and territory governments and the New Zealand Government. Products are included in the program based on whether the community would benefit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

The following products are also regulated on the basis of MEPS—this means that they have regulated minimum energy efficiency labels:

- Refrigerators and freezers
- Mains pressure electric storage water heaters
- Small mains pressure electric storage water heaters (<80L) and low pressure and heat exchanger types
- Three-phase electric motors (0.73kW to <185kW)
- Single-phase air conditioners
- Three-phase air conditioners up to 65kW cooling capacity
- Distribution transformers
- Ballasts for linear fluorescent lamps. 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
- Commercial refrigeration (self-contained and remote systems)
- Incandescent lamps
- Compact fluorescent lamps
- External power supplies
- Set top boxes
- Televisions
- Commercial building chillers
- Close control air conditioners
- Transformers and electronic step-down converters for ELV lamps.

The Australian Government is also working to introduce Greenhouse and Energy Minimum standards which will act as an expansion to the existing MEPS program and will cover additional products that consume other types of energy (e.g. gas) or do not consume energy but affect the energy efficiency of appliances (e.g. air conditioner ducting, building insulation or window glass).

### 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

No information available

#### 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

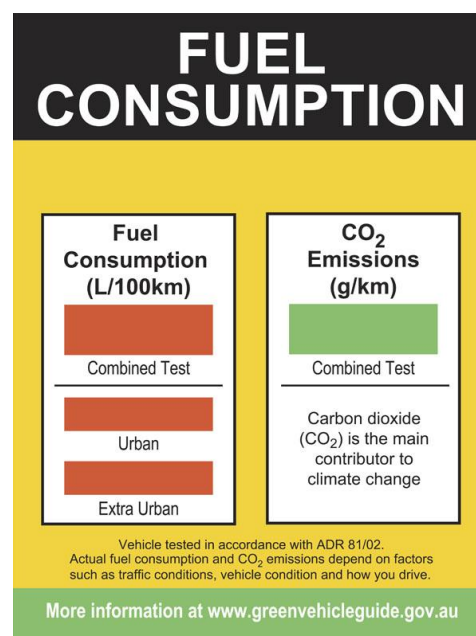
Mandated fuel consumption labelling to enable new car purchasers to compare vehicles on a common basis and incorporate vehicle fuel use in their decision making. More information can be found at <http://www.greenvehicleguide.gov.au/GVGPublicUI/Information.aspx?type=FuelConsumptionLabel>.

#### 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 2012.

#### 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, comprised of two main programs, the Community Energy Efficiency Program and the Low Income Energy Efficiency Program, provides AUD 330 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. It also supports low income households in trials of energy efficiency approaches and to find more sustainable ways of manage their energy consumption.

##### c) Applicable sectors

Local government, community, sport and recreation, low income households.

##### d) Outline

The Australian Government is currently considering program design and anticipates that the program guidelines for both programs will be released in early 2012. However, broadly the programs will achieve the following:

- The \$200 million Community Energy Efficiency Program will support energy efficiency upgrades to council and community-use buildings, facilities and lighting.
- The \$100 million Low Income Energy Efficiency Program will support consortia of Community organisations, local councils and energy service companies to trial energy efficiency approaches in low income households.
- The \$30 million Home Energy Saver Scheme will assist low income households find more sustainable ways to manage their energy consumption.

##### e) Expected results

The Government's objective is to support local councils, communities and households to reduce emissions and energy costs by stimulating investment in energy efficient upgrades to street lighting, community facilities, council buildings and low income households. 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 is the price on carbon that will come into effect from 1 July 2012.

## **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 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 December 2011, 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 Low Carbon Australia Limited. Formerly known as the Australian Carbon Trust, Low Carbon Australia (LCA) was established in 2010 as a Commonwealth-owned company, with an independent Board of Directors. LCA 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,

LCA provides financial support and advice to promote investment in energy efficiency technologies and building retrofits.

LCA 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.