ECONOMICS AND INDUSTRY STANDING COMMITTEE

INQUIRY INTO MICROGRIDS AND ASSOCIATED TECHNOLOGIES IN WA

TRANSCRIPT OF EVIDENCE
TAKEN AT PERTH
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SESSION TWO

Members

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

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Hearing commenced at 10.14 am

Mr PATRICK JAMES PEAKE
General Manager, EMR, Regulation, Perth Energy, examined:

Ms ELIZABETH AITKEN
General Manager, Operations, Perth Energy, examined:

Ms NICOLE SANGREGORY
Manager, Wholesale Risk and New Products, Perth Energy, examined:

The CHAIR: On behalf of the Committee, I would like to thank you for agreeing to appear today to provide evidence in relation to the Committee's inquiry into microgrids and associated technologies in WA. My name is Jessica Shaw, and I am Chair of the Economics and Industry Standing Committee. I would like to introduce the other members of the committee—to my right, Yaz Mubarakai, member for Jandakot; and to my left, Deputy Chair, Sean L'Estrange, member for Churchlands; and, Terry Redman, member for Warren-Blackwood. Stephen Price, member for Forrestfield, cannot 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 that you might say outside of today's proceedings.

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

The WITNESSES: No.

The CHAIR: Would you like to make opening statements?

Ms SanGregory: Yes; thank you. Firstly, thank you for inviting Perth Energy to participate in the inquiry. We have already gone ahead and introduced ourselves, so I will skip that bit. As you may know, Perth Energy is an electricity and gas retailer, as well as a generator, so the South West Interconnected System, with our 120-megawatt Kwinana Swift power station. Perth Energy sees the market conditions from the perspective of a market participant, as well as through our customers' experiences.

So at this point I would like to go ahead and summarise our two submissions that we have presented to the Economics and Industry Standing Committee inquiry into microgrids and associated technologies. In summary, Perth Energy believes that microgrids could have a significant positive impact on the WA energy sector, with the likelihood of improving energy security, reliability of supply and sustainability, and result in lower long-term energy costs for Western Australians. The key points from our submissions are setting clear definitions for microgrids, embedded networks, virtual power plants and other associated technologies will be critical.

Although there are a number of barriers to implementation, we believe that there are short-term or interim and relatively simple solutions that will allow progress into microgrids until further market review can be performed. These are things like consumer protections, competitive neutrality, and tariff and metering reform. Allowing for competition in certain areas could assist the uptake of microgrids, such as potential opt in or opt out for consumers and metering competition out. Requiring a licensed retailer to participate in all microgrid projects will ensure sure that there are adequate consumer protections in place. Stricter penalties or enforcements may need to be put in

place to ensure licensed retailers are participating. I have brought a slide pack with us as well that we would like to go ahead and step through with you. I have an electronic copy available as well.

The CHAIR: We would appreciate that. That would be good. Are you comfortable with us publishing that on our website? Yes?

Ms SanGregory: That is fine.

The CHAIR: Okay, great. Thank you. Ready when you are.

Ms SanGregory: One of the first points that I mentioned there are definitions, being one of the critical things that will need to be reviewed as part of the inquiry, the reasoning being what is an embedded network, what is a microgrid, what is a virtual power plant. Within industry they are sometimes used quite differently, but also sometimes interchangeably. Here we have put forward some suggestions, and we have used these definitions consistently throughout our submissions as well. So there is a definitions page, but then there is also the illustrating definitions page that I will be referring to as well. The definition of an embedded network, according to the Australian Energy Market Commission—the rule determination from 2015, so this is in relation to the national energy electricity market but we have used it here because we believe that it is pretty representative of how it is used in our market as well.

Embedded networks are private networks which serve multiple premises and are located within and connected to a distribution or transmission system in the National Electricity Market through a parent connection point. I would like to just point out that the main difference that we see between an embedded network and a microgrid is that an embedded network is likely to not have sufficient generation to be able to disconnect from the grid or to island. The physical structure may be quite similar to a microgrid, but it is excluding that point. With a microgrid we have considered the CIGRE's definition to be the most applicable, and we have referenced that within our submissions as well.

An electricity distribution system contains loads and distributed energy resources, such as distributed generators, storage devices or controllable loads that can be operated in a controlled, coordinated way either while connected to the main power network or while islanded. The key features here are that it is distribution connected, controllable, and is able to be islanded. If you look to the next page there, the very first illustration shows a group of buildings that are connected to some generation—it may be a battery, it may be solar, it may be wind—and has a control system in place, and then you will notice there just the little disconnection point from the network connection so that that grouping can be actually islanded.

The CHAIR: So what is Perth Energy's view on who is the controller of this? If it is controllable, by whom? Is it like a distribution network operator, or is it AEMO running the show or? Who is controlling it?

Ms Aitken: It should actually be able to be anybody. What we have not done is touched on what we think is an appropriate framework specifically for microgrid, because regardless of whether it is a distribution network operator or a private industry participant—like, for example, Perth Airport; that could be considered almost a microgrid in its own right—nobody acts to distribute the energy or manage the energy inside of that. The difference between the microgrid and the embedded network is that an embedded network, because it is potentially transmission-network connected, has to be able to contribute to the stability of the transmission network as a whole, which means that it would therefore be required, at least at the gate point, to be accountable to the system management operator for its security and reliability constraints.

Mr D.T. REDMAN: Ancillary services?

Ms Aitken: And potentially ancillary services as well. I know that it seems a bit dull, but we are kind of focusing on these definitions a little bit because they have significant impacts on security and reliability, not just affordability, for the network as a whole and how they are plugging in and swinging in.

The CHAIR: One of the key things that has come up for us is how these things present to the network, how they present to the market, so understanding what Perth Energy's view is as a retailer and operator of assets, how you see these entities engaging with both the market framework and the physical assets—it is important for us to understand what your view is of that. I do not know whether you have had an opportunity to review the evidence that has been before the committee, but we have had a number of different views put to us on these issues.

Ms Aitken: I should probably preface. My group is in charge of—not only do I look after the power station, but we also bid on behalf of many large-load participants in the WEM. We have some quite significant manufacturing customers who are both transmission connected, have their own generation behind the meter and also there is some behind the meter generation that is distribution connected as well. We enable them to utilise our platform and we essentially handhold them through their day-to-day operational requirements. We are actually fairly confident that one of the things we would like to do, and this is a plan that Perth Energy has, is to create a microgrid of some description and bid it at the gate.

In other words, there is sort of like an entry, a gate point, that swings in and out, because this is something that we do every day for large customers, and to some extent for ourselves with our own power stations. I do not see that that is a particularly concerning issue in terms of a microgrid or even a VPP, but when it comes to an embedded network, when you are transmission connected, it is a bit of a different story. You have got to unable to system operator to be able to help to manage that, because a ripple in the transmission network, as you would be aware, is a big deal. There is a degree of ceding of control that should be undertaken for an embedded network, more so than for a distribution-connected microgrid or a VPP.

The CHAIR: Before we move on too much further, could you give us a bit of an understanding of Perth Energy's role in the market? You are obviously one of 29 active retailers in the electricity market here in Western Australia. What is the profile of your customer base and how much of the contestable market do you have?

Ms Aitken: We are the third-largest retailer in the contestable space in Western Australia. We currently have about 15% of the market as a whole, so we have probably got close to 30% of the contestable market. Realistically, the profile of our customer base ranges quite significantly. We have obviously very small use customers, so we have the local Ezy Plus and a few 7-Elevens, all the way up to extremely large participants who, as I said, we manage on a real-time basis, as well as looking after some of the largest manufacturing companies in Western Australia.

The CHAIR: Do you bundle gas and electricity for them?

Ms Aitken: Yes, we do.

The CHAIR: Do you offer gas and electricity products separately as well?

Ms Aitken: Yes, we do—absolutely. Part of the challenge is, of course, that we have to do that, because below the contestability threshold, we cannot offer electricity to small customers, to residential customers, but we will offer gas. We are principally a business-to-business business—too many businesses there! We are really a B2B, so what we do is rather than doing mass retailing to individuals, we focus on providing the employees of our customers with good contestable gas prices; it is called friends of Perth Energy. So, rather than having a full mass marketing Simply

Energy–AGL style of base, we really are focused on business to business. That is what Perth Energy has done since it was created in 2006.

The CHAIR: It presumably controls your overhead as well.

Ms Aitken: Yes, to a large extent. We are very low cost operator—lean and mean. But then on top of that we have our power station in Kwinana. It is a gas-fired power station. It is the fastest power station for start-up in the state. We are critical for the provision of black start and some ancillary services. Essentially our power station, which is quite fun—because it is bright blue, you cannot miss it if you happen to be driving through the middle of Kwinana—is basically four jet engines strapped to a couple of turbines, so when it starts, it is great fun! You are more than welcome to arrange to come and have a visit if you would like to have a look at it.

The CHAIR: We will make sure it is a hot day when you are going to get a run!

Ms Aitken: Actually, no, we run more on overcast days than we do potentially on hot days.

The CHAIR: Is that because the PV penetration on the network?

Ms Aitken: Yes, it is.

The CHAIR: So you are seeing changes to the way you are operating your assets?

Ms Aitken: Massive—absolutely massive changes. Three years ago when I first started with Perth Energy, the power station was probably only getting a capacity factor of 2%, so for 2% of the year, it was running. We are now sitting at 20 to 25%.

Mr S.K. L'ESTRANGE: Is that because of the increase in PV?

Ms Aitken: Yes, it is because of the variability that PV is providing in the market as a whole, and also the fact that the IT platforms that we currently have that dispatch our market are at end of life and, quite frankly, cannot do what they need to do. So, there is bit of overkill, and I am sure that you are aware that there are various different programs that are being run to try to fix some of the fundamental problems that are currently in place in the market. So, your standing committee is actually quite timely when looked at in conjunction with actually fixing the basic IT. I am out of the NEM originally. I came over here only sort of four years ago, so I am used to a slightly different IT environment in electricity. I liken what we have here to a Commodore 64 trying to run an Apple iPhone X. That is kind of the situation that we are in at the moment. It is pretty hard to run a microgrid with a Commodore 64, which is kind of where we are circling back towards the whole embedded network versus microgrid thing.

Mr S.K. L'ESTRANGE: What has caused that, do you think?

Ms Aitken: Just a complete lack of investment in the dispatch engine, fundamentally. The dispatch engine was built prior to the commencement of the market, so pre-2006. In fact, it is based on technology that was around in the 2000s and has never been refreshed, so it is an exceedingly problematic outcome. Our plant, for example, as a fast start or as a microgrid would be, we have to bid for two hours in advance for what is going to happen for what might be dispatched, and there are a lot of things that can happen inside of a two-hour window, so you just never know what the hell is going on.

Mr D.T. REDMAN: What sort of lag time is industry's expectation?

Ms Aitken: My expectation is we could at least equal the east coast and be at 30 minutes, which they have been on now for the last eight to 10 years. The east coast is moving fairly quickly towards five minutes, and that would be something that would be far more appropriate, particularly for the implementation of embedded networks. The nice thing about microgrids is that they kind of avoid

a lot of that, because they are distribution connected, and, potentially, the way that they are measured, they will be a net size, not a gross size, if that makes sense.

The CHAIR: Just before we move off this topic, because this is a very important issue, and AEMO have made some similar, I think—I do not want to verbal them because we have taken a lot of information in over the last six months. I think that they have put some information to us around the performance of generation assets and the way that they bid into the market. Is it your evidence that the changes that we are seeing in the load profile is changing the way that you operate your power station; and, if so, is it having an implication on your operating costs and is there a revenue stream for you to monetise or realise the changing cost profile of your asset operations?

Ms Aitken: The answer is—there has been a slight change in our costs, but most of that is the impact of increasing the number of starts in a day. We may start six or seven times in a day.

The CHAIR: But you do not get a start fee, do you?

Ms Aitken: No, we do not.

The CHAIR: You just bid in a block price for operating in and out.

Ms Aitken: That is correct, and a start is an unrecoverable cost. Fortunately for us, what it means is that we do not incur a start cost like a CCGT or a coal-fired power station would.

The CHAIR: Do you have recips? Is that what you have got—reciprocating engines?

Ms Aitken: No.

Mr Peake: Aeroderivative gas turbines, so they are basically jet engines, so they have got very low starts. It is not like, say, Synergy's plant up at Pinjar, where every time you start, you are consuming the life to the next overhaul. It is quite a different type.

Ms Aitken: But what is happening for us is it is bringing forward major maintenance in terms of time. The more frequently we do starts, and we do not undertake maintenance, the less likely we are to actually meet those starts. Then if we do not meet a start, we get penalised for outages. There is a whole bunch of archaic provisions that exist that do not work for a fast-start plant like ours or for batteries, basically.

The CHAIR: Just a quick question—I know that Patrick will be all over this because I know his history in the market.

Ms Aitken: We brought our engineer!

The CHAIR: You have got him for good reason. I completely understand why. When you are bidding in, particularly into the WEM, are you allowed to recover the cost of the start as part of your short-run marginal cost bid, or is it categorised as long-run marginal cost for the purposes of participating in the WEM?

Ms Aitken: I can actually answer that. Believe it or not, we do not know.

The CHAIR: Right.

Ms Aitken: The ERA is currently undertaking an investigation on short-run marginal costs. It has released a draft guidance, which indicates that some start costs might be able to be recovered, but certainly not all, and none of the start costs that they are talking about being able to be recovered, which relate directly to—if you need to inject oil, for example, to get your boilers up, none of those apply to a plant like ours because we do not have any of though requirements. It is a framework that has been put in place that is very much biased towards older technology, not towards any new technology at all.

The CHAIR: The reason why I am focusing on this, and why it is so important to hear it from an independent market participant such as yourselves, is that this inquiry is looking at the benefits or otherwise of distributed energy resources. Insofar as they are having an operational impact on the network and they are causing traditional assets to operate differently, and there is potentially a hidden cost there, we need to understand that. It is one thing to offer these techs out as the great white hope of the network, but if they are affecting the value and the operating costs of other assets, or the things that those assets provide to the grid are not being valued or remunerated appropriately, we need to understand that.

We have spoken so far to the GTEs. You are the first independent power producer that we have had who has a different line of sight to these issues. I am sorry to focus on them, but they are very important issues.

Ms Aitken: No, that is fine.

Mr Peake: We know there is a work stream coming on and ancillary services being developed at the moment. We certainly believe that we are offering ancillary services which are not being properly recognised at the moment.

The CHAIR: And what are those ancillary services?

Mr Peake: I think it is the ability, for example, to come in and run continuously, would be another one. If you compared us, say, to demand management, which also receives reserve capacity payments, or will be, and I think the flexibility—so, for example, where sometimes we might be called to run for 10 minutes and then stop and then asked to run again. A major thermal plant just simply cannot do that. I guess the other thing is that because renewables are coming on, thermal plant is being taken off over the weekends. Two weekends ago Collie tried to restart and was unavailable for three or four days. So the fact that we are there to be able to be at call all the time is something that we are not really fully compensated for in our opinion.

Mr D.T. REDMAN: But does that not just get priced into your market bid?

Ms Aitken: No, we are not allowed to. The way that the market works in terms of income streams for us as an IPP is we receive income from the capacity system and we receive short-run marginal cost only for what we get in the bidding market. If somebody comes in above us with a higher short-run marginal cost, we will receive the difference between us and the price that that participant sets. But because of the type of plant that we are, and because we are being pulled on and off, more often than not when we are operating we are the marginal plant. So we are setting the price.

What is quite interesting is, by our calculations, we have saved the Western Australian consumer more than $25 million in the last 12 months just from coming in and capping off those prices for those short periods when otherwise we would be stretching Collie into its overrun for 15 or 20 minutes. We are able to come in and cap that off at a price that is less than their effective cost to reach that. But we are not really compensated for being able to undertake that.

Mr S.K. L'ESTRANGE: Is fuel of your plant the reason for your agility?

Ms Aitken: No, we are dual fuel. So, we can run on both diesel—we have 14 hours worth of full station operation diesel stored at site. But we are located right next to the Dampier to Bunbury gas pipeline, so we take the bulk of our fuel off that.

Mr S.K. L'ESTRANGE: Is that what gives you the agility?

Mr Peake: Also, physically, the engines.

The CHAIR: It is their plant as well.

Ms Aitken: Yes, it is the type of plant that we have got. We are not joking when we say we literally have jet engines strapped to turbines. We can literally—just think about when a plane takes off. That is what happens with us. So we are at full power as quickly as it takes an aeroplane to be in the air.

The CHAIR: One of the things that I am keen—and I know the expertise that exists within Perth Energy so this is why I am asking you these questions. The definition of ancillary services, the four services that are typically provided around frequency support, voltage control, black-start capability and spinning reserve—they are the four typical ancillary services. What are your views on an additional set of ancillary services potentially, reflecting the things that thermal plant does for network stability that just happen? I am thinking around things like inertia, voltage support, VAR support. They are the things that plant provides for free now; it just happens. And flexibility is another category of things that this plant can do where there is no revenue stream for it—no reflection of the value. Do you have any views on a broader range of ancillary services?

Mr Peake: I think it is appropriate that those be identified, because if you look at different types of plant, they can offer different amounts. A large thermal plant can offer a lot of inertia. Ours, ironically, does not have a great deal of inertia, which is why it can run up so fast. But there are other ones that our plant can provide. I think that as different types of plants come onto the system, the obligations which are in the technical rules are no longer appropriate. For example, our power station has what they call "governor droops" so that if the frequency falls, our machines are required to book out.

The CHAIR: You can follow, yes.

Mr Peake: In the eastern states that gets paid for. Again, if you have a wind farm and the frequency falls, they just slow down. They cannot provide that, but there may be other things that they can provide. I think you really need to say that there is a basket of things that are provided by different generators. In the past, originally, because everything was just steam turbines and then gas turbines would come along, it was not an unreasonable thing to say, "Well, everyone ought to do this", because everyone was capable of it. But now I think with different types of technology coming on—say, for example, all the buyback from domestic PV systems do not pay ancillary services as such. I think you can package those up. Some will be an annual cost, so maybe the capability of doing this or the capability to do that would be one.

Then, when we get our new co-optimised dispatch system, obviously, if we offer spinning reserve, we will be paid for that at the time. So, yes, I think that is right. You can identify these. It will be tricky to value them, but over two or three years we can probably value those, and then, yes, you could look at a station and say that it needs A, B and C but it does not do D and E, whereas another station might do A, B, F and G, and you get paid for that.

Ms Aitken: Both Patrick and I are deeply engaged with the working group on ancillary services that is being run by AEMO to try to establish some frameworks for faster and essentially battery-style operators, because even though we have a gas turbine—or diesel turbine—we are actually in that same bucket because of the type of turbine that we have. We are pretty much the sole voice on that working group in relation to the facilitation of appropriate ancillary services streams for the type of plant that we have.

The CHAIR: It has diverted us a little, but it is a really material issue to this type of tech. I know where you are in the market and what your plant does and it is very important that we get your views as not just having an interest in microgrids, but as a broader market participant and how these technologies are affecting you. So, let us go back to the slide pack.

Ms Aitken: I think we have established, then, the importance of the definitions.

Ms SanGregory: Just really quickly, I am sure you guys have heard it many times, but the main difference that we have pointed here between a microgrid and a virtual power plant is a physical connection. A microgrid is physical; virtual is not physical and cannot be islanded—it is more commercial.

Mr Peake: I guess we are very keen to see microgrids go ahead, because we think it is really important. The technology we will be seeing is terrific, and, as you said, the great white hope is that we will run ahead. We also think it is important that small customers, particularly prosumers, participate here. As battery prices come down, it is easier for them to do so. The concern we do have is that currently small participants are well protected by consumer regulations, things like financial hardship policies, building requirements—those sorts of things—and we are concerned that we do not want someone from one bad experience to sully the name of microgrids. If there is someone who develops a system and then something goes wrong—someone gets undercharged or overcharged or someone gets thrown off the system because they cannot pay.

So we really see it is important that consumer protection be applied to these areas and that is why we are saying that we believe that a licensed electricity retailer ought to be a participant with any microgrid. There are others who could do that, but we think that it is that—or at least whoever does them should be licensed through the same process. There are quite a few hoops to jump, as you would expect.

The other issue is that we believe that to bring small customers on there needs to be some sort of freedom of choice for that. We would suggest, whilst we perhaps would like to see full retail contestability, that is not going to happen for a whole range of reasons. But we do want small customers to be able to get the advantages that come from participating in a microgrid, and we see there the possibility of some sort of opt-in or opt-out mechanism. If you say, "I've put batteries on my house. I've put solar panels on my house. I am surviving off that, I know enough and I want opt-in to this microgrid", you should be allowed to do so. Again, I think part of the consumer protection process there would be that a person going into that situation should not be any worse off than if they remained with Synergy, the government supplier. So you would need to have some sort of acid test on that basis.

The CHAIR: Is there a social equity issue, because opting in assumes you own the house on which you install the PV and you can afford to put the PV and the batteries on the rooftop? Do you have any thoughts on the cross-subsidisation between those who are able to do that and those who are not, if we are thinking broadly about customer protection and vulnerable communities and vulnerable consumers?

Ms SanGregory: I think there could be a number of different commercial arrangements that could be put in place. One, just off the top of my head, is a potential project that is being talked about a bit in Kalgoorlie with, I think, the Department of Housing. In that instance, the commercial arrangement would be different so that the owners of those houses would not be necessarily putting up the capital for the systems there, but would obtain the benefit of being part of that. I think it would just depend on what commercial arrangements could be put in place.

Ms Aitken: In terms of social equity, I think it is the same social equity that you are talking about with PV generally. Without a doubt, the losers in the PV game are renters. It does not actually matter whether they are wealthy or they are poor, because they do not own the property they cannot do anything about the engagement in that sense. Unfortunately, until you can make it particularly beneficial for somebody who rents a house to actually install solar and then make it worth the tenants' while, it actually becomes quite difficult.

We have been doing a short project trying to look into—a friend of mine has a particularly large house and he rents it out. He wants to try to put solar on the roof, but what that means is that he needs to then be able to bill the tenant himself. So he sort of collects—it becomes a very complicated arrangement and then it becomes a question of whether he needs a retail licence but he cannot do it because it is Synergy, so it all becomes quite difficult. At least with opt in, opt out, the tenant and the landlord in conjunction could agree and then both of them would have to sign on an opt-in basis. But as it currently stands in the existing framework, there is not even and option to do that.

The CHAIR: Is there any demand from your commercial customers? A lot of companies rent commercial properties and they are heavy energy users. Do you have any demand from your own existing customer base for this and could you step us through that?

Ms Aitken: We do. We have had sufficient demand that we are now entering into a relationship with Infinite Energy, who are probably the best, or most credible, solar provider in WA. There are quite a lot of tripartite booking arrangements that we are entering into where owners of warehouses and commercial buildings want to put solar on the roof. We need to then on bill on behalf of that landlord to the customers in order to then try to management the differential between the solar and the cost of the solar that is being charged to the customer and to the grid electricity that has been brought in. We have a number of structures in place that will enable that. It is a little bit of a complicated contractual relationship, but because the customer is contestable, we are able to facilitate that, and we do. We do not have a huge number of them, because from a WA perspective they are still fairly new, but we are certainly seeing an increase in the number of them that we are actually entering into now.

The CHAIR: Are there any perverse regulatory outcomes? Assuming you go into one of these arrangements, all of a sudden a really heavy energy user behind the meter is able to super-optimise their consumption, and all of a sudden they present as a small-use customer—they fall below a threshold. Are there any perverse outcomes like that?

Ms Aitken: That is an open question, which we have actually asked the Ombudsman and the ERA about. The general theory has been once contestable, always contestable. So the perverse outcome is that—I will not lie when I say that I have thought about doing this: getting a dodgy old fridge and painting it in Perth Energy colours and putting it on to somebody's house, plugging it in and saying, "Here you go, have some beers. You just need to increase your electricity bill for three months to get you over the contestability threshold. Then put all your solar on—put everything on—drop yourself right back down to well below contestability, and you will save a significant amount of money on your electricity."

The CHAIR: Is that because it is a definitional threshold?

Ms Aitken: And it is not a particularly realistic threshold. There is certainly also a luxury homes market, where that would be applicable, and the other thing to bear in mind —

Mr D.T. REDMAN: Is the luxury homes market good enough to pick it up?

The CHAIR: Yes.

Mr Peake: We have two luxury home market customers so far.

Ms Aitken: Yes, that is correct.

Mr D.T. REDMAN: Serious luxury homes, are they?

Ms Aitken: Yes.

The CHAIR: It is more common than you think.

Ms Aitken: My house can probably fit in there four times. The key is, believe it or not, coolrooms. If a house has a coolroom or a walk-in fridge—this is why a lot of farmhouses can actually become contestable in their own right as well, even if they are not dairy farms who have a high electricity load. It is the coolroom that is an energy sucker. If you have one of those on and you keep it on for 12 months—not even 12 months—you can keep it on for four months and you become contestable straightaway.

Mr Peake: I think Synergy said they have a couple of hundred customers who had homes with —

The CHAIR: It is the walk-in wine fridge!

Mr Peake: Yes.

Ms Aitken: That is right—exactly. Sorry about that, Patrick, we digressed a little.

Mr Peake: It is probably back to Liz again, actually, because the other area that really needs to be looked at is adequate metering services. Obviously, if you are running a microgrid, you need to be able to determine how much electricity is being put out or taken in at each point, and that needs to be done on a five-minute basis or so. I will hand it to Liz.

Ms Aitken: On this slide, I have put in the goal, which, of course, I am not assuming will be achievable within the next—I like to think of it as part of the five-year plan, but we have put in some achievable steps, things that we think that the committee might be able to recommend, that could be done in a reasonably short time frame and could provide some guidance and also some assistance to industry and government around implementing VPPs and microgrids. As Patrick just alluded to, you cannot really have a microgrid unless you have a decent meter. It is the single most important enabling technology. As part of that decent meter, what you also need to have is a reasonable communications network and an appropriate IT framework that sits behind it that allows the information to come through to those people who need to use it on —

The CHAIR: Including the network operator.

Ms Aitken: Yes, that would be helpful for them too. I know Shanti Raya fairly well, who runs the network team at Western Power, and he would think that was awesome. So, part of the challenge here is that there have been a number of proposals that have gone up by Western Power through the formal AO4 or AA process. So, they put it up both in AO3 and in AO4. They have been rejected both times by the ERA because the ERA has, quite frankly, taken an ultra-conservative stance in relation to the benefits of this type of enabling technology, and it is not going to be done unless the government actually gives some form of direction.

If Western Power does not do it or the government does not give a direction, the only alternative that exists to doing that is to open up measuring to competitive services. We are going to end up with it in some way. I believe that it is probably better if the government gets ahead of this, rather than VPP providers coming in and essentially putting a second meter on everybody's house to try and enable this, because they have to bypass the meter that is not doing the job that it should be doing that we have all effectively paid for. So, you are paying for your metering twice.

The CHAIR: So Elizabeth, on the east coast, are you aware that other networks have put in access arrangements submissions and had the tick?

Ms Aitken: Yes.

The CHAIR: But in Western Australia, that has not happened?

Ms Aitken: I was working in electricity in Victoria when the smart meter rollout was occurring. So, yes, I know it got a whole bunch of bad press, but, in all honesty, it really was not bad. I have never understood why it got the bad press that it did, because when I finally got a smart meter on my little

house in Footscray, where I was living, it was the best thing that ever happened to me. I was able to within a day—and I must admit I knew what I was doing so it was easier for me, but I was towards the end of the rollout as well, so there were a lot of options that existed. I dropped my electricity bill—and this was in a competitive environment. I was able to drop it by 20 per cent moving from Origin to Powershop because I had a smart meter. I was able to change the tariff I was on. I had a change in the Western Power tariff—the equivalent; it was Jemena, actually—the Jemena tariff that I was actually under, because I was now with a smart meter, and I was able to optimise the value of the solar that I had on my roof. That was just from a smart meter.

The CHAIR: Can I ask you, because this is a really fascinating question around the regulatory framework: we operate under the auspices of the electricity networks access code and there are rate cases or access arrangement submissions that are put in, and it is a call response framework and, basically, Western Power has to initiate the proposals and the ERA sits there and ticks or crosses. Is the issue to do with the Electricity Networks Access Code as an instrument or are there cultural factors that influence the degree to which we are able to change the industry and accommodate these technologies? Do you have any views on that?

Ms Aitken: Yes, it is both. There are multiple challenges here. The first one is that there is a cultural issue. There is a cultural issue with the ERA and there is a cultural issue with Western Power. Western Power wants to change, but it is pushing the boundaries of the, if you like, ring-fence of what it is meant to be doing and there are open questions, because it is so cashed up. It has more money than anybody else. So, it is pushing the framework well beyond where theoretically it could. A classic example of this is that no-one has actually determined whether batteries should be classified as generation assets or not. Western Power is just assuming that they are not. Therefore, they can put them in and therefore they are running ahead and doing it because they have more money than anyone else.

The CHAIR: They call it a pilot.

Ms Aitken: Yes. I have never been in a place with so many test schemes. Oh, my God! There is a whole bunch of those sorts of things that are going on, and then the other side of it is, yes, the ERA is problematic and the access code was written for an era that is gone. It has gone. To be honest with you, the access code needs to be screwed up and started again, realistically.

The CHAIR: What do you think needs to change about ENAC? I have worked a little in this area and the ENAC actually says, "Put something to the ERA and see if it flies." It is not all that prescriptive about what you can put to the regulator?

Ms Aitken: No, that is that is correct.

The CHAIR: And what we are talking about here is what is being put to the regulator.

Ms Aitken: That is correct.

The CHAIR: Is it that the ENAC needs to change; and, if so, what?

Ms Aitken: That is a question that I do not think we have time to answer today. I am more than happy to give you a list of certain things that —

The CHAIR: We would happily receive your views on that.

Ms Aitken: I can organise that for you.

The CHAIR: Great.

Ms Aitken: Specifically, some of the things that Western Power has put forward—this metering service is a great example. They have put it forward. We, as Perth Energy, in our response back to

the draft determination from the ERA, said, "Absolutely, this should go ahead. This is one of the single most important things you can do." There were lots of things we did not support that Western Power put forward, things that we thought were lacking, but this was one thing, this and the SCADA upgrade were things that we absolutely said, "Are you sure you are spending enough money on this, realistically?" It was knocked back for what were, quite frankly, spurious reasons. The biggest part of the problem with the access code at a high level is there is a general lack of accountability. Decisions can be made, but then there is no need to provide justification.

The CHAIR: Decisions by the regulator?

Ms Aitken: By the regulator or by Western Power about what they do or do not choose to put up, what other people would choose to put up, what the regulator would choose to yes or no to. It is not so much about the fact that it is broken. It is more about fact that there is no culture of accountability. That is an issue, whereas over east you get a far stronger level of accountability that is required under chapters 5 and 5A of the national electricity rules.

The CHAIR: We have just come from America, where this sort of industry engagement, consultation, proposals and scrutiny seems to come through a lot more in their rate case process than in our access arrangement process. Do any of you have any views on that?

Ms Aitken: I think it is long overdue here. We ended up having to support Synergy in some contentious letters to the ERA in relation to tariff options that were put forward that we specifically asked for and had been rejected by both Western Power and the ERA with no justification whatsoever. It is a mixed bag of a whole bunch of different things. I do not know what the answer is.

The CHAIR: We are trying to find out.

Ms Aitken: Yes. Strengthen the regulator, empower them a bit more, but at the same time make them fully accountable in a public forum and then fully accountable to the minister would probably be good places to start. Get rid of some of the old stuff that exists within the access codes. One of the key problems is that we as retailers are effectively—anybody who has an ETAP with Western Power is the Western Power customer. That means that there are only 90 Western Power customers, but Western Power does not come to us to consult with us as to what is required. They do unusual forms of consulting that involve going out to the end user, who is not even their customer, then bypass those people who actually have the legal obligations to act on behalf of those end users. It is quite a bizarre arrangement and it is because there is no tripartite relationship in any of the regulatory framework that exists here in WA between the customer, the transmission distribution provider and the retailer. It is linear as opposed to triangular. Unfortunately, that triangular or tripartite relationship has been excluded from all of the work that has been undertaken for the market reform.

The CHAIR: This is fascinating, because if we are thinking about microgrids and we are talking about ways to incentivise the development—

Ms Aitken: A tripartite relationship is critical.

The CHAIR: Exactly. Because there are pricing signals, locational signals, time-of-use signals that presumably a network could offer through network regulation, but if there is no interaction with the guys who are actually selling this stuff and who know what their customers want and need, or can put some thought into what the most appropriate product is—could you give us a bit of a view on even signals that are sent through and to what degree you are able to put to Western Power how you think, as their customer, microgrids could be facilitated?

Ms Aitken: Actually, that brings me to my slide. What a great segue—hello!

The CHAIR: We are getting good at this.

Ms Aitken: We are. So, one of the things that we do believe is that there needs to be a degree of tariff reform to make microgrids work, and it is for exactly that reason: to make sure that customers can be getting the full benefit of entering into these types of arrangements through reduced energy costs. Of course, we are talking about reduced delivered energy costs. We have made a number of suggestions already to the ERA to investigate as part of the AA4 arrangement. We have asked for, specifically, thin connection. Thin connection is a concept I am sure that you have already heard it, but it is like paying for an emergency service connection from Western Power.

If you draw on it, you have to pay 10 times or 20 times the amount for that period of time that you are pulling power in. That is going to be quite important in this microgrid environment, because if you can move all of a microgrid to a single thin connection point at a gate, all of a sudden you have created the ability to save all of those customers within there a lot of fixed network charges and a lot of variable network charges so that they only need to call on —

The CHAIR: But they are still getting a benefit from the grid being there.

Ms Aitken: They are, and that is the point of the thin connection. When it is there and when you need it, you pay through the nose for it, but you do not have to pay for it every day. So you are effectively doing ultra-peak pricing, if that makes sense. That is just one example of some of the things that we have asked the ERA to look into. We are not getting very far with that, but we will see where that goes. But more broadly speaking, there does need to be an assessment of the cost-allocation methodology.

Realistically, tariffs at the moment are not really cost reflective. Western Power says that they have certain—what they decided was their new peak/off-peak shoulder tariff actually did not have anything to do with this price or load. It is a very strange tariff and we said, "How did you come up with this?", and they said, "We consulted." We went, "We don't know who you consulted with, because we are not going to use what you have put on the table." I think having a look into some of the things we have suggested here would be a relatively quick win for this committee and could provide some recommendations that would be very, very useful in terms of getting microgrids and VPPs off the line fairly quickly.

The CHAIR: Fantastic.

Mr D.T. REDMAN: Can you just expand on the comment you made here in respect to the regional subsidies and how you might see that playing forward in terms of reforms?

Ms Aitken: Yes. This one is a bit of a challenging one and this is why we have got it in the review section. If you want to think about it, if someone in Ravensthorpe—I will use Ravensthorpe because that is everybody's favourite WA example; I could use Kalgoorlie, but that is a bit big, we are talking small—at the moment Ravensthorpe is benefiting from a bunch of batteries, a whole bunch of different things that have been put out there to enable security and reliability of supply to that specific area. That has essentially been done on the basis of an alternate cost replacement. But if it was not being done on the basis of an alternate cost replacement, so in other words making that particular line an N-1, because at the moment that line is just one line and it is wobbly and stuff happens and it falls over.

If it was not necessarily on an N line, that community should be able to receive the benefit of and be no worse off than they were before. But the cost of that reliability is therefore not necessarily going to be reflected in the tech, if that makes sense. The cross-subsidy that is coming through, through the tap or the tech, would actually then potentially reduce the subsidy in its entirety, so the people here would still be paying the same amount that they were paying before, but because the

underlying cost has gone down to service that group, that should flow through to the cross-subsidy amount.

The CHAIR: Indeed, it does. I mean, it would wash through for all—well, for SWIS users that subsidise the people outside of the SWIS.

Ms Aitken: Yes, and that is where the tap comes into it, because there is a cross subsidy—

Mr D.T. REDMAN: Ravensthorpe is on it. Are you talking about the isolated Horizon network?

Ms Aitken: That is the tech, but the tap is the cross-subsidy that runs from the city to the country, essentially. There are a couple of options that I think—

Mr D.T. REDMAN: Which is tailing off to bugger all, isn't it?

Ms Aitken: It is all smeared.

Mr Peake: It still exists.

Ms Aitken: It is there. And it is very smeared, so it becomes a question of —

Mr D.T. REDMAN: That is not what the energy minister says.

The CHAIR: We are running out of time. This is a conversation for another day!

Mr Peake: If I could just say that we are not saying that tariffs should rise in those places, but if there are savings which are achieved, then some of that cost could be assigned to whoever is developing the microgrid. It is a matter of trying to—or at least recognising that those costs have changed and taking some action on it.

The CHAIR: We are, unfortunately, going to have to draw proceedings to a close because our next witness is here, but thank you so much. That has been such an interesting conversation. Please do feel free to put any additional information to us; we are pretty thirsty for it.

I will proceed to close today's hearing and 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 so much. That was fantastic.

Hearing concluded at 11.10 am

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