

ECONOMICS AND INDUSTRY STANDING COMMITTEE

INQUIRY INTO MICROGRIDS AND ASSOCIATED TECHNOLOGIES IN WA



**TRANSCRIPT OF EVIDENCE
TAKEN AT PERTH
WEDNESDAY, 10 OCTOBER 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 9.14 am

Mr PATRICK CREAGHAN

Managing Director and Chief Operating Officer, ATCO, examined:

Mr STEVAN GREEN

President, Gas Division, ATCO, examined:

Mr STEVE LEWIS

General Manager, Business Development, ATCO, examined:

The CHAIR: On behalf of the committee, I would like to thank you for agreeing to appear today to provide evidence in relation to the committee's inquiry into microgrids and associated technologies in WA. My name is Jessica Shaw and I am Chair of the Economics and Industry Standing Committee. I would like to introduce the other members of the committee—to my right, Yaz Mubarakai, the member for Jandakot; and, to my left, Terry Redman, the member for Warren-Blackwood. The Deputy Chair, Sean L'Estrange, and Stephen Price, are unfortunately not able to join us, although Sean may join us later.

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

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

The WITNESSES: No.

The CHAIR: Would you like to make opening statements?

Mr Creaghan: Certainly, Madam Chair, and thank you very much for the opportunity to participate in this. It is a good exercise. ATCO is an innovative, customer-focused company that builds, develops and operates a range of energy infrastructure, and we have been proudly contributing to the Australian economy for over 50 years now. In fact, I believe our chair actually set up shop with her dad before I was born, but that is not something that I would reiterate with her.

ATCO's Australian business, we own the largest gas distribution network in Western Australia, connecting 750,000 customers, and we have 14,000 kilometres of natural gas pipelines. We also have a regional focus, owning and maintaining the non-regulated gas distribution networks in Albany and Kalgoorlie, as well as operating the Geraldton gas distribution network. We also operate a power generation facility in Karratha. ATCO is a proud member of the community. We have actually re-invested every bit of earnings that we have made since we have taken on the Western Australian gas network into the network to drive innovation and efficiencies, to provide training, and to find a way to improve productivity. That has resulted in amongst the lowest operating costs of any distribution network in Australia. So we are very excited about the opportunities that are presented with the new economy, the new technology and the edge-of-grid activities. We believe that we can contribute further to the economy here in Western Australia, with some regulatory considerations. With that, possibly Steve could highlight that.

Mr Green: Yes, sure. As Pat said, ATCO Gas is one of the lowest, if not the lowest, operating cost gas networks operating in Australia. But the remarkable double there is that we are also the highest ranked in customer satisfaction. So our customers value the service that we provide, at the lowest

cost that we can. In our initial submission, ATCO detailed a number of barriers that we consider stifle microgrid development here in WA. Our submission talked around five key themes, and I might just reiterate those themes if I may.

The first is customer choice. Microgrids allow customers to choose the options to generate and consume electricity and energy, and to change consumption patterns that can alleviate pressure on the grid during peak times. Customers also have the option of alternative energy sources to secure household energy sources, and have the option of household appliances, whether that is gas, electricity or some other energy source, and diversification of energy supply, moving away from traditional baseload centralised electricity to homes and businesses to distributed energy. That creates value in the market—more people who can participate in the market.

Also, consumers are looking for renewable options that have a lower carbon footprint. Natural gas is a low-carbon alternative to many other energy sources currently. We talk about competition and the consideration of alternatives that are not currently able to be offered by Western Power. We believe that we should be encouraging such alternatives and that the end-use customer should have the ability to select from a number of suppliers.

The CHAIR: Can you give us a little more information on the alternatives that you think Western Power are not able to offer and why they are not able to offer those, and what alternatives you would suggest they could provide?

Mr Green: One of the things we talk about is standalone power systems. One of our recommendations—not recommendations—one of the things that we talk about is that perhaps that the regulation should be changed or the legislation should be changed to allow standalone power systems to be considered part of the integrated system in the South West. That would allow Western Power or other providers to provide the least-cost option to power in edge-of-grid or isolated areas.

The CHAIR: So are you suggesting a standalone power system that is theoretically disconnected from the grid but where Western Power is the provider of both generation and distribution network services? Is that your proposal?

Mr Green: I will not go into that detail, but the proposal is that standalone power systems should be able to be considered as a part of the integrated system without being physically connected.

The CHAIR: Right.

Mr D.T. REDMAN: From ATCO's perspective is there a threshold of capacity where that comes into play for you? I would imagine something on a very small scale would not be economic.

Mr Green: We will obviously make business decisions based on our return and the economics, and at smaller scale, that is not traditionally the area that we have participated in in the energy industry.

Mr D.T. REDMAN: So when you are talking about "standalone", are you talking about something of the scale of a town like Esperance or the scale of a smaller regional town or the scale of a handful of houses in a suburb?

Mr Creaghan: Possibly Steve could talk to that.

Mr Green: I think we talked about a GasSola trial in the original inquiry. That was very small scale, and that was trying to alleviate reliability concerns around the Western Power grid. So we had a number of houses, all with a gas generator, in a sort of microgrid style. There are some barriers to that, which we note in our submission, around sort of class A, class B. The economics of it we think are going to improve over time. So what we want to ensure is that when we get to the position

where we can offer an alternative, there is not a barrier in place that prevents us from providing that service.

The CHAIR: I was actually going to ask you some questions on the class A, class B-type appliance constraint and whether there are legitimate safety concerns. The other thing that you mentioned in the context of that was around the ability to sell any energy that is produced onsite by gas-fired generation as opposed to PV and export. Could you maybe expand a little on that constraint for us?

Mr Lewis: Yes. At the moment, retailers are required to purchase electricity generated by renewable sources back from the microgrid or connections to even at the residential level, but they are not required to purchase electricity generated at the micro level by gas generators. So that basically means that part of the economics for doing that is capped because you cannot then derive that income from selling back. All you are doing is then deriving an income from how you generate to the house.

The CHAIR: Do you see a potential revenue stream for grid support services that gas-fired microturbines could potentially provide to the electricity network?

Mr Lewis: Definitely, in supplying ancillary services, but also peak trading. For example, a lot of the capital that goes into electricity generation is for a small amount of the time per year. Distributed generation helps you to manage that peak. So that is one of the areas we are going into with our acquisition, Source Energy, which we talked about in our submission. That is allowing us to find a way to put generation behind the meter, and that can not only manage the peak but also provide services back into the grid, because thermal generation of course can provide that support to renewable generation.

The CHAIR: I really want to understand this issue, and I am probably going down into the weeds a little early on in things, but we are on the train of thought, so let us stick with it for a minute.

Actually, before I ask any other questions, I just want to put on the public record that I did work for ATCO a couple of years ago, and I do think it is important that I state that. But certainly none of this was happening when I was there, so it is really great to see how much progress ATCO has made in this area and the sort of innovation that is going on in the company. It is great to see. But I just think it is important that I place on the public record that some years ago, I did work for ATCO.

But just to tease out this ancillary services question, there are a range of things or ancillary services at the moment that are remunerated in the wholesale electricity market around frequency support, spinning reserve, black-start capability and voltage control. There are also other things and other valuable things that, as you point out, Steve, thermal generation can provide, particularly around things like VAR support or flexibility in dispatch that have a real value for the network and that are not necessarily able to be monetised. I wondered if you had thought about that as a business, particularly I guess in the NWIS as well. I know that your assets in Karratha are able to provide inertia, VAR support and flexibility purely because of the nature of the thermal generation assets that have you up there.

I wondered if ATCO put some thought into the ways in which those things could be valued, the ways in which those ancillary services could be monetised and the capacity of microgrid gas turbines to provide those services, either on a localised basis within a particular geographical, or theoretically island-able area or, more broadly, to the network?

Mr Lewis: That is a really good question.

The CHAIR: Thanks Steve. We learnt a lot in America!

Mr Lewis: At a macro level, we own a power station in South Australia. You know, renewable energy is 45% of the South Australian network, so we are keenly aware of the value of ancillary services from thermal generation at a wholesale level. I guess the distinction you are drawing is that microgrids are not wholesale and that the wholesale electricity market, which allows for supply of ancillary services and the like, at the moment prevents microgrids from being part of that. As a consequence of that, that has not featured in our business case when we are calculating what future revenue sources might be. But to that point, if I may take that one on notice and get back to you with some more specific thoughts?

The CHAIR: That would be really appreciated. I think as, obviously, a significant stakeholder in the energy industry here and a potential provider of these types of services, having some insight into what your views are would be invaluable to us. That would be greatly appreciated.

Mr D.T. REDMAN: Just an extension of that. There is a whole heap of players in the whole energy supply chain that are obviously grappling with this. You must be in conversation with a lot of them. Are signals coming to you that this will be something that ranks in the ongoing discussions that are playing in the ancillary services market?

Mr Lewis: At the wholesale level, yes, at the larger level, and in South Australia in particular. The 180 megawatts we have is critical to South Australia being able to maintain that voltage supply and security. We also have developed a business case for a large-scale battery attached to that generator, which can also provide those very fast start ancillary services. There are messages coming back that the more renewable energy that penetrates the wholesale market generally, the more you need to find a way for gas generation to support that and the gas network to support that. More broadly, we see a really big role for the gas network going forward as almost a giant battery in itself to be able to provide those services. It is important to distinguish the role that microgrids can play in that, as opposed to the wholesale market, which is another discussion.

Mr D.T. REDMAN: At some point in time we are going to write up the recommendations of this committee, so in the space of the question that the Chair has just asked, is there a particular recommendation you think should be flowing out of this committee?

Mr Lewis: Again, can I take that on notice and give it a more considered response and get back to you? Yes, we would definitely come back with a recommendation in that space.

The CHAIR: You can also provide information to us on a confidential basis if you would like to do so. I appreciate that some of these matters potentially have commercial sensitivity so, by all means, if there is information you want to disclose to us that you would like to provide on a commercial-in-confidence basis, we can accept it.

Mr D.T. REDMAN: Do you believe that you get value from what you provide in ancillary services from your engagement in the network in South Australia?

Mr Lewis: No.

The CHAIR: There is an interesting consultation paper that the ENA has just put out on these issues, which no doubt you have had an opportunity to have a look at. Have you participated in the CSIRO's and ENA's road map process that they went through to develop their recommendations for broader energy market reform?

Mr Green: We have participated through the ENA.

The CHAIR: Through the ENA—okay. That sort of took us down a little rabbit hole. Let us try and get back up to the big picture again. Do you want to carry on with your opening remarks, Stevan?

Mr Green: Just probably one more theme that comes through in our submissions is one that we call co-optimisation. There is no silver bullet. There is no one-size-fits-all and it is going to be a mix of solutions. There is obviously still need for baseload power but we do feel that the gas network and gas-fired generation in a range of sizes—from quite small, down to almost a handful of household types of ones, to towns the size of Geraldton, Kalgoorlie or Albany—gas fired generation will have a large part to play.

The CHAIR: Has ATCO done any work looking at opportunities through the rollout of these types of technologies to potentially defer electricity network infrastructure, where the electricity network is constrained and better utilised to service your gas network? As you say, co-optimisation: identifying points of the distribution network where there are grid constraints where the rollout of these technologies could potentially lead to a more efficient energy supply outcome.

Mr Green: Yes. GasSola, which Steve talked about, where we had nine houses providing their own power through solar battery and gas-fired generation.

Mr D.T. REDMAN: What does the household gas-fired generation facility look like?

Mr Lewis: It looks like a generator—about a large Esky size.

Mr D.T. REDMAN: It is turning gas into electricity?

Mr Lewis: Yes.

Mr Green: Yes.

Mr Creaghan: In North America you can buy them at Costco and you connect them to the back of your house.

Mr Green: I think we said in our submission that we had two main technical challenges. One was having the controls to recognise the gas-powered generator for what it was and the other one was noise. To have one of these at each house was problematic from a noise point of view.

The CHAIR: On the controls, was that sitting behind the meter—basically, you had some box sitting there, running the algorithm and working out what to dispatch?

Mr Green: Yes, the rectifiers and the distributors have been developed primarily with solar PV cells in mind, so we said in our submission we had to trick the controller into believing that the gas-fired generator was in fact a solar generator. That is at a cost too.

Mr Creaghan: This is the research and development side. We are actually now industrialising a Clean Energy Innovation Hub and making it on a larger scale, and we contemplate that there would be opportunity to leverage this into the broader community's intergrid activities, but we have not progressed specific work.

Mr D.T. REDMAN: Just back to an earlier question from the Chair in terms of whether you have done a bit of a scan. We have Western Power, which is a state-owned entity, a big network. There is a lot of points in that network where there could be value of new tech enhancing the system. Do you have visibility of that, and if you do not, is it your advice to us that we need to try to ensure that there is some sort of visibility of where the test points are so we can bring innovation to the table?

Mr Lewis: Yes. The point that Steve was making, the Vasse trial, was all about trying to shore up a part of the grid that was unreliable, so instead of putting a whole lot more capital into it to make it reliable, you put these units in and that provides the reliability.

The CHAIR: Is that where all nine houses were located?

Mr Lewis: That is right. The other part of it, going to your question, is avoiding capital that Western Power has to spend. There are a number of small users on the edge of grid who have long

connections that need to be upgraded. There is a case that you can put in a standalone power system at that level to avoid that capital. You probably know—I am sure I can mention it—that Western Power has gone out for expressions of interest to seek feedback on the most efficient and effective way of doing that. Implicit in that expression of interest was that Western Power would own that, and I guess we would submit that that requirement should be relaxed so that anybody can own and operate that, provided it gives the same level of service.

Mr D.T. REDMAN: So is the strategy for trying to identify where those points are simply Western Power's regulatory requirement to go out and test market on their most efficient solution, or do you go online and get a map of where those spots are?

Mr Lewis: No, you cannot go online and get a map of where those spots are, because at the moment they are all connected to Western Power's grid, so it is only Western Power that has the knowledge as to whether there is an alternative that they are pursuing, which makes sense. So they run a pilot program. The pilot program is intended to identify cost-effective solutions and then the idea is a much broader application.

Mr D.T. REDMAN: So the regulatory changes that you would be seeking in there, on the current rule—they have to go and test it, but essentially it is theirs—is the ownership piece, or —

Mr Lewis: Yes.

The CHAIR: When you did these trials—I just want to get a bit of an understanding of how they worked—at a household level, what sort of proportion of dispatch did you see from the microturbine as opposed to the PV as opposed to the battery, and do you have any visibility of the local impacts on a network management basis of these assets sitting there? Have you had any feedback from Western Power that, generally, it seemed like the grid was operating in a more stable fashion there, and did you engage with Western Power and how did that go?

Mr Green: To answer the second part of the question first, the size of the trial was not sufficient to impact the grid in any way, so we did not have discussions with Western Power on that aspect of it. Obviously, we let Western Power know what we were doing and received the appropriate authorities to connect the units that we did. With regard to the —

The CHAIR: How did that go—that whole interaction with Western Power, and the discussion that you wanted to install this tech behind the meter? How receptive were they to it?

Mr Green: At that level, they had no issues with us. I suspect if we were to roll it out at a larger scale, there may be other questions that come up. On the split of the supply of electricity into the homes, the gas generators probably ran about five per cent of the time, so the majority of the power was supplied from the batteries and solar panels.

The CHAIR: A few things spring to mind. If you have got an area where these are rolled out en masse, you have got a whole heap of micro gas turbines, collectively noise and emissions from those microturbines could potentially become problematic. I guess I would welcome your view on that. Is there opportunity within, say, a suburb for distribution grid scale, rather than household-scale, microturbines? If the aim is to get the most efficient deployment of assets and fuel utilisation, obviously a larger distribution scaled gas generation unit is probably going to be a bit more efficient than 40 little micro household scale grid turbines.

Mr Creaghan: This is actually why we have now moved it to our operations centre to get scale and to look at how it might work, in essence, on a community basis. In the micro side, we believe that there are greater efficiencies, so our trial now at the Clean Energy Innovation Hub is to see how that works and how that impacts.

Mr Green: Yes, that is right, so we are scaling up on nine, say, five-kilowatt systems up to a 300-kilowatt system at our Clean Energy Innovation Hub.

The CHAIR: I was very pleased to come along to the opening of that. Would you like to tell us a bit more about what you are doing there, and particularly around the role that hydrogen plays in all of that, because I think it is something that we really do need to get a bit more information onto the public record about?

Mr Green: Yes, happy to. Just to answer your question on noise with regard to generators, we see that as a technical issue that is readily overcome, and that should not be a barrier going forward; if the regulations and the economics work out, our technology for reducing that noise to acceptable levels will be there. However, as Pat said, we are trialling it at a larger scale and, as you suggest, it may be that you have a generator shared amongst a number of users for that backup purpose.

We are very pleased to be developing the Clean Energy Innovation Hub to take these trials to the next level. At Jandakot we will be installing some 300 kilowatts of solar power. We will have battery backup. We will have two banks of batteries. One will be to supply power to our site during the evening, when we need it. We have 24/7 operation down there. The other set of batteries are to test grid-forming capabilities of what we are producing. One of the issues with renewable energy is what to do with the spill. There is always the issue of what happens when the sun does not shine and the wind does not blow, but at the other end of the scale, what happens when the sun shines too much and the wind is blowing too hard, and you have got excess renewable energy available to you? We are testing that in a number of ways.

We are looking at, as I say, two forms of batteries and storage of the energy there, but we are also looking at the development of a hydrogen electrolyser to use that spilt renewable energy. For us, we have already mentioned the possibility of the gas distribution network being a very large battery for use, and it is a distributed battery, which has its own benefits. Can we store that spilt or excess renewable energy in a form other than batteries? The technology that we have chosen to test is the production of hydrogen from the electrolysis of water and then the storage of hydrogen. For the current Clean Energy Innovation Hub, we will simply store the hydrogen on site, but there is a potential into the future to store some of that hydrogen within the gas distribution system, as I say, effectively to be used as a large battery.

Mr Creaghan: But we will be blending the hydrogen into our internal distribution network.

Mr Green: That is right, so we will be using blends of hydrogen within our site. We have a number of gas appliances on site, including power generation and including gas-fired air conditioning, and we will test blends of hydrogen, initially at low levels and then potentially at a very high levels of hydrogen.

Mr D.T. REDMAN: And the high levels are, if I remember the CEDA conference, 10%?

Mr Green: Up to 10%, and what that means is that the appliances that currently use natural gas will not need any conversion to operate at 10% hydrogen.

Mr D.T. REDMAN: So, after 10% you have got to have some sort of conversion?

Mr Green: That is the current thinking, yes.

Mr Creaghan: That range is not yet precise. That is one of the items that we would look at. We have heard 10 to 15%, but —

The CHAIR: What about changes to the gas specification requirements on the distribution pipeline network? Obviously, at the moment, we rate assets by their ability to carry energy of a particularly value—like the Dampier to Bunbury pipeline is rated according to the HHV of the gas it is able to

transport. I would assume that the distribution network similarly thinks in terms of a gigajoule value of capacity. What impacts do you anticipate hydrogen would have on pipeline specifications? Are there any features specific to hydrogen around the volatility of it as a fuel source or are there any safety considerations, and have you thought through the impacts on other users of the gas distribution network? Obviously, there are other entities that currently buy, sell and transport natural gas through the distribution pipeline network. What would the impacts potentially be on them, and what sort of a consultation process or how would you suggest industry could be engaged to work through those issues?

Mr Green: It is a very interesting question, because the regulations currently are developed around the transport of natural gas from the wellhead through to the end user. Therefore, that puts constraints on innovation that is outside of what the regulation was developed to do. Hydrogen is a flammable gas, just like natural gas, just like LPG, so it needs to be handled safely. Hydrogen is widely used around the world in a number of industries. Oil refineries all produce and use hydrogen. So the technology to use hydrogen is well known, but to distribute the hydrogen to consumers, you would want to necessarily look at how you handle those hazards as you do that. That is a key part of our Clean Energy Innovation Hub.

Pat mentioned that we started here in Australia 50 or 60 years ago with transportable buildings and houses. As you would have seen, we have one of those houses at our Jandakot site. We will be using that as a test case to blend hydrogen into domestic appliances to showcase the ability to use hydrogen. The committee may know that in Fremantle, the Fremantle gasworks produced gas that was 50% hydrogen, so in some ways it is back to the future, which is interesting. That is not to downplay the safety issues, which will need to be managed.

Mr Creaghan: On a production basis, we will be producing hydrogen behind the fence on our own facility, but from a regulation standpoint we would not be able to produce hydrogen as a distributor as well and then feed it into the network.

Mr Green: That is right.

The CHAIR: Right. So the idea is not that you would export hydrogen and inject it into the broader distribution gas network; everything would be happening behind at that point at a particular property.

Mr Creaghan: That is the path that we are researching now within the regulation. Long term we believe that there is a broader opportunity into the larger network over time. There may be solutions that help balance the energy grid further. As both Steves have mentioned, we could use the pipeline network as a battery on a broader basis to store the excess energy from solar or wind production.

The CHAIR: It creates some regulatory challenges, though, probably more applicable on the transmission pipeline network. Distance factor tariffs that assume point-to-point transportation of molecules is the traditional way that the gas distribution and transmission networks have been structured, particularly also how you derive revenue from them, but if there is localised production of a gas source and injection locally into a distribution network, that presents, I would think, some real challenges then around how your network is valued and utilised and how you are remunerated for its use as a battery, as opposed to its use as a mechanism to transport molecules from point A to point B. Am I right?

Mr Creaghan: I think there are a lot of questions that would have to be resolved over time. We are looking at this as a longer-term basis. Again, at the outset, we would not be envisioning much more than a small percentage going into the network. But this research is helping us better understand

the future possibilities that we may have. There would be work from a technical standpoint in terms of the integrity of the pipeline networks, as well as regulatory changes I think that would have to be understood.

The CHAIR: And the other pipeline users that ATCO serves as a distributor of gas—how receptive have they been to these sorts of ideas and the injection of hydrogen potentially into the distribution network? Has there been any sort of engagement with them or have they expressed an interest in these sorts of innovations themselves?

Mr Green: I guess we will not talk on their behalf, but if I can give some examples of public information. Going even further upstream from the transmission pipeline, Woodside is publicly proactive in this area. AGIG, the operator of the Dampier to Bunbury pipeline, has been very public in their support for these sorts of developments. While these issues are recognised and solutions need to be brought to the table, and there are challenges for existing businesses and it is disruptive to many current modes of business operation, these are just two examples of companies that could be impacted who are embracing the public debate.

Mr Creaghan: As mentioned, we believe that the solution is going to be covering a range of different technologies and different solutions. This happens to be one. Hydrogen is one of a number of different solutions that we would look at to help.

The CHAIR: Can we just explore this appliance rating issue—this sort of type A, type B appliance rating issue? Can you expand on that a little and why it is a barrier, why it could be barrier and why you think that barrier should be eliminated?

Mr Green: The barrier comes about mainly due to cost. We talked about our GasSola project and the gas generators there. The installation of those gas generators, because of them being rated as type B appliances, there was a \$2,000 per household hit to the installation of the GasSola trials.

The CHAIR: For something that was running 5% supply and 5% of their energy requirements at a time.

Mr Green: That is right. So it is a big hit. People expect their power to be reliable. Back in the day, 99% reliability might have been acceptable. It is not acceptable for power supply, so there is a backup required. To have a \$2,000 impost is definitely a barrier. One of the technologies we have trialled at Jandakot is gas-powered air conditioning. The units that we imported had perfectly compliant gas trains built into them. We had to pay another \$2,000 to build a type B gas train to operate in series with the one that was there. It is simply an economic impost for standard pieces of equipment, not bespoke pieces of equipment—that is not what we are talking about; these are standard pieces of equipment off the shelf. You can buy them at Costco in North America. And then to have an impost, it would be like having a refrigerator delivered to your house and then having to have a specialised electrician to come in and install it for you.

The CHAIR: So on top of the capital cost of purchasing the equipment there is an additional \$2,000 charge?

Mr Green: Yes. That \$2,000 related specifically to our gas trial, but of that order would be the case for these sorts of appliances.

The CHAIR: Right. And what does that \$2,000 buy you?

Mr Green: It effectively buys you a gas input regulator. It takes the gas from your gas meter and then brings it down to a pressure that your gas appliance can use. It is as simple as that.

Mr Creaghan: Were you referencing the premium cost over the traditional?

Mr Green: Yes.

Mr Creaghan: But that is for a different class.

Mr Green: Yes, so for the type B appliance, you would need to have a type B installer come in. That is where the \$2,000 cost comes in.

The CHAIR: So what are they doing? Why is it worth \$2,000? Is it an artificial requirement for a special type of asset or a special kind of inspection? What is the justification?

Mr Green: If you go back to the history of why they have type B appliances, it was for bespoke gas installations—not for your gas stove and not for your gas hot water system, but for bespoke, one-off designs for commercial operations. I guess here we are starting to move towards semi-commercial operation at the household level, so that is where the lines start to get blurred.

The CHAIR: Right.

Mr Green: But as these sorts of appliances are being used in North America and Japan and become household appliances, there is no longer any bespoke nature to it, so a standard installer can readily install these types of equipment now.

The CHAIR: So the argument, then, is not that the requirement to do some sort of type B assessment exists, but more that these assets should not fall into that category.

Mr Green: That is right; yes.

Mr D.T. REDMAN: Your submission makes some reference to the requirement for the Western Power network to be an interconnected system. I think you reference —

ATCO submits that the *Electricity Industry Act 2004* definition of SWIS needs to be modified to remove the requirement for Western Power's networks to be interconnected.

Can you just expand on that? I guess my question is going to—presently there is a utility structure that is relatively fixed. You have Western Power, a big network, you have generators, both public and private, and retailers, and different pictures to contest in contestable markets. I guess I am wondering whether there is any recommendation from you as to whether there should be any modification of that in the context of the opportunities that are presenting now in microgrids or whether those big structures—that is, Western Power network, this is not a private or public ownership question; it is a question of structure and scale and I guess some nimbleness to respond to the issues that are presenting.

Mr Green: I think the issue we are addressing there is simply that when Western Power asked for expressions of interest for 60-odd sites for the standalone power system, our understanding is that the act, even with a standalone power system, would require Western Power to still maintain poles and wires to that system. To us, that is an inefficiency that does not need to be there.

Mr Creaghan: And that potentially could be expanded to a larger community as well.

Mr D.T. REDMAN: Bearing that question for a second, I understand that now. Going to the other question: is there any broader structural changes; that is, separating distribution from transmission in the network, having parts of the regions separated, if you like, as to smaller, maybe even vertically integrated public and/or private ownership? Is there any structural changes there that you think might be considered in enhancing the opportunities that this disruptive technology is bringing to the table?

Mr Green: I think our only view there is if you do have microgrid in standalone systems, the vertical integration should be appropriate to those systems.

The CHAIR: I think I know where Terry is trying to go with this questioning, and I think it goes with what you are doing with Source Energy. I am really keen to understand the genesis, I suppose, of

Source's participation and the model that it is participating under and how it deals with its customers, how it is presenting to the network. Could you maybe go into a little more detail on what is going on with Source Energy?

Mr Lewis: Source Energy, its business model is to purchase wholesale electricity for multi-resident buildings and then retail the electricity to the individual occupants of that multi-residence. It can do that under an exemption in the Electricity Industry Act that allows for owners of embedded networks to actually retail to their customers. But it goes further than that in that it installs solar panels and solar generation on the roofs of a multi-resident building. It enables a lower cost ultimately to the users by leveraging the wholesale cost minus the reduction in peak charges associated with the solar panels and then a further element to it is potentially installing batteries because if the solar panels do not line up with peak usage, which is usually in the evening, you can shift that energy to when the peak is required and then you lower the overall cost for the user.

The CHAIR: Just to explore that a little further, your submission talks about—Source has six of these embedded networks serving 400 customers. I was not clear on whether they were 400 customers in a particular suburb but on your evidence, there are six buildings basically that in aggregate have 400 customers. Are all residents in the building participating in these schemes?

Mr Lewis: Yes.

The CHAIR: Does the building then present to Western Power as just a single connection point and what is going on behind?

Mr Lewis: Yes.

The CHAIR: So there is no need for the operations or maintenance—it is not like a suburb where there are distribution assets?

Mr Lewis: No.

The CHAIR: All right; that is good to know. So all the customers are household residential customers?

Mr Lewis: Correct. Some of the occupants of the multi-resident developments are small restaurants and the like. If they have a ground floor occupancy, they are also a customer.

The CHAIR: Have you had a look at the legislative changes that have just been introduced under the *Strata Titles Act* and the *Community Titles Bill* to facilitate these community-scale PV and battery assets?

Mr Lewis: No.

The CHAIR: If you would like to, certainly we would appreciate your views on the recent reforms that have been made to the *Strata Titles Act* and the introduction of the *Community Titles Bill* and how you think that they will facilitate the broader rollout of these types of commercial structures.

Mr Lewis: Yes.

The CHAIR: How did Source Energy go again in its conversations with Western Power around connection and how is it participating—is it backing off its, I guess, exposure around load fluctuation in the wholesale electricity market or is it dealing with one retailer and buying whatever it needs to level out its supply obligations?

Mr Lewis: It goes to the market and buys wholesale from any number of suppliers. It goes through a tender process. That supply has a number of elements to it—capacity, peak and the like. And then its business case is that it can then reticulate to residential customers using the solar panels at a rate which is lower than the standing residential electricity rate.

The CHAIR: So does it own the solar panels?

Mr Lewis: It does.

The CHAIR: What are the protections that are in place around consumer protection or obligation on standard contracts and the sorts of typical small-use customer protections that are in place?

Mr Lewis: Source complies with the retail code, which is established voluntarily with the retail code. It is established for electricity sales at that level, so use of standard form contracts and the like is all incorporated.

The CHAIR: Which are approved by the ERA?

Mr Lewis: Yes.

The CHAIR: How long has this sort of model been in existence for and typically how are customers finding it?

Mr Lewis: The exemption to the *Electricity Act* was approved from 2016, so Source was established pretty soon thereafter. The feedback from the customers is very, very positive. The customers, due to us owning the embedded network, we have also put in smart meters, so the smart meters give the residents real-time reflection of their use of electricity, so we do not tariff it that way but they can actually see where their electricity is being used. I think that that is very useful for customers because it helps them manage their electricity bills when they can see them turning appliances on and off. But they also enjoy the fact that they are getting, I guess, a lot of attention from a new retailer.

The CHAIR: Do you give them pricing signals around their consumption or are they just given a cents per kilowatt hour figure?

Mr Lewis: At the moment just a cents per kilowatt hour figure so the information is just for them to manage their usage but their bill is still aggregate.

The CHAIR: Do you give them any sort of signal around a capacity energy price or are they just shown a flat cents per kilowatt hour?

Mr Lewis: They are just shown a flat cents per kilowatt hour.

The CHAIR: What is the price differential between the rate that you offer them and the rate that would be available to them were they just to purchase from Synergy?

Mr Lewis: Are we able to give you that in confidence?

The CHAIR: Absolutely you are. No problem at all. How do you deal with customer complaints?

Mr Lewis: Directly. The people who work in Source, on the website, the number is there, there is an email address there. We deal with them directly via email or through telephone calls but also going out to strata meetings, so council meetings, to deal directly with questions and the like.

The CHAIR: Is there any role or have any of your customers ever accessed the energy ombudsman to deal with any issues that they have had around Source's supply?

Mr Lewis: No.

The CHAIR: Is there provision for that? Would there be some sort of jurisdiction? I am just concerned to make sure that customers who are engaging in these types of schemes have access to the same sorts of customer protections and complaints mechanisms as other users.

Mr Lewis: I think because we comply with the retail code, that automatically follows that if there is a dispute, then they have courses of action open to them.

Mr D.T. REDMAN: In the earlier conversations about the microgrid arrangements—you even drilled down to even sort of behind the meter at a single household level—obviously there is a whole heap

of scalable opportunities there which you will consider in your business model, thinking that through. Other than the standalone arrangements, which I understand are isolated edge-of-grid areas where the connection to the grid is not critical, how sensitised are those business models to network pricing? You talked about the importance of that—one is thermal generation adding to the ancillary service needs—so network pricing was one of the prices in your stack?

Mr Lewis: Yes.

Mr D.T. REDMAN: How sensitised are you to network pricing to those business models?

Mr Lewis: Yes, price sensitive, because it does make up quite a large element of the price tag.

Mr D.T. REDMAN: Are you able to give us that percentage, or is that in confidence?

Mr Lewis: I can give you that in confidence, if you like.

Mr D.T. REDMAN: That would be fantastic.

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

Thank you so much for coming in today, we really appreciate it, and the submissions were great—like, really helpful—so thank you very much.

Hearing concluded at 10.07 am
