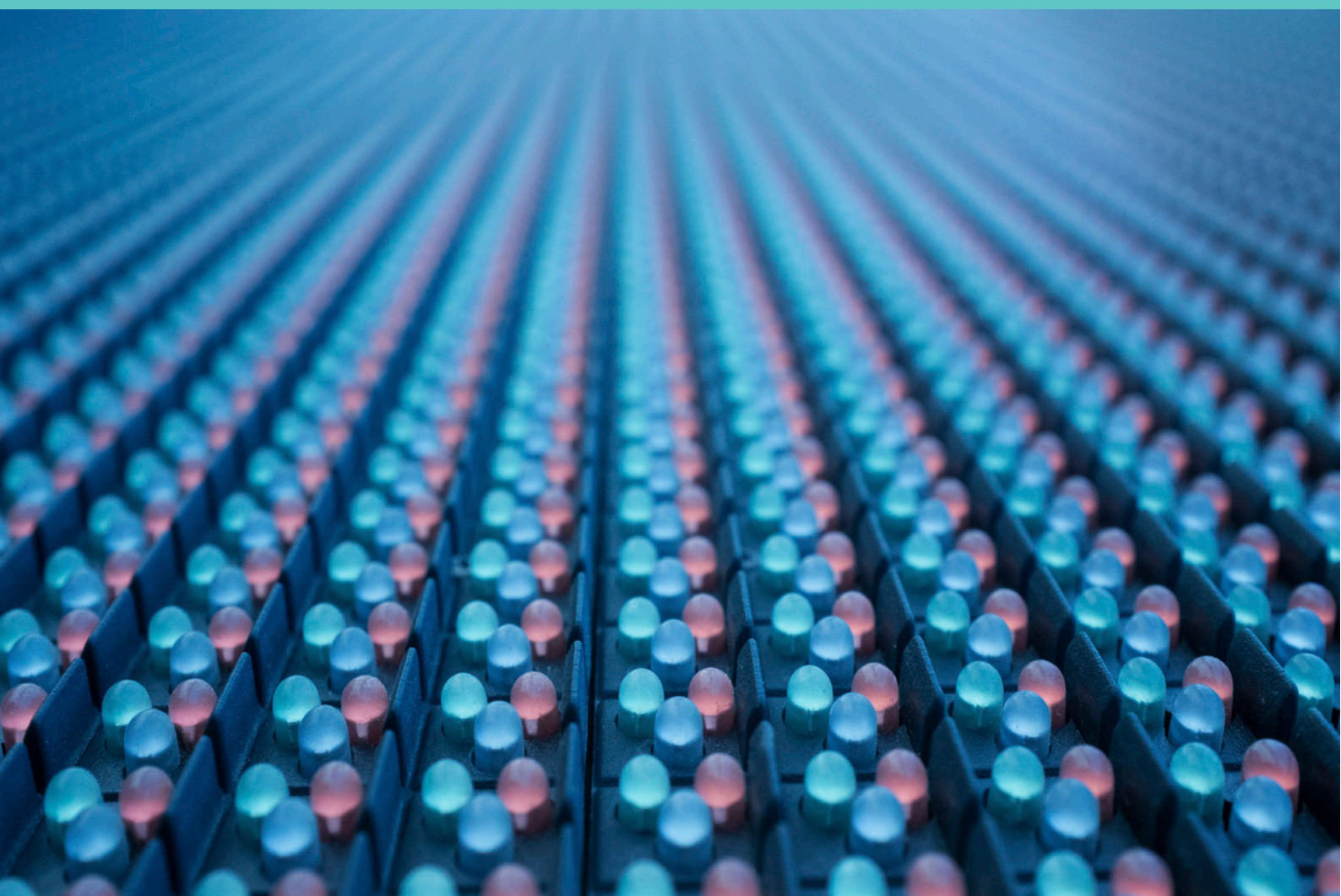




Australian Government



COAG
Energy Council



NATIONAL ENERGY PRODUCTIVITY PLAN 2015–2030

*Boosting competitiveness, managing costs
and reducing emissions*

December 2015

INDUSTRY.GOV.AU

© Commonwealth of Australia 2015

This work is copyright. Apart from any use as permitted under the *Copyright Act 1968*, no part may be reproduced by any process without prior written permission from the Commonwealth. Requests and inquiries concerning reproduction and rights should be addressed to the Department of Industry, Innovation and Science GPO Box 9839, Canberra ACT 2601.

Disclaimer

While reasonable efforts have been made to ensure the contents of this publication are factually correct, the Commonwealth does not accept responsibility for the accuracy or completeness of the contents, and shall not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on, the contents of this publication.

This report should be attributed as '*National Energy Productivity Plan 2015–2030*'.

Contents

Foreword	4
Introduction	6
How the NEPP works	7
What is Energy Productivity?	9
Why should we improve our Energy Productivity?	10
What are our goals?	12
How will we drive improvements to Energy Productivity?	14
National Energy Productivity Plan – Measures	18
Summary of the National Energy Productivity Plan Measures	19

Foreword



Josh Frydenberg MP

**Chair, Council of Australian Governments Energy Council
Commonwealth Minister for Resources, Energy and Northern Australia**

Australia's energy market is changing rapidly. New technologies, innovative services, the transition to a low carbon economy, and changing consumer demands are all major drivers of this change.

Managing and embracing this change requires a new focus to ensure Australia's energy policy meets changing expectations.

Improving Australia's energy productivity must be at the forefront of this focus. Consumers could be getting a lot more value from the money they spend on energy if Australia's energy productivity was on par with other comparable countries such as Japan, Germany and the United Kingdom.

To reverse this, the Government has set a National Energy Productivity Target to improve Australia's energy productivity by 40 per cent between now and 2030. The National Energy Productivity Plan (NEPP), developed by the COAG Energy Council, brings together a wide range of opportunities into a coordinated, national plan to achieve this target.

By improving Australia's energy productivity, we can:

- boost our competitiveness - creating investment and jobs;
- help consumers manage their energy costs to reduce bills; and
- reduce our carbon emissions - delivering at least one quarter of Australia's emission reductions to meet our international commitments to 2030.

At its most simple form, energy productivity saves money by coupling traditional efficiency measures with new technology and services, like smart appliances and solar power. It also includes market reforms that value and support these activities to pass on savings to consumers. For example, moving from a two star to a 4.5 star air conditioner could save a household \$340 a year. However, coupling this with a better energy contract could increase that saving to more than \$590 a year.

Through the NEPP, the COAG Energy Council will prioritise improving consumer information and decision making tools, the removal of market barriers to new technologies and services, and supporting wider innovation and competition within industry and energy market. This will support more productive consumer choice from a range of better energy services.

I congratulate the COAG Energy Council members for producing the NEPP, which establishes a 15 year journey to unlock Australia's full energy productivity potential. This will see Australian consumers, businesses, and the environment all better off.

A handwritten signature in blue ink that reads "Joshua Frydenberg". The signature is fluid and cursive.

The Hon Josh Frydenberg MP
Minister for Resources, Energy and Northern Australia

National Energy Productivity Plan (NEPP)

Improving Australia's energy productivity means **more value** from the energy we consume.

$$\text{Energy productivity} = \frac{\text{economic output (GDP)}}{\text{energy used (PJ primary)}}$$



WHY improve energy productivity?



Boosting **competitiveness** and growth



Helping families and business manage their energy **costs**



Reducing greenhouse gas **emissions**



WHAT are our goals?

40%
IMPROVEMENT BY **2030**

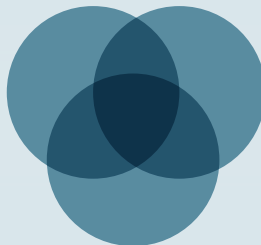


Energy systems that deliver **least cost energy** in the long term interests of consumers

More **informed** energy consumers **managing their energy bills**

2015

Energy efficiency



Energy market reform

Climate change
COORDINATING POLICY



HOW will we get there?

Encouraging more productive consumer **choices** through

- efficient incentives
- empowering consumers
- helping business compete



Promoting more productive energy **services** through

- innovation support
- competitive modern markets
- consumer protections



Introduction

The energy market is changing rapidly. New technologies, innovative tariffs and new services have entered the market and there is a transition toward a low carbon energy system. Consumers are changing the ways they use energy and the services they choose, and are becoming the driving force in the market.

Managing this change requires a new approach to energy policy, one which better balances demand-side consumer choices with supply-side energy services. A focus on energy productivity can achieve this.

Improving energy productivity means working to get more value out of our investment in energy through more productive energy services and more productive energy choices. Better energy productivity will boost Australia's competitiveness, help consumers manage their energy costs and reduce Australia's greenhouse gas emissions.

By increasing our energy productivity we strengthen our economy and help safeguard our environment. Businesses reduce their energy costs through innovation and modernising their infrastructure – improving their output and making them more competitive. Household consumers benefit through lower energy bills and increased home comfort. At the same time, Australia reduces its carbon footprint and contributes to the global challenge of mitigating climate change. It's a win, win, win for Australia.

Improving our energy productivity is an integral part of the Commonwealth Government's *Energy White Paper* and innovation agenda. Focusing on improving Australia's energy productivity will help us to capture the benefits of major leaps in innovative new energy technologies and energy management.

The Council of Australian Governments (COAG) Energy Council has agreed to work together to develop the National Energy Productivity Plan (NEPP). The NEPP will ensure Australians are able to effectively manage their energy costs, improve the productivity of their energy use and improve their access to least-cost energy.

By working together, the Commonwealth Government, states and territories, industry and communities can achieve more than we would separately. A nationally consistent approach increases certainty for businesses and reduces regulatory burden, leading to a more competitive and sustainable economy. We will work together on the NEPP for the benefit of all.

This document sets out the framework and initial measures to deliver the NEPP and the Commonwealth target of a 40 per cent improvement in energy productivity by 2030. This is the first step to guide Australia towards our energy productivity goals over the next 15 years.

How the NEPP works

Building on the COAG Energy Council's well-established energy efficiency and energy market reform work programme, the NEPP provides a framework and an economy-wide work plan of new and existing measures designed to coordinate efforts and accelerate improvement to deliver a 40 per cent improvement in Australia's energy productivity.

With the growing complexity of new services and technologies in the energy market, and the emergence of more active consumers, an important part of the NEPP will be to ensure that measures and reforms are coordinated, complementary and keep pace with market demands.

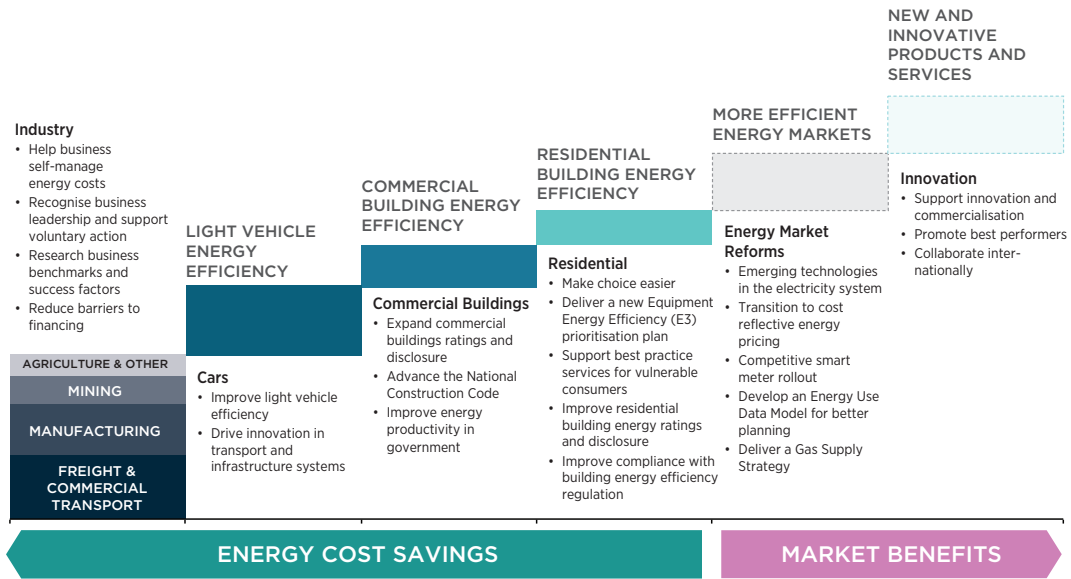
The work plan set out in this document covers the first steps in the 15 year life of the NEPP. Progress will be continuously monitored and updated by the COAG Energy Council to ensure that the NEPP's objectives are met, including appropriately reprioritising efforts and considering emerging gaps. To effectively measure progress towards these objectives, a range of appropriate metrics will be developed, which will be reviewed annually. The COAG Energy Council will publish its first detailed review of the NEPP's progress before 2020.

Individual NEPP measures will be developed in consultation with stakeholders and assessed against robust criteria (including policy rationale, appropriate cost-benefit analysis, and regulatory impact assessments). Only cost effective actions which provide clear and direct benefits for stakeholders and the wider economy, while minimising unnecessary market intervention and regulatory costs, will be pursued. NEPP measures will also be considered for their carbon abatement benefits.

Each NEPP measure will be delivered by the most appropriate body, for example: collaboratively by COAG; by the Commonwealth; by one or more jurisdictional governments; or voluntarily by industry or community bodies. The COAG Energy Council also acknowledges that wider actions by individual jurisdictions will complement the NEPP. The Commonwealth in particular is driving a number of key measures, such as developing options to improve light vehicle efficiency, which has the potential to create major new savings for consumers.

Figure 1: Examples of NEPP measures

Illustrative examples



Timeline

Achieving real improvement in our energy productivity will take time, as these improvements depend on gradually updating infrastructure and technology throughout the economy. For example, while better building and vehicle technologies can have large positive impacts on our national energy productivity, many buildings stand for more than 80 years and most cars are on the road for 10 to 15 years. Development of new market systems and regulatory arrangements to support change also take time to design effectively with stakeholders. To meet our energy productivity goals and capture the benefits of new innovations we must begin work today. We will also need to continuously monitor progress, keep up with market change and identify new opportunities.

- The NEPP commences December 2015 and continues through to 2030.
- Initial measures in the work plan will continue to be developed in consultation with stakeholders during 2016.
- The work plan and implementation of supporting measures will be continuously monitored by the COAG Energy Council, with measures updated over time to keep the NEPP on track.
- The COAG Energy Council will deliver a NEPP progress report and review by 2020.

What is Energy Productivity?

Energy productivity is about how much value we get from our investment in energy – whether it is energy in the form of electricity, gas or transport fuel, or investments in generation or network or equipment or buildings. In technical terms, energy productivity is a measure of the amount of economic output derived from each unit of energy consumed.

Improving energy productivity requires more efficient investment across both the supply and demand side of energy markets, including: primary energy sources (such as coal, gas, oil, solar and wind); energy supply assets (generation and networks); assets related to energy use (such as more efficient equipment, buildings and vehicles); and avoided energy use.

In the past, improving energy productivity has been challenging due to either a formal or informal separation between supply-side energy market reform and demand-side energy efficiency actions. The NEPP aims to bring supply and demand side policy closer together in order to fully realise the benefits to both the customer and the broader energy system.

Importantly, the NEPP will measure productivity improvements in a consistent manner to ensure we continue to make progress towards our goal. Our economy-wide energy productivity will be measured as national gross domestic product (GDP, in millions of dollars) divided by petajoules (PJ) of primary energy (a measure of the total energy supplied within the economy). This is a common international measure that will make it easy to compare our progress with other countries.

$$\text{energy productivity} = \frac{\text{economic output}}{\text{energy used}} = \frac{\text{GDP}}{\text{PJ}_{\text{primary}}}$$

The breadth of this metric is also important and we note that a range of alternative metrics exist. For example, to measure the success of specific projects or sectors other metrics such as \$value added/\$energy investment may be more appropriate. In order to keep track of these metrics, we will develop a dashboard of more detailed metrics relevant to different measures within the NEPP. This will ensure that our policies remain relevant, targeted and are achieving the desired goals. This dashboard will be part of the reporting to Ministers regarding the NEPP's progress.

Why should we improve our Energy Productivity?

Improving energy productivity will help us adjust to rapid change that is occurring in the energy market



The energy market is undergoing rapid disruptive changes, with new technologies, new customer expectations, rising prices, falling demand and pressures from climate change. This is changing the roles of energy service providers and putting energy consumers in the driving seat when it comes to choosing how, when and what they will be consuming when it comes to energy. Energy supply and use has moved away from predictable patterns and energy markets have struggled to forecast and plan for this change. This inability to plan effectively has resulted in inefficient investment which has led to higher costs for customers.

Managing and adapting to this change requires a new approach to energy policy so we can make more effective investment decisions across the supply and demand-side of the energy market. The NEPP will promote better coordination between energy market policy, energy efficiency activities and wider climate policy so that consumers understand their full range of choices and actions they can take to reduce energy consumption.

Energy productivity boosts competitiveness and growth



For many years, Australian households and businesses have benefitted from cheap and abundant supplies of energy. However, this has meant that we have not focussed on energy productivity to the same extent as other countries. Over recent years, Australia's energy productivity has improved, growing at around 1.8 per cent per year in the last decade.¹ Despite this we are still lagging behind many countries, such as Japan, Germany, and the United Kingdom, and without action this gap will get wider.

Improvements to the way we use energy (electricity, gas and transport fuel) can significantly reduce costs. A plan to improve energy productivity in Australian businesses is particularly important if we are to remain competitive against overseas economies. Many countries such as the United States, the European Union and China have their own energy productivity or energy efficiency targets.

By supporting better energy management practices and lowering energy costs, the NEPP will help Australian businesses compete internationally – growing our economy and creating jobs. The potential for improvement is great. Australian industry has identified potential energy savings of 164.2PJ per year (more energy than Tasmania uses annually) and potential annual net financial benefits of \$1.2 billion.²

¹ Office of the Chief Economist 2015 Energy Statistics Data.

² Energy White Paper 2015, page 32. Australian Bureau of Statistics: State and Territory Statistical Indicators, 2012.

Energy productivity helps families and businesses manage their energy costs



The last decade has seen rising electricity and gas prices and volatile petrol and diesel prices, which have put pressure on households and businesses. The rapid uptake of new technologies such as solar power, innovative appliances, more efficient cars and smart meters have provided many benefits for consumers but they have also added to the complexity of making the best choices when it comes to energy.

The NEPP will help consumers (large and small) manage this complexity and reduce their energy costs, by driving markets to improve tools to help simplify energy choices and continue to spur innovation in terms of energy products and services. To illustrate this, a typical large company's energy costs are now greater than 10 per cent of its earnings,³ so any improvement to energy productivity can make a real difference to their profitability.

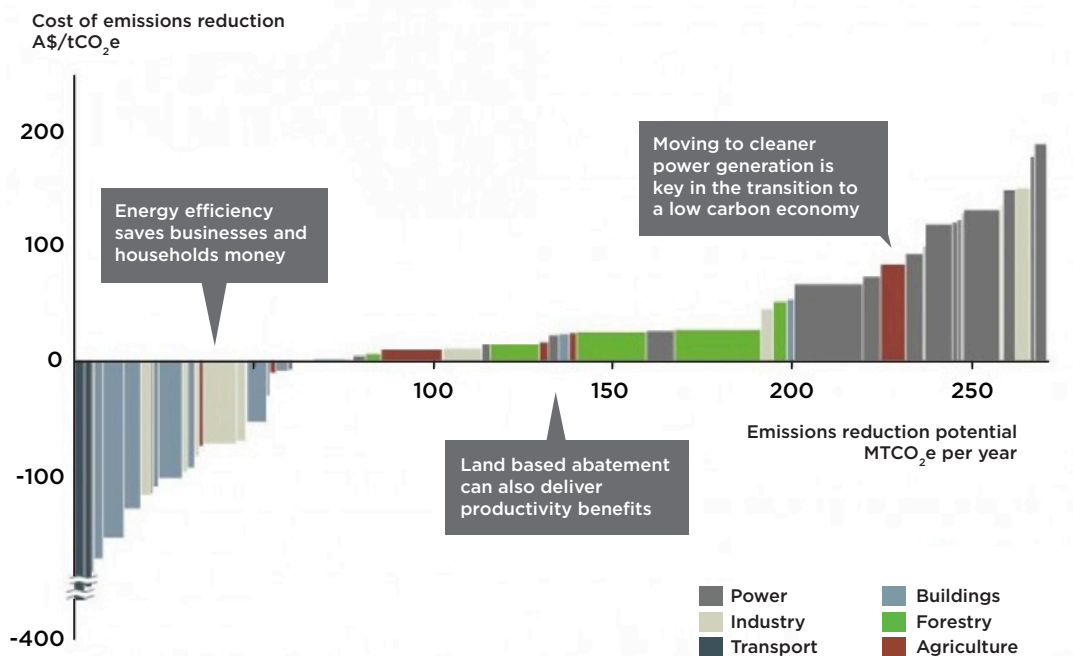
Improving energy productivity helps reduce greenhouse gas emissions



Energy productivity is a smart way to tackle climate change because it encourages economic growth while reducing emissions. The NEPP will capture low-cost emissions savings (Figure 2) and is expected to contribute more than a quarter of the savings required to meet Australia's 2030 greenhouse gas emissions reduction target.

It will be coordinated with and complement the Australian Government's suite of climate change policies, including the Emissions Reduction Fund and the safeguard mechanism, as well as the Renewable Energy Target. Existing projects supported by the Clean Energy Finance Corporation and the Australian Renewable Energy Agency will also complement this plan.

Figure 2: The NEPP targets lowest-cost emissions savings⁴



3 About 72 per cent of companies sampled by ClimateWorks Australia in their *Energy Management and Company Competitiveness* report (earnings before interest, taxes and amortisation).

4 Source: ClimateWorks, <http://www.climateworksaustralia.org/project/national-projects/low-carbon-growth-plan-australia>, 2010.

What are our goals?

The Commonwealth Government is strongly committed to a target of improving Australia's energy productivity by 40 per cent between 2015 and 2030.⁵

To meet this target, Australia will need to almost double its rate of energy productivity improvement compared to “business as usual” (Figure 3). A range of energy productivity improvement opportunities exist in each sector of the economy (Figure 4). Measures in the NEPP will contribute to the 40 per cent improvement target by reducing energy use (through greater energy efficiency) and increasing economic growth (through better-managed energy costs and more efficient energy investments).

Figure 3: Meeting the Commonwealth target requires accelerated energy productivity improvements

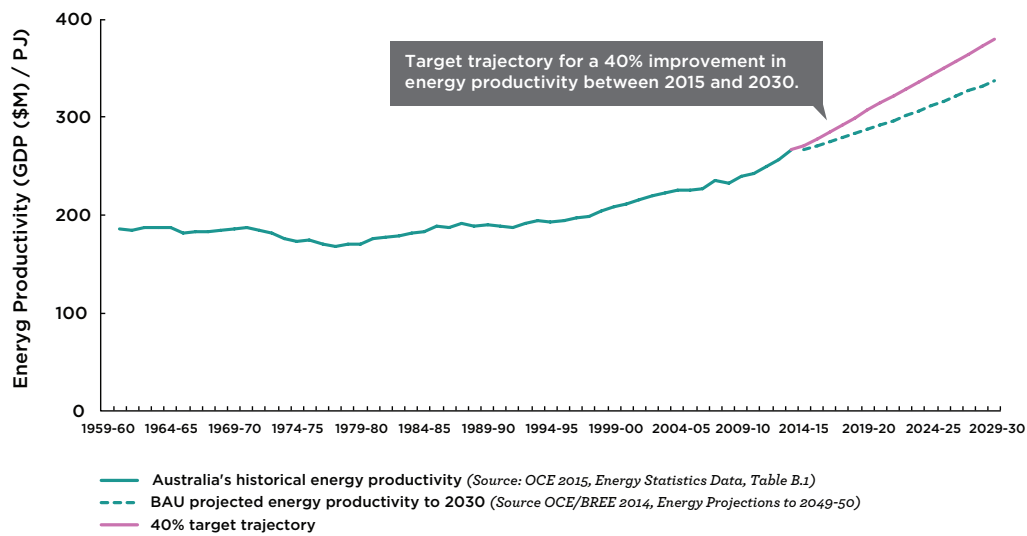
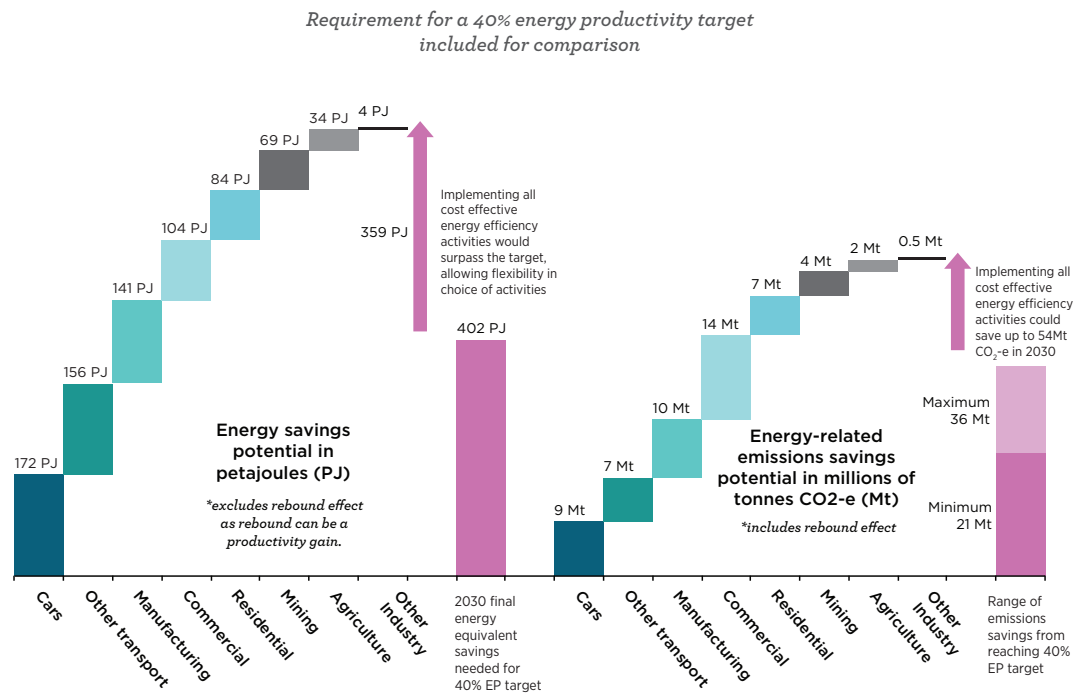


Chart notes:

1. Target trajectory is estimated using 2013-2014 data. The target will be finalised in mid-2016, when the OCE energy statistics data for 2014-15 become available.
2. In accordance with OCE/BREE (2014) Australian Energy Projections, all projections in this chart assume GDP grows at an average of 2.7% per year between 2015 and 2030. GDP growth of more or less than this will have an impact on the resulting trajectory.

⁵ The Commonwealth considered a range of data, including: historic rates of energy productivity improvement in Australia; future Australian energy projections from the Office of the Chief Economist; and a range of research into cost-effective opportunities for improvement across all fuels and sectors including work done by ClimateWorks Australia, Reputex and the Australian Alliance to Save Energy (A2SE), as well as information from government programmes.

Figure 4: There are energy productivity opportunities in many sectors⁶



Strong government action and coordination will be needed to capture many of these opportunities. In many cases there are well recognised information barriers to consumers making effective choices. For example, insufficient information on the energy performance of buildings or limited access to an individual consumer’s energy use data and tools to compare how different energy tariffs might impact that consumer currently affect consumers’ ability to make effective choices. In other cases information may be available but may not be well delivered or targeted. For example, many small business owners are time-poor and have highly diverse energy needs.

There are also market inefficiencies which lead to unproductive outcomes. For example, many energy prices do not provide effective signals to encourage consumers to reduce system peaks or support investment in the most efficient locations. New innovative services can face market barriers which require regulatory changes or supporting infrastructure, such as competitive metering or smart vehicles. Markets are also well recognised as underinvesting in innovation where benefits are not captured by a single actor. Governments must play a critical role in encouraging innovation where it can benefit many, for example through demonstrations at commercial scale or adaptation of international technologies to Australian conditions.

To define shared objectives, the COAG Energy Council has agreed that the NEPP should focus on:

- Reducing energy costs for households and businesses;
- Maintaining Australia’s competitiveness and growing the economy; and
- Reducing carbon emissions and improving our sustainability.

Through the NEPP, the COAG Energy Council will seek to deliver two main outcomes:

- Energy consumers that are able to effectively manage their energy costs and are engaged in improving the productivity of their energy use; and
- An energy system (including electricity, gas and transport fuels) that delivers least cost energy in the long term interests of consumers.

The COAG Energy Council has agreed that the Commonwealth’s 40 per cent energy productivity target can effectively work alongside and complement individual jurisdictional objectives.

⁶ Source: Climateworks Australia estimates for the Department of Industry, Innovation and Science, 2015.

How will we drive improvements to Energy Productivity?

To improve energy productivity we need to encourage **more productive consumer choices** from a range of **more productive energy services**. Largely, this can and should be achieved by effective markets—where incentives are efficient, information and tools to support decisions are effective, and competition and innovation is strong. However, where markets fail to provide efficient outcomes, standards and other direct measures can provide effective consumer protections.

Encouraging more productive consumer choices

Australia's total energy use is the sum of many choices of energy users, large and small. It's made up of millions of decisions to switch equipment on and off, purchase buildings, vehicles, appliances and equipment, and select individual energy products and services. However, when making these decisions, energy performance is often not a key factor and, in cases where it is a key factor, choices are becoming increasingly complex. Improving energy productivity requires a better understanding of how to influence these choices through efficient incentives and by making productive choices easier for all type of consumers.

Efficient incentives

Historically, direct energy use incentives (such as prices for electricity, gas and transport fuel) have often not reflected the full costs and benefits to wider society and the economy. With more efficient incentives, energy users large and small are better able to make decisions that are more productive for Australia.

For example, electricity prices have historically not reflected the true cost of total electricity use during peak periods, leading to higher costs for all. A transition is already underway to move the electricity market towards more cost-reflective pricing to improve investment signals for both consumers and service providers. This transition must be undertaken in a way that supports consumers to make well informed decisions that are best suited to their individual circumstances. A range of tools supported by well targeted communication and engagement is needed to assist consumers to make choices that best suit their needs. Cost reflective pricing should also be complemented by other demand side reforms, including effective incentives on network businesses to consider demand side options in efficiently managing their networks.

Many jurisdictions already have mechanisms in place which seek to create market incentives to account for wider societal costs and benefits. These include the Victorian Energy Efficiency Target, New South Wales Energy Savings Scheme, South Australia Retailer Energy Efficiency Scheme and the Australian Capital Territory Energy Efficiency Improvement Scheme.

Individual jurisdictions will manage these schemes over time to ensure they continue to provide efficient and effective incentives. Jurisdictions agree to work together to align activities where relevant and reduce red tape, while ensuring that schemes continue to deliver the high quality outcomes that consumers expect. This will help to expand opportunities for consumers to reduce their energy costs, and continue to grow jobs and skills in each state or territory.

The Commonwealth's Emissions Reduction Fund also plays this role and is at the centre of Australia's emissions reduction efforts. Through a competitive reverse auction mechanism, the Emissions Reduction Fund provides companies, including both energy users and existing power stations, with efficient incentives to upgrade and deploy new technologies that improve energy productivity.

The Emissions Reduction Fund's safeguard mechanism will also establish best practice emissions benchmarks for new entrants. This will encourage new industrial users and new power stations to deploy technologies that improve energy productivity and achieve best practice emissions levels. The Emissions Reduction Fund is complemented by the Renewable Energy Target, which continues to provide incentives to support the benefits of increasing uptake of renewable energy.

Empowering consumers

With rises in electricity and gas prices over the last decade, increasing competition in energy services, and falling costs of new technology, small energy consumers are increasingly looking to make new energy choices (such as adopting solar power and entering into new types of flexible electricity contracts). However, these developments have also made the decision making process more complex. Many consumers could substantially reduce their energy costs through a few simple changes, such as switching energy tariffs or upgrading a particular appliance, but do not always realise the benefits of doing so. Advice and tools to support decisions (like labels, comparator websites or information requirements on bills) need to keep up with new market developments.

There are also a range of market barriers to better information and advice. For example, consumers lack easy access to their own energy data. Having access to this data would allow service providers to help consumers select the best services for their needs. There is also a lack of energy performance information on residential buildings available for home buyers and renters.

The COAG Energy Council's priority will be to work with stakeholders to understand the customer decision making process and research how to make consumer choice easier. This will include consideration of consumer information and decision making tools to ensure that there are no barriers to market innovation of new tools and services, and a detailed review into improvements needed in existing government-provided tools. The Commonwealth will also work with stakeholders to build on recent Commonwealth-supported research into support for vulnerable consumers⁷. The COAG Energy Council will also consider a range of options to improve market information on residential buildings.

Helping business compete

Many large energy consumers are already actively improving their own energy productivity and providing strong leadership. However, small and medium-sized businesses often lack specific advice and support needed to improve energy productivity and may not have an appreciation of the benefits of doing so.

The COAG Energy Council supports the business sector showing leadership in improving energy productivity and will work with the sector to develop a range of options to support voluntary action.

One business initiative is being led by the *Doubling Australia's Energy Productivity (2xEP)* steering committee, supported by the Australian Alliance to Save Energy, which has been working with industry to develop detailed sector roadmaps and considering a range of programs to support voluntary action and business leadership. The Commonwealth has supported this initiative and will continue working with industry to develop more options for support.

The Commonwealth will also promote greater market action to improve commercial buildings and will respond to the Review of the Commercial Building Disclosure programme in early 2016.

Jurisdictions also agree that governments should lead by example. Most governments are committed to taking action to improve their own energy productivity. This creates not only direct savings of public funds but also drives market development of more productive services through considerable combined leasing and purchasing power.

⁷ This research has been undertaken through pilots supported by the Low Income Energy Efficiency Program.

Promoting more productive energy services

To make better choices, consumers need to have a better range of options available to them. Continuous energy productivity improvements require the ongoing development of better technologies and better services provided by competitive markets in a modern and innovative energy sector. The NEPP will foster more productive services by supporting innovation and improving competitive markets.

Innovation support

In line with its wider innovation agenda, the Commonwealth is strongly committed to supporting greater innovation and commercialisation of new technologies and practices that improve energy productivity and modernise Australia's energy sector.

Australians are increasingly driving innovation through demand, for example by choosing higher efficiency appliances or by getting their energy from new, less emissions-intensive services. Australia leads the world in its take up of rooftop solar, which is about triple Germany's take up rate (which comes second to Australia) – about 15 per cent of Australian households have already adopted this technology.⁸ Australia is seen as an attractive place for innovative companies to do business and it is why battery technology companies are focusing on the Australian market first.

The Commonwealth is currently developing a range of measures to further promote best performers, improve the research base for innovation and collaborate internationally. These new programmes will seek to integrate effectively with existing broader measures, such as the range of projects currently supported by the Australian Renewable Energy Agency, the Cooperative Research Centres Programme and the Entrepreneurs' Programme. Jurisdictions also provide a range of specific support mechanisms and trials.

Competitive modern markets

Capitalising on the transformative change currently underway in energy markets as they adjust to new disruptive technologies and services is a critical part of improving energy productivity. Effective competitive markets are key to managing this change.

The COAG Energy Council already has an active work plan to reform energy markets, which is delivering greater competition and enhancing consumer protection. Priorities in this work include: supporting the current transition to transformative new technologies and services in the electricity market; reducing barriers to new services; and building on systems and related protections to ensure the transition is effective. The COAG Energy Council also has a key strategy to develop more effective competitive gas markets as they transition to greater export exposure. To ensure that policy is responsive to the speed of market change and can capture the benefits of emerging innovation, the COAG Energy Council has reviewed and is acting on improving the governance of market arrangements.

Given the magnitude of these changes in the market, the Commonwealth has recognised that policy makers need a greater understanding of changing energy use trends and the ability to monitor, forecast and plan for new developments and activities.

The Commonwealth is providing \$6 million in funding to CSIRO to lead work with a wide group of stakeholders to develop an *Energy Use Data Model*. This will be a substantial contribution to research and planning for businesses, market bodies and governments in building a future energy market which is able to respond to changing needs and emerging innovations and efficiently meet consumer needs.

⁸ Energy Supply Association of Australia, *Renewable Energy in Australia – How do we really compare?*, 2015, http://www.esaa.com.au/Library/PageContentFiles/14251626-ae50-48a1-8fb0-70841eae409f/ESA002_factsheet_renewables.pdf

Consumer protections

Where the market does not provide efficient minimum services and adequate protections for consumers, there is a role for government measures, such as standards for equipment, appliances and buildings and service requirements for consumers. A range of these standards have been recently reviewed to ensure they are keeping up with technology and market developments. This work will continue under the NEPP to ensure that standards are put in place where the benefits clearly outweigh the costs and are streamlined to minimise regulatory costs, including aligning to international standards where relevant.

Through the Equipment Energy Efficiency (E3) programme, governments have increased the energy efficiency of new appliances and equipment sold into the Australian (and New Zealand) markets largely through the use of mandatory energy efficiency regulations. The COAG Energy Council has committed to a new E3 prioritisation plan aimed at substantially increasing the benefits for consumers while reducing emissions and costs to business.

In order to improve energy productivity of buildings, the COAG Energy Council is investigating improvements to the National Construction Code (NCC) (to be implemented in the 2019 NCC update). Complementary to this, the Australian Sustainable Built Environment Council is developing an industry-led vision for improving the energy performance requirements for both residential and commercial buildings in the NCC.

To ensure that consumer interests are protected and high performing buildings are achieved, the COAG Energy Council is also working to improve compliance with the energy efficiency requirements of the building codes through enhanced systems and skills. Consumer protections will also be central to related work considering new disruptive technologies and subsequent new services.

National Energy Productivity Plan – Measures

This work plan covers the first steps in the 15 year life of the NEPP and will be continuously updated.
A range of metrics to measure outcomes will be developed and reported annually.

■ New COAG Energy Council ■ New Commonwealth ■ New all-governments

Encouraging more productive consumer CHOICES

EFFICIENT INCENTIVES

- Transition to cost-reflective pricing
- Market mechanisms to capture societal benefits

EMPOWERING CONSUMERS

- Make choice easier
- Support best practice services for vulnerable consumers
- Improve residential building energy ratings and disclosure

HELPING BUSINESSES COMPETE

- Help business self-manage energy costs
- Recognise business leadership and support voluntary action
- Research business benchmarks and success factors
- Expand commercial building ratings and disclosure
- Improve fuel efficiency in aviation and maritime sectors
- Reduce barriers to financing
- Improve energy productivity in government

Promoting more productive energy SERVICES

INNOVATION SUPPORT

- Support innovation and commercialisation
- Improve light vehicle efficiency
- Drive innovation in transport and infrastructure systems
- More liveable, accessible and productive cities
- Promote leading practice
- Collaborate internationally

COMPETITIVE MODERN MARKETS

- Emerging technologies in the electricity system
- Deliver a Gas Supply Strategy
- Reform governance to keep pace with change
- Develop an Energy Use Data Model for better planning
- Competitive smart meter rollout
- Improve the exchange of market data
- Build service provider capacity
- New market mechanisms for demand response
- Promote competitive retail markets in electricity and gas
- Monitor the wholesale market
- Adopt National Frameworks

CONSUMER PROTECTIONS

- Deliver a new Equipment Energy Efficiency (E3) prioritisation plan
- Advance the National Construction Code
- Improve compliance with building energy efficiency regulation
- Review the National Energy Customer Framework for disruptive technologies
- Review Fuel Quality Standards Act

Summary of the National Energy Productivity Plan Measures

The full Council agreement is provided in a separate Work Plan. This table is a summary of the measures in the Work Plan.

MEASURE	WHY/WHAT	STATUS AND OWNER
MORE PRODUCTIVE CHOICES		
<i>Efficient incentives</i>		
1. Transition to cost-reflective pricing	Ongoing network tariff reform is needed to support better price signals for network investment, to provide greater options for consumers to manage their energy usage and to facilitate the integration of new technologies. Network businesses are engaging with customers to commence the implementation of more cost reflective tariffs in 2017. Progress on price signalling to customers will be continually monitored. This work is supported by Measure 3: Make choice easier to ensure reform is introduced in a way that supports consumers to make decisions that are best suited to their needs, including a range of supporting tools and targeted communication.	Status: Ongoing Owner: COAG Energy Council
2. Market mechanisms to capture societal benefits (Emissions Reduction Fund (ERF), state energy efficiency (EE) schemes, Renewable Energy Target (RET))	The market price of energy does not include the social and environmental costs (externalities) of energy use. This results in under-investment in energy efficiency and carbon reducing activities in terms of efficient societal benefits. A range of market schemes are targeted at driving this investment, including ERF, RET and several jurisdictional EE schemes. Work will be considered to align activities and reduce red tape where appropriate, while ensuring that schemes continue to deliver the high quality outcomes that consumers expect.	Status: Ongoing/expansion Owner: Jurisdictions
<i>Empowering consumers</i>		
3. Make choice easier	The current market transition with increasing choice in energy services, tariffs and technologies can provide strong consumer benefits. However, this greater choice also increases complexity and could increase risks of bill shock for some consumers. Choice needs to be supported by the right tools and customer information to avoid adverse impacts. A review will be undertaken of the total energy consumer journey, working with Energy Consumers Australia. This will include considering whether there are any barriers to market provision and innovation in tools and services, and review of tools and information provided by government. The first stage of this review will be completed by the end of 2016.	Status: New Owner: COAG Energy Council
4. Support best practice services for vulnerable consumers	Vulnerable consumers (indigenous, low income earners, remote, elderly) need additional assistance beyond those in Measure 3. Based on recent research, a best practice voluntary guideline for service providers will be developed with Energy Consumers Australia and stakeholders, which will seek to reduce the barriers to vulnerable consumers effectively engaging with energy productivity measures and services. This work will report back by the end of 2016.	Status: New Owner: Commonwealth
5. Improve residential building energy ratings and disclosure	Many homeowners and tenants are choosing homes to buy or rent or are renovating their homes without adequate information about their expected energy performance, comfort and likely future energy costs. Work will be undertaken by the end of 2016 to consider a range of different tools to improve information for residential buildings, including options for implementing a national approach to residential building energy ratings and disclosure.	Status: New Owner: COAG Energy Council
<i>Helping business compete</i>		
6. Help business self-manage energy costs	Energy productivity improvements in the small and medium sized business sector are particularly difficult where options need to be highly tailored and businesses are time-poor. The Commonwealth will consult with business during early 2016 to develop options to provide further tailored information, support networks and skilled service providers in partnership with relevant business associations.	Status: New Owner: Commonwealth

MEASURE	WHY/WHAT	STATUS AND OWNER
7. Recognise business leadership and support voluntary action in business	Business-led voluntary action can boost economic productivity, national competitiveness and employment opportunities. Government will work cooperatively with the business community on options to support energy productivity improvements.	Status: New Owner: Commonwealth
8. Research business benchmarks and success factors	Build a new research base that will support companies in how energy productivity can drive financial performance and competitiveness in their business, including through consideration of appropriate benchmarking. The first stage of this work will be released in late 2016.	Status: New Owner: Commonwealth
9. Expand commercial building ratings and disclosure	The review of the Commercial Building Disclosure scheme has identified benefits of mandatory disclosure for both tenants and building owners. The Commonwealth intends to respond to this review early in 2016. There are also benefits to building energy performance through the wider use of ratings schemes such as the National Australian Built Environment Rating System (NABERS). A plan for future development of NABERS rating schemes will be prepared for Council consideration in 2016.	Status: Expansion Owner: Commonwealth/ COAG Energy Council
10. Improve fuel efficiency in the aviation and maritime sectors	The aviation and marine sectors operate internationally, making for a complex environment in which to negotiate energy productivity. The Commonwealth will continue to work with these sectors on a range of specific measures.	Status: Expansion Owner: Commonwealth
11. Reduce barriers to financing	There remain a range of barriers which can limit efficient private sector investment in energy productivity improvements. A range of measures are addressing these issues, including existing projects under the Clean Energy Finance Corporation and work streams under the G20.	Status: Ongoing Owner: Commonwealth
12. Improve energy productivity in government operations	Governments should lead by example. Action undertaken by governments on their own energy productivity can have flow on benefits to the economy, not only through energy and cost savings and emissions reductions, but through leadership and driving market development in related services and technologies. Governments have undertaken a range of commitments, for example the Commonwealth commits to review and revise its own policy by the end of 2016.	Status: New/expanding Owner: Jurisdictions
MORE PRODUCTIVE SERVICES		
<i>Innovation support</i>		
13. Support innovation and commercialisation	There is currently under-investment in innovation and commercialisation of new technologies and processes to improve energy productivity. These are critical elements in ensuring Australia's ongoing competitiveness. The Commonwealth is considering a range of measures to broaden support for innovation in energy productivity in line with the innovation agenda.	Status: Expansion Owner: Commonwealth
14. Improve light vehicle efficiency	Based on international experience, there are significant opportunities in Australia's passenger vehicle fleet to promote improved productivity, fuel cost savings and reduced emissions. A new Ministerial Forum is considering options for improvement with reports on options due to be delivered to the Forum in June 2016 and March 2017.	Status: New Owner: Commonwealth
15. Drive innovation in transport and infrastructure systems	Australia has an opportunity to achieve significant energy productivity improvements and reductions in emissions through development, adoption and deployment of Intelligent Transport Systems (ITS). A new National Policy Framework for ITS is being developed and is due for completion in mid-2016.	Status: Ongoing Owner: COAG Transport and Infrastructure Council
16. More liveable, accessible and productive cities	If not effectively planned our built environment can make it very difficult to adjust to change like energy price pressures or emissions reduction needs. The Commonwealth has established a Cities Taskforce to support development of the Commonwealth's agenda for cities. Initial proposals are expected in early 2016.	Status: New Owner: Commonwealth

MEASURE	WHY/WHAT	STATUS AND OWNER
17. Promote leading practice	There is potential to drive energy productivity innovation through the promotion and recognition of leaders. The Commonwealth will continue current international work in this area. The Commonwealth will also seek wider options to drive innovation linked to Measures 3 and 7.	Status: New Owner: Commonwealth
18. Collaborate internationally	Collaboration between international governments and organisations on energy productivity can achieve better outcomes more quickly and reduce regulation through greater alignment. A range of work streams are underway, including through the G20.	Status: Expansion Owner: Commonwealth
<i>Competitive modern markets</i>		
19. Emerging technologies in the electricity system	A strategic work programme is considering the impacts of technological and market changes in the electricity sector, such as the emergence of solar PV and storage options, which are challenging the centralised, grid-based supply model on which the energy regulatory frameworks are based. This work will assess whether existing regulatory arrangements are likely to be sufficiently flexible to enable future market change which will allow customers to benefit from innovative products and services while ensuring that appropriate consumer protections and safeguards.	Status: New/expansion Owner: COAG Energy Council
20. Deliver a Gas Supply Strategy	The eastern gas market is undergoing a period of rapid transformation due to being export linked with the commissioning of liquefied natural gas (LNG) trains in Queensland, characterised by uncertainty about gas price and availability outcomes, drivers and policy responses. A range of gas strategies are being progressed which are expected to report back throughout 2016.	Status: Ongoing Owner: COAG Energy Council
21. Reform governance to keep pace with change	In order to increase energy productivity, energy markets must be agile in adjusting to market change and supporting policy and governance must be similarly responsive. Recommendations from the Review of Governance Arrangements for Australian Energy Markets are being progressed.	Status: Expansion Owner: COAG Energy Council
22. Develop an Energy Use Data Model for better planning	Growing gaps in energy use data in a rapidly changing market over the last decade have already created substantive challenges in forecasting and policy development, contributing to inefficient infrastructure development. An Energy Use Data Model is being developed with CSIRO to rectify this situation. Initial research outputs and datasets are expected in 2016 with the system operational within three years.	Status: New Owner: Commonwealth
23. Competitive smart meter rollout	Advanced metering will be critical in supporting flexible prices, empowering consumers to better manage their bills, increasing efficient management and planning in networks, and effectively managing new technologies and services. The Australian Energy Market Commission is currently finalising a Rule change to support a market-led rollout of advanced meters. The Australian Energy Market Operator will be developing market platforms to deliver services enabled by smart meters. These measures are expected to be in place by the end of 2017.	Status: Ongoing Owner: COAG Energy Council/AEMC
24. Improve the exchange of market data	Barriers currently exist in energy market data systems to the integration of new products and services and effective competition. Systems need to be flexible enough to adapt. Data exchange mechanisms need to facilitate the development of innovative services which support competition and inform consumer decision making at the point of purchase, based on real-time access to their energy use profiles. The Council will engage with market institutions during 2016 to understand whether barriers exist to this occurring.	Status: New Owner: COAG Energy Council
25. Build service provider capacity	Australia must build the capacity of a number of supporting sectors, particularly the energy efficiency sector and key trades, to help all sectors improve their efficiency. Governments will engage with industry bodies to identify and address any critical gaps in capacity.	Status: Expansion Owner: Commonwealth
26. New market mechanisms for demand response	New market arrangements could allow new innovative demand-side services to engage in the wholesale market and support embedded networks. The Australian Energy Market Commission is currently considering Rule changes for a number of such mechanisms proposed under the <i>Power of Choice</i> review.	Status: Ongoing Owner: COAG Energy Council/AEMC

MEASURE	WHY/WHAT	STATUS AND OWNER
27. Promote competitive retail markets in electricity and gas	Competitive energy markets provide efficient energy prices for the long term interest of all energy consumers and efficient operation of the energy system overall. The Council is undertaking complementary work streams to promote competition including improving the timeliness and accuracy of customer switching processes and improving retail price reporting.	Status: Ongoing Owner: COAG Energy Council
28. Monitor the wholesale electricity market	To build on the productivity gains from the establishment of the wholesale market, the Council will introduce a market monitoring function to identify the causes of inefficiencies as a means of determining what, if any, further reforms to the market arrangements are required.	Status: Ongoing Owner: COAG Energy Council
29. Adopt National Frameworks	Consistent national frameworks minimise duplication of regulations that could increase burdens for market participants, potentially putting downwards pressure on prices and improving productivity. The Council is supportive of Australia-wide adoption of the national frameworks. The Council supports the Northern Territory and Western Australia's adoption of the national frameworks.	Status: Expansion Owner: COAG Energy Council
<i>Consumer protections</i>		
30. Deliver a new Equipment Energy Efficiency (E3) prioritisation plan	Through the Equipment Energy Efficiency (E3) programme, governments increase the energy efficiency of new appliances and equipment through mandatory energy efficiency regulations. The recent independent review of the programme highlights that it is contributing over \$1 billion in avoided energy costs to the Australian economy annually, while avoiding carbon emissions by an estimated 11.6 million tonnes per annum. The Council commits to a new E3 prioritisation plan, seeking to substantially increase the benefits while ensuring that the compliance costs to businesses are minimised to the extent possible, consistent with maintaining a robust regulatory regime.	Status: Expansion Owner: COAG Energy Council
31. Advance the National Construction Code	Energy efficiency requirements in building codes for both residential and commercial buildings are out of date with recent technologies. The Council will facilitate engagement with the Australian Building Codes Board and Building Ministers Forum to consider changes to the Code so as to achieve better energy efficiency outcomes for Australia's buildings within the next cycle of revision of the National Construction Code, to be complete by 2019.	Status: Expansion Owner: COAG Energy Council
32. Improve compliance with building energy efficiency regulation	The Council recognises the importance of improving compliance with the energy performance requirements of the National Construction Code. To achieve this, the Council will continue to support the National Energy Efficiency Building Project. The Council will also consider what additional activities may be needed to improve compliance in the context of any new or changed rating and disclosure arrangements arising through work under this plan.	Status: Expansion Owner: COAG Energy Council
33. Review the National Energy Customer Framework (NECF) for disruptive technologies	In December 2014, the Council committed to undertake an assessment of the differences in how jurisdictions have applied the NECF. In addition the Council agreed to examine whether there is a need to enhance energy frameworks in light of the ongoing change taking place in competitive energy markets, particularly as it regards the introduction of new technologies, products and services. This will be linked to Measure 19.	Status: Ongoing Owner: COAG Energy Council
34. Review the Fuel Quality Standards Act 2000	Ongoing progression and availability of higher quality fuels in Australia are important for the availability of innovative new fuel efficient vehicles in the Australian market. A review of the Fuel Quality Standards Act 2000 was announced in June 2015.	Status: Ongoing Owner: Commonwealth