

Council of Australian Government (COAG)

National Strategy  
on Energy Efficiency

July 2009

Energy Efficiency

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# Background

In October 2008, the Council of Australian Governments (COAG) agreed to develop a National Strategy on Energy Efficiency (the Strategy) to accelerate energy efficiency efforts, streamline roles and responsibilities across levels of governments, and help households and businesses prepare for the introduction of the Carbon Pollution Reduction Scheme (the Scheme). A first round of stakeholder consultation was conducted in late January and early February 2009, with national workshops covering energy efficiency in the buildings sector, appliances and equipment and industry.

Additional targeted consultations have taken place on specific measures, for example:

- at the Energy Efficiency Opportunities (EEO) workshops during May 2009, businesses were consulted on an enhanced EEO program and on initial design factors for some of the industrial measures contained in the Strategy; and
- proposed improvements to building energy efficiency were discussed with industry stakeholders at a forum convened by the Australian Building Codes Board (ABCB) in May 2009.

The development of the Strategy drew on such consultations.

Further consultations with key stakeholders will occur as measures are developed, including through the formal regulatory impact analysis processes as required:

- the ABCB has commenced formal consultation on proposed new energy efficiency provisions to be included in the 2010 update of the Building Code of Australia; and
- proposals to introduce or increase the stringency of Minimum Energy Performance Standards (MEPS) for appliances and equipment, as well as proposals for mandatory energy rating labelling, are subject to full regulatory impact analysis and consultation with industry stakeholders – who have broadly signalled support for moving to a streamlined and consistently applied system of national legislation for MEPS and labelling.

The Strategy set out in this paper is designed to substantially improve minimum standards for energy efficiency and accelerate the introduction of new technologies through improving regulatory processes and addressing the barriers to the uptake of new energy-efficient products and technologies.

The Strategy aims to encourage and support innovation in energy efficient technologies and approaches. It incorporates and builds on measures already agreed by COAG and the Ministerial Council on Energy through the National Framework on Energy Efficiency (NFEE).

# Strategy themes

The measures in the Strategy are framed around the following four key themes:

1. Assisting households and businesses to transition to a low-carbon future;
2. Reducing impediments to the uptake of energy efficiency;
3. Making buildings more energy efficient; and
4. Government working in partnership and leading the way.

Many of the measures outlined in this Strategy can potentially fit under more than one theme. For simplicity, measures are listed under the theme with which they most closely align.

The processes required to establish and implement the measures are set out in the measure descriptions. Where appropriate to measures in this Strategy, Implementation Plans will be finalised within three months of COAG's agreement to this Strategy.

# 1. Assisting households and businesses to transition to a low-carbon future

Measures under this theme will assist households and businesses to transition to a low-carbon future by providing material assistance as well as the information and skills necessary to improve the efficiency of energy use. Complemented by the Australian Government's Energy Efficient Homes Package, the Strategy will further help households, industry and businesses reduce energy use by ensuring that they are better positioned to make well-informed decisions regarding investments in energy efficiency.

One key element to support this transition is the development of a trained and fully engaged workforce to provide sufficient numbers of skilled people to achieve Australia's energy efficiency potential. The Strategy is designed to encourage innovation and the development, enhancement, deployment and operation of more energy efficient technologies in the Australian marketplace. The Strategy includes measures to improve consumer awareness of the need for and benefits of energy efficiency and the adoption of energy efficiency measures by informed choice. The collection of adequate baseline data is a critical component of the Strategy to allow for effective implementation and evaluation of policy measures.

## 1.1 Industry and business

The business sector is by far the largest energy user in the Australian economy. The industrial sector alone accounts for almost half of Australia's energy end use, and around two-thirds of stationary energy use. Australia has one of the more energy intensive industrial sectors among developed countries,<sup>1</sup> which partly reflects relatively low energy prices and high levels of energy-intensive raw material production and mineral processing.

However, Australia's past performance suggests there may be potential for significant energy efficiency improvements in the industrial sector. Even under a carbon price signal from the Scheme, a range of market impediments may combine to cause businesses to under-invest in energy efficiency. There is also an important transitional role for policy to help ensure businesses are well equipped to implement energy efficiency investments to help offset higher energy prices as the price on carbon generated from the Scheme flows through the economy.

The industry and business component of the Strategy will assist companies and smaller businesses to address market impediments to energy efficiency uptake. Initiatives will help ensure that businesses have adequate knowledge, skills and capacity to operate in a low carbon economy. The Strategy has a strong focus on assisting businesses to make informed choices to improve their energy efficiency. Targeted outreach information, support to identify and implement projects with high energy savings potential, and help to assess and prioritise energy efficiency opportunities will be part of the Strategy. Additionally, there will be measures targeted at small and medium enterprises (SMEs).

Under the Strategy, actions will also be taken to identify skills gaps and support development of the skills and capacity of the energy services sector, particularly in the area of energy efficiency advice, audit and assessment. Developing these skills will not only assist the transition to a low carbon economy but will help build the jobs of the future. Finally, the Strategy will seek to maximise the potential for the application of co-generation, tri-generation and other distributed generation technologies that have the potential to increase energy efficiency.

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<sup>1</sup> International Energy Agency (IEA), *Energy Use in the New Millennium Trends in IEA Countries*. IEA/OECD 2007.

Measure	Key elements	Indicative pathway	Implementation responsibility
<b>1.1.1</b> Provide support to businesses to assist them in improving their energy efficiency and to make informed choices regarding energy efficiency by addressing barriers.	a. Continue an enhanced Energy Efficiency Opportunities (EEO) program and extend elements of the program to smaller users. b. Provide targeted support to fund energy efficiency assessments in selected industry sectors. c. Develop targeted outreach information to assist businesses, including information on systems optimisation of priority industrial technologies including motor and steam systems. d. Support businesses to identify and implement high energy saving energy efficiency opportunities including through whole of supply chain assessments and systems optimisation of priority industrial technologies. e. Jurisdictions will implement initiatives to improve the effectiveness of energy efficiency support programs targeted at small and medium sized enterprises (SMEs).	For elements a–e, the Australian Government intends that aspects of this measure will be delivered through the Climate Change Action Fund (CCAF).  For elements c–e, jurisdictions provide a range of resources, including information, training, financial assistance, and demonstration programs to assist businesses to improve their energy efficiency.	Australian Government  All jurisdictions
	f. Provide seed funding through an Energy Efficiency Trust to demonstrate innovative funding models and projects in existing commercial buildings and other business operations. The Trust will use seed funding to leverage private sector investment.	This measure will be delivered through the Australian Carbon Trust.	Australian Government
<b>1.1.2</b> Assist business and industry to ensure they have adequate knowledge, skills and capacity to meet the challenges of operating in a low carbon economy.	a. Identify skills gaps and work with industry and educational organisations to address skills shortages including in energy auditing and advisory services and energy-using corporations.	Skills gaps to be identified by the National Framework on Energy Efficiency (NFE) Commercial and Industrial Implementation Group in developing a long term training strategy for energy efficiency assessment skills. This strategy is to be developed by mid-2010.	Ministerial Council on Energy (MCE) <ul style="list-style-type: none"> <li>• NFE Commercial and Industrial Implementation Group</li> </ul>
	b. Promote best practice and innovation within energy-using corporations and the energy services sector (through case studies).	The Australian Government intends that aspects of this measure will be delivered through the CCAF. In addition, some state and territory programs will support case studies.	Australian, state and territory governments
	c. Develop the skills and capacity of the energy services sector and energy using corporations noting that skill requirements identified will be addressed through the broader energy efficiency skills initiative outlined in 1.2.1.		

Measure	Key elements	Indicative pathway	Implementation responsibility
<p><b>1.1.3</b> Maximise the potential for the application of co-generation, tri-generation and other distributed generation technologies that increase energy efficiency.</p>	<p>a. Provision of information and assistance with the development of complementary/mutually beneficial partnerships.</p>	<p>As a first step, Australian, state and territory and local governments will collaborate with the commercial building sector to deliver a national forum to explore the technical, regulatory and commercial policy issues associated with the application of co-generation, tri-generation and other distributed generation technologies.</p> <p>National forum to be held in the fourth quarter of 2009, with further work to meet information and assistance requirements to be identified by/after the forum.</p>	<p>South Australia</p> <ul style="list-style-type: none"> <li>To lead the coordination of the national forum, with ongoing governance arrangements to be developed as a direct consequence of the forum.</li> </ul>

## 1.2 Skills and training

The transition to a low-carbon future will demand the development and application of knowledge and skills that may not be sufficiently available in Australia at present. The skills and knowledge requirements for the transition to a low carbon economy are many – from professionals in engineering, architecture, industrial design, energy services including audit and advice, environmental sciences, planning and policy, to technical skills in a wide range of trades and industries.

Measure	Key elements	Indicative pathway	Implementation responsibility
<p><b>1.2.1</b> Develop the National Energy Efficiency Skills Initiative (NEESI), for approval and implementation in 2010, as a comprehensive strategy to provide for the future skill requirements of a low carbon economy and the implementation of sustainability strategies.</p>	<p>a. Identify energy efficiency skills requirements across the economy and associated training, accreditation and higher education needs.</p> <p>b. Build on existing NFEE process of identification of relevant and emerging professions and trades and associated skills and training gaps.</p> <p>c. Work with industry and educational institutions to:</p> <ul style="list-style-type: none"> <li>• develop training courses and materials, in association with educational institutions and industry, to address gaps; and</li> <li>• seek inclusion of energy efficiency in relevant trades and professional training, and integration of accreditation schemes and qualifications into existing licensing regimes where appropriate.</li> </ul> <p>d. Develop accreditation standards and systems to support the value of energy efficiency training and provide consumers with confidence in accessing energy efficiency services.</p> <p>e. Publicise training and accreditation developments to encourage the market for energy efficiency services, encourage training and provide customer awareness and protection.</p> <p>f. Monitor delivery and effectiveness of training and ensure emerging skills gaps are identified and addressed.</p> <p>g. Identify and build on synergies between the process jobs/skills in energy efficiency and other green jobs/skills.</p>	<p>Ministerial Council on Energy (MCE) to develop the National Energy Efficiency Skills Initiative and accelerate current work under NFEE on trade and professional training.</p> <p>MCE to consult with the Ministerial Council for Tertiary Education and Employment (MCTEE) and with the Environment Protection and Heritage Council.</p> <p>Implementation of this measure will commence with a cross-jurisdictional stocktake of current energy efficiency skills training courses and materials, as well as industry support programs, to be completed by February 2010.</p> <p>Develop the National Energy Efficiency Skills Initiative in consultation with all jurisdictions, to be considered by MCE by July 2010, with ongoing implementation based on an agreed work program.</p> <p>Development of training programs should take strategic guidance from the proposed National Action Plan for Sustainability in Vocational Education and Training Sector.</p>	<p>Ministerial Council on Energy in consultation with the Ministerial Council for Tertiary Education and Employment.</p>

Measure	Key elements	Indicative pathway	Implementation responsibility
1.2.2 Strengthen national capability in energy auditing and assessment.	<p>a. Rationalise existing energy efficiency audit and assessment processes with the aim of achieving nationally consistent approaches and requirements.</p> <p>b. Align building assessment metrics with outcomes from the national building energy efficiency rating and assessment framework to be developed under measure 3.1.1.</p> <p>c. Review need for additional training in energy auditing.</p> <p>d. Review Australian and New Zealand Standards AS/NZ 3598:2000 and AS/NZS 3598:2000 subject to timing of next scheduled review.</p>	<p>Residential</p> <p>Commission research and draft the framework for residential energy efficiency and sustainability assessments (including the Australian Government’s Home Sustainability Assessment Scheme under the Green Loans program):</p> <ul style="list-style-type: none"> <li>• Conduct scoping study of existing energy and sustainability assessment processes and training courses.</li> <li>• Evaluate the pilot Home Sustainability Assessment Scheme for trial during the national Green Loans program.</li> <li>• Commission the creation of national qualifications for assessors.</li> </ul> <p>Build on the work being undertaken through the NFEET Buildings Committee on development of assessments for mandatory disclosure of energy efficiency in residential and commercial buildings.</p> <p>Business and industry</p> <ul style="list-style-type: none"> <li>• Following the report of the NFEET Commercial and Industrial Implementation Group’s long term training strategy for energy efficiency assessment skills (by mid 2009–10), assess the scope to rationalise energy efficiency audit and assessment processes, and the need to review AS/NZ 3598:2000.</li> </ul>	<p>Australian Government</p> <ul style="list-style-type: none"> <li>• Department of the Environment, Water, Heritage and the Arts home sustainability assessment scheme</li> </ul> <p>Ministerial Council on Energy/Australian Government</p> <ul style="list-style-type: none"> <li>• NFEET Buildings Committee</li> </ul> <p>Ministerial Council on Energy</p> <ul style="list-style-type: none"> <li>• NFEET Commercial and Industrial Implementation Group</li> </ul>

### 1.3 Advice and education

The efficient use of energy requires information that motivates, facilitates and reinforces rational and responsible behaviour by business and consumers. The Strategy is designed to ensure Australians have access to clear, consistent and credible information on energy efficient products and services. The jurisdictions will collaborate when developing communication campaigns designed to change community attitudes and behaviours in relation to energy efficiency, and consumers will be given energy use benchmarking information. Governments will support the uptake of new technologies by showcasing and promoting energy efficient technologies and energy conservation measures.

Measure	Key elements	Indicative pathway	Implementation responsibility
1.3.1 Ensure access to clear and consistent information on: energy efficient products and services; reducing energy consumption; and incentives.	a. Establish an energy efficiency element in the Australian Government's web portal.	<p>Stage one (second half of 2009) will focus on key Australian Government initiatives and be aligned with a number of additional initiatives including the Energy Efficient Homes Package and Green Loans program.</p> <p>Stage two will be developed in more detail over the course of 2009 and implemented as individual jurisdictions provide approved content. Enhanced content and functionality will be added as approved.</p> <p>The Australian Government will manage development of the portal.</p> <p>The energy efficiency material to be linked in this portal will be developed by jurisdictions and fed in via the online portal stakeholder engagement processes. The NFEE Energy Efficiency Exchange will also be linked into the portal.</p>	<p>Australian Government</p> <ul style="list-style-type: none"> <li>Department of the Environment, Water, Heritage and the Arts</li> </ul>
	b. The Energy Savings Pledge Fund will provide tools to enable households and businesses to identify emission reductions and dollar savings to be gained from reducing energy use. Individuals and households will be able to pledge resulting savings, or any other amount, which will be used by the pledge fund to purchase and retire carbon pollution permits. This will contribute to enabling emission reductions beyond Australia's national targets.	<p>This measure will be delivered through the Australian Carbon Trust.</p>	Australian Government

Measure	Key elements	Indicative pathway	Implementation responsibility
<p><b>1.3.2</b> Jurisdictions will collaborate when developing communications campaigns designed to change community attitudes and behaviours in relation to energy efficiency. This will ensure campaigns are based on nationally consistent (and climatically relevant) information and advice.</p>	<p>a. Establish and maintain a register of public awareness campaigns and information material potentially available for use across jurisdictions.</p> <p>b. Establish a mechanism for jurisdictions to share and consult on plans for campaigns and evaluations of campaign and other community awareness materials and social research relating to community knowledge, skills and behaviour relating to energy efficiency.</p>	<p>Initially, a study will be undertaken to provide a comprehensive picture across all jurisdictions of the communications campaigns underway and planned. This will form the basis of the register which will then be regularly updated.</p> <p>Establish a mechanism for jurisdictions to meet at least annually to discuss approaches, issues and results in delivering energy efficiency campaigns.</p>	<p>Ministerial Council on Energy</p> <ul style="list-style-type: none"> <li>NFEE Consumer Information Implementation Committee</li> </ul>
<p><b>1.3.3</b> Implementation of benchmarking in consumer energy bills.</p>	<p>a. Provide energy use benchmarking information on customers' electricity bills.</p>	<p>Continue to support the NFEE project on energy bill benchmarking, which will provide householders with information that will allow them to measure and compare their energy consumption.</p> <p>A regulatory impact analysis for energy bill benchmarking will be prepared and released for consultation during 2009.</p> <p>Subject to regulatory impact analysis, regulatory requirements will be incorporated in the National Energy Customer Framework package to be enacted in 2010.</p>	<p>Ministerial Council on Energy</p> <ul style="list-style-type: none"> <li>NFEE Consumer Information Implementation Committee</li> </ul>
<p><b>1.3.4</b> Showcase and promote energy efficiency technologies and energy conservation measures.</p>	<p>a. Use community and government buildings and educational facilities to showcase new technologies.</p> <p>b. Support innovation and the adoption of best practices to reduce energy intensity in the way that Australians live and work, with a focus on energy conservation measures that reduce or avoid the need for energy through better design, planning and product lifecycle management.</p> <p>c. Establish a network/ partnership of key research institutions to promote the development of energy efficient technologies.</p>	<p>Jurisdictions to provide a report to the senior officials on activities and to inform any further work in this area.</p>	<p>Individual jurisdictions</p> <p>Australian Government</p> <ul style="list-style-type: none"> <li>Department of Innovation, Industry, Science and Research</li> </ul> <p>All jurisdictions</p>

## 1.4 Data

Accurate, timely and comprehensive data is fundamental to the development and successful implementation of new energy efficiency measures. Currently, the availability of broad and consistent energy efficiency data is limited, with little information about energy use in critical parts of the economy, for example commercial buildings. This Strategy seeks to improve data upon which national and jurisdictional energy efficiency policy development and evaluation, reporting, and benchmarking can be based.

Measure	Key elements	Indicative pathway	Implementation responsibility
<p><b>1.4.1</b> Improve data upon which national and jurisdictional energy efficiency policy development, reporting and benchmarking can be based.</p>	<p>a. Continue with the NFEE Energy Efficiency Data Project (EEDP) including scope of phase two data collection framework.</p> <p>b. Support energy efficiency data series and ad-hoc collections through the Australian Bureau of Statistics (ABS).</p>	<p>The NFEE Energy Efficiency Data Project (EEDP) has commenced and is being delivered through the project working group.</p> <p>EEDP working group to develop a paper by the end of 2009 proposing a package of new data activities to support this measure.</p> <p>The ABS will conduct a major one-off Energy, Water and Environment Survey in August 2009. It will survey approximately 15,000 businesses across Australia and provide baseline data for the 2008–09 financial year.</p> <p>The survey will collect information on energy use, energy efficiency activities and the use of renewable technologies. The survey will support the integration of financial data with energy use and activity data to enable the compilation of energy efficiency indicators.</p> <p>Based on the outcome of the NFEE data project and other processes that identify data needs, consider need for subsequent surveys by ABS and other bodies.</p>	<p>Ministerial Council on Energy</p> <ul style="list-style-type: none"> <li>NFEE Energy Efficiency Data Project Working Group</li> </ul> <p>Australian Government in conjunction with jurisdictions.</p>

## 2. Reducing impediments to the uptake of energy efficiency

The introduction of the Scheme will address the absence of a price signal for carbon emissions, however, impediments are likely to remain that prevent individuals and businesses from taking-up all cost-effective energy efficiency opportunities. These impediments arise from a range of market failures and barriers but in the main result from information failures and split incentives.

The Strategy is designed to encourage and enable action by individuals and business by providing the right information and ensuring that the regulatory frameworks are in place to deliver continuing improvements to:

- electricity markets (in bringing forward demand-side initiatives);
- the energy efficiency of appliances and equipment; and
- the energy efficiency of the transport sector.

### 2.1 Electricity markets

Historically, energy prices have been relatively low in Australia compared to other OECD countries. However, prices will continue to rise in the future as a result of the price on carbon under the Scheme, the expanded Renewable Energy Target (RET) and increasing capital expenditure requirements to meet peak demand growth. These price increases together with more cost-reflective retail prices, including the roll-back of retail price caps where competition is found to be effective, will help drive more efficient use of energy. The roll-out of advanced metering infrastructure ('smart meters') combined with information on energy efficient equipment and behaviours is also expected to assist customers to make energy-efficient consumption choices, while direct load control is also expected to assist manage peak demand growth.

Demand side initiatives include general demand reductions from energy efficiency, peak load shifting, cost-reflective pricing, and measures to address asymmetry of information. There is substantial overseas and local evidence to suggest that despite the existence of cost-effective demand side initiatives, they are often not effectively accessed by electricity markets as alternatives to expanded supply initiatives. The relatively low energy prices in Australia have provided consumers with little incentive to reduce their energy consumption, but with energy prices expected to rise, demand side measures are likely to become a higher priority for consumers.

Distributed generation including co-generation and tri-generation can be a cost effective and economically efficient alternative to conventional supply arrangements, with the advantages of greater efficiency of use of the primary fuel, avoidance of transmission and distribution losses and potential reduction of the need for network augmentation. However, factors such as lack of integrated planning and design for new buildings and uncertainty among users as to legal and commercial aspects of such projects can act as barriers to the implementation of cost-effective and economically efficient distributed generation.

The Strategy includes measures to review and develop actions in consultation with the Ministerial Council on Energy to address barriers to harnessing electricity markets to better enable the uptake of economic and cost-effective distributed generation and demand side initiatives, while maintaining reliability of supply for consumers and industry.

Measure	Key elements	Indicative pathway	Implementation responsibility
<p><b>2.1.1</b> Consider the effectiveness of the electricity market in bringing forward demand-side energy efficiency measures.</p>	<p>a. Initial consideration through the current Australian Energy Market Commission (AEMC) Demand Side Participation Review aimed at identifying obstacles in the rules to efficient demand-side participation and options for addressing these barriers where there are benefits in doing so.</p> <p>Key areas for focus will include:</p> <ul style="list-style-type: none"> <li>• impediments in electricity market settings to investment in cost-effective energy efficient practices;</li> <li>• regulatory arrangements affecting energy efficiency in energy markets (in addition to the National Energy Market), such as retailer obligation schemes;</li> <li>• barriers to the uptake and application of distributed generation, including tri-generation and co-generation; and</li> <li>• issues that could be assessed include technical restrictions and barriers to the efficient operation of the price signal in the market.</li> </ul>	<p>Identify issues that require further exploration following conclusion of phase two of the AEMC Demand Side Participation Review.</p> <p>COAG to direct the Ministerial Council on Energy (MCE) to request the AEMC to either:</p> <ul style="list-style-type: none"> <li>• include identified issues in its phase three review; or</li> <li>• review those issues by another process.</li> </ul> <p>With the need for further independent review in addition to the above to be assessed at that time.</p>	<p>Ministerial Council on Energy</p>
<p><b>2.1.2</b> Assist the transition to a low carbon economy by encouraging a smarter and more efficient energy network.</p>	<p>a. Implement a smart grid across the energy network in a location of sufficient scale to provide meaningful data, input to government policy and inform future roll out of smart grids.</p> <p>b. Explore links with the National Broadband Network (and other networks such as water and gas) to take full advantage of Australia's investment in this technology.</p> <p>c. Communicate lessons from the trial to industry, governments and consumers.</p>	<p>Commission pre-deployment study of potential economic and environment benefits of smart grid technologies and proposed business model and governance arrangements which would maximise the benefits of the National Energy Efficiency (Smart Grid, Smart City) Initiative, taking account of MCE decisions on the roll-out of smart meters and the current work of the AEMC.</p> <p>As part of the pre-deployment study, plan and facilitate industry, jurisdiction and community workshops in at least three major cities.</p> <p>Business model and guidelines for the Initiative agreed.</p> <p>Seek proposals from industry consortia; and assess proposals for smart grid trial.</p> <p>Successful industry consortia announced and project implemented.</p> <p>Facilitate learning and information dissemination from the trial to industry and governments.</p>	<p>Australian Government</p> <ul style="list-style-type: none"> <li>• Department of the Environment, Water, Heritage and the Arts</li> </ul>

## 2.2 Appliances and equipment

Energy consumed by residential appliances and industrial and commercial equipment is a major source of greenhouse gas emissions in Australia. By addressing a number of areas where low cost energy efficiency opportunities exist and are yet to be fully exploited, this Strategy enables Australians to access highly energy efficient appliances and equipment for residential, commercial and industrial applications, aligned with leading international standards.

The Strategy embraces a range of measures aimed at increasing the energy efficiency of products used in the residential, commercial and industrial sectors. Performance codes and standards are the most widely used measures internationally to reduce energy use and greenhouse gas emissions from appliances and equipment. Energy efficiency labelling assists consumers by providing information, allowing them to make rational choices having regard to likely operating costs. Minimum Energy Performance Standards (MEPS) provide consumer protection in a higher energy price context by ensuring that inefficient products are not available. These proposed measures include an acceleration of Australia's current MEPS and labelling program through the Equipment Energy Efficiency (E3) program. The program includes implementation of new and revised standards in the E3 work plan which was developed through stakeholder engagement and a review of international best practice.

Subject to a regulatory impact analysis, national legislation will be established to provide a nationally consistent policy framework covering appliance and equipment minimum energy performance standards and labelling, streamlining governance arrangements and regulatory processes, simplifying compliance and enforcement responsibilities for all stakeholders, and reducing transaction costs for business.

Inefficient lighting products in the Australian market will be phased-out and the range of lighting merchandise covered by MEPS increased over time.

Inefficient and greenhouse intensive hot water systems will also be phased-out through a mix of regulatory measures, incentives and industry development elements. Although the market penetration of electric resistance water heaters is falling, roughly half of Australian households still possess this type of hot water system. This phase-out of electric resistance water heaters will greatly reduce the total electricity used and decrease households' water heating costs.

Further efficiency will be delivered from more stringent standards for air conditioners. Electricity demand from air conditioners adds particularly to peak demand and there are significant environment and economic benefits to be realised by accelerating the introduction of new standards, in accordance with the COAG guidelines for national standard setting

To complement expanded MEPS and labelling programs and the phase-outs of inefficient lighting and greenhouse-intensive hot water system products, the Strategy includes measures to augment consumer information programs. Mandating the requirement for star rating of appliances to be displayed on advertising material, such as brochures, television advertisements and websites will ensure that consumers have access to the most up-to-date information to make better informed choices about the products they are buying. Household action is an important part of Australia's climate change approach. This Strategy is designed to give consumers confidence to make better choices and promote behavioural change.

Measure	Key elements	Indicative pathway	Implementation responsibility
<p><b>2.2.1</b> Accelerate and expand the current Minimum Energy Performance Standards (MEPS) and labelling program.</p>	<ul style="list-style-type: none"> <li>a. Broaden (beyond the current NFEES Equipment and Energy Efficiency program (E3) plan) the range of products and increase the level of (energy performance) stringency for covered products.</li> <li>b. Expand 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.</li> <li>c. Improve processes of: <ul style="list-style-type: none"> <li>• engagement with industry;</li> <li>• developing test methods and standards; and</li> <li>• regulatory impact analysis.</li> </ul> </li> <li>d. Expand enforcement and verification testing to maintain E3 program integrity.</li> <li>e. Accelerate the review of the stringency in MEPS for priority appliances, in accordance with the COAG Guidelines for national standard setting. This will include consideration of strengthening by 10 per cent the MEPS for air conditioners detailed in the September 2008 Consultation Regulatory Impact Statement, applying these for annualised energy use, and, subject to appropriate modelling and regulatory impact analysis, introducing these new requirements no later than 1 October 2011.</li> </ul>	<p>New and revised standards and labelling will be implemented as agreed in the 2008–09 to 2011–12 E3 work plan. A detailed E3 work plan is in the process of being updated for approval by the Ministerial Council on Energy.</p> <p>In addition to the current E3 work plan, the coverage of the current standards and labelling program will be reviewed and expanded through stakeholder engagement and with reference to international best practice.</p> <p>All proposals to introduce new or more stringent MEPS and labelling will be subject to full regulation impact assessment in accordance with the COAG guidelines for national standard setting.</p> <p>Verification testing will be implemented for an expanded range of products and compliance monitoring and enforcement activity will be increased.</p>	<p>Ministerial Council on Energy</p> <ul style="list-style-type: none"> <li>• The Equipment Energy Efficiency Committee.</li> </ul> <p>Governance arrangements will be reviewed in light of decisions taken on national MEPS legislation (measure 2.2.2).</p>

Measure	Key elements	Indicative pathway	Implementation responsibility
<p><b>2.2.2</b> Establish national legislation for Minimum Energy Performance Standards (MEPS) and labelling, and over time move to add Greenhouse and Energy Minimum Standards (GEMS).</p>	<p>a. Measure is intended to include an overhaul and streamlining of the MEPS process to include target timelines for development and implementation of new standards.</p> <p>b. Include gas products in MEPS and labelling.</p> <p>c. GEMS legislation expected to cover non-electrical appliances and system components that affect the energy efficiency of appliances (for example air conditioner ducting).</p>	<p>Stage one: Australian Government tasked with leading an officials group to consider form of national legislation. Undertake stakeholder consultation, including regulatory impact analysis (RIA) process. As part of this RIA process, the issues and processes for including greenhouse and energy minimum standards will be examined. Stage one will be completed when the RIA process is complete. Expected to be mid-2010.</p> <p>Stage two: New legislation drafted or amendments to existing legislation and regulations. Bill(s), including a simplified and nationally consistent compliance and enforcement scheme, to be introduced and legislation enacted in Parliament. Stage two will be complete when the draft Bill(s) have been passed, target implementation timeframe is second half of 2010.</p>	<p>Australian Government</p> <ul style="list-style-type: none"> <li>Department of the Environment, Water, Heritage and the Arts in consultation with the states and territories through the Ministerial Council on Energy.</li> </ul>
<p><b>2.2.3</b> Phase-out inefficient lighting products in the Australian market, commencing with incandescent globes</p>	<p>a. Implement import and sales restrictions on incandescent globes in 2009.</p> <p>b. Progressively increase the range of lighting products covered by the phase-out by introducing minimum energy performance standards.</p> <p>c. Educational and promotional activity regarding alternative lighting options directed at consumers, retailers and building professions and the trades.</p>	<p>Import restriction on inefficient incandescent general lighting service lamps began February 2009. Retail sales ban scheduled to commence in November 2009.</p> <p>The range of lighting products covered by minimum energy performance standards will be increased over time, subject to regulatory impact analysis processes and to cost effective alternatives being available in the Australian market:</p> <ul style="list-style-type: none"> <li>Implementation of MEPS for incandescent and compact fluorescent lamps commences from November 2009.</li> <li>Implementation of the MEPS continues in a staged approach as specified in relevant Australian Standards.</li> </ul> <p>The 10-year Greenlight Australia strategy (2005–2015) for improving the efficiency of lighting in Australia will be updated in consultation with Lighting Council Australia and other key stakeholders by end of the first quarter of 2010.</p> <p>Education and promotion materials such as point of sale information will be prepared and delivered.</p>	<p>Australian Government</p> <ul style="list-style-type: none"> <li>Department of the Environment, Water, Heritage and the Arts, in cooperation with relevant state and territory regulatory agencies, and NFEE Lighting Committee</li> </ul> <p>Ministerial Council on Energy</p> <ul style="list-style-type: none"> <li>The Equipment Energy Efficiency (E<sub>3</sub>) Committee and NFEE Lighting Committee</li> </ul>

Measure	Key elements	Indicative pathway	Implementation responsibility
<p><b>2.2.4</b> Phase-out of inefficient and greenhouse-intensive hot water systems</p>	<ul style="list-style-type: none"> <li>a. A set of measures (including energy efficiency standards) to phase-out conventional electric resistance water heaters (except where the greenhouse intensity of the public electricity supply is low) and increase efficiency of other types.</li> <li>b. Appropriate regulatory mechanisms in each jurisdiction (for example plumbing regulations in conjunction with the National Construction Code when developed), will be used to prevent installation of high emission electric systems.</li> <li>c. Minimum Energy Performance Standards (MEPS) to regulate remaining technologies.</li> <li>d. Education and industry development measures.</li> <li>e. Jurisdictions to work to better integrate, simplify and reduce red tape associated with incentive schemes, such as by offering rebates as point of sale discounts and having a single avenue for rebates applications.</li> <li>f. Mandatory labelling of gas, solar and heat pump water heaters will also be introduced.</li> </ul>	<p>A 10-year strategic framework for low-emission water heaters has been developed as a component of the National Hot Water Strategy. Regulatory measures which set minimum benchmarks/standards at the national level will be developed.</p> <p>The 10-year framework provides a staged approach to transition to low-emission water heaters, with the first phase focused on the phase-out of electric resistance water heaters commencing in 2010. The strategy includes further phases (in 2015 and 2020) where the minimum performance standard is strengthened, subject to regulatory impact analysis processes. This will provide the water heater industry with clear signals of the intention of Government to transform the market over the longer term.</p> <p>A National Hot Water Strategy Implementation Group under NFEET, co-chaired by the Australian Government and South Australia, will oversee the implementation of the Strategy. The group has representation from all states.</p> <p>The introduction of minimum energy performance standards for water heaters will be managed through the Ministerial Council on Energy's NFEET Equipment Energy Efficiency (E3) Committee, while the implementation of training packages will be managed by the NFEET Trade and Professional Training and Accreditation Committee.</p>	<p>Ministerial Council on Energy</p> <ul style="list-style-type: none"> <li>• National Hot Water Strategy Implementation Group</li> <li>• NFEET Trade and Professional Training and Accreditation Committee</li> <li>• NFEET Equipment Energy Efficiency (E3) Committee</li> </ul>
<p><b>2.2.5</b> Develop and implement additional consumer information programs</p>	<ul style="list-style-type: none"> <li>a. Mandate the requirement for star ratings of appliances to be displayed in advertising material such as brochures, television advertisements and web sites (subject to regulatory impact analysis).</li> <li>b. Develop information and advice to assist the promotion and sale of the most efficient products.</li> </ul>	<p>A three pronged approach will be used to achieve this measure:</p> <ul style="list-style-type: none"> <li>• Consumer information – mandatory energy rating information in product advertising; and</li> <li>• Retailer training – as product labelling is required for new products at point of sale, plans will be developed for provision of educational materials for retailers which will be used to empower consumers when making purchasing decisions (for example retailer communications materials are currently being developed in readiness of the introduction of mandatory labelling for televisions and lighting changes).</li> <li>• Website – renovated <a href="http://www.energyrating.gov.au">www.energyrating.gov.au</a> website as an information source, together with the <a href="http://LivingGreener.gov.au">LivingGreener.gov.au</a> portal (refer measure 1.3.1).</li> </ul>	<p>Ministerial Council on Energy and the Australian Government</p> <ul style="list-style-type: none"> <li>• NFEET Equipment Energy Efficiency (E3) Committee</li> </ul> <p>Australian Government</p> <ul style="list-style-type: none"> <li>• Department of the Environment, Water, Heritage and the Arts</li> </ul>

## 2.3 Transport

The need to reduce emissions from transport is becoming a major challenge for business and the community. Greenhouse gas emissions from the transport sector accounted for around 14 per cent of Australia's emissions in 2007. In May 2007, COAG requested the Australian Transport Council (ATC) and the Environment Protection and Heritage Council (EPHC) prepare a joint report on a package of vehicle fuel efficiency measures designed to move Australia towards international best practice. On 2 July 2009, COAG considered the recommendations of the vehicle fuel efficiency report of the ATC and EPHC and the agreed measures are incorporated in the Strategy.

Measure	Key elements	Indicative pathway	Implementation responsibility
<p><b>2.3.1</b> Develop a package of measures to improve the fuel efficiency of the Australian vehicle fleet.</p>	<p>a. Assess the costs and benefits of introducing CO<sub>2</sub> emission standards for light vehicles.</p> <p>b. Co-ordinate on-line information to assist fleet managers.</p> <p>c. Include fuel consumption and CO<sub>2</sub> data in vehicle advertising.</p> <p>d. Develop and deploy the 'Truck Buyers Guide' on the Green Vehicle Guide website.</p> <p>e. Co-ordinate on-line information for low-emission technologies for commercial vehicle operators.</p>	<p>Undertake a detailed regulatory impact analysis for introducing CO<sub>2</sub> emission standards for light vehicles.</p> <p>Co-ordinate the development and dissemination of on-line resources, drawing on best practice frameworks and case studies, to assist fleet managers in incorporating objective environmental criteria into fleet purchasing decisions.</p> <p>Develop a code of practice regarding the inclusion of fuel consumption and CO<sub>2</sub> data in vehicle advertisements and promotional materials. If a code of practice is not achieved, pursue the development of mandatory provisions.</p> <p>Co-ordinate the development of on-line information resources regarding trials and evaluations of low emission technologies for commercial vehicles to assist operators in assessing the effectiveness of various technologies.</p>	<p>Australian Transport Council to monitor and report progress on the measures to COAG and develop implementation plans for each measure by the end of 2009.</p> <p>Responsibility for implementation of key elements is as follows:</p> <p>a. Australian Government</p> <ul style="list-style-type: none"> <li>Department of Infrastructure, Transport, Regional Development and Local Government (DITRDLG)</li> </ul> <p>b. Australian Government</p> <ul style="list-style-type: none"> <li>DITRDLG, in conjunction with the States and Territories and other stakeholders</li> </ul> <p>c. Australian Government</p> <ul style="list-style-type: none"> <li>DITRDLG</li> </ul> <p>d. Australian Government</p> <ul style="list-style-type: none"> <li>DITRDLG</li> </ul> <p>Victorian Government</p> <ul style="list-style-type: none"> <li>Department of Sustainability and Environment</li> </ul> <p>NSW Government</p> <ul style="list-style-type: none"> <li>Department of Environment and Climate Change</li> </ul> <p>e. Australian Government</p> <ul style="list-style-type: none"> <li>DITRDLG</li> </ul> <p>NSW Government</p> <ul style="list-style-type: none"> <li>Roads and Traffic Authority, in conjunction with other interested jurisdictions and industry stakeholders</li> </ul>

Measure	Key elements	Indicative pathway	Implementation responsibility
<p><b>2.3.2</b> Encourage the domestic car manufacturing industry to develop and build more efficient passenger motor vehicles.</p>	<p>a. The Australian Government's \$6.2 billion <i>A New Car Plan for a Greener Future</i> is designed to encourage innovative industry responses to market challenges, particularly investment in environmentally-friendly automotive technologies.</p> <p>b. In particular, the \$1.3 billion Green Car Innovation Fund will provide assistance over ten years to design, develop and manufacture low-emission, fuel-efficient cars and components in Australia.</p>	<p>The Green Car Innovation Fund was launched on 24 April 2009 with a public call for applications.</p> <p>The Fund is a competitive merits based program administered by AusIndustry. Payments will commence from 1 July 2009.</p> <p>Measure 2.3.1 addresses further initiatives to improve the fuel efficiency of the vehicle fleet.</p>	<p>Australian Government</p> <ul style="list-style-type: none"> <li>Department of Innovation, Industry, Science and Research</li> </ul> <p>As per measure 2.3.1</p>
<p><b>2.3.3</b> Introduce voluntary measures to improve the performance of heavy vehicle fleets.</p>	<p>a. Pilot a SmartWay-style voluntary emissions reduction program involving the freight industry.</p> <p>b. Establish networks of organisations that give priority to accredited SmartWay carriers and working with heavy vehicle fleet operators to encourage them to implement innovative fuel and emissions savings devices on their vehicles (such as improved vehicle aerodynamics, idle-off devices, low roll resistant tyres, or driver training).</p>	<p>Actual program design would be developed based on an assessment of which options are most suitable for the Australian heavy road transport sector and developed in consultation with transport industry stakeholders.</p>	<p>NSW and Victorian Governments</p>
<p><b>2.3.4</b> Introduce voluntary measures to improve the performance of passenger vehicle fleets.</p>	<p>a. Benchmarking the environmental performance of existing fleets, and utilise an on-line tool to inform fleet managers of opportunities to improve performance through purchasing and operational practices for the fleet.</p> <p>b. The measure would be voluntary – fleet managers choose to participate and organisations can benefit from improved environmental performance and reduced costs.</p>	<p>The framework for the measure has already been undertaken by NSW. The FleetWise tool could be rolled on a national basis and on a voluntary basis by participating jurisdictions.</p>	<p>NSW in conjunction with participating jurisdictions.</p>
<p><b>2.3.5</b> Develop an effective Australian eco-driving program.</p>	<p>a. Develop evidence-based eco-driving training methodologies to inform the establishment of eco-driving programs in Australia.</p>	<p>Victoria and South Australia are jointly undertaking eco-driving trials, and along with other jurisdictions are planning a national workshop on eco-driving to be held in October 2009.</p> <p>Western Australia has undertaken a pilot program with heavy vehicles to reduce idling while vehicles are stationary.</p> <p>Victoria has also committed, as part of the Victorian Transport Plan, to develop an eco-driving campaign to help motorists reduce their fuel consumption. This campaign will be based on the findings of the VIC/SA eco-driving trial.</p>	<p>Australian Transport Council</p> <ul style="list-style-type: none"> <li>Environment Standing Sub-Committee</li> </ul>

## 3. Making buildings more efficient

Historically, our buildings have not been built with energy efficiency as a key concern, although voluntary industry action, government policy requirements and building efficiency standards instituted over the past decade have begun to transform our built environment. Energy consumption in buildings accounts for approximately 20 per cent of Australia's greenhouse gas emissions – split equally between commercial and residential buildings.

This Strategy sets the foundation for a transformation of Australia's building stock. The Strategy is designed to drive significant improvement in minimum energy efficiency standards to deliver substantial growth in the number of highly energy efficient homes and commercial buildings, reflecting international best practice. The transformation will be achieved through a combination of measures addressing both new building design and construction and existing building stock.

New buildings will be designed and constructed according to increasingly stringent energy efficiency standards that will lead to a reduction in energy consumption. These standards will account for climatic variation. Major renovations will be subject to the same standards.

This Strategy also includes measures to help raise the energy efficiency of existing building stock through cost-effective voluntary action in response to better information about building energy use. In particular, people seeking to buy or lease properties will be provided with information about the energy efficiency of the buildings through proposed new mandatory disclosure provisions. Armed with this information, consumers and businesses will be able to make informed choices about the energy efficiency of the buildings they buy and lease – and builders and building owners will respond to those market signals by investing in energy efficiency.

This Strategy encompasses early action in the commercial and residential sectors to significantly improve the energy efficiency of new buildings and also to phase-in mandatory disclosure, both commencing in 2010. This early action will be followed by major reforms to the building standard setting and rating system in 2011 to deliver national consistency in the way minimum standards for building energy efficiency are set and how performance outcomes and design are assessed and rated.

Governments will set out a clear process and timetable for periodic review (for example, every three years starting in 2012) of energy efficiency standards so that over the life of this strategy energy efficiency requirements will be progressively increased. This will give industry greater confidence to innovate and develop affordable solutions to improve building energy efficiency. For example, six, seven and eight star buildings, or equivalent, will become the norm in Australia, not the exception.

### 3.1 Consistency in standard setting and performance assessment frameworks

Measure	Key elements	Indicative pathway	Implementation responsibility
<p><b>3.1.1</b> All jurisdictions will work together to develop a consistent outcomes-based national building energy standard setting, assessment and rating framework for driving significant improvement in the energy efficiency of Australia's building stock. To be implemented in 2011.</p>	<p>a. This measure will be used to increase the energy efficiency of new residential and commercial buildings and major renovations, with minimum standards to be reviewed and increased periodically, for example every three years.</p> <p>b. Energy efficiency improvements will continue to be communicated via star ratings, underpinned from 2011 by new national measurement and reporting metrics relevant to both new and existing buildings, under the national framework.</p> <p>c. This framework will:</p> <ul style="list-style-type: none"> <li>• apply to new and existing building stock;</li> <li>• cover all classes of commercial and residential buildings;</li> <li>• over time set increasingly stringent minimum performance standards for new buildings and major renovations (subject to regulatory impact analysis);</li> <li>• include common metric(s) to underpin standard setting and performance assessment;</li> <li>• include flexibility to account for climatic variation;</li> <li>• accommodate mandatory disclosure of energy performance at time of sale or lease;</li> <li>• work towards convergence of existing, measurement-based rating tools (such as the National Australian Built Environment Rating System – NABERS Energy) for existing buildings with predictive or modelling-based tools used for rating new buildings; and</li> <li>• be capable of extension over time to cover broader sustainability elements, including water management and greenhouse gas emissions and the maintenance of energy efficiency performance through commissioning, operation and maintenance of buildings.</li> </ul>	<p>This measure will lead to the development of an integrated national outcomes-based framework.</p> <p>The Australian Government Department of the Environment, Water, Heritage and the Arts (DEWHA) will chair a group of jurisdictional representatives, drawing on external expert advice as required, to lead development of the national framework and consult with building industry stakeholders.</p> <p>The Building Code of Australia (BCA) will be the instrument by which the framework is implemented for both new building work and major renovation of existing buildings. The revised code will:</p> <ul style="list-style-type: none"> <li>• increase the performance standard for all new buildings and transition to a nationally consistent performance based assessment system by the end of 2011;</li> <li>• cover the building envelope and energy efficiency of key building services;</li> <li>• allow innovation in meeting defined performance standards;</li> <li>• provide for the use of rating tools developed by the market which provide an accurate assessment of a building's performance, and that such tools be transparent and user friendly; and</li> <li>• facilitate effective monitoring and compliance.</li> </ul> <p>A draft framework and implementation agreement will be developed by the end of 2009. Jurisdictionally agreed framework and implementation agreement to be agreed by the end of 2010, with implementation by the end of 2011 through the BCA.</p>	<p>Australian, state and territory governments.</p> <p>All jurisdictions via a specific purpose committee and including the NFEES Buildings Committee.</p>

Measure	Key elements	Indicative pathway	Implementation responsibility
3.1.1 (continued)	d. Enhancement of the national governance framework of NABERS Energy as a part of the development of a unified national framework.	Australian Government will chair the NABERS National Steering Committee with representation from all jurisdictions. NSW will provide national administration of NABERS and manage the development and delivery of the scheme, under the direction of the National Steering Committee.	

## 3.2 Commercial building sector

Measure	Key elements	Indicative pathway	Implementation responsibility
3.2.1 Significantly increase over time the stringency of energy efficiency provisions for all commercial buildings (Class three, and five to nine) in the Building Code of Australia (BCA) – starting with the 2010 version of the BCA.	<p>a. This measure will be achieved under the new national framework for building energy standard setting and rating.</p> <p>b. A package of energy efficiency measures for implementation in 2010 – for new buildings and major new work in existing buildings, which meets a benefit to cost ratio of 2:1.</p> <p>c. New efficiency provisions for heating, ventilation and air-conditioning systems and for artificial lighting.</p> <p>Note: the last BCA update included a package of commercial buildings energy efficiency measures with a benefit to cost ratio of 5:1. Tightening the energy efficiency measures such that the regulatory impact analysis of the energy efficiency package comes in at 2:1 represents a significant strengthening of standards.</p>	<p>The Australian Building Codes Board (ABCB) has been tasked with developing more stringent energy efficiency provisions for all commercial buildings for inclusion in BCA 2010, subject to a full regulatory impact analysis.</p> <p>The building energy efficiency framework to be developed under measure 3.1.1 will set out a clear process and timetable for periodic review of energy efficiency standards so that over the life of the Strategy the stringency of these standards is progressively increased. The process for developing the framework will incorporate an examination of how international best practice can inform each periodic review. For example, the UK's zero-carbon buildings targets.</p>	<p>Building Ministers Forum</p> <ul style="list-style-type: none"> <li>Responsibility for effecting the Building Code of Australia change will fall to the Australian Building Codes Board.</li> </ul> <p>In the interim, ongoing policy development will be led and managed by National Strategy on Energy Efficiency senior officials and in the longer-term delivered by its replacement body.</p>

Measure	Key elements	Indicative pathway	Implementation responsibility
<p><b>3.2.2</b> Phase-in from 2010 the mandatory disclosure of the energy efficiency of commercial buildings.</p>	<p>a. Phase one: implement a national mandatory disclosure scheme for large commercial office buildings (2,000m<sup>2</sup> or larger).</p> <p>To also cover commercial office buildings owned or leased by Australian, state and territory governments.</p> <p>b. Phase two: consideration of expanding mandatory disclosure to other building types, including hotels, retail, schools and hospitals.</p>	<p>Develop legislation to implement mandatory disclosure.</p> <p>The regulatory impact analysis (RIA) process commenced with the release of a public consultation RIA by the NREE Buildings Committee in late 2008. The decision regulatory document and regulatory impact statement (RIS) are expected to be finalised in the third quarter 2009.</p> <p>Subject to RIA outcomes, define parameters of Mandatory Disclosure Scheme. Establish national administration unit to implement mandatory disclosure scheme (including preparation of legislation).</p> <p>Phase one will be completed when the enabling legislation for commercial office buildings is passed and the national administrative unit is operational in 2010 (anticipated to be around mid-2010).</p> <p>Phase two will be completed when the scheme is expanded to cover all other feasible commercial building types in 2012, noting within this there will be a process of consideration of what is required and a further RIA process.</p>	<p>Ministerial Council on Energy</p>
<p><b>3.2.3</b> Implement the Heating, Ventilation and Air Conditioning High Efficiency Systems Strategy (Framework Cool Efficiency Program).</p>	<p>a. A code of best practice for maintenance and operation.</p> <p>b. A building services log book (including codes of best practice and system documentation standards).</p> <p>c. Voluntary standards (including log books) for maintenance of heating, ventilation and air conditioning (HVAC) systems in commercial buildings where standards are not mandatorily in place.</p> <p>d. Clean Efficiency Project: measure energy savings achieved from cleaning and protection of heat exchange services.</p> <p>e. 'Calculating Cool' – online tool for experimental and interactive advice about keeping buildings cool.</p> <p>f. Measure, monitor and meter selected older HVAC systems to inform control strategies and reporting regimes to building managers.</p>	<p>In partnership with peak industry bodies and relevant government agencies, deliver the projects of the Cool Efficiency Program under the NREE. Minimum Energy Performance Standards (MEPS) changes to commercial building chillers and close-control air conditioners will be subject to regulatory impact analysis processes. Implementation to commence in July 2009.</p> <p>Develop consistent guidelines for regulated and non-regulated practitioners.</p>	<p>Ministerial Council on Energy</p> <ul style="list-style-type: none"> <li>• Heating, Ventilation and Air Conditioning High Efficiency Systems Strategy (HVAC HESS) Implementation Committee</li> </ul>

### 3.3 Residential building sector

Measure	Key elements	Indicative pathway	Implementation responsibility
<p><b>3.3.1</b> Significantly increase the stringency of energy efficiency provisions for all new residential buildings in the Building Code of Australia (BCA) and broaden coverage of efficiency requirements.</p> <p>Minimum energy efficiency standards will be upgraded to 6-stars, or equivalent, nationally in the 2010 update of the BCA – to be implemented by May 2011 and reviewed regularly for potential upgrade thereafter. For example, 3-yearly from 2012.</p> <p>Separate energy efficiency requirements for hot water systems and lighting will be also considered.</p>	<p>a. This measure will be underpinned from 2011 by new measurement and reporting metrics under the single national framework.</p> <p>b. First step is to increase minimum energy efficiency requirements in the 2010 version of the BCA, so that new buildings and major renovations must achieve a six-star rating or equivalent for thermal performance of the building shell, noting that changes are subject to regulatory impact analysis.</p> <p>c. Include in the 2010 BCA, separate new energy efficiency requirements for hot water systems and lighting, subject to a regulatory impact analysis.</p>	<p>The Australian Building Codes Board (ABCB) will be tasked with developing and implementing these new requirements, including undertaking the associated regulatory impact analysis.</p> <p>The first step in this measure will be completed when the BCA 2010 has been published, but not fully implemented until individual jurisdictions have passed their enabling regulation expected no later than May 2011.</p> <p>Subsequent increases in minimum energy efficiency requirements (star ratings or equivalent) will be considered in more detail over the course of 2009–10 through application of the framework outlined in measure 3.1.1.</p>	<p>Building Ministers Forum</p> <ul style="list-style-type: none"> <li>Responsibility for effecting the Building Code of Australia change will fall to the Australian Building Codes Board.</li> </ul> <p>In the interim, ongoing policy development will be led and managed by National Strategy on Energy Efficiency senior officials and in the longer-term delivered by its replacement body.</p>
<p><b>3.3.2</b> Phase in mandatory disclosure of residential building energy, greenhouse and water performance at the time of sale or lease, commencing with energy efficiency by May 2011.</p>	<p>a. Credible and meaningful information is publicly and readily available to market participants to assist them in making lease/purchase decisions.</p>	<p>Progress the NFEE mandatory disclosure process and investigate leveraging work from the ACT Mandatory Disclosure Scheme.</p> <ul style="list-style-type: none"> <li>Stage one: Policy clarification and systems design will be completed when a decision regulatory impact analysis (RIA) is released in mid-2010. This will include an examination of the implications of different implementation options, including for landlords and tenants.</li> <li>Stage two: subject to the outcome of the RIA, which will determine scope, development and implementation will be defined in more detail over the course of 2009–10 and completed by May 2011.</li> <li>Stage three: phase-in, reviews and upgrades will commence in May 2011.</li> </ul>	<p>Ministerial Council on Energy</p> <ul style="list-style-type: none"> <li>Building Implementation Committee.</li> </ul>

Measure	Key elements	Indicative pathway	Implementation responsibility
<b>3.3.3</b> Provide incentives for residential building owners to undertake energy efficiency improvements.	<p>a. Australian Government's Energy Efficient Homes Package including the Low Emission Assistance Plan for Renters, the Homeowner Insulation Program, and the Solar Hot Water Rebate.</p> <p>b. The range of states and territory programs designed to improve the energy efficiency of existing residential housing stock.</p>	<p>The Australian Government's Energy Efficient Homes Package will install ceiling insulation in up to 2.9 million Australian homes.</p> <p>States and territories will consider specific jurisdictional issues and interaction with other incentive and regulatory initiatives in designing and delivering residential incentive programs. Examples include:</p> <ul style="list-style-type: none"> <li>• Queensland's Climate Smart Homes program; and</li> <li>• Victoria's provision of a range of rebates, grant and audit processes to improve energy efficiency or residential dwellings, including: <ul style="list-style-type: none"> <li>– complementary solar and gas hot water rebates;</li> <li>– assistance to upgrade to more efficient appliances; and</li> <li>– auditing programs to assess and advise households on ways to cut their energy bills.</li> </ul> </li> </ul> <p>A broad description of these measures will be provided through the LivingGreener on-line portal.</p>	<p>Australian Government</p> <ul style="list-style-type: none"> <li>• Department of the Environment, Water, Heritage and the Arts.</li> </ul> <p>Individual jurisdictions</p>
<b>3.3.4</b> States and territories to audit the energy efficiency of their public housing stocks.	a. States and territories to consider implementing cost-effective upgrades.	All states and territories will conduct and make publicly available an independent audit of the energy efficiency performance of their public housing stocks.	Individual jurisdictions



Measure	Key elements	Indicative pathway	Implementation responsibility
<p><b>3.3.7</b> Improve our understanding of the energy efficiency of Australia's existing housing stock.</p>	<p>a. Undertake a comprehensive on-ground study to assess the actual energy efficiency status of the existing housing stock. This study would include end-use metering to determine overall home energy use, energy use by home appliances and assessment of the thermal performance of the building shell for different housing types.</p> <p>b. Subject to outcomes of the studies, determine possible cost effective options for increasing energy efficiency for a range of house types.</p>	<p>Stage one: consult with key stakeholders to determine scope, design and methodology issues. Review previous and existing monitoring studies and examine existing end-use metering equipment. Develop 'best practice guidelines' on the approach to monitoring to enable consistency and data sharing.</p> <p>Stage two: monitor project commencing with a small number of households ramping up in later stages.</p> <p>Stage three: analyse results of monitoring project and determine options for cost effective policy measures for increasing energy efficiency for a range of house types, equipment and appliances.</p> <p>In addition, the Residential Energy Metering Program (REMP) is proposed to continuously meter detailed household energy use patterns at a selected sample across the nation. There are two steering groups for REMP, one for hardware and one for methodology.</p> <p>Furthermore, NSW will verify the Building Sustainability Index (BASIX) model against commitments made in the development consent with meter reading results for built BASIX homes. This will extend on the benchmarking work completed in 2003 with NSW, the Australian Bureau of Statistics (ABS) and the Commonwealth Department of the Environment, Water, Heritage and the Arts (DEWHA) using information from utilities.</p> <p>NSW will conduct a review and report on five years of operating BASIX.</p>	<p>Ministerial Council on Energy</p> <ul style="list-style-type: none"> <li>Buildings Implementation and Equipment Energy Efficiency (E3) Committees</li> </ul>

## 4. Government working in partnership and leading the way

Governments are significant users of energy in the community. Improving the energy efficiency of Australian, state and territory governments' operations will therefore not only contribute to reducing Australia's total energy consumption (and help to meet its greenhouse gas emission reduction goals) but also, importantly, demonstrate leadership and thus encourage wider community acceptance of management tools and other efforts to increase the efficiency of energy use.

The Strategy encompasses several ways to improve energy efficiency of government operations, and consequently reduce the whole of life cost and environmental impact. For example, governments are major clients in the commercial buildings market, with the Australian Government alone representing around 13 per cent of the commercial office market. To improve the performance of the building stock that Governments own or occupy, Australian, state and territory governments will jointly develop a national approach to improving the performance of their buildings. Greater emphasis will also be placed on energy efficiency as part of broader improvements to the sustainable procurement practices of governments.

Governments will also aim to achieve transport energy efficiencies through using a national TelePresence conferencing network to reduce government air travel. Street lighting is of variable efficiency across the country which presents opportunities for more efficient uptake. The Strategy includes a measure to identify barriers to the uptake of more efficient street lighting and develop strategies to address any identified problems.

Measure	Key elements	Indicative pathway	Implementation responsibility
4.1.1 Governments to significantly improve the environmental performance of the buildings they own or occupy.	a. Develop initiatives which demonstrate leadership to significantly increase the performance of the buildings governments own or occupy.	Australian, state and territory Governments jointly develop jurisdictionally appropriate policy approaches, noting many jurisdictions already have programs/targets.  Progress report to be provided to National Strategy on Energy Efficiency (NSEE) senior officials in 2011 to enable sharing of lessons learned.	All jurisdictions
	b. Promote the use of energy performance contracting to upgrade government buildings.	All governments to continue to promote and make use of energy performance contracting as appropriate.  Progress report to be provided to NSEE senior officials in 2011 to enable sharing of lessons learned.	All jurisdictions
	c. Develop and implement a National Green Lease Policy for Government buildings.	Ministerial Council on Energy (MCE) and the Australian Procurement and Construction Ministerial Council (APCMC) jointly developing a detailed green lease policy framework in 2009–10 for considerations by governments, with implementation of the agreed policy by individual governments in 2010–2011.	Ministerial Council on Energy and Australian Procurement and Construction Ministerial Council

Measure	Key elements	Indicative pathway	Implementation responsibility
4.1.1 (continued)	d. Develop and implement a National Framework for Sustainable Government Office Buildings	A draft national framework will be developed by mid-2009, with jurisdictions to agree the framework through Australian Procurement and Construction Ministerial Council (APCMC) by the end 2009. An implementation plan will be agreed by early 2010, with progressive implementation by jurisdictions in 2010 and onwards.	Australian Procurement and Construction Council <ul style="list-style-type: none"> <li>Government Property Group</li> </ul>
4.1.2 Reduce travel relating to government business and its related greenhouse gas emissions.	a. Establish a national TelePresence conferencing network to reduce the necessity for COAG-related and other official travel.	Roll out of TelePresence network in First Ministers' departments in all jurisdictions by June 2010.	Australian Government <ul style="list-style-type: none"> <li>Department of Finance and Deregulation</li> </ul>
4.1.3 Place greater emphasis on energy efficiency as part of broader improvements to the sustainable procurement practices of governments.	<p>a. Review the effectiveness of current procurement strategies in promoting energy efficiency.</p> <p>b. Work through the APCMC to implement the Australian and New Zealand Government Framework for Sustainable Procurement.</p> <p>c. Promote and accelerate the use of energy efficient equipment (including information–communications technology, refrigerators, etc) in government operations, and investigate the adoption of mandatory energy efficiency requirements, including the use of whole-of-life costing.</p> <p>d. Governments will progressively transform their vehicle fleets to be more fuel efficient.</p>	<p>The Framework for Sustainable Procurement has been agreed by jurisdictions through the Australian Procurement and Construction Ministerial Council by the end of 2009.</p> <p>Implementation measures under the framework will be developed progressively by working groups established by the Australian Procurement and Construction Council (APCC), and adopted subsequently as appropriate by jurisdictions in their procurement processes.</p>	<p>Australian Procurement and Construction Ministerial Council</p> <p>Implementation is the responsibility of individual jurisdictions.</p>
4.1.4 Increase the energy efficiency of street lighting.	<p>a. Identify barriers to the uptake of more efficient street lighting and develop strategies to address any identified problems, including considering introduction of mandatory standards for lighting energy efficiency while considering related cost implications for local government.</p> <p>b. Collect and make available to street lighting service providers and local governments nation-wide information on energy efficient street lighting technologies and operational practices.</p> <p>c. Consider whether an incentive mechanism for distributors to install efficient equipment is needed to give effect to this measure.</p>	<p>By the end of 2010:</p> <ul style="list-style-type: none"> <li>Review AS/NZS1158 to increase the minimum energy efficiency standard for specific categories of street lighting.</li> <li>Develop and promote guidelines to overcome the technical, financial and regulatory impediments to improved energy efficiency of street lighting.</li> </ul>	<p>Ministerial Council on Energy</p> <ul style="list-style-type: none"> <li>NFEE Equipment Energy Efficiency Committee with leadership by South Australia.</li> </ul>

