

ECONOMICS AND INDUSTRY STANDING COMMITTEE

INQUIRY INTO MICROGRIDS AND ASSOCIATED TECHNOLOGIES IN WA



**TRANSCRIPT OF EVIDENCE
TAKEN AT PERTH
FRIDAY, 23 NOVEMBER 2018**

SESSION THREE

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 11.12 am**Mr DAVID ANTHONY JOHN MARKHAM****Manager, Policy, Australian Energy Council, examined:****Mr SCOTT DAVIS****WA Policy Adviser, Australian Energy Council, examined:**

The CHAIR: On behalf of the committee, I would like to thank you both for agreeing to appear today to provide evidence in relation to the committee's inquiry into microgrids and associated technologies. 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, Yaz Mubarakai, member for Jandakot; and to my left, Stephen Price, member for Forrestfield; and Terry Redman, member for Warren–Blackwood. Sean L'Estrange, member for Churchlands, could not 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 start with questions, do you have any questions about your attendance here today?

Mr Markham: No, I do not.

Mr Davis: No, I do not.

The CHAIR: Would you like to make short opening statements?

Mr Markham: Yes, that would be great, thank you. Thank you again for the opportunity to appear before the committee. The Energy Council represents the 22 major electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy market. Those businesses collectively generate the overwhelming majority of Australia's electricity, and sell gas and electricity to over 10 million homes and businesses. In Western Australia, ATCO and Synergy are the state-based members. The committee is conducting hearings into the challenges posed by wind turbines, PV panels and batteries and what can be done to overcome barriers to microgrid uptake. I probably should make it clear that the AEC is not a technology organisation, so we will limit our contributions to the enablers and barriers and other factors perhaps affecting development, and leave the specific merits of various technology and hardware to their proponents.

In addressing the regulatory, technical, economic and social factors and the technology factors, the perspectives of our customers and our suppliers, be they regulated suppliers such as the distributors or merchant suppliers such as the manufacturers and installers of microgrid hardware, are just as relevant as ours is to retail it. That said, ultimately customers should be at the centre of everything that we do. Therefore, we start from a position that if customers choose to offer passive or active investment and responses, or behavioural responses, in support of system operations—I think that is the important nexus—then they should be rewarded for doing so. Ultimately, they might choose to do that independently, but we expect that most will do this in the future through an aggregator, a retailer or perhaps other models we have not even thought of yet.

When it comes to microgrids, we are keen to establish in WA some definitions of what a microgrid actually is or if there is one type. The word "microgrid" has and will probably further develop meaning beyond its use as a technical term. In WA, there are isolated communities where the option of main-grid connection is probably not feasible and where what we might describe as competitive markets may not be able to meet supply and reliability needs. Quite simply, it is hard to replicate,

in some areas, the economies of scale of Horizon Power, for example. So those isolated microgrids maybe should be considered where they will produce demonstrable transparent benefits, as well as better outcomes for those customers or communities. Where it cannot be demonstrated that such an asset is best structured as a natural monopoly—and we think there will be a threshold for this—then their implementation should, in our view, be left to open competitive market-based processes.

I will not go on much further, but when we talk about things—what we might call the embedded networks, which are grid connected but owned and operated outside, say, the Western Power franchise, for example—recent decisions by the AEMC have determined that those customers are now free to move about in competitive retail markets on the east coast. The practical benefit is that customers are no longer a hostage, I suppose, to an embedded network operator, but owners of the embedded networks argue that this is down to their business model and it is possibly an important consideration going forward. Then there are sort of standalone power systems, or the SPS. Some of these in WA are quite significant, such as Broome, and probably in our view are not, in a practical sense, a microgrid. Those may be well positioned to offer investment opportunities in support of system operations where needed, so where customers would become a part of the solution.

There is also the outer fringe of the South West grid. We understand that there might be 6,000 to 7,000 customers that may, as we understand it, be better served by SPS than the current extent of the network asset, which obviously may require replacement and augmentation. That is an interesting paradigm. I mean, the network cost to supply may well be lower with an SPS, but we assume it would still exceed the cost of supply in a practical sense under the regulated tariff. When we take customers off the edge of the grid, they are, in effect, removed from further opportunity in the competitive market, but perhaps that is less important now than it will be in 20 years' time, but we think that that requires some careful consideration.

One of the other things about these edge-of-grid customers—we have heard this from the customer advocates over here on the east coast—is that consumers are often focused on the community in those areas and not just on their own bill. Some have explicitly stated that they would prefer to share the burden of network costs, so that probably needs to be taken into account as well. For those types of customers, a demonstrable whole-of-system benefit is probably a better test than just testing what would happen to the local community.

Microgrid regulation will also be asked to deal with a number of objectives, such as addressing vulnerable customer needs and creating an equitable pricing framework, not only for those connected but for those who import and those who both export and import. It is important to be clear about the purpose and merits of any of these reforms. We think that clarifying what a microgrid is or if there is more one type should be clarified.

Finally, just a few words that you would expect from us in terms of market efficiency: we do believe that market forces should be used to determine the most cost-effective solution. Where those microgrids are not monopoly assets, provision of services should be open to the market and not through regulated assets. My final point would be that it is sometimes difficult to unravel what we might call network services from network assets, and ownership from control. Networks do really provide network services. Perhaps they should be agnostic as to who is the owner. Similarly, they can direct the operation of the network without being the owner. So when it comes to these embedded networks or edge-of-grid or standalone power stations or even remote or isolated communities, it is not a one-size-fits-all approach. We think there might be some benefit in determining some thresholds along the way to start with. That will probably conclude my opening remarks anyway. I am happy to add further or take questions.

The CHAIR: Thank you very much for that, David. There was quite a lot in your opening statement. We really appreciate it. Can I start with understanding the views of your membership base. We have predominantly heard from network operators. We have had one or two private sector generator participants give some evidence, both the really small businesses that are trying to crack into this market and then one generator who is operating here in the SWIS. We have predominantly been hearing from network service providers. What sorts of opportunities and threats do your generation and retail members perceive arising from microgrids and distributed energy resources?

Mr Markham: I think we can probably talk about something that we did over here, not over here but it was through the AEMC. It was a rule change proposal. It was the contestability of energy services. The AEMC has recently made a determination in that regard. Pretty much what they have said is that the services that could be delivered by competition should be delivered by competition. One of our early concerns was that when network businesses get involved in microgrids and start in the space of storage, which is effectively generation as well, it is effectively a form of vertical integration. Vertical integration is, from the membership's point of view, a bit of a problem in that it allows the network business, I suppose, to choose how it monetises the benefits that it obtains. It can allocate to its regulated revenues a specific proportion of its costs and then perhaps underdo its costs on the retail side to give itself a competitive advantage.

I think that the other thing that we were concerned about was that whilst in the short term—so if we were talking about building something tomorrow, and this is the dilemma that many governments have faced, such as in outback Queensland and so on—the network with its ability to take those costs and smear them over the entire customer base represents probably the fastest and lowest risk way of putting solar panels on the ground, for example. It has a chilling effect on the market. The sorts of people who have appeared before the committee, smaller installers or those representing them, are those seeking to get a toehold in the distributed generation space while the generators and so on feel that they are at an apparent disadvantage when they are up against a network and the structure of the network and the way that the network is able to, potentially if it is not strictly ring fenced, cross-subsidise its activities in this space. I think, broadly speaking, mostly it is about the dynamic efficiency question, really: how do you get a market started? It is the chilling effect that network participation might have in the early stages that we are most concerned about.

The CHAIR: We have had quite a bit of evidence presented to this inquiry, though, to suggest that the vertically integrated entities that are operating in this space—there are not many of them but those that there are, have a very clear line of sight from electron production right through to consumption and, because they have visibility at all points in the value chain, are able to identify the points where optimisation is going to deliver the most value rather than being concerned with just a small part, either the generation, the transmission distribution or retail, preserving or taking a clip of the ticket at each one of those points. What are your views on that?

Mr Markham: I am not sure whether the presentations that you are talking about in that regard came from regulated entities or unregulated entities.

The CHAIR: It has come from multiple sources. It has been quite an interesting observation made by regulators, market participants, both here in Australia and overseas.

Mr Markham: I think that there is not a lot of confidence that the regulator has line of sight of all the costs and the allocation of costs in a network business. The networks have to propose a cost allocation method as a general rule but that does not give the regulator an open view of their books; it just gives them a mechanism for determining where the costs go and where the revenues go. If you have got, for example, Horizon Power out in a remote area, they could plausibly say, "Well, we're going to put 50% of the costs of our linesmen, whom we have to maintain in this area anyway,

to this activity, and 50% of the time, they'll be working for this other activity, which is generation or whatever it might be." But that gives them a natural advantage, I suppose, over a party that does not have those economies of scale. We are not saying that that is a bad thing where there is no other option. What we are saying, though, is that in the corner of the South West interconnected grid, that is maybe not such a great idea because there are businesses there that could compete in that space readily and provide those services more readily.

The CHAIR: I want to come back to the point you were making around contestability of energy services. Could you expand a little on what those energy services are?

Mr Markham: Some of them probably have not been invented yet. But, essentially, it was activity that would be behind the customer meters. The rule that we were the proponent to the rule change to the AEMC was essentially aimed at things like batteries, which can provide two things: they can provide network support services but they also provide energy. We said that the mechanism by which the network obtains those network support services should be by sending a price to the market to say, "This is what we need and this is what we are prepared to pay for it" and the function of building what is, in effect, an energy generator in terms of a battery should fall for the competitive market and they can respond to that network price signal.

Essentially, that is what I mean by energy services. You have two types: you have network support, things like frequency control, which is important even on low-voltage distribution networks now with the introduction of lots and lots of solar and also the congestion management as well. If you can take peak demand off the system at given points in time, you are probably able to reduce the costs of running the network, which is in the long-term interests of consumers but at the same time as a retailer or an aggregator or some other form of operator in the competitive energy market, you have got a source of energy sitting there as well. The dispatch of that energy for the purposes of dealing with congestion or dealing with frequency control might not be concurrent always with the dispatch required to deal with peak energy on the system in different locations.

The CHAIR: Those issues have kept coming up during the course of this inquiry, particularly given that you represent generators. One of the things that has been suggested to us is that there is a whole heap of security and reliability services that existing thermal plant, in particular, provide to the network for free. It just happens as a function of what their assets are capable of doing around inertia and VAR control and voltage support and flexibility, like load-following capabilities.

Those things are just taken for granted and because of the impact of DER, the operational configuration of these traditional assets are changing. They are being forced to operate in different ways. They are providing these other things that are more and more necessary for free. I wondered if your members had given you any feedback on that and your views on how those sorts of reliability and security services could be defined, valued and remunerated?

Mr Markham: I do not know that they are actually provided for free. The cost is not passed through by the network. The cost of frequency control and other ancillary services is borne by consumers. It forms part of the costs of —

The CHAIR: Some types of ancillary services, yes, absolutely, and there are markets established for those. But some services provided have a cost that is being borne by generators and not being recovered through existing mechanisms. I just wondered what your views were on that.

Mr Markham: I think the dilemma there is that those services are required to keep the system stable. The beneficiaries of keeping the system stable do include generators. It is not just that. No-one wants to be constrained on an unstable system; there is no money in a blackout. I hear what you are saying, but I do not think that I am able to say uniformly that they all want to be able to pass

those costs through. I think some of them see them as a cost of doing business, by the way. But the idea that this service is for free, I think ultimately all costs find their way through where they exist. At the moment, there might not be a discrete charge for them as levied upon the distributor, but I do not think that means that they are not paid for.

The CHAIR: So they will be passed through in the form of whatever energy price that the generator then offers into a wholesale market?

Mr Markham: The generator has the fixed and variable costs component of running its business, and I assume that it prices accordingly, and that those costs will be reflected in there.

The CHAIR: Yes, I can understand that. What are your members' views on how the regulator process and their participation in the regulatory process is accommodating distributed energy resources? Again, we have heard a lot about the regulatory process from the network operators' perspective, but obviously generators and retailers have the opportunity to provide submissions and engage with regulators as access arrangement determinations are made. What is your members' view on how that process operates—and with the opportunities for innovation in this space, how open regulators are to those sorts of things?

Mr Markham: From the perspective of Western Australia, there are really only a couple of members heavily involved in that space, but I do not think the frustration is any different from anywhere else in the country. Generally speaking, there is a bit of a choke point from Synergy's perspective in WA with a thing called the prescribed customers order, which is where the retailer is not allowed to be a provider of what you might call appliances, so they are unable to sell things at a retail level to retail customers that might promote, I suppose, innovation in this space. Scott is probably a little more across the detail of that one than me, but I think it has been a long-term headache for people like Synergy.

The CHAIR: Scott, do you have anything to add?

Mr Davis: David, what was the point you wanted me to make there?

Mr Markham: The order in Western Australia that prevents companies like Synergy from selling retail products. I can take this question a little bit on notice and provide that specific detail to you from my materials, but I do not have it exactly right in front of me right now.

The CHAIR: That is fine. We are happy with that if that is your preference.

Mr Markham: If that is okay. That is one that I know particularly Synergy was concerned about. We have a penetration of PV and perhaps, coming with it, batteries, which means that networks have concerns about system stability—legitimate concerns—and therefore might be seeking to limit customer deployment of these types of products. What we would prefer to see than the answer “no” is a bit of innovation in the space of the answer: “Well, yes, but these conditions apply.” That is not just your traditional time-of-use tariff or peak-demand tariff or even something that is often not permitted, being an export tariff, but simply to say: provided that you stay within these voltage limits and that you limit your exports to these times and you do these various other physical acts—so they are not economic price response acts; they are kind of physical conditions that go with the tariff—then you can have a connection. Then the customer can make a decision as to whether or not there is an economic value in doing that.

At the moment, we have a tendency to just look at tariffs as a rather blunt tool, where if you put the price up high enough, you will get a consumer response. Often you do not get a consumer response, especially at the installation stage. You get a consumer response when they get their first bill and that is probably not the time to be making the investment decision; it has already been taken. For a long time in all the states—I would say WA in time-switch control, you know, off-peak

hot water to reduce pressure on the distribution system, and consumers are quite happy with that. Over on the east coast where it is colder, you have things like tariffs dealing with floor heating and heat pumps. In Queensland there are tariffs dealing with when your pool can run. These are all time-switch controlled, so they are all specific around a piece of technology that turns the power on and off.

In South Australia now, you have air-conditioning systems where the South Australia Power Networks, SAPN, provide a network tariff that says if you connect an air conditioner with capacity for us to control the compressor, then you will get a better deal—you will get a rebate actually, I think is what it comes down to. That has helped to flatten out some of their air-conditioning load problems in South Australia. Unfortunately, they have another problem with solar exports, which they will also have to deal with.

If I might just add one thing: one of the things the distribution networks and their owners have been criticised for is this thing called “gold plating”. Gold plating was largely a function of the penetration of air conditioning through the 1980s and 1990s, when the number of air conditioners in the population grew exponentially and we did not put any control on the installation or the use of the air conditioners; we simply put the price of energy up through the distribution costs because we had to keep building bigger and bigger systems to cope with the fewer and fewer days a year of peak demand. I think we are almost seeing the same event happening, but for a different reason with the penetration of solar, for example.

With solar, we do have the technologies now to restrict exports and to manage the impact that it has on the system, yet it is not going in as part of the deal. At the moment, you have various governments, over on the east coast at least, offering as much free solar as you can put on your damn roof with nary a thought for the problems that that is creating and the costs that that is imposing on the community more broadly. I am sure that some of the people who come to see you will have talked about their technologies, and I am certain that they can address the problem of peak solar, given the opportunity.

The CHAIR: We have had some great evidence on that. David, can I draw you back to the comments you were making on community-based energy solutions and what you are seeing on those types of initiatives?

Mr Markham: We are not seeing a lot. There are a few retailers who have engaged in what they call “virtual power plant programs”. They are in quite early days, but what they are seeking to do is to provide solar—if customers do not already have it, and if they do to augment their solar with batteries—and to be given, if you like, control of the battery as part of the package, so the customer gets a tariff. The tariff really is that you can pretty much use power whenever you want, so it is not seeking to limit customers’ amenity, for want of a better description, and the retailer will then have control over the storage and be able to build up or discharge energy as required into the system. But that is largely by them, and to some extent there are agreements with the local network providers where the network provider can also have a say in the provision of services that they need for network support. None of those projects, though, from a retailer-led level is concluded yet; they are all underway. So Origin Energy has one in place, AGL has one in place and Simply Energy also has one in place. I could obtain further information on each of those in terms of the customer numbers, which are in the hundreds or sort of high hundreds for the trials and provide that to the committee.

The CHAIR: That would be very much appreciated.

Mr Markham: So I would need to get that from the members. Obviously, the membership, because they are competitive, that information, I imagine, would be provided in confidence to you.

The CHAIR: And we are quite comfortable to receive information and we would de-identify or just use it in a very generic sense if we were to use it in the final report, so that is no problem. What about in geographical areas, David, so little towns that want to form an energy cooperative and they want to deliver local jobs and support their local economies—are you seeing much appetite for that?

Mr Markham: There has been one project near Daylesford in Victoria that was a wind farm. That is a community-funded wind farm, so members of the community become active shareholders in it in that they stick in capital. That has now been, I think, up and going for a couple of years. They are doing it, though, firstly, out of a sense of community. They need to do development in the local community, although wind farms are always a contentious issue. If more than the property owner where the wind tower is situated benefit, then they seem to get a much smoother passage and have less health and other effects. I do not know either way, but it is a fascinating insight.

Secondly, the community often exports energy onto the grid. But they are not islanded; they have not isolated themselves from the grid to become, in effect, the community-owned energy generator that, if you like, for want of a better description, offsets its own usage through these turbines and also sells its surplus into the system. Again, I can provide further advice on that one, if you would like. I do not know that I am going to be able to get a lot of detail from it because they are not members of ours, but I can certainly provide contact details for it.

The CHAIR: Contact details would be appreciated. That would be great; thanks, David. This committee is going to have an opportunity to make recommendations to government on changes or initiatives that are going to incentivise or otherwise the rollout of distributed energy technologies. Your members are generators and retailers. What are the priority recommendations that you think your members would want to make?

Mr Markham: I think, in the first instance, the recommendations at a high level, our objective is that where these services can be delivered by competitive markets, they should be, and therefore we want a regulatory regime that reflects that. I think that, in terms of what I spoke about earlier, being able to define more readily where the regulator is going to say, “This is an isolated community. It is small. There is really no chance of any other operator than the state”—for want of a better description—“and we are just going to go ahead and build it because it is an essential thing from the point of view of social and public policy”, then that is okay. What we do not want to see is that mixed up in the broader objective. We think that providing, I suppose, if you like, almost threshold tests in a megawatt sense as to what a microgrid is and then where it applies might be useful.

The second thing is that, as I said, the capacity for micro generators’, small generators’, distributed generation to connect to the grid has caused a great deal of frustration. Co-generation plants and so on have difficulty getting grid connection approval. So we would like to see that streamlined and basically turned into, from the point of view of, as I said, small retail customers, rather than the yes–no problem, and simply say, “These are the conditions that we put; provided that you can meet them, then that’s okay.” That requires the distributor to know its own network well, which perhaps might mean some upgrades in metering and so on, but it is important to be done. That was for the edge-of-grid stuff. For embedded networks, I think that at the moment the AEMC is finalising its embedded networks rules. We would like to see them applied to embedded networks nationally. That would be another thing that we would like to recommend if we could.

The CHAIR: Fantastic. Scott, do you have anything you want to add?

Mr Davis: No thanks.

The CHAIR: That was fantastic, David. Thank you so much. Thank you, Scott, for coming along today. I really appreciate you making yourself available over there, David. Sorry about all the IT hiccups on the way through.

Mr Markham: They have all started at our end, I am afraid.

The CHAIR: No, that is all right.

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 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 very much. Thanks, David.

Mr Markham: Thank you.

The CHAIR: Thank you, Scott. Thanks for coming in.

Mr Davis: Thank you.

Hearing concluded at 11.46 am
