REPORT NO: 2009/14

EQUIPMENT ENERGY EFFICIENCY PROGRAM

DECEMBER 2009

ACHIEVEMENTS > 2008/09

AN INITIATIVE FORMING PART OF THE AUSTRALIAN NATIONAL FRAMEWORK FOR ENERGY EFFICIENCY AND THE NEW ZEALAND NATIONAL ENERGY EFFICIENCY AND CONSERVATION STRATEGY

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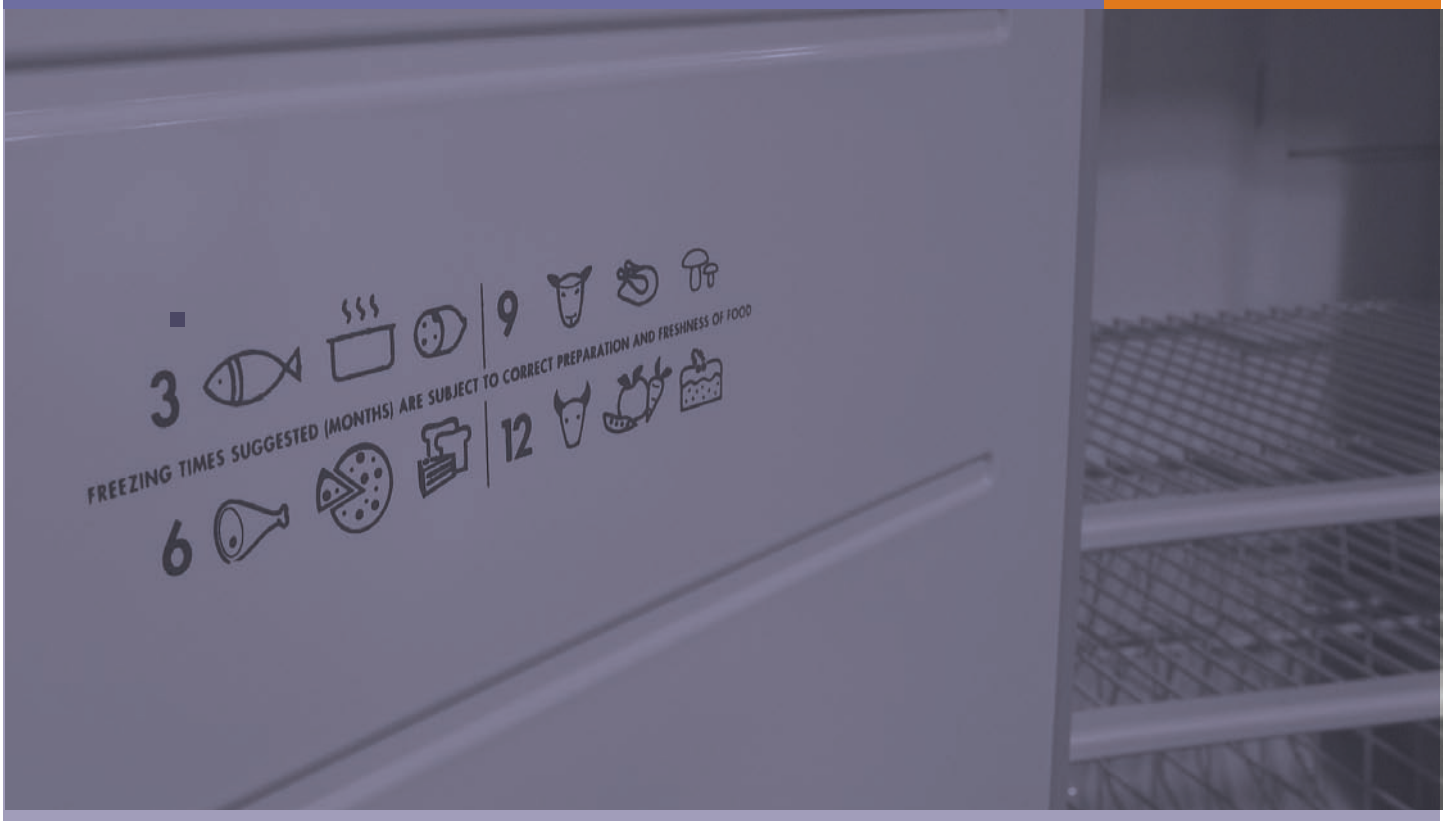

> ACHIEVEMENTS 2008/09 is the annual report of the Equipment Energy Efficiency Program – formerly known as the National Appliance and Equipment Energy Efficiency Program, which commenced nationally in Australia in 1992.

> This report highlights the progress made in the 12 month period from 1 July 2008 to 30 June 2009, against the goals set for the Program by the Ministerial Council on Energy.

> More information about the E3 Program can be found at www.energyrating.gov.au

> This is the 8th annual report since the Program was substantially upgraded in 1999.

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EXECUTIVE SUMMARY

This report details the activities and achievements of a program that has been more than 20 years in development. The very first label appeared on products in Australia in 1986 and in New Zealand in 2002. The program continues to build upon its success and manages $3.0 million in program funding for the 2008/09 financial year.

Equipment and appliances are a major source of energy consumption and greenhouse gas emissions in Australia and New Zealand. Improving the energy efficiency of appliances and equipment is therefore a key objective for all Australian governments and the New Zealand Government.

Under the National Framework for Energy Efficiency (NFEE) and the New Zealand Energy Efficiency and Conservation Stratgey (NZEECS), the Equipment Energy Efficiency (E3) Program embraces a range of measures aimed at increasing the energy efficiency of products used in the residential, commercial and manufacturing sectors in Australia and New Zealand. The main policy tools used to achieve these outcomes are:

1. Minimum energy performance standards (MEPS) (set-out in the relevant product standard published by Standards Australia).
2. Mandatory energy efficiency rating labelling (set-out in the relevant product standard published by Standards Australia and Standards New Zealand).
3. Voluntary measures including endorsement (ENERGY STAR in New Zealand) and labelling.
4. Training and support to promote the most energy efficient products.

PROGRAM RELEVANCE

Over 2008/09 the importance of an effective energy efficiency program such as E3 became increasingly apparent due to a number of factors. Firstly, the release of prominent domestic climate change impact studies such as the Garnaut Review and the Wilkins Review highlighted the need for immediate and effective greenhouse gas abatement action. The latter reinforced the E3 Program as an effective complementary measure to Australia's future under a Carbon Pollution Reduction Scheme[1](CPRS).

Secondly, the Council of Australian Government's (COAG) commitment to develop a wide-reaching National Strategy for Energy Efficiency (NSEE) will significantly expand the scope of both labelling and MEPS under E3 going forward. The NSEE incorporates and builds on the NFEE by accelerating energy efficiency efforts; streamlining roles and responsibilities across levels of governments; and by helping households and businesses prepare for the introduction of a CPRS. More specifically, the NSEE enhances existing E3 Program measures by:

- Accelerating and expanding the MEPS and labelling program, and establishing national legislation for these matters.

The E3 Program achieves energy savings by applying more stringent energy requirements on an expanding range of appliances and domestic and commercial appliances.

1 Roger Wilkins, Strategic Review of Australian Government Climate Change Programs (31 July 2008) Available Online at: http://www.finance.gov.au/publications/strategic-reviews/docs/Climate-Report.pdf p95.

Internationally, the E3 Program has continued to demonstrate international leadership on energy efficiency initiatives.

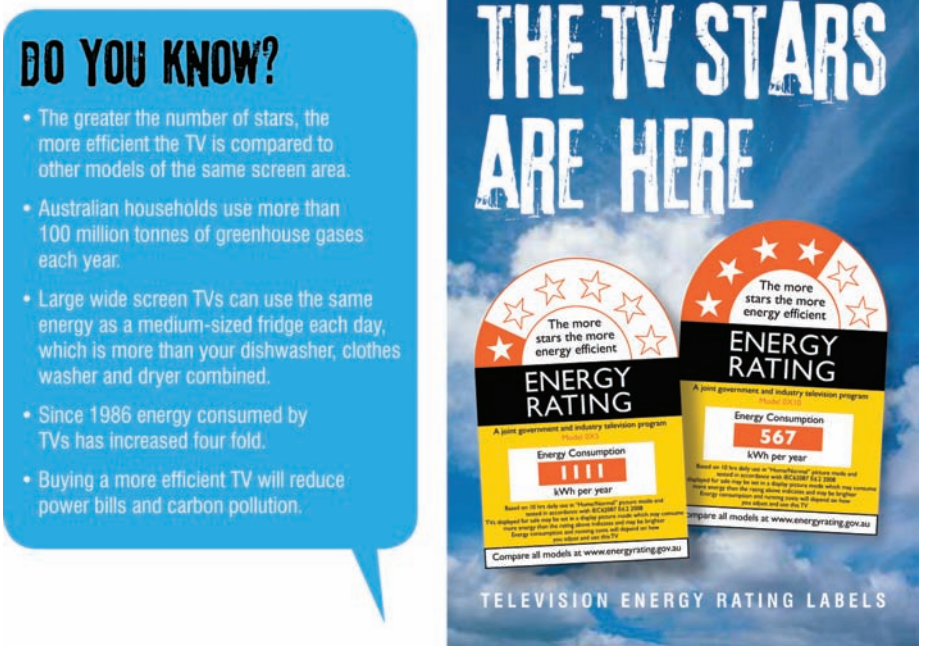
- Gradually implementing Greenhouse and Energy Minimum Standards (GEMS) to cover non-electrical appliances and system components (such as air conditioning ducts).
- Phasing out inefficient lighting products and greenhouse-intensive hot-water systems.

Thirdly, the Program's budget has continued to grow steadily. E3 received $3.0 million for the 2008/09 financial year (a 50% increase from FY2008/07) and a proposed $3.5 million each for financial years 2009/10 and 2010/11 from the Ministerial Council on Energy Special Account. Additionally the 2009/10 federal budget announcement in May 2009 included funding allocations of $34.9 million over four years for the E3 agenda alone, comprising $18.3 million to implement enhanced energy efficiency labelling, as well as $16.6 million to expand the MEPS for appliances and equipment. This represents 54% of the total budget allocated to the NFEE ($64.6 million over four years). State and territory governments have also reaffirmed their commitment to maintain existing energy efficiency funding levels, thereby sustaining the scope and subsequent effectiveness of the Program.

PROGRAM ACHIEVEMENTS

The E3 Program achieves energy savings by applying more stringent energy requirements on an expanding range of appliances and domestic and commercial appliances. In 2008/09 several milestones were achieved in these areas for each product category covered by E3, both domestically as well as internationally.

Domestically, the Program increased its coverage from 13 to 20 regulated products and commenced six new regulation impact assessments that sought to introduce or revise MEPS, revise a product's energy rating algorithm and label, regulate a product component, explore alternate regulation strategies, or a combination of the above. Alongside regulation impact assessments, the stringency of existing energy requirements was progressed further through the development of 17 new and existing standards in collaboration with industry. 2008/09 also saw the Department of the Environment, Water, Heritage and the Arts, on behalf of the E3 Committee, enter into a service agreement with Standards Australia to streamline the delivery



In-store marketing material to inform customers of the energy rating label now applying to TVs.

With Australians buying around two million televisions each year, the introduction of MEPS & labelling for televisions represents one of the biggest single greenhouse gas abatement measures ever undertaken by the E3 Program.

of any new or revised standards over the three-year period from 2008 to 2011. This is estimated to include approximately 20 work items going forward.

The E3 Program continued to use a variety of compliance strategies to maintain Program integrity over 2008/09. This financial year was a development year where E3 committed substantial resources to the future of the Program's compliance component in an effort to expand, develop, streamline and enhance existing check-testing measures. Check-tests on 88 products were conducted across all product areas, which saw the Program move away from a whitegoods focus to the testing of constantly evolving new technologies. Other compliance activities included a revamp of the compliance newsletter; conducting point-of-sale labelling audits of products being sold in stores; a desktop review of motor and transformer products available for sale and their level of regulatory compliance; and further improvements to the online database for product registrations.

Long-term strategies continued to be implemented for standby, lighting, gas products and HVAC HESS, while work commenced to develop ones for commercial refrigeration, commercial catering equipment, industrial products and residential air-conditioning.

Internationally, the E3 Program has continued to demonstrate international leadership on energy efficiency initiatives through its involvements with international organisations such as the Building and Appliances Taskforce (BATF) of the Asia-Pacific Partnership on Clean Development and Climate (APP); the Energy Working Group (EWG) and the Expert Group on Energy Efficiency and Conservation of the Asia-Pacific Economic Cooperation (APEC); and the Efficient Electrical End-use Equipment (4E) Program of the International Energy Agency (IEA). On behalf of the E3 Program, both Australian and New Zealand governments continue to propose our joint national priorities to these international endeavours.

Achievements 2008/09 provides detail of, and more importantly, the greenhouse and energy improvements delivered by a range of measures. With its focus on the residential sector, the E3 Program made considerable progress in several product categories highlighted below.

HOME ENTERTAINMENT

In Australia, the E3 Program introduced MEPS for both External Power Supplies (EPS) and Set Top Boxes (STBs) as well as mandatory MEPS and labelling for televisions. The latter demonstrated strong public-private partnership between the Australian Government and the television industry over 2008/09, with industry supporting the transition of the initial voluntary television labelling scheme into a mandatory MEPS and labelling program due to commence no earlier than 1 October 2009. With Australians buying around two million televisions each year, the proposal represents one of the biggest single greenhouse gas abatement measures ever taken under the E3 Program. Projections show that by 2020, over 6Mt in CO_2-e emissions will be avoided each year compared to a business-as-usual scenario.

Internationally, the E3 Program continued to progress global standby initiatives under the APEC, APP and IEA banners. As part of the IEA Standby Power Initiative, Australia took on leadership of the 4E Standby Power Annex with the assistance of the USA and was the first nation to publicly pursue the 'one-watt' target. Australia also continued to foster national and international comparisons of household appliances via APEC and APP projects to align national standby power approaches and structures. These have focused on not only the development of standby policies but also the measurement, collection and dissemination of standby power data across different economies and regions. These focus areas will demonstrate the effectiveness of the policy mix used in individual countries and promote products that meet standby power objectives.

LIGHTING

The Australian Government's announcement of leading phase-out action of inefficient lighting in February 2007 came into force in 2008/09, with stage one – the import restriction of incandescent light bulbs of less than 150 watts into Australia – taking effect on 1 February 2009. This brought forward the commencement of the phase-out by almost one year, which will also include a subsequent ban on the retail sale of incandescent light bulbs due to commence no earlier than 1 November 2009.

These regulations form just one component of the E3 Program's wider domestic lighting efficiency strategy. One other notable aspect of this strategy was the introduction of MEPS for a range of incandescent light bulbs as well as compact fluorescent lamps (CFLs) and halogen voltage converters. The regulatory impact assessment for these regulations received MCE approval in August 2009, with the regulations scheduled to begin taking effect in Australia from 1 November 2009.

Through the E3 Program, Australia also continued to be a global leader in the international lighting efficiency arena by collaborating with APEC and APP partners to conduct training workshops in India and China; progress the harmonisation of test procedures for CFLs; establish benchmarks for regional lighting standards and coordination bodies; and to commence international round robin testing for low voltage halogen reflector lamps.

The Australian Government's leading phase-out of inefficient lighting came into force in 2008/09.

HEATING, VENTILATION, AIR CONDITIONING (HVAC) AND COMMERCIAL REFIGERATION

MEPS regulation was approved for both chiller towers as well as close control units (CCUs) in December 2008 and June 2009 respectively. These measures took effect on 1 July 2009. Work also continued throughout 2008/09 to draft a ten-year strategy for commercial refrigeration[2] as well as revise both the energy labeling algorithms and the MEPS levels for air conditioners. The latter will involve the launch of a new ten-star energy rating label on 1 October 2009 that will be followed by mandatory requirements for products to be registered to the new standard from April 1 2010.

INDUSTRIAL EQUIPMENT

Over 2008/09 achievements in the industrial equipment category focussed on progressing global testing regimes for motors and motor system components; the development of more stringent MEPS for distribution transformers (to be implemented no earlier than October 2010); and the commencement of a ten-year industrial products strategy that will consider the efficiency potential of industrial pumps, fans, air compressors and industrial chillers and boilers.

WATER HEATING SYSTEMS

Over 2008/09 E3 commenced a regulation impact assessment to introduce MEPS for gas water heaters (external storage and instantaneous units). This measure is expected to reduce energy consumption of gas water heaters exposed to MEPS by 17 PJ (1.15 Mt CO_2-e) from 2013 to 2020.

WHITEGOODS

In the whitegoods category, the E3 Program embarked on a revision of the domestic energy label algorithm and MEPS similar to that for air conditioners, along with the progression of two key international bilateral projects: the development and implementation of education and training for a standards and labelling regime in Fiji, as well as the strengthening of testing ties between Australia and China via a round robin testing agreement with the China Household Electric Appliance Research Institute (CHEARI).

2 The ten-year strategy for commercial refrigeration will include energy efficiency measures for refrigerated display cabinets, refrigerated beverage vending machines as well as ice-makers and ice storage bins.

COMMUNICATIONS

In association with these achievements, The E3 Program released 21 publications over 2008/09 and implemented two mass communication campaigns to accompany the lighting phase-out *(Change the Globe)* as well as the introduction of MEPS for televisions *(The TV Stars are here)*. Moreover, the Program's online portal (www.energyrating.gov.au) experienced increases in the amount of time visitors spent gathering information on equipment energy efficiency from the website. A review of the website was also commenced to improve its content, navigation and structure for its users.

COST-EFFECTIVENESS

The Program has enjoyed support from governments of varying political compositions, stakeholder groups and the public because it has continued to prove extremely cost-effective in delivering real benefits to the Australasian economy, environment and its consumers. Total electricity savings from all sectors targeted by the E3 Program are projected to exceed 32,000 GWh per annum by 2020. The Program has been focussed on the residential sector, which will account for more than two thirds of total energy savings. Moreover E3 measures already implemented will reduce household electricity use in 2020 by about 13% compared with business-as-usual, while measures that have been planned for implementation could bring about a further reduction of nearly 15%.

For Australian energy users as a whole, the E3 Program is projected to return net benefits of AUD$22.44 billion (NPV in 2008 at a discount rate of 7.5%) from 2009 to 2024 and save the community AUD$5.20 billion (NPV) in the year 2020 alone[3]. For New Zealand, the cumulative net benefits from 2009 to 2020 are NZD$5.19 billion (NPV discount rate of 5%). These projections demonstrate the effectiveness of sound energy efficiency policies that will continue to significantly reduce energy bills, enhance national energy security and lower greenhouse gas emissions based on a business-as-usual projection.

The E3 program has continued to prove extremely cost-effective in delivering real benefits to the Australian economy, environment and its consumers.

3 George Wilkenfeld and Associates, *Prevention is Cheaper than Cure – Avoiding Carbon Emissions through Energy Efficiency: Projected impacts of the Equipment Energy Efficiency Program to 2020.* (January 2009) p5.

GLOSSARY AND ABBREVIATIONS

4E	Efficiency Electrical End-use Equipment – an implementing agreement under the IEC.
ANZ	Australian/New Zealand
APP	Asia-Pacific Partnership on Clean Development and Climate.
BAU	Business-as-usual: assumed circumstances under which no policy intervention has been taken.
CFLs	Compact Fluorescent Lamps.
CHEARI	China Household Electric Appliance Research Institute.
CO2-e	Carbon dioxide equivalent.
CPRS	Carbon Pollution Reduction Scheme.
DCC	The Department of Climate Change.
DEWHA	The Department of the Environment, Water, Heritage and the Arts.
DRED	Demand Response Enabling Devices - a device that automatically alter an electrical product's normal mode of operation in response to an initiating signal originating from or defined by a remote agent.
E2WG	Energy Efficiency Working Group.
E3 Program	Equipment Energy Efficiency Program. [Formerly known as the National Appliance and Equipment Energy Efficiency Program]
EER	Energy Efficiency Ratio - calculated by dividing Energy Out by Energy In.
ELV	Extra Low Voltage.
ELVC	Extra Low Voltage Converters.
EPS	External Power Supply units.
EWG	The APEC Energy Working Group.
GEMS	Greenhouse and Energy Minimum Standards.
GLS	General Lighting Service - these are more commonly known as the traditional pear-shaped incandescent lamps.
IEA	International Energy Agency.
IEC	International Electrotechnical Commission.
kWh	Kilo Watt-hour – one thousand watt-hours.
kWr	Kilo Watt-refrigeration.
LCA	Lighting Council of Australia.
MCE	Ministerial Council on Energy.
MEPS	Minimum Energy Performance Standards.
Mt	Mega (10^6) tonnes.
NAEEEP	The National Appliance and Equipment Energy Efficiency Program – now the E3 Program.
NATA	National Association of Testing Authorities.
NFEE	National Framework for Energy Efficiency.
NSEE	National Strategy for Energy Efficiency.
NZEECS	New Zealand Energy Efficiency and Conservation Strategy.
OBPR	Office of Best Practice Regulation - a part of the Australian Government's Department of Finance and Deregulation.
PICs	Pacific Island Countries.
RET	The Department of Resources, Energy and Tourism.
RIAT	Regulatory Impact Assessment Team, New Zealand Government Treasury.
RIS	Regulatory Impact Statement.
SCO	Standing Committee of Officials.
TWh	Tera Watt-hour – 10^{12} watt-hours.
TTMRA	The Trans-Tasman Mutual Recognition Agreement between Australia and New Zealand.
USAID	The US Agency for International Development.
WELS	Water Efficiency Labelling Standards.

1 INTRODUCTION TO THE EQUIPMENT ENERGY EFFICIENCY PROGRAM

PROGRAM OVERVIEW

Energy consumed by equipment and appliances in Australia and New Zealand are a major source of energy consumption and greenhouse gas emissions. Improving the energy efficiency of appliances and equipment is therefore a key objective for all Australian governments and the New Zealand Government.

Performance codes and standards are among the most widely used measures internationally to reduce energy use and greenhouse gas emissions from equipment and appliances. The National Appliance and Equipment Energy Efficiency Program (NAEEEP) began more than fifteen years ago with an agreement to label a few domestic appliances on a national basis. Since that time, the program has grown continually and has become one of the key elements of Australia's National Framework for Energy Efficiency (NFEE). This is now known as the Equipment Energy Efficiency (E3) Program, which embraces a range of measures aimed at increasing the energy efficiency of products used in the residential, commercial and manufacturing sectors in Australia and New Zealand. New Zealand has participated directly in the Program since the NFEE was established in 2004. The organisational structure under the NFEE as at 30 June 2009 is illustrated in Appendix 1.

National Framework for Energy Efficiency

The main policy tools used to achieve these outcomes are:

1. Mandatory MEPS (set-out in the relevant product standards).
2. Mandatory energy efficiency labelling (set-out in the relevant product standards).
3. Voluntary measures including endorsement labelling.
4. Training and support to promote the most energy efficient products.

Some of these measures are backed by regulations mandating the energy labelling of products at the point-of-sale, or specifying minimum energy performance standards (MEPS) that products must meet or exceed to be lawfully sold. A number of individual sub-programs stimulate the development of world class products as well as helping to create fairer competition in the marketplace by:

- Informing consumers of comparative energy consumption.
- Using energy rating labels to endorse the top energy efficiency performing models in a product range.
- Stipulating minimum acceptable efficiency levels below which products may not be sold.

The E3 Program measures improvement by increasing the number of products covered, increasing the stringency of existing energy requirements, and increasing the intensity of the Program in key areas so that a range of program tools are used to maximise the energy saving outcomes.

The Program now extends into all sectors, and will yield an economic benefit to Australia of AU$22.4 billion by 2024, plus a benefit of NZ$4.5 billion[4] to the New Zealand economy by 2020. This reflects not only economic and environmental benefits, but also significant savings for households, businesses, and industry throughout Australia and New Zealand. These benefits will be achieved through a productive working relationship between government agencies and industry.

GOVERNANCE

In 2001 the Council of Australian Governments (COAG) established the Ministerial Council on Energy (MCE) to manage national policy and governance of the Australian energy market (http://www.mce.gov.au/). The MCE is comprised of the Federal Energy Minister, each jurisdiction's Minister responsible for energy, and observers from New Zealand, Papua New Guinea, and Norfolk Island. A current MCE membership list is at Appendix 2.

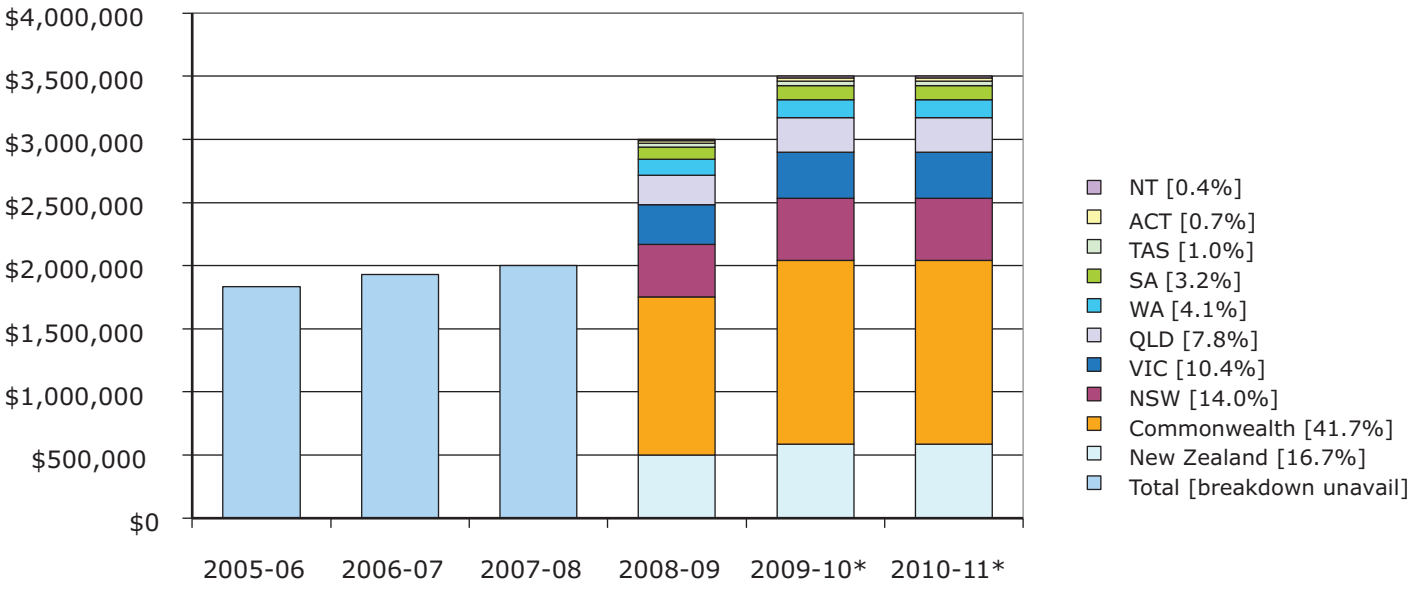
Under the MCE's guidance, the NFEE was developed to improve end-use product energy efficiency performance, through the development of MEPS and comparative energy labelling. Management of the E3 Program is the responsibility of the E3 Committee, which consists of officials from Commonwealth, State and Territory Government agencies as well as representatives of the New Zealand Government. A current list of the E3 Committee membership is at Appendix 3.

Across the Tasman, this Program is known as the New Zealand Energy Efficiency and Conservation Strategy (NZEECS). The New Zealand Minister for Energy has full membership and voting rights in regards to issues that fall under the Trans-Tasman Mutual Recognition Arrangement (TTMRA). This trigger applies whenever any proposals for mandatory performance standards or labelling for end-use products are being considered. Under the MCE's Energy Efficiency Working Group (E2WG), Australia and New Zealand have established a common end-use energy efficiency work program. This seeks to ensure that:

- The same regulatory standards apply to suppliers in both countries, offering improved economies of scale in local production and reduced compliance costs.
- It stimulates the development of world-class products and helps to create fairer competition in marketing products.
- Consumers are able to make informed purchasing decisions as a result of a greater number of energy-efficient products available on the market with consistent standards and labelling schemes in each country.
- Efficiency regulators deliver common regulatory proposals with resultant public sector resource savings.
- It fulfils the obligations of the Australia New Zealand Closer Economic Relations Trade Agreement and the TTMRA.

4 Cumulative savings for new and existing measures during 2010-2020, using Program Evaluation Tool analysis (current at May 2009) and national average electricity prices for 2007 from the *New Zealand Energy Data File - June 2008,* http://www.med.govt.nz/upload/59482/00_EDF-June2008.pdf.

FIGURE 1. HISTORICAL AND PROJECTED BUDGETS FOR THE E3 PROGRAM FROM 2005-2011.



*Years subject to MCE approval

The E3 Committee is responsible for advising the MCE on efficiency implementation measures to address the efficiency needs of all types of electrical equipment. MCE has given the E3 Committee a mandate to assess any energy-using product for possible regulation, subject to community consultation and the completion of a Regulatory Impact Statement (RIS) as required by COAG. In 2006, the MCE agreed for the first time to consider regulating products even in circumstances where a cost is imposed upon the community providing such action may offset even more expensive mitigation action sometime in the future.

The E3 Committee Charter provides the Terms of Reference for the E3 Program and is listed in Appendix 4. The Program is currently undertaking Stage Two of the Implementation Plan for the NFEE, as well as continuing the work initiated in Stage One. A copy of the NFEE operating instructions is at Appendix 5.

PROGRAM BUDGET

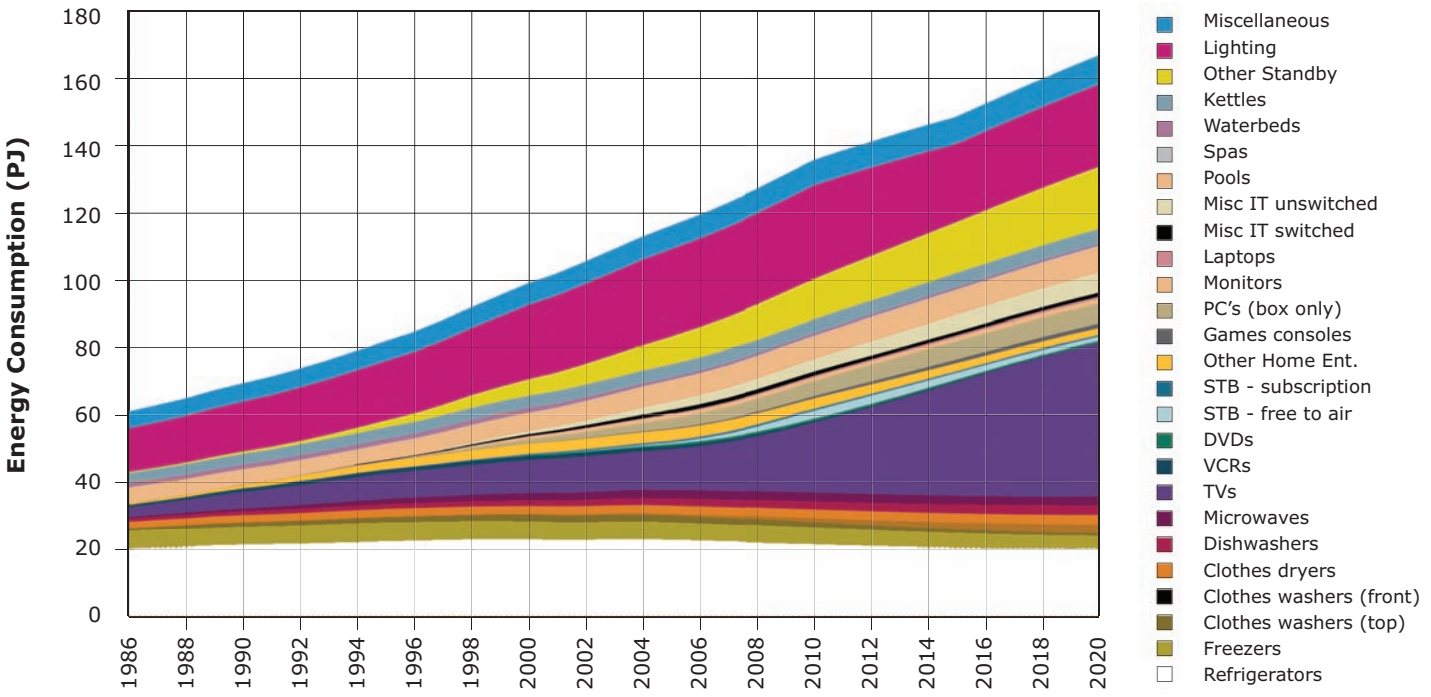
Funding for the E3 Program is sourced primarily from the MCE's Energy Special Account, which is administered by the Commonwealth Department of Resources, Energy and Tourism (RET). The Energy Special Account receives contributions for the E3 Program from New Zealand[5] and follows the COAG funding formula of a 50/50 split between the Australian Commonwealth[6] and the States & Territories for the remaining Program budget. These are determined pro-rata based on population and are detailed in Figure 1.

Figure 1 illustrates a steady increase in funding for the E3 Program in recent years. For the financial year 2008/09, the E3 Committee received $3.0 million in MCE funding. A proposed $3.5 million each for financial years 2009/10 and 2010/11 are subject to final approval by the MCE Standing Committee of Officials (SCO).

Moreover, COAG committed to developing a wide-reaching National Strategy for Energy Efficiency (NSEE) in October 2008 that incorporates and builds on existing NFEE measures. In a joint media release on 12 May 2009 regarding the 2009/10 federal budget, Ministers Lindsay Tanner, Penny Wong and Peter Garrett announced that the NSEE would receive federal funding allocations of $64.6 million over four years to help Australians choose more energy efficient appliances, and to make residential and commercial buildings more energy efficient (full media release is at Appendix 8.1). More specifically, this includes $18.3 million to implement enhanced energy efficiency labelling, as well as $16.6 million to expand the Minimum Energy Performance Standards for appliances and equipment – i.e. a total contribution of $34.9 million over four years for the E3 agenda alone. State and territory governments have also reaffirmed their commitment to maintain existing energy efficiency funding levels, thereby sustaining the scope and subsequent effectiveness of the Program.

5 New Zealand contributes to the E3 program only.
6 The Commonwealth contribution is jointly funded by the Department of Resources, Energy and Tourism (RET) and the Department of the Environment, Water, Heritage and the Arts (DEWHA).

FIGURE 2. TRENDS IN ELECTRICAL APPLIANCE BY TYPE IN AUSTRALIA.



Source: Department of the Environment, Water, Heritage and the Arts, *Energy Use in the Australian Residential Sector 1986-2020*, http://www.environment.gov.au/settlements/energyefficiency/buildings/publications/pubs/energyuse-part1.pdf p 41.

OBJECTIVES & TARGETS

The energy and greenhouse contribution of end-use equipment does not remain static. It changes over time due to structural changes in the economy, changes in consumer preferences, and with the introduction of new technologies. Figure 2 provides an estimated breakdown of stationary energy end uses in Australia's residential sector over the period 1986 to 2020.

Figure 2 clearly illustrates that amongst the appliances that were measured, the energy consumed – and subsequent greenhouse emissions caused – by televisions and other home electronic equipment (in particular standby power) is expected to grow significantly over the coming decade. Conversely, the energy used by regulated products such as refrigerators is expected to decline. This type of data is very important in informing and identifying where government intervention could be targeted.

Recognising the impact that equipment standards and labelling programs may have on greenhouse gas abatement and energy efficiency, the E3 Program has matured with additional activities added to leverage the impact of regulatory measures within particular equipment markets. E3 officials now undertake activities to align policies and practices throughout Australia and New Zealand. These are outlined below.

REGULATION

- To exclude the worst-performing products from the market through MEPS.
- To enable consumers to compare the energy performance of appliances through mandatory energy labelling.
- To provide assistance to all Australian states and territories and New Zealand agencies considering technical, legal, and administrative aspects of equipment energy efficiency initiatives.
- To harmonise all MEPS, mandatory labelling and related initiatives throughout Australia and New Zealand.

BEST PRACTICE

- To encourage the sale of better performing products.
- To foster ties amongst international energy efficiency organisations and contribute to global energy efficiency policy development.
- To coordinate the development and implementation of voluntary energy efficiency programs which enhance existing regulatory programs, including:
  - voluntary labelling and other initiatives
  - market transformation projects
  - industry training
  - web-based information and selection tools and other related programs.

COMMUNICATION

- To inform stakeholders about the Program.
- To coordinate national marketing and communication projects to support new, and enhance existing, energy efficiency programs.
- To coordinate broad consultative processes with industry and other interested parties developing and implementing energy labelling and associated programs.
- To monitor and report Program performance, achievements and enforcement outcomes.

COMPLIANCE

- To verify conformance with regulatory measures.
- To provide a forum for exchanging information on enforcement and compliance issues between participating jurisdictions.
- To administer an effective, coordinated testing regime verifying the energy efficiency claims of suppliers.
- To review existing appliance energy consumption information and to improve Australian standards and testing protocols.

The Program publishes three year work plans and has already delivered impacts across a range of end use product groups, including:

- Household appliances
- Standby power
- Lighting
- Electricity distribution transformers
- Air conditioners
- Commercial refrigeration
- Water heaters
- Electric motors

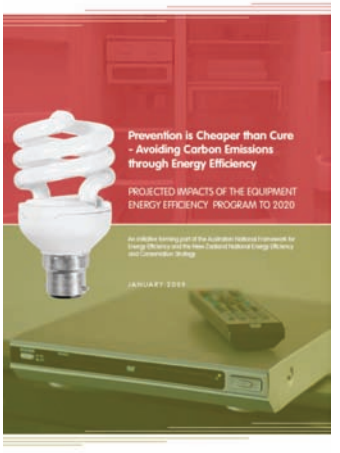
Products from each of these groups are considered for inclusion within the Program on the basis that the community will benefit from its regulation. Individual energy efficiency mandatory levels are either the equivalent of world-best regulatory levels, or are more stringent because of strong support of key stakeholders.

The current work plan for the 2008-2011 period responds to the policy framework agreed to by COAG in the NSEE of 2008. Both include the following major objectives:

- Broadening the range of products and increasing the level of performance stringency for covered products.
- Expanding MEPS significantly into the industrial equipment sector to cover off-the-shelf products in areas such as compressors, boilers, industrial chillers, pumps and fans, heat exchangers and refrigeration equipment.
- Improving E3's processes in terms of:
  - Engagement with industry
  - Developing test methods and standards
  - Regulatory Impact Assessments.
- Expanding enforcement and verification testing to maintain the E3 Program's integrity.
- Accelerating the review of the stringency in MEPS for priority appliances. For example, examining a 10% improvement in air-conditioner performance from 2012.

A list of products expected to be covered by 2011 under the current work plan (MEPS and/or labelling type) is at Appendix 6.

COST-EFFECTIVE OUTCOMES



The Program is an extremely cost effective measure that delivers real benefits to the economy, the environment and Australasian consumers. In January 2009 a fourth Impact Study: *Prevention is Cheaper than Cure – Avoiding Carbon Emissions through Energy Efficiency* (pictured) analysing the projected impacts of the E3 Program over the period 2000-2020 was released.

Taking into account the latest information on programs implemented as well as those still to be implemented under the 2008-2011 E3 Work Plan, the report estimates the value of energy saved and compares this with the cost of the Program to energy users. A summary of the report's findings are described below.

RESIDENTIAL ENERGY SAVINGS

In the residential sector, energy savings are projected to be nearly 22,000 GWh per annum by 2020. Until 2008, refrigerators dominated the energy savings among electrical appliances. Going forward, water heating is estimated to represent over 33% of the projected savings from 2009 to 2020 (mostly from the phase-out of electric resistance water heaters), while refrigerators and freezers will account for 29%. Other major contributors to projected electricity savings are televisions and set top boxes (10%), lighting (8%) and air conditioners (8%).

E3 measures already implemented will reduce household electricity use in 2020 by about 13% compared with business as usual (BAU), and measures currently planned could bring about a further reduction of nearly 15%.

In order for residential sector electricity demand to remain constant despite population growth, average household electricity consumption per capita must decline. ABARE estimates that BAU household electricity use per capita will increase at about 1.0% per annum, yet the E3 Program could result in a reduction of 0.8% per annum.

NON-RESIDENTIAL ENERGY SAVINGS

Electricity savings below BAU are projected to reach about 10,300 GWh per annum by 2020 in the non-residential sector. This is slightly less than projected for the non-residential programs in the 2005 Impacts Study, as a result of delays in implementing regulatory proposals. Lighting products will account for nearly 30% of the projected electricity savings between 2009 and 2020, followed by transformers (21%), air conditioning products (20%), motors (13%) and computers and electronic devices (9%).

Total electricity savings from all sectors targeted by the E3 Program are projected to exceed 32,000 GWh per annum by 2020. The Program is still focussed on the residential sector,

which will account for more than two thirds of total energy savings. Almost 80% of the energy savings will come from pure MEPS programs, and the other 20% from labelling or labelling combined with MEPS.

GREENHOUSE IMPACTS

An earlier 2005 Impact Study estimated that emissions avoided due to E3 Programs over the period 2000-2020 would be 207.3 Mt. The present Study estimates 250.2 Mt over the same period, or 218.2 Mt if electricity emissions intensity falls, under the influence of a '10% reduction' carbon cap. By 2020, greenhouse abatement from the Program will be in the order of 19.5 Mt per annum, about two thirds from greater efficiency of energy use and the rest from declining emissions intensity.

Looking forward over the period 2009-2020, it is estimated that about 34% of total Program savings will occur in NSW, 24% in Queensland, 20% in Victoria, 9% in WA and the remaining 13% in the other four jurisdictions (including New Zealand).

The greenhouse emissions avoided in each jurisdiction depend on the emissions intensity of the electricity supplied changing these percentages slightly. NSW would account for about 36% of total emission avoided over the period 2009-2020, Queensland for 25%, Victoria for 22%, WA for 8% and the remaining states and territories for 9%.

COSTS AND BENEFITS

For Australian energy users as a whole, the E3 Program is projected to return net benefits of $22,437 million (NPV in 2008, at a discount rate of 7.5%) over the 16 years 2009-2024. This gives an overall benefit/cost ratio of 2.9. As a point of comparison to past studies, the Program will save the community $5,200 million (net present value) in the year 2020 alone. For New Zealand, the cumulative net benefits from 2009 to 2020 are NZD$5.19 billion (NPV discount rate of 5%).

Unlike previous studies, the benefit (not cost) of each tonne of CO2-e avoided by the E3 Program needs to be adjusted to account for the share of emissions avoided that will come from projected falls in the intensity of electricity supply brought about by the Carbon Pollution Reduction Scheme (CPRS). Even with this adjustment, the Program will save energy users about $56 per tonne of emissions avoided (at a 7.5% discount rate) – about twice the corresponding estimate in 2005, and nearly back to the levels estimated in 2003. This indicates that the E3 Program is even further from exhausting cost-effective opportunities to increase energy efficiency, now that the value of savings has been increased by the CPRS.

2. PRODUCTS REGULATED BY THE EQUIPMENT ENERGY EFFICIENCY PROGRAM

TABLE 1. PRODUCTS REGULATED BY THE E3 PROGRAM AS AT 30 JUNE 2009.

PRODUCT	SECTOR	MEASURE Year (to be) implemented/revised		REGULATORY STANDARD	
		MEPS	Labelling*	Test Method:Year	MEPS/Labelling:Year
AIR CONDITIONERS					
Chiller towers	C	2009	-	AS/NZS4776.1:2008	AS/NZS4776.2:2008
Closed Control Units (CCUs)	C	2009	-	AS/NZS4965.1:2008	AS/NZS4965.2:2008
Single-phase air conditioners	R,C	2004, 2006 (2010)	ML: 1992, 2000, (2010)	AS/NZS3823.1.1:2009 (Non-ducted) AS/NZS3823.1.2:2009 (Ducted) AS/NZS3823.3:2009 (Simulation)	AS/NZS3823.2:2009
Three-phase air conditioners	C	2001 (2010)	VL: 2001, (2010)		AS/NZS3823.2:2009
COMMERCIAL AND INDUSTRIAL					
Refrigerator Display Cabinets	C	2004	-	AS1731.1-13:2003	AS1731.14:2003
Distribution Transformers	I	2004	-	AS60076.11:2006 (Dry type); AS60076.1:2005 (Oil filled)	AS2374.1.2:2003/Amdt1-2005
Electric Motors (Three-phase)	C,I	2001, 2006	-	AS/NZS1359.102.3:2003 (Method A); AS1359.102.1:1997 (Method B)	AS/NZS1359.5:2004
ELECTRIC WATER HEATING					
Electric Water Heaters	R,C	1999, 2005	-	AS/NZS4692.1:2005; AS1056.1:1991/Amdt5-2005; NZ4602:1988; NZ4606.1:1989	AS/NZS4692.2:2005; AS1056.1/Amdt3-1996; NZ4602:1988; NZ4606.1:1989
HOME ENTERTAINMENT AND ICT					
External Power Supplies	R,C	2009	PM: 2009	AS/NZ4665.1:2005/Amdt1-2009	AS/NZ4665.2 :2005/Amdt1-2009
Set Top Boxes	R	2009	-	AS/NZS62087.1(Int):2009	AS/NZS62087.2.1:2008
Televisions	R,C	2009	(ML: 2009)	AS/NZS62087.1(Int):2009	AS/NZS62087.2(Int):2009
LIGHTING					
Linear fluorescent ballasts	C,I	2003	VL	AS/NZS4783.1:2001	AS/NZS4783.2:2002
Linear fluorescent lamps	C,I	2004	VL	AS/NZS4782.1:2004 (IEC60081)	AS/NZS4782.2:2004; NZHB4782.2
Self-ballasted CFLs	R,C	2009	-	AS/NZS4787.1(Int):2008	AS/NZS4787.2(Int):2008
Incandescent lamps	R,C	2009	-	AS/NZS4934.1(Int):2008	AS/NZS4934.2(Int):2008
WHITEGOODS					
Clothes dryers	R	-	ML: 1992, 2000	AS/NZS2442.1:1996/Amdt4:2006	AS/NZS2442.2:2000/ Amdt2:2007
Clothes washers	R	-	ML: 1992, 2000	AS/NZS2040.1:2005/Amdt1:2007	AS/NZS2040.2:2005
Dishwashers	R	-	ML: 1992, 2000	AS/NZS2007.1:2005	AS/NZS2007.2:2005
Refrigerators / Freezers	R,C	1999, 2005, (2010)	ML: 1992, 2000, (2010)	AS/NZS4474.1:2007/Amdt1:2008	AS/NZS4474.2:2009

Sectors R- residential; C- commercial; I- industrial
Measures MEPS – minimum energy performance standards; ML- Mandatory Labelling; PM – Performance Marking; VL- Voluntary Labelling
***Labelling** Some states had mandatory energy regulations prior to 1992 for a range of products. Refrigerators were first labelled in late 1986. Algorithm changes occurred in 2000 for all products. Algorithm changes for refrigerators, freezers and air conditioners are scheduled for 2010.
Codes AS/NZS Australian/New Zealand standard; NZHB-New Zealand handbook (a regulatory standard prepared by the NZ Government and published by standards NZ) labelling.

3. MAJOR DOMESTIC ACHIEVEMENTS

PROGRAM RELEVANCE

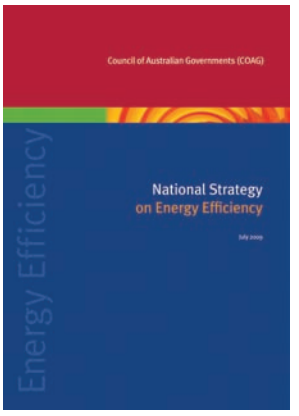
Throughout its development, the E3 Program has aimed to address the market failures that hinder the uptake of cost-effective end-use equipment, which would otherwise lead to higher energy use and greenhouse gas emissions. The Program has enjoyed support from governments of varying political compositions, stakeholder groups and the public because it has continued to prove effective in improving energy efficiency. E3's activities significantly reduce energy bills, enhance national energy security, and lower greenhouse gas emissions based on a BAU projection.

The importance of an effective energy efficiency program has become increasingly apparent due to events such as those outlined below.

- **Ratification of the Kyoto Protocol** by both Australia and New Zealand.
- **The release of several prominent domestic studies** regarding the potential economic and environmental impacts of climate change for Australia and the need for immediate and effective greenhouse gas abatement. These include the Garnaut Review and the Wilkins Review. The latter promoted the E3 Program as an effective complementary measure to Australia's future CPRS.[7]
- **Support from industry experts** on the necessity of an energy efficiency program, particularly in conjunction with the implementation of a CPRS. In his submission to *The Garnaut Review*, Dr George Wilkenfeld noted that the level of energy efficiency tends to be 20-30 per cent less than the optimum, because of market barriers and failures such as:
  - Poor information and understanding of energy prices.
  - Poor information and understanding of the total lifetime costs of energy services (covering both capital cost of buildings/equipment and energy prices).
  - Poor information and understanding of the different efficiency levels, capabilities and capital costs of competing products and design approaches.
  - Low motivation (e.g. 'optimising energy' investments compete with other priorities).
  - Lack of energy efficient alternatives: i.e. all products on the market are equally inefficient.
  - Split incentives.

Wilkenfeld stated that enhancing complementary measures to the CPRS could result in significantly greater energy efficiency gains than from carbon pricing alone.[8] The E3 Program addresses many of the market failures outlined above.

- **COAG's commitment to developing a wide-reaching NSEE in October 2008.** This Strategy aims to accelerate energy efficiency efforts, to streamline roles and responsibilities across levels of governments, and to help households and businesses prepare for the introduction of a CPRS. It will encompass all areas in the economy where substantial cost-effective energy efficiency opportunities exist – this includes commercial buildings, residential buildings, appliances and equipment, industry and business, government, transport, skills, innovation, advice and education.



A first round of stakeholder consultations were conducted in late January and early February 2009, with national workshops covering energy efficiency in the buildings sector, appliances and equipment, and industry.

The NSEE has been an important factor in the development of the E3 Program over the 2008/2009 period, as it significantly expands the scope of both labelling and MEPS. The NSEE incorporates and builds on measures already agreed to by COAG and the MCE through the NFEE by:

- Accelerating and expanding the MEPS and labelling program, and establishing national legislation for these matters.
- Gradually implementing Greenhouse and Energy Minimum Standards (GEMS) to cover non-electrical appliances and system components (such as air conditioning ducts).
- Phasing out inefficient lighting products and greenhouse-intensive hot-water systems.
- Providing a range of informational services to help address information-based market distortions and assist households and businesses to transition to a low-carbon future.

In its recommendations to the Department of Climate Change (DCC), **the Wilkins Review** made note of the importance of the NSEE in strengthening national energy efficiency by stating that, "The COAG process provides an opportunity to develop a common, national strategy with an agreed implementation framework covering all energy efficiency initiatives."[9]

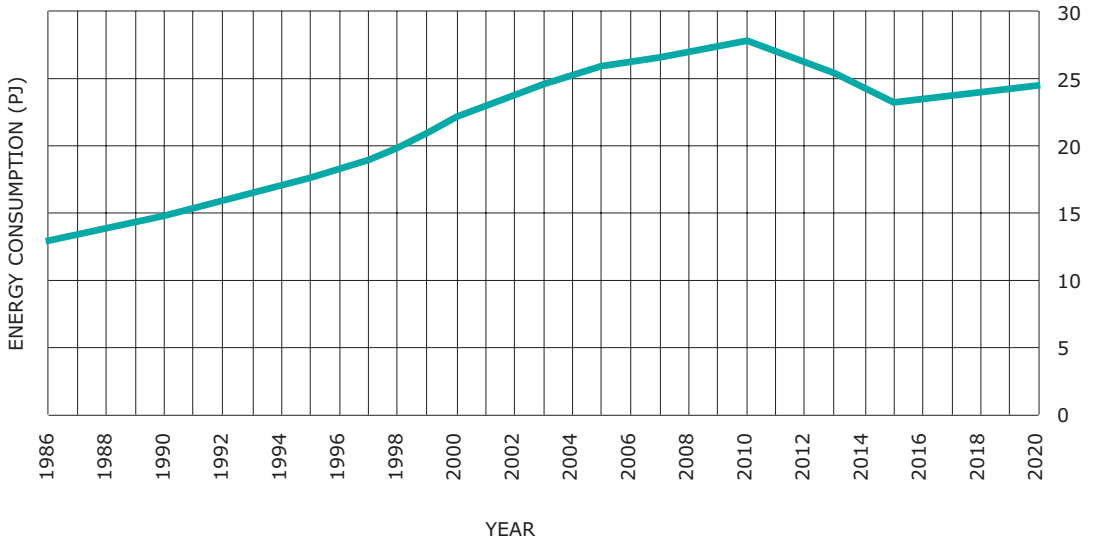
Several programs are already underway, such as assisting households and businesses transition to a low-carbon future by providing the information and skills necessary to improve the efficiency of energy use. In particular, the NSEE aims to

7 Roger Wilkins, *Strategic Review of Australian Government Climate Change Programs* (31 July 2008) Available Online at: http://www.finance.gov.au/publications/strategic-reviews/docs/Climate-Report.pdf p95.

8 George Wilkenfeld, "The continuing need for 'complementary' policies and programs to raise energy-efficiency" in *Garnaut Review: Submission by Dr George Wilkenfeld* Available Online at: http://www.garnautreview.org.au/CA25734E0016A131/WebObj/D0849346ResponsetoIssuepaper5-DrGeorgeWilkenfeld/$File/D0849346%20%20Response%20to%20Issue%20paper%205%20-%20Dr%20George%20Wilkenfeld.pdf p2.

9 Roger Wilkins, *Strategic Review of Australian Government Climate Change Programs* (31 July 2008) Available Online at: http://www.finance.gov.au/publications/strategic-reviews/docs/Climate-Report.pdf p103.

FIGURE 3 ENERGY CONSUMPTION (PJ) OF LIGHTING IN AUSTRALIA'S RESIDENTIAL SECTOR FROM 1986-2020



(Source: DEWHA (2008). *Energy Use in the Australian Residential Sector: 1986-2020* page 65)

improve consumer awareness of the need for and benefits of energy efficiency, as well as the adoption of energy efficiency measures by informed choice. An example of this has been the *Change the Globe* public information campaign launched by Minister for the Environment, Water, Heritage and the Arts, the Hon Peter Garrett AM MP in March 2009. This initiative sought to assist consumers in choosing the most appropriate energy efficient lighting options for their home, which involved the development and distribution of point-of-sale material throughout Australia for use in supermarkets, hardware and department stores.

In launching the *Change the Globe* campaign, Minister Garrett noted, "You're looking at about an 80 per cent saving for people in terms of their energy bills in lighting… About $900 million saving for us as Australians in our lighting purchases. And in terms of greenhouse gas emissions about 4 million tonnes, per year, each year running up to 2015 - significant dollar savings, significant greenhouse gas reductions."

Getting the Australian public involved and aware of the benefits of energy efficiency will be essential to the success of the E3 Program. Senator the Hon Penny Wong, Minister for Climate Change and Water, reiterated the importance of consumer involvement as, "Strong household action also helps make it easier for governments to set even more ambitious targets in the future." This will ensure that the E3 Program maintains its consistent record of achievement, remains a relevant and powerful force in the market, and continues to benefit consumers, industry, and the environment.

PHASE-OUT OF INEFFICIENT LIGHTING

Energy consumption from lighting has shown steady and relatively strong growth since 1986. This is expected to decline from 2010 to 2015 but then rise again until 2020 (Figure 3). The International Energy Agency estimates that globally, incandescent lamps consume 970 terawatt hours of electricity per year and result in greenhouse gas emissions of 560 million tonnes. A comparison of the energy efficiency characteristics of various lighting technologies is at Appendix 7. Switching to Compact Fluorescent Lamps (CFLs) – or other high efficiency lighting – will see energy savings of 800 terawatt hours and greenhouse gas abatement of 470 million tonnes CO_2-e – equivalent to 118 million cars off the road or 470 million new trees planted per year.

Given these calculations, on 20 February 2007 the Australian Government announced world leading phase-out action to reduce energy consumption and greenhouse gas emissions from domestic lighting. Through the E3 Committee, the federal and state governments have been working with industry to:

- Progressively remove (i.e. phase-out) the least efficient incandescent lamps from the market, including the familiar pear-shaped tungsten filament lamps, otherwise known as general lighting service (GLS) lamps of less than 150 watts.
- Set mandatory standards for the efficiency and quality of CFLs.
- Remove the least efficient Extra Low Voltage Converters (ELVCs) from the market.

On 5 June 2008 the Minister for the Environment, Heritage and the Arts, the Hon Peter Garrett AM MP, announced that the first stage of the phase-out would be the introduction of an import restriction on inefficient traditional pear-shaped incandescent light globes used for general lighting purposes. The import restriction was developed by DEWHA in cooperation with the Australian Customs Service and came into effect on 1 February 2009. This initiative brought forward the commencement of the phase-out by almost a year compared with the original announcement by the then Minister for the Environment, the Hon Malcolm Turnbull MP. The sales ban of the same products is planned to begin from November 2009.

In addition to the import restriction and sales ban, the Commonwealth Environment Minister, Peter Garrett, on behalf of the states and territories, launched a range of point-of-sale materials designed to help consumers choose more efficient lighting on 24 March 2009. Based on the concept to *'Change the Globe'*, the materials (pictured) will appear in lighting retailers, supermarkets and hardware stores during the lead-up to the sales ban of inefficient traditional pear-shaped incandescent light globes in late 2009. The full media release is at Appendix 8.2.

Over the period 2012 to 2020, this initiative is expected achieve a total of approximately 28 million tonnes of greenhouse gas abatement and save Australians $380 million per year by 2020 (an average of $50 for each household that changes all its incandescent lamps to CFLs).

This initiative has also translated into international momentum for Australia to take a leading role in international efforts to develop global energy efficiency standards for lighting technologies as well as to contribute to other inefficient lighting phase-out programs. These are described in Chapter 4 *Major International Activities*.

NEW VOLUNTARY LABELLING SCHEME FOR TELEVISIONS TO BECOME MANDATORY

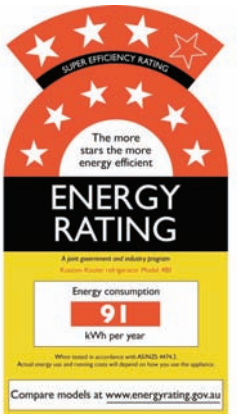
In June 2008 the Commonwealth Environment Minister, Peter Garrett, announced that the Australian Government and the television industry would develop a voluntary labelling scheme for televisions. This highlights the strong public-private partnership that continues to develop between government and industry within Australia and New Zealand. One year on, close to 100 television models are displaying the voluntary energy label in stores.

Moreover, industry has backed the transition of this voluntary scheme to a regulatory program of mandatory MEPS and labelling, due to commence no earlier than 1 October 2009. The Decision-stage Regulatory Impact Statement for this proposal was approved by the Office of Best Practice Regulation (OBPR) in June 2009. With Australians buying around 2 million televisions each year, the proposal represents one of the biggest single greenhouse gas abatement measures ever taken under the E3 Program. Projections for Australia show that by 2020, over 6Mt in CO_2-e emissions will be avoided each year compared to a BAU scenario.

TEN STAR LABEL

After 20 years of promotion, community awareness of the six-star appliance Energy Rating Label scheme is almost universal, with most consumers having a good understanding of its basic concepts and features.

Nevertheless, highly efficient products are now bunched at the top end of the rating scale, disadvantaging both consumers who cannot access clear information to make cost and energy-saving decisions, as well as manufacturers who are not encouraged to continually improve their products since their energy-saving innovations are not easily recognised.



To resolve this issue, the scheme will be upgraded such that up to ten stars can be awarded. The six-star version will continue to appear on regulated product types, with the new ten-star version gradually transitioned in once industry is able to provide super-efficient products to the marketplace.

Transition to the ten-star label (pictured) will occur gradually and will be triggered when products exceed the current six-star maximum. The next step in the transition process will be incorporating the new label formats and relevant star-rating algorithms into the relevant product standards. The six-star version will continue to appear on regulated product types, with the new ten-star version likely to commence as soon as industry is able to provide super-efficient products to the marketplace. This has commenced for air conditioners as well as refrigerators and freezers, as outlined in both Chapter 7 *Regulatory Impact Assessments and Chapter 8 Standards Development, where work has begun to revise the star rating algorithms in their respective Australian/New Zealand standards.*

4. MAJOR INTERNATIONAL ACTIVITIES

The effectiveness of the E3 Program is not only measured by its achievements within Australia and New Zealand but also its ability to influence global energy efficiency debates. The Program has long held links with other national and regional activities, which also assists E3 regulators to apply that knowledge to the E3 Program.

In 2008/09 Australia and New Zealand continued to demonstrate how the international agenda can be influenced by taking the initiative on the phase-out of inefficient lighting, the harmonisation of standards and test procedures for standby power and electric motors, the fostering of bilateral partnerships, and the establishment of international round robin testing. These, along with other key international exchanges are described in this chapter. The chapter will begin with an overview of the main international organizations associated with the E3 Program.

RELEVANT INTERNATIONAL ORGANISATIONS ASSOCIATED WITH E3

The international areas of work in which the E3 Program is actively involved encompass a handful of international organisations. The most prominent in 2008/09 were:

- The Asia-Pacific Partnership on Clean Development and Climate (APP) Building and Appliances Taskforce (BATF).
- The Asia-Pacific Economic Cooperation (APEC) Energy Working Group (EWG).
- The International Energy Agency (IEA) Efficient Electrical End-use Equipment (4E) Program.

ASIA-PACIFIC PARTNERSHIP ON CLEAN DEVELOPMENT AND CLIMATE (APP)

The APP, comprising partners from Australia, Canada, China, India, Japan, Republic of Korea, and the United States of America, was established in 2005 to bring together key developing and developed countries in the region to address the challenges of climate change, energy security and air pollution in a way that is designed to promote economic development and reduce poverty.

The E3 Committee is involved in leading and participating in various APP projects under the Building and Appliances Taskforce (BATF), which has been tasked with developing projects that address the main sources of greenhouse emissions in the residential and commercial sectors, with the exception of transport. In terms of appliances under the current BATF Action Plan[10], partner countries have selected three project areas for cooperative action:

1. **Harmonisation of test procedures:** to work toward common methods of testing and gauging energy performance of selected appliances, in order to reduce the burden to manufacturers of multiple tests and to encourage the growth of international markets for more energy-efficient products and new energy-saving technologies.
2. **Standby power:** to build on existing national and international initiatives to better understand market trends and cost-effective technical opportunities to reduce standby power levels in a range of devices, and to encourage actions by each individual country to accelerate market acceptance of new technologies that can help reduce unnecessary standby power.
3. **Market transformation:** to encourage the sharing of experience among Partner countries with a range of market-oriented policies and programs, including voluntary labelling and recognition programs for efficient products, utility rebates and tax incentives to both consumers and manufacturers, training and information campaigns, and aggregating buyer demand (e.g. by government agencies) to create a "market-pull" for efficient products.

In terms of international lighting, the US Agency for International Development's (USAID) ECO-Asia Clean Development and Climate Program has been a key Australian APP partner in conducting training workshops, international CFL quality testing and supporting the proposed establishment of the Asia Lighting Council.

ASIA-PACIFIC ECONOMIC COOPERATION (APEC)

APEC brings together twenty-one economies from the APEC region who currently account for around 60% of the world's energy demand. The APEC Energy Working Group (EWG), launched in 1990, seeks to maximize the energy sector's contribution to the region's economic and social well-being, while mitigating the environmental effects of energy supply and use.

The EWG is assisted by five Expert Groups and two taskforces which concentrate on particular strategic aspects of the EWG's agenda. New Zealand is currently the Chair of the Expert Group on Energy Efficiency and Conservation For more information see http://www.ewg.apec.org

THE INTERNATIONAL ENERGY AGENCY (IEA)

The International Energy Agency (IEA) acts as energy policy advisor to its 28 member countries in their efforts to ensure reliable, affordable and clean energy for their citizens. In 2008, the IEA Board approved a new IEA Implementing Agreement for a co-operative program on Efficient Electrical End-use Equipment (4E).

The 4E Implementing Agreement connects energy efficiency policy makers from Asia with those in Europe and North America and is the only international mechanism that focuses on electrical equipment. Its aim is to share knowledge on a global scale by providing an international forum for governments and other stakeholders to coordinate policies and technology for efficient electrical equipment.

4E's focus allows it to be effective in identifying and tackling barriers, while its mandate gives it an important role in

10 The current BATF Action Plan is available online at: http://www.asiapacificpartnership.org/pdf/Projects/Buildings%20and%20Appliances.pdf

collaborating and extending existing activities. This is particularly crucial when tackling issues relating to global trade and harmonisation. 4E has a number of Annexes (essentially working groups) focussing on a handful of projects. The current Annexes are:

1. **Mapping and Benchmarking:** to assess the energy saving potential in electrical appliances.
2. **Standby Power:** to monitor and report the extent of, and changes in, energy consumption by electrical appliances in low-power modes (standby power); and support the development of policies which seek to minimise excessive energy consumption by products in standby power modes.
3. **Electric Motor Systems:** to promote harmonisation of standards and promotion of high-efficiency electric motors in appliances.

INTERNATIONAL LIGHTING EFFICIENCY ACTIVITIES

Australia has been the global leader in terms of the international lighting efficiency agenda. The week after the domestic incandescent phase-out initiative was announced, there were repercussions around the world with the European Commission declaring its intention to move further and faster on efficiency that included an explicit mention of lighting. Equivalent moves are in the pipeline in the US, Canada and East Asia.

Recent international activities have focussed on promoting the take-up of efficient lighting alternatives – starting with CFLs – particularly in developing nations. The main objectives have been to:

1. Empower countries considering phase-out as a policy option by providing a roadmap for early action and enabling them to engage with international networks of support and funding.
2. Collate data with a view to establish coherent test methods and standards for phase-out action.

In line with APEC and APP agendas, Australian leadership and cooperation in 2008/09 included training workshops held in India and China; progress with the harmonisation of test procedures for CFLs; the establishment of regional lighting standards and coordination bodies; and the commencement of international round robin testing. These are outlined below.

INTERNATIONAL TRAINING WORKSHOPS

Australian-led workshops held in India and China in 2008/09 have contributed to both the move to phase-out inefficient lamps and to the promotion of harmonised standards for CFLs.

- **India:** In cooperation with Australia's APP partner, USAID Environmental Cooperation-Asia (ECO-Asia), the Australian Government supported two workshops on lighting quality and efficiency in New Delhi and Chennai, in April 2009. The workshops covered an extensive range of topics including supply, quality and testing of energy efficient lighting alternatives, environmental issues and enforcement.
- **China:** 85% of the world's CFLs are produced in China. Two one-day workshops entitled, *Quality Plus Efficiency: Meeting the Demand for Low Carbon Lighting,* were held in Xiamen on 25 May 2009 and in Hangzhou on 27 May 2009. Also part of Australia's APP lighting efficiency initiatives, the workshops were organised by DEWHA in cooperation with the Chinese Association of Lighting Industry (CALI). The workshops were targeted at the Chinese lighting industry and addressed a number of lighting efficiency and quality topics, which emerged from the *Phase-Out* 2008 conference held in Shanghai in May 2008.

HARMONISATION OF TEST PROCEDURES FOR CFLS

Harmonised standards are an important step in eliminating a major barrier to trade in efficient lighting products among APP member countries and ensuring the supply of efficient and high quality CFLs to the Australian market. This project seeks to develop and implement harmonised minimum performance standards and test procedures for CFLs.

To date the project has included support for the development of sampling methodology and the review of test methodologies for CFL quality and mercury testing. The project is intended to feed into the ongoing work being conducted by the APEC-supported Compact Fluorescent lamp International Harmonization Initiative (CFLI).

ESTABLISHMENT OF REGIONAL LIGHTING STANDARDS & COORDINATION BODIES

Australia has worked with the USAID's ECO-Asia Clean Development and Climate Program to develop a coordinated regional approach to lighting quality and efficiency. This led to the establishment of the Asia CFL Quality Charter[11] and to significant progress to establish the Asia Lighting Compact. The Lighting Compact has received strong support from major international lighting manufacturers to date. It will promote and support regional and international efforts to harmonise test procedures, quality and energy efficiency standards to improve product quality and mitigate greenhouse gas emissions.

Australia has also continued work in cooperation with ECO-Asia to sample and collect CFLs representing 156 product models from Australia, India, and the four largest ASEAN countries: Indonesia, Philippines, Thailand, and Vietnam. The initiative has now completed the testing of 96 CFL models from Australia and over 60 models from India and ASEAN countries - a total of over 2,200 lamps. This testing has created benchmarks by which all regional policy initiatives can be measured, including the market changes brought about by the new quality guidelines instituted in the Australian phase-out program. Moreover, testing has created the most comprehensive set of data for CFL quality, electrical and mercury ever placed in the public domain. This will inform regulators and procurement organisations throughout the region.

11 Asia CFL Quality Charter website: www.cleanenergyasia.net/cfl/index.php

Work was also undertaken to develop an effective and reliable check-test method for measuring the efficacy of low-voltage halogen reflector lamps. This comprised a round robin test program involving six test laboratories across the globe (outlined in this chapter under International Round Robin Testing). A written guide to phasing out inefficient lamps based on the Phase-out 2008 conference in Shanghai is also being developed.

INTERNATIONAL STANDBY ACTIVITIES

Standby power consumption, which is the power used by appliances when they are not performing their primary function, has been recognized as one of the most cost effective energy efficiency end-use measures. While the amount of standby power varies markedly between countries, the IEA estimates global energy consumption from standby to be between 200–400 TWh.

Regular international conferences on reducing standby power have helped to keep the issue at the forefront of national energy efficiency strategies and stimulate coordination amongst countries. Australia participates in the international standby projects outlined below. Together with the provision of project and technical support, Australia coordinates and publishes a standby power newsletter, *LoadDown*[12], for international circulation. Other achievements in the period include Australia's participation in a standby power workshop held in Washington, US, in October 2008.

APP ALIGNMENT OF NATIONAL STANDBY POWER APPROACHES

The APP *Alignment of National Standby Power Approaches* Project enables the comparison of household appliances across different countries and regions. This is facilitated by the measurement and collection of standby data for a range of common household appliances on display in retail outlets, as well as the provision training on in-store testing practices. Such measurement will demonstrate the effectiveness of the policy mix used in individual countries and promote products that meet standby power objectives.

This work is being led by the Department of the Environment, Water, Heritage and the Arts with assistance from South Korea.

APEC ALIGNMENT OF NATIONAL STANDBY POWER STRUCTURES

Australia successfully promoted the *APEC Alignment of National Standby Power Structures* project that was approved in December 2008. In collaboration with other international activities, this project seeks to support APEC economies through two distinct streams of work:

- The development of policies to tackle standby power.
- The measurement, collection and dissemination of standby power data from appliances.

With a total budget allocated of US$105,000 the project is scheduled to commence in 2010 with Australia as the project coordinator.

IEA 'ONE–WATT' STANDBY TARGET

Australia was the first nation to publicly state that it would pursue the 'one-watt' target under the banner of the IEA standby power initiative. This aspirational target sought to raise awareness about excessive standby amongst suppliers and product purchasers. Since Australia's announcement, other IEA member countries such as Japan and the USA have taken similar stands.

Most consumer products are traded internationally and any Australian action can only be effective if it is in step with international endeavours. Australia has been a "standard bearer" in this field and will continue to adopt actions to reduce standby to reasonable levels and help other nations to identify and redress excessive standby power.

IEA 4E STANDBY POWER ANNEX

In July 2007 Australia agreed to lead the new 4E Standby Power Annex with the assistance of the USA. The Annex was ratified at a Network Standby coordination meeting held in Paris on 18 June 2009 and work is due to commence mid 2009 for a four year period. The goal of the Annex is:

> *"To monitor and report the extent of, and changes in, energy consumption by electrical appliances in low-power mode and support the development of policies which seek to minimize excessive energy consumption by products in standby power modes."*

12 Copies of *LoadDown* and information on various standby projects are available online at the Energy Rating website (www.energyrating.gov.au) under Standby.

INTERNATIONAL MOTOR & TRANSFORMER ACTIVITIES

APP HARMONISATION OF TEST PROCEDURES FOR ELECTRIC MOTORS & MOTOR SYSTEMS

A project workshop was held in Sydney on 6 February 2009 to progress electric motors and motor systems. Workshop participants agreed that Australia, Korea and China would participate in the IEC testing round robin in mid 2009. Australia and China are also working closely together on testing motors in a Chinese test laboratory to gain further experience with the new IEC test method standard 60034-2-1.

IEA 4E ELECTRIC MOTOR SYSTEM ANNEX (ESMA)

Australia joined the IEA 4E Electric Motor Systems Annex (EMSA) in early 2009. Switzerland is the lead country for the EMSA with participation from Australia, Austria, Denmark, Netherlands and the UK. Under the E3 Program, Australia is leading *Task C: Testing Centres.* Other participants include Denmark and Switzerland, with South Africa expressing strong interest. *Task C* aims to raise the quality of energy efficiency testing of motors worldwide by developing networks, fostering dialogue and sharing best practice approaches between laboratories in different countries. The first networking event under *Task C* is expected to be held in France in September 2009.

MOTOR ENERGY PERFORMANCE STANDARDS AUSTRALIA (MEPSA) 2009 – *REGULATING MOTORS AND MOTOR SYSTEM COMPONENTS*

MEPSA 2009 was an international motors event coordinated by DEWHA to support the E3 Program's work on motors. The event was held at the University of New South Wales (UNSW) in Sydney from 4-5 February 2009. It brought together international motor experts to review global progress on motor and motor system efficiency, and to consider the wider implications of the new IEC motor standards as they impact on manufacturers, users and policy makers.

MEPSA participants agreed to set up a working group to develop an interpretive document for the new IEC test standard, as well as to liaise with the IEA 4E Electric Motor Systems Annex (EMSA – see below). Delegates also strongly supported the call for tougher global compliance regimes.

BILATERAL PARTNERSHIPS

The Australian Government Bilateral Climate Change Partnerships Program was introduced in 2004-05 to develop and implement projects that deliver mutual practical benefit for Australia and partner countries, help build the capacity of developing countries to take action on climate change and to provide an additional mechanism to facilitate strategic policy dialogue with key countries.

These bilateral partnerships are a useful complement to other international forums, providing more flexible mechanisms for reaching agreement and building stronger cooperative relationships on climate change. Energy efficiency is a focus area in a number of bilateral partnerships including China, the United States, New Zealand, the European Union and Fiji. Cooperative areas include harmonisation of emissions monitoring, reporting, verification and certification procedures between Australia and partner countries.

FIJIAN STANDARDS AND LABELLING PROGRAM

For more than a decade, the Australian Government and later the New Zealand Government have been working with Pacific Island Countries (PICs) to explore mitigation opportunities for greenhouse gas reductions and energy efficiency. Early studies found that scope for the systematic application of appliance regulation in the PICs was possible and eventually all PICs indicated support for a standards and labelling project to start in Fiji as a test case.

This test case makes sense as most of the large electrical appliances sold in Fiji and many other PICs have been imported from Australia or New Zealand with the Australian/New Zealand (ANZ) energy label since the early 1990s. Around 80% of refrigerators arrive in Fiji with their ANZ energy labels attached, which has made energy labelling a relatively familiar concept in Fiji.

The Fijian Cabinet agreed to several important steps necessary to establish regulation in support of end-use equipment energy efficiency. Experts found that labelling was currently not very effective in encouraging Fijian consumers to purchase more energy efficient refrigerators. The limited success of energy labelling in Fiji was due to a number of reasons including:

- Consumer focus on up front costs rather than equipment life-cycle costs;
- Subsidised electricity prices under-valuing the running costs for consumers; and
- The limited availability of energy efficient models, which make their purchase less of a priority.

While these barriers cannot be addressed by labelling alone, transforming the market can be addressed by adopting sale bans of inefficient products, as is done in Australia and New Zealand. A detailed economic analysis found that if Fiji adopted Australia's standards system for household refrigerators and freezers, the country would save an estimated 9 GWh per year (8% below BAU) by 2010 and 35 GWh per year (20% below BAU) by 2020.

With assistance from Australian consultants and government officials, the Fijian Department of Energy continued to work towards the implementation of a standards and labelling regime in 2009. This included the following initiatives:

- Retailer training was delivered to retail staff and government officials from 20-23 October 2008.
- Regulatory and compliance training for Government compliance and enforcement officers is planned for 2009 following the legislation.
- A community education campaign successfully promoted an Energy Smart Calculator. This was designed to assist

retail staff in communicating the advantages of purchasing energy efficient appliances to consumers. Over 120 retail staff were trained on energy labelling in the first half of 2009.

These legislative developments and retailer training initiatives in Fiji will be crucial to the roll out of similar programs to the other PICs in the future.

Apart from the Fijian standards and labelling program, Australia and China have cooperated through a bilateral agreement in relation to energy efficiency standards for LCD televisions and more strategically, to enhance cooperation between technical experts on energy efficiency and standards and labelling agencies in both countries. The E3 Committee continues to explore further bilateral opportunities with China and other nations.

INTERNATIONAL ROUND ROBIN TESTING

WHITEGOODS ROUND ROBINS

In 2008 on behalf of the E3 Committee, DEWHA approached the China Household Electric Appliance Research Institute (CHEARI) to conduct an international round robin for appliances. The purpose of the round robin was to:

- Strengthen testing ties between Australian and Chinese appliance test laboratories.
- Build cooperation and confidence between Chinese and Australian governments on appliance testing matters.
- Provide an opportunity to assess inter-laboratory reproducibility of test procedures used for selected appliances.
- Clarify any ambiguities in the major test methods used for regulatory purposes.

Given the large flow of appliances from China to Australia, the initial emphasis was an assessment against Australian requirements for selected major appliances. This covered six refrigerators, four air conditioners and two clothes washers. It also saw CHEARI representatives Mr Wu Heng and Mr Cai Ning travel to Australia in March 2009 to discuss initial results and Australia's compliance program. During this time they also visited several laboratories accredited by the National Association of Testing Authorities (NATA) in Sydney and Melbourne.

LIGHTING ROUND ROBINS: LOW-VOLTAGE HALOGEN REFLECTOR LAMPS

In late 2008, a round robin testing program of 90 MR16 low-voltage halogen reflector lamps was established to develop a cost-effective and reliable check-test method using an integrating sphere for measuring the efficacy of reflector lamps. This sought to protect consumers and manufacturers from sub-standard products, given their proliferation in the Australian market.

Testing is conducted in accordance with AS/NZS 4934.1(Int):2008 *Incandescent Lamps for General Lighting Service Part 1: Test Methods – Energy Performance*, with minor variations. A total of six test laboratories across the globe were involved - four of which were manufacturer laboratories who provided their own branded lamps, as well as two independent laboratories – the Queensland University of Technology, Australia, and the National Lighting Test Centre in Beijing, China.

Given the geographical spread of the laboratories and the tight testing timeframes, the coordination and scheduling of tests was somewhat of a challenge. Yet despite sphere calibrations requiring correction (the latter has been incorporated into subsequent testing), preliminary testing has been promising based on consistent results between laboratories.

ELECTRIC MOTOR ROUND ROBINS

An IEC testing round robin expected to commence in mid-2009 involving Australia, Korea and China for electric motors and motor systems was agreed to at an APP workshop held in Sydney on 6 February 2009. Australia and China are also working closely together on testing motors in a Chinese test laboratory to gain further experience with the new IEC test method standard 60034-2-1.

5. LONG-TERM STRATEGIES

A key feature of the E3 Program is the development of ten-year strategies to clearly articulate government policy and to provide a road map for reducing energy use in that area. These have proven effective in the past as a result of successful engagements with stakeholder industries that led to agreement between government and industry on the key policies required to stimulate greater energy efficiency improvements and their uptake in the market. Current and upcoming ten-year strategies are listed in Table 2 and are described below.

NATIONAL STANDBY STRATEGY: MONEY ISN'T ALL YOU'RE SAVING

The MCE has been committed to reducing standby power since 2002. There are two main mechanisms: one process is ongoing, while the second is planned for implementation in 2013.

Firstly, the energy associated with standby modes is being incorporated into the regulatory programs of those product sectors targeted under the E3 Work Plan to 2011. This occurs in a variety of ways including:

- Energy labels (standby is incorporated into the energy label rating system for whitegoods and televisions);
- Overall efficiency standards which incorporate energy used in low power modes (e.g. air conditioners and televisions); and
- Mandatory limits on low power modes for some product types (e.g. set-top boxes).

Secondly, Australia is intending to align with an EU directive that all home and office electrical appliances (not already subject to energy efficiency regulation) will be subject to a uniform 1-watt requirement. This requirement will be introduced in April 2013. The details are being finalised, with a consultation RIS due for release in late 2009.

More information on standby policy is available online at www.energyrating.gov.au in the electronic library.

LIGHTING STRATEGY: GREENLIGHT AUSTRALIA

The *Greenlight Australia* ten-year strategy for improving the efficiency of lighting in Australia was released by the MCE in November 2004. The strategy represents the agreed government plan across all jurisdictions for improving the efficiency of lighting products and reducing greenhouse gas emissions from lighting. It also sets out immediate and future priorities for consideration.

Due to recent advances in lighting technology and developments in the lighting industry, work began in 2008/09 in cooperation with the Lighting Council of Australia (LCA) to revise the strategy such that its scope extends beyond 2015. A draft strategy is expected to be released for public comment in 2009-10. The strategy will improve the efficiency of all lighting equipment in the residential, commercial, industrial and public lighting sectors.

TABLE 2. LONG-TERM STRATEGIES COVERED BY THE E3 PROGRAM

(Strategies are available at www.energyrating.gov.au)

Strategy	Sectors	(Expected) Coverage
National Standby Strategy – *Money isn't all you're saving*	R,C	2002-2012
Lighting Strategy – *Greenlight Australia*	R,C	2005-2015+
Gas Strategy – *Switch on Gas*	R,C,I	2005-2015
Heating, ventilation and air conditioning (HVAC) High Efficiency Systems Strategy	C,I	2007-2017
Commercial catering equipment strategy	C	(2010-2020)
Commercial refrigeration strategy	C	(2010-2020)
Industrial Products Strategy	I	(2010-2020)
Residential air-conditioning strategy	R	(2011-2021)

R=Residential, C=Commercial, I=Industrial.
+ The *Greenlight Australia* strategy was being revised such that its coverage extends beyond 2015.

GAS STRATEGY

The *Switch on Gas* strategy is a blueprint jointly endorsed by government and industry outlining the actions to enhance energy efficiency for gas appliances and equipment from 2005 to 2015. The gas strategy covers the agreed implementation of a similar regulatory framework to electrical products that seeks to improve the efficiency of gas products and reduce greenhouse gas emissions from their use.

The E3 Program's Gas Committee is responsible for implementing the *Switch on Gas* strategy and for its overall management. The Gas Committee consists of officials and representatives from Commonwealth, State, Territory and New Zealand government agencies with current membership listed at Appendix 10. The Gas Committee reports to the MCE via the EWG.

Updates will be available as they occur at www.energyrating.gov.au in the electronic library.

HEATING, VENTILATION & AIR-CONDITIONING HIGH EFFICIENCY SYSTEMS STRATEGY (HVAC HESS)

The HVAC HESS ten-year strategy was commissioned by the E3 Committee in 2007 and was designed to improve the energy performance of HVAC systems. At the time, the installed base of non–residential HVAC systems in Australia was estimated to:

- Consume 9% of electricity produced in Australia and produce more than 3.6% of the total Australian greenhouse gas inventory (i.e. more than 21Mt CO_2 pa);
- Depending on the building type and use, be responsible for between 40% and 60% of all energy used in non-residential buildings;
- On average create more than 55% of electrical demand recorded in CBD buildings during peak demand periods;
- Involve cooling towers that consumed billions of litres of water per annum across Australia;
- Service approximately 120 million square metres of buildings, comprising an industry worth approximately $7 billion per annum that employs at least 95,000 people.

The strategy has been designed to address many non-technical barriers to efficiency, while identifying and promoting both highly efficient technical solutions and systems optimisation processes. It also seeks to create the environment in which energy efficiency gains are valued, measurable and sustainable. This led to more than 20 separate but complementary measures being proposed across eight priority areas, which have been grouped under three broad strategic initiatives:

1. **Practices** – Creating nationally standard cradle-to-grave systems of documentation and data capture that allow trained climate control professionals to most effectively commission operate, and maintain the performance of HVAC systems.
2. **Systems** – Identifying, demonstrating, analysing and promoting best practice, sustainable efficiency gains and technological advances, systems and tools across the entire spectrum of climate control industry participants and stakeholders.
3. **People** – Creating nationally standard, recognised and transferable qualifications and certificates built on effective multi-disciplinary training modules that provide numerous entry points for industry participants and stakeholders to access material that improves their understanding of HVAC systems and their skills as climate control professionals.

The resulting strategy has received widespread industry and stakeholder endorsement and has a target of improving the energy efficiency of the installed base of systems by 20% over the life of the strategy. If that target is achieved, it would reduce greenhouse gas emissions by approximately 4Mt pa and save as much as $350 million in energy costs per annum.

COMMERCIAL CATERING EQUIPMENT STRATEGY

Work on a Discussion Paper for the development of a ten-year commercial catering equipment strategy began in 2008/09. This was informed by the results of a commercial catering equipment end-use metering Study, which was conducted to identify the most resource intensive items of commercial catering equipment and to obtain a better understanding of their energy performance characteristics. Data was collected on the electricity, gas and water consumption of key commercial catering equipment items in ten commercial kitchens in Melbourne. This work is being led by Sustainability Victoria and is expected to be released in the second half of 2009/10.

COMMERCIAL REFRIGERATION STRATEGY

Preparation of the draft ten-year strategic plan for commercial refrigeration energy efficiency in Australia and New Zealand was nearing completion at the end of 2008/09. The strategy considers:

- Voluntary agreement measures that include retro-fitting doors on existing open Refrigerator Display Cabinets (RDCs) and freezers, and fitting night covers on open RDCs and freezers in supermarkets.
- Regulatory measures that include the revision of current MEPS levels for products within the sector such as RDCs.

- Similar policies adopted by Australia's major trading partners. This will ensure that Australia captures new products within the scope of current standards and that Australasian equipment keeps pace with the competition.

Recognising that government engagement and consultation with the commercial refrigeration industry is crucial to any long-term plan, the strategy will be released for public consultation in November 2009, with the final strategy expected to be published in April 2010. The launch of the strategy will be an opportunity to highlight practical government action that meets domestic election commitments whilst demonstrating partnership with industry to achieve reductions in greenhouse gas emissions. Moreover the strategy will put Australia at the forefront of international commercial refrigeration energy efficiency initiatives.

INDUSTRIAL PRODUCTS STRATEGY

Work commenced to develop a draft ten-year industrial products strategy that will consider the efficiency potential of industrial pumps, fans, air compressors and industrial chillers and boilers. This draft strategy points to industrial pumps and fans as the next industrial products that E3 can most effectively focus on. Subsequently, the development of product profiles for both these product categories has been commissioned and are expected to be released for stakeholder comment in 2010. This is work is being led by Sustainability Victoria.

RESIDENTIAL AIR-CONDITIONING STRATEGY

The E3 Committee agreed to commence developing a ten-year strategy to improve the energy efficiency of residential heating and cooling in 2008/09. It intends to take a system-wide approach, map a path forward and propose a range of measures around the central theme of increased regulatory requirements. This is expected to be released in 2011.

6. REGULATORY COMPLIANCE

In 2008/09, the E3 Program continued to use a variety of compliance strategies to maintain Program integrity. These included:

- Check-testing products assessed as being at risk of not meeting either MEPS requirements, or efficiency and/or capacity statements made by suppliers on energy rating labels. Where necessary, this has been followed by appropriate enforcement measures.
- The publication of compliance newsletters.
- Conducting in-store compliance audits of products on sale.
- A desktop review of motor and transformer products available for sale and their level of regulatory compliance.
- The provision and improvement of the online database for product registrations.

ADMINISTRATIVE GUIDELINES

The nationally consistent energy efficiency legislative scheme is delivered by state and territory legislation. The use of nationally endorsed regulations allows each jurisdiction to follow a consistent scheme.

The scheme operates through a set of mutual expectations. Industry expects that regulatory agencies will act in a nationally consistent and cooperative manner and will use the Standards Australia processes in setting and publishing technical standards. Regulatory agencies expect that industry will participate constructively in those technical debates to ensure that technical requirements are fair and equitable for all participants.

The Administrative Guidelines play a crucial role in meeting these expectations. They help state and territory regulatory agencies work in a consistent manner so that costs and inconvenience to industry are minimised, and regulations concerning energy efficiency labelling and performance standards are enforced efficiently. The guidelines provide an explanation to industry about:

- The way legislation operates and is administered by state and territory regulatory agencies.
- The standard procedures, rules and processes that underpin state and territory legislation.
- The responsibilities of all stakeholders.

The guidelines have operated since the Program began but were first published in April 2000. A major revision was published in 2005 with the guidelines now updated from time to time on www.energyrating.gov.au

CHECK-TESTING AND ENFORCEMENT IN 2008/09

Check-testing is a quality assurance process which aims to:

- ensure that electrical products entering the Australian and/or New Zealand markets meet the MEPS specified in legislation; and
- that the performance of electrical products offered for sale in Australia and/or New Zealand meet the energy efficiency and performance claims made by suppliers on labels and claims contained in registration applications.

Since 1991, the Program has conducted regular check-testing of all products registered for either MEPS or energy labelling. One aim of this testing is to ensure that consumers can rely on the information contained in the energy rating labels affixed to appliances, and that suppliers provide accurate information when registering products for sale.

This financial year was a development year where the Program moved away from a whitegoods focus to the testing of constantly evolving new technologies. It has been a year of transition in which 88 check-tests were conducted across all product areas. It was also the year where E3 committed substantial resources to the future of the Program's compliance component in an effort to expand, develop, streamline and enhance existing check-testing measures.

As a result of 2008/09 check-testing efforts, a lighting supplier voluntarily entered into an agreement with DEWHA in 2009 to compensate both consumers and the environment when one of their products failed a MEPS check-test. The supplier agreed to:

1. Exchange the particular product for a MEPS compliant replacement.
2. Advertise the failure of their product in trade magazines.
3. Advise the professional body associated with that product.
4. Address the environmental damage caused by the use of their non-compliant product by purchasing greenhouse gas abatement credits to the value equivalent to the additional emissions created as a result of the additional energy used.

TABLE 3. SUMMARY OF CHECK-TESTS PERFORMED ACROSS ALL PRODUCT CATEGORIES OVER 2008/09 AND THEIR OUTCOMES AS AT 30 JUNE 2009.

Product	No. of Tests Performed	Confirmed Passes	Confirmed Failures		Outcome Pending
			Confirmed Failures	No. of Failures De-registered	
Air Conditioners	9	8	1	1	-
Clothes Dryers	-	-	-	-	-
Clothes Washers	4	1	-	-	3
Commercial Refrigerators	9	6	3	3	-
Compact Fluorescent Lamps	-	-	-	-	-
Dishwashers	20	8	8	-	4
Distribution Transformers	-	-	-	-	-
Electric Motors	23	3	-	-	20
External Power Supplies	-	-	-	-	-
Linear Fluorescent Ballasts	-	-	-	-	-
Linear Fluorescent Lamps	-	-	-	-	-
Refrigerators/Freezers	23	9	-	-	14
Set Top Boxes	-	-	-	-	-
Water Heaters	-	-	-	-	-
TOTAL	**88**	**35**	**12**	**4**	**41**

Table 3 provides a summary of the check-tests performed across all product categories over the 2008/09 period and the status of their outcomes as at 30 June 2009.

COMPLIANCE NEWSLETTERS

In October 2006, the E3 Committee published its first compliance newsletter, which continues to inform stakeholders of compliance related outcomes. Towards the end of the 2008/09 reporting period, the E3 committee made the decision to revamp the format of the newsletter – the objectives being greater engagement of audience members and an emphasis on current topical issues. A new name for this publication was chosen, with the first edition of *Circuit Breaker* to be launched in 2009/10.

MEPS COMPLIANCE AUDIT - *SURVEY STAFF*

As a result of a tender process, the E3 program engaged the Australian Refrigeration Council Ltd (ARC) to conduct a compliance audit of equipment energy efficiency requirements and deliver detailed survey data of this audit.

The audit is designed to target a broad range of selling points. This included in-store audits at various store locations (metropolitan, regional and rural) and store types (major department stores and warehouse chains; regional and suburban stores; as well as smaller outlet stores) in all Australian jurisdictions. Audits are conducted by a 'taskforce' known as *Survey Staff*.

The Program audits products for compliance to a number of regulatory requirements, including, but not limited to:

- Ensuring that products have valid registrations in a recognised jurisdiction.
- Ensuring that the correct Energy Star Rating label is affixed.
- Ensuring that the correct water rating label is affixed for water using products.

Stores are chosen at random by *Survey Staff*. Prior notification of a store audit is not provided to stores; rather, a member of *Survey Staff* gives a letter of authority to the store manager when they arrive. The auditing program, along with a list of products to be audited are also outlined to the manager. In addition to in-store audits, auditing is carried out on both point-of-sale, internet sites and hard-copy catalogue advertising, thus gaining valuable data on alternative sale strategies used by retailers.

During the first phase of auditing, ARC *Survey Staff* conducted point-of-sale compliance audits on a number of product classes in the whitegoods category. An estimated 28,000 products were audited for compliance by 30 June 2009 and include mass consumer purchase items: air conditioners, clothes washers, dishwashers, clothes dryers and refrigerators/freezers.

Given the expanding scope of products covered by MEPS registration and mandatory labelling under the E3 Program, additional products will have the potential to be audited through this initiative. One such product is televisions, which will require MEPS registration and mandatory labelling from October 2009. Others include commercial refrigeration, electric water heaters, electric motors, set top boxes and lighting ballasts.

The results of the first phase are expected to be published in late 2009.

DESKTOP RESEARCH ON REGULATIONS FOR MOTORS & TRANSFORMERS

During 2008/09, external consultants were engaged to conduct a desktop review of motor and distribution transformer suppliers. This was trialled as a method of potentially identifying unregistered industrial products being offered for sale in the country. Over a one-month period, models being offered for sale were compared with current registrations on the Energy Rating website. The outcomes of this review are progressing as part of a broader industrial products compliance strategy.

ONLINE DATABASE FOR PRODUCT REGISTRATIONS

The online registration database was introduced in 2002 to facilitate the registration process for prescribed appliances and equipment. The database also serves as an interactive products listing at www.energyrating.gov.au.

Over the period 1 January 2008 to 30 June 2009, just over 2,000 registered users completed 5,731 submissions to regulators resulting in 4,022 registration approvals. This has increased from just over 1,000 registered users completing 5,262 submissions in 2007/08 that resulted in 3,510 approvals, as described by product type in Table 4.

Since 1 January 2008, this system has continued to be enhanced and extended:

- A new 'Wizard' function was added to the registration system to help guide users (particularly new users) through the initial stages of the registration process.
- Provisions to upload supporting documentation alongside registration submissions were expanded to cover all products currently regulated.
- Additional functionality was created to enable registration of the following newly regulated products:
  - *Closed control air conditioners
  - *Chillers
  - Compact fluorescent lamps
  - External power supplies
  - *Incandescent lamps
  - *Low voltage transformers
  - Set top boxes

  * *No valid submission and approval data (see Table 4) was available for these products during this reporting period, given their more recent inclusion under the E3 Program.*
- During the first half of 2009 development and testing of a new registration facility for registering televisions was undertaken. These facilities are scheduled to be available for use in August 2009.
- Revisions to the registration forms for refrigerator, air-conditioner and external power supplies were undertaken in accordance with amendments to the regulatory standards for these products.
- Manufacturer details have been added to the registration application forms.

TABLE 4. THE NUMBER OF SUBMISSIONS AND APPROVALS IN 2008/09 FOR PRODUCTS COVERED UNDER E3.

Product Type	Submissions		Approvals	
	2007/08	2008/09	2007/08	2008/09
Air Conditioners	1,718	832	1,208	535
Clothes Dryers	124	67	63	44
Clothes Washers	329	144	174	97
Commercial Refrigerators	566	327	329	140
Compact Fluorescent Lamps	N/A	16	N/A	0
Dishwashers	262	136	182	99
Distribution Transformers	29	46	9	10
Electric Motors	1,318	624	999	459
External Power Supplies	N/A	2,905	N/A	1,317
Linear Fluorescent Ballasts	94	48	23	26
Linear Fluorescent Lamps	78	40	49	15
Refrigerators	659	387	402	267
Set Top Boxes	N/A	30	N/A	26
Water Heaters	85	129	72	87
Total	**5,262**	**5,731**	**3,510**	**4,022**

7. REGULATION IMPACT ASSESSMENTS

As part of the Australian and New Zealand Governments' framework and on behalf of the MCE, the E3 Program is required to develop and assess the effects of any proposed regulation through the process of a regulation impact assessment. A key component of a regulation impact assessment is the Regulation Impact Statement (RIS). RISs are written documents that inform affected parties and stakeholders of the potential impacts and regulatory options of any proposed new or amended regulation, which could directly or indirectly affect business or competition. They include a public consultation process that invites comments from the wider community – thereby providing a public cost-benefit analysis process that ensures both the social and economic impacts of regulating a product are considered in a timely, systematic, objective and transparent manner. They also provide a consistent framework for identifying the most cost-effective regulatory options and ensure industry and community involvement in identifying and analysing the impacts of those options.

To maximise opportunities for interested parties and stakeholders to assist in identifying potential impacts, the E3 Program often augments the Regulatory Impact Assessment process with public meetings or by producing and publishing product profiles, technical reports, cost-benefit analyses or fact sheets before seeking industry and community input in response to a Regulatory Impact Statement. The E3 Program also provides early notice of potential regulation by publicly releasing a 3-year work plan detailing the products likely to require future regulation.

TABLE 5. SCHEDULE OF REGULATORY IMPACT STATEMENTS PUBLISHED IN 2008/09 AND GOING FORWARD UNDER THE 2009-2011 WORK PLAN.

Product type	Type of Regulation	Sector*	2008-2009		2009-2011 Work Plan**	
			Public Consultation	MCE Decision	Public Consultation	MCE Decision
AC Chiller Towers	Introduction of MEPS	C,I	Aug 2008	Dec 2008	-	-
Air Conditioners (single- & three phase)	Revision of MEPS, energy rating algorithm & labelling	R,C	Sep 2008	-	-	✓
Air Conditioners (single- & three phase) with 10% lower MEPS	-	R,C	-	-	✓	✓
Air Conditioning (closed control units)	Introduction of MEPS & alternate strategies	C	Mar 2009	Jun 2009	-	-
Commercial Refrigeration (RDCs, RBVMs, ISIMBs)	Introduction of MEPS, component regulation & alternate strategies	C	-	-	✓	✓
Computers and Monitors	-	R,C	-	-	✓	✓
Distribution Transformers	-	I	-	-	✓	✓
External Power Supplies	Introduction of MEPS	R	Dec 2007	Feb 2009	-	-
Lighting (incandescents, CFLs, halogen voltage converters)	Introduction of MEPS	R,C	Sep 2008	Aug 2009	-	✓
Refrigerators and Freezers	Revision of energy rating algorithm & labelling	R,C	Jun 2008	Mar 2009	-	-
Set Top Boxes (digital television receivers)	Introduction of MEPS	R	Oct 2007	Feb 2009	-	-
Standby Power	-	R	-	-	✓	✓
Televisions	Introduction of MEPS & labelling	R	Mar 2009	Aug 2009	-	✓
Water Heaters (gas)	Introduction of MEPS	R,C	Aug 2008	-	-	✓

* Sector: R = Residential; I = Industrial; C = Commercial.
**Updates on the E3 work program are made available at www.energyrating.gov.au.

When conducting assessments, the E3 Program complies with the national regulation-making processes of Australia[13] and New Zealand[14]. Before a RIS is publicly released and later when public submissions are incorporated into the RIS, the E3 Program seeks an independent assessment of the process by the Australian Government Department of Finance and Deregulation's Office of Best Practice Regulation (OBPR) and the New Zealand Government Treasury's Regulatory Impact Assessment Team (RIAT).

A marked acceleration of the E3 Program over recent years has seen a corresponding increase in the number of RISs prepared. Table 5 summarises the status of RISs as at 30 June 2009, including those to be covered under the current E3 Work Plan. The E3 Program team is working closely with OBPR and RIAT to ensure the timeliness and quality of impact assessments can be maintained with the anticipated increased MEPS/Labelling RIS workload.

AC CHILLER TOWERS

Release date:

The OPBR cleared the Decision RIS for MEPS and Alternative Strategies for Chillers to proceed on 25 August 2008, thereby creating pathways towards regulation. The MCE agreed to the Decision RIS on 12 December 2008 for MEPS regulation to commence 1 July 2009.

Outline:

From 1 July 2009, regulation will commence introducing mandatory MEPS that cover chillers of greater than 350 kWr. The MEPS includes minimum requirements for full operating load Coefficient of Performances (COPs) and importantly, minimum requirements for part operating loads (called Integrated Part Load Values or IPLV).

Benefits and Costs:

Impacts of the proposal to introduce MEPS for chillers from 1 July 2009:

- Over the period 2009 to 2020, reductions in energy use are estimated to total 511 GWh/yr. This amounts to a cumulative greenhouse gas emission saving of 463 kt CO_2-e.
- From June 2009 to 2020, the cost of chillers in Australia and New Zealand resulting from the MEPS program is projected to increase by $27 million. However benefits to consumers will be worth $82 million, resulting in an overall net benefit of $55 million in net present value terms. The ensuing benefit-cost ratio is 3.04.

AIR CONDITIONERS: SINGLE & THREE-PHASED

Release date:

In September 2008 the MCE released the Consultation RIS: *Benefits of the Revision to the Energy Labelling Algorithms and Revised MEPS Levels for Air Conditioners seeking stakeholder comments. The associated Decision RIS was completed in early 2009 and was approved by the MCE in November 2009.*

Outline:

This RIS contained a number of measures flagged to be introduced in 2010, including a re-grading of the energy label algorithm, designed to move the current star ratings for air conditioners back two or more stars, depending on the rating. Also included in the RIS were several other proposals that formed the basis for a revision to AS/NZS 3823.2, including:

- More stringent MEPS levels for most products in cooling mode;
- The introduction of MEPS requirements for heating performance;
- The introduction of measures to reduce non-operational power consumption (both standby and crankcase heater energy use) through the inclusion of this energy into the energy labelling algorithm in 2010 and into the MEPS compliance calculation in 2011;

13 Council of Australian Governments (COAG): *Best Practice Regulation: A Guide for Ministerial Councils and National Standard Setting Bodies (2007).* http://www.finance.gov.au/obpr/docs/COAG_best_practice_guide_2007.pdf

14 The New Zealand Government Treasury: *Guidelines on the Regulatory Impact Analysis Requirements (2008).* http://www.treasury.govt.nz/publications/guidance/regulatory/impactanalysis/guid-ria-reqmts-nov08.pdf

- Mandatory reporting of demand response capability[15] during the product registration and an option to indicate demand response capability on the energy label where this is present;
- Inclusion of minimum permitted power factor levels for all air conditioners; and
- A new energy label design including provisions for up to ten-star energy ratings.

Benefits and Costs:

Both Australia and New Zealand stand to gain significant greenhouse gas abatement measures and benefits from the proposed regulation. The cumulative net benefit over 2005 to 2050 is estimated to be $313 million[16] along with a cumulative greenhouse gas saving of 6,446 kt CO_2-e.

AIR CONDITIONERS: CLOSED CONTROL UNITS (CCUs)

Release date:

In March 2009, the MCE released a Consultation RIS: *Minimum Energy Performance Standards and Alternative Strategies for Close Control Air Conditioners* seeking comments. The Decision RIS was cleared by the MCE in June 2009 and regulation came into effect from 1 July 2009.

Outline:

RIS for closed control air conditioners resulted from close consultation with the close control air conditioners supply industry from 2004 to 2008. Stakeholders were asked to comment on the proposed MEPS and the data assumptions relating to the cost-benefit analysis. Two comments were received – both in support of the proposed regulation.

The MEPS for CCUs include minimum requirements for the Energy Efficiency Ratio (EER) when measured or simulated to the new Australia/New Zealand Standard. It does not differentiate between types of heat rejection (water cooled or air cooled) or unit size.

Benefits and Costs:

Impacts of the proposal to introduce MEPS for CCUs from July 2009:

- Over the period 2007 to 2020, reductions in energy use are estimated to total 1,923 GWh. This amounts to a cumulative greenhouse gas emission saving of 1.72 Mt CO_2-e.
- From the proposed date of implementation of July 2009 to 2020, the additional cost of CCUs is projected to increase by $34 million. However, savings to consumers will be worth $212.8 million, resulting in an overall net benefit of $178.8 million in net present value terms. The ensuing benefit-cost ratio is 6.25.

COMMERCIAL REFRIGERATION

REFRIGERATED DISPLAY CABINETS | REFRIGERATED BEVERAGE VENDING MACHINES | ICE MAKERS & ICE STORAGE BINS

In August 2008 the Consultation RIS to introduce MEPS, component regulation and alternate strategies for ice makers and ice storage bins was not cleared by OBPR as the cost-benefit analysis was found to be unfavourable; while that for refrigerated beverage vending machines was cleared in September 2008. Nevertheless public consultation for the latter has not yet occurred, as further progress for all commercial refrigeration is subject to a ten-year strategy: *In From the Cold - Strategies to increase the energy efficiency of non-domestic refrigeration in Australia and New Zealand that was released in November 2009. Public consultation is expected to occur in late 2009.*

DISTRIBUTION TRANSFORMERS

Work has continued to progress for the proposal to increase the scope and stringency of the current MEPS levels for distribution transformers. A draft Consultation RIS was released for public consultation in the second half of 2009.

EXTERNAL POWER SUPPLIES (EPS)

Release date:

In early 2009 the MCE advised all jurisdictions to implement MEPS for External Power Supply (EPS) units.

Outline:

MEPS and performance marking requirements for EPS units are being implemented in all jurisdictions. Some EPS units will be exempt from complying with the proposed mandatory MEPS including those used with medical\therapeutic devices in the Australian Register of Therapeutic Goods, or those used as spare parts for a period of five years from the introduction of MEPS.

Benefits:

Projected impacts in Australia on EPS units exposed to the introduction of MEPS in 2009 and subsequent increases in stringency of these MEPS in December 2011 include:

- Reductions in energy use are expected to approximate 8,536 GWh and cumulative greenhouse gas emission savings of about 7.8 Mt CO2-e over the period 2007 to 2025.
- Over the same period, the overall net benefit is projected to be $280 million in net present value terms with a benefit-cost ratio of 2.36:1. These projections take into account savings that occur over the expected service life of EPS units sold in the above period.

15 Demand Response Enabling Devices allow alterations to an electrical product's normal mode of operation to be automated in response to an initiating signal originating from or defined by a remote agent. At present, some air conditioners have a latent demand response capability in their control software, but low-cost means to realise this capability have not so far been available. The forthcoming DRED standard will define the physical connections and communications protocols necessary to realise the demand response modes.

16 This is based on a 7.5% discount rate for both Australia and New Zealand. Please refer to the published RIS document for projections using a 5% discount rate for New Zealand.

LIGHTING

Release date:

Drafting of the RIS commenced in early 2008, however in September 2008 the New Zealand Government advised that they would withdraw from the planned public consultation process. The Australian Consultation RIS was subsequently cleared for release by the OPBR against the Australian RIS guidelines and released for public consultation from 11 September 2008 to 10 October 2008. The RIS was then revised to incorporate public comments – prepared as an Australian Decision RIS relating to the proposed import prohibition, it was cleared by the OBPR on 3 December 2008 and approved by the MCE in August 2009. The decision to implement the Australian import restriction was approved in mid-December 2008 by the Minister for the Environment, the Hon Peter Garrett AM MP, and the Minister for Home Affairs at the time, The Hon Bob Debus MP. A further revision of the RIS has been prepared for consideration by the MCE in relation to the point-of-sale restrictions.

Outline:

The RIS proposes to introduce MEPS for a range of incandescent light bulbs, CFLs and the voltage converters used to provide power to low voltage halogen lighting systems. The RIS notes a two-stage introduction:

1. From 1 February 2009 an 'Australian only' import restriction, approved for implementation on incandescent GLS (traditional pear-shaped incandescent) light bulbs.
2. This will be followed by an Australian point-of-sales MEPS proposed for implementation no earlier than 1 November 2009.

Benefits and Costs:

The savings to the environment and the economy from the phase-out initiative will be considerable. Across the country, the move to more efficient lighting is expected to save around 30 terawatt hours of electricity over the period 2008 to 2020 and around 28 million tonnes of greenhouse gas emissions over the same period. This is equivalent to permanently decommissioning a small coal-fired power station or taking more than 500,000 cars off the road. It is expected to result in savings to the Australian economy of around $380 million per year by 2020 and result in net savings for each household that changes all its incandescent lamps to CFLs of more than $50 per year.

It is also estimated that there will be net reductions in annualised life cycle costs (LCC) for all economic sectors, and for most types of lighting tasks (objectives). These assessments show that, in general, the proposed measures will deliver net financial savings. There are three exceptions:

- In the case of some Extra Low Voltage (ELV) halogen downlights, the new lamp would still be more efficient but, instead of using less energy, it simply generates more light. Most residential users can still save energy by dimming the lamp. However, a minority of residential users and a majority of commercial users do not employ this feature. They are obliged to take the improved performance as more light but still pay the incremental cost of the improved lamp.
- Lighting costs increase for combinations of small lamps (40 watts or less) or low duty (less than two hours per day) in non-residential applications. These are unlikely combinations.
- For technical reasons, it is not always feasible to replace a conventional magnetic Extra Low Voltage Converters (ELVCs) with the more efficient electronic type. In such situations the MEPS will require the use of an efficient magnetic ELVC that is significantly more expensive than both the conventional magnetic and electronic types. The energy savings do not generally provide adequate compensation and the cost of the lighting service increases. Suppliers say that the requirement for magnetic ELVCs is small: less than 5% of ELVC sales.

These small cost increases are outweighed by much larger cost reductions in the majority of lighting applications that are covered by the MEPS, to the point where there are weighted average cost reductions in all sectors – residential, commercial and industrial.

REFRIGERATORS AND FREEZERS

Release date:

On 19 March 2009 the MCE agreed to revise the energy star rating algorithm for household refrigerators and freezers. The MCE approved the following recommendations in the Decision RIS:

1. The MCE accepts the case for changes to the labelling algorithm for the energy star rating for household refrigerators and freezers made in the relevant RIS.
2. MCE authorises all jurisdictions to simultaneously take the necessary steps to implement the new arrangement for household refrigerators and freezers, as published in the relevant Australian Standards.

Outline:

This RIS proposes a new approach to calculating star ratings for household refrigerators and freezers that better reflects the effect of compartment sizes on energy consumption. Some small adjustments to the MEPS levels for Group 5 and 7 products were also proposed to account for the impact of the test method and to keep the MEPS levels equivalent. The end of the transition period for the new label is proposed to be April 2010. The last label algorithm re-grade was in 2000.

Benefits and Costs:

Impacts of the proposal to introduce a label algorithm update and small test method adjustments for refrigerators and freezers from June 2009:

- For refrigerators, reductions in energy use are expected to approximate 106 GWh per year in 2020 and greenhouse gas emission savings of about 500 kt CO_2-e over the period 2005 to 2020. For freezers, reductions in energy use are expected to approximate 9 GWh per year in 2020 and cumulative greenhouse gas emission savings of about 43 kt CO_2-e over the period 2005 to 2020.
- It is expected the proposal will raise the cost of refrigerators and freezers expected to be sold from 2005 to 2050 by $49.2

million, but will deliver energy savings to consumers worth $82.8 million. This will result in an overall net benefit of $33.6 million in net present value terms with a benefit cost ratio of 1.7 in Australia (2.7 for New Zealand) under base-case conditions.

SET TOP BOXES (STBs)

Release date:

In early 2009 the MCE advised all jurisdictions to implement MEPS for STBs.

Outline:

Mandatory MEPS for STBs commenced from April 2009. The regulations apply to STBs that are capable of decoding MPREG2 video transport streams and do not have a recording function (i.e. without a hard drive).

While the MEPS requirements apply to passive standby, active standby and in-use models, there are separate requirements for: standard definition STBs, high definition STBs, free-to-air STBs and subscription television STBs.

Benefits and Costs:

Projected impacts of the introduction of MEPS for STBs in Australia – taking into account the expected service life of each unit – are:

- Reductions in energy use are expected to approximate 1,561 GWh and cumulative greenhouse gas emission savings of about 1.46 Mt CO2-e over the period 2000 to 2020.
- For the 7.8 million STBs forecasted to be sold from 2006 to 2014, the proposal is expected to raise costs by $3.4 million but deliver energy savings to consumers worth $42 million. This will result in an overall net benefit of $38.6 million in net present value terms with a benefit cost ratio of 12:1.

TELEVISIONS

Release date:

In March 2009 the Australian only Consultation RIS for televisions was released. The Australian only Decision RIS was approved by the OBPR in June 2009.

Outline:

The RIS outlines a proposal to introduce mandatory labelling and MEPS not earlier than 1 October 2009. MEPS is proposed in two tiers:

1. First tier MEPS are to be set at the equivalent of 1 star on the energy label; and
2. Second tier MEPS are to be set at the equivalent of 4 stars on the energy label and introduced no earlier than 1 October 2012. E3 will have the authority to negotiate an extension to the October 2012 timetable should a review conducted 12 months after the first tier of regulation refute expert predictions of energy efficiency improvements in televisions.

Benefits and Costs:

When used over their expected service life for 10 hours a day, televisions in Australia are projected to achieve reductions in energy use of up to 40 TWh or 144 PJ and avoided emissions of up to 37.7 Mt CO2-e are projected over the period 2009 to 2020. It is expected that the proposal will provide savings of $6 billion over the same period with a cost of $185 million. This provides a benefit-cost ratio of over 32:1 – potentially representing the biggest benefit-cost ratio of any single measure under the NFEE.

WATER HEATERS: GAS

Release date:

Public comment arising from a cost-benefit analysis was incorporated into a consultation RIS which was released for public consultation in August 2008.

Outline:

The proposed introduction of MEPS for gas water heaters was outlined in the RIS. It targets the performance of external storage gas water heaters and all instantaneous gas water heaters for household use. Implementation of the new MEPS has been proposed for October 2010.

Benefits and Costs:

Gas water heaters exposed to MEPS in both Australian and New Zealand during the period 2013 to 2020 will:

- Reduce energy consumption by 17 PJ and greenhouse gas emissions by 1.15 Mt CO_2-e.
- Raise the cost of 719 million GWH sold during this period by $22.2 million, but deliver savings on household energy use worth $147.3 million. This gives rise to a net benefit of $124 million and a benefit-cost ratio of 6.3:1.

8. STANDARDS DEVELOPMENT

The role of standards within the E3 portfolio is an essential one. Broad agreement was reached between industry and government in the 1990s to use Australian and New Zealand Standards (AS/NZS) as the primary link in the delivery of the E3 Program. Generally speaking, the AS/NZS consists of two parts:

- Part one: Describes the method and procedures to be used for testing products.
- Part two: Details the technical and regulatory requirements for energy labelling and MEPS.

Standards provide a "one-stop shop" for stakeholders of the Program to address testing and performance requirements as well as energy labelling and MEPS requirements for products. These specific regulatory standards are drafted by the relevant standards committees under the direction of E3. This ensures that most regulatory requirements for products are contained in public documents which are drafted by committee experts in a manner that is fully integrated with the relevant test procedure. It also ensures that regulatory standards requirements, which are given force through state government legislation, are defined in a nationally consistent manner in all jurisdictions.

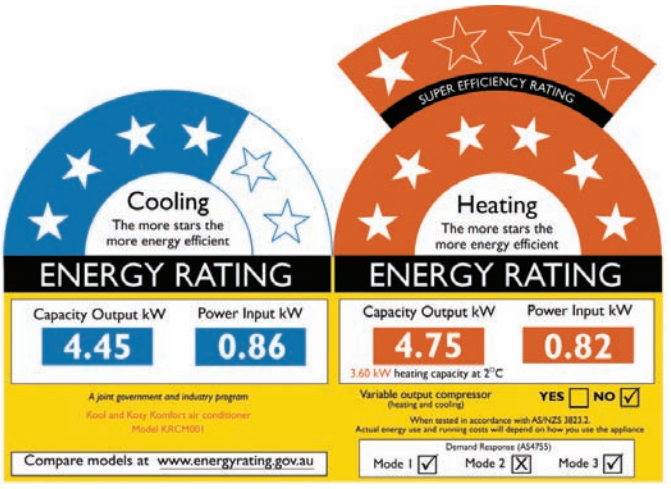
Moreover the use of Australian and New Zealand Standards processes provides an additional level of public input and scrutiny from key stakeholders in the development and implementation of energy efficiency requirements.

In 2008/09, industry worked collaboratively with Government to progress work on the standards described below that are to be used for energy efficiency regulation in Australia. 2008/09 also saw DEWHA, on behalf of the E3 Committee, enter into a service agreement with Standards Australia to streamline the delivery of any new or revised standards over the three-year period from 2008 to 2011. This is estimated to include approximately 20 work items going forward.

AC CHILLER TOWERS

Draft standards for chillers developed by the Commercial Air-conditioning Equipment standards committee were published and released for public comment in 2007. The final standard was published in November 2008 to mandate new MEPS requirements for chillers. The MEPS requirements are covered in AS/NZS 4776.1.1:2008, AS/NZS 4776.1.2:2008 and AS/NZS 4776.2:2008 respectively.

AIR CONDITIONERS



To ensure the smooth introduction of measures proposed in the RIS (see Chapter 7 Regulation Impact Assessments), a transition timetable was implemented to complement the release of the new air conditioner regulatory standard AS/NZS3823.2:2009 and new energy label design. The major dates for the transition timetable were:

- October 2009: The new standard AS/NZS3823.2:2009 was published.
- Online registration to the new standard will be available shortly after the publication of the standard.
- From 1 April 2010: All products manufactured or imported have to be registered to the new standard and must meet the 2010 MEPS levels.
- On 1 April 2010: Registrations to previous editions of the standard are to be grandfathered.
- From April 2011: All products manufactured or imported must meet the more stringent 2011 MEPS (standby power and other non operation power now included in the MEPS limits).

More stringent MEPS requirements are also proposed for October 2011. These are the subject of a separate RIS process.

AIR CONDITIONERS: CLOSED CONTROL UNITS

In November 2008, standards were published to mandate the performance of closed control air conditioners. The test rating method and MEPS level are covered in the AS/NZS 49665.1:2008 and AS/NZS 4965.2:2008 respectively. Drafting instructions were developed and forwarded to the states for incorporation into their energy efficiency legislation and regulation. An online registration database has also been established for industry to register products.

CLOTHES DRYERS

In September 2007 a regulatory ruling (13A) was issued to allow the use of the load from the clothes washers Standard (AS/NZS2040.1:2005 Amendment 1) in dryer tests under AS/NZS2442.1. As the dryer standard is more than ten years old, Standards Australia advised that no further amendments were permitted.

In 2008 the dryer working group considered a number of items for inclusion into a revision of AS/NZS2442.1. EI015/4 has agreed to proceed with a revised energy label to show the water consumption (if any) on the dryer label (only combination washer-dryers at this stage) and to include minimum energy performance standards (MEPS) requirement for standby modes on dryers. Work on these new requirements will proceed through 2009.

CLOTHES WASHERS

A revised Australian Standard (AS/NZS2040:2005) which saw rinse performance fully integrated and required the energy label value to include standby power was published in late 2005. It required all clothes washer models on the market after 31 March 2007 be registered to the new Standard. This transition was completed without incident.

In 2008 the washer working group considered a number of items for inclusion into a revision of AS/NZS2040.1, including allowing the use of the 'IEC load' instead of the current load. The test method was reviewed in-light of results from round robin testing conducted in 2007/08, and the necessary amendments made - particular focus was the assessment of duplication and clarification of some rinse-related issues. Work on these new requirements is continuing through 2009.

COMMERCIAL REFRIGERATION

Refrigerated Display Cabinets, Refrigerated Beverage Vending Machines, Ice Makers & Ice Storage Bins

In 2007 and 2008 stakeholders advised that the Refrigerated Display Cabinet (RDC) Standard AS1731 had several ambiguities, which were causing problems for industry in classifying RDCs for MEPS registration. DEWHA responded by engaging consultants to develop a ten-year strategic energy efficiency plan for the commercial refrigeration sector in Australia and New Zealand. The aim of this work is to enable governments and industry to agree on the key policies which are needed to stimulate greater energy efficiency improvements and uptake in the market. Standards for RBVMs and IMISBs will also be incorporated within the strategy.

COMPUTERS AND MONITORS

There is currently no Australian Standard for testing of computers and monitors. A Draft Standard was prepared for the Joint Standards Australia/Standards NZ Committee TE-001, Safety of Electronic Equipment. The objective of the Standard is to provide designers, manufacturers, importers, test laboratories, regulators and users of computers with a test method to assess energy efficiency of these devices. It draws on the ENERGY STAR Program that is administered by the US Environmental Protection Agency (EPA), where ENERGY STAR version 5.0 for computers and version 4.1 for computer monitors are the de-facto test standards in the US.

It is intended that these Standards should be proposed as the basis for an International Electrotechnical Commission (IEC) Standard once it has been published in Australia.

DEMAND RESPONSE ENABLING DEVICES (DREDs)

Demand Response Enabling Devices allow alterations to an electrical product's normal mode of operation to be automated in response to an initiating signal originating from or defined by a remote agent. At present, some air conditioners have a latent demand response capability in their control software, but low-cost means to realise this capability have not so far been available.

The new standard for DREDs, AS4755.3.1 – *Interaction of Demand Response Enabling Devices and Electrical Products: Operational Instructions and Connections for Air Conditioners,*

is in preparation. It will define the physical connections and communications protocols necessary to realise the demand response modes with the assistance of the Australian Standards committee EL-054.

DISHWASHERS

Revisions of AS/NZS2007.1 and AS/NZS2007.2 were published in late 2005. These required that all dishwasher models which remained on the market after 31 March 2007 be registered to the new test method AS/NZS2007.1:2005 and that the energy label value include standby power (off mode and end of cycle mode). The transition was completed without incident and there have been no standards developments for dishwashers since.

DISTRIBUTION TRANSFORMERS

Work has continued to progress to develop more stringent MEPS for distribution transformers, which will be implemented no earlier than October 2010. This standard is expected to expand the scope of transformer MEPS to include 33kV networks and transformers rated up to 3150kVA.

EXTERNAL POWER SUPPLIES

Amendments to both Part 1 and Part 2 of the EPS standards for MEPS and performance marking requirements were published in February 2009.

Amendments to Part 1 of the standard AS/NZ 4665.1:2005/ Amdt1:2009) include redefinitions of single models and model families to simplify testing and registration requirements. Performance marking requirements were expanded to include performance mark V, utilising the ENERGY STAR V2.0 requirements, thereby aligning the standard with international measures.

Amendments to Part 2 of the standard (AS/NZ4665.2: 2005/ Amdt1:2009) defines the MEPS and High Efficiency requirements and testing.

IEC STANDARDS FOR ELECTRICAL EQUIPMENT & APPLIANCES

The E3 Committee recognises that electrical equipment and appliances are increasingly global products. Therefore it is advantageous to promote the development and use of international standards for these. Australia will continue to contribute to the development of IEC test methods and adopt these whenever possible. IEC test methods allow meaningful comparison between data sets that are collected around the world. They also provide the opportunity for internationally aligned standards that provide manufacturers with level playing fields spanning national boundaries.

TC 100 TV POWER MEASUREMENT

Australia was instrumental in developing the IEC 62087 Edition 2 testing method for televisions, which was published in November 2008. The new test method has been adopted by the EPA, EC, California and Australia as the appropriate test method for their MEPS and Energy labelling programs.

TC 100 STB POWER MEASUREMENT

Australia proposed a new project to update IEC62087 for STB power measurement in 2008. Technical Area 1 of TC100, chaired by Australia, is undertaking this work. The project is progressing, with publication of IEC 62087 Edition 3 expected in early 2010.

LIGHTING

Interim standards for Self-ballasted CFLs (AS/NZS4787 (Int):2008) and Incandescent lamps (AS/NZS4934(Int):2008) were published by Standards Australia in March and April 2008, respectively. These were under review this year, as minor revisions had been identified. Initial investigations were carried out based on the need for efficiency and quality standards for Light Emitting Diodes (LED) lighting and further work has been proposed in cooperation with Lighting Council Australia.

At the request of the Chair of the E3 committee, Lighting Council Australia has commenced the drafting of a revised Greenlight Australia Strategy, taking into account recent advances in lighting technology and developments in the lighting industry. A draft strategy will be released for public comment in 2009/10.

REFRIGERATORS AND FREEZERS

Energy labelling for refrigerators and freezers has been in place in Australia since 1986, with a revision of the energy label algorithm undertaken in 2000. MEPS for refrigerators and freezers were first implemented in 1999 and made substantially more stringent in 2005. New Zealand implemented mandatory MEPS and labelling in 2002. .

While MEPS and labelling are not directly linked, any action regarding one will influence the other. Labelling has encouraged more efficient models onto the market, while MEPS has removed the worst performing products. For example, the 2005 MEPS levels have resulted in a market where most products with lower star ratings under the 2000 algorithm have been eliminated. This has left star ratings bunched around 4 stars for refrigerators and freezers.

After extensive consultation in 2006 and 2007, a revised test method for refrigerators and freezers, AS/NZS4474.1, was published in September 2007. This 2007 edition is now mandatory for all registrations, with the key improvements being:

- The introduction of a number of anti-circumvention (i.e. cheating) provisions in the test method so that product control software cannot be programmed to give a result that is optimised for the test only.
- A range of new performance requirements for temperature stability during normal operation and to limit temperature rises during and after defrost.

- Changes to how compartment temperatures are measured during tests designed to encourage minimisation of temperature rises during defrost.
- New requirements to deal with small and unusually shaped compartments.
- A large number of technical refinements regarding testing and setup – these are summarised in the preface of the standard.

Amendment 4 to the Part 2 regulatory standard was published simultaneously to both compliment these changes and to allow for the immediate implementation of this new test method. A further revision to Part 2 of the standard was published on 8 April 2009. The scope of AS/NZS4474.2:2009 covered the energy labelling and MEPS requirements for vapour compression refrigerating appliances that can be connected to mains power and which are within the scope of AS/NZS4474.1:2007.

The new MEPS and energy labelling regulatory requirements for refrigerators and freezers that come into force on 1 April 2010 are as follows:

- All products must be tested for energy consumption to AS/NZS4474.2:2007 edition of the test method;
- A change to the definition of MEPS from model average energy to a maximum permitted energy for any model – the new levels are broadly equivalent to the existing 2005 levels;
- A revised energy star rating algorithm (set of equations) as outlined in AS/NZS4474.2:2009;
- A tighter tolerance check testing of the energy label validity to 7.5%; and
- A new energy label design.

The key transition dates are:

- From 1 October 2009 only registrations to the new standard (AS/NZS4474.2:2009) will be accepted by regulators.
- All products manufactured or imported from 1 April 2010 have to be registered to the new standard.

Work is also under way on an amendment to clarify energy testing requirements for products with automatic icemakers.

SWIMMING POOL PUMPS

Information gained from laboratory tests on a selection of pumps in 2006 as well as field trials in 2007 was used to develop an Australian Standard for testing the energy efficiency of swimming pool pumps in 2007-08. This was an important milestone in the development of energy labelling and MEPS for swimming pool filtration pumps and pool solar water heater circulation pumps. Draft standards to mandate the performance of these (a test rating method and MEPS level) have been developed by Standards Australia and are currently out for public comment. The public comment period is due to close at the end of July 2009.

SET TOP BOXES (STBs)

MEPS for Set Top Boxes are specified in AS/NZS 62087.2.1:2008, published by Standards Australia on 21 October 2008.

TELEVISIONS

In April 2009, Standards Australia published two interim standards:

1. AS/NZS 62087.1 (Int) Power consumption of audio, video and related equipment, Part 1: Methods of measurement; and
2. AS/NZS 62087.2.2(Int) Power consumption of audio, video and related equipment, Part 2.2: Minimum energy performance standards (MEPS) and energy rating labels requirements for television sets

The proposed television regulations will call up both parts. Part 1 of the standard is largely an Australian / New Zealand version of the IEC test method for televisions and other audio and video equipment. The Part 2.2 standard sets the MEPS and star levels for the proposed television regulations.

WATER HEATERS: GAS

Development of a new draft Australian Standard (method of test and MEPS standard) for gas hot water systems continued over 2008/09. The new method of test will underpin the establishment of the new MEPS and provide industry with a more robust, repeatable, reproducible and up-to-date method for assessing the energy use of gas hot water systems. Finalisation of the new method of test is anticipated by early 2010.

9. COMMUNICATIONS

PROGRAM PUBLICATIONS OVER 2008/09

Twenty-one publications covering a range of products and serving various purposes were released during 2008/09. These include discussion papers, market surveys, fact sheets, regulatory impact statements (RIS), brochures and program reports.

A full list of the publications and brief description of each is at Appendix 9. Electronic copies (along with those from previous years) are available for download from the electronic library of the Energy Rating website.

ENERGY RATING WEBSITE

The Energy Rating website continues to be the main access point for all appliance and equipment efficiency programs. The website address has been displayed on all appliance energy labels since its launch in 2000.

The website has two main public sections:

- The first section provides information and reports about government energy efficiency programs and regulatory requirements.
- The second section provides consumers with an interactive listing of all registered products to help guide them when choosing an energy efficient appliance.

Figure 4 illustrates the total number of visits[17] and website hits[18]

17 **Website visits:** The number of times people have visited the website. A 'visit' ends once the user has been idle for 20 minutes or more. A new visit is generated when they return

18 **Website hits:** Anytime information is requested from the website

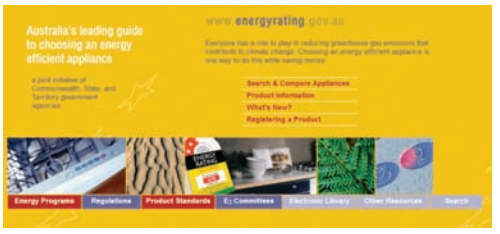
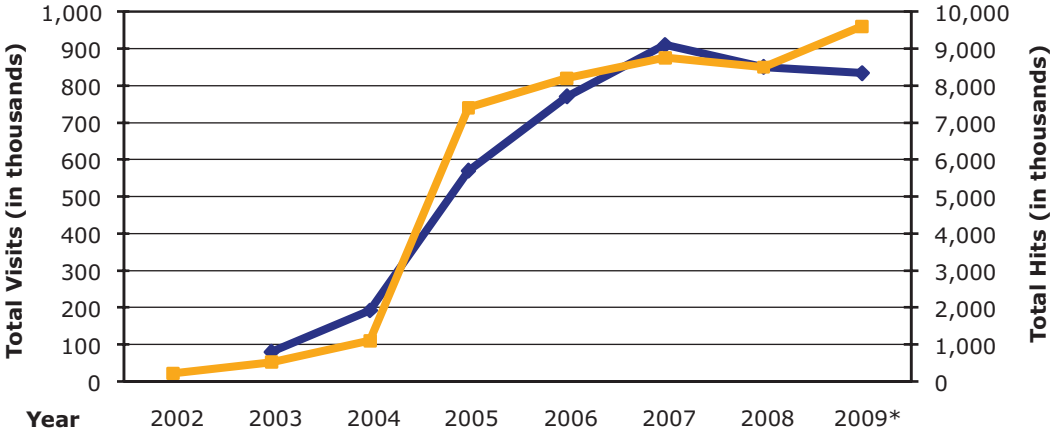


FIGURE 4. ENERGY RATING WEBSITE VISITS AND HITS OVER TIME

* Real data to June 2009 and projected forward on a pro-rata basis.



Total visits ('000)		80	192	570	771	909	850	834
Total hits ('000)	220	523	1,100	7,400	8,200	8,750	8,500	9,600

for the Energy Rating website over the years. It can be seen that although the total number of visits to the website has somewhat stabilised, the number of website hits has continued to rise at varying rates over time. This could suggest that whilst a steady volume of people are visiting the website, their visits are longer and more in-depth – with visitors gathering more information on equipment energy efficiency from various links and web-pages per visit.

The website is currently under review which aims to identify areas for improvement including the website's navigation, structure and content for the various user groups. The review will be completed by October 2009 and will form the basis of the website's revamp anticipated to commence by the end of 2009.

MASS COMMUNICATION CAMPAIGNS

One of the aims of the NSEE is: *to improve consumer awareness of the need for and benefits of energy efficiency, as well as the adoption of energy efficiency measures by informed choice*.

In 2008/09 E3 assisted households and businesses transition to a low-carbon future by developing and distributing mass communication materials for televisions and lighting. These were designed to equip consumers and businesses with information to improve the efficiency of these high energy consuming items as a whole.

LIGHTING PHASE-OUT

As part of the inefficient lighting phase-out, Minister Garrett, on behalf of the states and territories, launched a range of point-of-sale materials designed to help consumers choose more efficient lighting on 24 March 2009.

Based on the concept, *Change the Globe*, the materials (an example of a consumer poster is pictured at top right) have begun appearing in lighting retailers, supermarkets and hardware stores during the lead-up to the sales ban of inefficient traditional pear-shaped incandescent light globes in late 2009. The full media release is at Appendix 8.2.

TELEVISION LABELLING

A consultation and communications program to retailers for televisions was ongoing through 2008/2009. It helped drive television energy efficiency regulations, voluntary television labelling and the transition to mandatory labelling.

This saw Minister Garrett announce the arrival of the first energy labelled television in December 2008 (full media release is at Appendix 8.3), which was followed by posters for retail staff were provided to 1,500 television retailers in June 2009.

A suite of point-of-sale materials for consumers was also developed; these are expected to be rolled out in the lead up to mandatory labelling in the first half of 2009/10.

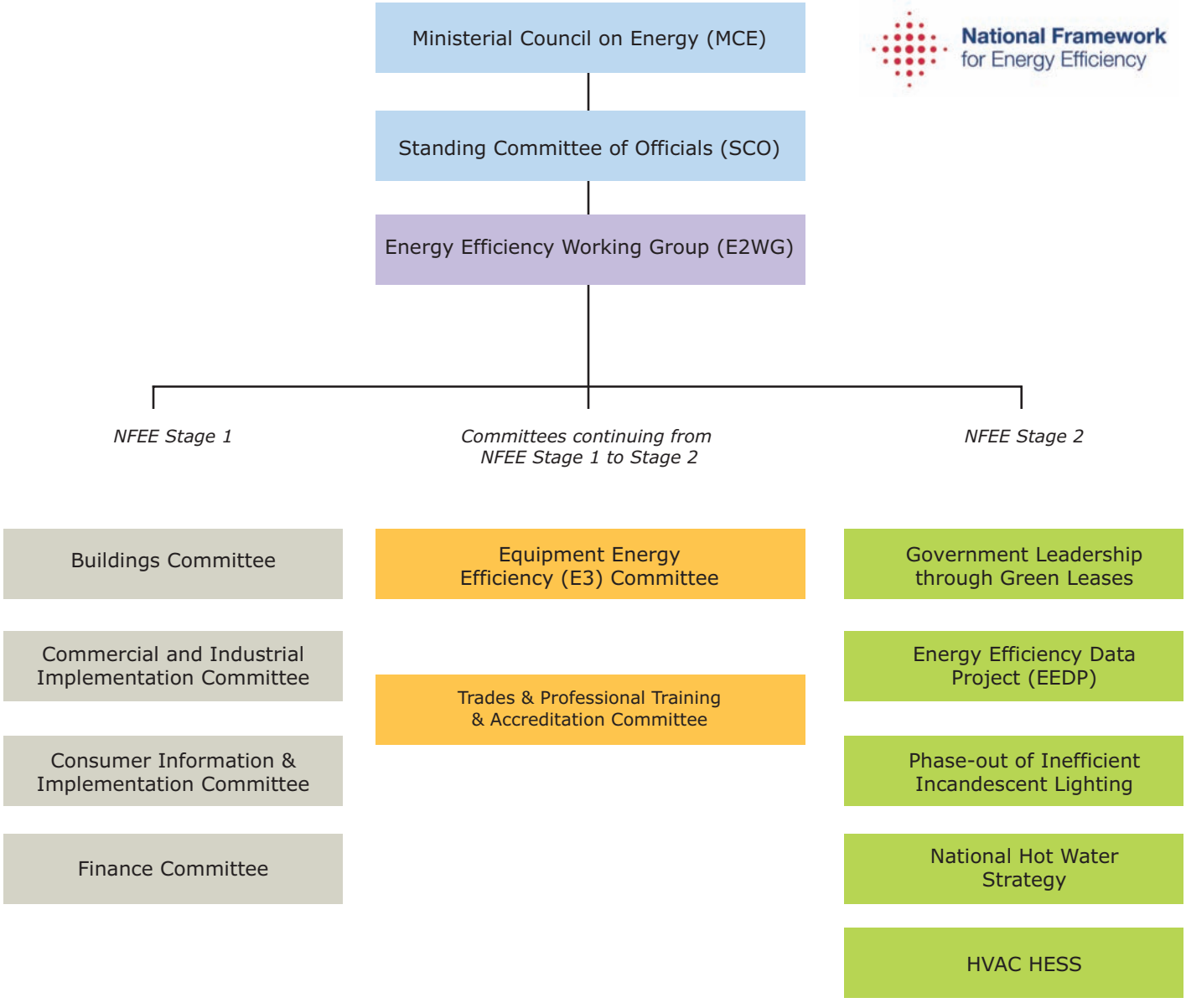
A simple light conversion chart to help customers buy more energy efficient light globes.

Poster announcing that TVs are now labelled with the energy star rating label.

APPENDICES

1. ORGANISATIONAL STRUCTURE OF THE NATIONAL FRAMEWORK FOR ENERGY EFFICIENCY (NFEE) AS AT 30 JUNE 2009

FIGURE 5. ORGANISATIONAL STRUCTURE OF THE NATIONAL FRAMEWORK FOR ENERGY EFFICIENCY (NFEE) AS AT 30 JUNE 2009



2. MEMBERSHIP OF THE MINISTERIAL COUNCIL ON ENERGY (MCE)

(AS AT 2 JUNE 2009)

The Hon Martin Ferguson AM MP
Minister for Resources and Energy, COMMONWEALTH
(Chair, Ministerial Council on Energy)

The Hon Stephen Robertson MP
Minister for Natural Resources, Mines and Energy, QUEENSLAND

The Hon Ian Macdonald MLC
Minister for Energy, NEW SOUTH WALES

The Hon Peter Batchelor MP
Minister for Energy and Resources, VICTORIA

The Hon Peter Collier MLC BA DipEd
Minister for Energy, WESTERN AUSTRALIA

The Hon Patrick Conlon MP
Minister for Energy, SOUTH AUSTRALIA

The Hon Delia Lawrie MLA
Treasurer, Northern Territory Treasury NORTHERN TERRITORY

Mr Simon Corbell MLA
Minister for Energy, AUSTRALIAN CAPITAL TERRITORY

The Hon David Llewellyn MHA
Minister for Energy, TASMANIA

OBSERVERS

The Hon Gerry Brownlee
Minister of Energy and Resources, NEW ZEALAND
(with voting rights on TTMRA issues)

The Hon William Duma LLB LLM MP
Minister for Petroleum and Energy, PAPUA NEW GUINEA

The Hon Neville Christian MLA
Minister for Finance, NORFOLK ISLAND

3. EQUIPMENT ENERGY EFFICIENCY (E3) COMMITTEE MEMBER ORGANISATIONS

The Commonwealth, New Zealand and each state and territory are represented on the E3 Committee and participate in its deliberations. Representatives are officials within government departments, agencies and statutory authorities or people appointed to represent these bodies. Representatives are usually a senior officer directly responsible for energy efficiency. The membership is currently under review and may expand to include other agencies working in these fields. Current membership includes:

TABLE 6. E3 COMMITTEE MEMBER ORGANISATIONS AS AT 30 JUNE 2009.

Jurisdiction	Government Agency
Commonwealth	Department of Resources, Energy and Tourism Department of the Environment, Water, Heritage and the Arts
Australian Capital Territory	ACT Planning and Land Authority
New South Wales	NSW Department of Water and Energy
Northern Territory	Northern Territory Department of Regional Development, Primary Industry, Fisheries and Resources Northern Territory WorkSafe, Department of Justice
Queensland	Office of Clean Energy, Department of Employment, Economic Development and Innovation Electrical Safety Office, Queensland Department of Justice and Attorney-General
South Australia	Office of the Technical Regulator, South Australian Department for Transport, Energy and Infrastructure
Tasmania	Office of Energy Planning and Conservation, Department of Infrastructure, Energy and Resources, TAS Workplace Standards Tasmania, Department of Justice
Victoria	Sustainability Victoria Energy Safe Victoria
Western Australia	Western Australia Sustainable Energy Development Office *EnergySafety*, Western Australian Department of Commerce
New Zealand	New Zealand Energy Efficiency and Conservation Authority New Zealand Ministry of Economic Development

COMMONWEALTH

The Australian Government **Department of the Environment, Water, Heritage and the Arts (DEWHA)** delivers the majority of energy efficiency programs under the Australian Government's climate change strategy. A DEWHA Officer is the chair of the E3 Committee and others provide support for its activities.

The **Department of Resources, Energy, and Tourism (RET)** has the lead coordination role on implementing the Australian Government's energy white paper, *Securing Australia's Energy Future.* RET provides the Secretariat for the MCE which brings together all state and territory government ministers to work on national policy and governance for the Australian energy market. The Minister for Resources, Energy, and Tourism chairs the MCE.

AUSTRALIAN CAPITAL TERRITORY

The **ACT Planning and Land Authority** (the Authority) is responsible for administering the ACT planning system, land information, development and building administration, land management and urban design. The Authority also licenses construction occupations and undertakes the technical regulation of network utilities and construction practitioners. A key element of the Authority's role is to set and enforce safety and energy efficiency standards for buildings, equipments and appliances to assist with reducing end-use energy consumption in the building sector.

NEW SOUTH WALES

The **Department of Energy and Water (DWE)** leads the NSW Government's sustainable energy and urban water agenda. The Department is the agency responsible for regulating appliance and equipment energy efficiency in NSW.

NORTHERN TERRITORY

The **Department of Justice** is an integrated organisation that shapes a safe and fair Northern Territory by increasing product and workplace safety standards and compliance, and participates in proactive policy advice.

The Department of Regional Development, Primary Industry, Fisheries and Resources enables the NT Government to provide opportunities to sustainably develop the Territory's economic resources and efficiently deliver services to Government and Territorians.

QUEENSLAND

The **Department of Employment, Economic Development and Innovation** develops and manages the Queensland Government's energy policy and regulatory frameworks in which energy participants operate. The Department works with industry to identify and develop solutions for more reliable, sustainable and energy-efficient options for business and domestic energy consumers. Within the Department, the **Office of Clean Energy** is also delivering clean energy policy reform and consumer energy programs.

The **Department of Justice and Attorney-General** acts as the regulator for energy efficiency matters in Queensland under an agreement with the **Electrical Safety Office** of the Queensland Department of Employment, Economic Development and Innovation. The Electrical Safety Office within the Department of Justice and Attorney-General administers the *Electricity Act 1994* and *Electricity Regulation 2006* for registration of prescribed electrical equipment, associated enforcement activities to ensure compliance with regulatory requirements on the sale of prescribed electrical equipment and development of Australian standards and information to industry in relation to complying with requirements for electrical equipment energy efficiency.

SOUTH AUSTRALIA

Under the **South Australian Department for Transport, Energy and Infrastructure**, the Energy Division delivers the following services for the competitive, sustainable, safe, reliable and efficient supply and use of energy, for the benefit of the South Australian community:

- Provision of policy advice and coordination of energy market reforms, including national reforms, sustainability and energy efficiency.
- Management of energy programs for the delivery of services to remote areas and in support of renewable energy and energy efficiency.
- Enforcement compliance and promotion of technical and safety regulation; and
- Monitoring and management of emergency events.

TASMANIA

The Tasmanian Government's interest is managed by the **Office of Energy Planning and Conservation** (OEPC) within the Department of Infrastructure, Energy and Resources. The OEPC provides policy advice on energy issues to the Minister and the Tasmanian Government and provides input into the development of the framework for the regulation of industry participants in Tasmania's energy industry.

VICTORIA

Energy Safe Victoria (ESV) is the Victorian *Technical Regulator* responsible for electrical safety and equipment efficiency. Its mission is for Victoria's energy to be the safest and most efficient and its corporate vision is for Victoria to enjoy the safest, most efficient supply and use of electricity and gas. A strategic responsibility of the office is to ensure energy efficiency of equipment through the labelling of major domestic appliances and meeting (MEPS).

Sustainability Victoria's purpose is to show the way to using our resources more efficiently and reducing our everyday environmental impacts. The Energy Efficiency for Victoria Action Plan and the NFEE demonstrate commitment to a program of action on energy efficiency in the residential, commercial, industrial and government sectors. The Energy Efficiency for Victoria Action Plan sets out a comprehensive program of Government action to drive improvements in energy efficiency and greenhouse gas abatement. It also establishes the context for action - detailing where Victoria stands today and the opportunities and challenges with respect to energy efficiency - and outlines the VIC Government's broad objectives and strategies.

WESTERN AUSTRALIA

The Sustainable Energy Development Office is focused on delivering the Government of Western Australia's sustainable energy policy. Key objectives include the increased uptake of energy efficient products, best practice energy management and greater use of renewable energy. The Office plays a vital role in accelerating the adoption of renewable energy and energy-efficient strategies across all sectors of the community – from business and industry to government and the general public. By implementing programs that promote and highlight the importance of renewable energy and energy efficiency, the Sustainable Energy Development Office is fostering a sustainable energy industry that contributes to the Western Australian economy and the environment.

Under the Western Australian Department of Commerce, the **Energy Safety Division (*EnergySafety* WA)** is the Western Australian regulator responsible for technical and safety regulation of the electrical industry and most of the gas industry in Western Australia. It is responsible for ensuring: the safety of people (the public, workers and consumers) in respect to gas and electricity infrastructure; the supply of gas and electricity to residential and business consumers that is metered accurately and meets minimum standards of safety, reliability and quality; and that common household appliances as well as certain types of electrical equipment perform are labelled according to energy efficiency standards.

NEW ZEALAND

The **Energy Efficiency and Conservation Authority** (EECA) represents New Zealand on the E3 Committee and is the principal body responsible for delivering the New Zealand Energy Efficiency and Conservation Strategy. EECA's function is to encourage, promote and support energy efficiency, energy conservation and the use of renewable energy sources.

The **Ministry of Economic Development** is the lead New Zealand Department advising the Minister of Energy and Resources on the development of government policy and advice on energy efficiency, conservation and the use of renewable sources of energy. It works with EECA and also monitors its performance under the Public Finance Act. The Ministry represents New Zealand on the Standing Committee of Officials (SCO), which approves E3 Committee recommendations before they are progressed to the Ministerial Council on Energy (MCE).

4. TERMS OF REFERENCE OF THE EQUIPMENT ENERGY EFFICIENCY COMMITTEE

The charter of the E3 Committee encompasses the following functions:

- To provide assistance to all states and territories, as required, in the development and regulatory implementation of technical, legal, and administrative aspects of equipment energy efficiency initiatives.
- To coordinate the national development and implementation of energy efficiency programs of a non-regulatory nature and enhance existing regulator programs. These may include voluntary labelling initiatives, market transformation projects, and similar voluntary actions.
- To coordinate national marketing and communication projects to support new, and enhance existing, energy efficiency programs.
- To review existing appliance energy consumption and improve standards and test procedures.
- To monitor program performance and achievements.
- To provide a forum to exchange information on enforcement/ compliance issues and community information and marketing initiatives.
- To administer an effective, coordinated testing regime of the energy efficiency claims of suppliers.
- To coordinate broad consultative processes with industry and other interested parties in the development and implementation of energy labelling and associated programs.

The charter recognises the maturity of the program and the need for a "holistic" approach to government policies for greenhouse gas abatement in the appliance and equipment field. The focus of the program continues to be the delivery of nationally consistent regulation. The implementation of most voluntary programs remains an individual jurisdictional responsibility although voluntary programs that assist the regulatory program to maximise benefits are being added to E3 Committee Work Plans.

5. E3 COMMITTEE OPERATING INSTRUCTIONS UNDER THE NATIONAL FRAMEWORK FOR ENERGY EFFICIENCY

BACKGROUND

In November 2002, the Ministerial Council on Energy endorsed a proposal for the development of a National Framework for Energy Efficiency (NFEE) to define future directions for energy efficiency policy and programs in Australia. Adoption of the NFEE by state, territory and federal governments provided a sound platform to improve energy efficiency performance nationally. The Equipment Energy Efficiency Program operates under the NFEE and is responsible for managing Australia's end-use energy efficiency program. This is chiefly implemented through Energy Rating Labelling and MEPS.

NFEE Stage One was announced in August 2004 and consisted of a comprehensive package of 'foundation' measures to establish the building blocks of NFEE. This involved:

- Residential buildings
- Commercial buildings
- Commercial/industrial energy efficiency
- Government energy efficiency
- Appliance & equipment energy efficiency
- Trade and professional training & accreditation
- Commercial/industrial sector capacity building
- General consumer awareness
- Finance sector awareness

NFEE Stage Two was agreed to in December 2007 and includes a package of the following five new energy efficiency measures for delivery:

- Expanding and enhancing the Minimum Energy Performance Standards (MEPS) program
- Heating, ventilation and air conditioning (HVAC) high efficiency systems strategy
- Phase-out of inefficient incandescent lighting
- Government leadership though green leases
- Development of measures for a national hot water strategy, for later consideration.

In addition to the new measures, a number of Stage One measures are continuing including the Energy Efficiency Opportunities (EEO) program, and the Energy Efficiency Exchange (EEX).

At the December 2008 meeting of the Ministerial Council of Energy, Australian federal, state and territory Energy Ministers endorsed the National Hot Water Strategy and a revised Heating, Ventilation and Air Conditioning (HVAC) high efficiency systems strategy. Both projects commenced on 1 January 2009.

Independent experts estimate that the current Program has an average benefit/cost ratio of 2.4 to 1, and is achieving greenhouse gas abatement at a cost of minus $30/tonne, indicating potential for further expansion.

OPERATIONAL FRAMEWORK

The Program is coordinated nationally to ensure greater energy efficiency of residential, commercial and industrial appliances and equipment is achieved Australia-wide. The main tools employed are mandatory MEPS and Energy Rating labelling, and voluntary measures including information provision, endorsement labelling, training and support to promote high efficiency products.

The New Zealand government created its own mandatory MEPS and labelling program in 2002 after initially operating a voluntary labelling scheme.

Since 2000, key factors which have underpinned the Program are:

- A mandate to regulate any energy consuming product, subject to a positive cost-benefit study and community consultation.
- Australia to match world's best regulatory practice, but with a suitable time-lag to allow local industry to adapt.
- A requirement under the Trans-Tasman Mutual Recognition Agreement (TTMRA) for Australia to coordinate its program with New Zealand.

DEVELOPMENT PROCESS

Ongoing stakeholder consultation will be used to design and implement key measures in the policy package including development of:

- detailed three-year work plans for electrical and gas appliances and equipment.
- ten-year product strategies, including the National Standby Strategy, Greenlight Australia and a range of others.

The standard program process for developing and implementing MEPS and labelling regulations will continue to be used, including the preparation of product profiles, regulation proposals, regulatory impact statements, involvement in standards development and formal stakeholder consultation processes.

DELIVERY MECHANISM

The Equipment Energy Efficiency (E3) Program is the delivery mechanism under the NFEE and NZEECS that was collaboratively designed by all governments to align energy efficiency policies and practices for end-use equipment throughout Australia and New Zealand respectively.

The E3 Program is administered by officials drawn from participating jurisdictions and is accountable to the MCE (where New Zealand has observer status). The current organisations participating in E3 are listed in Appendix 3. The E3 Program, however, is substantially more than just a handful of officials involved in administering and overseeing possible regulatory measures. The past success of the program can be credited to the involvement of all stakeholder

groups in decision-making. World-class experts from Australia and New Zealand (and increasingly other countries) provide advice to the E3 committees on technical and regulatory issues. Industry interests are incorporated through formal and informal stake holder consultation processes and, via Trade Associations, through participation in the E3 Review Committee, established to publicly appraise regulatory proposals. Industry leaders also participate in Standards Australia committees that form part of the process of developing regulatory measures. The program for electrical and gas products, and any other product-types regulated, will continue to be implemented through the existing program delivery mechanisms:

- Test methods, MEPS levels and labelling algorithms defined in Australian or joint Australian/New Zealand standards, and based on international standards where possible.
- Mandatory regulations implemented through state, territory and New Zealand legislation which call up the relevant standards for each product type.
- Products tested to the standards and registered for MEPS or energy labelling by state-based regulators (or the Energy Efficiency and Conservation Authority in New Zealand).
- Public information provided through national websites.

6. LIST OF E3 PRODUCTS EXPECTED TO BE COVERED BY 2011

Key: MEPS – minimum energy performance standards
HE – high efficiency voluntary label
ML – mandatory star rating energy label – can include separate HE label for many products, for ballasts MI mean display for energy efficiency index
LE – low efficiency label mandatory label
VL – voluntary use of the star rating energy label

TABLE 7. PRODUCTS EXPECTED TO BE COVERED BY THE E3 PROGRAM BY 2011

Location	No.	Product	Measure	
			MEPS	Labelling
Home	**Whitegoods**			
	1	Refrigerators	✓	ML
	2	Freezers	✓	ML
	3	Dishwashers		ML
	4	Clothes washers		ML
	5	Clothes dryers		ML
	Home Entertainment			
	6	Televisions	✓	ML, HE
	7	Set-top boxes	✓	HE
	8	Other home entertainment : • DVDs • Home theatre • New technologies	✓ ✓ ✓	HE HE HE
	Heating and Cooling			
	9	Air conditioners (single phase, three phase)	✓	ML
	10	Electric storage water heaters	✓	
	11	Gas water heaters	✓	
	Other Products			
	12	Swimming pool equipment	✓	ML
Office	**Heating and Cooling**			
	13	Air conditioners (packaged - 3 phase)	✓	HE
	14	Close control AC (for computer rooms)	✓	
	15	Chiller towers for commercial AC	✓	
	IT and Office Equipment			
	16	Computers (including laptops) and monitors	✓	HE
	17	External power supplies (EPS)	✓	HE
	18	Internal power supplies (IPS)	✓	HE

Location	No.	Product	Measure	
			MEPS	Labelling
Office	**Lighting**			
	19	Fluorescent ballasts (linear)	✓	ML
	20	Fluorescent lamps (linear)	✓	HE
	21	Fluorescent lamps (CFLs)	✓	HE
	22	Halogen lamps (including reflector lamps)	✓	HE
	23	Halogen transformers	✓	HE
	24	Luminaires	✓	HE
	25	High intensity discharge lamps	✓	HE
	26	High intensity discharge ballasts	✓	HE
	27	Control systems	✓	HE
	28	Emergency and exit lighting	✓	HE
	Other Products			
	29	Chilled and boiling water dispensers		HE
	30	Refrigerated beverage vending machines	✓	
Factory	**Industrial**			
	31	Electricity distribution transformers	✓	HE
	32	Electric motors (3 phase)	✓	HE
	33	Industrial fans	✓	
	34	Industrial pumps	✓	
	35	Air compressors	✓	
	Commercial Refrigeration			
	36	Refrigerated display cabinets	✓	HE
Street	**Lighting**			
	37	Public amenity lighting (street lighting)	✓	HE
	38	Traffic signals (LED)	✓	HE

TABLE 8. SUMMARY OF E3 ELECTRICAL PRODUCTS IN 2011 (BY MEASURE)

MEPS	Mandatory labelling	High efficiency voluntary labelling
36	9	24

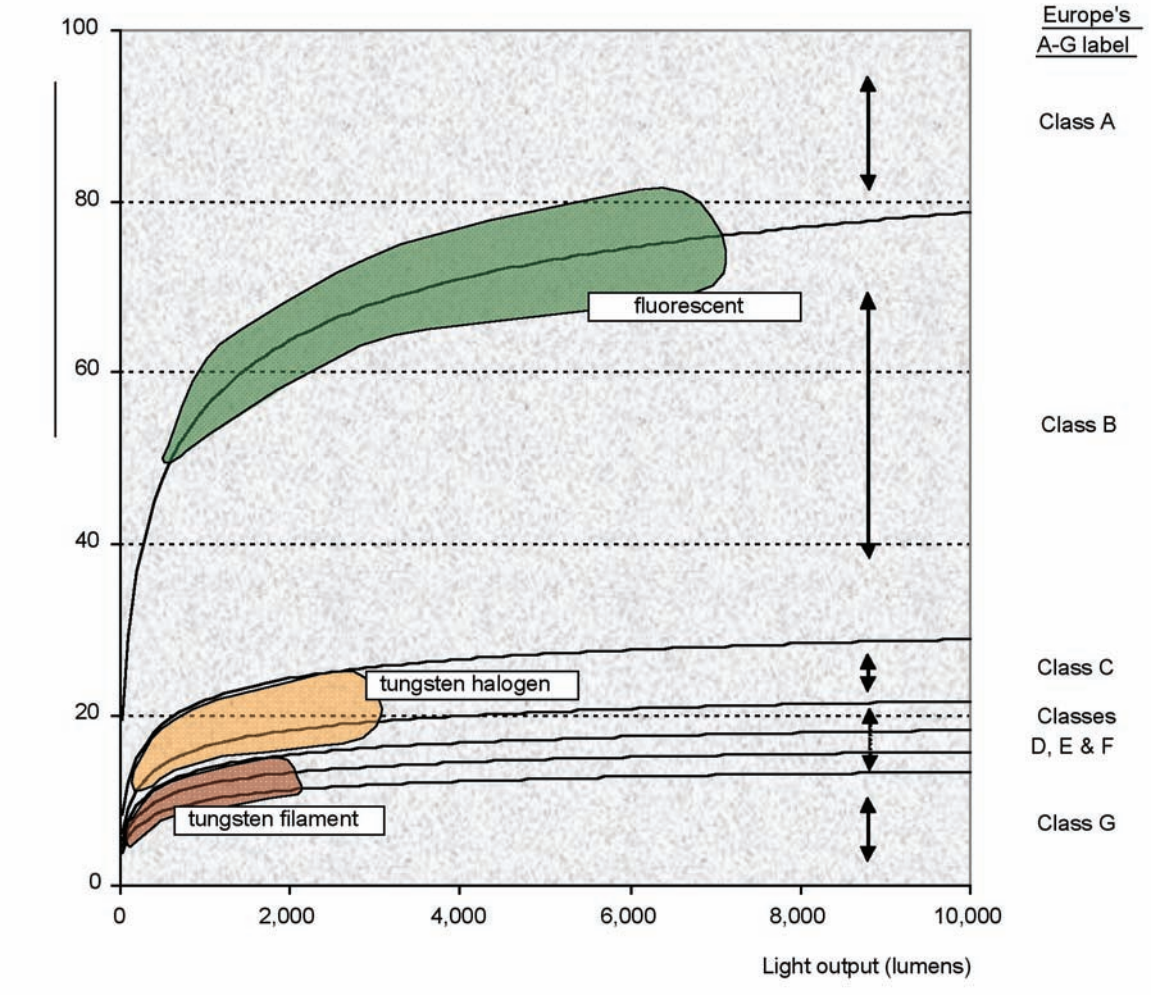
TABLE 9. PRODUCTS EXPECTED TO BE COVERED BY E3 IN 2011 (MANAGED BY NEW ZEALAND)

Type/sector	No.	Product	Measure	
			MEPS	Labelling
Home / residential	1	AC heat pumps	✓	✓
	2	Solid fuel space heaters	✓	✓
	3	Solar water heaters	storage tank	whole system
Industry and agriculture	4	Motor rewinds (service)	quality controls	
Non-energy using products	5	Building insulation		✓
	6	Windows		✓
	7	Water heater cylinder wraps		✓

7. ENERGY EFFICIENCY CHARACTERISTICS OF VARIOUS LIGHTING TECHNOLOGIES

FIGURE 6. THE RELATIVE EFFECTIVENESS OF LIGHTING TECHNOLOGIES

(Sourced from Equipment Energy Efficiency Committee "Proposed MEPS for incandescent lamps, compact fluorescent lamps and voltage converters" in press)



Note the following:

- Light output is measured along the horizontal axis in lumens, which refers to a measure of the amount of visually useful radiation that is emitted by a lamp. For example, a common 60 watt globe emits approximately 750 lumens.
- Lighting professionals use the term 'efficacy' for the ratio of the rate of light production (lumens) to the rate of energy input (watts). Efficacy is measured along the vertical axis in lumens/watt.
- In 1998 the European Union introduced a lamp labelling scheme with seven classes, labelled A to G. The thresholds increase with lamp output because it is easier to efficiently produce large amounts of light and more difficult to efficiently produce small amounts of light. The incremental class thresholds are extremely non-linear, with relatively small differences between classes D and G in the lower regions but a larger gap between classes A and C in the upper regions – see Figure 6.
- Incandescent lamps convert less than 10% of the radiation emitted by a white hot body into light, and inhabit the lower regions of Figure 6. Suppliers seldom place incandescent lamps higher than class C.

8. MEDIA RELEASES

8.1 STREAMLINING THE AUSTRALIAN GOVERNMENT'S CLIMATE CHANGE PROGRAMS AND MAKING ENERGY EFFICIENT CHOICES EVEN EASIER (12 MAY 2009)

THE HON LINDSAY TANNER MP

Minister for Finance and Deregulation, and

SENATOR THE HON PENNY WONG

Minister for Climate Change and Water, and

THE HON PETER GARRETT AM, MP

Minister for the Environment, Heritage and the Arts

STREAMLINING THE AUSTRALIAN GOVERNMENT'S CLIMATE CHANGE PROGRAMS AND MAKING ENERGY EFFICIENT CHOICES EVEN EASIER

Joint Media Release

12 May 2009

The Australian Government will invest $64.6 million over four years as part of its contribution to the National Strategy on Energy Efficiency to help Australians choose more energy efficient appliances, homes and buildings, and make residential and commercial buildings more energy efficient.

Environment Minister Peter Garrett said the new suite of measures demonstrated the Government's commitment to encouraging action on energy efficiency across all sectors of Australian society.

"This investment builds on the Government's $3.9 billion Energy Efficient Homes program, driving further energy efficiency across Australia," Mr Garrett said.

"The expansion of energy efficiency labelling and minimum performance standards will help consumers buy more energy efficient appliances, reducing household energy bills and encouraging innovation in smart, cost-saving technologies.

"Australians will also be able to make meaningful comparisons when assessing the environmental performance of buildings. Whether you are buying a home or leasing a large commercial building, energy performance ratings will be made available to help you factor in the benefits of energy efficiency as part of the decision-making process.

"Improvements to the 2010 Building Code of Australia will increase energy efficiency requirements for homes and commercial buildings.

"Collectively, these measures lay the foundation for a nationally consistent approach to energy efficiency, helping households, businesses and the community to lower their energy use and save money. By becoming more efficient, we will help to reduce the energy intensity of the Australian economy overall, which is critical in our transition to a low pollution future," Mr Garrett said.

The eight energy efficiency measures announced as part of the National Strategy on Energy Efficiency in the 2009-10 Budget are:

Appliances and equipment

- Implementing enhanced energy efficiency labelling - $18.3 million over four years.
- Expansion of minimum performance standards for appliances and equipment - $16.6 million over four years

Residential buildings

- Increasing energy efficiency requirements for residential buildings - $8.7 million over four years.
- Disclosure of energy performance of residential buildings - $7.8 million over four years.

Commercial buildings

- Disclosure of commercial building energy efficiency - $5.3 million over four years.
- Improvements to the Building Code of Australia requirements for commercial buildings - $3.3 million over four years.
- Commercial building rating tools - $2.6 million over four years.
- Improvements in heating, ventilation and air conditioning systems - $2.0 million over three years.

These measures build on the unprecedented support Government has committed to improving energy efficiency since the 2008/09 Budget, including the $3.9 billion Energy Efficient Homes program.

This package of new and streamlined measures has been developed in response to the recommendations made in the *Strategic Review of Australian Government Climate Change Programs*, which has been released today with the Government's response to the recommendations.

This package of new and streamlined measures has been developed in response to the recommendations made in the Strategic Review of Australian Government Climate Change Programs, which has been released today with the Government's response to the recommendations.

"Streamlining climate change programs is an important part of the Government's climate change strategy. It will ensure the community receives value for money and the challenge of addressing climate change is dealt with effectively and at the lowest cost to the economy," Minister for Climate Change and Water, Senator Penny Wong said.

The Review considered 58 active climate change programs. It made recommendations about whether they align with the Rudd Government's broader climate change strategy or should be considered transitional programs.

"This will ensure the best use of taxpayer funds, with expenditure being focused on better targeted programs to combat climate change," Minister for Finance and Deregulation, Lindsay Tanner said.

"I would like to thank Mr Roger Wilkins AO for his expertise, time and effort in conducting this Review. The Government welcomes his views on its climate change programs and his broader recommendations on climate change policy," Minister Tanner said.

A copy of the Strategic Review of Australian Government Climate Change Programs report is available at www.finance.gov.au/publications.

The Government's response to the Review is available at www.environment.gov.au/minister/wong/2009/wilkinsresponse.html

8.2 CHANGE THE GLOBE FOR EARTH HOUR (24 MARCH 2009)

THE HON PETER GARRETT AM, MP

Minister for the Environment, Heritage and the Arts

CHANGE THE GLOBE FOR EARTH HOUR

Media Release

24 March 2009

In the lead up to Earth Hour this Saturday, Federal Environment Minister Peter Garrett has encouraged all Australians to Change the Globe.

"Earth Hour is the perfect opportunity to switch to a more energy efficient future. Turning off the lights for an hour makes a powerful statement and can be the catalyst for long-term action," Mr Garrett said.

The Minister launched a new information campaign designed to help consumers choose more efficient lighting, while visiting Beacon Lighting's Belrose store - the first retail outlet to display the new Change the Globe information.

"On World Environment Day last year, I announced the accelerated phase-out of inefficient light globes. The phase-out has now begun and many stores have already started selling less traditional globes and more efficient compact fluorescent lamps," Minister Garrett said.

"It's timely to start rolling out in-store posters and light globe conversion guides to help customers decide on the best alternative products, and I'm pleased to launch this material today in the lead up to Earth Hour – an event which serves as a really important reminder that the simplest of changes in the way we live can add up to big changes for the future."

The phase-out is a joint Australian, State and Territory Government initiative. An import restriction on inefficient general lighting service (GLS) light globes is already in place, ahead of the sales ban which is expected to be in place by November this year.

The traditional pear-shaped incandescent general lighting service globes are the least efficient, wasting 90 per cent of the energy they use, mainly as heat.

"Phasing-out inefficient incandescent light bulbs will help all of us waste less energy at home, save money on our power bills, reduce demand on our electricity supplies, and reduce our impact on the environment. Switching to more efficient light globes can also save up to 80 per cent of the $900 million dollars spent on lighting our homes each year.

"Earth Hour is a strong reminder that we can all do more: whether that's turning off the computer when we leave work, taking appliances off standby, or switching to more efficient light globes for a longer-term impact," Minister Garrett said.

For more information on the phase-out of inefficient lighting, see www.changetheglobe.energyrating.gov.au

8.3 THE TV STARS HAVE ARRIVED! (14 DECEMBER 2008)

THE HON PETER GARRETT AM, MP

Minister for the Environment, Heritage and the Arts

THE TV STARS HAVE ARRIVED!

Media Release

14 December 2008

Energy conscious consumers can now 'look for the stars' when shopping for a television, Environment Minister Peter Garrett announced today.

With energy star rating labels now starting to appear on televisions on shop room floors, Mr Garrett said choosing appliances that use less electricity was one simple way to save money and energy.

"One in four Australians buys a new television each year and televisions are now the fourth largest user of electricity in our homes after water heating, domestic refrigeration and lighting," he said.

"Television energy use has increased fourfold between 1986 and 2006 and is continuing to grow due to the new technology, increased hours of use and bigger screens.

"A large wide-screen TV can use the same energy as a medium-sized fridge each day, which is more than your dishwasher, clothes washer and dryer combined.

"That massive growth is having a big impact on Australians' energy bills and our carbon footprint."

Mr Garrett said the introduction of the energy rating labels for televisions was one of the announcements the Government made to coincide with World Environment Day in June this year.

"Energy rating labels have helped Australians compare the energy efficiency of white goods for more than 20 years. Labels on TVs will also be a major selling feature when consumers consider the ongoing costs of using their new TV, both financial and environmental."

According a recent Australian Bureau of Statistics study, energy and water efficiency are the main factors considered by Australian households when replacing or buying white goods.

"With Christmas and the Boxing Day sales just around the corner, it's great that we'll start to see these labels appearing on TV sets around the nation to provide consumers with a chance to make an informed choice about their new investment.

"If you're thinking about spending your Christmas bonus on a new TV set, ask your retailer about which televisions are the most energy efficient," Mr Garrett said.

"There will be more models available with the star ratings in early 2009. The more stars, the more efficient the product – a three star TV for example uses 20 per cent less energy than a two star product of the same size.

"In the meantime, choose the TV that meets your needs. And remember: the smaller the TV the less energy it uses.

"The Australian Government welcomes the cooperation of major manufacturers and retailers who are embracing the new scheme."

Voluntary labelling of televisions is the first step to reducing the carbon emissions generated by televisions. This program will transition into mandatory labelling in 2009. Minimum energy performance standards for new TVs are targeted to come into effect on 1 October 2009.

8.4 NEW MEASURES TACKLE SPIRALLING ENERGY CONSUMPTION IN HOMES (5 JUNE 2008)

THE HON PETER GARRETT AM, MP

Minister for the Environment, Heritage and the Arts

NEW MEASURES TACKLE SPIRALLING ENERGY CONSUMPTION IN HOMES

Media Release

5 June 2008

Celebrating World Environment Day, Environment Minister Peter Garrett today announced three new initiatives to help householders save energy and money while reducing greenhouse gas emissions.

"Today we are announcing three new measures:

- • a new television labelling scheme to enable consumers to identify the most energy efficient sets at point-of-sale;
- • a new guide to help householders and in particular renovators identify ways to incorporate energy saving measures into their homes; and
- • the accelerated phase-out of traditional incandescent light bulbs "The announcement coincides with the release of a new report on household energy usage which forecasts an increase in energy usage of 56 per cent by 2020, emphasising the need for immediate, comprehensive and coordinated action on energy efficiency.

"The report, Energy Use in the Australian Residential Sector 1986-2020 identifies clear priorities and opportunities for tackling climate change in Australian households and communities and sets the framework for action," Mr Garrett said.

"The household sector is forecast to grow by almost 4 million homes and over 1,000 million square metres in combined floor space by 2020, creating increased demand for heating, cooling, lighting and electrical appliances.

"This report estimates that one in four Australians buys a new television each year and that TVs are now the fourth-largest user of electricity, behind water heating, domestic refrigeration and lighting. Without Government action, television energy use is predicted to double between 2004 and 2014.

"It is critical that we help households identify and invest in the latest cost-saving energy-efficient technologies in appliances, and energy and water saving design features.

"For more than 11 years, the previous Government sat on its hands when it came to dealing with climate change and helping Australians take steps to reduce the size of their carbon footprint.

"Since coming to office, the Rudd Government has announced and funded $1 billion in measures including our Green loans program, assistance for landlords to install insulation in rental homes and the expansion of labelling and new standards for energy-efficient appliances.

"On World Environment Day we want to help all Australians 'kick the carbon habit'."

Details of the new measures follow:

TELEVISION AND OTHER ELECTRICAL APPLIANCE LABELLING

The Rudd labor Government was elected with a commitment to deliver on a ten-star appliance rating scheme. These new appliance labels, which will be in phased in over the next 12 months, will help consumers identify super efficient appliances – like clothes dryers, washing machines and dishwashers.

The voluntary television energy label is similar to the energy label used on fridges, washing machines, clothes dryers and air conditioners, helping consumers save energy, save money and reduce greenhouse gas emissions.

This new voluntary scheme will come into effect within the next six months, backed by a proposal to introduce mandatory labelling and standards next year. Combined with the acceleration and expansion of minimum greenhouse and energy performance standards, and the introduction of new ten-star labels, these measures will help consumers save energy and provide manufacturers with recognition for energy efficient innovations.

YOUR HOME RENOVATOR'S GUIDE

The Rudd Government wants to make it easier for people to access information on ways to 'green-up' their homes, with measures announced in the Budget like our new one-stop web portal to provide consumers with a single window to all federal, state and local government environmental programs for sustainability at home.

The Your Home Renovators Guide, was developed in partnership with the Victorian Building

Commission, Sustainability Victoria, other state Governments, the Centre for Design at RMIT and the

Institute for Sustainable Futures at UTS.

Every page of this guide provides tips to help home owners save money, and make their homes healthy and comfortable and more environmentally friendly from the front door to the backyard.

There are 4.2 million homes in Australia that are over 20 years old so the Your Home Renovator's Guide has the potential to inform a large portion of the Australian community now and in the future, helping drive down energy usage.

LIGHTING

Lighting is an area where we can make quick, simple cuts in energy consumption and greenhouse gas emissions. More efficient lights like compact fluorescent lamps are already available on the market and are an easy, cleaner alternative to the traditional incandescent globe.

The Rudd Labor Government and lighting Council Australia have joined forces to fast track the phase out of inefficient light bulbs in Australia, bringing forward an import ban to November this year. The 12-month acceleration of the four-year phase out, beginning with the introduction of a ban on imported incandescent lamps from this year will result in earlier cuts to greenhouse emissions of more than four million tonnes per year.

9. PUBLICATIONS RELEASED FROM JULY 2008 TO JUNE 2009

The following E3 publications are available online from the Energy Rating website at http://www.energyrating.gov.au/library/index.html

TABLE 10. E3 PUBLICATIONS RELEASED FROM JULY 2009 TO JUNE 2009

Publication Date	Publication Type	Publication Title and Summary
2008-JUL	Discussion Paper	*Consumer Group Discussion on Purchasing Major Household Appliances with Reference to TVs and ICT* Explores the information needs of consumers when they are seeking to purchase various appliances including home entertainment systems, television sets and computers.
2008-AUG	Market Survey	*Energy Efficiency - Perceptions of Potential TV Buyers* (Prepared by GfK Marketing Services) Gauges public opinion and perceptions regarding television energy efficiency levels and whether Energy Rating labels should be introduced.
2008-AUG	Regulatory Impact Statement [Consultation]	*Consultation Regulatory Impact Statement of Proposal to Introduce a Minimum Energy Performance Standard for Gas Water Heaters* Proposes the introduction of common MEPS in Australia and New Zealand for gas water heaters.
2008-AUG	Fact Sheet	*Fact Sheet: MEPS for Set-top Boxes* Provides details of forthcoming MEPS requirements from 1 December 2008 for digital set-top boxes.
2008-SEP	Report	*Achievements 2007/08* Highlights the achievements of the E3 Program for 2007 in the area of product energy efficiency.
2008-SEP	Regulatory Impact Statement [Consultation]	*Consultation Regulatory Impact Statement for the Revision to the Energy Labelling Algorithms and Revised MEPS levels and Other Requirements for Air Conditioners* Examines the impacts arising from a proposal to change the star rating algorithm for the energy labelling system and update the MEPS levels for air conditioners.
2008-SEP	Regulatory Impact Statement [Consultation]	*Consultation Regulatory Impact Statement: Minimum Energy Performance Standards and Alternative Strategies for Close Control Air Conditioners* Reviews the energy efficiency of close control air conditioners and the potential to introduce MEPS and Energy Labelling.
2008-SEP	Regulatory Impact Statement [Consultation]	*Consultation Regulatory Impact Statement: Minimum Energy Performance Standards and Alternative Strategies for Refrigerated Beverage Vending Machines* Proposes the introduction of MEPS for Refrigerated Beverage Vending Machines.
2008-SEP	Regulatory Impact Statement [Consultation]	*Consultation Regulatory Impact Statement: Proposal to Phase-out Inefficient Incandescent Light Bulbs* Proposes the introduction of MEPS in Australia for incandescent lamps, compact fluorescent lamps (CFLs) and voltage converters.
2008-OCT	Fact Sheet	*Fact Sheet - Voluntary TV Labelling* Provides details of voluntary labelling for televisions.
2008-OCT	Fact Sheet	*Fact Sheet - Water Chillers - Minimum Energy Performance Standards* Provides details of forthcoming MEPS requirements from 1 July 2009 for Water Chillers
2008-OCT	Report	*Appliance Standby Power Consumption Store Survey 2007/2008 - Czech Republic* Initiated as part of the Asia Pacific Partnership on Clean Development and Climate Change (APP), the purpose of the project was to measure and collect standby power data in two Central Eastern European countries – Hungary and the Czech Republic.

Publication Date	Publication Type	Publication Title and Summary
2008-OCT	Report	*Appliance Standby Power Consumption Store Survey 2007/2008 - Hungary* Initiated as part of the Asia Pacific Partnership on Clean Development and Climate Change (APP), the purpose of the project was to measure and collect standby power data in two Central Eastern European countries – Hungary and the Czech Republic.
2008-OCT	Report	*Standby Power Store Survey 2008-09: Interim Report* Provides the interim results of standby power consumption for almost 300 appliances, collected in August 2008.
2008-DEC	Brochure	*Transforming Transformers* Information for industry on mandatory efficiency requirements for distribution transformers.
2009-JAN	Report	*Prevention is Cheaper than Cure - Avoiding Carbon Emissions through Energy Efficiency* Projected Impacts of the Equipment Energy Efficiency Program to 2020.
2009-MAR	Regulatory Impact Statement [Consultation]	*Consultation Regulatory Impact Statement: Proposed Minimum Energy Performance Standards and Labelling for Televisions* Calls for public comment on a range of regulatory proposals for televisions sold in Australia.
2009-MAR	Regulatory Impact Statement [Consultation]	*Supplementary Consultation Regulatory Impact Statement: Introducing measured EER and COP levels for air conditioners in Australia on 1 October 2009* Considers the impact of introducing measured heating and cooling levels for air conditioners on 1 October 2009.
2009-APR	Report	*Data Centre Energy Efficiency - Product Profile* Examines the energy efficiency of data centres in Australia with particular consideration of the related Information and Communication Technology (ICT) equipment.
2009-APR	Fact Sheet	*Fact Sheet - Close Control Air Conditioners - Minimum Energy Performance Standards* Provides details of forthcoming MEPS requirements from 1 July 2009 for Close Control Air Conditioners.
2009-JUN	Fact Sheet	*Fact Sheet - Transitional Arrangements - Refrigerators and Freezers 2009-2010* Details the implementation of new MEPS and Energy Labelling Requirements for refrigerators and freezers which come into force on 1 April 2010.

10. E3 GAS COMMITTEE MEMBER ORGANISATIONS

TABLE 11. E3 GAS COMMITTEE MEMBER ORGANISATIONS AS AT 30 JUNE 2009.

Jurisdiction	Government Agency
Commonwealth	Department of the Environment, Water, Heritage and the Arts
Australian Capital Territory	ACT Planning and Land Authority
New South Wales	NSW Department of Water and Energy
Northern Territory	Northern Territory Department of Planning and Infrastructure Northern Territory WorkSafe, Department of Justice
Queensland	Office of Clean Energy, Department of Employment, Economic Development and Innovation Electrical Safety Office, Queensland Department of Justice and Attorney-General
South Australia	Office of the Technical Regulator, South Australian Department for Transport, Energy and Infrastructure
Tasmania	Office of Energy Planning and Conservation, Department of Infrastructure, Energy and Resources, TAS Workplace Standards Tasmania, Department of Justice
Victoria	Sustainability Victoria Energy Safe Victoria
Western Australia	Western Australia Sustainable Energy Development Office *EnergySafety*, Western Australian Department of Commerce
New Zealand	New Zealand Energy Efficiency and Conservation Authority New Zealand Ministry of Economic Development