

AUSTRALIA

ENERGY EFFICIENCY GOALS

1. GOVERNMENT POLICY ON ENERGY EFFICIENCY

The Australian Government released the Energy White Paper 2015 (EWP 2015) to provide consumers with certainty and confidence in energy policy. The EWP 2015 includes a strategic policy framework that addresses the challenges in Australia's energy sector and positions the economy for long-term transformation regarding the way it produces and uses energy.

As part of the EWP 2015, the government announced a National Energy Productivity Plan (NEPP), including an energy productivity improvement target of 40% between 2015 and 2030. This is equivalent to a 402 petajoule (PJ) energy demand reduction compared to business-as-usual (BAU). Energy productivity will be measured as the number of Australian dollars of GDP produced per PJ of primary energy. Australia also has an emissions reduction target of 26% to 28% below 2005 levels by 2030.

There are a number of Government programmes, grants and incentives to assist in achieving the 40% energy productivity improvement.

2. ENERGY EFFICIENCY STRATEGY

The key objective of the NEPP is to empower energy consumers in all sectors to make better energy decisions and effectively manage their energy costs. Attached to this overall objective is the 40% energy productivity target. The NEPP includes:

- Measures that support efficient decisions when selecting energy services such as smart meters, cost-reflective prices, access to information, and labels.
- Measures that support the development of better energy services through innovation and competition such as reducing barriers to entry in the market for new technologies and service options.
- Measures that ensure efficient minimum services and performance including those through standards for equipment, appliances, and buildings as well as financial resources and budget allocation.

FUNDING

The NEPP is not funded directly; however, a number of other programmes at state and federal level will contribute to achieving the target.

LINKS

The National Energy Productivity Plan: <http://www.environment.gov.au/energy/national-energy-productivity-plan>

3. ENERGY EFFICIENCY ACTION PLAN

Not applicable.

4. ENERGY EFFICIENCY, INTENSITY OR EMISSIONS REDUCTION TARGETS

The National Energy Productivity Plan, discussed previously, is the government's tent pole energy efficiency policy. It targets an energy productivity improvement of 40% between 2015 and 2030.

The Australian Government is also committed to reducing greenhouse gas emissions to 26% to 28% below 2005 levels by 2030.

LINKS

The National Energy Productivity Plan: <http://www.environment.gov.au/energy/national-energy-productivity-plan>

Climate Change Policy: <http://www.environment.gov.au/climate-change>

5. SECTORAL ENERGY EFFICIENCY TARGETS

The EWP 2015 and NEPP do not state sectoral targets although the EWP does provide estimates of potential energy savings by sector. If all energy efficiency potential is achieved, then Australia would far surpass its energy productivity target.

LINKS

NEPP Annual Report 2016: <http://www.coagenergycouncil.gov.au/publications/national-energy-productivity-plan-annual-report-2016>

6. LEAD ENERGY EFFICIENCY INSTITUTIONS

The Department of the Environment and Energy (DEE). Established in July 2016 from components of the former Department of the Environment and Department of Industry, Innovation and Science.

INSTITUTIONAL SETTINGS AND RESPONSIBILITIES

The Australian Constitution divides legislative powers between the national and state governments. As such, policy responsibility for energy efficiency varies between the levels of government. At the economy level, the DEE has direct responsibility for the development of energy efficiency policies and measures as well as the coordination of the implementation of the NEPP. A number of other federal government agencies have sectoral interests in energy efficiency, including the departments in charge of transport, industry, research and development and education.

STAFF AND BUDGET

Total departmental resourcing is estimated to be AUD \$62.96 million in the 2016-17 financial year with an average staffing level of 1 755. Specific energy efficiency budget and staffing numbers are not available.

BUDGET USE

Not available.

LINKS

The DEE: <http://www.environment.gov.au>

The 2016 DEE Budget: <http://www.environment.gov.au/system/files/resources/cf243495-d7df-4dc8-84fd-4411be7f4df7/files/environment-pbs-2016-17.pdf>

7. OTHER ENERGY EFFICIENCY AGENCIES

The NEPP is the main mechanism for coordinating energy efficiency policies and actions with the state and local governments through the Commonwealth of Australian Governments (COAG). At the state/territory level, there is a wide range of institutional structures. The following list covers the agencies that are primarily responsible for energy efficiency:

- Australian Capital Territory: The Environment, Planning and Sustainable Development Directorate.
- New South Wales: Department of Planning and Environment.
- Northern Territory: Department of Lands, Planning and the Environment.
- Queensland: Department of Energy and Water Supply.
- South Australia: Department of State Development and Department of Environment, Water and Natural Resources.
- Tasmania: Department of State Development and Department of Premier and Cabinet.
- Victoria: Department of Environment, Land, Water and Planning.
- Western Australia: Public Utilities Office within the Department of Finance.

LINKS

ACT: <http://www.environment.act.gov.au/>

NSW: <http://www.environment.nsw.gov.au/> and <http://www.resourcesandenergy.nsw.gov.au>

NT: <https://denr.nt.gov.au/>

QLD: <https://www.dews.qld.gov.au/>

SA: <http://www.environment.sa.gov.au/Home> and <http://statedevelopment.sa.gov.au/resources/energy-efficiency>

TAS: <http://www.stategrowth.tas.gov.au/energy> and http://www.dpac.tas.gov.au/divisions/climatechange/Climate_Change_Priorities

VIC: <https://www.climatechange.vic.gov.au/>

WA: http://www.finance.wa.gov.au/cms/Public_Uilities_Office.aspx

8. ENERGY EFFICIENCY INFORMATION DISSEMINATION

At the federal level, DEE manages a wide range of information, capacity building, and knowledge-sharing web resources, including the following:

- The Energy Efficiency Exchange (EEX) – supporting energy management and energy efficiency strategies for industry, covering a range of sectors and technologies.
- YourEnergySavings.gov.au – how to save energy, save money, and reduce one’s impact at home, including information regarding all available government assistance.
- YourHome.gov.au – providing guidance on building and renovating homes in a sustainable manner.

The department also manages the COAG website for the Equipment Energy Efficiency Programme and developed several mobile applications that allow consumers to compare the energy efficiency of labelled appliances and lighting through their smartphones.

LINKS

Energy Efficiency Exchange: <http://www.eex.gov.au>

Your Savings at Home: <http://www>YourEnergySavings.gov.au>

Your Home: <http://www>YourHome.gov.au>

Energy Rating: <http://www.energyrating.gov.au>

9. ENERGY EFFICIENCY AWARENESS RAISING

There are no economy-wide energy efficiency awareness-raising programmes. However, awareness campaigns may be undertaken within specific initiatives such as the phasing out of inefficient incandescent lighting. Some states also participate in awareness-raising activities.

LINKS

10. GOVERNMENT SUPPORTED ENERGY EFFICIENCY TRAINING

The NEPP includes a number of measures related to capacity building for industry, including supporting businesses to improve their energy efficiency and assisting businesses to ensure that they have adequate knowledge and skills as well as the 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 number of state governments also offer energy efficiency training, particularly targeted towards business.

LINKS

NSW Training: <http://www.environment.nsw.gov.au/business/energy-efficiency-training.htm>

VIC Training: <http://www.sustainability.vic.gov.au/services-and-advice/business/energy-and-materials-efficiency-for-business/boosting-productivity/energy-efficiency-capability-grants>

11. PRIVATELY OPERATED TRAINING

A significant number of professional and industry organisations, universities and vocational education institutions provide training related to energy efficiency.

LINKS

Energy Efficiency Exchange Training Providers: <https://www.eex.gov.au/business-support/energy-efficiency-skills-and-training/energy-efficiency-training-providers>

Higher Education Training Providers: <http://sustainability.edu.au/>

12. GOVERNMENT SUPPORTED RESEARCH & DEVELOPMENT

In general, Australia adopts a technology-neutral approach to research and development funding, with researchers focusing on energy efficiency-related projects that compete with other projects for funding. However, there are a number of specific programmes that support energy efficiency R&D.

- Clean Energy Finance Corporation

The AUD \$10 billion Clean Energy Finance Corporation was established in July 2013, independent from the Australian Government. It invests in the commercialisation and deployment of renewable energy, low pollution, and energy-efficient technologies. Investments are divided into two streams: a renewable energy stream and an energy-efficient, low-emissions technology stream, each with half of the allocated funding.

- Entrepreneurs' Programme

Provides practical support for business, researchers and entrepreneurs including in the form of co-funded grants to commercialise novel intellectual property in the form of new products, processes and services.

- Cooperative Research Centres (CPC) Programme

Supports industry-lead collaboration between industry, researchers and the community to focus on research and development towards commercialisation.

LINKS

CEFC: <http://www.cefc.com.au/>

Entrepreneurs' Programme: <https://www.business.gov.au/assistance/entrepreneurs-programme>

CPC Programme: <https://www.business.gov.au/assistance/cooperative-research-centres-programme>

ENERGY EFFICIENCY MEASURES

13. COLLECTION AND MONITORING OF ENERGY EFFICIENCY OUTCOMES

At the federal level, the Department of the Environment and Energy is responsible for energy efficiency policy and analysis. Assessments of programmes are generally carried out ex post either by the Department or externally at the Department's request.

State and Territory Governments also generally carry out assessments of their own programmes when completed.

LEGAL POWERS

The National Greenhouse and Energy Reporting Scheme (NGERS), established in 2007, is the national framework for reporting and disseminating company information about greenhouse gas emissions, energy production and consumption and other information specified under the legislation and is administered by the Clean Energy Regulator. For the 2010-11 financial year and subsequent years, corporations must report if their group consumes more than 200 terajoules (TJs) of energy per year or if a facility in their group consumes more than 100 TJs of energy per year.

LINKS

NGERS: <http://www.cleanenergyregulator.gov.au/NGER>

14. EVALUATION OF ENERGY EFFICIENCY PROGRESS OR POTENTIAL

Surveys, statistical compilations, end-use information, monitoring, and trend analysis are all undertaken. In addition, databases are maintained to assist in programme evaluation, meeting international reporting obligations, and policy formation. The Australian Government's DEE is mainly responsible for energy efficiency monitoring and reporting. Its programmes and measures include:

- Through the Commercial Building Disclosure Programme, the DEE produces a public listing of energy performance regarding office buildings in Australia, along with an increasingly rich set of data analyses.
- The DEE also publishes the Australian Energy Statistics, Australia's official and authoritative source of energy statistics. The Australian Bureau of Statistics also collects and publishes a wide range of energy-related statistics.

LINKS

NGERS: <http://www.cleanenergyregulator.gov.au/NGER>

CBD dataset: <http://cbd.gov.au/registers>

Australian Energy Statistics: <http://www.environment.gov.au/energy/energy-statistics>

Australian Bureau of Statistics Energy Statistics: <http://www.abs.gov.au/Energy>

15. SELF-EVALUATION OF ENERGY EFFICIENCY PROGRAMMES

Government funded programmes are usually required to conduct an evaluation when concluded.

16. CROSS-SECTOR ENERGY EFFICIENCY INITIATIVES

Emissions Reduction Fund

OBJECTIVE

Provides businesses with the opportunity to earn Australian carbon credit units (ACCUs) for every tonne of carbon dioxide equivalent stored or avoided emitting through projects that adopt new practices and technologies. ACCUs can then be sold to generate income.

OUTLINE

The Emissions Reduction Fund (ERF) is a scheme that provides financial incentives to organisations and individuals to use new practices and technologies in their business, so they can reduce their greenhouse gas emissions and improve their energy efficiency.

Participants in the scheme can earn Australian carbon credit units (ACCUs) for every tonne of carbon dioxide equivalent they store or avoid emitting. ACCUs can be sold to generate income for participants.

To ensure emissions reductions are not displaced by a rise in emissions elsewhere in the economy, the Emissions Reduction Fund includes a safeguard mechanism, which encourages large businesses to keep their emissions within historical levels.

LINKS

ERF: <https://www.business.gov.au/assistance/emissions-reduction-fund>

Tax measures

OBJECTIVE

The Australian Government offers an R&D tax incentive programme to encourage more Australian companies to undertake R&D.

OUTLINE

The incentive allows for:

- A 43.5% refundable tax offset for eligible R&D entities with a turnover of less than \$20 million per annum.
- A non-refundable 38.5% tax offset for all other eligible R&D entities.

To be eligible, energy efficiency projects must be experimental, based on established scientific principles and processes, and be conducted for the purpose of generating new knowledge.

LINKS

Energy Efficiency Tax Incentives: <https://www.eex.gov.au/business-support/grants-funding/tax-incentives>

R&D Tax Incentive: <https://www.business.gov.au/assistance/research-and-development-tax-incentive>

17. INDUSTRY ENERGY EFFICIENCY INITIATIVES

Not applicable.

18. TRANSPORT ENERGY EFFICIENCY INITIATIVES

Fuel Consumption Labelling Standard (ADR81/02) and Fuel Consumption Label

OBJECTIVE

Mandated fuel consumption labelling to enable new vehicle purchasers to compare vehicles on a common basis and incorporate vehicle fuel use into their decision-making processes.

OUTLINE

The fuel consumption labelling standard was introduced in 2004 (ADR81/01) and subsequently updated in 2008 (ADR81/02). The standard requires all new vehicles up to 3.5 tons (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 CO₂ emissions (in grams) that the vehicle emits for each kilometre travelled.

In 2010, a revised version of the fuel consumption label, ADR81/02, was developed to suit electric vehicles and plug-in hybrids. The new label uses the same format as the existing label, but reframed as an Energy Consumption label in order to list the test results for energy consumption and range on the vehicle. The label also includes fuel consumption and CO₂ emissions, with pure-electric vehicles displaying '0' and plug-in hybrids displaying their respective testing results. A cross reference to the Green Vehicle Guide website is also provided to address the potential for CO₂ emissions during recharging.

LINKS

Green Vehicle Guide: <http://www.greenvehicleguide.gov.au/pages/Information/FuelConsumptionLabel>

Fuel Consumption Labelling: https://infrastructure.gov.au/roads/environment/fuel_consumption_label.aspx

19. BUILDING ENERGY EFFICIENCY INITIATIVES

Commercial Building Disclosure (CBD)

OBJECTIVE

The CBD Programme is an economy-wide initiative designed to improve the energy efficiency of Australia's large office buildings.

OUTLINE

Under the programme, most sellers or lessors of office space of 2000 square meters (1000 square meters from 1 July 2017) or more are required to obtain and disclose a current Building Energy Efficiency Certificate (BEEC). The BEEC, which is valid for 12 months, must be publicly accessible on the online Building Energy Efficiency Register and include the following:

- 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.

The Commercial Building Disclosure programme aims to stimulate investment in energy efficiency improvements to existing commercial buildings 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 programme will lead to more informed purchasers and lessees as well as help transition the commercial office market to a low-carbon future. The programme also provides a wide range of public information that is useful to energy service providers in identifying markets for improved energy-performance services.

LINKS

Commercial Building Disclosure: <http://cbd.gov.au/>

Minimum Energy Performance Standards and Labelling

OBJECTIVE

To specify mandatory requirements for the minimum energy performance standards and energy labelling of appliances, including offences and penalties for non-compliance.

OUTLINE

The Greenhouse and Energy Minimum Standards Act 2012 (GEMS Act) provides the framework for mandatory minimum energy performance standards (MEPS) and energy efficiency labelling. Products are included in the programme 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 they are set to be the equivalent of the world's best practices, 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 includes two main features. First, 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). In this case, the more stars, the more efficient the appliance is compared to other models of similar size and capacity. Second, the label displays an estimated energy consumption figure based on typical use of the appliance (usually in kWh/year).

The star system is regularly regraded in order 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). Labelling is mandatory for the following electrical products sold in Australia:

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

A number of other products, including certain types of water heaters, air conditioners, power supplies and lamps are also regulated by MEPS.

LINKS

MEPS: <http://www.energyrating.gov.au/>

National Construction Code (NCC) - Energy Efficiency Provisions

OBJECTIVE

The aim of the NCC – Energy Efficiency Provisions is to improve the energy efficiency of the design and construction of new buildings by reducing the energy consumption predominantly associated with thermal comfort, lighting, and hot water.

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 and state and territory governments (through the 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 (NatHERS), which includes a maximum rating of 10 stars. Following the implementation of the provisions, some states indicated that they wanted to increase the stringency of the provisions. As such, the 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 were subject to a regulatory impact assessment (cost-

benefit analysis) which found them to be cost-effective. In addition to enhanced provisions for the thermal shell of residential buildings, the new residential standards included requirements for hot water and lighting. The 2010 BCA energy efficiency provisions for residential and commercial buildings were agreed on by the states and territories and adopted on May 1, 2010.

LINKS

National Construction Code: <http://www.abcb.gov.au/Resources/NCC>

NatHERS: www.nathers.gov.au

The National Carbon Offset Standard (NCOS)

OBJECTIVE

The NCOS sets requirements for becoming carbon neutral based on a rigorous and transparent framework.

OUTLINE

The National Carbon Offset Standard, which was introduced by the government on July 1, 2010, is administered by the Department of the Environment and Energy. The NCOS's Carbon Neutral Programme is a voluntary scheme that certifies products or organisations as 'carbon neutral' and provides a trademark for participants to promote their carbon neutral status. This helps consumers and businesses trust such claims as well as provide them with another way to take effective action on climate change and energy efficiency.

LINKS

National Carbon Offset Standard: <http://www.environment.gov.au/climate-change/carbon-neutral/ncos>

20. ENERGY EFFICIENCY COOPERATION

COOPERATION AGREEMENTS WITH OTHER ECONOMIES OR ORGANISATIONS

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

The Australian Government is committed to engaging with the business sector and providing support to new technologies through public-private partnerships, including the \$10 billion CEFC. The objective of the CEFC is to overcome capital market barriers that hinder the financing, commercialisation, and deployment of commercially oriented, energy-efficient, renewable, and low-emissions technologies.

The CEFC was built on the success of Low-Carbon Australia Limited (LCAL), formally the Australian Carbon Trust, which provided more than \$100 million in funding to promote investment in energy efficiency and building retrofits. Concurrent with the commencement of operation of the CEFC, in July 2013, the LCAL and the CEFC merged, which allowed the CEFC to leverage off the systems and the expertise of the LCAL, while providing certainty as well as the efficient delivery of financial support to the market.

BILATERAL, REGIONAL OR MULTILATERAL COOPERATION AGREEMENTS

Australia is a member of the International Energy Agency (IEA) and Asia Pacific Economic Cooperation and is involved in various energy efficiency working groups associated with these organisations. It is also involved in discussions related to better data collection and the development of energy efficiency indicators.

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 programmes that yield considerable energy efficiency gains. The IPEEC also aims to promote information regarding best practices as well as facilitate initiatives to improve overall energy efficiency.

Founded in May 2009, the IPEEC is a voluntary forum of developed and developing countries that represent the major economies of the world. As of September 2017, the members of the IPEEC include: Australia, Argentina, Brazil, Canada, China, the European Union, France, Germany, India, Italy, Japan, Mexico, Russia, South Africa, South Korea, the United Kingdom, and the United States.

Relevant international standards are considered in the development of Australian MEPS.

LINKS

The IEA: <https://www.iea.org/topics/energyefficiency/>

IPEEC: <https://ipeec.org/>

21. OTHER ENERGY EFFICIENCY EFFORTS

Energy Efficiency in Government Operations

The purpose of this policy is to improve the energy efficiency of Australian government operations with particular emphasis on building energy efficiency. It is committed to progressive improvement of overall agency energy performance through minimum efficiency requirements and regular energy reporting.

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 in order to maintain and maximise the energy efficiency of the building. The GLS management framework also enables agencies to incorporate required energy efficiency standards into their leases and other procurement activities.

LINKS

<http://www.environment.gov.au/energy/efficiency/non-residential-buildings/government-buildings/eego>