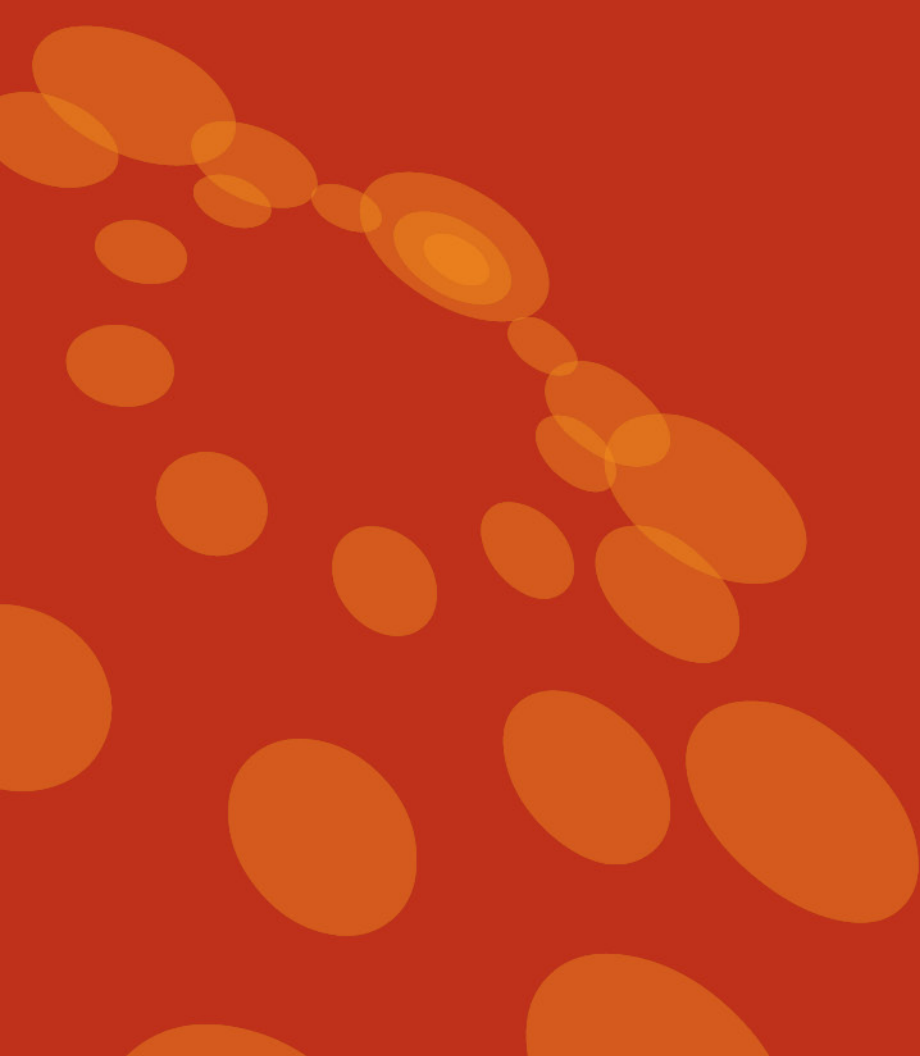




ENERGY WHITE PAPER: GREEN PAPER 2014

ENA response to the Green Paper



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ENA Responses to Energy White Paper – Green paper

ENA Response 1

The ENA supports Australian Government actions to streamline regulatory approvals, improve labour productivity and skills, create supply chain opportunities and indigenous employment, improve geoscience and promote exports.

Additionally, the ENA considers that:

- » The Australian Government, with States and Territories, should complete the current COAG Energy Council reform agenda while minimising policy reviews which add to uncertainty and risk increasing the cost of financing future network industry investment.
- » Enhance regulatory harmonisation through the Australian Energy Regulator (AER) assuming network regulatory functions across Western Australia and the Northern Territory.

ENA Response 2 (a)

The COAG Energy Council should develop an integrated road map for tariff reform to consolidate and refresh its current Power of Choice work program. The road map should include: a balanced approach to the regulation of advanced metering; a consumer education initiative; a national implementation framework for flexible pricing based on trigger events and consumption thresholds; refocussing customer hardship programs; and the deregulation of retail prices.

ENA Response 2 (b)

The Australian Government, together with the COAG Energy Council, should seek to achieve the adoption of the National Energy Customer Framework (NECF) in Queensland and Victoria on the targeted dates (Queensland 1 July 2015 and Victoria before 31 December 2015).

ENA Response 2 (c)

The Australian Government should seek to rationalise emission reduction schemes and ensure least cost abatement on a technology neutral basis.

As noted in response to Section 4, the Australian Government should prioritise the reform of the Small -scale Renewable Energy Scheme which is likely to increase gas bills to consumers by \$50 per annum by 2034.

ENA Response 3

The Australian Government, together with the COAG Energy Council, should support gas market development and a level playing field for gas, through removal of unnecessary barriers to new gas supply, developing measures to promote greater transparency in the upstream gas market and to ensure that energy schemes designed to reduce emissions are fuel neutral.

ENA supports an Australian Competition and Consumer Commission (ACCC) Inquiry or Productivity Commission Inquiry that may review any potential barriers to competition in upstream gas supply.

ENA Response 4 (a)

ENA supports the abolition of the Small-scale Renewable Energy Scheme (SRES) which is no longer required to support market entry of small scale renewable technologies.

If the SRES is not abolished, it should at least be made technologically neutral. This could be achieved through the removal of those displacement technologies from the scheme which have been selectively included (such as solar hot water systems or heat pumps).

ENA Response 4 (b)

The Australian Government along with States and Territories should continue to provide support for research and development aimed at developing solutions to changing utilisation patterns and the challenges facing the transmission and distribution of energy for all Australians.

1. ENERGY NETWORKS ASSOCIATION

The Energy Networks Association (ENA) is the national industry association representing the businesses operating Australia's electricity transmission and distribution and gas distribution networks. Member businesses provide energy to virtually every household and business in Australia. ENA members own assets valued at over \$100 billion in energy network infrastructure.

This submission by the ENA is in response to the Australian Government's *Energy White Paper – Green Paper 2014* (the Energy Green Paper)

ENA appreciates the opportunity to contribute to the policy process, which has the potential to revitalise the national energy market reform agenda, foster an efficient, customer-focussed energy sector and minimise regulatory burden, in the interests of energy consumers.

Should you wish to discuss any aspect of this submission further, please contact John Bradley, Chief Executive Officer.

2. ENERGY WHITE PAPER – ISSUES PAPER

As highlighted in its submission to the Energy White Paper – Issues Paper in February 2014, the ENA encouraged the Australian Government to consider the following five actions:

1. **Deliver the current national network regulatory reform program** to improve incentives and engage consumers, without policy reviews which add uncertainty to the cost of financing future network industry investment.
2. **Enhance the COAG Energy Council's role in managing energy market reform**, through increasing the frequency of COAG Energy Council's meetings, enhancing peak industry and consumer engagement and publishing a regular reform road map.
3. **Achieve a truly national economic regulator for electricity and gas networks and reduce the regulatory burden**, while maintaining the integrity of Australia's independent energy regulation and rule making process.
4. **Implement three key electricity market reform priorities:**

- a. an **integrated roadmap for tariff reform** to support the fair and efficient transition to cost-reflective retail pricing;
 - b. the **acceleration of proposed demand side participation measures in a logical, prioritised sequence**; and
 - c. the proper **resourcing of national measures of the value of customer reliability** (for use in all jurisdictions).
5. **Support market development and a level playing field for gas**, through removal of unnecessary barriers to new gas supply, developing measures to promote greater transparency in the gas market and to ensure that energy schemes designed to reduce emissions are fuel neutral.

ENA welcomes the Green Paper's focus on a number of these priorities. This submission highlights areas for further consideration and responds specifically to the structure of the Australian Government's four Energy Policy Goals.

3. ATTRACTING ENERGY RESOURCES INVESTMENT

Streamlining regulatory processes

Chapter 1 of the Energy Green Paper is focussed on attracting energy resources investment and the Green Paper rightly recognises an energy resources investment pipeline of over \$340 billion¹. While the investment environment for energy supply chain infrastructure is partly addressed in Chapters 2 and 4, it is important to recognise that the Australian community has an equally significant interest in ensuring an efficient investment environment for future electricity and gas supply chain investment. For instance, the CSIRO Future Grid Forum project recently estimated the need for cumulative expenditure in electricity supply chain infrastructure (including distributed generation and energy resources, centralised generation and network infrastructure) of \$850 to \$1,000 billion over the period to 2050. Energy consumers have a direct interest in an integrated policy and regulatory environment which

¹Department of Industry, Energy White Paper – Green Paper 2014, Figure 3, p.8.

permits efficient capital financing of long lived energy investments.

The ENA welcomes the recognition in the Green Paper that a stable and predictable regulatory environment is crucial to delivering capital investment in the energy market.

Energy network infrastructure development typically relies on long term investment and few capital allocation decisions in our economy are made based on longer time horizons. The continued capacity of energy networks to efficiently access capital required to make long-term investments in energy infrastructure is a critical benefit to existing and future energy consumers. For example, a modest 10 per cent increase to the risk premium on the debt and equity component of the required cost of capital would require an increase of over \$300 million per year to electricity network and gas distribution charges. It is important to maintain industry and investor confidence in the integrity and stability of the regulatory regime in order to ensure new and ongoing investment in networks infrastructure needed to deliver safe and reliable energy services to the community.

Energy networks must compete for investment with other infrastructure projects both domestically and internationally. International investors routinely place great weight on regulatory stability and predictability when they conduct assessments of investments options.² To date, the Australia's regulatory framework has been recognised as transparent and well-understood by potential investors.

The ENA considers that the potential for further reviews can negatively impact regulatory stability. The ENA notes that a number of overlapping comprehensive reviews of Australia's network regulations were completed over 2012 and 2013.³ This is highlighted in Figure 1 below.

The first determinations are yet to be made under the amended regulatory framework which features a range of new measures designed to enhance the capacity of the AER

² Standard & Poors 'Why UK Utilities' Regulatory Framework Merit A "Strong" Regulatory Advantage Assessment, 11 December 2013, p.2 and see also Edison Electric Institute *Disruptive Challenges: Financial Implications and Strategic Responses to a Changing Retail Electric Business*, January 2013, p.8.

³ AEMC, Rule Change, Economic Regulation of Network Service Providers, November 2012. Productivity Commission, Public Inquiry, Electricity Network Regulation, June 2013. Senate Select Committee, Inquiry into Electricity Prices, November 2012.

to assess and test proposed future expenditure, and potentially disallow recovery on past capital investment where forecast expenditure has been exceeded.

The ENA supports the establishment of a truly national energy regulator. This policy objective can be achieved by movement of remaining network regulatory functions in WA and Northern Territory to the AER. By ensuring that the same regulatory bodies and regulatory rules cover energy networks across all of Australia's States and Territories, the Australian Government can further promote investment certainty and remove potential investment distortions between the Eastern States, Northern Territory and Western Australia. These outcomes are consistent with clause 2.1 of the *Australian Energy Market Agreement* and should be addressed as a matter of priority.

Strategic directions for network regulation

Energy network businesses also recognise the strategic consideration being given to changes in the market, competitive and technological context of energy service delivery as part of the COAG Energy Council's Network Regulation and Demand project.

The network sector has welcomed ongoing engagement with this COAG Energy Council process. Evolving market, competitive and technological circumstances will have implications over the medium term for the nature, scope and reach of the energy regulatory framework. In particular, as a range of network services become potentially contestable or competitive, it is critical that the regulatory framework does not represent an unintended barrier to service innovation and delivery by network businesses, and that regulatory arrangements do not have the practical impact of limiting consumers' access to efficient, valued services.

The ENA has recently released a policy paper *Evolving a Future Ready Regulatory Framework*, discussing some of these potential implications. This policy paper is attached to this response.

ENA Response 1

The ENA supports Australian Government actions to streamline regulatory approvals, improve labour productivity and skills, create supply chain opportunities and indigenous employment, improve geoscience and promote exports.

Additionally, the ENA considers that the Australian Government, with States and Territories, should:

- » complete the current COAG Energy Council's reform agenda while minimising policy reviews which add to uncertainty and risk increasing to the cost of financing future network industry investment.
- » enhance regulatory harmonisation through the AER assuming network regulatory functions across Western Australia and the Northern Territory.

REGULATORY REVIEWS OVER 2010-2014

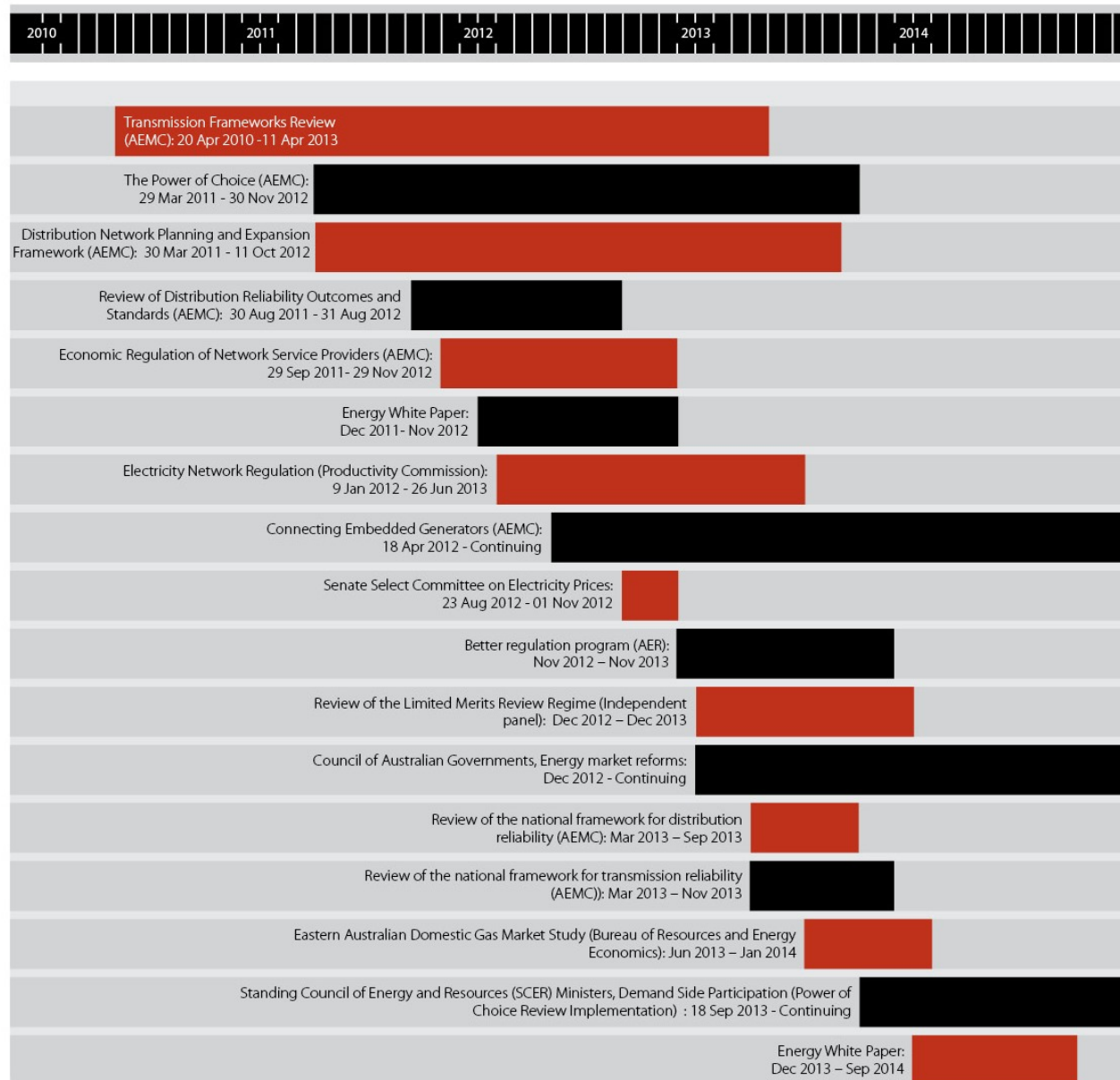


Figure 1: Recent Regulatory Policy Reviews in the Australian Energy Networks Sector

4. ELECTRICITY PRICES

Increase the range of tariff choices

The Australian Government is seeking feedback on pricing reforms "...so that users pay the real cost of electricity based on the time at which they use it, as well as their fair share of the costs of poles and wires". The Green Paper states that the Australian Government is waiting for an Australian Energy Market Commission's (AEMC) *Distribution Network Pricing Arrangements Rule change*⁴.

ENA supports a comprehensive framework for network tariff and enabling metering reforms that is broader than the AEMC's Distribution Network Pricing Arrangements Rule change (the Rule change).

This is because the main barriers to network tariff reform are not within pricing principles or the *National Electricity Rules* (NER). The most significant issues will benefit from collaborative responses by multiple parties including networks, governments, retailers and consumer representatives. The key barriers to network tariff reform currently include: the relatively low availability of interval or smart meters (70 per cent of meters remain simple accumulation meters); jurisdictional constraints; the need to address customer hardship schemes; and the need for consumer information and decision-making tools. A critical issue in securing the benefits of network tariff reform will be the extent to which network price signals are reflected or "passed-through" into the retail tariffs paid by customers.

Potential benefits from the Rule change

The AEMC Rule change process has been an important opportunity to advance the case for network tariff reform. ENA has welcomed the AEMC support for network pricing reform that results in *"network prices that better reflect the costs of providing network services to individual consumers"* as this will allow *"consumers to make more informed decisions about how they want to use energy services and the technologies they invest in to help manage their use."*⁵

While the main barriers to network tariff reform do not lie within the NER, the ENA welcomes a number of the AEMC's proposed changes put forward as part of the Draft Rule

Determination. The changes to the NER that ENA considers will make a positive contribution to the implementation of network tariff reform are:

- » greater engagement between networks and stakeholders in the development of network tariffs;
- » greater transparency of network tariff structures and indicative pricing levels to apply over a regulatory period in a tariff structure statement (TSS); and
- » earlier finalisation of network prices in the annual pricing proposal process.

In relation to the regulatory framework governing network pricing, the ENA considers that networks should have the flexibility to design appropriate, more cost-reflective network tariffs in consultation with their customers, stakeholders and with the oversight of the regulator.

Scope for distribution network tariff reform

Network tariff reform will provide customers with efficient incentives to make informed choices in their use and generation of electricity. Network tariffs that signal future costs and recover total efficient costs will benefit customers by putting downward pressure on network prices, will minimise unfair cross-subsidies as network uses become increasingly diverse and enable the successful integration of future step-changes in technology into the electricity grid.

In most jurisdictions almost all large industrial customers, and a significant proportion of commercial customers, receive network charges based on their electricity demand (kilowatts or kilo-volt-amperes), rather than consumption (kilowatt hours). In addition, some networks have introduced critical peak pricing (an energy based tariff) for commercial and industrial users, for example AusNet Services introduced a voluntary critical peak tariff in 2011.

For small customers, i.e. residential and businesses below 160 MWh per year:

- » where customers have a simple accumulation meter, reduced reliance on volumetric (consumption) charging has been achieved by gradually increasing the fixed charge component of network tariffs; and
- » where customers have a meter that measures demand (an interval meter or smart meter):
 - time of use network tariffs have been made available in NSW, the ACT (where they have been the default tariff for new customers since 2010), Victoria and Queensland;

⁴ Department of Industry, Energy White Paper – Green Paper 2014, p.36

⁵ AEMC, Distribution Network Pricing Arrangements Rule change Draft Rule Determination, Executive summary, i

- a number of networks are in the process of progressively introducing demand charging for medium businesses, for example SA Power Networks has required all new customers requiring current transformer metering since 2010 to be on a cost-reflective network tariff.

Further network tariff reforms are being developed by network businesses, in consultation with their customers, as part of the regulatory proposals being considered for the next regulatory control period.

Electricity pricing reform will be essential to keep downward pressure on electricity costs, ensure fairness and that the electricity grid can accommodate major changes in use.

The future direction for network tariffs is developing within an environment of dynamic technological change. Customers have the opportunity to fundamentally change their load profile and the nature of their reliance on the electricity grid:

- » as the costs of generation and storage technology become more economic, compared with electricity grid supply; and
- » as rising living standards increase the use of energy intensive appliances in the home, including the use of electric vehicles as they potentially become economic in the future.

In this environment of increasingly diverse network uses among the same cohort of customers, network tariffs play a critical role in avoiding increasing cross-subsidies and signalling to customers the actual costs of their use of network services. This could involve both changes in tariff structures to more widespread use of demand tariffs and higher fixed charges, and potential for more geographic differences in network tariffs.

Retailer pass-through

A critical issue in securing the benefits of network tariff reform will be the extent to which network price signals are reflected or “passed – through” into the retail tariffs paid by customers. The outcomes sought by the AEMC proposed rule change are dependent on such a pass-through.

As recognised by the Productivity Commission:

“Cost-reflective network charges will have little effect on consumers if retailers do not have incentives to pass

*through at least some form of those time-based charges in their retail offers”.*⁶

The AEMC took the view in the Power of Choice Final Report and more recently in the Draft Rule Determination that retailers have an incentive to pass through network tariff structures⁷. However, the experience of networks to date is that retailers often do not fully pass through more cost-reflective network tariffs when they have been introduced.

This experience is borne out by research findings reported by KPMG in 2008 as part of its assessment of the benefits of smart meters and more recently by the Productivity Commission.

In its study KPMG determined that retailers could be reluctant to pass through price variability in tariffs, because of concerns about the complexity of tariff structures. It reported that when Ausgrid introduced a time of use network charge in 2009

*“...of customers with an external retailer, only an estimated half of these faced time of use tariffs from their retailer of choice.”*⁸

More recently the Productivity Commission found that a time of use network charge with significant variation in peak and off-peak periods is usually translated into much smaller price relativities at the retail level.

*“For example, in New South Wales, Origin Energy’s peak retail energy prices for residential customers in the Ausgrid network area are only around four times those of the off-peak rates (Origin Energy 2012). Accordingly, a ten-fold price differential at the network side was more than halved when expressed in retail prices.”*⁹

There are a number of contributing factors which may mitigate the incentive for retailers to pass through the network tariff, including retailer perception of the customer response to the network tariff signal and differentiation strategies in competitive markets. Additionally, retailers’ recovery of input costs on a volumetric basis, and the infrastructure of national billing systems and call centres, all may constrain the pass through of network tariff structures.

⁶ Productivity Commission, Electricity Network Regulatory Frameworks, Inquiry Report, Volume 2, p 494.

⁷ AEMC, Draft Rule Determination, Executive summary iii.

⁸ Productivity Commission, Electricity Network Regulatory Frameworks, Inquiry Report, Volume 2, p 496.

⁹ Productivity Commission, Electricity Network Regulatory Frameworks, Supplement to Inquiry Report, p. 7.

Given the different incentives faced by networks and retailers to pass through network tariff structures, the ENA and member businesses will work closely with retailers to ensure increased alignment of network and retail tariff structures in the interests of consumers.

Advanced metering

The Green Paper notes the AEMC is considering a rule change to support competitive metering services outside of Victoria, which is already exhibiting advances in development of advice to customers on their energy usage and utilisation of flexible tariffs to influence energy use. The Green Paper notes that competitive metering services are expected to encourage the metering needed for flexible tariffs, stimulate investment in advanced metering technology, and promote innovation in energy services¹⁰.

ENA supports a competitive, open and fair market for demand side services and a market driven rollout of smart meters. However, it will be equally critical that the new framework: maintains current network services supported by meters which benefit all customers; efficiently leverages existing investments; and ensures consumer protection measures are maintained or enhanced.

Smart metering can provide significant benefits to all customers when used in an integrated way in network operations. These include improvements to grid reliability and service from rapid and localised identification and rectification of faults and power outages; advanced warning of dangerous asset degradation (e.g. candling which could cause fires); targeted load management options to limit need for costly grid expansion; safe and speedy responses to customer requests to connect or disconnect supply relating to move in/move out.

Delivery of these services will be dependent upon:

- » ensuring that the market-led rollout of smart meters enables meter functionality sufficient to support delivery of network benefits;
- » the smart meter service model (including a Shared Market Protocol) delivers appropriate service delivery timeframes and continuity of service despite changes to parties responsible for metering and service delivery;
- » provision of a mechanism to ensure economic outcomes in pricing and terms of smart metering

¹⁰ Department of Industry, Energy White Paper – Green Paper 2014, p.29.

services offered in the proposed market. Light handed access regulation could ensure access to smart metering services is available to all parties including networks, at an efficient cost, to the benefit of all consumers; and

- » ensuring Victorian customers are able to receive the benefit of their investment in smart meters by ensuring these assets are not prematurely replaced.

ENA notes the range of reviews, rule changes and other activities currently underway arising from the AEMC power of choice review. ENA remains concerned that inter-related processes need significant coordination to achieve a coherent and effective outcome and implementation process. Some of the relevant reviews include: the AEMC reviews of open access and common communication standards; metering contestability and tariff reform; Australian Energy Market Operator reviews of smart metering minimum functionality specification and shared market protocol; Demand Response Mechanism and multiple trading relationships; and Department of Industry/Energy Market Reform Working Group consideration of third party regulation and improved consumer access to energy data.

ENA supports a Road Map for Tariff Reform which is an integrated package of five key measures (see Figure 2). These measures need to be addressed not only by networks but retailers, governments and energy institutions working

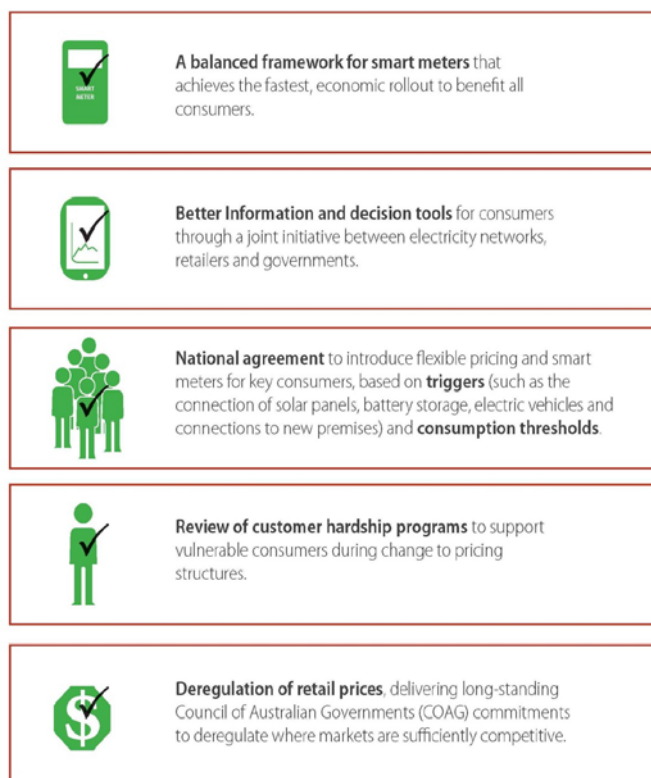


Figure 2: ENA Road Map for Tariff Reform

together in the interests of customers.

ENA Response 2 (a)

The COAG Energy Council should develop an integrated road map for tariff reform to consolidate and refresh the current Power of Choice work program. The road map should include: a balanced approach to the regulation of advanced metering; a consumer education initiative; a national implementation framework for flexible pricing based on trigger events and consumption thresholds; the refocussing customer hardship programs; and the deregulation of retail prices.

Reliability standards should reflect consumer expectations

COAG Energy Council agreed to the development of a national framework for network reliability that ensures that network reliability costs are efficiently based and reflect consumers' willingness to pay.

Australia's electricity network businesses support a national framework for network reliability, which gives added weight to the views of customers. ENA supports a national framework that ensures that:

- » reliability spending is efficient and provides a level of reliability that customers value;
- » customers are engaged in the process for determining reliability spending in a meaningful and timely manner;
- » there is independent oversight of the way that network reliability standards and targets are set, while a continuing customer relationship with networks is maintained; and
- » there is flexibility and incentives for networks to innovate to improve customer outcomes.

Enhanced consumer engagement

ENA strongly supports the role enhanced customer engagement can play to ensure energy networks are ready to meet changing customers' needs into the future. ENA acknowledges progress on the establishment of the new national body known as 'Energy Consumers Australia' to lead energy consumer advocacy across Australia and supports the formation of this national, co-ordinated approach to integrating the views of consumers into the regulatory framework, noting that jurisdictions will have specific requirements of their own.

In supporting enhanced customer engagement ENA also notes that energy networks operate in distinct areas that vary in demographics, climate and geography. In that context, ENA warns against duplication and prescription in rules with respect to consumer engagement. Frameworks for engagement should not inhibit the ability of networks to meet changing consumer needs and must provide the flexibility for individual energy networks to undertake an approach that suits their customers.

Australia's energy networks have been innovating in deeper and more diverse customer engagement techniques in recent years and this is reflected in changes to the regulatory framework. Recent changes to national regulatory rules require the AER to consider issues identified by electricity consumers in their engagement with networks processes when assessing future network expenditure.

To assist this process, the AER has developed a Customer Engagement Guideline for Network Service Providers with the cooperation and support of networks and consumers. Additionally, a new Consumer Challenge Panel will provide input on networks engagement with customers. These initiatives are designed to bring consumers voices and perspectives directly into regulatory decision-making on network pricing determinations.

The ENA has contributed strongly to the development and implementation of the NECF legislation which was passed by the SA Government in March 2011. ENA is concerned that this legislation be applied across jurisdictions, and for the NECF to be introduced in the remaining jurisdictions of Queensland and Victoria subject to appropriate exemptions and/or transitional provisions being put in place as part of the application legislation. It is important that these jurisdictions adhere to the current timetable of 1 July 2015 and before 31 December 2015 respectively)

The continued inconsistency in the application of the NECF between states is a concern, creating inefficiency for

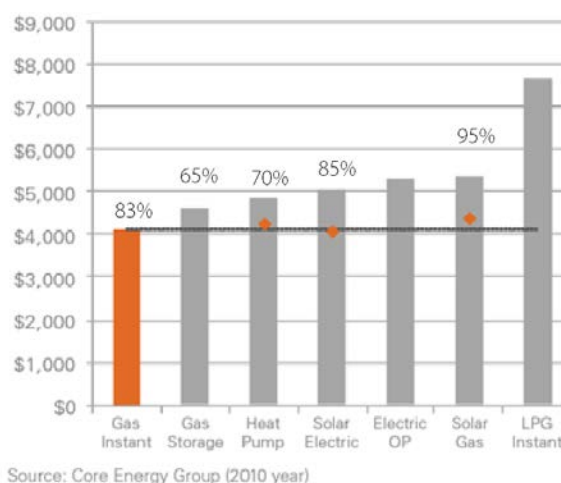


Figure 3: Whole of life costs for water heating technologies.

companies with national activities. The objectives of the NECF may be achieved more efficiently if greater consistency were achieved in implementation by individual jurisdictions.

ENA Response 2(b)

The Australian Government, together with the Energy Council, should seek to achieve the adoption of the NECF in Queensland and Victoria as per the current timetable.

Rationalise emission reduction schemes

ENA supports the rationalisation of emission reduction schemes.

The ENA supports greenhouse gas abatement reduction programs that provide a least cost, technology neutral solution to emissions reduction. The ENA does not support abatement programs that distort markets by supporting specific technologies over others or create uncertainties for business.

In a report commissioned for the ENA, Core Energy Group identified 10 State, Territory and Australian Government emissions reduction schemes that affect the gas market.

The majority of these policies aim to reduce emissions, through supporting renewable technologies. These include solar feed in tariffs, state schemes to support increased use of solar water heating and, at the commonwealth level, the SRES.

ENA has made several submissions to the Australian Government requesting the inclusion of water heating alternatives in the fuel neutral Emissions Reduction Fund (ERF). ENA believes that a fuel neutral approach, such as through the ERF, is far better than an approach that supports a particular technology. A program such as SRES that effectively locks in to a particular set of technologies does not recognise that alternative technologies can be more effective. As an example, SRES supports electrically boosted heat pump water heaters despite these systems offering less abatement and being more costly to operate and install than a 7 star gas instantaneous water heater (Figure 3).

In Figure 3, the market distortion of SRES can be seen by the orange diamonds which indicate the impact of SRES on total costs. The percentages indicate total abatement over a traditional electric resistance hot water heater.

Australia requires an enduring framework for the monitoring and abatement of its greenhouse gas emissions in line with international obligations.

ENA Response 2 (c)

The Australian Government should seek to rationalise emission reduction schemes and ensure least cost abatement on a technology neutral basis.

As noted in response to Section 4, the Australian Government should prioritise the reform of the SRES, which is likely to increase gas bills to consumers by \$50 per annum by 2034.

The Emission Reduction Fund

The ENA supports key design features of the Emission Reduction Fund, including that it seeks to promote least cost abatement on a technology neutral basis. However, ENA remains concerned about the setting of baselines as part of the design of the ERF. As found by a study for the cancelled Australian Government Energy Efficiency Opportunities program (EEO)¹¹, gas and electricity networks are already incentivised to reduce network losses which are an inherent part of the operation of a network.

In ENA's May 2014 response to draft ERF legislation ENA noted that *'Gas networks are already subject to direct financial penalties in the form of having to 'make good' fugitive emissions that come from leaks in the distribution system. As a result, gas distribution network service providers continually seek to minimise such losses. Similarly, existing regulatory frameworks require electricity transmission and distribution network service providers to manage networks and make efficient network investments which include consideration of losses. Investments in reducing losses beyond a value that is economically efficient to attain would ultimately increase end user energy prices and network businesses are acutely aware of impacts on energy affordability.'*

A growing gas network will necessarily create emissions over and above an initial safeguard level in absolute terms. This does not infer deterioration in emissions – indeed the supply of gas to new areas has the potential to lower emissions by providing a fuel for more efficient water heaters for example. Thus a constraint on the growth of gas networks has the potential to increase rather than reduce Australia's overall emissions profile.

¹¹ Department of Industry, *Regulatory Impact Statement for Extending of the EEO Program to Electricity and Gas Transmission and Distribution Networks*, 2013.

The Australian Government should avoid imposing a baseline framework on gas and electricity networks which increases the cost of energy to consumers without achieving least cost abatement outcomes.

Remove unnecessary regulation and encourage further privatisation

Whilst issues of ownership are a matter for current equity holders of network businesses, previous Australian and international privatisation programs have relied on credible, long-term regulatory regimes with mechanisms to limit undue regulatory risk as an essential pre-condition. The ENA considers that any future government policy decisions to increase the role of private sector capital through changes to ownership arrangements of currently publicly-owned network infrastructure must be supported by a stable and predictable regulatory environment.

5. BUILDING GAS MARKET SUPPLY AND IMPROVING MARKET OPERATION

Addressing near-term east coast gas supply

The Eastern Australian Gas Market is undergoing once-in-a-generation structural adjustment, driven by the commencement of an LNG export industry. Wholesale gas customers face a long-term shift in gas pricing from historically low prices by global standards to a domestic price influenced by international LNG markets.

ENA considers that while direct government intervention in gas markets should not occur unless it can be justified from a public policy perspective, the Energy White Paper should evaluate the role of a National Interest Test on future large-scale export gas developments, as has been adopted in other international jurisdictions¹².

The ENA supports further review by the Australian Government of the barriers to gas supply including those that stifle competition.

¹² Recommendation 7, Page 23 ENA response to Energy White Paper - Issues Paper 2014.

Sustaining national gas supply

The ENA is concerned that unnecessary barriers to onshore exploration and development in New South Wales and Victoria has the potential to exacerbate wholesale gas price pressure for more than one million NSW residents and over 30,000 business in that state and around two million residences and 50,000 businesses in Victoria.

In May 2013 SCER endorsed the National Harmonised Regulatory Framework for Natural Gas from Coal Seams and also the Multiple Land Use Framework. The intention of these frameworks is to provide guidance to regulatory authorities, industry and the community in the development of leading practices for Coal Seam Gas (CSG) development. The ENA notes the endorsement of these documents by State Government Ministers through SCER.

The ENA commissioned Core Energy Group to examine the effects of wholesale gas price increases. The Core Report concluded that domestic gas supply will tighten due to large scale demand by the LNG sector estimated to be around 120,000 PJ¹³ over a 20 year period. The report also suggested other significant economic changes as a result of rising gas prices partially due to lack of supply such as:

- » marginal wholesale gas prices in eastern Australia are increasing and are expected to double over the next four years relative to 2013 levels;
- » price increases alone would lower network demand by around 10%; and
- » a softening domestic demand due to lower use in the power generation sector, lower Industrial demand and potentially lower network demand will lessen the buying power of domestic consumers relative to international buyers.

When combined with poor public policy measures such as further distortionary subsidies to small scale renewables, this environment creates the potential for:

- » a loss of \$200m p.a. in capital investment;
- » direct losses of tax revenues and indirect losses of tax and State royalties; and
- » a loss of economic value of over \$1.5bn based on the net present value of lost profits.¹⁴

The Productivity Commission's draft recommendations in its ongoing inquiry into non-financial barriers to resource exploration in Australia, noted that:

¹³ ENA, *Gas Network Sector Study*, August 2014, p.27.

¹⁴ ENA, *Gas Network Sector Study*, August 2014, p.11.

- » environment-related regulatory requirements relating to exploration should be proportionate to the impacts and risks associated with the nature, scale and location of the proposed exploration activity; and
- » environment-related regulation of exploration activities should be focused towards performance-based environmental outcome measures.

Gas prices are not transparent

The first principle set out in the 1993 Hilmer Review on National Competition Policy is:

No participant in the market should be able to engage in anti-competitive conduct against the public interest¹⁵.

Twenty years on from this report the East Coast Gas Market Study (the Study) noted that:

The Competition and Consumer Act 2010 excludes declaration of a service which amounts to the use of a production process. This is likely to exclude upstream production facilities from third-party access requests under the Act.

The Study also noted that:

The implication of current arrangements is that, in practice, the sharing of processing facilities is largely a matter of whether the technical and commercial objectives of asset owners can be satisfied. These may include strategic objectives, for example to exclude competitors from access. To the extent to which this is a barrier to entry over time may be limited by competitors building smaller or alternative plant (the economies of scale for building new processing may not be as large as with transmission pipelines). However, it is also the case that more ready access to processing in the proximity of reserves could accelerate supply response. It is therefore not surprising that a number of parties have raised concerns over the difficulties with negotiating access to processing infrastructure in the current environment.

The ENA notes the Green Paper raises the suggestion of an ACCC or Productivity Commission Review into competition in gas markets. ENA supports any measure that will increase the transparency of market information in relation to supply markets and notes that the Productivity Commission has announced an investigation into these issues.

¹⁵ *National Competition Policy Review*, Commonwealth of Australia 1993, p.361.

ENA Response 3

The Australian Government should support gas market development and a level playing field for gas, through removal of unnecessary barriers to new gas supply, developing measures to promote greater transparency in the upstream gas market and to ensure that energy schemes designed to reduce emissions are fuel neutral.

ENA supports an ACCC Inquiry or Productivity Commission Inquiry that may review any potential barriers to competition in upstream gas supply.

6. SECURITY, INNOVATION AND ENERGY PRODUCTIVITY

Secure and reliable and competitively priced energy supplies

The ENA supports the Energy White Paper's recognition of the need for policy and regulatory frameworks which support secure, reliable and competitively priced energy supplies.

The ENA notes the risk to energy productivity and consumer bills without reforms to support cost-reflective network tariffs and the economic deployment of smart grid infrastructure. For instance, the Australian Government's Smart Grid Smart City project, found that a smarter energy grid has the potential to provide \$28 billion in net benefits to the Australian community.

However, the analysis also highlights this is only possible through smarter tariff structures, so customers are rewarded for using energy efficiently and network costs are evenly shared. Current volumetric tariff structures using outdated meters are likely to result in consumers paying \$10 billion more over the next 20 years than necessary, by incentivising an uneconomic over-investment in onsite generation and storage. This also creates the risk of unfair cross-subsidies of up to \$420 per year to 'early adopters' of new generation and storage technology, if current tariff structures result in network costs being passed to other users.

All customers benefit from the continuous supply, start-up power, power balancing and power quality provided by the grid. For many electricity customers the centralised grid will remain an essential and competitive component in the delivery of safe and reliable energy. They will either choose not to install alternative energy source, such as rooftop PV or they may not be able to access or install solar PV for a

range of reasons including affordability, residence type (i.e. apartments with no roof space), home-ownership and suitability.

Even where consumers have chosen to install rooftop PV systems, the majority these consumers remain connected to the electricity grid, and benefit significantly from that connection through

- » Constant supply – Customers receive a continuous supply of electricity, made up of their own generation and the grid as a back-up whenever their own generation cannot provide all the electricity they need.
- » Access to the energy market and use of feed-in-tariffs - Customers can sell the excess power generated by the PV system to retailers at the feed-in tariff rate.
- » Start-up power, power balancing and power quality – the grid provides a number of virtually invisible services to customers. These include:
 - The ability to provide large increases in the amount of electricity delivered over very short time periods. This is important because some consumer appliances – such as air conditioners - can require significantly more power to start up than they do once running.
 - A steady and even supply of electricity which is required for appliances to operate properly and which could be difficult for a PV system to provide on its own its output drops temporarily due to passing clouds.
 - A high level of power quality, which is important for certain home appliances, such as desktop computers.

Keeping future technology options open

The Green Paper states that the Government is seeking feedback on removing unnecessary regulation and processes to speed the adoption of new technology. The ENA contends that because the SRES is not fuel neutral, it provides a barrier to the adoption of cleaner, more effective technologies. Government initiatives to develop fuels for the future should be fuel neutral and allow fuels to compete against each other on the basis of merit, not because they have been artificially selected by programs such as SRES.

The recent Warburton Review into the Renewable Energy Target found that solar hot water systems, electrically boosted heat pump hot water heaters and solar photovoltaic panels are currently subsidised by up to 30%, including where they achieve less abatement than unsubsidised gas hot water systems.

SRES provides support for electrically boosted heat pumps which are significantly inferior in terms of abatement outcomes to 7 star gas instantaneous water heaters.

This results in a distorted hot water appliance market, more expensive abatement and reduced gas network volumes which push up gas prices to other gas users.

In April 2014 the ENA commissioned Core Energy Group to undertake further analysis on the impact of rising wholesale gas prices and government policy on gas networks. This modelling demonstrates that discriminatory subsidies to solar technology represent the most influential policy impacts on gas demand, result in a significant distortion to the gas market and that removing the SRES could reduce gas bills by about \$50 per annum.

This is particularly concerning given the challenges for gas consumers in managing the transition to an internationally-linked wholesale price. The continuation of the SRES at a time when the gas sector is undergoing unprecedented change continues to disadvantage the gas sector with a net loss of value to Australian consumers and taxpayers.

The SRES is also no longer required to support the installation of solar panels. Australia's penetration rates of small-scale solar panels are among the highest in the world, reaching 25% in South Australia and 23% in Queensland. The technology cost has halved in recent years, removing the public policy justification for subsidies from other electricity users.

It is essential for good consumer outcomes that government-mandated subsidy schemes like the SRES reflect today's needs and market circumstances.

ENA Response 4 (a)

ENA supports the abolition of the SRES which is no longer required to support market entry of small scale renewable technologies.

If the SRES is not abolished, it should at least be made technologically neutral. This could be achieved through the removal of those displacement technologies from the scheme which have been selectively included (such as solar hot water systems or heat pumps).

Technology collaboration

Network businesses are increasingly enabling the use of new technology which assists customers to improve their energy use and lifestyle. While commentators often focus on threats, Smart Grid technology provides significant

opportunities to improve network service delivery to customers.

ENA and its members are actively involved in developing new technologies to enable more effective and efficient delivery of energy to all Australians. In September 2014 ENA and the Australian Renewable Energy Agency entered into an agreement to provide a one-stop-shop of up-to-date renewable energy grid integration projects and findings.

The stocktake includes 176 renewable energy grid integration projects from across Australia, worth more than \$4 billion, including 60 key projects from overseas. This work will make it easier for the electricity sector to address challenges and capitalise on opportunities involved in integrating renewables into the network. This is on top of the work being undertaken by the ENA's Australian Strategic Technology Program which funds university research into new technologies relevant to the transmission and delivery of Australia's electricity requirements.

As well as these efforts ENA members are developing their own projects in particular around storage options. Effective storage would significantly reduce peak loads on networks, allow for the more effective use of energy gathered at non-peak times (such as with PV panels) and could also allow for the development of effective microgrids in remote areas.

ENA is also working with the CSIRO to further develop the industries understanding of the impact of new technologies.

Response 4 (b)

The Australian Government along with States and Territories should continue to provide support to research and development aimed at developing solutions to changing utilisation patterns and the challenges facing the transmission and distribution of energy for all Australians.

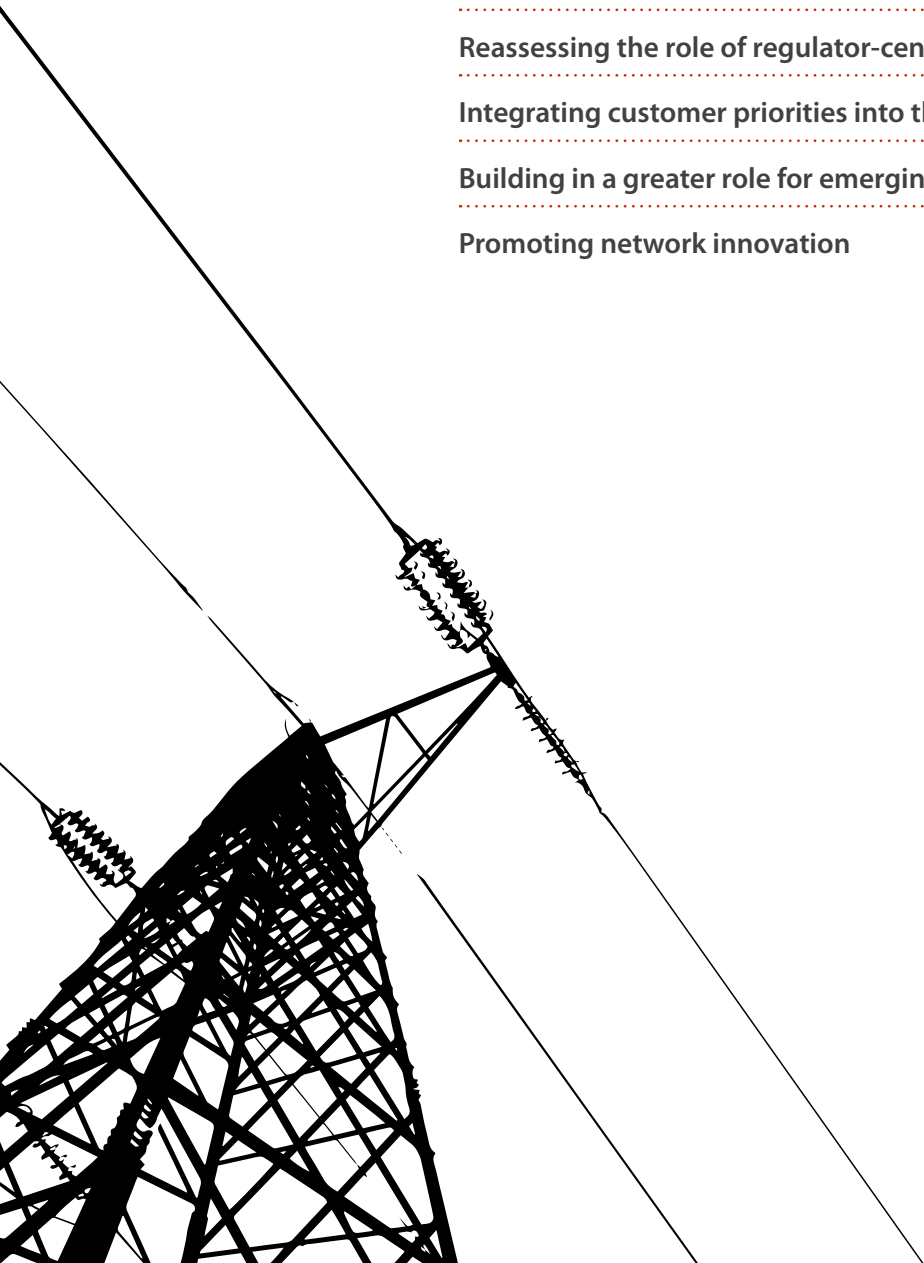


NOVEMBER 2014

EVOLVING A FUTURE READY REGULATORY FRAMEWORK

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EVOLVING A FUTURE READY REGULATORY FRAMEWORK

EXECUTIVE SUMMARY

This paper indicates some potential ways in which the emerging market, technological and competitive environment facing energy networks could influence the medium-term evolution of the regulatory framework. Learning from other utility sectors and international regulatory approaches to similar issues provides insight into possible pathways for the future.

POSSIBLE INITIAL DIRECTIONS FOR A 'FUTURE READY' REGULATORY FRAMEWORK

- » Ensuring that as a key design principle the regulatory system provides that networks are free to deliver valued, efficient energy service solutions to each individual customer.
- » Evolving the goal of the regulatory framework towards facilitating more efficient and collaborative approaches to setting networks business and investment plans.
- » Bringing the real perspectives and priorities of consumers into the heart of the regulatory decisions, and giving them effect through regulatory decisions.
- » Allowing efficient competition to emerge, with flexible and dedicated processes to address where regulation can be removed or recalibrated.
- » Robust independent processes for evaluating the boundaries of competition and contestability which consider the full range of costs and benefits to consumers.
- » Being open to new ways to promote network innovation.

INTRODUCTION

The electricity market is currently entering a significant phase of intensive transformation, with changes in demand patterns, competitive conditions, technology and potential service offerings. These changes follow a long period of relative stability in the way electricity was produced, delivered and consumed.

Key parts of Australia's economic regulatory framework covering energy networks were put in place during this period of stability, but the framework has also undergone important evolutionary changes over the past two decades. A further wave of institutional and policy reforms, including major regulatory rule revisions, are currently in the process of implementation. This reform wave has followed on from a period of intensive review and policy focus around the regulated energy sector in the past three years.

This paper aims to look over the immediate horizon of these changes to explore the different ways that Australia's sound regulatory model might potentially adapt to the major changes affecting the consumption and delivery of energy over the next two decades.

KEY MARKET DEVELOPMENTS IN ENERGY DELIVERY

There are a range of current market developments which are changing the way electricity customers produce and consume electricity. Energy consumers are using and interacting with the grid in new ways, and deriving new value from the services and access to energy markets that it enables.

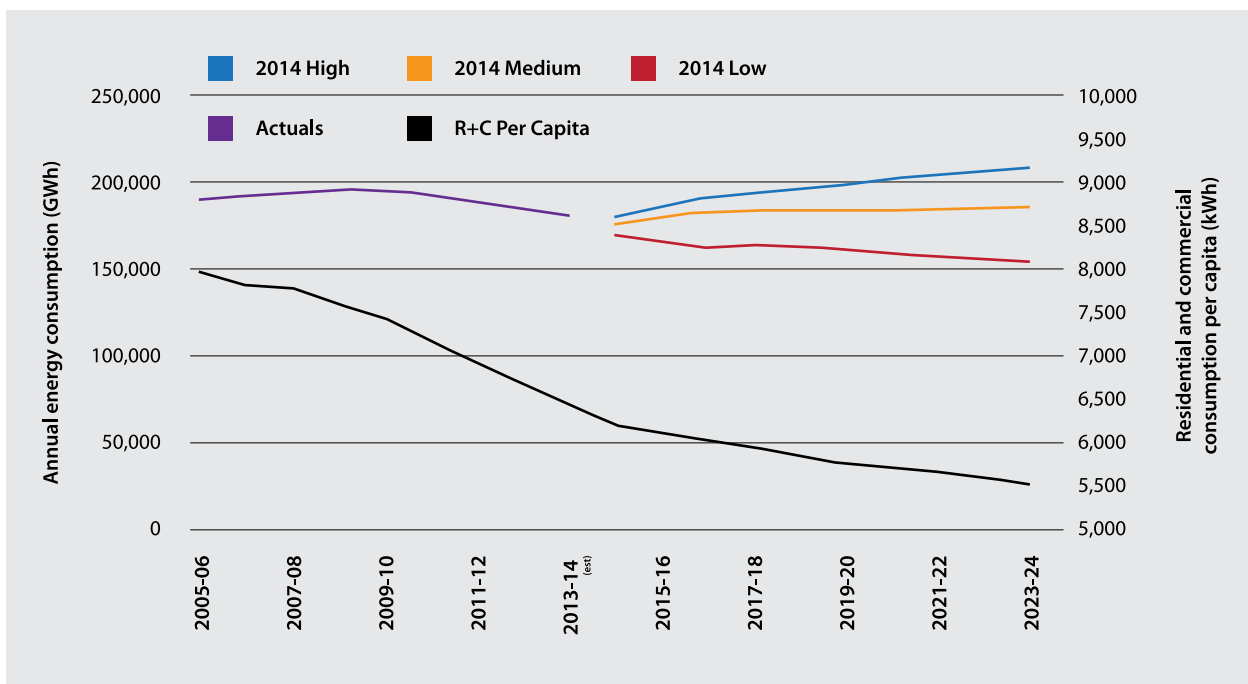
Total grid-based energy consumption across the eastern Australian market reached 200,000 gigawatt hours in 2009-10 and has been declining since (See *Figure 1*).¹ These falls are a combination of a number of factors, including consumers' responding to increasing energy prices, less intensive usage of electricity in the commercial and manufacturing sectors, and the penetration of rooftop solar PV systems. They follow decades of steady year on year growth in energy consumption, built first on the mass electrification of urban and regional Australian communities, and steadily growing use of energy across household and businesses.

Technology changes, particularly falls in the costs of solar, communications and storage technologies are also bringing about changes in both the capabilities of electricity networks, and the services they can enable and deliver for consumers.

As an illustration, driven by falling costs and a range of feed in-tariff schemes the number of small scale photovoltaic units has grown from a few thousand in 2008, to approximately 1.2 million units currently. Collectively, these units have an installed capacity of around 3,200 megawatts, which is approximately the same output as Australia's largest power station at Loy Yang in Victoria. While energy storage technologies are not currently a cost-effective solution for the broad residential consumer market, rapidly falling costs and expanding scale could change this equation in the course of the next decade.

Amidst these changes, networks are well-placed to be efficient providers of a set of expanded network-related services beyond the traditional network operation functions. For example, some network businesses could establish themselves as providers of maintenance services for on-site generation and other energy solutions.

FIGURE 1: ENERGY DEMAND AND FORECASTS (NEM)



Source: AEMO National Electricity Forecasting Report, June 2014

1 AEMO Supply and Demand Snapshot, February 2014

GREATER COMPETITION ACROSS THE ENERGY CHAIN

Electricity networks have been regulated almost since their inception as natural monopolies. Over time, policy and market reforms have enabled competition to be created both between electricity generators and at the level of energy retailing, providing most Australian consumers with choice of their supplier.

Previously, there was an assumption that despite this emerging competition across other sectors of the energy market, network services by their nature would always be heavily regulated to protect the interests of consumers in efficiently-priced and reliable monopoly grid services. With a new range of technologies, business models, capabilities and market players this is no longer a given. In many cases networks may increasingly face the credible risk of bypass or substitution for a number of services traditionally delivered only by a monopoly regulated network.

Emerging competition and impacts of the falling costs of new technologies are forces that act across every business sector across Australia. In response to these rapidly changing market conditions, businesses in competitive markets are in a continuous process of adjusting and evolution, constantly seeking and securing new markets, developing new products and services, and taking advantage of new technologies. In competitive markets, the beneficiaries of this process are consumers.

In regulated sectors, however, this natural market process of 'creative destruction' is impacted by the existence of an economic regulatory framework. Economic regulation (including network pricing and revenue regulation, ring-fencing obligations, licensing requirements and jurisdictional pricing restrictions) can profoundly affect the capacity for commercial firms to participate and enter these markets, the type of services they can offer, permissible pricing structures and levels, incentives for and the scope for innovation, and feasible business models.

INSIGHTS FROM OTHER INDUSTRIES

Electricity networks are undergoing challenges that have parallels in past and present challenges faced by other regulated and network-based businesses.

Telstra's ageing copper wire network, for example, was largely built to deliver universal, economic voice services across Australia. Yet growing numbers of Australians choose to effectively bypass major parts of the copper wire network, relying exclusively on mobile or VOIP services. In 2012-13 around 21 per cent of Australian adults rely on mobile only services as their principal telecommunications service, up 18 per cent on a year on year basis.²

Similarly, Australia Post and overseas postal carriers are facing increased competition from other delivery service providers, and a long term decline in mail volumes. Increasingly these businesses are examining and proposing changes to their core services and changing regimes to respond to the decline in the overall volume of physical mail, as well as changing cost structures in response to the growth of package delivery arising from the uptake of online shopping.

From mid-2015, New Zealand Post will only be required to deliver letters three times a week. Contrast this to the competitive adaptation to changed market conditions possible in the unregulated parcel delivery market in the United States. Fed Ex has recently moved from traditional weight-based to a new dimension-based charging methodology.³ This is in part responding to the continuing rapid growth of online shopping related postal packages, and the need to ensure its prices continue to be aligned with key cost drivers.

The historically highly regulated taxi industry is another sector experience challenges to its monopoly status driven by technology and innovation, with the rise of alternative car sharing and hiring services.⁴ Similar forces are changing the market for accommodation through the rise of global businesses such as 'Airbnb'. These changes will have implications over time for the scope and nature of regulation that will continue to best promote the interests of consumers in their respective markets.

2 ACMA Communications report 2012-13.

3 Wall Street Journal, 7 May 2014

4 Slate, 'When is a Taxi Not a Taxi?', December 15, 2011.

AUSTRALIA'S CURRENT REGULATORY MODEL

Australia's current regulatory model for electricity networks is effectively based on forms of utility regulation developed in the United Kingdom over thirty years ago. It also incorporates some features of US style 'rate of return' regulation that has a history stretching back to the early 1900s. Over time this regulatory model has evolved, for example, with the progressive introduction of a series of incentives reward and penalties schemes aimed at providing the right signals for capital and operating efficiencies in service delivery, and maintaining or enhancing service quality. This evolution continues, with recent development of new capital expenditure incentive mechanisms and potential national reliability frameworks.

Under the current regulatory approach network businesses prepare and consult on detailed regulatory proposals which include expected operating and capital costs, electricity demand, network charges and investment plans for the next five year regulatory period. These proposals are then assessed by the regulatory body for conformity with a set of **National Electricity Rules**, guidelines and models which collectively run to over 1200 pages. This process takes around two years. There are likely to be significant costs saving benefits to consumers in streamlining and improving the efficiency and data-intensity of current regulatory processes

The starting point for the current electricity regulatory model is a strong presumption of the existence of a persistent natural monopoly over network services. This has led to a principal focus of the framework being seeking to ensure regulated charges for a narrow and well-defined set of regulated services reflect efficient costs. A further critical goal has been providing a predictable cost recovery framework to provide network investors the confidence to continue to make ongoing investments in long-lived capital intensive network assets such as poles and wires.

The current regulatory model has significant strengths which are sometimes overlooked. For example, consumers are major beneficiaries of the reduced financing costs arising from a stable and predictable regulatory framework. A stable regulatory regime allows networks to raise capital and refinance large investments on favourable terms in capital markets. Due to the capital intensive nature of the grid, minimising these costs plays a key role in containing the shared cost of the network to individual consumers. By way of example, a modest 10 per cent increase to the risk premium on the debt and equity component of the required cost of capital would require an increase of over \$300 million per year to electricity network charges to Australian households. This highlights that minimising regulatory risk and inconsistency, and thereby the cost of capital required by investors, should remain a fundamental consideration for policy and rule-makers.

The existing regulatory framework does contain some degrees of flexibility which should not be ignored. For example, the regime provides networks with the capacity to seek long-regulatory periods, and the regulator the capacity to trial and experiment with small-scale incentive schemes. Yet there are also some features of the existing regulatory framework, and its application, that unintentionally limits its ability to be fully responsive to market circumstances. One example is the lack of capacity to defer depreciation on large scale network investments or bring it forward across multiple regulatory periods. Another is the currently heavily volume-based tariff structures. Both of these significantly constrain networks ability to apply normal commercial options to manage evolving demand and technology-related risks.

POSSIBLE IMPLICATIONS FOR ECONOMIC REGULATION

The transforming shape, demand patterns and capability of energy markets represent an opportunity to evolve regulation to better meet the actual needs of individual consumers.

REASSESSING THE ROLE OF REGULATOR-CENTRIC FRAMEWORKS

Unless modified, the traditional model of network regulation actually places the regulator between a network business and its primary customers. Traditionally the core service capability of the grid was seen as delivering one way volume flow of electricity and an undifferentiated product. The basic physical characteristics of electricity networks means that many customers are likely to always share some common service elements and experiences. Under these constraints, the regulator has sometimes been represented as the 'proxy' or 'voice' for consumers through the price-setting process.

In the past, this has created controversy over whether the role of consumer advocate conflicts with the statutory role of the regulator to be a 'referee', impartially applying the rules of the framework. In addition to the potentially conflicted position it places the regulator in, the larger problem is a single regulatory body can never serve as a substitute for, or adequately reflect the varying expectations and desires of diverse groups of individual customers.

This traditional concern with regulation is exacerbated by the pressures of competition and technological evolution, which should increasingly enable the individual consumer to shape their choices around pricing and the energy services and infrastructure configuration that best serves their individual needs. Simply persisting with the current paradigm unfairly places regulators in a 'no win' situation of continuously seeking to define and refine what basket of defined regulated services an 'average' consumer desires to consume, at what price. Rather than this process, what would seem preferable is greater reliance on the normal workings of competition and choice.

INTEGRATING CUSTOMER PRIORITIES INTO THE HEART OF REGULATION

Central to breaking out of this dilemma is better integrating the choices and preferences of consumers with key decision-making processes. Current reforms largely seek to address this by strengthening regulated businesses and regulators' obligations to consult with representatives of consumers, and through the establishment of new institutions charged with inputting consumer perspectives into existing regulatory and rule processes. There are also welcome recent policy moves towards linking customers identified willingness to pay for changes in expected reliability outcomes.

These are a positive first steps, but not the end destination. There are a variety of further ways regulation could be better designed to bring out consumers preferences, and reward companies for meeting customer needs. *Figure 2* provides a brief summary of some approaches observed internationally.

FIGURE 2: SUMMARY OF POTENTIAL ECONOMIC REGULATORY MODELS

Model	Description
'Building blocks' incentive regulation	Future prices are set to recover expected efficient costs, comprising a return on capital, depreciation and operating costs.
Fast-track incentive regulation	As above, but with a regulatory option which allows the regulator to streamline regulatory approval based on evidence of close consumer engagement, or due to minimal proposed changes in prices.
Price monitoring	Economic regulator tracks prices and service quality measures over time, with potential threat of direct intervention or more prescriptive regulation.
'Regulatory settlements'	Regulator facilitates direct negotiations and collaboration between regulated firm and its users, providing information and a last resort 'umpire' role if no agreement is reached.

Redesigning the regulatory process to enable networks proposals which are demonstrated to have been developed in close coordination with consumers to be 'fast-tracked' is one option. This is an approach being trialed in water and energy regulation in the United Kingdom by Ofwat and Ofgem. Under this model, where it is demonstrated that a network business has genuinely excelled in gathering and reflecting the priorities of its customers in its proposed forward investment and operational plans, its regulatory proposal is approved more rapidly. This allows for more rapid delivery of real consumer priorities with lower levels of regulatory compliance costs. Regulated businesses also benefit through a closer connection to their final customers and by improved certainty compared to traditionally drawn out and costly regulatory approval processes.⁵

An alternative approach is the 'regulatory settlements' approach, trialed in a large number of US state-based utility proceedings, and recently championed by the founder of UK 'price cap' regulation Professor Stephen Littlechild. This involves repositioning the regulator from being the monopoly decision-maker on network charges and terms and conditions to a facilitator of a transparent process of negotiations. In this model the regulator provides information, and guides parties through a process on an outcome. A variant of the same type of approach in the Scottish water sector is referred to as a 'tramlines' approach, with the regulator effectively establishing a set of broad boundaries within which a more collaborative settlement can emerge. So far, these 'settlement' type approaches have been most prevalent and successful in contexts featuring smaller and relatively homogenous customer bases. Critically, they also appear to work best in instances of small cooperative or community-owned networks, which are not a typical feature of the Australian energy market.

BUILDING IN A GREATER ROLE FOR EMERGING COMPETITION

Critically, a future framework also needs to be adaptable to recognise the presence and emergence of competition in traditional monopoly services.

Market, technology and cost developments may make a range of previously monopoly delivered services increasingly contestable and competitive. Where this occurs, the regulatory framework must have the capacity to both diagnose this, and in some cases, adapt or withdraw. It also needs the ability to make transparent policy and competition assessments, well-informed by evidence about where competition and contestability is feasible, and where it has a strong prospect of promoting genuinely efficient outcomes for both individual consumers and the community at large.

Consumers generally benefit far more by allowing efficient competition to deliver innovation and choice, than by relying on regulation to replicate its outcomes. The current framework in electricity does have some existing processes at the initial stages of five yearly determination processes to require the regulator to assess the potential for competition in a range of services, through the service classification process and form of regulation factors, for example. However, it does not provide for an independent strategic assessment of whether regulation is necessary. Nor does it consider the level and form of competition and contestability which will promote efficient outcomes for consumers and what diseconomies may be created.

These questions are preconditions for sound regulatory policy. These types of processes already exist in the rules covering gas networks. The gas framework provides for both the introduction of lighter-handed forms of non-pricing regulation (including negotiation and arbitration) but also offers avenues to remove regulatory controls altogether where they are judged not to be required in order to promote the long-term interests of consumers.

A more robust 'future ready' framework in electricity would likely feature more flexible and clearer pathways to lighter-handed forms of regulation. It may also include increased emphasis on price monitoring or removal of price controls in those circumstances where market or technology developments mean competition is able to be effective.

⁵ See for example, the recent Ofwat decision to qualify two water companies for 'enhanced' status, meaning a streamlined regulatory approval process.

PROMOTING NETWORK INNOVATION

Regulation, particularly relatively intrusive pricing and revenue controls that form part of traditional network regulation, has the potential to discourage innovation and experimentation.

This potential has long been recognised in both the theory and design of regulatory pricing and revenue schemes, but there is no universally acknowledged solution. In some countries, longer regulatory periods, allowing firms to benefit from the rewards of innovation over a longer period, have been argued to be part of the solution.⁶ Developing approaches which incentivise innovation in the network sector is important. Networks operate energy infrastructure assets valued at over \$100 billion, and network charges typically make up between 30-50 per cent of final energy prices. It is clear from these metrics alone that the potential magnitude of benefits to consumers from innovation across this important link in the energy delivery chain are substantial. To ensure that these benefits are captured it is critical that the interaction of competition and targeted regulation actively promotes innovation. A framework which simply assumes innovation is only likely to be valuable if it occurs outside of the network business represents a potentially significant missed opportunity for consumers.

One possible approach is to set aside a pre-approved 'bucket' of innovation funding to be used or foregone, and paid for upfront by consumers. This is obviously a second best solution, because it implies the regulatory process will deliver the 'right' level of innovation funding, and assist in directing it to the 'right' projects. It also makes innovation - which is a highly uncertain and context-specific business process - a 'pre-paid' cost to consumers. This in turn risks subtly altering the nature of innovations pursued, discounting higher risk experimentation with potentially significant societal pay-offs.

One model recently employed by the UK energy regulator in the electricity transmission sector is the offering of an 'innovation prize'. Under this model, a competition is held for a reward of up to £27 million pounds (\$AUD 48 million) with independent industry experts responsible for recommending rewards for innovations developed by the regulated business. The involvement of a wider cross-section of expertise in this process seeks to overcome some of the issues outlined above. This mechanism is one of a suite of measures developed by the UK regulatory Ofgem (which also includes a network innovation allowance and an innovation roll-out allowance).⁷

The issue remains, however, that innovations that consumers benefit from may not be obvious to third parties, regulators, or many market participants themselves. This is particularly the case with new products or services. In a famous econometric case study valuing the consumer benefits of the introduction of Apple-Cinnamon flavored Cheerios, MIT economist Jerry Hausman estimated the welfare gain to US consumers at over US\$60 million per year.⁸ In an (albeit dystopian) world where the breakfast cereal market was subject to regulation, it's difficult to conceive of this type of innovation being sponsored or approved by regulators.

A further example of this is offered by the case of US airline deregulation that commenced in the late 1970s. Prior to deregulation, US airlines operated on regulator-approved routes, with strict controls on market entry, exit and fare pricing. The Civil Aeronautics Board licensed individual point-to-point routes on which a small set of airlines were eligible to operate. The regulatory controls directed industry innovation into strong competition on a range of non-regulated quality of service features, such as free in flight catering, entertainment, and frequency of service. Yet this 'regulated competition' led to fares that were beyond the reach of many average travellers. Since deregulation of the routes and fares, market entry and vigorous competition has emerged which has demonstrated that the type of service innovation promoted by the regulatory regime was not what consumers were in practice willing to pay for.

6 As an example, in the UK Ofgem's 'Regulation Innovation Incentives and Outputs' or 'RIIO' reform program has moved to an eight year regulatory period for networks with a less intensive mid-period examination and readjustment to unanticipated trends.

7 Ofgem Electricity Network Innovation Allowance Governance Document, December 2012

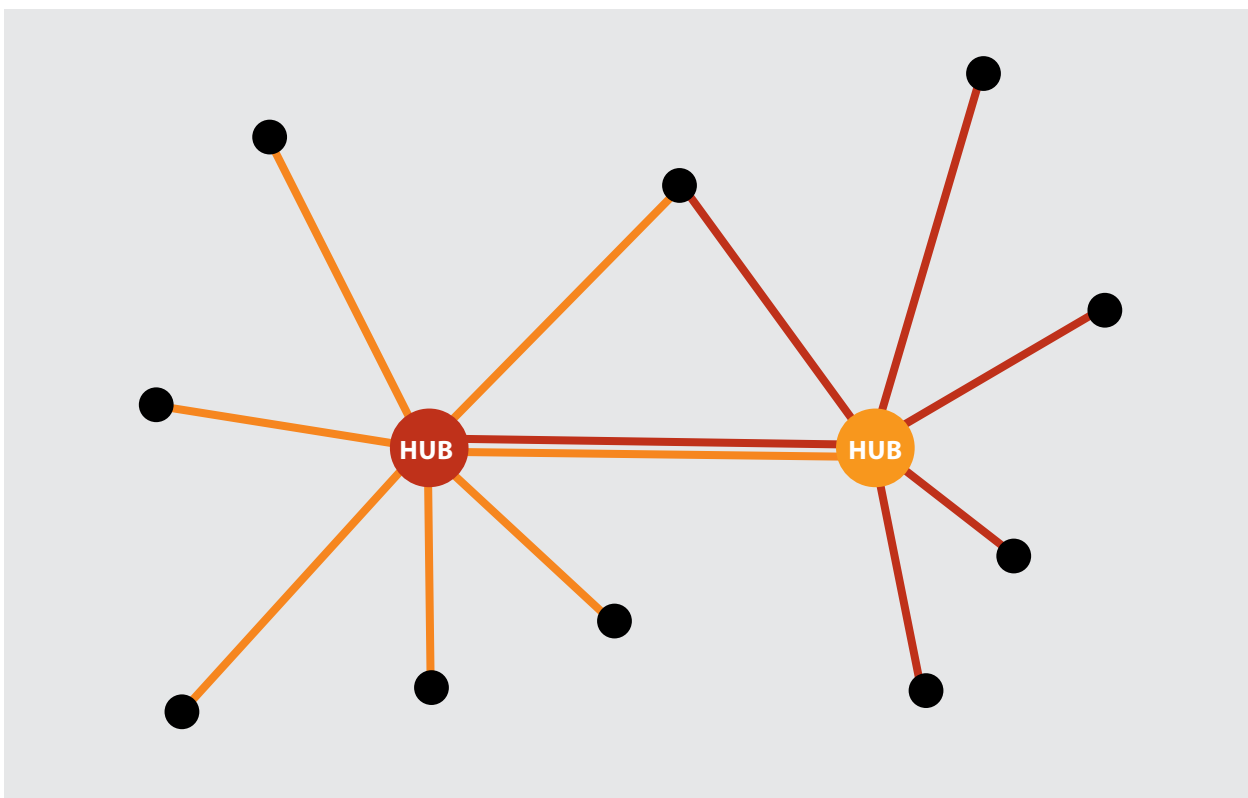
8 Hausman, J. 'Valuation of New Goods under Perfect Competition', in Bresnahan, T. and Gordon, R. (eds) *The Economics of New Goods*, University of Chicago, 1996.

In addition, the regulatory framework itself had represented an invisible and unintended barrier to the emergence of the more efficient and now widely adopted 'hub and spoke' network approach (Figure 3). The adoption of this approach delivered substantial cost savings to consumers, through increasing the efficient utilisation of airlines fleets. The impact of competition and adoption of more flexible business models, enabled by removal of unnecessary regulation, has benefited consumers substantially through lower prices and increased accessibility.

The number of US air passengers has grown from around 207 million per year in 1974 to over 800 million in 2012. In 1974 the cheapest return New-York to Los Angeles flight that regulators would allow was \$1442. In 2011, the same trip cost \$268 in real inflation adjusted dollars.⁹

These examples show the potential for both the form - and the well-meaning application - of regulation to real-world conditions to perversely act to stifle innovation, at significant cost to consumers.

FIGURE 3 EXAMPLE OF A 'HUB AND SPOKE' MODEL OF AIRLINE OPERATIONS



⁹ Businessweek *Airline Deregulation, Revisited* 20 January 2011 and US Department of Transportation.



FURTHER INFORMATION

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