

“New technologies: re-drawing the line between what is subject to economic regulation and what is competitive”

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Introduction

Thank you. And good afternoon ladies and gentlemen.

No doubt one of the things that brought us all here today is the stake we share in how our energy sector develops.

The energy market and its associated regulatory arrangements are of course always changing and adjusting to new ideas, technology, the relative prices of inputs, consumer behaviour, and government policy positions. What's different now, is that it's happening much closer to consumers.

While we have market mechanisms and institutional arrangements designed to respond to these developments, along with every other aspect of life it seems, the scope and pace of change seems to be accelerating, which leads some people to prophesise that we are on the verge of an energy Armageddon, while others based on the same observations herald the eminent arrival of an energy nirvana.

So today, it's a good opportunity to share the AEMC's thinking about the direction and context of developments in the sector and some of the regulatory implications.

In short, new technologies and business models, coupled with consumer-led development of the energy sector, mean the biggest gains will come from network tariff reform and re-drawing the line between what is subject to economic regulation and what is competitive.

The AEMC has a clear objective in the face of changing technologies, business models and consumer preferences. It is a resilient energy market, one that is flexible and can adapt to whatever the future may bring. One that is efficient, secure and reliable, keeping prices of energy services as low as possible for consumers. How this is achieved, however, will no doubt be radically different to the past because of these changing market dynamics.

1. Consumer choices are driving the application of new technologies including storage

Let's start where all our discussions should rightly start – with consumers who are increasingly at the centre of the energy system and increasingly driving change.

Starting with the proposition that generally speaking, it's consumers themselves who are in

the best position to decide what works for them, much of our efforts over the past five years have been in driving more opportunities for consumers to make informed choices about the way they use electricity based on their own assessment of the benefits that end-use services provide to them.

The Power of Choice reforms in particular have laid the foundation for the energy system to be positioned to respond to new technologies in a way that's in the consumer's interest. These technologies are changing how consumers participate in energy markets and include battery storage but also microgeneration, smart devices, electric vehicles and connected home products and services.

However, we need to look beyond the widgets to focus on the *function* they perform and adjust the regulatory and market processes to accommodate them. Many of the functions they perform are not new – what is new is that the technology allows these functions to be performed much closer to, and within the control of, consumers.

Battery storage technology is a great example of this. Batteries can be thought of as simply a generator with electricity as a fuel source – it can be thought of as no different to pump storage hydro. At times it's a source of energy, at other times it's a load on the network. The difference is how close the technology is to the consumer.

We label this the 'consumer-led transformation' of the energy sector. This is part of a process whereby...if you will excuse the pun ...the power to determine how the sector develops is becoming disaggregated. Before the National Electricity Market, the focal point for decision-making was with the generators, it then shifted towards retailers and is now increasing resting with consumers, with flow on consequences for networks and how they are regulated.

Given this trend of decentralisation, the goal for policy makers and regulators becomes consumers being in a position to decide when the value to them of using energy services is greater than the efficient costs to the system of producing it. To arrive at this state of the world, a number of conditions naturally need to be satisfied.

The need for pricing reform

In 2014, one of our first major rule changes under Power of Choice was changes to the distribution network pricing arrangements. So while the 2012 rule changes dealt with the determination of network revenues, the 2014 changes tackled the way those revenues are turned into price structures.

In recognition of the disaggregation or de-centralisation process that is underway, with distributed generation, solar PV, batteries, electric vehicles, energy management software, greater diversity in consumption patterns and the like, determining the efficient level of network revenues only gets you so far.

We also need retailers, third party service providers and where appropriate, consumers directly, to be provided with price structures that reflect the efficient costs of providing network services to them at that time, at that place.

If consumers, through the choices they make, are driving the way the sector develops, then

the development of a competitive energy services market and providing energy services at the lowest possible cost to the consumer will depend on how network prices are structured.

For networks, that means tariff reform ...having network prices structured to reflect the efficient costs of providing network services to individual customers.

Linked to this, and dependent upon the successful management of the network tariff reform process, is facilitating innovation and the development of a competitive energy services market.

Facilitating the development of a competitive energy services market, including storage technologies

Companies are now competing to offer energy services not just energy. I note from this morning's press that AGL has released a new App for instance. This shift has been brought about by changing consumer preferences in how they source and use energy, new technology and new business models, and is driving a re-definition of where the lines are drawn between functions that are subject to economic regulation and those that can be provided through competition.

It is also redefining the relationship between different parts of the sector, where they potentially compete and the circumstances under which they co-operate.

This has important implications for how competition for retail energy services develop, how we think about the role of the retailer, the evolution of networks, in particular, at the distribution level, and when considering deployment of energy storage technologies.

Distribution businesses are evolving from one-way energy delivery systems in an expected growth environment, into managers of multi-directional flows of energy ... and information.

The regulatory framework must evolve to support these innovations in a way that clearly distinguishes between those that relate to the natural monopoly functions of the network and hence are subject to economic regulation and those that belong in a competitive energy services market. The recent rule changes designed to support the development of a competitive metering services market is an example.

Where and how the line between economic regulation and competition is drawn, and the nature of the relationship between network operators and those providing energy services at the retail level, depends somewhat on what you perceive the long-term interests of consumer to be and hence the objective that is trying to be achieved.

If their best long-term interests lie in the development of a competitive energy services market, it means regulated network businesses being unable to use either the financial resources provided by regulated network revenues, or information that they gather as network operators, in a way that limits the growth of competition in energy services.

This has been central to our thinking on how network regulation should evolve in response to energy storage technologies.

What we are particularly wary of are proposals that seek to use regulation to impose solutions or particular technologies on consumers. Imposed solutions generally come at the expense of competition which means they also tend to result in consumers, rather than energy businesses, bearing the risks of technology deployment.

For example, we don't think it's appropriate for networks to put storage behind the meter as part of providing regulated network services.

Our approach is to support the development of a competitive market in energy storage technologies. One that encourages efficiency through businesses competing to provide consumers with the energy services that they value.

Under this approach, storage would only be installed where consumers want the services that energy storage can provide. This could include potentially cheaper electricity, back-up power, environmental benefits, and the opportunity to sell excess energy – all at a price that the individual consumer is willing to pay.

Example: removing the network's monopoly – competition in metering reforms

An example of this approach is our Competition in Metering reforms where, in response to a rule change request, we have removed the regulatory barriers to competition in metering services. In removing the networks' monopoly, we want consumers, via their participation in the competitive retail services market, to be able to choose the 'smart meter' products and services they value.

We believe these metering reforms will allow investment, innovation and technological development in response to consumer preferences - guided by price signals - rather than the network operators' preferences and solutions imposed by regulation.

In effect, the new technologies now available to us, of which storage is but one example, provide us with the opportunity to redraw the lines between economic regulation and competition. It will be companies operating in this competitive retail energy services sector that will need to find the combination of services and technology that best meets consumers' needs.

2. Adaptable regulatory framework to accommodate new business models

Example: who controls storage behind the meter?

One issue that will be close to your hearts is who should control the storage device when it is behind the meter? Should it be the consumer, the energy services company, the retailer or the network business?

In a consumer-controlled model, consumers themselves may buy batteries directly, along with optimising software so the battery can store power at times of low prices (or from their own solar PV), and then discharge at times of high prices.

Or an energy-service company could manage the device on their behalf.

A retailer-controlled model would see retailers providing storage to consumers through, say, a lease or power purchase agreement. The consumer gets a 'less than socket' electricity price while the retailer controls the device to hedge against wholesale and distribution prices.

All of these are compatible with the idea of a competitive energy services sector.

Then there's the network-controlled model. One example is where the network owns the storage asset behind the meter and socialises the cost across all customers.

The concern is that network-controlled storage would act as a barrier to the other models. For example, networks may have an incentive to make network connections onerous and costly if they have a competing business interest in network-controlled storage.

3. Drawing the line between what is contestable space and what is subject to economic regulation

The ability of storage to generate multiple value streams is central to our thinking about which services should be contestable and which should be regulated.

Example: Trial of energy storage in SA

Let me give you a recent example to illustrate this.

Phase 1 of a trial of energy storage has been completed on ElectraNet's transmission network in South Australia. There will be a more detailed case study on this at tomorrow's session with Rainer Korte from ElectraNet but for now, let me take you through the AEMC's perspective on this.

ElectraNet is part of a consortium that includes AGL energy. AGL is an electricity generator and a retailer. The consortium wants to trial a storage device on ElectraNets' network to provide network support as an alternative to network augmentation to address network capacity issues.

If Phase 2 goes ahead, it will be located near a major wind farm and it's hoped the trial will show how storage can help the network cope with integrating an increasing amount of renewable generation.

In providing network support, which is a regulated service, the project also has other potential contestable value streams.

Wholesale energy revenue is one of them. With wind generation often occurring at night when demand and prices are low or negative, the storage device could store energy when prices are low and release electricity when prices are high.

Another contestable value stream is reducing losses when the network is congested. The storage device could be used to store energy when the network is congested and capture energy that would otherwise be lost. It would then release its stored energy when capacity is freed up again.

A third contestable value stream is in ancillary services support. Storage can help maintain key technical requirements of the power system like frequency and voltage. These services are acquired by the Australian Energy Market Operator on a competitive basis as part of the wholesale spot market.

So we want market and regulatory arrangements capturing these multiple value streams so that there is strong separation between the regulated and competitive services provided by the storage asset. We would want to see the benefits of the value stream accruing to the right market participant. In this South Australian example, this would mean benefits accruing to AGL including:

- The market trading benefits
- the 'saved' energy benefits during periods of network congestion because AGL is owner of the wind farm
- And the ancillary services support benefits because AGL is operating the device.

To be clear, we believe network businesses should use storage where it is more efficient than network augmentation or other demand management options to meet network requirements. And the regulatory framework already has incentives for network businesses to adopt non-network solutions, including demand management and energy storage.

What we are intent on doing, is drawing the line between what is subject to economic regulation and where competition can be effective, in a way that enhances competition in the contestable energy services sector. This means regulated network businesses being unable to use either the financial resources provided by regulated network revenues, or information that they gather as network operators, in a way that limits competition in energy services.

To use a sporting analogy, every player on the energy sector playing field should understand the position they are playing.

The whole team suffers if a forward decides to simultaneously take over the fullback's position.

Where to from here?

So where to from here?

- Networks need to effectively manage the tariff reform process and demonstrate how they're going to partner with people competing in the energy services space to help them respond effectively to consumer demands,
- Retailers on product development and
- Market institutions on adjustments to the market and regulatory frameworks that remove barriers to innovations that benefit consumers and effective competition.

Governments quite rightly see the need to focus on the energy-specific consumer protection

frameworks, and how these may need to evolve. In doing so, the relationship between energy specific consumer protections and the more general Australian consumer law is one issue that would benefit from clarification. In doing so, we would expect that they approach it through the lens of continuing to promote effective competition for the provision of energy services.

Conclusion:

Let me finish by saying that these are exciting times in the dynamic energy sector.

Energy storage is one technology that is generating a lot of interest in its ability to transform energy systems.

The 'consumer-led transformation' of the energy sector shows no sign of abating with new technologies bringing the market much closer to, and within the control of, consumers.

We remain committed to market and regulatory arrangements that create an environment for business evolution that promotes the long-term interests of consumers. This means that the regulation of network revenues must continue to evolve.

We are mindful, however, of the importance of where to draw the line between what should be contestable and what should be subject to economic regulation and the imperatives of tariff reform as a pre-requisite for a successful energy services market, including storage technologies.

Thank you and I am happy to take your questions and comments.

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