

National Energy Productivity Plan A2EP Review of Progress – Year 2

Slowing progress over the last two years increases the challenge of meeting energy productivity and emissions reduction targets.

Two years after COAG Energy Council agreed a national plan for energy productivity improvement, metrics may indicate that the rate of improvement is slowing. The Plan targets a 40% improvement in energy productivity over the 15 years from 2015 to 2030 and included 34 measures intended to deliver the target. In this document we review apparent progress on each measure.

Background

Rapidly improving energy productivity is the most cost effective and immediate way to meet the acute energy challenges facing Australia – affordability and competitiveness, ensuring reliable supply, and reducing carbon emissions. It is also one of the few means available to address them simultaneously.

From the metrics it appears that energy productivity improvement in Australia has stalled in the past two years, after a promising acceleration over the previous three years. A continuation of the recent trend will make it very difficult to meet even the modest NEPP target, let alone the 2xEP target proposed by A2EP (doubling energy productivity by 2030, from a 2010 baseline).

A great deal of the urgency associated with improving energy productivity results from the long term impacts of locking in poor performance. In 2017 Australians bought nearly 1.2 million new vehicles ¹, built 220,000 new homes ² and invested nearly \$47 bn ³ in non-residential buildings. These are long lived assets. The ways in which they consume – and produce – energy have implications for owners, operators and occupants but also for the community and the economy, for energy markets and for the emissions reduction project. The issue is significant; in 2014-15 Australia spent \$135.5 bn on energy, approximately 8.5% of GDP of ~\$1,600 bn. Prices for electricity and gas have continued to increase for businesses and households since this data was published. Our relative competitiveness in the global economy weakens

The Plan and performance

The National Energy Productivity Plan (NEPP) is a COAG Energy Council agreed package of measures to improve Australia's energy productivity by 40% between 2015 and 2030.

The COAG Energy Council recognised that improving energy productivity helps:

- *businesses reduce their energy costs through innovation and modernising their infrastructure*
- *households benefit through lower energy bills and increased home comfort*
- *Australia reduce its greenhouse emissions*

The NEPP takes a whole-of-system approach to energy policy and covers electricity, gas and transport fuels. It includes:

- *energy market reforms to promote consumer choice and increase competition and innovation in the energy market*
- *energy efficiency measures that support better energy use in buildings, equipment and vehicles*

National Energy Productivity Plan (NEPP) 2015 ⁴: Sets national baseline for energy productivity of \$274 million per petajoule (\$m/PL) of energy consumed. Targets 40% improvement on baseline by 2030.

NEPP Annual Report 2016 ⁵: Annual change 2014-15 +1.48%, lower than average of previous 15 years, 1.69%. Also lower than estimated average annual improvement of 2.26% required to achieve target

NEPP Annual Report 2017 ⁶: Annual change 2015-16 +0.40%. A significant increase in energy consumption in the mining sector, largely related to LNG exports “value of production relatively flat”.

¹ Australian Bureau of Statistics, 9314.0 - Sales of New Motor Vehicles, Australia, December 2017

² Australian Bureau of Statistics, 5609.0 - Housing Finance, Australia, December 2017

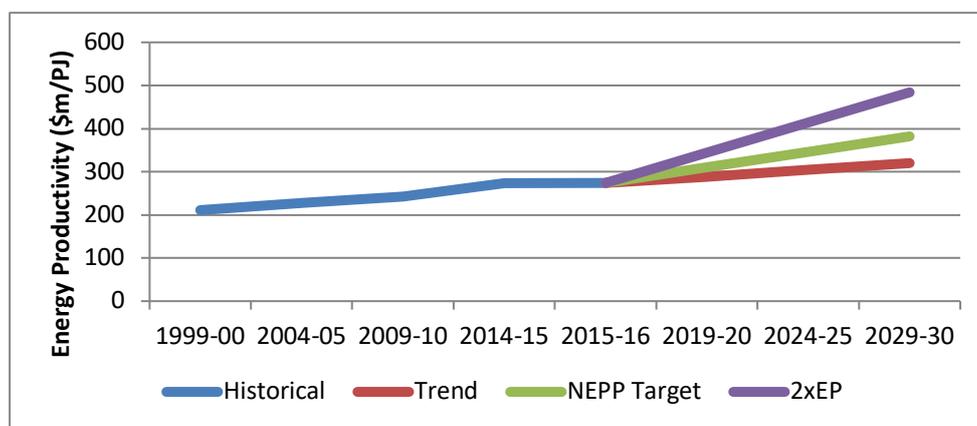
³ Australian Bureau of Statistics, 8731.0 - Building Approvals, Australia, December 2017

⁴ National Energy Productivity Plan 2015-2030, Commonwealth of Australia 2015

⁵ National Energy Productivity Plan 2015-2030: Annual Report 2016, Commonwealth of Australia 2016

⁶ National Energy Productivity Plan 2015-2030: Annual Report 2017, Commonwealth of Australia 2017

Australian trend energy productivity vs targets. \$million/PJ, 1999-00 to 2029-30



Source: A2EP analysis of data from *Australian Energy Statistics 2017*

* 40% improvement on 2014-15. ** 100% improvement on 2009-10

Action by governments

A2EP believes that the following measures need to be undertaken with urgency to deliver the important outcomes needed by the Australian economy from improved energy productivity:

1. Adequately fund and resource the implementation of existing NEPP measures now.
2. Implement immediate additional energy productivity measures to reduce cost pressures on business and consumers such as, for example, investment incentives for businesses implementing projects to optimise their energy use.
3. Upgrade the NEPP by adding further measures to improve energy productivity in manufacturing and for transport (particularly freight), which are not adequately addressed in the NEPP.
4. Provide funding support for accelerating energy productivity innovation, through changing the ARENA mandate to include transformative energy productivity measures.

While we acknowledge that individual Australian states and territories are making progress, there seems to be a lack of commitment and resources at Commonwealth level to implement key NEPP measures.

A2EP is of the view that concerted national effort is required to address the measures proposed by the NEPP. This will need to be supported by a significant and immediate boost in financial and people resources. There is a need for a specific, multi-year, budget allocation for the implementation of the NEPP.

A2EP and doubling energy productivity by 2030 (from 2010)

A2EP continues its work to develop energy productivity 'roadmaps' for key sectors of the economy and to work with stakeholders to advance action. We acknowledge, with gratitude, that our work on these roadmaps has been supported by the Commonwealth, New South Wales, Queensland and Victorian governments. The roadmaps and other publications are available online at 2xep.org.au.

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MEASURE	WHY/WHAT	STATUS AND OWNER	Notes, details, updates at December 2017 on publication of the second NEPP Annual Report
<i>MORE PRODUCTIVE CHOICES</i>			
<i>Efficient incentives</i>			
1. Transition to cost-reflective pricing [in electricity markets]	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	<p>A2EP Status: ●</p> <p>This measure as included in the NEPP was focused on electricity supply. A2EP observes that cost-reflective (time-of-use) pricing has a role to play in other networks, notably road networks. Cost reflective pricing can be used to manage congestion and recover costs. COAG amongst other bodies has given consideration to this matter over the course of a decade or more, but it seems that take-up rates for new tariff types, particularly by residential consumers, is low.</p> <p>Cost reflective pricing for [electricity] customers: There are three threshold challenges for this measure; the first is a requirement for interval meters to enable time-of-use based tariffs; the second is the creation of conditions that encourage consumers to switch and benefit; the other is metrics – measures of progress towards and impacts of the transition should be measured by the number of customers on dynamic tariffs, the manner and extent to which demand is affected, impacts on customer bills.</p> <p>For 'small' customers, both business and residential, and with exception of Victoria, this measure is dependent on the success of Measure #23, a competitive smart meter rollout. In the absence of real incentives the roll-out in other jurisdictions will likely be slow.</p> <p>Energy companies have been slow to recognise that consumers respond to positive incentives, not penalties, and that many are not able to respond to price signals.</p> <p>In Victoria, business demand charges are based on annual peak demand, and so it is difficult for firms to capture financial benefits from reducing peak demand.</p>
2. Market mechanisms to capture societal benefits (Emissions Reduction Fund)	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,	Status: Ongoing/expansion Owner: Jurisdictions	<p>A2EP Status: ●</p> <p>This measure is focused on the 'alignment', - ie harmonisation, promotion and extension - of market mechanisms (examples</p>

(ERF), state energy efficiency (EE) schemes, Renewable Energy Target (RET)	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.	provided). There has been little in the way of apparent progress regarding existing mechanisms.
		However, in November of 2017 COAG Energy Council, on advice from the Energy Security Board, resolved to pursue the design and implementation of a National Energy Guarantee (NEG). ⁷ The NEG promises “to encourage new investment in clean and low emissions technologies while allowing the electricity system to continue to operate reliably”. The NEG comprised two elements: a reliability guarantee (to operate from 2019) and an emissions guarantee (to operate from 2020, replacing the Renewable Energy Target). The NEG intends to integrate energy and emissions policy through a market mechanism.
		The ERF and RET are programs of the Commonwealth and bounded by budget or/and time and are not consumer focused. The state and territory EE schemes are not harmonised. The success of these schemes is demonstrated. ⁸ They are currently, however, inconsistent in design and application. The costs of doing business for scheme participants operating in multiple jurisdictions are inefficiently high. The absence of schemes in Queensland and Western Australia is an egregious failing. The potential for these schemes to significantly improve energy productivity is not realised.

Empowering consumers

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 [ECA]. 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	A2EP Status: ●	The NEPP has not yet delivered tools to facilitate choices in the best interests of individual consumers or the community at large. While A2EP welcomes progress in research we are concerned that the 'market transition' is accelerating in the absence of effective policy frameworks and that choices are becoming even more complex, notably as storage solutions (ie batteries) gain favour in retail markets and with the introduction of competition in the provision of [electricity] metering services. In conjunction with the ready availability of new tariff types and dynamic pricing there is increasing risk to consumers of deleterious outcomes (higher than necessary bills, unnecessary investments). There are nine million residential electricity connections in Australia. Energy markets are lively. Many consumers
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⁷ <http://www.coagenergycouncil.gov.au/publications/report-national-energy-guarantee>

⁸ International Energy Agency, *Energy Efficiency 2017*, p45 <https://www.iea.org/efficiency/>

are making choices with material, immediate and often long lasting consequences.

In March 2017 the ACCC was tasked with conducting an inquiry into the retail supply of electricity and the competitiveness of the retail markets in NEM jurisdictions. The inquiry will provide a final report in June 2018. Its preliminary report identified a range of concerns with the operation of markets and made recommendations for actions by governments. The Independent Review into the Future Security of the National Electricity Market (also known as the Finkel Review) reported in June 2017 and suggested [6.1] that the ACCC inquiry recommend actions to “improve transparency and clarity“ of prices.

The ECA-led review of the 'total consumer journey' is underway: ECA has undertaken and published independent analysis of the LIEEP evidence base, in order to understand effective tools and information, and how best to approach consumers. The second stage is about to commence and will comprise an independent review of retail market barriers to energy management products, and research to incorporate the segmentation work done through the LIEEP review, as well as other relevant research, to develop a strategic framework to identify critical residential consumer touchpoints in energy procurement and consumption.

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
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A2EP Status: ●

A2EP is concerned that the best practice voluntary guideline has not yet been finalised.

Some of the most effective support that could be provided to vulnerable consumers relates to the choices that they make with regard to products and services (see Measure #3 above). As choice becomes more complex and outcomes become more significant, support for decision-making becomes critical. Support of whatever kind, however delivered, is likely most effectively provided as early as possible, eg in selecting tariffs rather than dealing with a debt.

Related to the work mentioned at Measure #3, ECA has developed a tool for service providers to ensure they capture all impacts of programs supporting energy efficiency for vulnerable consumers, and will develop a platform for community groups to share resources targeting particular classes of consumers, particularly vulnerable consumers. The research into the LIEEP evidence base has provided a

			<p>segmentation framework to inform the development of energy management products and services to vulnerable consumers. A2EP welcomes work to value the manifold benefits of improved energy efficiency</p> <p>The Finkel Review recommended [6.4] that “the Energy Security Board’s annual <i>Health of the NEM</i> report to the COAG Energy Council should report on affordability issues and proactively identify emerging issues”. A2EP supports this recommendation and suggests that these reports inform the ongoing development of services for vulnerable consumers. The Finkel Review also recommended [6.6] work to improve energy-use efficiency and encourage the uptake of distributed renewable energy by low income consumers.</p>
<p>5. Improve residential building energy ratings and disclosure</p>	<p>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.</p>	<p>Status: New Owner: COAG Energy Council</p>	<p>A2EP Status: ●</p> <p>There is currently no clear pathway to the development and implementation of a nationally consistent energy ratings and disclosure system for the residential buildings sector</p> <p>Analysis by the Reserve Bank of Australia suggests that averaged over the decade to December 2016 about 5.5%⁹ of Australia's 9 million homes¹⁰ change owners each year. Research by Roy Morgan¹¹ found that 14.3% of respondents to a national survey had lived at their current address for less than one year and a total 24.2% for less than two years. About two thirds of people who had been resident at their current address for less than a year were renting. It is clear that large numbers of Australians are involved in making choices about where to live and what to buy or rent. Those choices are likely bounded by a range of factors but, currently, except in the ACT, those choices are not likely supported by credible, consistent and effective information about energy; thermal efficiency and other attributes that will affect the cost to own and occupy.</p> <p>Existing regimes including NatHERS, BASIX (NSW), EER (ACT) model approaches that are limited in scope eg to new buildings, to heating and cooling only, to thermal performance only.</p> <p>In December of 2016, COAG Energy Council published <i>National Collaborative Approach to Residential Building Ratings and</i></p>

⁹ Reserve Bank of Australia, *Bulletin March Quarter 2017 – Housing Market Turnover*, <https://www.rba.gov.au/publications/bulletin/2017/mar/3.html>, 2017

¹⁰ Australian Bureau of Statistics, *2024.0 Census of Population and Housing*, <http://www.abs.gov.au/ausstats/abs@.nsf/mf/2024.0>, 2017

¹¹ Roy Morgan, *Australians not sold on moving house*, <http://www.roymorgan.com/findings/6899-australians-not-sold-on-moving-house-201607210902>, 2016

Disclosure – Principles. The Victorian Government has progressed work to develop and test its Residential Efficiency Scorecard. The New South Wales Government has progressed work to develop and test a 'home energy rating system' for point of sale that could become required ie mandatory in 2020 if demonstrably successful. It plans to provide a similar system in the rental market.

Helping business compete

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	A2EP Status: ● A2EP is unaware of any work to progress this measure at the federal level. A range of programs in the states and territories provide some assistance through knowledge sharing, practical assistance (audits, advice), cash grants, 'white' certificate schemes. The Finkel Review recommended [6.10] “that governments should accelerate the roll out of broader energy efficiency measures to complement the reforms recommended in [that] Review”.
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	A2EP Status: ● A2EP is unaware of any work to progress this measure by the federal government. The Commonwealth has provided financial and in-kind support to A2EP for the development of sector 'roadmaps' in collaboration with business stakeholders. Likewise the New South Wales, Queensland and Victorian governments have supported aspects of this work. Our understanding of the NEPP measure is that it was intended to acknowledge and celebrate the achievements of businesses, particularly those that had demonstrated high levels of improvement and/or pioneered with innovative approaches.
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	A2EP Status: ● A2EP is unaware of any work to progress this measure.
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	Status: Expansion	A2EP Status: ●

	<p>Commonwealth intends to respond to this review early in 2016.</p> <p>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.</p>	<p>Owner: Commonwealth/COAG Energy Council</p>	<p>Effective July 2017 the threshold for coverage by the Commercial Buildings Disclosure (CBD) program has been lowered from 2000 to 1000 square metres. This significant extension of the program is welcomed as are the anticipated outcomes; a \$50 million saving in energy spend and a 3.5 million tonne reduction in CO2e over five years.</p> <p>A2EP is unaware of any work to progress a plan for future development of NABERS or further consideration of NABERS by COAG Energy Council.</p> <p>The Finkel Review recommended [6.10] “that governments should accelerate the roll out of broader energy efficiency measures to complement the reforms recommended in [that] Review”.</p>
10. Improve fuel efficiency in the aviation and maritime sectors	<p>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.</p>	<p>Status: Expansion</p> <p>Owner: Commonwealth</p>	<p>A2EP Status: ●</p> <p>A2EP is unaware of any work to progress this measure.</p>
11. Reduce barriers to financing	<p>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 [CEFC] and work streams under the G20.</p>	<p>Status: Ongoing</p> <p>Owner: Commonwealth</p>	<p>A2EP Status: ●</p> <p>A2EP acknowledges the considerable success of the CEFC in providing, leveraging and accelerating access to finance for businesses that are investing in renewable energy and energy efficiency across a range of sectors including buildings, transport and agriculture.</p> <p>In May of 2017 the <i>G20 Energy Efficiency Investment Toolkit</i>¹² was published under the auspices of the G20 Energy Efficiency Finance Task Group (EEFTG). The document offers a helpful assessment of the current state of and potential for investment but at a high level unlikely to be easily translated to helping Australian businesses compete, domestically or internationally.</p> <p>Linked to Measure #6, help business self-manage energy costs, there is urgent need for work with business associations, finance providers and government agencies to understand barriers, improve understanding of the business case for investment and facilitate access to finance.</p>

¹² https://ipeec.org/upload/publication_related_language/pdf/626.pdf

A2EP recommends that the Commonwealth consider the potential for incentives through the taxation system, possibly along the lines of the (up to) \$20,000 'immediate asset deductibility' for small business.

MORE PRODUCTIVE CHOICES

Innovative support

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	<p>A2EP Status: ●</p> <p>A2EP is unaware of any work to progress this measure by the Commonwealth. The Energy Efficiency in Government Operations (EEGO) regime seems not to have been reviewed or updated for some years. The targets and standards currently in force date from 2011.</p> <p>Some individual states and territories are moving to improve energy use-efficiency in own operations, for example through the Government Resource Efficiency Policy (GREP) in New South Wales and the Climate Transition Strategy in Queensland.</p> <p>The Finkel Review recommended [6.10] “that governments should accelerate the roll out of broader energy efficiency measures to complement the reforms recommended in [that] Review“.</p>
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	<p>A2EP Status: ●</p> <p>A2EP notes that, according to the most recently published ABS data, Australia spent \$135.5 bn on energy in the year to June 2015 and that this was equivalent to more than eight per cent of GDP. Given the poor if admittedly early record of progress towards the NEPP target, A2EP suggests that the National Innovation and Science Agenda should be resourced to specifically and explicitly support the NEPP. The recently released report <i>Australia 2030 – Prosperity through innovation – A plan for Australia to thrive in the global innovation race</i> suggests an opportunity missed. Energy barely rates a mention. And the mooted hydrogen city (a candidate for national mission) would seem to be an exciting but fanciful mirage in a landscape with much more in the way of realistic and ready prospects.</p>

			<p>A2EP welcomes the establishment by ARENA of a new investment priority in energy productivity and continuing work to develop a program for funding projects that feature innovation. We look forward to supporting this work as it unfolds.</p> <p>Some individual states and territories are moving to support innovation and commercialisation, for example the Clean Energy Knowledge Sharing Initiative in New South Wales and the Agriculture Energy Investment Plan in Victoria. In South Australia the Energy Productivity Implementation Grants program focused on businesses that consume large volumes of electricity with a view to managing costs and contributing to stability of supply.</p> <p>The Finkel Review recommended [6.10] “that governments should accelerate the roll out of broader energy efficiency measures to complement the reforms recommended in [that] Review“.</p>
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	<p>A2EP Status: ●</p> <p>A2EP notes that the anticipated reports have been delivered, draft Regulatory Impact Statements (RIS) have been produced and published for consultation and that nearly 100 submissions were lodged in response (by the due date in March 2017). Additional consultation has been undertaken. The Forum website advises that “it will consider other measures to encourage the uptake of low emission vehicles” “and provide a draft implementation plan on potential measures for consideration by [Commonwealth] Government”.</p>
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	<p>A2EP Status ●</p> <p>Policy making and regulatory development are underway in this fast moving area. Innovation, 'disruption' and investment are occurring in transport and related infrastructure systems (including planning for autonomous vehicles and developing specifications for telematics). The keys to maximizing energy productivity outcomes are planning across the passenger and freight transport sectors and integration with other work.</p>
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	Status: New Owner: Commonwealth	<p>A2EP Status: ●</p>

	support development of the Commonwealth's agenda for cities. Initial proposals are expected in early 2016.		<p>The relationships between buildings, transport, energy, water and waste in dense urban environments are critical to energy (and other) productivity. The Department of the Prime Minister and Cabinet (DPMC) has published the Smart Cities Plan. The Plan makes reference to energy, energy efficiency and clean energy, but superficially. It observes that “real time data and smart technology will lead to better utilisation of infrastructure, clean energy and energy efficiency, improvements in services and better benchmarking of cities performance”. Data and technology are elements of the energy productivity story, as are financing (CEFC) and standards (MEPS and NABERS). But in the absence of considered approaches to planning, coordination, optimisation and integration we rely on happy accidents to drive the changes required. Given the importance of cities to the national economy, and the importance of energy to cities, that might prove insufficient.</p> <p>DPMC has published the National Cities Performance Framework and made available a ‘Dashboard’, neither of which specifically addresses energy productivity. The Framework does have regard to transport congestion which might be regarded as a metric for productivity. The City Deals program “aligning planning, investment and governance to accelerate growth and job creation, stimulate urban renewal and drive economic reforms to secure the future prosperity and liveability of our cities” does not address energy at all (consumption, production, efficiency, emissions).</p>
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	<p>A2EP Status: ●</p> <p>A2EP is unaware of any work to progress this measure</p>
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	<p>A2EP Status: ●</p> <p>A2EP welcomes ongoing international collaboration between governments and other parties, particularly in the areas of energy efficiency and renewable generation. We are concerned that energy productivity in transport may not garner sufficient attention; the G20 is alive to considerations of fuel efficiency and fuel quality in which Australia lags. Likewise we seem to be absent from participation in</p>

international 'green freight' initiatives that aim to “help countries reduce fossil fuel dependency, improve air quality and minimize CO2 emissions that contribute to climate change, without hindering economic development”.

Competitive modern markets

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	<p>A2EP Status: ●</p> <p>A2EP is unaware of any work to progress this measure to the point of making changes to regulatory frameworks that directly affect and protect customers. The Finkel Review recommended [6.5] that COAG Energy Council “accelerate work its work on applying consumer protections... to new energy services and also consider safety issues...”</p> <p>A2EP notes, with regard to Measure #23, that the National Energy Customer Framework (NECF) was developed without consideration to 'emerging technologies' and that consumer advocates have highlighted the potential for innovation to introduce unintended consumer detriment alongside benefits for innovation in products and services. A2EP notes that these products and services are readily available in the market and that there may be risk to consumers in the absence of appropriate consumer protections and safeguards.</p>
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	<p>A2EP Status: ●</p> <p>The Gas Supply Strategy and related Implementation Plan are in train¹³ and as of November 2017 four of 14 'collaborative actions' have been completed (three were added in August 2017). It is not clear the extend to which completed actions have affected the market. A review of the Plan was due to commence in January 2018.</p>
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	<p>A2EP Status: ●</p> <p>Reforms to the market institutions - the AEMC, AER and AEMO - recommended by the Review, are in train. Additionally, COAG Energy Council has established the Energy Security Board with an</p>

¹³ <http://www.coagenergycouncil.gov.au/publications/coag-energy-council-gas-supply-strategy-december-2015>

			independent chair and deputy chair along with the heads of the AEMC, AER and AEMO.
			A2EP notes that in addition to the Review of Governance Arrangements, markets and market institutions may be affected by recommendations from the Independent Review into the Future Security of the National Electricity Market (the 'Finkel Review'), the National Energy Guarantee and the 2017 Review of Climate Change Policies.
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	A2EP Status: ● A2EP welcomes progress towards the EUDM with some concern about the time taken for finalisation of the 'initial public platform' (now the first half of 2018), the overall cost of the project, now \$19.4 million and the overall length of the project, now extending out to 2022. The Finkel Review recommended [2.6] that COAG Energy Council “in addition to its project on energy storage systems, should develop a data collection framework (or other mechanism) to provide static and real-time data for all forms of distributed energy resources at a suitable level of aggregation. The project should be completed by mid-2018.” The Review also recommended [7.14] that “by end-2018, the Energy Security Board, in collaboration with the Australian Energy Regulator, should develop a data strategy for the National Electricity Market”.
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	A2EP Status: ● NEPP Annual Report 2017 notes that reforms commenced 01/12/17 but ‘success depends on uptake of smart meters’.
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	Status: New Owner: COAG Energy Council	A2EP Status: ●

	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.		A2EP is unaware of any work to progress this measure or any public outcomes. The Finkel Review recommended [6.3] that, “by mid-2020, the COAG Energy Council should facilitate measures to remove complexities and improve consumers' access to, and rights to share, their energy data“.
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	A2EP Status: ● A2EP is unaware of any work to progress this measure or any public outcomes. The Finkel Review recommended [2.12] that “by mid-2019, the COAG Energy Council should facilitate the development of a national assessment of the future workforce requirements for the electricity sector to ensure a properly skilled workforce is available”. A2EP hopes that this assessment extends to the distributed renewables, demand-side, and systems integration workforces.
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	A2EP Status: ● A2EP welcomes developments over the last twelve months, notably the work by AEMO and ARENA to support trials of demand response that have involved retailers, distributors, governments, customers and a range of providers of services and technologies. The Finkel Review recommended [6.7] that the COAG Energy Council “should direct the Australian Energy Market Commission to undertake a review to recommend a mechanism that facilitates demand response in the wholesale energy market. This review should be completed by mid-2018 and include a draft rule change proposal for consideration by the COAG Energy Council.” A2EP is not aware that COAG Energy Council has, as yet, so directed the Commission.
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	Status: Ongoing Owner: COAG Energy Council	A2EP Status: ● In August of 2017 the Commonwealth Government reached an agreement with electricity retailers such that retailers would contact all customers on expired discount [market] contracts and all customers on

	timeliness and accuracy of customer switching processes and improving retail price reporting.		standing offer contracts with information about options for switching. The impact of this action is not yet clear. The initially proposed design of the National Energy Guarantee suggests a shift towards energy retailers increasing focus on long term contracted energy supply, which may reduce competition. Recent A2EP work with several businesses shows that energy tariff structures for businesses (and households) provide limited price signals, and that already high fixed charges are increasing as a proportion of bills.
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	A2EP Status: ● A2EP notes that, following a process of stakeholder consultation, the National Electricity Law (NEL) was amended in December 2016 to provide for the Australian Energy Regulator to monitor the wholesale electricity market.
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	A2EP Status: ● A2EP notes that the National Energy Customer Framework (NECF) was legislated in 2012 (for NEM-participant jurisdictions). Since then all NEM-participant jurisdictions, with the critical exception of Victoria, have introduced the NECF through enabling legislation. About a quarter of Australia's electricity customers are in Victoria, along with more than 40% of gas customers. The fact that the NECF does not extend to all NEM-participant jurisdictions is a significant impediment to the efficient operation of the retail electricity and gas markets. While the Northern Territory and Western Australia ought to be encouraged to adopt the NECF, the Victorian market should be the first priority. The Australian Energy Market Agreement (as amended in 2006) lays foundations for the retail regulation regime and provides at 14.5 that... <i>in order to ensure national consistency, the Parties agree, to the extent possible and where effective regulation is not impeded, that the [initial] rules will:</i> <i>(a) provide common regulatory arrangements for the electricity and natural gas sectors;</i> <i>(b) improve the transparency of the regulatory arrangements;</i> <i>(c) provide an appropriate level of regulatory certainty;</i>

(d) *reduce overlap between energy specific and generic regulation; and*

(e) *minimise the regulatory compliance burden and associated cost.*

Consumer protections

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 A2EP Status: ●	<p>The new E3 prioritisation plan was published in December of 2017¹⁴. It 'identifies how E3 will accelerate policy development and focus on regulating products that will deliver the most energy and emissions savings'.</p> <p>The Finkel Review recommended [6.10] "that governments should accelerate the roll out of broader energy efficiency measures to complement the reforms recommended in [that] Review".</p> <p>In January of 2018 the Commonwealth announced the timing of a statutorily mandated review of <i>Greenhouse and Energy Minimum Standards Act 2012</i> (GEMS Act). The GEMS Act provides the national legal framework for the operation of the E3 program.</p> <p>Progress towards increasing appliance and equipment efficiency has been hampered by a Commonwealth requirement that all new regulations must be 'offset' by removal of regulations. In an emerging area such as appliance efficiency, this requirement is difficult to meet. An intention to review is not a guarantee of effective action, and in reality means there will be limited tangible action until the review process is completed. The present approach to appliance efficiency, which focuses on regulatory activity applying to new appliances, is limited in scope; other measures could focus on identification of faulty existing equipment, innovation incentives, research, development and deployment, consumer motivation, etc.</p>
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	Status: Expansion	Owner: COAG Energy Council A2EP Status: ●	A2EP is concerned that the outcomes of the next cycle of revision of the Code will be insufficiently ambitious and will not reflect the

¹⁴ <http://energyrating.gov.au/document/e3-prioritisation-plan-2017-18>

	<p>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</p>		<p>potential for improved energy efficiency available with currently available technologies and practices including through planning and design, construction materials and methods, equipment and appliances.</p> <p>The residential sector stringency will not be increased from 2010 levels until at least 2022, despite increases in energy prices, reducing compliance costs and increasing contribution to peak demand of residential cooling. There are proposals to introduce separate summer and winter performance requirements within the present level of stringency, but given the presently low stringency these are likely to be weak. Given the lengthy nature of building regulatory development processes, even potential change in 2022 may be weak, as proposals will have to be framed within the next year, in a context where past lack of progress in analysis (including consideration of health aspects) and weak policy ambition on carbon emission reduction undermines well-informed decision-making.</p> <p>While non-residential building stringency is expected to be significantly increased, there is limited focus on use of NCC to drive reduction in peak demand, although cost-benefit analysis does include an 'avoided energy infrastructure' cost factor</p> <p>The Finkel Review recommended [6.10] “that governments should accelerate the roll out of broader energy efficiency measures to complement the reforms recommended in [that] Review“.</p>
<p>32. Improve compliance with building energy efficiency regulation</p>	<p>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.</p>	<p>Status: Expansion Owner: COAG Energy Council</p>	<p>A2EP Status: ●</p> <p>The work of the National Energy Efficiency Building Project progresses¹⁵ but slowly and without manifest impact to address the significant compliance failings identified through Phase 1 of the work in 2013. There is continuing potential for many if not most of new build and major renovation projects to fall short of Code requirements 'locking in' low efficiency and high emissions for the life of the structure.</p> <p>A2EP acknowledges that compliance involves state and local government agencies. A2EP acknowledges the leading role of the Building Ministers' Forum in oversight of the Australian Building Codes Board and, through it, development of the Code.</p>

¹⁵ <http://dpc.sa.gov.au/what-we-do/services-for-business-and-the-community/energy-efficiency/national-energy-efficiency-building-project>

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 A2EP Status: ●	A2EP is unaware of any work to progress this measure to the point of making changes to regulatory frameworks that directly affect and protect customers. The Finkel Review recommended [6.5] that COAG Energy Council “accelerate work its work on applying consumer protections... to new energy services and also consider safety issues...”
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 A2EP Status: ●	A2EP reiterates the observation made in the NEPP: “higher quality fuels are important for the availability [and effectiveness] of fuel efficient vehicles”. It is essential that the issue of future fuel quality be considered and resolved in tandem with Measure #14, improve light vehicle efficiency. The Ministerial Forum has now released a draft Regulation Impact Statement for consultation on proposed changes to fuel quality standards. Submissions are due in March 2018.