

ECONOMICS AND INDUSTRY STANDING COMMITTEE

INQUIRY INTO MICROGRIDS AND ASSOCIATED TECHNOLOGIES IN WA



**TRANSCRIPT OF EVIDENCE
TAKEN AT PERTH
WEDNESDAY, 20 JUNE 2018**

Members

**Ms J.J. Shaw (Chair)
Mr S.K. L'Estrange (Deputy Chairman)
Mr Y. Mubarakai
Mr S.J. Price
Mr D.T. Redman**

Hearing commenced at 10.46 am**Dr RAY CHALLEN****Governing Body Member, Economic Regulation Authority, examined:****Mr PAUL KELLY****Executive Director, Regulation and Inquiries, Economic Regulation Authority, examined:**

The CHAIR: On behalf of the committee, I would like to thank you for agreeing to appear today for a hearing into the committee's inquiry into microgrids and associated technologies in Western Australia. My name is Jessica Shaw and I am the Chair of the Economics and Industry Standing Committee. I would like to introduce the other members of the committee: to my right, Stephen Price, member for Forrestfield, and to my left, deputy chair Sean L'Estrange, member for Churchlands, and Terry Redman, member for Warren-Blackwood. Our other member, Yaz Mubarakai, is not able to be with us today.

It is important that you understand that any deliberate misleading of this committee may be regarded as a contempt of Parliament. Your evidence is protected by parliamentary privilege. However, this privilege does not apply to anything you might say outside of today's proceedings.

Before we begin with our questions, do you have any questions about your attendance today?

The WITNESSES: No.

The CHAIR: Would you like to make an opening statement?

Dr CHALLEN: We can talk about what we do in the space first. We are really at your disposal. If you have things you want to talk to us about, we are quite happy to start off that way. If not, we do have roles in licensing regulation and consumer protection that we think are relevant to the issue of microgrids and standalone systems. We could start off, if you want us to, with a description of what those activities are, which will then lead into a discussion of some of the issues we see around changes in the technology of delivery of electricity services.

The CHAIR: I think that would be helpful. The way we have approached this inquiry is that we are essentially tackling it in two parts. We have just spent the past few months looking at the technologies and the various opportunities that are out there across the entire value chain. We now will move onto the complex regulatory and market structure issues. I think that having an understanding of the Economic Regulation Authority's role in licensing and market monitoring, economic regulation and network access and your consumer protection function would be very helpful in a general sense because we have not had the benefit of an overview on that yet. If we have time, we can start exploring those other issues or they may well drop out from members as we go through. That scene setting and context and some thoughts on this topic would be great. If we run out of time—there is a real risk that may happen—we will either provide you with questions on notice or we can have another discussion at a later point.

Dr CHALLEN: I will start and then hand over to Paul, who deals with these issues on a day-to-day basis. The Economic Regulation Authority has three areas of activity that relate to electricity markets. One is we have a monitoring enforcement role for the wholesale electricity market in the south west—really the Western Power grid—and also an annual review role on the effectiveness of the operation of that market, reporting to the Minister for Energy. We also have a regulatory function around access to the Western Power network, and then we have a licensing function, which

also deals with a lot of the customer protection issues, because customer protection issues are effectively implemented and enforced through licence conditions. I think it is that last one that is probably most relevant, so I might hand over to Paul who can give a better outline of what we do there.

Mr KELLY: We currently have issued about 64 licences in the electricity industry. That is across generation, transmission, distribution and retail. That includes Western Power and the like. It is in excess of about one million customers across that group. That is within and outside the SWIS. I am not sure how much you know about the break-up of the customer group. The small users, the mums and dads—less than 50 megawatt hours a year; about a \$15,000 account for the year—are known as franchise customers and they must be supplied by Synergy. Between 50 megawatt hours and 160 megawatt hours they are contestable customers, but the retailers and network operators must comply with the small use customers' code. That is around about \$56,000 a year. The code has protection of customers from 160 megawatt hours a year down.

Beyond that, it is completely deregulated. You still need a licence to deliver electricity, but those customers are not protected by the code. They are bilateral agreements generally between the retailer and the customer. I do not know the precise number of that group because, obviously, it is not something that we regulate in terms of customers, but the last figure I had was around 26,000 in 2012. It is likely to be more than that at this stage because as the tariffs go up and consumption goes up, obviously, they move between those categories.

The CHAIR: Is the threshold a monetary threshold or a kilowatt hour threshold?

Mr KELLY: It is a kilowatt hour.

The CHAIR: So the tariffs changing around do not necessarily shift you into one thing?

Mr KELLY: No.

The CHAIR: I just wanted to ensure that we picked that up.

Mr KELLY: That is absolutely correct. In fact, the financial numbers for those bills used to be significantly lower but as the tariff has gone up, the value of the account has gone up.

The *Electricity Corporations Act* broke up the old Western Power into Horizon Power, Synergy, Western Power and, initially, Verve Energy. That is something that we do not have any jurisdiction over. Our powers derive from the *Electricity Industry Act*. That is where we do the licensing and that is the regulatory framework that the authority applies. That is the genesis of those powers. One of the most significant ones, as Ray pointed out, is in the customer protection area. The legislation is quite prescriptive in terms of our responsibility for the development of the customer protection code. An independent committee is appointed by the authority which must provide advice to the authority on the conditions of the code. Eventually, through a very convoluted prescribed process, the authority then endorses the code and gazettes it. That is the means by which the customer protection provisions are applied to retailers in the business.

In terms of microgrid and standalone systems, there are some obvious issues there in how that code would operate. There is also an Energy Ombudsman scheme, which is independent of the authority but the authority approves the charter of that scheme. The authority does have a role, but not in terms of the day-to-day operation of the scheme.

One of the difficulties that would emerge for microgrids in the standalone systems is the nature of how they would operate and who would be supplying the electrons to the consumer. That is the area where the licence applies. It is not actually to the consumer; the licence obviously sits with the supplier of those electrons. There are a few issues with the current Western Power proposals

because most of the legislation and the regulatory framework that sits around the electricity industry is all predicated on a network supply as opposed to a standalone or microgrid-type system. There is scope in the legislation for the minister to exempt suppliers of electrons from the licensing scheme. Indeed, that is happening for some PV providers. It is not something that the authority gets involved with. It is a policy decision, basically, of the minister as to whether any proposals will be exempt from the licensing and the regulatory framework.

But the biggest impediment to any kind of inertia with regard to microgrids and standalone systems is in fact a legislative and regulatory framework because, as I said, it is all predicated on having networks. Even with the Western Power pilots at the moment there is possibly a question of whether, under the *Electricity Corporations Act*, Western Power can actually supply a standalone system because it is virtually prevented by the act from being a generator or a retailer; it is simply a network operator. There is a serious question there, but it is a pilot and those systems that have been put in place so far are still connected to the grid, so technically they can be supplied from the grid. If they were to be a complete standalone system, there could well be some difficulties. It is not something that we regulate. We would not be taking action against them. It is a decision for the government at the end of the day as to whether its trading enterprises are complying with the legislation.

That is a bit of a thumbnail sketch. I suppose the best way to describe it is that microgrids and standalone systems are virtually the Uberisation of the electricity industry in some respects. They are the big disruptors. The regulatory framework is not advanced sufficiently, or sufficiently flexible, to allow a proliferation of these sorts of activities in the current market.

The CHAIR: There is an issue around customer protection and licensing and then there is a significant part that you have not touched on yet, which is about the role of network access and regulation accommodating these types of technologies and developments, and the types of services being provided by the assets that are attaching to the network—their remuneration; the way Western Power derives a return. That is something that you have not touched on. I would say that is something that we would be very interested to explore.

Perhaps we want to question for a little while around these consumer protection-type issues and then invite further comment on those access frameworks?

Mr KELLY: You are quite right: there is a whole swathe of other issues in relation to the normal access arrangement-type process. If companies have standalone assets, are they then part of the asset base for regulatory purposes, for AA4, for example?

The CHAIR: I see that as probably one of the most significant aspects of this inquiry. Clearly, the ERA has a huge role to play in that space. Indeed, I appreciate that you are in the middle of the AA4 process and that your draft determination is out there.

Do committee members want to ask questions around these consumer protection-type issues and then move on to the broader regulatory issues?

Mr D.T. REDMAN: You get submissions from Western Power for asset investment and you make the decision based on the efficient way of doing that and, therefore, given them an allowance in terms of what they can invest. From where you sit are you seeing any evidence of investment decisions that are essentially aligned to the old model—this big central generation getting stuff out there? How well does what you are being presented with in terms of investment decisions match up to what is happening with the new “Uber” that has come along and is going to hit us?

Dr CHALLEN: From a network regulation perspective, the way that network regulation in Western Australia works, which is pretty much the same as Australia generally, is that if a network

owner passes some tests—effectively customer benefit tests or regulatory requirement tests for investment in the network—then they become guaranteed a rate of return on that investment. For example, Western Power invested in the major transmission line that goes up through Eneabba and, ultimately, to the north coastal and northern wheatbelt area. That went through a series of tests that said that yes, under certain assumptions that investment made sense for customers and had benefits to customers. They had the multi-hundred million dollar investment added to their capital base and they are effectively guaranteed a rate of return for the 40 or 50-year life of that asset.

That works fine if the model of the way the electricity system operates is going to be constant over the next 40 to 50 years and we can be sure that that asset is going to stay in service. But what happens if we no longer operate an electricity system in which we are moving energy from Collie to Geraldton and that asset is no longer fully utilised, or even in the extreme, no longer necessary at all, because all of those country towns and the City of Geraldton are generating enough electricity to satisfy themselves?

What would happen if \$500 million or \$600 million of transmission line was no longer required? Would our excess regime still reward Western Power for an asset that is sitting there being unnecessary? Would we draw on the poorly defined provisions under the access regime to make assets redundant and effectively remove them from the asset base and say, “Sorry, network service provider, your asset is no longer necessary. Why should consumers continue to pay for it? We are going to writedown that asset value”? In which case, what consequences does that then have for rates of return that we provide Western Power, if all of a sudden their assets that have previously been regarded as a secure investment and, therefore, attracted a low rate of return of investment, become risky investments? Would they quite rightly demand a high rate of return or faster rates of depreciation of those assets? That really has not been thought through.

Our access regime was developed at a time when everybody thought that the old way of providing electricity would go on forever and, hence, provisions for making assets redundant if they are no long required or only partially utilised have not been well developed in the legislation and have never actually been enacted by regulators. I think regulators would require a lot of thinking if they were to draw on those provisions. The same would apply to the transmission lines coming up from Collie, for example. If centralised coal generation declined, what about those transmission assets? Are they still required? Should consumers continue to pay for those even if they are not being utilised?

The CHAIR: This is clearly a big issue for regulators around the world. What work is the ERA as an institution doing to grapple with those issues? Do you have any specific research programs? How well resourced are you to look at these types of issues?

Dr CHALLEN: Our role is not the regime; it is not the legislation. We basically deal with the legislation that we have been given. We are in the process at the moment of a regulatory approval for Western Power, for its network prices for a five-year period. We have been giving some pretty serious thought in that to this issue of what happens if electricity networks are no longer a safe, relatively passive investment into the future. We put out a draft decision six weeks or a couple of months ago and we are still in the process of receiving submissions on that. One of the matters that we did address is within the scope of the authority’s discretion, changing the price control or form of regulation that applies to Western Power so Western Power does start to have revenue at risk if people no longer want to utilise the network.

Until this point Western Power is regulated. You say, “Here is your investment in assets, here is your operating costs. We will allow you an amount of revenue to collect and if for some reason that revenue is not collected in this five-year period, we will roll it over to the next regulatory period.”

We have made a proposal in our draft. This is not to change that. If Western Power does not collect the revenue that they have been allowed, there is not a rollover of under-recoveries, so Western Power bears demand risk. Whether that will go through to our final decision or not remains to be seen. As I said, we are waiting for submissions on that.

But our thinking behind that is that Western Power needs to start thinking about the value of the network services that it provides. It needs to say, "Okay, network-supplied energy is now in competition with household or consumer-supplied energy at the premises." That is in competition with batteries and the like which will store energy and no longer require the network, and potentially in competition with people deciding not to connect or to disconnect from the network, and either having standalone premises or small microgrids of customers that are detached from the Western Power network. We certainly took the view that Western Power needs to start thinking about the value of the network services that it provides and Western Power needs to be out there demonstrating to customers the value of that connection. We have been concerned in the past around complaints from customers about difficulty in connecting to the Western Power network, complaints about the tardiness of Western Power in responding —

Mr D.T. REDMAN: Expensive comes to mind.

Dr CHALLEN: —and it being expensive. While we are not necessarily pointing the finger at Western Power, within our scope of discretion under the legislation we need to make sure that Western Power faces the right incentives to be responsive to customer needs and to be well aware of what value the network is to customers. That is the reason why in our draft decision we have proposed that Western Power be faced with more demand risk in the provision of network services.

The CHAIR: I guess it also reflects a change in what the network does. We have had evidence put to us about networks basically being platforms for exchange now. Perhaps you could elaborate a little more on the ERA's core response functions. The ERA responds to a proposal that Western Power puts to it about the way its business should be valued, its assets remunerated and the charges it can levy to its customers. In the proposals that have been put to you, not necessarily just from Western Power but from a number of parties have made submissions to the AA4 process, are you seeing a change in the way that submitters are asking the regulator to view the function of the network and the services that are provided and to consider that in a different way than historically has been the case?

Dr CHALLEN: Our concern with network owners—I am not speaking just about Western Power but certainly from our view of what is happening in the eastern states—is that they still exist in an old mindset, that they are entitled to a return on their investment in the network. Our response is not to be second-guessing what is the future of the network and where does value lie. We are not in the position of being network providers ourselves. We are not industry participants. What we are concerned about, though, is whether the regulatory regime provides the right incentives for Western Power, for example, to be thinking about that and maximising the value. That is what we see as our role.

An example of the proposals that we are seeing and how we still think that network owners are in an old mindset is that they come forward with a proposal of wanting to increase fixed charges for connection to the network. Their main reason for that is that they want revenue stability. They say, "Okay, you have a connection to the network. You're going to pay a fixed charge for that connection regardless of how much electricity you use. We want that because demand for network-supplied energy is at least static, or declining in some respects, and that does not accord with our view of the world where we want a return on our network investment."

In our view, that is an old way of thinking and it is not suited to a world where networks compete against other sources of energy supply and other models of energy delivery. It is not our role to think that the network should be doing different things. All we are saying is that the network should face the right regulatory incentives to be thinking about how we can create value for customers with network services.

Mr S.K. L'ESTRANGE: We saw that in last year's budget, where the fixed charge was increased so that if people were using PVs to lower their energy costs and whatever, it was not accepting that effort on the part of the consumer by hitting them with a fixed rate charge through Western Power. Do you look at those types of policy decisions made by government and then go forward to them and say, "This is actually not where we need to be going?" Where do you sit?

Dr CHALLEN: That is not really our role. We do not comment on government policy unless we have an inquiries function when we are specifically asked to.

The CHAIR: I guess there is a difference as well; we are talking about the network tariff as opposed to retail tariff.

Mr S.K. L'ESTRANGE: Can I just get the answer please, Chair?

Dr CHALLEN: Again, the increase in the fixed charge—there are arguments either way. At the moment we have a lot of people with solar panels on their roof who still utilise the network to sell energy back into the network or as a backup for when the sun is not shining or when their battery runs flat. Under the old retail tariff scheme—you would have heard this before—when customers are paying on an energy-only basis, they are effectively getting that network service for free or at low cost. There is a reason to charge differently for that and a fixed charge is a fairly crude way of doing that. As the new technology has developed, customers are going to have the ability to bypass the network if they want. Although an increase in fixed charges may meet this objective of getting people to pay a fairer contribution towards the cost of networks at the moment, there are limitations on how far you can go with that.

Mr D.T. REDMAN: It could be counterproductive.

Dr CHALLEN: Sooner or later customers will say that they would rather not be connected to the network.

Mr S.K. L'ESTRANGE: Are you modelling those future outcomes?

Dr CHALLEN: We are not modelling them. Again, that is more of a policy issue for the Government, particularly as government is advised on the structure of the Synergy tariff and so on. That is not our role. Our role is to make sure that particularly the network has the right incentives to be thinking about customer value and not about protecting the stability of its own revenue stream through —

Mr D.T. REDMAN: You must be in a really good position to have some visibility on emerging inefficiencies. Yes, you are constrained by the legislative bounds of what you regulate. The network operator—in this case, for example, Western Power—has constraints on what it can invest in. That is almost a mechanical process that you work through, but you do have some visibility on emerging inefficiencies. One of the things you talked about a second ago was that a little-used part of your options is to take it off the asset base. That must have been an emerging challenge for you, given that that will be a pretty big disruptor in Western Power's business case, I would have thought, if you have a big asset in that space.

Dr CHALLEN: Absolutely. At the moment the deal with the Network Access Code is almost handled in a couple of lines in that code and almost as an afterthought. It has not been properly thought through how this would affect the regulatory regime. It is not an issue yet. Will it be an issue in the

next regulatory decision in five-years' time or the one after that? It is difficult to say at the moment, but we can certainly see the potential for that problem. We certainly flag these sorts of issues for the government to deal with on a policy basis.

Mr KELLY: There are two real impediments. One is the Access Code itself, which we do not have any control over. It is a government instrument and we simply apply the Code. The other is the *Electricity Corporations Act*, which actually prevents Western Power taking some initiatives that would resolve some of the issues that Ray is commenting on. For example, even if they put in a standalone system somewhere, unless it is connected to the grid, legally under the *Corporations Act* it is unlikely that they are able to do it. You have to remember that back in 2005, Western Power was vertically integrated. The purpose of that 2005 legislation was to break that up and segment it. What the Committee is now looking at is something that is vertically integrated. The whole structure of the Government-owned element of the electricity industry has been disaggregated in 2004 or 2005 and now we are looking at concepts that are having small, vertically integrated systems, à la Horizon.

The CHAIR: There are two key questions that I would be really keen to get your view on. The first thing is that all the evidence that has been presented to this committee would suggest that things are changing incredibly quickly and that there is already a lag in terms of the frameworks that are capable of accommodating these technologies. The access arrangement decision that is made now applies for the next five years and then we go through another access process, so theoretically it is 10 years away before we see any change, whereas certainly the evidence the industry has been suggesting to us is that something needs to happen in a lot more responsive fashion. I would be interested to hear your views on the urgency with which we—I use “we” generally; not necessarily the ERA—potentially need to tackle this and how swiftly we need to have some sort of response.

The second issue comes back to an answer that you gave a couple of questions ago, Ray, about encouraging Western Power to think of the network in a different way or the need for networks to approach their functions in a different way and for frameworks to accommodate that. Have you seen any other jurisdictions that seem to be thinking about these things or even putting proposals out there that do ask for this reconceptualisation of how networks function and how they should be remunerated?

Dr CHALLEN: They are certainly thinking about it in the National Electricity Market. They have not taken the step that we have of exposing the network owner, or proposing to expose the network owner to demand risk. We are leading the field in that one. As I say, let us wait and see whether we end up doing that or not in our final decision because we are still waiting for submissions on that proposal. Another example of an issue they are dealing with in this is: what can the network business actually do?

To give you an example of that, with battery technology emerging there is an ability to substitute batteries for network assets. If you have a Wheatbelt town that has a poor security of supply due to weaknesses in the network, then you can either strengthen the network out to that town or you might install a big battery at the town itself. In the relevant electricity substation would be the obvious place to put it. Depending on what you conceptualise that battery as, Western Power may or may not be able to do that itself. You have probably heard this story. If a battery is regarded as a generator because it puts out energy into the network, Western Power, strictly speaking, would not be allowed to do that.

That might seem a bad thing, except that—this is one of the matters that is on the minds of the Australian Energy Market Commission—if you allow network businesses to be out there installing batteries, they actually have a market advantage and a market power in doing that because they can install batteries at their substations but potentially inhibit other people from doing the same

thing as a business initiative of their own. That is not contemplated as a potential problem in the access regime that we have now.

The CHAIR: Is it that they are not allowed to do it or they are not allowed to derive an income from it? If they are selling electricity and getting cents per kilowatt hour on whatever platform, is it just that they are physically not allowed to do it, because they are operating a network? If that is considered to be a network stability function that is being provided, if they are doing it and it is part of their operations of the network to maintain reliability, that is very different from them doing it and then looking at it as an income source—as a generation source.

Mr KELLY: So long as they do not cut the wire, they are probably all right—they can augment it with a battery—but as soon as the wire is cut, it is no longer a network. If you have a connection coming from Geraldton to Jurien Bay and you have reliability problems, every time a pole goes over, Jurien Bay is out of power so they put a battery at Jurien Bay to supplement and back up the supply. What are they going to do in relation to maintaining the line? What happens to landowners there who are not connected at present? All of a sudden Western Power decommissions a line because they have put a battery in at Jurien Bay to ensure reliability of supply. What happens to property values when the feeder line is gone? Do they leave it there in care and maintenance? Is that then able to be reactivated if need be? There are myriad issues.

That is why you cannot get away from the fact that with the *Electricity Corporations Act* and the structure of the industry, it is almost as though you have opposing forces. You have the existing structure, you have new technology and a demand for more flexibility from the network owner, and the two are banging heads a bit at the moment.

Dr CHALLEN: To give another example to the issue you raise, if there was a weakness in the network and Western Power stuck a battery in one of its substations to backup the network, if they were to use that solely to backup the network and they did not derive a revenue from selling electricity out of that battery, it would arguably be clearly within their remit under the *Electricity Corporations Act* to do so. Once they have got that battery storage there, would they be able to offer a service to people with solar PVs on their roof to say, “Hey, we’ll sell you some battery storage. We’ll also cut your excess power and we’ll sell you that storage”? That may or may not be within Western Power’s ability to do.

Then you would move to more definite things such as if Western Power decided to have a battery there to soak up a whole lot of excess energy from the network and then decided to sell that energy as a retailer, that would be clearly outside of Western Power’s statutory function and, strictly speaking, they would not be able to do that because they would end being an electricity wholesaler or retailer. There are some things that they would clearly not be able to do, there is a very large grey area of what they may or may not be able to do under the *Electricity Corporations Act* and there are things that are quite squarely their role.

Stepping outside our role and commenting on policy, it would really be the right thing to do to think about what should the roles of the different entities be in this electricity market that best satisfies the needs of customers while addressing other matters like market power and monopoly power of networks and the like. I think that is where the real challenge exists.

The CHAIR: Do you think that the frameworks as they currently exist adequately identify the various services that these assets could provide and then have suitable mechanisms there to monetise and incentivise their provision?

Dr CHALLEN: It is what you imagine into the legislation almost. The legislation is very clearly around the old model that a network provides network services, a retailer provides retail services and a

generator provides wholesale energy. Whether or not they can handle other ways of an electricity system operating is really about what can you read into the permissions provided in the legislation.

The CHAIR: But the assets themselves—not just necessarily batteries, but PVs on rooftops. I guess batteries in particular are changing the way that ancillary services could potentially be provided. Say it was not a Western Power; say somebody else came in or there was some other way—the actual things that these assets do, the services they can provide or the support that they can give to the network; the things that you mentioned—could they soak up PV off rooftops and then provide it back into the grid with the network almost functioning as a giant battery? Are the capabilities of these assets adequately recognised and remunerated? Irrespective of who gets the money, are the services they are capable of providing recognised through the current way that assets earn a living on this network?

Dr CHALLEN: That is yet to be tested. There is a better example with gas pipelines because gas pipelines are a little further down the road in some of the thinking. One of the opportunities that ATCO was thinking of with its distribution network is that a gas pipeline can function as a large battery. You can use solar energy to generate hydrogen. You can put a lot of hydrogen into a gas pipeline and mix it with the gas stream without significantly changing the properties of that gas stream and, hence, you can use your distribution network to store energy and effectively function as a large battery. That is not a service of gas pipelines that is contemplated under the licensing of those pipelines or under access regimes for those pipelines.

So would somebody else be able to get out there and generate hydrogen? There would be an obligation on a pipeline owner to accept that hydrogen into their gas stream or into their pipeline. The existing regulatory regime would not be able to handle that question because it is modelled on you getting natural gas at a wellhead and putting it into a pipeline and transporting it to a customer. Would that be a problem or would pipeline owners just be able to do that outside of the regulatory regime—it is a bit too early to say—or would they have some sort of market power advantage that would not ultimately be to the benefit of the customer? These are the sorts of gaps and questions that need to be addressed.

The CHAIR: I guess it comes down to what the regulated service is. On gas pipelines, for example, there is a defined set of regulated services that it is permissible under the regulatory regime to earn a return on, but there are unregulated services that pipeline operators can also offer that are not recovered from the regulatory charges but can be recovered outside of the narrow definition of regulated services. Certainly storage is not just a concept that is relevant to hydrogen. I know there are storage services on a range of pipeline assets both in WA and around the country. There are other services like blending services that are nothing to do with the regulated function of transmitting gas from point A to point B, and, therefore, are not recovered through the regulatory regime and the regulated return that the asset owner gets, but there is a whole unregulated revenue stream potentially sitting there attached to different types of services.

Dr CHALLEN: That is right. That model of allowing electricity network owners of the gas pipelines to run business activities off to the side of their core regulated business has actually worked reasonably well in the past. But what happens when those activities grow to the point, hypothetically speaking, with the gas pipeline when they start using their pipeline as a battery and offering energy storage and that is developed to the extent that they say that less capacity is now available to transport natural gas, which was their core regulated function.

Then you start asking these questions: What is the function of that pipeline? How should the regulatory regime best work in these sorts of situations? You have gone from an activity that has not previously been particularly material to something that is a large activity and starts having an

effect on the core regulated function of this infrastructure. In that case, who should be paying for that fixed investment in the pipeline? How should that fixed investment be shared between these innovative unregulated services and the core regulated services?

That is probably quite a good example of how something that has been allowed to happen in the past and has not really been seen as particularly important could become so in the future and where we may need to rethink whether some of our regulatory regime can handle it or not.

The CHAIR: I guess there is a different risk profile for the different types of regulated and unregulated services, both in terms of the technical and operational nature of what you are doing and the return structure that sits around that. That is kind of an interesting concept.

Dr CHALLEN: Yes, and the same might apply if, for example, a network owner decided to use some of the land space on their substation sites to be building batteries. It is an obvious thing to be using substations that just happen to be in exactly the right place to build batteries. Would you then allocate some of that fixed investment, or sunk investment, in those substations to a contestable part of the electricity market and no longer require that cost to be recovered through regulated services? That again is something that is generally recognised as being an issue that we are going to have to deal with; something that the regulatory framework does not contemplate at the moment, or certainly does not contemplate in the level of detail that would be needed to guide a regulator, and is the sort of thing that we flag to the policy agencies of government that are going to be needed to be dealt with.

Mr S.K. L'ESTRANGE: Are you drafting those changes?

Dr CHALLEN: It is not our role to draft those changes; it is the role of the Public Utilities Office and the Minister for Energy to pursue those issues. What we do, though, through our formal functions of review of the electricity market and also informally is to raise these issues of concern that these are emerging policy issues.

The CHAIR: Coming back to the question I was asking before about whether we have five or 10 years, and the need to address these matters, what is your view on how swiftly these matters need to be dealt with?

Dr CHALLEN: There are some pressing issues that will need to be dealt with. You probably have heard from people other than me about the penetration of solar PV systems and the disruption of the electricity market that is happening. Whether that will create problems for the operation of the electricity system is something that I understand the energy market operator is starting to lose sleep about. It is a pressing issue. We are not seeing a rate of change in things like network services at the moment that would indicate that this is something that government really needs to get on to in the next couple of years, but certainly the view of the authority would be that government should start thinking about these things, otherwise the regulatory framework will find itself in a place that it cannot cope with.

The CHAIR: You mentioned previously that some thinking has been going on in the NEM on these issues? Are there other jurisdictions that you look to or are aware of that are doing particularly innovative work in this area?

Dr CHALLEN: Not really. In many ways Australia is leading the thinking on these issues. I think we are facing a lot of these problems sooner than other parts of the world. There are not really other examples of people who have solved the problems.

The CHAIR: That is not very heartening!

Dr CHALLEN: It just makes it more fun!

The CHAIR: I am sure it does for you guys!

I will proceed to close today's hearing. Thank you for your evidence before the committee today. A transcript of this hearing will be emailed to you for the correction of minor errors. Any such corrections must be made and the transcript returned within seven days of the date of the letter attached to the transcript. If the transcript is not returned within this period, it will be deemed to be correct. New material cannot be added via these corrections and the sense of your evidence cannot be altered. Should you wish to provide additional information or elaborate on particular points, please include a supplementary submission for the committee's consideration when you return your corrected transcript of evidence. Thank you both for coming in. We really appreciate it.

Hearing concluded at 11.37 am
