

CORRECTED VERSION

ECONOMIC, EDUCATION, JOBS AND SKILLS COMMITTEE

Inquiry into community energy projects

Melbourne — 21 November 2016

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Witnesses

Mr Chris Judd, Chief Executive Officer and Managing Director, and

Ms Megan Wheatley, Manager, Communications and External Affairs, Senvion Australia.

The CHAIR — Welcome to the public hearing for the Economic, Education, Jobs and Skills Committee’s inquiry into community energy projects. All evidence taken at this hearing is protected by parliamentary privilege. Any comments you make outside the hearing are not afforded such privilege. Hansard is recording today’s proceedings. We will provide a proof version of the Hansard transcript so you can correct any typographical errors. I invite you now to make your statement.

Mr JUDD — Firstly, I thank you for the opportunity to present to the Committee this morning. My name is Chris Judd. I am the Chief Executive Officer and Managing Director of Senvion Australia. Senvion is a wind turbine manufacturing company based in Hamburg, Germany. We are the fifth-largest manufacturer of wind turbines globally. To date we have built around 14.8 gigawatts—14 800 megawatts—of wind turbines around the world, and employ about 4000 people across some 20 countries around the world.

We have been in Australia since 2002. We have built around 10 per cent of the wind farms around Australia, primarily in Victoria. We have built 30 per cent of the wind farms that have been built in Victoria to date, and ours has also been the technology that has been used in the only community-owned wind farm that has been built to this stage—the Hepburn wind farm up near Daylesford.

We have been involved in a number of other similar-sized community-scale wind farms: Chepstowe, west of Ballarat, three turbines; six turbines down at Wonthaggi et cetera; and we are just in the process of constructing two wind turbines up at Coober Pedy in South Australia for that community, which is an off-grid community that relies on a dedicated generation source such as ours to keep the lights on. We are transitioning that community off what are just diesel generators at this point in time.

As a global business, we generate around €2 billion of revenues per annum, so that is a very significant number of turbines. We install around 1000 turbines per year, but the average-sized contract for those turbines is only around 4 turbines. As a pedigree of a business globally we are always dealing with very small communities and very small owners and ownership structures for our wind turbines typically around the world, so we are very used to dealing with very small ownership bases.

But I should point out that we are not wind farm owners. We are really typically providing solutions to the owners of wind farms that are developing the wind farms and owning the wind farms—the likes of the Origins, the AGLs and other independent power producers et cetera. We provide them with solutions to design, construct and operate the wind farms for the long term.

We do, however, take a lot of interest in how those owners work with the communities to best provide benefit to the communities, and I can certainly expand on that as we go into discussion, but we are very supportive of how the community derives greatest benefit out of any wind farms that we are involved in. We know that as a long-term operator and maintainer of the wind farms we are very much part of that community for a long time and we do take a lot of effort to make sure that we create a good legacy in the community associated with our wind farms and that we are a good corporate citizen in that regard. I will leave it at that, but I am certainly happy to expand further.

The CHAIR — Thank you. Megan, would you like to add anything?

Ms WHEATLEY — No, I will just introduce myself. Megan Wheatley, Manager, Communications and External Affairs at Senvion Australia.

The CHAIR — Chris, thank you for your time and for your briefing. My question to you is: what lessons have you learned from delivering and operating Hepburn Wind and what advice would you give the Victorian Government about supporting a community wind farm?

Mr JUDD — The Hepburn wind farm, being the first community-owned wind farm to date, has certainly learned some lessons, I guess, on how to structure the ownership. I think the wind farm has enjoyed great ongoing support from the community in terms of the co-op that they have established and the people from that local community that have bought into the ownership idea of that wind farm. I think it has taken a long time for that wind farm co-op to derive benefit from that ownership. They have started to see the benefits of that in recent years. I think one of the lessons learned by that owner—and they could certainly do with assistance from government in how to do this better in the future for others looking at this lesson—is how to ensure they do derive an adequate revenue stream that is guaranteed under contracts for a long period of time. That is an

important means of ensuring that there is going to be an adequate revenue stream and some benefit to the owners of a community wind farm in the future.

In the past with the Hepburn wind farm they have been reliant on selling their power in an uncontracted or merchant manner, which has left them to ride the peaks and troughs of power pricing and pricing for large-scale renewable certificates in what have been quite distressed times for those revenue models. That has meant that that community has not been able to enjoy monetary return from the ownership, but obviously they do derive great social and moral enjoyment from ownership. I think they all remain very happy to have owned the wind farm and to continue to own the wind farm, even though they have not seen a dividend, shall we say, for some time.

Our involvement and some of the lessons we have learned are to work closely with the owners, and work closely with the co-op there, to work as best we can to communicate and educate the broader community around the benefits of wind, to work as closely as we can with the co-op to support them in open days and providing whatever we can as individuals with resources—be they flyers, be they facilities—to help host the open days on the wind farm, to just broaden that message of what the benefits of wind farms are in terms of the clean benefits of the energy and the fact that it is an infinite energy source with no use of any finite materials, no outputs that have any impact on the earth and that, once built, the energy being derived is effectively free other than some maintenance thereafter.

So there is a very good story to tell and we are very happy to be part of that education process with broader communities. We do that at Hepburn but also other communities, particularly down at Wonthaggi. We were doing it recently up at Cooper Pedy, with a lot of the involvement we are doing there with school programs, giving early education to both primary and secondary school students as to what renewable energy is all about. We do see ourselves as very much an educator around our space and we do give up a lot of our time and resource for that purpose.

The CHAIR — So what advice would you give to the Victorian Government?

Mr JUDD — If we are looking to the future I think there are a number of ways that the Government can help facilitate more community energy both in terms of direct ways to incentivise or protect the ownership and encourage the ownership of community wind. If we use the Victorian Renewable Energy Target scheme as an example, one of the things we have made in our submission as a statement was that we would be very happy that a portion of the revenues that could be derived under that target were allocated to community-scale renewable energy. We would support that as an initiative, and that would help address one of the lessons learned with Hepburn that gives them a secure revenue stream for the long term under that model.

Other opportunities for the Government to consider would be around planning legislation. We see in recent times restrictions applied to where in our sense—and I talk purely from a wind perspective—the opportunity to develop wind farms has been restricted to certain no-go zones around regional cities and other deemed no-go areas, which conflict with the interests of regional communities who actually want to build these facilities close to their town centres. I think that the Government can provide some adjustment to those planning rules as they stand today, and a lot of this is in progress, particularly around relaxing planning guidelines that restrict wind farms around communities.

One example I can cite is we work with the Woodend sustainability group. We have helped provide them with a Met Mast—a wind monitoring mast—to allow them to gather data and information around their wind resource, with the hope of building a wind farm near their community. But presently that wind farm would not be allowed to be built where it is planned to be built because of the planning restrictions as they exist today. I believe the Victorian Government intends to bring changes to those guidelines to allow that wind farm and others like it to be built where most appropriate.

There is one other particular point to make, I guess, in this regard for the State Government to consider, and that is how rates are applied to wind farms, so how your land rates, your council rates, are applied. At this point in time there is a payment-in-lieu-of-rates methodology, which for wind farms requires an initial lump sum plus a rate thereafter depending on the size of the wind farm. That initial lump sum of \$40 000 is, shall I say, an unfair impost on very small-scale wind farms. When we are talking community wind farms, we are generally talking very small scale. I think if that initial lump sum could be dealt with or addressed in another way—removed

maybe, worked into some of the revenue stream or something like that as an alternative—that it would be one less impost on community wind or community energy projects.

Mrs FYFFE — If I may, could you expand on that a little more? How does that work interstate in comparison to Victoria?

Mr JUDD — It is only in Victoria that I am aware that the system works this way.

Mrs FYFFE — So the other states do not pay rates or they do not pay that \$40 000 up-front?

Ms WHEATLEY — I am not sure what the other states do.

Mr JUDD — They do not have this arrangement where there is this lump sum up-front, regardless of the size of the facility. I can only really cite South Australia as an example, where we have built some other facilities, when we talk about providing communities with funding. Quite often there is an annual funding model that comes from wind farms where the wind farm operator and owner provide a certain amount of money—it can be as much as quarter of a million dollars per year—to that community to spend on community initiatives. It could be footpaths, playgrounds, shelters, barbecues—whatever it might be in the community—to benefit the community. Quite often that quantum is agreed to with the council to be something comparable to council rates, so that the council is involved in how large that sum is and how it is going to be spent and have some involvement in the other moneys allocated. But it is a more relaxed scheme than the PiLoR methodology that Victorian governments have in place.

Mrs FYFFE — If I could, you mentioned Coober Pedy—this is purely my interest. You say they are on diesel generators now and the wind power is to replace that, but what about the battery storage? It is still in its infancy in some ways, so how are you going to store the power when there is no wind?

Mr JUDD — For me, I am very passionate about this particular project.

Mrs FYFFE — I know in Victoria we have not got a Coober Pedy.

Mr JUDD — No, we do not have a Coober Pedy, but that is not to say that a similar concept could not be applied within the grid for a microgrid solution for a community where they would have the connection to the grid as a security measure if for any reason their microgrid of generation solutions is not working. Up in Coober Pedy they are completely reliant on diesel generators at this point in time. The customer that we are working for, the developer that presently owns those diesel generators, is looking to transition that facility to a green solution, and they have got some funding from ARENA, the Federal Government grant body, to facilitate renewable energies and clean energies. It has given them around half of the money they require to enable them to transition that diesel generator facility to be part wind, we are providing two turbines—part solar, part battery storage. Toshiba are providing the battery storage facility to allow the energy that is generated from the wind and the sun to be stored overnight and used as needed by that community.

Mrs FYFFE — So the batteries are now capable of storing sufficient...

Mr JUDD — Absolutely.

Mrs FYFFE — I thought it was still in its...

Mr JUDD — Well, to get us through a night. You cannot provide days of power from a battery, but from the context of generating power during the day with the sun into the evening, with the wind, storing the surplus in the batteries and then that being available for use overnight and up until the early day when the sun is then available and the wind is blowing again, that type of battery capacity is out there, and beyond the prototyping stages — commercial.

Mrs FYFFE — It would be interesting to watch how the wind and the solar work in together.

Mr JUDD — Yes, it is quite an exciting concept. This is a relatively new prototype of proving up the combination of technologies. The people that are providing the control system manage the different power sources and storage sources. Hydro Tasmania have a very similar concept already operating on King Island, so it is not that it cannot be done...

Mrs FYFFE — So it is not a community; it is the company that has been providing the diesel generators? It is not the community involved, so they will not require additional technical expertise because the company will have it.

Mr JUDD — The company has the technology expertise, and they do own the facility, but their customer is the community, so they sell their power to that community.

Mrs FYFFE — What we are hearing is that if communities run their own power, then they need outside help and assistance with all of the technologies.

Mr JUDD — Yes, and that experience and IP expertise does exist out there in many consultancies today.

Mrs FYFFE — It is paying for it.

Mr JUDD — Yes, you would have to pay for it; typically that is the model today. Whether there is any government abilities to provide resources that would help communities work through the logistics and the economics of how to go about some of this for their own ownership purposes is something to be considered.

Mrs FYFFE — So when will Coober Pedy take off?

Mr JUDD — We have just poured the foundations on the weekend and will be installing our wind turbines in February next year. That renewable energy facility will be operating by mid next year.

Mr NARDELLA — Where is this?

Mr JUDD — Coober Pedy, in South Australia.

Mr MELHEM — Just to follow up on that particular model, you said the batteries will sort of work overnight—that type of thing. So with the current plan are we looking at 24-hour capacity to store power in the batteries, or 48 hours a week? What is the best-case scenario and worst-case scenario? You have done some modelling, had the system work or...

Mr JUDD — I will be up-front and say that the battery technology is not our expertise. We are the providers of the wind technology. We are very interested in the broader concept, but it is not our skill set. We would probably have to follow up. If you had any particular questions around that and you are not talking to anybody else that has a greater expertise in that area, we could follow up for you. I know you have talked to the Clean Energy Council already, and they do have some storage experts in their team.

Mr MELHEM — It would be great if you were able to take that on notice and give us a bit of feedback on how that sort of model works because, as you said, between wind and solar you would think you should be pretty okay with a battery overnight et cetera, because if you do not have sun you are likely to have wind—vice versa type of thing. Just looking at what is the best-case scenario and what is the worst-case scenario, there is really the next question, on the South Australian tragedy or episode, whatever we want to call it, that happened recently. If we want to move more toward wind and solar—renewable energy—and I am talking about energy security, what is the learning so far from that and what would be your advice if we are devising a model to encourage community renewable energy projects and go more renewable and less dependent on fossil fuels? Have you got any comments or thoughts on that?

Mr JUDD — Yes. I think, firstly, just to complete the picture of what is going on at Coober Pedy, I should state they are not removing all of the diesel. There is one remaining diesel generator left as a backup. When we are talking about energy security, in the worst-case scenario of a week of rainy days and no wind and very little energy being generated through renewable sources, they still do have the security of the diesel generator to turn back to. So from that isolated community's perspective, there is that backup plan, and I think in the context of a renewable energy solution that would be connected to the grid they might not have the diesel generator, but if they are not generating enough of their own power they could always draw power as traditionally done from the grid as a backup.

When we talk about energy security at a larger scale and we look at the South Australian event, what happened there, firstly, was cyclonic conditions that destroyed the transmission towers, which caused the system to effectively protect itself in that disaster situation and the generators shut down, as they have to to protect

themselves from that earthing and low-voltage scenario that was happening when the powerlines fell over. Maybe one of the key learnings from that is that the transmission network itself needs to have more redundancy within the system. Having a larger number of generation sources assists in providing the security, so as per current day, if you have a transmission system as it is designed to have very large generators and then it distributes the energy from those generation systems through very big transmission lines, it gradually disperses the power. If you lose either that big generator or that big transmission line, as in the case in South Australia, it causes what we saw in South Australia—an event where there is not enough generation to keep the state's lights on. If you put a lot of generation all around the network through little solar, little wind, little community renewable energy facilities, the chances of any one of them or any portion of the line being knocked out, maybe through a natural disaster like it happened in South Australia, the consequence of that then causing a greater knock-on effect is minimalised.

I think there is a lot to learn for the transmission network service providers and how they provide greater network security through redundancies in their system, and how they, in the case of providing connections between states, create more of them, so that if any one interconnector fails, as has been the source of an earlier outage in South Australia, if there are multiple means of drawing power into the state from neighbouring states in the event that one of those interconnectors goes down, again you are creating a heightened security solution for providing energy to the community.

Mr MELHEM — If we start moving to renewable wind, solar et cetera, how do we balance that with, for example, baseload generation, because it is important to maintain industry and the backup, looking at interstate? The second part of the question is: how do we service the transmission lines? Who is going to pay for it, if we move into more community-based projects and they become self-contained groups, units or geographical areas? There are a few questions in one, I suppose. I am interested in your opinion because of your expertise.

Mr JUDD — Yes, okay. Again, I am not a transmission network service provider expert.

Mr MELHEM — That is why I am asking you, because you do not have a vested interest.

Mr JUDD — I think they have a challenge ahead of them to work out what is their revenue stream in a more dispersed generation model where communities are more self-reliant on the use of their power. But the model for them might not be, as I was talking about earlier, the role of providing power from one big service generator to a dispersed community; it could be more about picking up the surplus generation from these community-owned facilities and sharing it with their neighbours or selling it back into the grid to sell to industry or to commercial customers et cetera. There are a lot of solar facilities that are owned by the community, for example, and they are producing a lot of power during the day. That is when industry and commercial operators need their power. I think you literally reverse the model and it is the community providing the power back into the daytime load, which is typically industry. That is one way the transmission could still be necessary, and then potentially some revenue model that is derived out of that. Do not ask me the specifics.

Mr MELHEM — But you still need to maintain...

Mr JUDD — You still need a transmission network.

Mr MELHEM — Yes. We will still need to depend, for example, on coal-fired or gas-fired power stations or some sort of larger generator—it does not necessarily have to be coal-fired—in the future, unless we go nuclear I suppose.

Mr JUDD — Well, this is it. We do not sit here saying that wind is the only solution or solar is the only solution, but as you build more and more renewable facilities around the world, around the country and around the state, they become more geographically spread. What happens then is that the wind is always blowing somewhere, so it might be blowing in northern Victoria or in Gippsland. By virtue of just building up a geographic spread of renewables, it does mean that there will always be some baseload portion of power being generated, even if it is not at 100 per cent of capacity of those facilities.

All we are really trying to say is that it is just part of the solution. When you have got wind and solar and storage, you can complement them with hydro as it is built today. It is a very complementary energy source and it is very easy to turn the tap on and off to use hydro—either what is sitting in Tasmania that is available or the Snowy Hydro scheme et cetera. There is run-of-the-river schemes et cetera in other parts of the country. You

can very easily turn the tap on these to complement when the wind is not blowing or the sun is not shining. Gas, nuclear, wave technology, current technology—all these things—we do not say are not part of the solution. We will gradually be transitioning, using what sources of fuel we have at our disposal as economically proven as we move to that point where we could clearly and confidently say that there are zero carbon emissions from our energy generation. I think part of the transition will have us needing a reliance on gas for some time and even coal for some time. But we are not talking decades or centuries; we are literally two or three decades out and we should not have much reliance on coal or gas moving forward at all.

Ms WHEATLEY — It is probably also worth reflecting on the other side of the equation as well. We have been talking a lot about the generation side of things, but I think that as the technologies improve the demand side and demand side management can become more sophisticated as well. So you have got a much more sophisticated energy system, which includes storage as the technology evolves, which includes a diversity of generation sources but also a more sophisticated approach to when that energy is used.

The CHAIR — Chris, I know you said you have got until a quarter to 11, but I promise you I will finish before that. Your submission recommends establishing a community energy target as part of the renewable energy auction process. Has the community energy target been incorporated into an auction scheme elsewhere and how successful has it been? At what level should a community energy target be set in order to be effective?

Mr JUDD — Tough question to answer, I am afraid, because I am not aware of any particular precedent or example. I stand by our statement that we think that it would be a good idea to encourage community level development to be supported through the scheme, but I do not know whether I am the right person to give you an idea as to what portion of the target should be set aside.

Mr NARDELLA — I was in Tuvalu earlier on this year, and they have just put in a whole range of solar arrays and stuff. They used to run off a diesel generator, but because they are losing their islands their diesel generator has been converted to vegetable oil or whatever, so the whole electricity system on their main island is renewable. So when you are looking at Coober Pedy, they may in actual fact have a look at something like that as well, depending on what their aim is, really, and their aim, I suppose, is to get rid of the high component diesel cost.

Mr JUDD — We can certainly follow that up with that owner to see if they have any fuel transition concepts in mind.

Mr NARDELLA — And if Tuvalu with 10 000 people can do it...

Mr JUDD — Yes. Coober Pedy is three, four thousand.

The CHAIR — One more question: what are some best practice approaches for supporting community energy projects that you have come across internationally, and what can Victoria learn from community energy projects delivered overseas?

Mr JUDD — Look, I think where we see the greatest take-up of community-owned wind farms, through my experience and exposure, is typically in Germany. That is largely the case because of the feed-in tariff scheme that exists in that country, which provides a very visible, long-term revenue stream that encourages the take-up of renewable energies. Both solar and wind are being actively taken up by small communities, be they just farmers, farmers co-ops, small townships et cetera. They are very much the largest ownership base of wind farms and renewable power in Germany. That is because the revenue model is very clear for them and they can run their economics—of what are their costs to build and operate versus the revenue stream deal—very clearly, and it works out, shall I say, quite profitably for them under that scheme.

I am not sure that I would necessarily recommend a feed-in tariff as the solution here. But I think, again, just coming back, providing some revenue stream certainty under the VRET scheme would be a form of providing a similar certainty to the communities to explore what that revenue scheme would be as part of the analysis and feasibility investigations of whether to go ahead with a community scheme.

Mrs FYFFE — I am just pleased that you are looking at the whole supply of alternative energies. When wind farms first came in—about 15 years ago, I think, we started having them, or 18 years ago—it was going to be the answer to everything. I had visions of Victoria being becalmed on the sea and nothing happening for

weeks while we waited for the wind to come, so it is pleasing to hear the technology is advancing and that you are working together.

Mr JUDD — We are not here to dominate the sector. We are here to be part of the solution; we recognise we are part of the solution.

The CHAIR — Well, on behalf of the Committee, I would like to thank Chris and Megan for attending—and for your patience as well.

Mr JUDD — Thank you very much for your time; thank you for inviting us.

Witnesses withdrew