

ECONOMICS AND INDUSTRY STANDING COMMITTEE

INQUIRY INTO MICROGRIDS AND ASSOCIATED TECHNOLOGIES IN WA



**TRANSCRIPT OF EVIDENCE
TAKEN AT PERTH
WEDNESDAY, 21 NOVEMBER 2018**

SESSION ONE

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 9.02 am**Mr CHRIS PATTAS****General Manager, Distribution, Australian Energy Regulator, 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 issue of microgrids in Western Australia and distributed energy resources. 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 the Deputy Chair, 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 today, do you have any questions about your attendance?

Mr Pattas: I have no specific questions about the attendance. I will just respond to any particular issues you want to raise. I wonder if I could make a couple of opening remarks?

The CHAIR: That would be wonderful, thank you.

Mr Pattas: I should stress that whilst we have a particular interest in this broader issue, a lot of the work that is going on in this area of the standalone systems and microgrids is working through our, if you like, brother regulator, which is the AEMC that has the role of looking at the framework and providing advice. They are undergoing a fairly significant inquiry at the moment on these sorts of matters. I suppose they are in a much better position to talk about some of those detailed workings that they are going through in terms of models and various systems and that sort of thing. But we still have an interest in it and we are participating in that process.

At a broad level, of course, we support new technology that enables customers, especially customers who are living in more remote and regional areas, to have alternative options available to them, which might reduce the costs of their power system and, in so doing, also reduce the costs for all other customers too. We believe there are win-win situations with the development and the rollout of this sort of technology. But the issues all go back to the detailed workings of how this might work, what sort of customer protections there are, whether customers will have choices around their retailer, and whether competition is feasible or not feasible. Those are the sorts of things that will be important in making sure that this rollout or implementation is a success or otherwise.

At a fundamental level, we believe that microgrids and standalone systems do have the potential to provide benefits to those customers with more reliable services and perhaps lower-cost services as well as to the remaining customer base, which hopefully will mean that some of those costly upgrades will not have to occur. I will leave it at that for now.

The CHAIR: Thank you very much for that. That is very helpful. We have the AEMC coming to meet with us next week. Obviously, they have a program of work to do, but I would be very keen to understand what the AER's role is potentially with respect to these technologies. What are your touchpoints?

Mr Pattas: There are a couple of areas that we are particularly interested in. Firstly, we want to make sure that if there is an ability for customers to have choices about their supply, those choices should be available to them. In other words, if there are opportunities to have contestable options for them, they should be pursued and looked at. In other words, we do not want to see a situation where it is just the local distribution service provider that necessarily will always have the role of providing the service. We believe that alternative options should be considered. The AEMC will look at both the DNSP and non-DNSP options as part of its work. We believe that every option should be on the table in that sense.

The other thing that we think is very important is the customer protections that customers currently receive from their retailers. I am speaking particularly about the national framework over the National Energy Retail Rules. There are particular protections that customers receive. We believe those customer protections should be received by all customers regardless of whether they are directly connected or otherwise. That is another important touchpoint for us. The other areas where our role becomes relevant will depend very much on the nature of the model that is pursued through the inquiry process and, ultimately, through the COAG process.

In other words, if you have a situation where the DNSP is going to be the prime provider and treats the service very much like they treat their current grid connected services, then there is a role for the regulator in that respect in terms of making sure that those costs or prices that those customers receive are efficient. If, on the other hand, you have somewhat alternative models around other procurement models or third-party models, then our role will be less direct; it will be more related to making sure that that whole process, that framework if you like, is consistent with the rules. It is more of a compliance role, if you like. Our role will depend very much on the kind of model that ultimately gets pursued.

The CHAIR: Just taking those sequentially, I will start with your first point around the contestable opportunities and non-DSNP options. Are you talking then about the customer's provision of services as opposed to the DNSP just rolling out the tech and basically the customer not having any role in network service provision?

Mr Pattas: Yes, I am talking about a situation where at the moment, if you want to unbundle those services it is probably best to think of it as a number of services that are being received. At the moment, the customer gets a network service or a transport service as it were. They get an energy service, which is the actual electricity, and they also get a kind of retail-type service or a sort of tertiary service, which is the packaging, the marketing and the dealing et cetera. Those are three distinct services that the customer receives. Under the national framework or even any other framework where you have a disaggregated system, there are at least three different parties involved in the provision of those services.

Then when you have a situation like a standalone system where you have a cut—now I am not talking about where you have very thin lines to the grid; that is a very different case, but where you have a complete cut from the grid, you then still have to make a decision about how those services are provided to that customer. Is there going to be one entity that will effectively combine those services and provide a single consolidated service to that customer, if you will, which is essentially what retailers do today by the way, or are you going to have some different approaches? From the point of view of the customer, they just want to get a service and they want to know who is responsible for that service. What happens behind the scenes is something that the system and the framework should deal with, but I suppose it does depend very much on how that actually works.

The CHAIR: I would be interested to tease this out a little. We have had a bit of evidence around this issue and some quite differing perspectives offered in. There is an appetite, certainly in industry, to

come in and provide standalone power systems or certainly at least the equipment, but there are two issues that present themselves. Firstly, customer expectations about utility-quality power and who they are comfortable buying their power from, and then equally from the provider perspective, who they are comfortable selling their service to.

Does your guy with ute and a couple of gennies, a PV system and a battery want to develop a fleet of those and take on all of the customer risk potentially associated, or would they prefer to contract with a retailer and just basically deliver the kit? What are your views on the customer's expectations around who is responsible for delivering utility-grade energy supply, and then industry's or a provider's opportunities and views on counter-party risk, retail capacity and servicing capability and those sorts of issues?

Mr Pattas: These are very good questions and the sort of issues that they raise are matters that are being considered in those inquiries. As I alluded to earlier, the customer, for their part, will want something that is straightforward, as uncomplicated as possible and is providing the kind of experience that they are getting today. They do not want something that poses undue risks to them. They do not want something that is overly complicated to them and they have to make various choices at different times about different suppliers. They want something that is pretty much as close as possible to the kind of experience that they are getting today, perhaps with better reliability because it is a localised system, and not at a higher cost but maybe at a lower cost. That is what the customers are expecting and that is understandable. That is the kind of aim we should all be trying to achieve here.

How do we actually do it is a question of do we have, as I said, a single service relationship that brings it all together or is it in some other form? Those are matters of detail that will need to be looked at more carefully, but as far as the customer experience is concerned, they want something that is very much similar to what they see today.

Mr D.T. REDMAN: You make the point that customers, as a uniform group, like a less sophisticated service arrangement so that they can understand it and fully appreciate where it is at. Is it your experience that that varies depending on the sophistication of the customer? Do your much more sophisticated, larger customers seek to have choices and options and work through a bit more of a complex relationship?

Mr Pattas: Yes, it is true, but I am thinking more about the less sophisticated customer rather than the more sophisticated customer. Whether you are talking about the less sophisticated or the more sophisticated, ultimately they will be looking for a service package, if I can call it that, that meets their needs. Sometimes even the less sophisticated customers may still have a third party or an agent involved that does all the hard stuff—all the stuff behind the scenes for them. It is still a complicated situation, but someone else deals with the complexity, not them. If I can clarify that, that is what I think there. For a more sophisticated, larger customer, they might do more of that themselves.

The CHAIR: On the standalone power system context, which I understand is where this conversation is centred at the moment, obviously one of the issues there is that the assets that are being installed on standalone power systems have long lives. If you are entering into a contract for someone to provide you with that supply, then if you feel like churning it is not as easy as just picking up the phone and saying, "I want to change my supplier." That means someone has to come in, take away your infrastructure and set you up again. I wonder about your views on how liquid that market is. I guess it comes down as well to that supply-side preference on product offering and structure and counter-party or customer risk. I just wondered what your views were on that.

Mr Pattas: They are some of the issues that come up in this area, of course. I was sort of making a point about how complex this is going to be for the customer at the end of the day. This question about churn is a really important one. We have seen this in the metering space, too. If it becomes a matter that you have to change over the systems or the equipment because you change providers, that is certainly going to be a no-no for customers and there will be a constraint on that sort of approach. You can of course enter into a long-term arrangement with a customer on the basis of a certain price–quality outcome for a period of time that might match the expected life of the service. You can enter into a longer term contract. The way that we regulate today is in the form of a long-term contract or a compact, if you like.

You can find ways to deal with those things where a customer has more certainty around their price–quality outcomes over that period of time, and they feel that that is reasonable for them and they are happy with that service. Then it is only at the end of the life that you might go into churn and those sorts of things as opposed to intra-period sort of changes, which are far more disruptive and unpredictable for customers. There are things you can do around that to deal with the uncertainty that is otherwise there.

The CHAIR: We have just been speaking about standalone power systems, but on fringe-of-grid or even within the mesh parts of the network, how do you view these types of issues around customer preferences, retailer or supplier contracting preferences and the churn issue? I guess there are some different dynamics at play in the connected network. What are your views on these issues in that context?

Mr Pattas: I think the circumstances of each case have to be looked at in turn. If I can use an example of a more regional or remote situation at the end of grid, if you like, the economics are such that it makes sense for those customers to go off grid and have their own systems. So there are cost benefits, as I was talking about before. Then you have a situation of is it a more individualised sort of decision, an atomistic kind of decision, or is it more of a community decision? That also influences the kind of model that people are talking about, the kind of choices that are available in some ways, who provides the service, and whether third parties are involved and how they are involved and the risk to the network. That takes more of the consolidated role, if you like. Those things will depend very much on the circumstances around it being more a community or sort of an area-based approach versus the more atomistic kind of approach that you might see in any part of Australia where people decide, as technology and costs change, to make that decision for themselves.

The CHAIR: The committee travelled to the US where we actually dealt with a community-based energy cooperative. Certainly, evidence has been presented to us here that there are a couple of market participants that are interested in establishing community energy cooperatives that are geographically defined and could be disconnected or not depending on the community's preferences, but nonetheless could function as a microgrid within a broader network. What thinking has the AER done, if any, about the formation of these community cooperative-type structures, and is it something that there seems to be an appetite for over there? How is your thinking going on that?

Mr Pattas: There have been some discussions in some network businesses, and others around the various jurisdictions have looked at those sorts of opportunities, they have looked at those sorts of examples, some more than others, and the issues that have come up there are essentially how does the current framework—this is the rules framework that we have in the national approach—cope with or deal with those sorts of situations you have talked about? For instance, there is this whole question about the essential service nature of electricity; the network's role to connect customers

on request; and the whole question about how third parties are treated in that situation where they do not necessarily have the same obligations or the same legal obligations.

So the rules at the moment, when you are talking about grid connected systems, are fairly strict, in the sense that that is a service that currently the distribution network can provide, and if there are other arrangements there, they have to be dealt with appropriately. So there are certain rigidities, and this is part of what the AEMC is looking at about the current framework, and about how that current framework can cope with those sorts of microgrid situations, particularly where they are within, or they are contiguous with, the broader network to some degree. So they do raise some complexities.

We have not actually thought through all the issues in that regard. I think people come to us and say, “Well, what does the AER think about the rules?” and we say, “Well, some of those matters are matters either for the rules themselves, or they are matters for the jurisdiction, which may have some parallel requirements around security and supply, for example, and about, you know, who has been licensed to provide a service.” They do go back to jurisdictional requirements, too. So our role there is not a central one; it is more, well, you know, this is the framework, this is the way the rules work, this is the way the game is played at the moment, and they are the sort of matters that obviously have to be looked at either through the COAG, being the national level, or through the jurisdictional level.

The CHAIR: Do you have any views on the business model in these either standalone power systems or these fringe-of-grid areas about the integration of the retail generation transmission distribution function and the sort of line of sight between electron production through to consumption? I would just be interested in your views on that in the context of these community energy or these sort of cooperative-type structures.

Mr Pattas: We do not have any views specifically on business cases in that sense. Obviously, those proponents will go through that in order to work out whether this is a proposition that makes sense commercially for them and for the customer too, of course. I suppose, when you are looking at these sorts of microsystems or standalone systems, you do soon get into this whole situation of a more consolidated or aggregated way of supply, whereas now, of course, with the national system, or with the grid-based system, we have been able to break up that sector, if you will, between, say, generation or transport, or distribution, transmission and your retail side.

We have been able to do it, because we have been able to use the synergies, and we have been able to use the economies that occur at each level, to some degree. But when you are talking about a standalone system or a microsystem, then the whole issue about whether you should be providing it in that way, as I was talking about earlier, is actually the feasible way or the appropriate way, and whether it should really be done in a more consolidated way. I think that is really where it all opens up. And when you are talking about a more consolidated way, then you are running against, well, what is the framework that we need in order to achieve that, given that our current framework is very much based on more of a segregated system? So, if you like, there is a parting, a sort of a— I would not call it a disconnect, but it is a challenge. There are some issues there that need to be immediately looked at to make sure, as I was saying before, the framework is fit for purpose for the kind of system that seems appropriate in this case.

The CHAIR: Can we move now to network regulation. I would be very interested in your views on network access pricing, the way that tariffs can operate to encourage distributed energy resources on, and the sorts of price signals that could be sent through networks to either act as barriers or enablers for the rollout of distributed energy resources.

Mr Pattas: Yes. So, in talking about distributed energy resources, I think that is a more general issue. It does not apply specifically just to the kind of systems we have been talking about; it applies more generally. So this is essentially as more and more customers decide they want to get distributed resources, solar being a typical case, certainly at an individual level, so as you get more solar in the system, you get more of these resources then being introduced and being installed, and there are questions then, when that happens: what is driving that sort of rollout? Is it simply the fact that people just want to reduce their cost, because network costs have been going up, and more generally, energy costs have been going up, and people just want to try to control and have some influence over their cost, and therefore they put it on? Is it because there are renewable and green objectives that they are interested in pursuing, or some other combination of things?

But I think the importance of pricing in this case is that we want to make sure that if they decide they want to install solar panels or batteries, or the way they use their other equipment, whether it is about pool pumps or air conditioning or whatever it might be, we want to make sure they are using those sorts of things efficiently.

Just going back a little, what we have seen since air conditioners became much more viable for most customers, they were installing those air conditioners but not paying for the full cost of that use because of the way our pricing system simply is on the basis of a metric of total use, as opposed to pricing being reflective of actual use at particular times. So, because of that problem, when you do not have a pricing framework which sends those signals, to use all of those things effectively and efficiently, we easily get a situation where air conditioners go on without customers paying the full cost; where solar panels go on without having full regard to the way they are used and the impact they have on the system; and where batteries go on where they may not be—whilst you can say batteries might be some form of a solution to some of these problems, if they are not properly operated, then they become part of the problem rather than part of the solution. So, in each of those cases what we want to see is that decisions are being made on the basis of effective price signals, and if that is the case, then what we will see in terms of an ultimate outcome is a more efficient outcome for all customers.

The CHAIR: I want to pick up the question about cost implications, and one thing that I really would welcome your views on is the IT smarts required to make this happen, the installation of smart meters, and whether the costs for those types of technologies are legitimate and should be recoverable, because it seems to me that the sort of things you are talking about around PV, dispatch, batteries, even behind the meter air conditioner trials, rely to a significant degree on smart metering, so you can understand in real time what is going on, both at a household level but also at a locational level, but then dispatchability and operability, potentially. It seems to me that smart metering is a key enabler of that. So, as a regulator and a network regulator, I would like your views on smart metering and the rollout of smart meter technology and its legitimacy as a network asset, if that makes sense.

Mr Pattas: Yes, okay. Yes, there are a couple of aspects to this issue, and, in fact, when I was talking before about pricing, I was actually implying that there was appropriate technology at the home that allows pricing to be given effect, and that means effectively smart meters need to be installed as part of that process in order for the customer to have that sort of control in the first place and to have that ability to, if you like, be engaged in the market. So going back to smart metering, it is a vital part of the whole thing. Smart metering—and I will also characterise—is coupled with proven IT and other technology at the network level. So a smart meter on its own cannot do anything. It needs to be connected to smart facilities or data facilities and other facilities, communication facilities, as the case may be, that go with it. You effectively need an infrastructure. So it is an important part of providing these services in an effective way, and in a way, as I said before, which

leads to ultimate consumer wealth, consumer benefit, as opposed to making the situation worse. So you do need smart meters as a key part of that.

Now, in terms of whether you see this as a distribution level sort of service—I think that was the question you were saying—as opposed to —

The CHAIR: That is part of the question, sure, but it is also reflecting the legitimacy of smart meters as a network asset, and then also, I guess, the utilisation of those assets as part of distribution services. I would like you to, if possible, give us your view on both of those things.

Mr Pattas: I think there are a number of views about this; there is not one view. One view is that this is a necessary and integral part of the distribution system that the distributor needs to own and operate and allow access to other providers as necessary. That is one model. The other model is that it is essentially a device for providing broader services to customers, which other parties, whether it is retailers, aggregators or other parties, can provide, because it is really part of providing broader services, and the distributor should have access to the data and to the information that comes from those devices.

So one model is sort of a centralised model where effectively one party can control it; the other side is essentially a customer-driven approach. We have seen examples or models of this in Victoria. We had our distribution model, if you like, where distributors were given a mandate to roll these things out and charge customers accordingly; and now in the national program, we have effectively a customer-driven model where essentially the retailers have that responsibility to do so. I am not necessarily going to make a point about which model is better—they both have their pros and cons. I think the important thing is that they do provide the necessary infrastructure to allow customers to do whatever they need to do in order to provide their services.

It does not really matter at the end of the day who has control or who has primary ownership, if you like, as long as there is appropriate access by the relevant party, whether it be the distributor or the retailer, so they can deliver on what they need to deliver for their own purposes. That is really where we are now with the national contestability framework on smart meters. Whilst the retailer or the metering coordinator has that prime responsibility for installation and ownership, there needs to be an appropriate arrangement for distributors to have access for their network control purposes and to do whatever else they need to do, including being able to deal with these distributive resources appropriately, and there is also a role then for other parties to use the data in order to provide whatever services they need to provide. So whichever model you go for, you can have a situation that ultimately comes to the same sort of end point.

The CHAIR: In the industry here, and I would imagine over there very similarly, systems operations is handled usually by one company in a very large region and they are a transmission system operator. They also do distribution system operations, but generally one company does the whole lot, and they may just have a voltage limit on what team is operating in what parts of the network. Has there been much debate over there about distribution system operators and how they may potentially fit into the mix—standalone distribution system operators?

Mr Pattas: The main debate has been going on—you might have heard a bit more about this from the AEMO and from the ENA, and you might get a bit more—I understand the AEMO is coming up, and you will hear a bit more about it from them—in terms of the so-called open network work that has been going on, which is talking about effectively how you orchestrate these resources in such a way that they do not lead to a disruption, they do not lead to voltage issues, they do not lead to safety issues and security issues and reliability issues for the network, and they also at the same time make sure that customers can utilise these resources in the way that they have envisaged in investing in them in the first place.

So, in other words, if you rely on very crude arrangements around voltage and around inverter control, that means that, sure, if there are sort of excessive amounts of solar PV going in, the inverter will automatically click off and you will protect the safety and security of the system, but it will mean that the person who owns that installation will not be able to use it for that period. So that is not necessarily the total solution. It is a partial solution and it is a technical solution, but it is not a full solution. So what the AEMO is saying—I am not going to put words in their mouth—is that going forward, that is not a sustainable situation and we need a better way to control these devices so that we can have good outcomes both in terms of the technical outcomes, but we also have good outcomes for customers in terms of using their panels or their batteries in the way that they are intended and they get value out of them.

So there is a whole debate going on about the nature of that orchestration, if I can call it that, that should occur. Should it be the distributor having that primary role to make sure they have orchestrated all these things appropriately in the network? Is it one for a third party? Is it one for AEMO, which would parallel to some degree their role in the transmission side? That is a debate that is currently going on. I am not going to express a view about the appropriate model; we need to see how that develops. There are all sorts of arguments for and against all of those models, again, and they have been agitated quite extensively in that process that AEMO and ENA have gone through, if that is what you are getting at. I have not heard of anything around DSOs in the context of standalone systems or microgrids, but I gather—well, there is an issue there about who should have that role and whether in that particular, more limited, situation they should not be just a distributor if they are the ones who are the main sort of proponent of those services.

The CHAIR: Can I turn to your role on network regulation. Essentially, as I understand it, in the AER you perform a very similar function to the ERA over here in terms of network access. One of the things that I am very keen to understand is your view on where the network sits in the operational nature—let me explain myself. Sorry; I am not making myself very clear. At the moment, the network is valued or remunerated for doing certain things based on an outdated industry structure, and increasingly the network is doing different things, and the services that are required to keep it running are potentially not well articulated and well defined, let alone valued or remunerated.

I would be interested to understand what the thinking is in the AER around the changing nature of the network as a piece of infrastructure providing a service and requiring services to keep operating, and how that is flowing through to the way that you then regulate your networks, particularly around your access pricing and your access arrangements, essentially.

Mr Pattas: There is a bit implied in that question, if I can answer —

The CHAIR: Yes, absolutely. I have left it quite deliberately quite open-ended.

Mr Pattas: Whether in fact networks are not being well remunerated or appropriately remunerated for the services they provide, that is sort of implied in your question. I am not sure I agree that that is necessarily the case. The other part of your question I think is more about is the nature of the services changing in such a way that the regulatory framework is not quite dealing with the changing nature of the services that customers are getting, whether it is from networks or from others. I think that is an open question and I think we have sort of talked around that a little bit this morning. So I suppose it comes back to the nature of the services that customers want to see and who should provide them. It probably is not necessarily in a sort of fixed view that the network has particular services and only the network should provide those services, or at least, let me put it another way, that beyond the core service of the transport service, that there will not be a role for others to come in and provide service off those platforms.

So the way I would see it is that there is a core service, which is still provided by the network, and it is an important service, and they are well remunerated for it, but then the question about whether they should be involved in additional services that come off that platform, or valued-added services, if you like, is something that should be open to others. That is implicit in the so-called DSO approach, but it is also consistent with the way we do things, which is that we want to see a more contestable environment for services where that is feasible. It may not be feasible out in the remote areas but we believe that in the more built-up areas, that should be something that, as I said, is available to customers so that they are not forced to just take services from the one entity all the time.

The CHAIR: I want to explore this in a little more detail. First, I would be interested on your view on batteries and where they fit into the provision of services and any observations you might have about the performance of the Hornsdale asset, and whether batteries are providing network services or generation services, because that seems to me to be a fairly contentious issue. I just wonder about your views on that.

Mr Pattas: Again, there are different views about this. When we talk about batteries, we could be talking about batteries at what we call “grid scale”.

The CHAIR: Let us deal with grid scale first.

Mr Pattas: There are arguments that that may well be a more efficient outcome overall. It is a little bit like the argument about whether solar farms and wind farms are more efficient than just having solar panels. It is a similar sort of issue, if you like. Are you are talking about kind of an ideal or shall we look at what we have and try to do what we can that still achieves certain benefits for customers? We do not have a green slate or a greenfield site yet. We have a history of huge investments at the localised level. We are not starting from scratch and saying, “What’s the perfect solution?” I think we almost have to recognise whether we are talking about batteries and grid scale, or whether we are talking about solar at the premises or solar at a grid scale as well, or wind farms or any of other things that allow that more centrally located generation to occur. That is my general point about that distinction, if you like.

Given that reality, then, what is the situation we have? A battery could be used as part of the load—the battery takes energy in—or it could be used akin to a generator, which means it pushes energy out. At the moment in our system, rightly or wrongly, we treat those two things differently as far as charging is concerned. Generation does not pay, whereas load does pay. You have a distinction there depending on what sort of device it is and how you use it. Whilst you have that distinction, that does then of course influence the way that batteries are treated in the system—whether they are treated as assets for the distributor and how the distributor themselves treats them, versus how customers treat them. Those things do lead to different approaches. Of course, if we had a common charging approach between load and generation, then we may not see those sorts of distinctions necessarily, but that is the reality that we have.

The CHAIR: I want to tease that out because it is not just about generation and load services. I think there is also a series of ancillary services that come into the mix here around voltage control and VAR support and flexibility and load-following services. They are quite specific system operations, sort of network-type services, that are required. I will make that opening comment, but what I would say is that I would be interested in your views on system operations, problem definition, signals and technology neutrality. How could the frameworks identify problems, send the right signals and, on a technology-neutral basis, encourage in an energy solution, as opposed to picking a solar farm or a battery? What are your views on the way that regulatory frameworks can ensure that we get that efficient asset deployment and optimised network operations?

Mr Pattas: I agree entirely with you that batteries can serve those sorts of functions. If they are at the grid scale, they do enable the network to be able to provide those sorts of services—ancillary services, voltage control services and various other services—some of which are services that go directly to the market and may be even paid for by the market or otherwise directed by AEMO, and other services might be more integral to their operation. But in either case, they are important devices that the network can use to deal with the ebbs and flows of the system—as I said, as we see the deployment and increasing penetration of the distributed resources continue. I think batteries have an important role to play there in how they are used. It is important, though, that they are used in a way, as I said, that makes sure the system is running more smoothly; they are not there to make the problem worse.

If you have the situation where you have a battery that is located in various customer premises and is not being operated appropriately to ease the situation, then it may make the problem worse. We want to make sure that the way that battery is utilised or controlled through a sort of enabler, orchestrator or operator, is such that it is leading to a better outcome. We still need to do that. I agree entirely with you that those sorts of things are important. Then you get to this question about what does the framework do? Is the framework one that is actually streamlining or facilitating that situation, or is it getting in the way? I think that is at the heart of your question. In the framework at the moment, if a distributor puts a battery on his system, which means it goes into the regulated asset base and it is taken by all customers and they utilise that battery pretty much in the way that you have articulated, which is to provide network control and these other services which are all directed towards the secure, safe and reliable delivery of the service, then I think it is pretty reasonable that that battery should be part of their asset base. It should be paid for by the customers because it is delivering a service that is ancillary to the service that they are getting generally.

If on the other hand that battery is being used to go beyond that and to provide other services which are, you might say, not part of the regulated service—it goes well beyond that regulated service, and there is then a debate about where you draw that line—but if you go beyond that, then there are questions about whether regulated customers should be paying for that service when, effectively, what the network is doing there is providing a different service to a market where other players are playing in that market and it is getting remunerated for operating in that market. There they are getting another revenue source or something that is already being paid for by the customer base. That is where you need to be very clear about how the cost of the battery is allocated between the distribution services and the other services.

The CHAIR: So just for clarification, because other people will be reading this, are the “other services” you refer to then those load and generation services that we began this conversation on?

Mr Pattas: I think they are services which are provided to the market directly, yes.

The CHAIR: And potentially storage of energy and that sort of—we have just rolled out a trial in Mandurah where 52 households have PV on their rooftops. We have installed a battery. The prime purpose of that battery is to allow households to produce electricity during the day and store it, and then draw it down at night. If you just were to just look at the battery’s utilisation on that basis, it is not a network asset. It is there as some sort of arbitrage asset or energy consumption-and-production asset as opposed to providing a network service, although it may indirectly do that, but its prime purpose is around a generation–consumption asset.

Mr Pattas: That is right. That is the distinction that I was making.

The CHAIR: It is going to be interesting to think about how you delineate between the two. Have you given any thought to how you describe that in your regulatory frameworks and how you draw those lines?

Mr Pattas: It is a difficult decision to make. Certainly nothing is black and white about this service belonging here and this service belonging here. One of the ways that we try to deal with this is by looking at the initial starting point of, say, a battery. I will use the example of a battery that goes into the grid. I will leave aside the other battery options that you mentioned, which are essentially household devices, or behind the meter. The “behind the meter” thing is a bit easier to understand in the sense that you have a clear demarcation, but here you have a battery that goes into the grid, into a substation. It goes into the asset base of the distributor and at that point you have to make a decision—a kind of one-off decision if you like—about what purpose that battery is going to be used for and then you make a cost allocation appropriately for that purpose.

The problem with that is that it is a one-off decision made on the basis of your starting point. Within a year or two, you may well use that battery very differently to the way you thought you would use it. You might have 20% of it as a market-based thing—it does not go into the base for that. But that might change and then what do you do? Do you have this ongoing review? Then it would be a static versus dynamic approach to the way you look at these assets. This is part of the problem that we have where you are trying to make those sorts of distinctions. If we are making those sorts of distinctions because we want to preserve the way that the markets operate and there are no undue cross-subsidies occurring between the regulated service and other services, then you have to make those calls, difficult as they are.

If you did not have to make those calls, then of course it would not matter—you put it in and that would be the end of it. But because you have to make those calls, you have this issue of these dynamic changes that occur over time. Then maybe at every reset or at every regulatory review, you might want to review how that asset is currently being used and what it might be used for in the next period and then make appropriate adjustments to the cost allocation.

The CHAIR: In the network’s context, though, that creates major problems for investment certainty, because these assets are not cheap to install and they require significant revenue streams over a certain period of time in order to wipe their own noses. You have a look at the Hornsdale asset, for example. The projections were that on the cost of the services that it was providing or installed to provide at the time were so incredibly high that it very quickly would have paid itself off. The assets over-performed in terms of solving the problem, and the price has been driven down for the services that it has provided. It has done so well it has undermined its own business case. So there are some very important issues around investment decisions, recovery of capital and remuneration of the services these assets provide. That is one of the things that I am very concerned about.

Mr Pattas: I will just add one further point on that, and that is that, of course, when you make that investment decision, you do it on the basis of your forecast or expected sort of usage in these various areas. For instance, if you are saying that this asset will provide this level of services or this stream of services, which will be remunerated this way, that is part of the business case. To the extent the battery is also being used to deliver market services, there will be a remuneration or potential remuneration for that stream. Those streams may change. The streams are still there; it is just that they might change over time. I think that as long as one is making the returns that they were expecting, they might make a bit more here and a bit less there, but they still should be able to recover the costs. That is probably the important thing. Of course, if the market is such that changes are now risk associated with the way they operate in the market, well, then, that is again a risk upon

the investor, or at least a part of the investment, and has to be factored in at the beginning as well, which I think is what you were getting at.

The CHAIR: I suppose the key question is that you have to make sure that all the various things that are required to run a network are appropriately valued and can be procured and that the revenue streams are available for the assets themselves, reflecting all the things that they can and do do.

Mr Pattas: In terms of the regulated service, that is the case. That is clearly the case that they do get a return on those sorts of services and those sorts of revenues. The issue here is where they are using that asset to do other things which are more risky, but that is a fact of the day. That is something that they would need to take into account. But the regulated revenue side is pretty clear cut. It is more that the question is how else they use that asset and whether that results in a windfall gain or loss for them, depending on market conditions.

Mr S.K. L'ESTRANGE: In your submission on the first page, you said that the EMTPT will request the Australian Energy Market Commission to undertake work to develop policy positions on relevant changes to regulation in regards to microgrids and similar off-grid supply scenarios. Do you know whether that request has been made and if there is a time frame for an outcome?

Mr Pattas: Yes. The COAG energy council directed the AEMC to conduct an inquiry. I understand a discussion paper came out around August on that, or in September. We had a discussion paper from the AEMC responding to that request and they are currently in the process of going through that. There are various phases of that process. They are in the first phase at the moment, and I think they are looking to put a draft report out next month, and I understand Anne Pearson is appearing before your committee, who can provide any details about the timing of that and also a bit more about that processing. In fact, that is one of the things I mentioned right at the outset. That is an important process for us in working through some of the issues we were talking about earlier.

Mr S.K. L'ESTRANGE: Okay; thank you.

Mr D.T. REDMAN: Just a quick question from me. I probably have not got the full understanding of your exact remit but I will just give you an example of something. I am interested in whether your regulatory response goes down to that and you do respond to it. There is a situation in Western Australia here in the community called Esperance, which is an isolated community—15,000 or 20,000 people supplied by Horizon Power. They operate in all the remote parts of Western Australia. It has some baseload generation down there from gas turbines, and right now the community is at full capacity of solar PVs on roofs because of the limits that the provider of energy has in its systems. As a matter of course, in a regulatory sense, is it a fundamental right that householders should be able to have feed-in tariffs, and do your regulatory responsibilities go to those sorts of issues in laying out your frameworks?

Mr Pattas: It is a good question. In fact, it is something we were talking about earlier. It allows me to pick up a couple of extra points, I think, from what the Chair was asking about before, too. Here we have an interesting situation with Horizon; it is an integrated provision. This is an integrated supply, not a disaggregated supply. Then you get this question about what sort of limits should occur when you get this solar penetration and it gets to such a point where it threatens the system. At the moment, there are technical issues that kick in when voltage is exceeded, for example, and that means, of course, that the system will remain safe in that situation, but customers cannot use their equipment very well. That was the point we were talking about earlier.

Feed-in tariffs are part of the problem there. In other words, if there is so much solar going in, say, in the middle of the day—this is really typical—should you be actually paying customers to put in more solar or is the value of solar in the middle of the day so low that the feed-in tariffs should

reflect that? That is one question that you will have to ask yourself. The AER does not actually set those feed-in tariffs, even in the national system. Those feed-in tariffs are set by jurisdictional regulators. I am just making the broader point that if you do have so much solar going in, you do not really want to be encouraging customers or paying customers to put even more solar in. What you should be doing is sending signals for them to put batteries on or to not put so much solar in at that time and put more solar in at a different point of time. That is the role of price signals and other mechanisms that we are talking about.

Mr D.T. REDMAN: So there is a tension that exists, and I suspect it is a tension with all the—you are treating a lot of the DER issues now as outliers. You are trying to bring those in as core businesses in a regulatory sense and there is a tension between threats to the system versus fundamental rights of customers as participants in the system.

The CHAIR: Just before you answer that, Chris, I just want to flag that the teleconference is going to drop out in two minutes, just so I do not catch you mid-sentence and you disappear from us.

Mr Pattas: I think that is right. In fact, it comes back to an expectation about what customers actually getting, and perhaps communication. There was a communication issue there about what customers are actually getting or not getting when they install their solar panels. They certainly raise that as an issue.

The CHAIR: Thank you very much. That was such an informative conversation. We really appreciate you taking the time out of your day to speak with us today, and that has raised so many issues for us to think about; it really has. 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 connections 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

Mr Pattas: Thanks very much.

Hearing concluded at 9.58 am
