Ensuring the regulatory framework facilitates competitive and efficient energy markets in a time of technological change

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Introduction

In 1879, Thomas Edison became famous around the globe. The American wrote his name into history by inventing a commercially viable version of the electric light.

Equally well known was Edison's one-time employee and rival, Nikola Tesla, whose discovery of alternating current allowed for the safe transportation of electricity over long distances.

Tesla also designed the first large-scale AC hydroelectric power plant at Niagara Falls in 1895. This marvel of engineering provided consistent power to the city of Buffalo in upstate New York. Imagine the citizens of Buffalo - staring in wonder at the world around them - houses and public buildings lit up in the dark for the first time.

So why this glimpse back into history?

Because once again an energy revolution is happening . . . in renewables; in storage . . . in information management . . . and in the increasingly multidirectional nature of the flow of energy.

A century ago a safe and reliable source of energy was the wonder of the world. Today consumers take it as given and our economy relies on it.

Today there is an amazing and growing range of technologies and energy service options for consumers to choose from.

What's new in this latest chapter of the energy story is that technological change is allowing consumers to choose how that energy is delivered and used.

What's not new is technological change itself – which has been a characteristic of the sector since Edison and Tesla.

The major shift is that technology is enabling a devolution of decision making. It is providing consumers with options and choices. And how they exercise these choices is driving the development of the sector.

However, to take advantage of changing technology, the structure of the energy sector has to change. This means changing the way jobs are done; capital is employed; and businesses are organised. This is what always happens when economic growth is driven by technological progress.

We've experienced this in the past in the energy sector and we're going through it again.

So with this in mind, my intention today is to explore with you:

- why a consumer-driven market lies at the centre of all the AEMC does;
- how Australia's energy market framework has been designed and continues to evolve in response to choices made by consumers; and
- where this framework leads us to when it comes to drawing the line between competition and regulation.

1. Why we champion consumer choice - an argument for markets

So decisions that drive investment and deployment of particular technologies are increasingly being devolved to consumers; and consumers are making choices based on their own interests or values – whatever those interests may be.

And the question becomes: what are the coordinating mechanisms that mean the sum total of all these choices leads to an efficient, safe, secure and reliable energy system?

It's important to stress that the market is only able to embrace consumer choice and the current wave of technological change because of foundations laid in the 1990s by the design of the competitive wholesale market and more recently by the Power of Choice reforms.

How so? The fundamental change effected by the introduction of the wholesale market was a shift in the allocation of risk.

Before the wholesale market was established, generation investment risks rested with consumers because these investment decisions were made by monopoly utilities.

When monopoly utilities got it wrong they passed the cost of their mistakes on to consumers.

After its establishment, generation investment decisions became the responsibility of competing businesses.

Now the future is, by its very nature, uncertain.

Business may not be any better or worse than government in second guessing the future path of technology or levels of demand.

But competition transfers risk from consumers to business when competing businesses bear the responsibility for good or bad investment decisions – and bear the responsibility for subsequent success or failure of their business models.

It was these same basic insights that underpinned the 2012 Power of Choice reforms.

Specifically:

- that market and regulatory arrangements are fundamentally mechanisms for allocating risks between parties;
- that technological developments are enabling consumers to have more control over how their energy is sourced and used; and

- that consistency of risk allocation between the wholesale commodity and retail services sectors is required in order to coordinate the emerging energy ecosystem so it is efficient, safe, secure and reliable.

The Power of Choice reforms are the fulcrum upon which a competitive retail energy services sector is able to develop.

2. How we have designed a framework based on choice

Let's now turn to how the Commission has supported the COAG Energy Council's development of a policy and regulatory framework that sustains consumer choice and technological transformation.

It's important to start with some of the key principles that do enable choice. First and foremost this is all about establishing rules that neither favour nor prevent particular technologies from being used.

The Commission does not seek to pick winners. We're agnostic on the question of whether any one technology is superior to another. Instead, our goal is to create a market framework that can respond to any future scenario in terms of energy demand, changes in technology, costs, and so on.

We've spent a great deal of time thinking about how to design a framework that is technologically neutral – one that can equally accommodate existing technologies and those not yet in existence, as well as environmental requirements determined by government.

These are now the focal point of a maturing market framework . . . designed to put consumers first.

But the reforms are designed to fit together. To finish the consumer-led transformation of the energy sector, we need to stay the course on the reform package in its entirety.

To extrapolate on what this means, let's unpack three key reforms and look at how they interrelate.

The first piece of the puzzle involves network pricing reform.

From 1 July 2017, networks will have to structure their prices to better reflect the consumption choices of individual consumers.

For the networks, this means tariff reform. In other words, structuring prices to reflect the costs associated with providing a particular service to a particular customer.

For example, household A and household B might look the same on paper. They have like-for-like incomes, live in the same climate and have an identical number of family members. But because they have different appliances; lead different lifestyles; or even have different attitudes towards their household budgets; they are likely to consume electricity in very different ways.

Thanks to network pricing reform, these two households will be able to see the dollar value of their consumption choices.

The role of the networks is to provide cost-reflective pricing. The retailers' role is to take wholesale costs, network charges and other potential energy services such as distributed generation or energy management systems, and package these up for consumers. In many ways, their job is to be the consumers' agent for dealing with the rest of the system.

Successful retailers are those that offer the most attractive packages to consumers. And remember in this new energy environment, the term retailer means any business that comes to market offering energy services. Because consumers are so different, we should expect there to be great diversity in the products, services and tariffs offered and taken up.

Consumers choose between fixed and variable mortgages with different terms in the financial sector; and they choose from a range of mobile phone packages in the telecommunications sector.

Network pricing reform in the energy sector is about sending price signals to consumers – and more precisely to competing retailers – about the cost of using the network in different ways and at different times. This means consumers can make the consumption choices they want to, while allowing co-ordination of the various elements of the energy supply chain.

Our second key reform follows logically from the first.

To allow consumers to be provided with retail offerings they value, we need a coordinating mechanism that allows information to be passed between different players in the sector.

That's why we instituted rules in November 2014 to make it easier for consumers to obtain information from networks and retailers about the electricity they're using . . . and to obtain this information in a simple, affordable and timely way; because choice means nothing if consumers don't understand the information they're given.

Finally, consumers need tools to make use of the information now available.

That's where the third piece of the puzzle – metering reform – comes into play.

This reform paves the way for the competitive provision of advanced metering services for residential and small business consumers.

This approach is guided by the principle that competition is more likely to drive innovation and facilitate deployment of advanced meters and services to consumers at the lowest possible cost.

More advanced metering technology gives consumers greater choice and control. With the right technology, information and price signals, they are better able to make decisions about what retail service offering they decide to take up.

To sum this up, the Power of Choice reforms are intended to ensure a resilient, technologically-neutral energy market is created . . . a market that can adapt to whatever the future might bring.

These reforms were difficult to institute.

But they were made possible thanks largely to the quality of the engagement on energy market reform, which is significantly more sophisticated than it was 20 years ago – or even 10 years ago.

The Commission provides all stakeholders interested in energy market reform with a unique platform to come together and debate the pros and cons of market rules. Any individual or organisation . . . public or private . . . any incumbent or new energy service provider . . . may request a rule change or participate in our consideration of stakeholder rule requests.

It is a robust process that rigorously tests not our thinking – and the thinking of everyone else who participates in the consultation process.

3. Drawing the line between competition and regulation

So Australia has made significant progress. More innovative products and services are being offered into the rapidly developing energy services market than ever before. Consumers are benefiting from the new options available to them.

For example, they can now monitor the electricity they are using in real time. Understanding time-of-use pricing is revealing new ways for them to save; phone apps are giving easy access to detailed usage data; and remote access technology is allowing them to turn their appliances on and off when they're away from home.

And for those of us that want to keep it really simple and just pay a fixed amount per month, well that option is also available.

While consumer choice and protection must remain a focus, in the face of this transition we maintain a fundamental principle of the original reform program. It is only where

competition cannot deliver consumer benefits that economic regulation should be contemplated.

Our country's regulatory model draws a distinction between the operating space given over to the monopoly functions of the network – which should remain subject to an incentive-based regulatory regime – and the operating space that can be given over to competition.

If we agree that creating the most competitive energy services market possible is good for consumers, it follows that networks should not be able to use their financial clout, or the information they've gathered as network operators, or the timing of their access to that information, or the processes they control; to construct barriers to entry for potential competitors.

The Commission is especially wary of proposals that seek to use regulation to impose particular solutions or technologies on consumers.

Imposed solutions don't just decrease competition. They also tend to result in consumers, rather than the energy providers themselves, bearing the risks associated with deploying technology.

For example, networks may have an incentive to make network connections onerous and costly if they have a competing business interest in distributed generation or storage.

So for the purpose of drawing the line between regulation and competition, storage, for example, should be considered a contestable service. (That is not to say that networks should be prevented from buying support services from battery operators where that is a lower cost solution than network investment.)

Storage technologies like batteries are a good example of how new technology more broadly can trigger re-thinking on where regulated functions stop and competition starts.

Batteries store and discharge energy. That's not a particularly novel function (think about what a hydro dam does). What makes storage interesting today is its potential to perform a number of functions and possibly generate multiple value streams. This potential to be many things in the market is central to the thinking that underpins which services should be contestable and which should be regulated.

Let me illustrate this with an example.

Addressing the intermittency of renewable generation is one of the drivers behind storage facilities participating in the wholesale market.

This is an exciting development as we seek to successfully transform the electricity sector to result in a less carbon intensive future.

A project called Energy Storage for Commercial Renewable Integration, sought to test whether storage assets could be used to take advantage of the significant amount of energy generated overnight at AGL's South Australian wind farms.

The project's aims were to:

- support the National Electricity Market with frequency control services and black-start capability for coal-fired power stations;

- provide value to ElectraNet's transmission network in South Australia by managing peak load or deferring potential transmission capital upgrades; and

- allow increased use of renewable generation within the network.

The project is a sophisticated example of collaborative, comprehensive testing which takes the right approach to investigating the possible benefits of grid-scale storage. As the network service provider, ElectraNet addressed how the proposed storage system would interact with the network and its regulatory framework while AGL assessed the wholesale and retail market benefits.

Today, new energy service providers are coming to market almost on a daily basis with offers of home battery systems.

Tesla, the California-based Enphase Energy, and Sydney-based Infratech are just some of the players we see emerging in the retail space or forming partnerships with developers to build housing developments that market the promise of cost savings from "energy autonomy."

Given the range of players out there looking to develop products and services for consumers – and taking the risk on whether particular technologies and business models will be successful – there does not appear to be any market failure that would suggest you need regulated entities to be offering these products and services to consumers directly.

The mistakes made within our own sector in past decades have taught us that innovation is driven by competition. It was the Roman poet Ovid who said, "a horse never runs so fast as when he has other horses to catch up and outpace".

Regulated entities, including networks, should only be allowed to own contestable products and services if this can be done in a way that enhances the development of a competitive retail energy services sector.

At this point I would have to say that this is a big "if". It has yet to be demonstrated that network businesses are able to operate in this space without damaging the development of a competitive energy services sector that benefits consumers and has an appropriate allocation of risks.

The stakes are high in getting the line between regulated and competitive right. More than 1.5 million households in Australia now have rooftop solar. Combine this with the possibilities of battery storage, and Australians have the opportunity to produce and consume their own power – and participate in the energy market – like never before.

Given this situation, our objective should be to allow the competitive energy services market to expand and can continue to drive innovation and choice. This is a complex area, but more work is being undertaken in the coming months to provide stakeholders with clarity and guidance.

First, we're expecting a rule change request from the COAG Energy Council that will ask us to clarify how the rules create separation between what is a regulated service and what is a contestable service.

Second, the Australian Energy Regulator has begun to develop an electricity distribution ring-fencing guideline that will apply across the National Electricity Market.

The AER has released a preliminary position paper, which includes case studies showing how the new ring-fencing guideline may be applied. It's worth noting that the guideline will result in a move away from state-based ring-fencing arrangements towards a national approach.

Conclusion

Ladies and gentlemen, thank you very much for your interest and attention today.

In conclusion, I return to the title of this presentation - "a time of technological change".

As a community, we're not always good at fully comprehending the implications of change, especially when it is happening all around us.

It's often only with the benefit of hindsight that things become clear.

For example, email usage only became widespread in 1996. Even then, there was no YouTube, Google, Twitter, Facebook or Wikipedia. Today, it's hard for us to let a day go by without using these services.

Against this backdrop of technological change, the Commission has been – and continues to be – focused on facilitating competition to enable the adoption of change and the development of a flexible and resilient market framework.

We've acted to manage change as it happens. And we've adapted to ensure we are ready for changes still to come.

The industry has come a long way and, as already mentioned, recent reforms have built on the early foundations based on a consistent framework for risk allocation, competition and its associated efficiency benefits.

But who knows what awaits us? Who knows what technological breakthroughs in renewable energy, in storage, in electric vehicles, or in distribution might arise?

Whatever happens, with the AEMC working with the COAG Energy Council and all of you to support the successful transformation of the sector, we are confident that the settings are in place for winners to reveal themselves, driven by consumer choice.

Thank you.

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