

# **ECONOMICS AND INDUSTRY STANDING COMMITTEE**

**INQUIRY INTO MICROGRIDS AND ASSOCIATED TECHNOLOGIES IN WA**



**TRANSCRIPT OF EVIDENCE  
TAKEN AT PERTH  
WEDNESDAY, 13 JUNE 2018**

**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 10.07 am****Mr PAUL AZZALINI****Manager, Strategy and Development, Lendlease, examined:****Ms TRISTY FAIRFIELD****New Projects and Stakeholder Engagement, Energy Made Clean, examined:**

**The CHAIR:** On behalf of the committee, I would like to thank you for agreeing to appear today for a hearing for the committee's inquiry into microgrids and associated technologies in Western Australia. 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 is Yaz Mubarakai, member for Jandakot. To my left is Sean L'Estrange, member for Churchlands; Stephen Price, member for Forrestfield; and Terry Redman, member for Warren–Blackwood. 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 here today?

**The WITNESSES:** No.

**The CHAIR:** Would either or both of you like to make a short opening statement?

**Mr AZZALINI:** I have a little one.

**The CHAIR:** Fire away.

**Mr AZZALINI:** I appreciate the chance to talk about this topic with state Parliament. We think it is quite an exciting area. The technology that you saw when you visited the EMC workshop is proven. It has been out there for a few years now. What we need is scale to really further develop this product and to reduce costs further. The cost savings to Western Power, if they go down and use this technology, will save them billions if they replace poles and wires. The private sector is very interested in this. I believe WA is in the lead in Australia in this particular industry, and we can take the step forward compared with others.

**Ms FAIRFIELD:** The only thing I will add is that I understand the committee has been broken into two sections—the opportunities and the barriers. This may go into the second section—I am not sure about that—but I think it is really important, as we mentioned in the submission, to look at other sectors and the roles that they play, particularly in the planning area, and the implications for planning policy and how that integrates with microgrids and associated technologies.

**The CHAIR:** First of all, I would like to thank both of you and your organisations for hosting the committee and for taking us through the facility. It was absolutely fantastic for us to see both the way that you pull the assets together and the deployable technology that you have, but then also how you remotely manage that. That was a very educational experience and beneficial for all the members who attended. Thank you very much for that.

You have pretty much hit on the three major topics that I for one would like to explore with you today. I think we have been managing this inquiry on the opportunities side and then were thinking about regulation, but I think you are the first organisation that has appeared before us that has probably a fairly unique line of sight to the regulatory barriers as well. I anticipate that we may stray into that territory. If at any stage there is anything that you would like to take on notice, please feel

free to flag that with us. Of course, you are obviously welcome as well to provide supplementary submissions if there is anything you feel you have missed as we go through those discussions. I will kick off with the asset replacement program that you mentioned in your submission and, Paul, in your opening comments, you referred to the potential cost savings for Western Power. What engagement have you had with them or what work has been done to somehow quantify the sorts of potential benefits; and, if you have engaged, how have you found that engagement?

**Mr AZZALINI:** I suppose Western Power did an assessment a couple of years ago in their submission to AEMC and identified about 3 000 standalone systems that they could install that would save them \$380 million. We have not had any further engagement with Western Power to understand the extent of this particular technology. It was only in the discussion that I had with you a couple of months ago that they identified a larger number. If you look at that and extrapolate, you are looking at potentially billions of dollars of savings.

**The CHAIR:** I want to pick up the comment that Tristy made around integrating these technologies with other infrastructure and land use planning. Would you like to expand on that issue in particular?

**Ms FAIRFIELD:** Yes. I guess I would like to point to the state planning policies. I am not sure if they are fully understood or if they have fully caught up with the progressions in electricity technologies—microgrids and standalone power systems. We have had customers approach us and say, for example, “I want to do an industrial development. It is too expensive to connect to Western Power infrastructure.” It is predicated according to either the Department of Planning or WAPC on the type of activities that we undertake in that location, but they are not allowed to do that as a standalone development or as a microgrid. They have to connect to Western Power infrastructure. I am not sure if it is a failure of planning policy or a failure of understanding of the capability of renewable energy hybrid technologies to meet those industrial loads, but I think there is a disconnect between the technology capability and either the policies or the understanding of those policies. Because I am not really familiar with planning policy, I am not sure where that disconnect is happening. It has also happened with smaller customers in the regional areas who want to subdivide. They have been told that they need to connect to Western Power infrastructure. My reading of the current planning policy, which is 2.5—there is a specific section there around electricity infrastructure—is that if you can demonstrate it can be met by renewable energy technologies, then you do not have to connect, but that is not the message these people are getting. I am not sure where that breakdown is happening. I guess a further extension of that, as you would know from your previous witnesses, is if a customer goes to Western Power, they have an obligation to connect within 100 metres, but irrespective of the distance it is at the customer’s expense to pay that amount. My understanding is that Western Power is not allowed to direct that customer to an alternative form of electricity provision. I am obviously not suggesting that they recommend vendors, but I do not believe that they say, “Have you looked at these other technologies? They may be more appropriate.” There are all these sorts of gaps in opportunity where either the policies or the understanding of the policies could lead to better outcomes.

**The CHAIR:** If we can just put the Western Power connection issues aside and focus on planning at the moment. About three weeks ago, the government released a draft position statement on renewable energy facilities through the planning commission. It has literally just been released to try to address the issues that you raised in the first part of your answer. There has also been some announcements made around reform to the Strata Titles Act and the creation of a community title for renewable energy assets. Have you had an opportunity to look at either of those things? By all means, if you want to take it on notice and have a poke around, then let us know what you think, but if you have had a chance to turn your mind to those, I just wondered if you had any thoughts?

**Ms FAIRFIELD:** I have not had a chance to but I will take it on notice and provide some feedback.

**The CHAIR:** We would appreciate that, thanks. I might hand over to my colleagues. I have heaps of questions but has anybody else got a question?

**Mr Y. MUBARAKAI:** Paul, your submission under affordability talks about how EMC–Lendlease did independent modelling to look into the greater savings in providing better designs and raw materials. Could you talk more about this undertaking that you have done and the modelling behind it and give us an indication of what it was and what findings brought you to that conclusion?

**Mr AZZALINI:** I suppose we have done a number of iterations on the design since EMC did the original project for Western Power for Ravensthorpe. Through development of products we have identified some savings for Western Power once they come out to market for future standalone systems. I cannot give a quantum of the savings because obviously it is commercial. But in terms of the price reductions over the last couple of years, if you look at Western Power's submission to AEMC, since then—in the last two years—the cost of solar panels has dropped 20 to 30 per cent and batteries by 40 per cent. Some significant savings have been realised since that submission and will continue to come through once you have revised designs. I am unable to give you a quantum of the potential savings.

**Mr Y. MUBARAKAI:** I was just hoping that you could give us an indication of to what extent and what were the avenues you went down to identify these scales.

**Ms FAIRFIELD:** There are a number of ways that you can look at the quantity of savings. It is obviously a function of the cost of the standalone power system in particular—we are talking about standalone power systems rather than microgrids—and also how many customers there are at the end of those electricity networks and how long those electricity networks are. There is a range of different scenarios with different variables that impact on the savings, but the cost trajectory that Paul is talking about heads in only one direction—it only gets better.

**Mr D.T. REDMAN:** You talked right at the start, Paul, and also Tristy about the fact that there is a lot of technology coming on. Your submission talks about technology not being the barrier but a whole range of other things. There is obviously engagement from your companies with the private sector with asset—standalone or whatever—but also with the government and with both Horizon and Western Power. What has been the on-the-ground practical outcome and/or challenges with implementation of the tech, even though the tech has to be integrated with the system? You have high voltage regulation, which is a difficult space to manage. Can you give us some feedback about your on-ground projects and that challenge and how that is working through?

[10.20 am]

**Ms FAIRFIELD:** Horizon Power and Western Power are our customers and the residents at those standalone power systems are their customers. I just want to make that bit clear. In terms of the trials that Western Power has done for the Ravensthorpe trial and Horizon's experience in Esperance, it has been a relatively smooth process from a technology point of view. They both had really excellent customer engagement at the front end to recruit those customers and to explain to the customers what was going to be expected so that when our installers came on site, they were very welcome. It was fairly straightforward. There were some small kind of technical issues with one or two of the systems I think with the diesel, but I would have to take that on notice as to what the exact thing was. We had diesel issues but they are fairly typical of commissioning of systems and they were certainly resolved quickly. If you look at the performance of the SPS compared with the network, and I am sure Western Power would have talked to you about this, the SPS had I think an average of four and a half hours of outages over 12 months compared with the equivalent feeder

of 70 hours. Some of those systems had zero outages. That four and a half hours was really those technical installation commissioning issues at the very front end. It would probably be a different matter at scale because you have more customers, more access and more people to engage with. But I think our experience with those utilities is that it was managed very smoothly and the customer and technology engagement was pretty smooth.

**Mr D.T. REDMAN:** Further to that, I understand Western Power and Horizon are your customers and the users are their customers—I understand that distinction. I asked some questions of Western Power in budget estimates around the Kalbarri circumstance and the microgrid that has been put in place up there. One of the comments you made about them is the importance of community acceptance and community engagement on that. That is probably not your job in the sense that Western Power is your customer in this case, not the consumer. But are you coming to the table with ideas and thoughts that can modify and advance even Western Power's discussion given how quickly technology moves and the capacity of that to be reliable and to delivery to a community what it want? I understand in Kalbarri there is a little bit of a disconnect with the community and concern about longer term reliability about the location of batteries et cetera.

**Ms FAIRFIELD:** We went with Western Power to their community engagement session in Kalbarri soon after the announcement of the EMC—Lendlease JV being awarded the battery contract. To the extent that there are technical issues around technology performance, we assist with that. Certainly, I think Western Power engages with a range of vendors about the technology improvements. They also have a very strong internal capability. But absolutely if they come to us with any questions around technology options or different design options for things like, for example, battery storage, of course we engage and assist with that.

**The CHAIR:** Just a follow on question to that on the customer relationship model and particularly the risk perceived by both the potential vendor of these technologies and the potential purchaser if we are talking about individual households or even small communities. What are your thoughts on Western Power and Horizon Power standing as the outward face towards the customer and, in turn, the level of comfort that the customer may have in dealing with Western Power as opposed to dealing with any number of small companies that are out there at the moment trying to crack into this space? Equally, as one of those companies trying to crack into that space, what are your preferences about directly contracting with an individual customer with a very different profile as opposed to vending your services to Western Power as Horizon Power as your customer? I guess I am talking about perception of risk from both the customer end and a vendor end.

**Ms FAIRFIELD:** The customer being —

**The CHAIR:** The end customer. The mum and dad in Kalbarri.

**Ms FAIRFIELD:** We see this transition to what Western Power has called a modular system, to be over time. It will not happen immediately. An absolutely critical part of that is the customer acceptance and trust in that technology. If they do not accept that that technology is going to be better for them and safer and more reliable, it is not going to happen. At the moment, Western Power and Horizon Power and the retailer Synergy are not perfect, obviously, but they have high levels of trust in the community. Our view is that at this stage, when the customer acceptance is really important, there is such a short space in time in which to reap that economic benefit. If we avoid replacing the poles and wires now, they have a life span of 40 or 50 years. So we have this really short window of opportunity. That is why even though our view is that ultimately this is a contestable space, it is fairly obvious that standalone power systems are not a natural monopoly asset. They are easily replicated. They do not have any of the other characteristics of a natural monopoly asset. But in order to not lose the opportunity, Western Power and Horizon Power

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undertaking this transition is the best course of action. Over time, that will naturally transition to a contestable space, or it might not happen naturally and it will probably need regulatory reform, but there are so many complexities in that end and it is such a long-term outcome. For now, that trusted utility interface is really important. As the technology becomes more accepted and more mainstream and more usual, I think inevitably the vendors such as ourselves will have that trust and that acceptance of the community. We have discussed previously that there are so many other really complex regulatory things that would need to change to enable that space to be contestable, and by the time that happens, I think we will have a different relationship between different vendors. It is part of the sector that does not really exist yet.

**The CHAIR:** Just on that, this seems to me to be a groundbreaking space. It is very fast moving. There is a whole lot of change in the technologies with lower cost profiles all the time. There is all this innovation going on. With innovation comes risk and you have to couple that risk in developing the products with the risk of managing thousands of potential customers. In terms of actually encouraging innovation in the sector, does having a counter-party like Western Power or Horizon Power sitting there as your customer, affect your perception of your risk? How does it impact on your willingness or ability to innovate and to maybe take some of the risk around developing the technology because you know you have a credit-worthy counter-party there that honours contract? Could you give us a bit of an understanding from the vendor perspective to Horizon Power or Western Power as a business and how that affects your ability to innovate, your willingness to innovate and your perception of risk?

**Mr AZZALINI:** As Lendlease, we prefer to deal with larger companies. We would have a stronger preference to deal with a Western Power-type of entity—whether it is Western Power or someone else or a larger entity—to manage the customer interface. But in addition to the regulatory hurdles, I think tariff reform also needs to happen because we will not be competitive based on the current tariffs that these consumers pay on these standalone systems on the edge of the grid. It is a lot cheaper for them to maintain their connection to Western Power than to buy a standalone system by themselves. The market is not there yet until there is tariff reform.

**Mr D.T. REDMAN:** Unless you have not got a connection.

**Mr AZZALINI:** That is correct, yes.

**The CHAIR:** Just to take that one step further, contracting with Western Power and Horizon Power directly, you are insulated from the impact of tariffs because, at the end of the day, Synergy is the party that offers the tariff. How they choose to procure or how Western Power or Horizon Power or whoever chooses to procure the energy to supply that uniform tariff customer, that is the point at which you have no exposure whatever to uniform tariff. You can come to whatever the most commercially viable and economically optimised solution is available, right?

**Mr AZZALINI:** That is right.

**Ms FAIRFIELD:** Just to add to your question about innovation risk. I think it is important, and I know your previous witnesses have made the point, that the technology has some innovative aspects, particularly in the remote monitoring and the remote control, and once you get to scale to be able to manage that at a fleet level. But standalone power systems have obviously been in operation for a long time, maybe with different battery technology, so we would not take pre-commercial technologies to those customers anyway. You are only ever going to be serviced with technology that is well and truly proven and tested. Whether it is through Western Power or Horizon Power or directly, what really provides that comfort to innovate and to test separately from the customer to bring things through is the scale and the knowledge that you have a market there. Although at this point it is Western Power and Horizon because of the potential scale and their balance sheet and

their strength, at scale that would give comfort to innovators to be doing that testing separately through trials or other tests, but we would not be bringing untested or unproven technology to the customers.

**The CHAIR:** We have had some really interesting evidence presented to us about innovation and we have some research institutions coming to us to talk about various CRCs that are being proposed. This whole pre-commercial technology—is there space for partnership and innovation? Are you working with the GTEs not just about deploying a proven technology, but also having a look at what else is possible and if we set ourselves up in a particular way, what can we do? How does the private sector engage with both academia and the GTEs to test these pre-commercial technologies?

**Ms FAIRFIELD:** If you have customers that are obviously consenting to be part of a trial and they know they are part of a trial, that is quite a different scenario than when you are rolling these systems out at scale as part of a business as usual undertaking. Absolutely, there is the opportunity to test not only the technology in terms of the communications and the new battery chemistries and all sorts of things, but also to use that technology to test business models and tariff models as well. To the extent the utilities or any academic institutions want to pursue that, absolutely we are keen to participate and willing to assist.

[10.30 am]

**Mr AZZALINI:** And sizing is a key thing as well. That is probably a technical challenge that needs to be resolved. Once we have standardised sizes then we can innovate much better than what we have at the moment.

**The CHAIR:** That was actually going to be my next question—nice segue. Obviously, achieving scale means deployability. You would not go to every single household and ask, “What does your daily consumption profile look like?” You kind of need to have categories of offerings; is that right?

**Mr AZZALINI:** That is right.

**The CHAIR:** Is it a push or a pull factor? Are you working with the GTEs to say, “We suspect you’re going to have a whole heap of customers that look like X; and, if so, this is how we would design a service, or a product, for you? Or is it Western Power saying to you, “We think we’ve got a whole heap of customers that look like”—how does that work? How are you working out what the little segments of the market are?”

**Ms FAIRFIELD:** For the first trial in Ravensthorpe Western Power provided technical specifications that were based on a proxy load profile. They have only gone to the expression of interest phase in this one, but they may produce load profiles for vendors to respond to. We have a lot of experience in that space anyway and typical customers at the moment through the wheatbelt are not all exactly the same obviously, but you can make some assumptions around load profiles based on both our experience and the types of customers that they are. Ultimately, the load profile is important because it depends on the sizing of your systems and it impacts on the cost of your systems, but you do need to make sure that these systems are modular and scalable. As a customer’s load profile changes, they might need more batteries or more inverters, or more solar. Conversely, depending on the economic efficiency of doing so, you might want to scale that back if the customer leaves the property or they have another significant change.

The other thing that we need to move towards as we get into this standardisation is standards, because you need to be able to plug and play. You do not want to have some people with this system and some people with that system and they cannot change out the batteries or change out the inverters or replace the solar panels. You need to have that interoperability across all the systems to really get those economies of scale. So, we really need to make sure that they are being rolled

out with an intention to have some consistency across operations; otherwise, some people are going to have the VHS and in some people are going to have the Betamax, and it is going to be incompatible and then you have lost those opportunities for those economies of scale and those efficiencies.

**The CHAIR:** Just pick up that point, the ENA have recently, I think in the last couple of weeks, released a proposed set of standards for the connection of distributed energy resources that they are floating as being the industry standard. I was recently in Singapore at an IEEE conference where again they were talking about trying to come up with standardisation for the installation of these types of technologies. As industry participants yourselves, are you engaged in those processes? It sounds to me that sometimes it is network businesses all talking about it to each other, but they may not necessarily be engaging with the providers of the technology around the development of these standards. I wondered whether you are being engaged and how you feel about that—I am getting nods and smiles.

**Ms FAIRFIELD:** It is a great idea to have I guess it is the equivalent of the technical rules for networks connected to the DER to be standardised. I think installers have found that be quiet frustrating. I am not aware of those particular processes but certainly through the Clean Energy Council and other mechanisms you usually have the opportunity to participate. Whether you have the capacity to do so is sometimes another matter. But to the extent possible, obviously, it is good to have the vendors and the industry participants involved so they can bring their experience to bear on the conversation.

**The CHAIR:** Earlier on, we touched on a few issues around the regulatory—Western Power's obligation to connect and how businesses that want to provide the technologies relate to the GTEs. One of the things that has been alluded to in submissions—we have not done a deep dive into it as yet, but I think we are rapidly approaching the point where we may—is around the statutory functions of the GTEs. The fact that Synergy can only generate, Western Power can only manage networks, but Horizon Power can do the whole box and dice and is unregulated and can go away and do whatever it likes. As a provider of solutions to the industry, how has your experience been dealing with the different GTEs? How do you think that their constraints may impact their ability to engage with you?

**Mr AZZALINI:** Probably EMC should be answering this one. We have only just started engaging Western Power as a joint venture, so we are limited in what we can say.

**Ms FAIRFIELD:** You are right, but they are all operating within the constraints that they have to operate in. I think that goes without saying. I do not think any of the utilities are deliberately putting barriers in place that do not exist. Horizon Power, as you said, has obviously got an easier time of it because they do not have those constraints involving their statutory function. I do not think it has impacted on the way they engage with us necessarily. It has had consequences for the speed that they can undertake processes and it was quite a long time for them to come to the landing on that first trial, but I think they are operating within the bounds that they find themselves in as effectively as they can. I think they are doing as much as they possibly can within the constraints that they find themselves in and as a consequence of the drafting of that initial legislation on disaggregation. We spoke to some people at NSP in New Zealand called Powercor that was doing a similar program of standalone power systems. I said to them, "How did you change your legislation?" and they said, "We'll send you the draft." They literally sent me the draft of the legislation. It had crossed out one bit and it said, "Except when it is off the grid, in which case blah, blah, blah." It was so simple and that just changed and then they could go and do it; whereas, the way our legislation had been

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drafted it is right up there in the primary legislation, which is quite difficult to change. I think they are doing a good job under the circumstances.

**Mr S.K. L'ESTRANGE:** Following up on that, for the legislative change you highlight there is a requirement for regulatory and legislative change. You also mentioned earlier that window of opportunity with poles being replaced. Is that window now and what is the time line that you would require regulatory or legislative change to be able to make business decision that can actually progress what you are trying to achieve?

**Ms FAIRFIELD:** I would say the window of opportunity, if it continues. But it started, I would say, when Western Power had the obligation to replace all their rural wood poles. I think that was a really good opportunity that was missed. The opportunity cost continues to be high because, obviously, they have a high replacement program. We are ready to go; as soon as those utilities are able to proceed, we are ready to proceed. You are probably able to elaborate more on that in terms of manufacturing and rollout.

**Mr AZZALINI:** Absolutely. We need to be working closer with Western Power and Horizon Power to formulate a larger plan. At the moment, we are tendering 60 standalone systems to Western Power, and Horizon Power is coming out with five, but these are quite small. If it is a larger scale and we have some commercial arrangement with them to work in some form of alliance, you are going to get greater returns quicker in this particular technology working together, rather than them working between themselves and coming out to market—that will be a lot slower.

**Mr S.K. L'ESTRANGE:** Have you done any cost–benefit analysis of that window of opportunity to be able to get in there with those major players to help them to make the decisions about whether to replace poles as opposed to going with new technology?

**Mr AZZALINI:** We know it is coming. We do not have visibility of their replacement program and the amount. We know there is a large number that needs to happen, but we have not got that visibility.

**Ms FAIRFIELD:** I think it is important to also realise the opportunity exists throughout the NEM states as well—the national electricity market states. We went through their submissions to the AEMC rule change proposal that Western Power put up and they all have quite large numbers of opportunities where it would be more economically efficient—and, obviously, the safer and more reliable goes with that—to put standalone power systems in place of network renewal. That is obviously another big opportunity for Western Australia to be a leader and to showcase our utilities and their leadership, but also for the industry to benefit from that as well. They are quite significant numbers. Even if you look at, certainly an informal assessment at the very least, the distribution numbers of the rural and regional customers that those network service providers have, and make some assumptions about maybe five per cent of those customers who would be eligible, you are talking really, really big numbers. But, as we said, as soon as those poles and wires are replaced, the opportunity is gone.

[10.40 am]

**The CHAIR:** Have you participated in or looked at Western Power's AA4 consultation? They have their draft decision out at the moment that talks about what they will allow Western Power to do in terms of replacing poles and wires and encouraging these new technologies. Have you had an opportunity to look through that or to submit to that process at all?

**Mr AZZALINI:** Not closely.

**Ms FAIRFIELD:** No, I have not looked at the AA4 proposal yet. But I would make that point that Western Power can only propose in AA4 what they are legally allowed to do and the regulator can presumably only approve them to do. I am a little unclear if it is shown to be less economically

efficient but they are not legally allowed to do the alternative, where that lands them. I am a little unclear about that. They can only propose what they are allowed to do would be my understanding.

**The CHAIR:** You talked about opportunities in other states and in your submission you refer to the export opportunities associated with these types of technologies. Would you like to expand on that any more, because we are looking at the entire potential value that this offers Western Australia from advanced manufacturing through to export opportunity? Would you like to give us a bit more detail on your thinking in that space?

**Mr AZZALINI:** I suppose it is just a high-level thought. I mean, developing countries need power and they do not have infrastructure, and this is a great way to provide power to the communities rather than building a grid—similar to mobile phones. We have not done an assessment of the overseas market. The focus has been more Australia-wide, and what we have seen is that WA is leading the way. The east coast power utilities have openly said that they are just watching what Western Power is doing in terms of regulation. They have the opportunity to change regulation quicker than the east coast, because they have to follow the NEM. Really, this is definitely the cradle for this technology to be developed, which can be taken overseas or over east, but I have not looked in detail at the over east opportunity.

**Mr D.T. REDMAN:** This is a slight departure from our question. I am interested in your business model and how that interacts with what is happening right now. There are a number of companies pitching to the market and saying, “We have technology. We want to be the next Apple or Microsoft that rises through the ashes to be the one that takes it over”, hence you have engagement at a range of levels. I have not looked at EMC’s balance sheet, but I have seen Carnegie’s balance sheet. I wonder how commercial your decisions are and whether you are making decisions that are depleting the balance sheet in the interest of getting market exposure and opportunities and/or government grants for either TEC development and/or supporting projects that you are engaged in as a company. I guess that is the business of where you are pitching now.

**Mr AZZALINI:** I suppose the joint venturers set up the target EPC projects. It is all Western Power. We are not set up to do a BO project—build and operate—but that is an option we could look at. We are funding many developments internally. I mentioned earlier that there is a number of iterations we have done on the design which we have funded in-house. Really, we need projects to support that. Once we win some work and get money through the door, then we can do further development.

**Ms FAIRFIELD:** The standalone power systems are commercially viable for us. I think you are asking: are we taking a loss leader position, or something like that, on those sorts of projects? But we are not; they are commercial.

**Mr D.T. REDMAN:** Is that across the board in all the other activities in EMC?

**Ms FAIRFIELD:** We are just an EPC business purely and squarely in the solar battery–hybrid space, which is a commercial proposition.

**Mr D.T. REDMAN:** Who are your main competitors out there or is that something you do not want to declare?

**Ms FAIRFIELD:** We have a few. I do not think I will name them.

**Mr D.T. REDMAN:** Is it a big list or a small list?

**Ms FAIRFIELD:** It is a healthy list. That is a great thing because you get a vibrant competitive market and you will get the best outcome, so we are excited by that. They are great operations and we are all looking towards achieving the same goals.

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**Mr AZZALINI:** The Kalbarri battery that we were successful on, I think they had about 29 submissions, so there is definitely a lot of interest in the market.

**Ms FAIRFIELD:** And the lead procurement person at Western Power at the recent standalone power system briefing for the 60 systems—I think there were probably about 60 to 80 people in that briefing—said that he had never had as many questions from a briefing. Clearly, there is a lot of interest and there is a lot of capability in the sector.

**Mr D.T. REDMAN:** How important are government projects in terms of the profile? Obviously, there are only wholly owned utilities in WA. How important are government projects or what percentage would they make of your market and/or projected market opportunities?

**Ms FAIRFIELD:** For the standalone power systems, because we need to get the scale to get the costs—the really different thing about standalone power systems as they are now compared with when they were doing pastoral stations is really that fleet management with remote operations and monitoring and control, because you do not have to physically go to site to see what is happening and you can resolve a lot of issues remotely, so you really do need the scale. We are not really competing. There are smaller operators in the market that will do, say, the one-off standalone power system for someone on a rural block who does not want to connect to the electricity network, but that is quite a different proposition to an at-scale fleet management approach that really does need that utility partnership.

**Mr D.T. REDMAN:** So, the utilities are a pretty big operating space in WA and if you have not got that piece, it is a challenge.

**Mr AZZALINI:** That is correct.

**Mr S.J. PRICE:** Can I go to a different section of your submission on your workforce planning and development? You outline a range of opportunities and requirements there. Lendlease probably has a little more experience because of its involvement over east versus EMC, but I would be interested to hear both responses. In regard to the skill set that your workforce needs, is that an off-the-shelf skill set? Are you able to get the required skills that you need at the moment, or do we have a gap in our training programs that we need to look at as this technology and hardware develops?

**Ms FAIRFIELD:** What I have observed and from my conversations—I will probably get back to you with more detail—the training exists, particularly in the standalone power system space, where there are some clear certificates that you need to have in terms of installing and commissioning that technology. Whether it is brought together with the COMS piece, which is a different skill set—a lot of the people who we have internally have studied, but have also taught themselves a lot from my discussion with them. I suspect in that COMS-ICT piece it is out there, but it is disparate and not brought together with this particular application in mind. Just because of the renewable energy cycles that we are in it can be difficult to find enough people with particular skill sets. There are a lot of projects in the large-scale renewable space under construction, so maybe that will change, but I think there is definitely a place for a more thorough look at the educational–vocational requirements and how they are focused on this energy transformation.

**Mr S.J. PRICE:** Have you had a similar experience on the east coast?

**Mr AZZALINI:** Not in this particular market. There is a lot of work coming up in Western Australia. I think there is definitely a need for increased training in this area.

**Mr S.J. PRICE:** When we had the tour of the facility in Belmont the guys were putting the batteries together and stuff like that. That is quite unique, so they must have done it previously somewhere else or you guys gave them the training and the skill set to do that.

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**Ms FAIRFIELD:** It is a bit of both. You need to have that specific training on the DC applications through your electrical training, but there is a lot of peer-to-peer education as well. The other side of it, of course, is the operations and maintenance out in the field as we get to scale. At the moment we are using local contractors, and because it is not a huge amount, we can manage that. As that grows, which is a really big regional employment opportunity, then I guess it is a matter of whether you have the numbers of people who can undertake those activities. But at the moment we think there definitely is in those regional areas, because we can use existing workforce providers.

**The CHAIR:** You might have a big regional workforce that you want to transition to a whole new sector. You mention in your submission very briefly the factory acceptance testing and that your workshop is one of the only places where that is currently conducted in Australia. How big is that pipeline of work? Is there a lot of overseas factory acceptance testing—what proportion? If we could do more of it here, how much opportunity is there?

**Mr AZZALINI:** I suppose it is only through talking to clients, and whenever they have bought larger-scale batteries they have always been commissioned overseas, and they said it was quite frustrating because they were sending their representatives overseas to make sure things are done properly. They love the idea of coming locally to be involved in the commissioning. There are not many of these out there in Australia, I believe. It has grown in the last couple of years, and people are getting interesting in this market, but most of the batteries come in tested overseas.

**The CHAIR:** Thank you, both. That was really interesting.

I will proceed to close today's hearing and thank you for your evidence before the committee. 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.

**Hearing concluded at 10.52 am**

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