Jemena Limited

Submission to the Independent Review into the Future Security of the National Electricity Market

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OVERVIEW

Jemena appreciates the opportunity to respond to the Independent Review into the Future Security of the National Electricity Market's (the **Review**) Preliminary Report (the **Report**). As a member of Energy Networks Australia (**ENA**), Jemena also welcomes and supports ENA's submission to the Review.

Jemena owns and operates a diverse $9 billion portfolio of energy and water transportation assets across the east coast of Australia. This includes a regulated electricity distribution network which serves 320,000 customers in north west Melbourne, as well part ownership of the United Energy and ActewAGL electricity distribution networks. We also own gas distribution and transmission assets throughout eastern and northern Australia. We continue to monitor trends in the energy market and broader developments in the energy policy and governance frameworks, and therefore we have taken a keen interest in this Review.

Jemena agrees that policy development to enhance energy security of the National Electricity Market (**NEM**) should be designed and implemented in a way that optimises the balance between energy supply security, affordability and greenhouse emission outcomes (the 'energy trilemma' as termed in the Report).

The Review and Report have facilitated a useful and timely public debate on key issues associated with, and potential options for addressing, the energy trilemma. While this is a welcome initial step, Jemena believes it would also be helpful to develop clear overarching policy principles to assist with the evaluation of nationally consistent policy reform options to strategically guide the development of the Review's recommendations.

Jemena believes that some key reform principles that are likely to assist in addressing the energy trilemma include the strategic pursuit of:

- **nationally consistent, technology neutral energy and climate policy design** to harness the most diverse range of market solutions and innovations at an efficient cost and provide greater certainty for investors and market participants, including consumers
- **efficient, equitable and transparent price signals** that enable timely and efficient investment in energy infrastructure, and promote greater competition and customer choice in energy markets
- **improved innovation incentives** to encourage investment and improve understanding and integration of new technologies to address energy trilemma challenges
- **meaningful consumer engagement** to build energy consumer understanding of key energy trilemma trade-offs and inform policy, including system reliability standard, development.

As the energy trilemma continues to evolve there is a clear need and a growing urgency for an integrated national energy and climate strategy to be developed and progressed by the Council of Australian Governments (COAG) Energy Council to not only guide future NEM reforms, but also the broader energy sector and help ensure investor confidence in all parts of the energy supply chain. The current situation of different policies in state, territory and Commonwealth jurisdictions is not optimally supporting a nationally interconnected energy market.

It will be important that policy decisions are taken with the energy trilemma in focus, rather than pursuing individual objectives in isolation, so that one element of the trilemma does not suffer while the objectives of another element are prioritised. History offers some insights here; following blackouts in QLD and NSW in the early to mid-2000s, the state governments responded by increasing reliability standards. This prioritisation of reliability subsequently led to unnecessary increases in electricity prices in those states. Governments and rule makers should seek to avoid repeating similar mistakes; for example by chasing short term affordability outcomes to the detriment of other energy trilemma elements—an example being the current process around reforming the limited merits review regime.

Long term and consistent policy and regulatory settings, rather than frequent changes, are important in guiding sector investment and any future proposed policy and regulatory changes should also occur with the energy trilemma in focus. With this in mind, Jemena firmly supports the CSIRO and ENA's Network Transformation

Roadmap (which Jemena has been actively involved in helping develop) as a well-considered, comprehensive and stakeholder-driven approach to addressing the energy trilemma on a national scale.

When considering reforms to improve the NEM it is important to keep in mind that history does suggest that with the right incentives and consistent regulatory frameworks in place it is possible to achieve valuable system efficiencies, innovation and service improvements—including through private energy companies. In many respects, privatisation has delivered some significant improvements. For example according to analysis by Oakley Greenwood, there has been a 14.3 per cent decrease in real terms in distribution network charges for Victorian residential customers between 1995 (the year before network privatisation) and 2017. More recently within this period, Victorian network businesses have also delivered significant investment in advanced metering infrastructure that will provide the foundation to help transform the electricity network into a two way consumer-driven platform that optimises consumer energy needs for mutual benefit.

In light of increasing concerns over the risk and security of Australia's electricity and energy sector, Jemena firmly believes that a competitive energy market that harnesses a diverse range of energy sources would help mitigate the risks and prevent overreliance on any one energy source. Jemena strongly supports the Report's view that gas will have a crucial role to play in electricity generation, supporting renewables and helping Australia to address its energy trilemma more broadly. It reinforces the need for optimised and nationally consistent policy and regulatory settings to support gas in fulfilling its role. Currently, restrictions such as gas exploration moratoria are impeding gas supply.

Jemena supports the structure and efficacy of the current energy sector governance model and recognises that there have been comprehensive reviews of the governance model in recent years (e.g. the Vertigan Review of Governance Arrangements). However, Jemena also believes that better policy outcomes can be achieved by strengthening the resourcing and visibility of regulators and governance bodies to improve public engagement and literacy around key energy sector issues.

1. A PRINCIPLES-BASED APPROACH

Jemena believes that some key reform principles need to be outlined to assist in addressing the energy trilemma. Some of the key principles are discussed below.

Nationally consistent, technology neutral energy and climate policy design

The Report has identified that energy security, affordability and emissions reduction outcomes are critically dependent on the ability to integrate and deploy a wide range of technologies into the National Electricity Market (**NEM**), while also enabling access to a diversity of energy sources.

Applying a technology neutral principle to the design of future energy and climate policies can significantly improve access to technology and fuel sources (solar, batteries, gas and others). There is also a need for comprehensive identification and assessment of current energy and climate policy settings that are not technology neutral and how these are best transitioned to create a diverse and active market for all technologies and fuel sources to compete in.

Jemena welcomes the Report's acknowledgement of the critical role that natural gas plays now, and will be required to play in the future, in providing cost-effective electricity supply, system security and greenhouse emission abatement. The Report further reinforces the urgent need for addressing moratoria and other regulatory restrictions in some jurisdictions that are impeding access to future national gas supplies—a position that has also recently been advocated by the Australian Competition and Consumer Commission.[1]

Jemena encourages the Review and COAG Energy Council to explore the development of a nationally consistent, technology neutral energy and climate policy that incentivises greenhouse gas emission reductions at least cost and facilitates broad-based investment decisions. Recent modelling by Jacobs on behalf of Energy Networks Australia (**ENA**) found that under a technology neutral policy option household electricity bills would be $216 per annum lower than the 'business as usual' option for meeting Australia's emissions abatement targets.[2]

While the Commonwealth Renewable Energy Target (**RET**) is not a technology neutral policy design, Jemena understands and supports the need for maintaining the target at current levels. The ongoing speculation regarding the future of the RET over recent years has had a detrimental effect on investor certainty in the renewable energy sector and broader energy markets, so the interests of customers and the market in general are not well served by fundamentally changing the scheme.

By maintaining the RET at current levels, then developing a broader national technology neutral climate policy, an effective transition to a diverse and active market for all technologies and fuel sources can be achieved over time.

Efficient, equitable and transparent price signals

Jemena supports the need for a careful and methodical review of NEM frameworks and mechanisms, as well as jurisdictional instruments, to identify and assess policy and regulation changes to ensure price signals in the NEM work together to facilitate an efficient response to addressing system security and affordability objectives.

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1 Australian Compeitition and Consumer Commission, *Inquiry into the east coast gas market*, April 2016, available at: https://www.accc.gov.au/system/files/1074_Gas%20enquiry%20report_FA_21April.pdf

2 Energy Networks Association, Enabling Australia's cleaner energy transition, August 2016, available at: http://www.energynetworks.com.au/sites/default/files/enabling_australias_clean_energy_transition_august_2016_1.pdf

Jemena also supports the introduction of a separate but complementary market-based scheme to ensure there is a pricing signal to achieve cost-effective emissions reduction.

The paper rightly identifies the greater need for deploying ancillary services into the wholesale market to facilitate system security. However it is important to first understand the amount of ancillary capacity readily available and the likely price points at which current and future technologies are likely to be available at. Jemena encourages the Review to undertake a market study to inform the development of fit-for-purpose policy and market design options, and avoid the potential for significant electricity price increases if sufficient ancillary services are not available or are available but at a price that many consumers cannot bear.

While there is much to learn about the benefit of enhanced ancillary services markets, the benefits of improved pricing signals via electricity tariff reform have been well documented and the subject of considerable engagement in recent years.

The ENA has estimated that over $16 billion in network tariff savings can be achieved by 2050 through improving network tariff designs and establishing frameworks for networks to buy grid optimisation services from customers with distributed energy resources.[3] In helping to reduce to peak demand, tariff reform can also reduce pressure on generation capacity.

With this in mind Jemena, together with other Victorian electricity network businesses, has proactively supported and invested in the reform of electricity network tariffs. For example, our Jemena Electricity Network (JEN), in north-west Melbourne, has recently introduced a new opt-in monthly demand tariff for mass-market customers.

Implementing a demand-based component to tariffs not only creates a price signal to reduce the need for expensive infrastructure to meet peak demand but also to encourage better integration of batteries, as these and other storage technologies become more affordable and smarter over time.

Jemena's monthly demand tariff design was informed by extensive stakeholder engagement, involving everyday residential and small business customers as well as pricing experts from consumer advocacy groups, energy retailers and other key stakeholders.

While evidence-based research indicates that take-up of opt-in schemes are likely to be quite low (see our response to question 4.4.1), Jemena remains hopeful that a transition to mandatory or opt-out demand tariffs will occur after the Victorian Government considers this matter in the lead up to the next Victorian electricity network price determinations in 2020.

Improved incentives for innovation

Addressing the energy trilemma in recognition of the growing sophistication and intensity of Australia's energy needs will require significant further investment. Innovation incentives are an important part of the right policy settings to encourage and facilitate this investment.

Innovation incentives are crucial to The UK Office of Gas and Electricity Markets provides a suite of innovation incentives through its RIIO framework (innovation is the second 'I" in RIIO) for regulating energy networks. These incentives include a Network Innovation Allowance (received by each RIIO network licensee), Network Innovation Competitions where companies compete for funding for research and technology projects, and A Low Carbon Networks Fund which provides money for projects by distribution businesses to trail new technologies and other innovations that can aid the UK's transition to a low carbon economy.

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[3] Energy Networks Australia, *Electricity Network Transformation Roadmap: key concepts report*, December 2016, available at: http://www.energynetworks.com.au/sites/default/files/key_concepts_report_2016_final.pdf

With the longer term in mind, Jemena is also currently exploring trials in low carbon energy technologies such as power-to-gas (P2G) technology in NSW. P2G technology has the potential to provide large-scale energy storage services in the future, by converting surplus renewable power generation into hydrogen that can be stored for use in gas distribution networks. P2G is discussed further in our response to question 1.2.

Innovation incentives such as funding from the Australian Renewable Energy Agency (**ARENA**) may be a potential avenue to enable the commercialisation of these technologies given it would facilitate improved integration of renewables into the energy grid. However it is as yet unclear whether these technologies will be facilitated within the ARENA mandate. Since ARENA focuses on renewables, its mandate for providing funding is narrower than RIIO's.

Broader energy innovation would be better enabled by incentives that are more technology neutral. A shift back towards ARENA's original role providing more grants-based funding (rather than transitioning to a debt and equity model) is also needed, in order to provide incentives for innovations that may have a longer term benefit rather than generating immediate financial returns.

Meaningful consumer engagement

It is critical that government, industry and key market bodies step up their engagement with energy consumers and other key stakeholders to build their capacity to understand, inform the design of, and have greater confidence in, key energy and climate policy reforms that substantively address the energy trilemma.

Jemena has experience with proactively engaging a representative selection of JEN residential and small business customers to build their capacity to understand potential trade-offs between network reliability of supply and other issues such as network tariff changes.[4] Jemena undertook this engagement to inform our last electricity price review submission to the Australian Energy Regulator and the development of the JEN Tariff Structures Statement.

Jemena remains proud that this customer engagement approach was recognised by leading customer advocates, such as the Consumer Utilities Advocacy Centre (now known as the Consumer Policy Research Centre), as meaningful, genuine and industry leading. However Jemena remains under no illusion that we, and our sector in general, has much more to learn about how to engage most effectively with our customers on the key issues of most significance to them.

Jemena believes that the engagement approach we used at the local distribution network level may have some potential to be applied more broadly to engage mass-market consumers to the setting of NEM reliability standards. Jemena would be happy to discuss our experiences with the Review team if there is interest in pursuing complementary consumer engagement measures.

[4] For further details see: http://jemena.com.au/documents/price-reviews/electricity/our-regulatory-proposal/attachment-04-02-newgate-jen-community-and-small-b.aspx

2. RESPONSES TO CONSULTATION QUESTIONS

1 Technology is transforming the electricity sector

1.1 How do we anticipate the impacts, influences and limitations of new technologies on system operations, and address these ahead of time?

The timely pursuit of trials and research can assist by providing an evidence base to project the impacts, influences and limitations of new technologies on system operations. Energy distribution businesses are already pursuing a wide range of new technology trials funded by the Demand Management Incentive Scheme and other funding sources. However with the scale of technology developments occurring in energy markets the ability to undertake timely trials and research can benefit from enhanced incentives and funding.

The UK Office of Gas and Electricity Markets' Network Innovation Competitions and Low Carbon Networks Fund are examples of incentives and funding to drive greater innovation, trials and research in the energy network sector.

1.2 How can innovation in electricity generation, distribution and consumption improve services and reduce costs?

There are a range of ways for innovation to play a role in electricity generation, distribution and consumption to improve services and reduce costs. The ENA submission to this Review provides a useful industry summary of these. In addition, the ENA-CSIRO Electricity Network Transformation Roadmap provides numerous examples of potentially beneficial innovations and technology. One key example is the capacity for networks to act as platforms to match supply with demand and enable trade, by linking customer owned generators and energy storage systems to one another.

Private ownership in the energy network sector has delivered innovation and service improvements, including reliability performance, while reducing costs for energy consumers. Recent analysis by Oakley Greenwood has found that the network charge for a typical residential consumer has reduced in real terms by 14.3 per cent since the privatisation of Victorian electricity networks in the mid-1990s. Over the same period Victorian network charges decreased from accounting for on average 42.7 per cent to 25.4 per cent of the total electricity bill.[5]

While reducing costs, Victorian electricity network businesses have also improved network reliability over this period. For example, Jemena has significantly improved our network reliability—see table 1 below. A network-wide rollout of smart meters, along with innovative web portals to assist customers better manage and source their energy has also been delivered in recent years.

[5] Oakley Greenwood, *Causes of changes in electricity bill changes in Victoria, 1995 to 2017*, Febru 2017

Table 1—Jemena's network reliability indicators: 1995 vs 2016[6]

Indicator	1995	2016
Unplanned System Average Interruption Duration Index	133 minutes	58 minutes
Unplanned System Average Interruption Frequency Index	1.84	0.94

As the Australian energy sector increasingly embraces and invests in renewable energy generation, the lack of adequate large-scale storage for surplus renewable energy has been noted as a potential barrier to its ability to meet the higher proportions of energy generation to satisfy Australia's growing energy demands and climate change commitments. With the longer term in mind, Jemena is also currently exploring the potential for trialling hydrogen, biogas and other low emissions gas technologies in New South Wales.

One of these technologies is P2G—the conversion of electrical power into a gaseous energy carrier (such as hydrogen or methane), commonly applying electrolyser technology. Hydrogen can be produced from surplus renewable energy generation by a process of electrolysis. The hydrogen produced can then be stored in already established natural gas networks for later use. Existing network infrastructure can be utilised by linking existing power and natural gas grids, allowing electricity to be held in reserve. This enables storage of significant amounts of power, which can be surplus renewable energy generation, to meet seasonal fluctuations in power demand and the provision of carbon-neutral fuels in the form of the resulting renewable energy source—hydrogen gas.

P2G technology is advancing quickly in Germany and elsewhere, and it is highly expected to be effective for a range of applications. While it has not been trialled to any significant degree as part of the renewable energy storage and distribution system in an Australian context, our industry is currently exploring its potential as a viable, long term storage distribution solution.

While the idea of separating water into its individual components of hydrogen and oxygen is not new, the coupling of the power grid with the natural gas storage network is. Currently, the bulk of the P2G installations throughout the world are based upon the conversion of renewable power to hydrogen, which is then either used in industrial processes directly for transport, or blended with traditional sources of natural gas and distributed as a blend through natural gas infrastructure. Policy stability and innovation incentives are crucial to bringing forward these innovations.

1.3 What other electricity innovations are you aware of that may impact the market in the future?

Please refer to the ENA submission.

2 Consumers are driving change

2.1 How do we ensure that consumers retain choice and control through the transition?

There needs to be a stronger focus on customer engagement across the energy industry to enable enhanced customer trust and industry understanding of increasingly diverse customer needs and preferences. Information gathered through this engagement can help inform the design of products as well as customer service strategies across the industry during the critical transition period.

[6] Unplanned—an outage duration of more than 1 minute.
System Average Interruption Duration Index—average duration in minutes that a customer in the Jemena Electricity Network was without power due to unplanned events in the year.
Unplanned System Average Interruption Frequency Index—average number of unplanned supply interruptions that a customer in the Jemena Electricity Network experienced in the year.

Stewarding a responsive and competitive energy market is also crucial, which is best served by technology neutral policy settings, so that customer choice is maximised.

Jemena supports the findings of the ENA-CSIRO Electricity Network Transformation Roadmap, which provides the following guidance to enable a customer-focused electricity sector:

- enhanced relationships between networks and customers, enabled by data analytics and a greater understanding of customer needs
- networks expanding information services to enhance interactions with customers
- networks playing a key role in the delivery and connection of an expanding range of products and services to customers.

2.2 How do we best meet the needs of vulnerable and hardship consumers?

Vulnerable and hardship consumers, due to the higher costs of investing in the associated technologies, tend to be more passive in seeking distributed energy resources. In seeking to understand the impact of energy policies on different customers, including passive consumers, the CSIRO examined the impact of electricity bills on a number of categories of households, and broken down by active and passive households. The analysis found that, compared to the counterfactual, under a whole 'Roadmap' scenario (key pillars of which are more cost-reflective pricing and better innovation incentives):

- all the analysed categories of households are better off, whether they are active or passive; and
- the gap between active and passive customers narrowed across the households by between 30 to 66 per cent.

Jemena is also a proud partner of UnitingCare Kildonan's CareRing program which aims to support and empower vulnerable customers, providing a single point of contact to Kildonan trained staff to help address the various issues facing households including energy literacy, financial management, mental health and unemployment. A clear benefit of the CareRing program is that it takes a holistic approach to addressing hardship and vulnerability, well beyond just energy bills. The programme allows partners such as Jemena (whose customer service staff are trained to identify potential CareRing referrals) to refer vulnerable customers to CareRing and better address their needs.

While CareRing currently has a number of corporate partners, increased membership by energy utilities, particularly retailers (who often have more direct engagement with customers) would allow the energy sector to better engage and meet the needs of vulnerable and hardship households and individuals.

2.3 How do we ensure the needs of large-scale industrial consumers are met?

Jemena understands that service reliability at an economically efficient price is critical to keeping Australia's large industrial businesses competitive. Jemena will continue to engage with our large-scale industrial customers to ensure that we are delivering services they want now and into the future.

2.4 How can price structures be made more equitable when consumers are making different demands on the grid according to their electricity use and their investments behind the meter?

Refer to the discussion on the principle of efficient, equitable and transparent price signals above and the ENA submission.

2.5 How do we ensure data sharing benefits and privacy are appropriately balanced?

With the prospect of metering contestability in the future it will be critically important to ensure that electricity distribution businesses have access to the consumption and other data needed to plan and optimise the

network. Data sharing could occur through a process that is facilitated and overseen by a central body (e.g. the Australian Energy Market Operator) to ensure that the data is secure and anonymised.

3 The transition to a low emissions economy is underway

3.1 What role should the electricity sector play in meeting Australia's greenhouse gas reduction targets?

The electricity sector is a contributor to the production greenhouse gases and therefore should play a proportionate role that is shared across the broader economy.

3.2 What is the role for natural gas in reducing greenhouse gas emissions in the electricity sector?

Relative to coal fired electricity, natural gas provides a lower emission intensity option, both in terms of its direct use as an energy sources and its use to generate electricity, and is a natural partner to the increased penetration of large-scale renewables. Households switching reliance away from electricity from the grid to gas can result in a reduction in greenhouse gas emissions as well as savings on household bills. Gas networks and infrastructure is also well placed to help to integrate and support renewables and other energy technology, including P2G (see response to 1.2).

Modelling by the Australian Energy Market Operator and Jacobs shows that the level of gas consumption will remain largely unchanged for households and industry out to 2030. However, gas consumption for electricity generation is projected to increase as Australia works towards reaching its emission reduction targets. The Jacobs study found that gas used in electricity generation will be required to increase fourfold to reach this abatement outcome. Given this and international demand for Australian gas, optimised policy and regulatory settings will help enable the necessary gas supply and that Australia can make use of its vast gas reserves.

The key roles of gas in reducing greenhouse gas emissions is set out in further detail in 'Australia's Bright Gas Future', a joint report by the Australian Pipelines and Gas Association, Australian Petroleum Production & Exploration Association, and ENA.

3.3 What are the barriers to investment in the electricity sector?

Key barriers from a Jemena perspective include:

- climate and energy policy uncertainty, and the lack of a coherent national framework
- gas moratoria and other restrictions on supply development
- energy and climate policies that are not technology neutral
- heightened regulatory uncertainty and risk—which can arise, for example, if reforms to the limited merits review regime are not carefully designed, potentially leading to underinvestment in energy networks and heightening energy security risks.

While the above barriers are the highest priority from a Jemena perspective, we also support other relevant barriers raised in the ENA submission.

3.4 What are the key elements of an emissions reduction policy to support investor confidence and a transition to a low emissions system?

The key elements of an emissions reduction policy are:

- Technology neutral
- Emissions reduction effort proportionally shared across the energy sector and broader economy

- A market-based framework that is designed to endure over the long term
- Emissions reduction targets reviewed periodically reviewed every five years within the broader framework of the COP21 Paris agreement.

3.5 What is the role for low emissions coal technologies, such as ultra-supercritical combustion?

Jemena does not have a view on this issue.

4 Variable renewable electricity generators, such as wind and solar PV, can be effectively integrated into the system

4.1 What immediate actions could be taken to reduce the emerging risks around grid security and reliability with respect to frequency control, reduced system strength, or distributed energy resources?

Please refer to the ENA submission.

4.2 Should the level of variable renewable electricity generation be curtailed in each region until new measures to ensure grid security are implemented?

Jemena does not support imposing a cap on renewable generation in the electricity market given we are not aware of evidence to support what the curtailment measure should be defined to be in each region.

Similarly, Jemena does not support the rushing ahead with the imposition of ambitious, yet arbitrary, jurisdictional renewable targets, when the energy security implications of these targets have not been fully considered and understood.

There is a need for nationally consistent emissions reduction policies rather than technology specific interventions at multiple levels of government.

4.3 Is there a need to introduce new planning and technical frameworks to complement current market operations?

Please see the ENA submission.

4.3.1 Should there be new rules for generator connection and disconnections?

Jemena does not believe new rules for generator connection and disconnections are necessary.

4.3.2 Should all generators be required to provide system security services or should such services continue to be procured separately by the power system operator?
Jemena supports the ENA's views on this matter

Jemena does not have views on this.

4.4 What role can new technologies located on consumers' premises have in improving energy security and reliability outcomes?

Jemena believes they have a strong role to play. For example, according to the modelling done for the ENA-CSIRO Electricity Network Transformation Roadmap, up to 50 per cent of Australia's electricity supply could be provided by distributed, privately owned generators by 2050. However, technologies on consumer premises will have to be integrated into the network systems if they are to be relied upon to improve energy security.

Jemena supports the views on this expressed in the ENA submission.

4.4.1 How can the regulatory framework best enable and incentivise the efficient orchestration of distributed energy resources?

The regulatory framework needs to be adaptive to emerging technologies and the changing energy sector more broadly so as to create unnecessary barriers entry for technologies and innovations that could otherwise aid the efficient orchestration of distributed energy resources and help address the energy trilemma more broadly.

For example, in Victoria there are regulatory restrictions preventing wider take-up of cost reflective pricing. Research has found that customers are four times more likely to use a cost reflective tariff under an 'opt-out' arrangement than if customers have to opt-in.[7] The restriction to opt-in schemes, in combination with currently lower than optimal customer knowledge of such tariffs and their potential benefits, may be impinging on the full realisation of the benefits of cost reflective tariffs. See our response to question 6.3 for further details .

Jemena supports the views put forward in the ENA submission.

4.5 What other non-market focus areas, such as cybersecurity, are priorities for power system security?

Please see the ENA submission.

4.6 How could high speed communications and sensor technology be deployed to better detect and mitigate grid problems?

Please see the ENA submission.

4.7 Should the rules for AEMO to elevate a situation from non-credible to credible be revised?

Please see the ENA submission.

5 Market design can support security and reliability

5.1 Are the reliability settings in the NEM adequate?

JEN directly engaged a representative group of customers in 2014 and 2015 to inform our 2016 to 2020 price review submission to the Australian Energy Regulator and the JEN reliability performance was considered adequate.

There needs to be regular engagement with consumers on this issue given that customer expectations can change. For example, following major blackouts and supply uncertainty/curtailment in South Australia, Tasmania and other affected regions, it is likely that customers in these parts of the NEM will now have different expectations regarding reliability and supply security. Thus it is important that there is regular engagement with these and other customers to better understand any changes in their expectations and the implications of any responses to address energy security issues.

5.2 Is liquidity in the forward contract market for electricity adequate for the needs of commercial and industrial consumers and, if not, what can be done?

[7] Ahmad Faruqui, Ryan Hledik and Neil Lessem, 'Smart by Default', *Public Utilities Fortnightly*, August 2014, p.25

Jemena does not have direct insights on this issue.

5.3 Are commercial and industrial users experiencing difficulties in obtaining quotes for supply?

Jemena does not have direct insights on this issue.

5.4 What impact will an increasing level of renewable generation have on the forward contract market and what new products might be required?

Jemena does not have direct insights on this issue.

5.5 Rule changes are in process to make the bid interval and the settlement interval the same, both equal to 5 minutes. Are there reasons to set them to a longer or shorter duration?

Jemena understands that the Australian Energy Market Commission is currently considering this issue. The potential alignment of bid and settlement intervals at five minutes needs careful consideration, given it is possible such changes could make it unviable for some existing gas peaking generators to bid into the market and could place upward pressure, and additional volatility, on wholesale electricity prices.

5.6 What additional system security services such as inertia, as is currently being considered by the AEMC, should be procured through a market mechanism?

Please see the ENA submission.

5.6.1 How can system security services be used as 'bankable' revenue over a sufficient period of time to allow project finance to be forthcoming?

Jemena does not have insights into this issue.

5.6.2 How will generators and retailers mitigate price risk in such a market?

Jemena does not have insights into this issue.

6 Prices have risen substantially in the last five years

6.1 What additional mechanisms, if any, could be implemented to improve the supply of natural gas for electricity generation?

Removing/alleviating gas supply moratoria and other regulatory restrictions in some states and territories.

6.2 What are the alternatives to building network infrastructure to service peak demand?

Jemena strongly supports the promotion and subsequent widespread use of cost reflective tariffs and believes they will have a key role to play in network demand management. Demand for electricity is theoretically somewhat price elastic and most customers are responsive to price signals. As such, cost reflective pricing of electricity, in combination with means for customer monitoring of usage such as smart meters, can help to shift customer behaviour and therefore reduce peak demand.

Greater uptake of solar PV, in combination with energy storage as it becomes more affordable, can also help to further alleviate peak demand for grid electricity and therefore help reduce the burden and costs for building and servicing the associated infrastructure.

Smarter energy use (e.g. cycling air conditioning), as well as improved availability and price of technology to support this, can also help reduce peak demand.

Households and businesses switching from electricity to gas appliances (for example emerging technologies such as gas powered air conditioning, GPAC) can help to alleviate additional pressure on electricity network peak demand. GPAC is already used in Australia by a number of commercial and industrial operations including offices and educational facilities. According to the 'Australia's Bright Gas Future' report, owners of very large houses or small businesses with a cooling load of over 14 kW may also benefit.

The millions of users of household gas help minimise peak loads of electricity demand that would otherwise require extensive, and expensive, additional electricity network upgrades.

6.3 What are the benefits of cost reflective prices, and could the benefits be achieved by other means?

Tariff reform towards cost reflective prices is essential to enable informed customer consumption, investment decisions and new technology. Cost reflective pricing, in concert with technology, customer education and the right policy and regulatory settings, can:

- empower customers with greater choice and transparency and help them reduce their bills.
  - Energeia has estimated that cost reflective prices could save customers up to $17.7 billion in present value terms by 2034.[8]
- help to shift energy consumption away from peak periods and ease the burden on infrastructure to service this peak demand and its associated costs.
- assist the orchestration and take-up of distributed energy resources for example by providing those with solar PV with information on optimum times and prices to on-sell their generated power.

Jemena strongly supports cost reflective pricing and is taking a leading role in enabling its implementation. For example, our JEN has introduced a new demand tariff (currently opt-in only) for small customers and will continue to work to advocate for policy and regulatory settings to enable the success of cost reflective pricing.

6.4 How can we ensure that competitive retail markets are working?

- Continued regular monitoring of customer satisfaction and insights, such as through Energy Consumers Australia's biannual consumer survey.
- Greater collaboration across industry and government to enable improved customer energy literacy and understanding.
- Network tariff transparency on customer bills so that retailers only compete on the components they manage.
- The use and promotion of bill comparator websites.
- Measures to reduce community confusion around bills and bill comparisons, for example prices pre- and post-discounts.
- The *Review of electricity and gas retail markets in Victoria* should offer additional insights regarding retail market improvements.

6.4.1 What outcomes of competition should we monitor?

[8] Energeia, *Network pricing and enabling metering analysis*, November 2014, available at: http://www.energynetworks.com.au/sites/default/files/energeia_network-pricing-and-enabling-metering-analysis_november-2014_1.pdf

Potential indicators of competition to monitor may include:

- average prices, both in terms of overall utility bills and component costs of the bill
- range and choice of providers, products and tariffs
- customer satisfaction with competition/choice (e.g. through Energy Consumers Australia's survey).

Individual indicators of competition should of course not be taken to necessarily be concrete evidence of competition or a lack thereof. Rather, monitoring and analysis of these and other indicators of competition should be done holistically with consideration of other factors and indicators.

7 Energy market governance is critical

7.1 Is there a need for greater whole-of-system advice and planning in Australia's energy markets?

The preliminary report suggests that there may be an issue with a lack of whole of sector coordination of advice, and cites the low public profile of current regulators at a time when energy issues have achieved significant public prominence. Jemena does not believe that a wholesale restructuring of energy sector governance is required to improve coordination of energy regulators.

Jemena is confident that the existing institutions already have the capability to learn from these events and engage with market participants and other key stakeholders to access the advice needed to reform the sector. Maintaining the existing institutions (such as the AEMC and the AER) and their independence is a crucial to enabling investor confidence. However, more effort is needed to engage the public and political stakeholders to steward the implementation of important reform processes, and perhaps this is best done by building the resourcing and capability of AEMC within the existing governance structure.

Over and above this, the quality of the advice to COAG Energy Council seems to have been reasonably sound, and the Energy Council has rightly sought independent advice on contentious issues as they arise (e.g. most recently the Vertigan examination of the current test for the regulation of gas pipelines and this Review). The key issue to overcome is achieving enough political and public goodwill to enable the advice to be implemented in reforms, rather than restructuring energy sector governance.

7.1.1 If so, what are the most appropriate governance arrangement to support whole-of-system advice and planning?

Please see the ENA submission.

7.1.2 Do the roles of ministers and energy market institutions need further clarification?

Please see the ENA submission.

7.2 What lessons can be drawn from governance and regulation of other markets that would help inform the review?

Please see the ENA submission.

7.3 How should the governance of the NEM be structured to ensure transparency, accountability and effective management across the electricity supply chain?

Please see the ENA submission.

7.4 Are there sufficient outcome statistics for regulators and policy makers to assess the performance of the system?

Please see the ENA submission.

7.5 What governance measures are required to support the integration of energy and emissions reduction policies?

Please see the ENA submission.

7.5.1 Should the AEMA be amended?

Please see the ENA submission.

7.5.2 Should the NEO be amended?

Jemena does not support the amendment of the NEO. Amendments to the NEO are likely to cause significant regulatory uncertainty and risk by introducing additional trade-offs that would be better accounted for in separate yet complementary policies (e.g emission reduction policy).

7.6 How can decision-making be appropriately expedited to keep up with the pace of change?

Please see the ENA submission.