

Horizon Power —

Mr S.J. Price, Chair.

Mr W.J. Johnston, Minister for Energy.

Ms S.J. Unwin, Chief Executive Officer.

Mr M. Houlahan, Chief Financial Officer.

Ms K. Ryan, Coordinator of Energy, Energy Policy WA.

Mr R. Sao, Chief of Staff, Minister for Energy.

Mrs A. Keogh, Principal Policy Adviser.

Miss Y. Lucas, Senior Policy Adviser.

[Witnesses introduced.]

The CHAIR: This estimates committee will be reported by Hansard. The daily proof *Hansard* will be available the following day. Members may raise questions about matters relating to the operations and budget of the off-budget authority. Off-budget authority officers are recognised as ministerial advisers. It is the intention of the chair to ensure that as many questions as possible are asked and answered and that both questions and answers are short and to the point.

The minister may agree to provide supplementary information to the committee, rather than asking that the question be put on notice for the next sitting week. I ask the minister to clearly indicate what supplementary information he agrees to provide and I will then allocate a reference number. If supplementary information is to be provided, I seek the minister's cooperation in ensuring that it is delivered to the principal clerk by close of business Friday, 1 October 2021. I caution members that if a minister asks that a matter be put on notice, it is up to the member to lodge the question on notice through the online questions system.

I give the call to the member for North West Central.

Mr V.A. CATANIA: Minister, correct me if I am in the wrong section. I refer to page 817 and standalone power systems. Paragraph 11 states —

As part of the COVID-19 Response, an investment of \$9.9 million will be made ...

Seven systems are located in the Gascoyne. Does this include an upgrade to the Exmouth power system?

Mr W.J. JOHNSTON: No.

Mr V.A. CATANIA: Is that getting upgraded or changing over in terms of a new power provider?

Mr W.J. JOHNSTON: I will invite Stephanie Unwin to speak but I just make it clear that the seven SPS in the Gascoyne are for individual customers, not the town. Seven people are getting that rather than using whatever system they currently have. I invite the CEO to make a comment about the power supply in Exmouth.

Mr V.A. CATANIA: Just on the status of the power supply in Exmouth.

Ms S.J. Unwin: In Exmouth we are going through a process of understanding the changeover. We have an independent power producer in Exmouth that currently services the supply to the residences and the businesses. That power purchase agreement has a number of years to run, but at the end of that time we need to think about a new supply, which will be either a combination of running it and refurbishment, or having more renewables brought into that region. We have run quite an extensive period of community consultation to understand where it would like to go. It is very clear that we can go out with fairly strong renewable support for Exmouth that will be a combination of centralised, decentralised and management of that system. Expression of interest has gone out for providers to help us with that solution, which will be done probably over the next three or four years.

Mr W.J. JOHNSTON: Of course, member, the experience that Horizon Power has gained in Onslow is very important in that planning process.

Mr V.A. CATANIA: I was going to mention Onslow and how that is really shaping power supplies right across my electorate. It is a good thing.

Mr W.J. JOHNSTON: If Ms Unwin wants to speak further, I am happy for her to do so, but I just make the point that that is a genuinely globally significant project. The fact that it ran for 80 minutes on 100 per cent renewables is extraordinary. Normally we would need the mass of the spinning generators to keep inertia et cetera going. The fact that we have been able to provide that artificially is an extraordinarily good achievement.

Mr V.A. CATANIA: It was a very good project by the former government.

Mr W.J. JOHNSTON: It was a project funded by Chevron and invented by Horizon Power. It is an excellent project.

Ms S.J. Unwin: It is very important technology because that orchestration of the centralised generation as well as the distributed generation is where the difficulty lies in the transition. The better we can orchestrate it, the more we can put on rooftop solar in the businesses and the residential sector. Onslow has been a tremendous project because we have now got orchestration technology. It is in the process of being switched over from manual to fully automated as we speak—I did not want to tell the minister that. But it is groundbreaking work because we are now trying to get the system to watch the weather patterns, see the demand on the system and the supply that is available and orchestrate that automatically for us. In Onslow they did that very successfully with the 80-minute trial that the minister referred to a moment ago.

Mr V.A. CATANIA: Is there a population threshold for where a system like the one in Onslow can be installed? “Threshold” is probably not the right word.

Mr W.J. JOHNSTON: It is probably easier to manage in smaller communities. If the member thinks about it, that is what a standalone power system does. Horizon and Western Power both expect to have one SPS providing power to more than one customer. The solar panels charge the battery and the battery supplies the house. If the battery runs out, then the diesel generator kicks in. It is all automated and it can be monitored by remote control. That shows how it can be done for one house. Onslow is a more complicated scaling up of that with 700 houses. It has shown that it can be done at that scale, but we are building the aeroplane while it is flying here in Perth. We have 1.2 million connection points and we are trying to do the same thing at the same time. In Onslow, the first time they tried it, the system shut down for five hours because of all these unexpected —

Mr V.A. CATANIA: Faults.

Mr W.J. JOHNSTON: No, they were not faults. They were embedded protection activities of each of the elements fighting against each other. Although the manufacturers had said that it can do this thing, they had never actually done it. We were the first in the world. Naturally, we found these challenges, but we would not want to do that in Western Power because a million people would be without power. It is good that we can learn by doing; that will help us as we roll it out to an even larger scale later.

[7.40 pm]

Dr D.J. HONEY: I refer to the electric vehicle charging network that is being installed and Horizon Power’s responsibilities. How many stations are we looking at for that work? What is the estimated completion time for that network?

Mr W.J. JOHNSTON: Horizon is doing 23 of the 45 sites; that is 46 installations.

Dr D.J. HONEY: What is the anticipated completion time?

Mr W.J. JOHNSTON: I think it is a four-year build. Again, we said that at the media conference when we announced it.

Dr D.J. HONEY: Does the minister believe that is still the achievable time line? I am not asserting that it is not.

Mr W.J. JOHNSTON: I have not been advised of anything that suggests it is not a reasonable time frame.

Mr V.A. CATANIA: I refer to the remote communities embedded networks on page 817 of the *Budget statements*. Can the minister perhaps include photovoltaics in remote communities as well? I do not know whether the two go hand in hand. Can the minister say where that work is being conducted and in what remote communities? I am happy to take it as supplementary information, or the minister might have a list.

Mr W.J. JOHNSTON: This is obviously very exciting. We acknowledge that the commonwealth government is helping us a bit as well, which is good. We would like it to help more, but we are pleased with the little bit it has done. The communities included in this program are as follows. In the East Kimberley, they are Emu Creek, Bell Springs, Mud Springs, Munthamar, Koongie Park and Mardiwah Loop. In the West Kimberley, they are Joy Springs, Karparrmi, Gillarong and Loanbun. In the Gascoyne–midwest, they are Woodgamia and Buttah Windee. In the goldfields–Esperance, it is Marmion Village. I am happy for the CEO to talk further, because, again, this is applying technology to fix an old problem, and we are really pleased.

Ms S.J. Unwin: In addition, the second part of the member’s question was about photovoltaics in remote communities. The towns we are working on there are mostly in the Kimberley. One place is Kalumburu, where we are currently installing a solar farm. There is also Warmun, Bidadanga, Ardyaloon, Beagle Bay and Djarindjin. A number of those communities are dependent on the land outcomes, and there has also been quite a significant impact from COVID, because of the biosecurity. They are the towns. Warmun will be the next town that we will be able to access with the land in order to progress the body of work. The places the minister spoke to just a moment ago, with the embedded networks, are more around regularisation, so improving the community’s distribution network to each utility to a quality that we would describe as town-based power, whereas the photovoltaics are more about putting centralised solar, and in some cases batteries, into those communities to reduce the cost of running them from their traditional diesel outcomes.

Mr W.J. JOHNSTON: The good news here is that because Horizon has the tech to make good the gap between the cost and the price—obviously the price is very low and the cost is very high—the more we do here the less tech we need for the future. That then takes price pressure off the A1 tariff, which benefits everybody in the state. The great thing here is that we are deploying these new technologies to fix the diesel problem, because diesel is very expensive. The other good news is that because diesel and solar play well together, unlike coal and solar, there can be a direct benefit by integrating with existing technologies. We do not have to throw everything out and start again. Of course, we are determined across government to provide regularised services for the remote communities. There is a big body of work not just for Horizon, but Water Corp and others, to regularise those schemes. The member can see how this just works for us. The more we do, the better it gets.

Mr V.A. CATANIA: It is absolutely integral to life.

Dr D.J. HONEY: What is the capacity of local communities to maintain those electrical systems or at least at nearby regional communities? My understanding is that in many of those areas a major issue is access to suitably qualified electricity personnel.

Mr W.J. JOHNSTON: Obviously, Horizon Power takes the obligation to maintain the systems, but there is a system to try to engage with local communities. I will invite the CEO to make further comment.

Ms S.J. Unwin: Horizon Power has a program called remote community utility workers, by which we have trained qualified people who live and work in the communities, and they are typically from an Aboriginal and Torres Strait Islander background. They are qualified to provide first response activities in those towns. We have been quite successful both in Kalumburu and Beagle Bay. We are really keen to try to extend the reach of that program, but that qualification enables us to do a great amount of work. If we could have more workers, so more scale, we could have two workers in one town, and that is something we are talking about. I think there is a lot of opportunity, particularly as we regularise more of the remote communities in and around our footprint to expand the opportunities. They are very key, because if people both live and work in the community, it is a really good outcome and leads to a much more sustainable community.

Dr D.J. HONEY: Then they will all go on and work on mine sites!

Ms S.J. Unwin: I think they like it there too much to go!

Mr V.A. CATANIA: I refer to the Denham hydrogen demonstration plant on page 817. I suppose this will feed into what we have just been talking about. If this works and works well, this is the future of where we are heading with our standalone systems. Hydrogen plants can be pretty much rolled out everywhere.

Mr W.J. JOHNSTON: I know Ms Unwin is dying to give the member some more information about this, because she is very passionate about the idea of combining standalone power systems with hydrogen. That then gives a 100 per cent renewable that is dispatchable and reliable, and I will let her speak in a minute. I make the point that, again, this is a globally significant trial. People do not realise how advanced Western Australia is in the energy sector. People talk about what is happening in Germany, but they do not get it. If people want to learn about renewable energy, they should come to WA, and the more we tell people that, the better it is.

Mr V.A. CATANIA: And it is all in my electorate, so it is fantastic.

Mr W.J. JOHNSTON: It is not all in the member's electorate.

Mr V.A. CATANIA: The majority of it is.

Mr W.J. JOHNSTON: A lot of it is in the member's electorate, yes.

Again, this demonstration plant got some capital subsidy from Minister MacTiernan's project to support renewable hydrogen, and it was also lucky enough to get some federal government money from Senator Marino—I am sure that decision was completely independently made! It is a great demonstration. Of course, it will be great if we can get this to work, remembering that, as I said before, some of the towns have a very high cost. In one town, the cost of a kilowatt hour of electricity is \$2.70. We are selling it at the 28¢, so the member can see that we would love to get the cost down, and this is the opportunity to do that in the future.

Mr V.A. CATANIA: Just filling up the car with diesel will cost over \$2 a litre.

Ms S.J. Unwin: It is a really groundbreaking project, and we are very proud of the support we have got from the state and federally in order to put hydrogen on the ground. There is a lot of talk about hydrogen, but there is not as much demonstration of it on the ground. By early next year, we will have all of the components together and be in the commissioning phase in order to do this thing that we are trying to do, which is to use completely green power, so green energy, that we then turn into hydrogen that we compress and store. That fuel cell, which is probably where the demonstration has to do its work, can then be used to distribute back out into the homes of Denham. There will be 100 homes fully serviced by pure green energy, and it is firm energy. We hear a lot about intermittency and the difficulties of having power that goes off and on with the sun and the wind, but the beauty of hydrogen, if we can get it to work and make it work at a lower cost over time, is that we can have firm green power and use our very great

competitive advantage in the state. We think that it will demonstrate that this can be done not just in our remote and regional centres, but we hope on a much broader scale across the state. We will have it on the ground early next year, and for Denham it is a very exciting project, but it is of national and international significance. There are a lot of eyes watching it, but we are very confident that it will do what we hope it does.

[7.50 pm]

Mr V.A. CATANIA: I look forward to being invited to all these milestones that these things are reaching in my electorate, minister—hint, hint.

Dr D.J. HONEY: In that trial for 100 homes, for how long is it anticipated that hydrogen could supply power? What would be the duration for those 100 homes?

Mr W.J. JOHNSTON: Ms Unwin.

Ms S.J. Unwin: Thank you. Ideally, we want the energy that is generated from the solar farm to do the heavy lifting for as long as it possibly can, because that is the cheapest, most efficient way to push that out into the system. We then have the fuel set, which is about 100 kilowatts, that can then take the difference overnight. In effect, it is providing that lower demand that is needed to be serviced overnight when the sun is not shining. That is what it is doing. For how much we will need on the day, we will have to see how it works, but the idea is that it provides 100 per cent of the energy for those 100 houses for the time that they need it, and that overnight it should be lower than their consumption during the day.

Mr W.J. JOHNSTON: I make it clear that that is not for 100 per cent of the houses in Denham. It is designed to be a demonstration and in the future we might be able to scale it up further.

Dr D.J. HONEY: It is a fantastic project. It shows the advantage of an aggregated utility.

On page 814 under “Energy Affordability”, the first paragraph, “Solar Generation”, states —

Horizon Power encourages the uptake of rooftop solar and has a plan for zero refusals ...

It has a date, which I appreciate is in the future. When I visited Esperance I was told by some people there that Horizon Power is not accepting any more connections for rooftop solar that would feed power back into the network, which I understood because a transition is going on there. I was told that households were even being prevented from putting batteries behind the meter. They were not allowed to connect batteries behind the meter when they were not going to feed back; they would use those batteries only to stabilise or at least provide some additional power supply at their home. I was surprised by that, because I could not understand the purpose. I just wondered whether that is in fact correct; and, if so, why would that be the case?

Mr W.J. JOHNSTON: I am happy for Ms Unwin to make a comment in a minute, but I just make the point that for everywhere in Horizon, we prefer people to generate their own electricity, because when we sell it to them we lose money. There is no economic incentive for us not to have people connect to solar. The only reason we have to limit solar in Horizon’s footprint is because of the technical needs of the grid. Often there is a misunderstanding about the restrictions, because obviously Horizon has stricter limit on the amount of solar that can be installed compared with Western Power. Western Power has a significant number of its customers who do not have a roof, because they are in apartments et cetera, whereas each of Horizon’s microgrids are smaller, and that makes them more sensitive to the ups and downs of intermittent generation. Horizon has less network control capacity than Western Power, so it is more sensitive to it, but there is no economic incentive for Horizon not to let people go solar. We will have a better budget position for the government of Western Australia if it is self-supplying. Before Ms Unwin talks about any technical issues, I want to 100 per cent emphasise that this is not us. I have met people in regional Western Australia who say, “You’re trying to make us buy more power from Horizon.” I would love them not to, because we lose money every time we sell them power. I invite Ms Unwin to speak.

Ms S.J. Unwin: Thank you. Each of our regional towns has hosting capacity limits. It is based on a technical assessment around the reliability of the system and how much solar can be imported into that system with that system remaining reliable and providing a safe supply. Esperance is currently out of hosting capacity, so it has reached its technical limit. Until we are able to put more, battery technology will probably enable us to moderate the system fluctuations, which are due mostly to voltage fluctuations. I think early next year we will be able to release more hosting capacity in Esperance so that the residential and commercial sector will be able to put more solar and batteries on their roofs. Although I cannot specifically talk to the examples that the member raised, there is absolutely a process to release more hosting capacity, again based very much on engineering technical constraints. It is our commitment as a business, as we have in the budget papers, to come up with a plan for zero refusals, so that we are never in the position of saying no. That requires the sort of solution, which we spoke about earlier, as in Onslow, where we have much greater control of a system to enable much higher penetration of distributed energy resources, but it requires battery-type solutions and other mechanisms so that we get a safe reliable power supply, particularly to a customer

Extract from *Hansard*

[ASSEMBLY ESTIMATES COMMITTEE A — Thursday, 23 September 2021]

p392a-396a

Chair; Mr Vincent Catania; Mr Bill Johnston; Dr David Honey

base of about 12 000 to 14 000 people. If there is a technical constraint right now, it is because we do not have sufficient hosting capacity to put new systems on, but there will be a process early next year to release some more.

Dr D.J. HONEY: I understood the logic of that argument, which seemed entirely reasonable, and that is that capacity to host feed into the system. I was informed, and it surprised me, by a person who was told that if they were not going to feed any power into the system but have the capacity to take power from the system, they could not install batteries as part of their solar installation on their own property. That would be configured with no capacity to feed back. Based on what the minister said, that sounds implausible. It made no sense to me.

Mr W.J. JOHNSTON: It is a bit hard to answer that here, but if the member wants to contact us separately, we are happy to have a conversation on that topic.

The CHAIR: That concludes the examination of the off-budget authority Horizon Power.

[8.00 pm]