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AUSTRALIAN ENERGY WEEK

AEMC CHAIRMAN'S ADDRESS

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Introduction

Thank you, Elise, for that kind introduction. As I tell most groups, I'm not in the forecasting business but, nevertheless, we can have a bit of a stab at a few things.

It's certainly a pleasure to be with you all today as it gives us an opportunity to talk about some of the issues and indeed the opportunities that the sector faces and the role that the Commission has in that. But before doing so it is perhaps worthwhile reminding ourselves of a bit of the broader context in which we are operating.

Last Tuesday evening, following the Reserve Bank's announcement of a lowering of the cash rate to the remarkably low 1.25 per cent, the Governor of the Reserve Bank, Dr Philip Lowe, gave a widely reported speech in which he reflected on Australia's general broad level of economic performance, but in particular the role of what's referred to as structural reform policies.

That is - policies that drive innovation, lift productivity, these being key determinants of sustainable economic prosperity.

It was the logic of this relationship that saw the decentralisation of key operating and investment decisions in the electricity sector, where that was possible, during the 1990s, not only because of the need to lift the sector's own productivity, which it did for many years, but because of the flow-on consequences to the rest of the economy.

So as we address the questions posed by today's policy objectives, technologies and consumer choices – the relationship between competitive markets, innovation and productivity and economic prosperity needs to be the backdrop to the answers we provide to today's questions.

But before I turn to the issues we see facing the market today I will just say a few words about the role of the Commission.

First, we provide advice to governments on market developments but, secondly, perhaps more importantly for today, we are the rule maker for Australian electricity and gas markets. We adapt market and regulatory frameworks as the world around us changes, specifically by making amendments to the National Electricity Rules, the National Gas Rules and the National Energy Retail Rules – and this is the important bit – in response to proposals that can be submitted by anybody.

Anybody that is except the AEMC itself.

This is a significant responsibility. We are effectively delegated law makers, and the AEMC Commissioners and I take that role extremely seriously, particularly as we are operating in times of sweeping change.

Through all that change we are focused on what's best for consumers and how change can be brokered at the lowest cost to families and businesses.

At times like these, there are certainly great opportunities for entrepreneurs and innovative thinkers to deliver great benefits to the community as a whole, often leveraging off the promise of the new technologies.

But there are also challenges, and it must be said people talk their own book.

So in the Commission's work we are deeply consultative and stand for evidence based decision making. All the change coming from industry, from policy changes, from the Commonwealth, the states and territories must be dealt with in our work program.

But our advice must not shift from finding the lowest cost options to just managing these changes for consumers. We are required to make decisions about proposals to amend these rules that are submitted by stakeholders, customers, consumer groups, peak bodies, market participants, some market bodies, governments and indeed from civil society.

And it's really because of this today I wish to give some guidance as to the areas that the Commission believes deserve particular focus.

I would like to nominate five priority areas that the Commission will be focusing on in the coming year.

Just to be clear, we are required by law to address all rule change proposals that are sent to us as soon as practical. But, with the volume of

rule changes being submitted to the Commission and the call from many stakeholders to address issues and problems that the national electricity market (NEM) is facing, we believe it's necessary to provide some guidance around the types of rule changes the Commission will prioritise.

The NEM of course is a rather complex beast, or system, that delivers electricity to homes and businesses from Far North Queensland to Tasmania and to South Australia. It was set up in a way to allocate the risk of investment to commercial market participants rather than taxpayers and consumers.

Protecting consumers from these risks and costs is one of the Commission's key objectives when making decisions that are in the long-term interests of consumers.

Perhaps as we manage the issues and the sorts of transitions we are going through at the moment it's never been more important to focus on making energy policy that's in the long-term interests of consumers.

What does that mean? It means delivering secure, reliable, low cost power for Australia as the system changes to incorporate these new technologies, new behaviours and new expectations on the part of consumers.

Technology and consumer choices, consumer decisions, and consumer preferences of course change continuously. Right now new technologies, perhaps more than anything else, are changing the way the electricity system operates.

A couple of big things worth noting are really the shift from large geographically concentrated electricity generation to smaller perhaps more modular renewable investments; along with widespread adoption by households and businesses of solar PV generation and increasingly of battery storage; and the digitalisation of consumer interactions or the means of those interactions.

Our priority areas of reform will accommodate these and indeed any future changes and disruptions because that's our job, to change the rules as the world changes - but always in ways that deliver what consumers want and need.

So what are these areas?

The first of our priorities is generation access and transmission pricing

This needs to be reformed because we are moving, as I said, from a small number of large generators concentrated in regions usually with access to nearby coal - to a large number of small generators that are far more geographically dispersed to places where the wind blows or where there is room for solar arrays.

The sheer number of new generators coming on line and the lack of coordination between connecting generators and transmission businesses means generators are being built in places where there is not enough transmission infrastructure to get the generation to the market.

This trend will continue with the decline in the costs of renewable technologies, and changing patterns of electricity demand that will also require complementary – often gas-fired, pumped hydro, energy storage sorts of technologies, plus investor concerns about carbon risk.

There's around 8,000 megawatts of new power generation currently under construction or at financial close, and in the coming years this should place downward pressure on prices.

We are understandably considering how best to support this transition so we can get the best outcome for consumers.

The Integrated System Plan completed by the Australian Energy Market Operator provides a useful starting point for thinking about what the grid may look like in the future. Within the Commission our coordination of generation and transmission investment review, which goes by the very attractive title of COGATI, is considering how to reform the way generation gains access to the market.

Our present access and transmission pricing arrangements presume that transmission is built for and in effect used by consumers -and hence consumers pay for transmission. If the changing nature of generation technology investments means that people are starting to argue that transmission needs to be built for generators, it seems reasonable to ask what transmission investments should be paid for by generators and how.

If we don't reform generator access and transmission pricing on access arrangements, then consumers or indeed taxpayers may end up footing the bill for transitioning towards the grid of the future. Hence **we will prioritise rule changes that seek to reform generation and transmission frameworks to try and address these access issues.**

The second of our priorities is system security

Reform is needed in this area because the levels of such things as inertia, frequency control, and system strength have been deteriorating as the generation mix changes - that is the stuff that keeps the system ticking along within its technical limits.

Significant investment in new forms of generation has been positive in that it reduces greenhouse gas emissions from the sector. But the types of generation being installed have different technical characteristics from the types of generation that have been retiring; as referred to before, the coal-fired stations.

Services that were once provided as a by-product of the technology that was producing energy, the sort of positive production externalities, aren't being provided to the same extent anymore.

The system needs these services to continue to operate in a secure state. So there needs to be incentive for participants to invest in the sort of technology and kit that provides these services.

It is this deterioration in system security that actually keeps me awake at night.

This is primarily because, unlike reliability gaps that can be evaluated many years ahead, system security tends to be a rather binary thing: you either have it or you don't.

The statement of opportunities reports and indeed market participants' own forecasts give people fair warning about emerging reliability gaps, and the COAG Energy Council's retailer reliability obligation will require retailers to address those reliability gaps as they emerge.

But a secure system is one that operates within a fairly narrow band of technical parameters constantly, and there will always need to be the right

amount of frequency control, voltage management, inertia, system strength et cetera.

If these parameters are not within the appropriate narrow bounds in real-time the system becomes unstable and of course, as we have seen, some uncontrolled blackouts are indeed possible. We have been working hard with AEMO to address these issues and we have made some significant changes to improve system security frameworks in the last two years. But, even with the significant changes made, it remains a priority area of reform for the Commission and **we will prioritise rule changes that seek to reform the way in which security is maintained into the future with our changing power system.**

The third priority area is integration of distributed energy resources

Reforms are needed in this area because consumers' uptake of distributed energy resources is not just fast; it's exponential. More than 2 million homes are now energy producers as well as consumers. In the March quarter alone nearly 500 megawatts of small-scale solar PV have been installed. Batteries, electric vehicles are also set to be embraced in a greater numbers by households, as costs fall.

So the people that run the power system and distribution networks are coming to grips with understanding how these DER resources are impacting on grid operations and what the waves of change may mean as more and more distributed resources are being installed.

There is an opportunity for policy makers to focus on how these distributed resources can be utilised and how consumers can be rewarded through access pricing and cost reflective or – my preferred term – customer reward pricing. Because, properly implemented, network pricing structures that reward customers by leveraging rules that are in fact already in place would, for instance, allow customers with distributed resources to be rewarded when their resources are integrated in an operational sense with the rest of the system. That in turn would allow all consumers to benefit by lowering the average cost to serve to all consumers.

The Commission is considering a lot of these issues through its electricity networks economic regulation review. **We will prioritise rule change proposals that come to us that seek to address the efficient integration of distributed resources into our networks.**

The fourth priority area is the digitalisation of energy supply

Reforms are needed to help consumers take advantage of these emerging technologies. Digital technologies in homes and workplaces are creating significant opportunities for consumers to self-manage their energy that was previously not possible. These smart technologies mean households and businesses can take advantage of things like demand response, and that means the power system can avoid the cost of more resources to service peaks in electricity demand for only a few hours of the year.

In this context the Commission is designing new frameworks to support efficient demand response, embedded networks and stand-alone power systems. Focusing on this priority will allow consumers, through energy service companies, both big and small, to respond in real-time and be rewarded for doing so in relation to what the system actually needs.

Hence **we will prioritise rule changes that seek to empower consumers, particularly through the application of these digital technologies.**

Finally, the fifth priority area is aligning the financial incentives that operate on market participants and the physical needs of the power system

The market was set up to pay generators for making electricity when consumers need it. The design of many tools that have been used to achieve environmental goals have broken the link between demand and the financial rewards and costs faced by the generation we need for reliable and secure supply.

This is important because obviously electricity supply and demand needs to be balanced at all times, otherwise things break.

The incentive for sellers to generate electricity when consumers and the power system need it is when spot prices are high or low – this has been

blunted. The NEM allows spot price volatility to drive the most efficient dispatch within the wholesale market of course, but generators and retailers manage that risk through the use of financial derivative products, hedging contracts.

Entering into wholesale hedging contracts obviously helps retailers manage their financial risks and have more certainty over their wholesale energy costs, hence allowing them to offer stable retail prices to consumers. They also increase the certainty for generators' revenue streams which then obviously has a flow-on effect to their funding of the business operations and investment.

But it is a particularly important risk management tool for generation companies seeking not only to build a new power station; they also provide very strong incentives for generators to be there when the system needs it most. A generator covered by a swap contract can lose in excess of $14,000 per megawatt per hour if they are not generating when the system needs them.

For a 500-megawatt set, that's the equivalent of in excess of $7 million or the equivalent of burning $7 million per hour for not generating when they are covered by a swap contract.

In other words, the interaction between the spot and wholesale contract prices links the physical needs of the system with financial outcomes. The emergence or the way in which a lot of production subsidies have been structured has broken the link between the physical needs of the system and financial incentives for generators.

As an example, the increased use of contracts that are structured so as to reward the seller for generating as much electricity as possible at any time is the sort of development off the back of these production subsidies that affects this link, this relationship between physical and financial.

We see the need to restore those links between financial outcomes and what the system physically needs. In fact, as an aside, the recent moves by Infigen to firm up their wind resources with a gas turbine to enable them to write swap contracts against a portfolio of resources is, I suppose, one company's response to this issue.

Therefore **we will prioritise any rule change proposals that are put to us that seek to align financial incentives with the physical needs of the system.**

Conclusion

So, in summary, over the next 12 months and perhaps beyond the Commission will seek to prioritise rule change requests within its broader work program that fit within one of these five areas. I would expect that each year the Commission may again express a view as to which are the priority areas for rule changes, again to provide guidance to people such as yourselves and other stakeholders when they are considering putting rule changes to us.

As I noted earlier, the Commission is required to consider all rule changes as soon as we can. In other words, we cannot and will not ignore rule changes that are made by any of our stakeholders, and certainly those that come to us as urgent or critical for operational or other reasons will be addressed in a very timely manner. But the transition that's under way in the energy sector means we do need to prioritise our work program to make sure the right questions are addressed in the long-term interests of consumers.

Since the Commission's inception the market design has been subject to a constant process of review and adaption reflecting changing conditions, technologies and government policies. We will continue to do so in the years to come. Someone suggested that the fact that we are up to version 122 of the electricity rules, version 45 of the gas rules and version 17 of the retail rules is one indicator of how these frameworks are fundamentally different now than they were just a few years ago, let alone when the NEM started.

As we manage this change, I would like to suggest it's perhaps never been more important to continue to leverage off the disruptive nature of rigorous competition to drive productivity and, through that, lower costs to consumers.

By that I mean protecting and empowering consumers by ensuring that the commercial market risks associated with investments in these new

generation technologies, business models and the like remain with the market participants rather than consumers.

I suppose for our part the Commission is and will continue to work as hard as we can with our counterpart market institutions, so the transition that's currently under way, and will inevitably continue, delivers on our national electricity objective, being the long-term interests of consumers. Thank you.

Ends.