Electricity Network Economic Regulatory Framework Review Approach Paper submission

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Energy Networks Australia

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Introduction

Energy Networks Australia welcomes the opportunity to make a submission to the Australian Energy Market Commission (AEMC) in response to the *Electricity Network Economic Regulatory Framework Review Approach Paper* (the Approach Paper) published by the AEMC on 1 December 2016.

Energy Networks Australia is the national industry association representing the businesses operating Australia's electricity transmission and distribution and gas distribution networks. Member businesses provide energy delivery services to virtually every household and business in Australia.

Energy Networks Australia welcomes the opportunity to provide submissions to the Approach Paper and to contribute more broadly to the *Electricity Network Economic Regulatory Framework Review* (the Review).

Energy Networks Australia's submission in response to the Approach Paper reflect the following key messages:

- Networks support the role allocated by COAG Energy Council to the AEMC to monitor developments in the energy market, including the increased uptake of decentralised energy, and to provide advice as to whether the economic regulatory framework for electricity transmission and distribution networks is sufficiently robust and flexible to continue to achieve the national electricity objective (NEO) in light of these developments.
- Networks consider that the AEMC Review can be constructively informed by the detailed analysis and findings included in the *Electricity Network Transformation Roadmap* developed over two years with wide stakeholder engagement;
- Integrated, cohesive and investment-friendly energy policy, carbon policy and regulatory frameworks will be critical to enabling agile, efficient, customer-focussed responses by current and future industry participants; and
- Greater coordination of regulatory review and rule change processes is necessary to avoid unintended consequences to market and consumer outcomes.

Energy Networks recognise the importance of a robust, stable and predictable regulatory framework to supporting the capacity of network service providers to excel in delivering innovative, continuously improving customer services while continuing to access low cost financing which ensures lower costs to network customers. Energy Networks Australia supports the AEMC adopting a holistic approach to evaluating the regulatory framework. In particular, the Commission should consider the risks to customer outcomes of confusion in the regulatory framework should it be subject to multiple overlapping review and rule change processes pursuing piecemeal change, without an assessment of the overall impact on the regime, its stability and outcomes for customers.

Energy Networks Australia recognises that there are a number of important reviews underway, including the *Independent Review into the reliability and stability of the National Electricity Market* chaired by Australia's Chief Scientist, Dr Alan Finkel AO. It is likely that further changes to the regulatory framework may result from these reviews. Energy Networks Australia hopes that this AEMC Review will incorporate the findings of other review and rule change processes underway.

Energy Networks supports the need to consider prudent regulatory reform, while noting the evolution of the regulatory framework should be well-planned, coherent and nationally integrated.

Consequently, the AEMC's Review provides an opportunity to ensure that the Economic Regulatory Framework remains fit-for-purpose in the context of a rapidly changing market environment.

Energy Networks Australia notes that the conduct of the Commission's review results from policy advice received by the COAG Energy Council regarding the adequacy of the regulatory framework to continue to deliver the National Electricity Objective (NEO) based on four scenarios developed by the CSIRO in their *Future Grid Forum report*[1].

CSIRO developed four scenarios in its *Future Grid Forum report,* which Energy Networks Australia and CSIRO have further developed through the *Network Transformation Roadmap Key Concepts Report*. The Roadmap looks at five areas of transformation of the energy sector and identifies a suite of integrated measures focussed on better customer outcomes, including enhanced consumer choice, reduced emissions, reduced electricity network costs and increased levels of reliability and security.

The 5 key areas of transformation examined were:

- Customer oriented electricity;
- Carbon abatement;
- Incentives and Network Regulation;
- Power System Security; and
- Intelligent Networks and Markets.

Consistent with the Commission's Power of Choice reforms – and the COAG Energy Council work program – the Roadmap highlights opportunities to enable customer participation in markets, where customers or their agents may determine 25% to 50% of system expenditure.

Integrated actions to enable transformation could have material benefits for customers, including:

- Achieving deep decarbonisation in accordance with the aspiration of COP 21, including meeting and exceeding emissions reductions in the electricity sector of 26 to 28% below 2005 levels by 2030 and achieving zero net emissions in the electricity sector by 2050.
- Retention of the security and reliability essential to the lifestyle and employment in a period of unprecedented change in technology and customer electricity use.
- Enabling customer choices and providing fair incentives, with a majority of customers in 2050 utilising distributed energy resources and 'paid' $2.5 billion per annum by networks in exchange for grid support services.
- Cumulative total system savings (across the supply chain) of $101 billion by 2050 through fully realising complementary benefits of centralised and distributed resources.
- Reduced network investment due to the ability to 'orchestrate' distributed resources, saving approximately $16 billion by 2050.
- Lower bills for valued services and fairer outcomes for customers by 2050, including:
  - network charges could be approximately 30% lower compared to 2016;
  - average households are expected to save around $414 in their annual electricity costs;
  - a medium family who cannot take up distributed energy resources is better off by over $600 per annum through lower network costs and the removal of cross subsidies.

However, the Roadmap program highlights that this transition will not happen without deliberate and prompt action by industry and government institutions in key areas. For instance, key factors

[1] CSIRO (2013) *Change and choice: The Future Grid Forum's analysis of Australia's potential electricity pathways to 2050*.

are likely to include:

» Stable and enduring, outcome focussed carbon policy;

» Establishing a modernised electricity grid enabled by open standards, extended monitoring, advanced network planning, forecasting and hosting capacity analysis; and the mapping and locational value of distributed energy resources.

» Achieving fair and efficient cost reflective network charges and enabling network optimisation markets – new incentive frameworks which enable the full value of distributed resources to be realised; and

» Flexibility in the regulatory framework to encourage alternatives for new and existing grid connection, such as economic use of stand-alone systems and microgrids.

Given the scale of actions required and the need for carefully coordinated management of regulatory change, Australia's successful energy transformation is likely to benefit from centralised monitoring by the Commission, potentially through the current Review.

As an example, the significant transition to cost-reflective network tariffs by 2020 is identified in the Roadmap as a key prerequisite to other market enabling measures and incentives important to customer outcomes. It itself has dependencies on the timely and efficient adoption of advanced metering in contestable markets, and together they provide a 'critical path' for the resilience of energy market frameworks to rapid changes in technology adoption and customer choice. It would be appropriate to monitor the progress of both tariff reform and metering deployment.

Energy Networks Australia recommends that the AEMC consider the findings of the Roadmap during this current Review, in light of the linkages between the *Electricity Network Economic Regulatory Framework Review* Terms of Reference and the previous CSIRO *Future Grid Forum analysis*. Detailed underlying Roadmap expert reports are accessible here. Energy Networks Australia suggests that the AEMC may consider whether some or all of the milestones developed as part of the Roadmap may be appropriate for the AEMC to track and report on through this Review process.

A review of the current state of the market

Energy Networks Australia supports the collection of indicator data to inform the AEMC's Annual Review. Energy Networks Australia's members are pleased to assist the AEMC in this area. We note that:

- reliable and complete information on some of these indicators may not yet be readily accessible to the AEMC, or other participants such as electricity network businesses; and
- there is no central registry currently operating to collect such information. Distribution businesses are likely to have varying reporting arrangements and it would be necessary to recognise the current information format may not be uniform across jurisdictions.

The Clean Energy Regulator (CER) regularly publishes updated small-scale renewable energy installation data on:

- small generation units (SGU) (small-scale solar panel, wind and hydro systems) and kilowatt (kW) capacity by installed postcode, and
- solar water heaters (SWH) and air source heat pumps by installed postcode.

Energy Networks Australia notes that the register is organised by postcode and does not readily allow mapping back to distribution network service provider (DNSP) zone substation. Hence, without additional information, clear addressing matches or NMI level information as a key, the utility of currently collected CER data for electricity network planning purposes has some limitations.

Noting these limitations, Energy Networks Australia and its members would be pleased to provide input and contribute case studies, building on the work already undertaken by other agencies and as part of the Roadmap.

Additional Reporting Requirements

The Roadmap has identified a series of "no regrets" actions aimed directly at navigating the expected energy transformation. The precise scale and timing of Australia's energy transformation is inherently uncertain. However, the Roadmap analysis confirms that the agility with which networks are able to connect, integrate and incentivise new lower carbon energy choices will directly influence the cost, fairness, security and reliability of outcomes to customers.

It will be important to manage the prudent and timely evolution of the regulatory framework. In key areas, the regulatory framework may already permit the flexibility required for innovation in customer outcomes. However, some regulatory and policy barriers will need to be addressed or avoided to achieve the best outcomes for customers during the transformation.

Example – pricing and incentive frameworks

Energy Networks Australia considers that introducing additional monitoring and reporting on the uptake of cost reflective tariffs and the uptake of smart meters would be one way to assist in early identification of barriers to market transformation. The Approach Paper notes:

> *"In November 2014, the AEMC made a new rule to require network businesses to set prices that reflect the efficient cost of providing network services to individual consumers. This will allow consumers to compare the value they place on using the network against the costs caused by their use of it. Consumers who choose to respond to network prices by reducing their consumption in higher cost periods will be rewarded, through lower network charges. Over time all consumers will benefit through lower network costs and*

lower average network charges."

However, Energy Networks Australia notes that while many DNSPs have developed and made available some form of cost-reflective tariff, the level of take-up by customers has been very low.

In fact, the evidence in the Roadmap report suggests that a reliance on current status quo "opt in" approaches will see the majority of customers remaining on unfair and inefficient network tariffs out to 2050. Such an outcome would have substantial effects on network costs and on the future cross subsidies occurring between customers who own distributed energy resources and those who do not.

The early transition of the majority of customers to cost-reflective tariffs is a necessary precondition to developing market-based solutions for network optimisation and full use of innovative market opportunities such as 'peer-to-peer' trading.

Consequently, Energy Networks Australia recommends that the AEMC include reporting on:

- the number of customers who have transitioned from legacy tariffs to cost reflective tariffs; and
- the current and estimated penetration of smart meters (critical for the implementation of the cost reflective tariffs).

Links to other reforms

Energy Networks Australia notes that increased centralised oversight and coordination of the numerous Review and/or Rule Change processes underway may provide significant potential benefits to market participants and to consumers. This will reduce fragmentation and duplication. The example of the proposed battery storage register is highlighted below.

> Energy Networks Australia notes that the Energy Market Transformation Project Team (EMTPT) under the Council of Australian Governments' (COAG) Energy Council has initiated a work program to understand the regulatory and policy implications of increasing deployments of distributed battery storage systems, including safety, installation and connection practices, operation and maintenance, and disposal[2].
>
> In general, stakeholders support the concept of establishing a battery storage register, but there were some concerns that requiring battery systems to be registered would add costs and complexity to an emerging industry.
>
> Stakeholders' views included that:
>
> - the register should be a national database, supported by a clear policy objective and governance framework;
> - the cost of setting up and maintaining the register should be justified
> - privacy and consumer information must be protected;
> - the regulatory framework that governs the proposed register should be flexible and adaptable to future technologies; and
> - COAG should ensure the implementation of appropriate regulatory changes to ensure all necessary data is collected.
>
> Energy Networks Australia notes that the COAG Energy Council has agreed in-principle to develop a national battery storage register, subject to a cost-benefit analysis that

[2] Commonwealth of Australia Approach to Market *Consultancy Services to Produce a Cost-Benefit Analysis of a National Battery Storage Register to collect and share information about small-scale battery storage* - Consultancy Services Reference No: 2000001105 p. 2-3.

compares a register with other options.

The Commonwealth, as represented by Department of the Environment and Energy, is currently seeking tenders for the provision of Consultancy Services to Produce a Cost-Benefit Analysis of a National Battery Storage Register to collect and share information about small-scale battery storage (Reference No: 2000001105). Tenders close on 6 February 2017. Consultancy services are due for completion on or before 30 June 2017.

The Australian Government's approach to market (ATM) stipulates that design of the cost benefit analysis should include consideration of collection and appropriate sharing of information about distributed battery storage systems and should be flexible and scalable so that information on other distributed energy resources (DER) such as solar PV could be included if beneficial in the future.

Energy Networks Australia's members would be pleased to assist the AEMC including in contributing case studies where valuable.

Robustness of the economic regulatory framework

Energy Networks Australia notes that the AEMC will review whether the economic regulatory framework is sufficiently flexible and robust to promote the NEO through the following assessment criteria:

Criteria	Assessment approach
Incentives	Does the framework provide the correct incentives for participants to: » make efficient planning, investment and pricing decisions; » sufficiently adapt business models; and » utilise non-network solutions?
Flexibility	Does the AER have appropriate and sufficient tools and flexibility over how to use them, for a changing environment?

The Roadmap identified key drivers of change to the current regulatory and policy framework in Australia. These included:

- the emergence of new technologies and new business models, providing capacity for greater competition and service tailoring;
- the potential for the development of off grid solutions and competition in a range of traditional network services to lead to an unplanned and disruptive break down of the funding of the commons of a shared network service capable of integrating efficient levels of centralised generation and distributed energy resources that meet customer needs; and
- the potential for the regulatory framework to stifle unintentionally the delivery of customer-valued services by a variety of competing business models, operating on a level playing field to deliver value.

Some of the key findings from *Chapter 8: Regulatory and Policy Frameworks* include:

- that there is the opportunity to move to more of a consumer centric, and less of a regulator driven framework;
- that there is also the opportunity to move to lighter handed regulatory models, especially for services which are increasingly subject to competitive disciplines;
- that there is an increasing role for emerging competition tests - the threshold for where more intensive and costly economic regulatory approaches are necessary will need closer consideration and design as competition for network services strengthens; and
- that a range of services may become completely contestable, changing the monopoly regulation presumption. The regulatory framework will need to have flexibility to incorporate new service types while continuing to support long-lived investments.

Cambridge Economic Policy Associates (CEPA) undertook detailed work on *Future Regulatory Options for Electricity Networks* as part of the Roadmap. Their report and an accompanying Policy Summary is available on the Energy Networks Australia website and is attached (Appendix A).

The AEMC inquires whether the Australian Energy Regulator (AER) has appropriate and sufficient tools and flexibility over how to use them, for a changing environment. Energy Networks Australia recommends evaluation of the AER's current tools and actions against a set of expectations, milestones and actions identified as necessary for energy market transformation to

occur. It is important that the AEMC provide clear guidance to the AER, and to other market participants, to ensure the implementation of recommendations from Reviews and rule changes. The Roadmap recommends some further evolution of regulatory arrangements, commencing as early as 2019. Energy Networks Australia suggests that it may be appropriate for the AEMC and AER to consider these milestones as part of this reporting framework.

Energy Networks Australia considers that the AEMC's Review should (in addition to assessing incentives and flexibility) also consider the importance of the role of a stable, predictable regulatory framework in helping to minimise the financing costs borne by customers for long-lived network infrastructure investments and to ensure that networks continue to provide reliable and secure network services.

Energy Networks Australia agrees with the AEMC that recently made rule changes may have significant bearing on the regulatory framework's flexibility and robustness and that not all of these rule changes will have been in place for long enough to assess fully their effect for the 2017 report.

Energy Networks Australia agrees that the AEMC's assessment should also consider existing relevant schemes and guidelines such as:

- the efficiency benefit sharing scheme (EBSS);
- the capital efficiency sharing scheme (CESS);
- the regulatory investment test for transmission and distribution (RIT-T and RIT-D); and
- the distribution ring-fencing guidelines.

AEMC key priority areas for future reforms

Energy Networks Australia notes that each year in its Review the AEMC will identify key risk factors and emerging themes for potential challenges that may be faced by the regulatory framework in the near to medium term. The COAG Energy Council may focus on identified priority areas for future reforms.

For the 2017 report, the three preliminary priorities are:

- continued implementation of network pricing reform;
- the ability of networks to utilise increasingly diverse grid supply and network support options; and
- different network operating models (for example, the distribution market model).

AEMC Priority 1: Continued implementation of network pricing reform.

The Roadmap *Key Concepts Report* noted that an efficient adoption and integration of distributed energy resources (DER) through appropriate pricing and incentives should deliver significant savings in network augmentation costs, while at the same time delivering significant additional value to customers via their ability to participate in other markets.

The alternative, however, is failure to transition to a fairer system of prices and incentives, which will expose customers to the risk of over investment in the system, leading to higher average electricity bills and unfair cross subsidies paid for by some customers.

Key findings from Chapter 7: Incentives and Network Regulation include:

- Finding 1: Fairer system of prices can only be achieved in a reasonable timeframe with changes to tariff assignment policy;
- Finding 2: Smart meters are essential to ensuring a fair system of prices; and
- Finding 3: Over $16bn in network savings are possible by 2050 through improving existing tariffs, introducing new tariffs and establishing frameworks for networks to buy grid services from customers with distributed energy resources.

Energeia research undertaken to inform the Roadmap shows that "with the increase of new technologies in the energy system, early opportunities for buying and selling grid services are best served through agreements between customers and service providers. This will allow for dynamic and locational network orchestration of distributed energy resources where they can provide a lower cost solution to a traditional distribution service expenditure, to either augment or replace the existing grid.

An additional layer of direct, targeted incentive signals to integrate new technologies at a locational level, to complement more efficient broad-based tariff structures. Under its preferred scenario, Energeia predicts a third of customers will participate in some type of additional incentive, either directly or through an intermediary[3]".

Energy Networks Australia recommends that the AEMC, as part of its annual monitoring and reporting to COAG on technology trends and changes in market conditions, report on:

- the pace of market led smart meter deployment to ensure that it is on track to deliver the required number of meter installations to transition to an opt-out tariff assignment framework as soon as possible, and ideally from 2021; and

[3] Energeia (2016) Unlocking Value for Customers: Enabling New Services, Better Incentives, Fairer Rewards p. 3.

- the transition of customers from legacy to cost reflective tariffs to determine whether further regulatory and policy change is required to achieve a faster transition.

This finding links to the AEMC's second priority:

AEMC Priority 2: The ability of networks to utilise increasingly diverse grid supply and network support options.

The Roadmap notes that over the next 35 years, it will be possible to connect up to 27,000 rural customers with a lower cost solution through a standalone power system[4]. It will be possible to save almost $700 million by supplying these connections, usually farms, with a standalone power system[5]. It is also likely that transitioning existing grid connected remote customers to alternative supply via micro-grids or standalone power systems will result in a lower cost overall (in certain circumstances). This can also result in other benefits such as reduced bushfire risk. Current regulations can make the transition from conventional grid supply arrangements very difficult to enact.

With these potential circumstances in mind, on 9 September 2016 Western Power lodged a Rule Change proposal with the AEMC titled: *Removing Barriers to Efficient Network Investment*.

Western Power is concerned that a lack of clarity in the National Electricity Rules (NER) may unintentionally create a barrier to the use of certain types of technology that will deliver not only the most cost-effective services, but also potentially more reliable and safe services.

Western Power seeks to ensure that the definition of distribution service facilitates the achievement of efficient costs as intended under the NER economic regulatory framework by:

- removing any technology bias which could exist in the current definitions, thereby enabling DNSPs to have choice in the type of assets employed;
- promoting consistency between the planning obligations on DNSPs under Chapter 5 of the NER and the economic regulation frameworks under Chapter 6 of the NER; and
- aligning the flexibility currently provided to the AER regarding its approach to expenditure approvals and its approach to service classification.

Energy Networks Australia supports the AEMC's initiation and consideration of Western Power's rule change request and considers that clarification of regulatory arrangements allowing networks to connect customers at least cost will become increasingly important as the cost of alternatives to grid augmentation / replacement improve over time.

AEMC Priority 3: Different network operating models (for example, the distribution market model).

The Roadmap identifies that, irrespective of the network operating model chosen, there are a substantial number of identified initiatives which will be required to ensure that distribution networks can operate safely, reliably, securely and efficiently, as the mix of generation becomes more decentralised over time. Energy Networks Australia recommends that the AEMC consider identifying and reporting against key grid modernisation milestones as part of this Review.

As noted above, key elements of a modernised electricity grid are likely to include:

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[4] Energy Networks Australia and CSIRO (2016) *Electricity Network Transformation Roadmap: Key Concepts Report* p. 41.
[5] Ibid, p.42.

- open standards including communication protocols for distributed energy resources;
- extended distribution system monitoring,
- advanced network planning, forecasting and hosting capacity analysis; and
- the mapping and locational value of distributed energy resources.

Energy Networks Australia has also made a separate submission to the AEMC's *Distribution Market Model Approach Paper*. Please see our previously lodged submission on this matter.

If further information is sought on this matter, please contact Ms Kate Healey, Director Regulation, on 02 6272 1516 or by email on khealey@energynetworks.com.au.