C O R R E C T E D V E R S I O N

ECONOMIC, EDUCATION, JOBS AND SKILLS COMMITTEE

Inquiry into community energy projects

Daylesford — 30 May 2017

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Witnesses

Mr Chris Weir, President, Bendigo Sustainability Group.

The CHAIR — Good afternoon, Mr Weir. Welcome to the public hearing of the Economic, Education, Jobs And Skills Committee inquiry into community energy projects. All evidence taken at this hearing is protected by parliamentary privilege but 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 that you can correct any typographical errors.

I would like to invite Mr Weir now to make a contribution or a presentation and then allow some time for the Committee to ask questions.

Visual presentation.

Mr WEIR — My name is Chris Weir. I am the President of the Bendigo Sustainability Group. I am actually showing you the output of one of our solar projects at the Bendigo Tramways. This is a project that we were involved in project managing. We organised the financing between a community group and the tramways, which is a community tourism organisation, and we were able to project manage, bring the two together, to set up this 50-kilowatt system. This is a real-time output from the tramways that is occurring. It is a bit of a wet day as you can see from the data down here so we are not getting a fantastic utilisation, but you get a bit of an idea.

The reason I wanted to show this to you is that we are now mapping all of our solar, and I will show you that in a minute. We are starting to map all our solar projects, and we will start to do this across the city. I will explain why, but I just wanted you to see the map.

We were founded in 2007 and we have a membership of 200. I am going to go really fast because you will have the transcript; I have got a lot of information to get across. We have got a membership of about 200-plus, however, our social engagement, our Facebook is now our primary communication tool. We have a very big take-up and engagement through this tool and you will see with the crowdfunding projects we have run that we had a very active engagement with that on Facebook. We actually have two Facebook part-time facilitators. One does the good fuzzy stories and one does the hard—not political—messaging about why we are doing the programs we are doing.

We are involved very heavily with the City of Greater Bendigo. We have been involved in their sustainability strategy, a 20-year strategy, and I am proud to announce that for our good work we won the 2016 Premier's Sustainability Award. I just want to run this video for you. It will you a very quick overview of what we have been up to with our solar. This is just to give you a bit of an overview of our process and methodology. Our first project was the Bendigo Library which is 20 kilowatt. We did that in 2015. It took me three years to get that project up—a lot of governments, agency engagement, essential services, the council; lots of meetings. As I said, it took about three years to get that going. The crowdfunding, by the way—we went to the market for $25 000, and we raised that in two and a half months. That was the community calling in and putting money into that development. What we did is we had an unusual program where we suggested that people might like to donate a panel, and that was $400. We had a great take-up on that and we were fully subscribed, as I said, in three months.

The next one was the discovery centre, and again we went to crowdfunding. We raised more than 50 per cent of what we were asking for, so there is an appetite in the market for that. In 2016–17 we went to the tramways. We were approached by a community foundation who had the money. The tramways did not have the money but had the roof and wanted a project, so we have done a power purchase agreement that will run for 10 years. The tramways will pay back the foundation their money and interest and at the end of 10 years, for the remaining 15 years, the tramways will have free electricity which will lower their overheads. It is a really good sweet deal.

The next project we did, which was the Bendigo Archives, was 30 kilowatts. We did that project and I used again a hybrid financing deal where we got a grant. We also did a little bit of bank financing because I wanted them to get used to doing loans against power purchase agreements. That went all the way up to Bank Australia, got agreed to by the accountants and the lawyers, and it has come down. So for our next

tranche, as we are going to need another level of financing, this bank is now ready for us to be able to do that.

Having done that, we had already mapped out another 10 sites with the council. However, they said, 'Hey, we are going to do it ourselves'. They brought us in as consultants and we put together a package for four other sites up to a capacity of 150 kilowatts. Those will be installed before 30 June.

We are now on to the next layer of some of the council buildings. At the same time we are being a bit progressive. We are starting to look at other sites, being aged care, health centres, sports centres. We do not get involved in residential and we do not get involved in too much commercial; they are difficult areas. We get better, faster runs on the board by these projects.

Why are we doing this? What I want to show with our core program, our community-owned renewable energy, is, as you see on that chart, the investment by the community adds up to approximately $115 000, but in terms of the re-power of the power purchase agreement back to the core group and then to the roof host, basically will contribute $480 000 over the space of the 25 years. That money stays in Bendigo; that money we use for low income; that money we use for and do energy recycling. We have got a lot of projects, and by using this money and keeping it in the community rather than going out to foreign international companies we will be able to do good works with that.

As you are beginning to see, we have developed a very good set of tools that we are using. We in actual fact have sold the tool kits to Ballarat and Castlemaine and I am just in negotiations to sell it to another community group, but you will hear a little bit later about that kit and where we are going with it.

The next project we are working on is that we want to monitor the equipment. We have set up monitoring so that we can look at and do energy generation, but more particularly we are actually able to do what they call 'behind-the-meter' billing. We are using devices which are what we call billable-grade devices and that is acceptable by the council as a billable invoice.

We have also been able to look at the building energy usage. We are interested to know what is happening with the weather and how that impacts on solar. It also will give us a capacity further down the road. If there is more solar than is being generated on-site and it is being exported, why not put a battery solution in for evenings? In particular for sporting centres that is an absolute motza. So we are looking at the capacity, and the idea is we will have a community dashboard where people can come in and actually see what is being generated in their community.

One of the targets we are looking for is 100 per cent renewable energy by 2036. I actually want to bring it forward by six years to 2030, and I believe that is achievable. So we have mapped that there is $100 million that can stay within the community. It is a bit ambitious, but it is possible. We want to obviously reduce climate impact. We are seeing the impact on rural communities, and we want to help reduce that. We also have a mission of reducing energy poverty. So in the middle of winter, low-income people do suffer by not turning on electricity. We want to help and assist with those people.

How are we going to do that? So we already know that Bendigo generates 150 gigawatts of energy. We just started to have a look and go, 'How can we meet that 100 per cent target?'. So it could be household PV. We are talking 15 per cent, but currently Bendigo is at 20. Business solar—that is possible. But we are now looking and talking about large-scale solar, renewable energy and waste to energy, as in bio.

Having done the rooftops, we have now got expertise knowledge, and we will continue on that pathway. But there is a point that we are going to max out on the rooftops. We will run out of rooftops, other than residential of course and certain businesses. So what we are looking at now is community solar farm projects. We are already starting to scope up and have discussions with the council to be able to get land to put these solar farms up. I believe for a community group, a 1-megawatt farm is probably the best size. The total cost for a megawatt is around about $2 million to $3 million, and we believe that is achievable in the market using different financing options. So it is possible. We have already started to map out land. In particular, we are looking at council land or crown land. For instance, in 2005 we were involved in putting a very small micro solar farm on the livestock exchange in Bendigo. So there is a capacity in the paddocks

on top of the Livestock Exchange to do solar. We have also identified some other areas, and in particular this is waste land—old tips—that we can put these panel farms on top of. So we are looking for unused land that we could put the panels on.

I know this is not in your charter, but I just want to touch on some of the things that are happening with us in terms of—you have got solar generation; what are you going to do with it, and in particular at night-time? Some of the storage solutions—you may have heard; we have got the pumped hydro. We are also setting up a program where we are going to do shared residential batteries. So people having batteries at their home may have capacity or overcapacity—being able to sell that back into the community itself. Then the final thing is larger solar and battery storage.

So our pumped hydro solution is basically using our old mine. So we are going to use either solar or wind to pump from a high-level mine shaft and then drop it down during the night to a low-level mine shaft. So we are using solar to generate that pumping, and at night we will drop it down and that will generate energy and electricity. As you probably know, Bendigo has a lot of mines underneath it. So we are already starting to map out. The government and the council have provided a grant of $150 000 to look at using this pumped hydro solution.

Shared residential—so basically these are houses that will have batteries on them. You have heard about the Tesla batteries and the new Tesla 2 batteries. These are where people have got capacity—and it is quite possible and it is happening today that you can share some of your power from your battery back out into the grid.

The thing that I am interested in is this community solar farm that I just indicated before with battery storage so it can do night-time. The possibility is the community can actually own elements of that farm. They could own 10 panels, for instance. So unfortunately at the moment in a regulatory way that is not possible, but we are really keen to see if we can set that up. You will hear terminology calling it the solar farms—solar gardens. That is what this concept is about.

So very quickly, just closing off, there have been a lot of developments. Since you started your call-out we have been involved with the government—with the community solar alliance. This was under the new energy jobs, round 1, and that has enabled us to help—there is a group of 10 solar guys. The communities have come together. We are developing that toolkit and expanding that toolkit, and we are successfully adapting what they call the ClearSky database model. We hope to have that out and running by October or November and starting training and workshops into the new year. So this is working with community groups to give them the tools to be able to roll out their programs.

You also may have heard about the pilot community power hubs. This is three communities, being Bendigo, Ballarat and Latrobe, establishing lighthouse projects and, based on our success and modelling internationally, being able to help other groups in a meaningful way. In theory this project is due to roll out in July 2017.

Again, I do go off brief a little bit, but electric cars and solar charging — we have undertaken two studies for council and a local authority about EV charging, and you can see on the right-hand side there is actually a solar carport. It has got solar carport storage and charging. This is being developed up at Bridgewater. This is a local manufacturer opportunity, so we are really keen about that.

What are we looking for? We are hoping to have a look at one of the areas. This is peer-to-peer transactions. Blockchain is probably a good word for it. We are really interested in seeing how that can work. We are also keen to get financial institutions to undertake funding. I have talked about that $2.5 million to $3 million. This is a tool or an opportunity where they could use some of their green bonds market to help facilitate the rollout of the projects. What I would also like to do under the new VRET scheme is encouragement of perhaps a 10 per cent allowance or option for community energy and, finally, have the establishment of a community energy umbrella organisation so we can help share and coordinate and present information back to the community and the authorities.

The CHAIR — Thank you. Well done. My question to you is: can you explain the process you went through to enter into a power purchase agreement with the council and provide advice for other community groups that would like to do the same?

Mr WEIR — Sure. Thank you. The basic formula is that we request a list of the council buildings. From that, we use a tool called Nearmap, so we are able to go in and have a look at the rooftop and see if it has capacity to take solar on it—if it has got the right orientation. We then set about and put together some basic funding formulas and work out and ask the council what they pay with their existing electricity bill. We map it at what we consider is the cost of provision of electricity from behind the meter, and we compare it and put a study together and make a recommendation. If they are ready to roll ahead, which in most cases they are because we do better than what they are paying the traditional providers, then we do an engineering study. We then put out a tender document. We have a tender selection by using local installation companies, then we manage the projects that we monitor and then we do the invoicing on a quarterly basis.

The CHAIR — How long did that take, roughly?

Mr WEIR — The first one took us three years. I reckon we can do one now about every three months, and if not, they are cascading, so we are having one overlapping on top of another. We have now got capacity and speed because we now have the track record.

Mrs FYFFE — What capacity or potential do you see for partnering with a commercial developer to develop an energy project in your community? Do you see that happening?

Mr WEIR — Absolutely, particularly the bigger ones—you know, the potential with wind or the big solar farms. The big solar farms—they are talking about 200 to 250 megawatts. We are talking $500 million, so some of the discussion is, 'That's great, but how are you going to engage with the local community? What are you going to do? Is it going to be some sort of a financial percentage? Is it going to be some sort of an engagement or promotion?'. So with the new reverse option I am very keen to see what the government has slated for that.

Mrs FYFFE — So would you like the government to regulate or mandate that community has a certain percentage?

Mr WEIR — I think so. The reverse option will give me some clear idea of what they are thinking.

Mrs FYFFE — Good.

Mr CRISP — You talk about the importance of that power purchase agreement—coming to that point. I would like to explore that a little more and get an idea of: how do you make a value proposition for everybody to make a power purchase agreement work? Because we have heard that they are difficult, from other evidence that has been given.

Mr WEIR — When we sat down we had a look at the market potentials. You have got residential. We did bulk buy in the residential market, and currently the market sits at around about 20 per cent capacity for residential solar. I think it has kind of hit its peak. With the batteries coming in it may get a bit of a burst, but it has hit its peak.

Where is the next opportunity? Commercial organisations—the problem with commercial organisations is that the owner of the building is not necessarily the operator. The operator will only ever sign a three-year deal. We are asking the roof host to sign a minimum of a 10-year deal. They are reluctant to do that because the tenant might move out and they are stuck with the bill, so they go, 'No, we're not interested in that'. So the opportunity lies with an owner-operator—somebody who owns the building and is operating it. Sometimes that has an impact on their bottom line because what that does is reduce their capital acquisition opportunities: 'Do I spend $100 000 getting a new bit of equipment to manufacture or do I spend $100 000 putting solar electricity on the roof?'. That is where it comes to. So we have targeted organisations like the council, we are looking at aged care—those non-commercial types of organisations.

For us, those power purchase agreements are relatively easily done now, because the document is relatively the same all the way through. This document has been audited by the council, by the Department of Finance, so there are a whole lot of people who have had a look at the document and signed off on it, because all we are doing is changing the schedule at the back. It is the rate, the time, and that is what changes.

But another element that is connected is the roof rental agreement. It may be the same organisation or it may be a separate organisation, but if there is a fallout in regard to the power purchase agreement, we have the right to go up on the roof and take our panels off. We would not, but people have talked about combining the two. We do not; we keep them separate.

Mr CRISP — All right, thank you. So the value agreement is that the user of the energy is preferred to be the roof owner. The agreement is that they are going to save money on their electricity, but you are going to get your investment repaid.

Mr WEIR — Correct. With a commercial organisation, and this is gathering weight particularly in New South Wales…

Mr CRISP — It is ClearSky operating in that …

Mr WEIR — ClearSky and Repower Shoalhaven have what they call a special purpose vehicle, which is what we are about to do. They go and find 20 investors to match into a project. Under the legislative law you can go to 20 investors without necessarily having a comprehensive full prospectus. ClearSky I think recently signed off $400 000 on a bakery, and there is an appetite for that market. Part of that community solar alliance—that is exactly the pathway we are going down. So we are going to be setting up these SPVs.

Mr CRISP — Thank you.

Mr MELHEM — I think in your submission you were saying that the government should mandate 10 per cent of the total renewable energy market to be set aside for community projects. Are we are talking about that being restricted to medium to large projects or would it include even small projects like …

Mr WEIR — I would think that our capacity is somewhere in the 1 megawatt to maybe 5 megawatt range, because you are talking $10 million. That is lot of money for a community. Having said that, Hepburn Wind went to market and they got $10 million. They are just, I think, in the final process of paying that lot off, so from here on they have got a really good income stream that is coming back into the community.

Mr MELHEM — The reason I asked the question is that if you have got hundreds and hundreds or thousands of community projects supplying energy to the market or to residents et cetera, how do you control that? I am talking about probably security supply where instead of having now one generator, for example, supplying the bulk of the state you are then moving to thousands and thousands of generators in the market. It is 540 megawatts, which is 500 or 600 megawatts if you want to apply 10 per cent, so that is a lot of solar panels.

Mr WEIR — That is right.

Mr MELHEM — We are excluding individual residents who are actually putting it on their roof, so we are not counting them.

Mr WEIR — One of the impacts that we are going to see, and it depends on your view on this, is the impact of electric cars. What is the impact of electric cars going to be, not necessarily today, but if you look at the Tesla 3, when that gets launched in the middle of next year? They will roll that out, and they have already got 500 000 people signed up. I know all the other manufacturers are waiting for Tesla to be the new Apple, and they will come in behind. The impact of electric cars into this market is going to be

massive. I think there are massive opportunities for solar and community solar. Hepburn Wind have already got an electric charge station here in the middle of town.

Mr MELHEM — Yes; we saw that this morning.

Mr WEIR — We are about to do three as a test site up in Bendigo. It is very early days, and we think it is an explosive area.

Mr MELHEM — So the feed-in tariff reduction, for example—now it has gone up again to 11 cents—is that going to have any impact on the success or otherwise of …

Mr WEIR — Great question. When we do our analysis we try to keep it that we are not exporting to the grid. The reason is that if we are doing it behind the meter we do not get that money back as an investment group. The building owner does, but he does not pay us in that sense. So we do not get any benefit from the three-year tariff.

Mr MELHEM — So what you are saying is we need to change the thinking. I think it is already happening. If you go back to the early days people were thinking about 'How much am I going to sell it for?'.

Mr WEIR — Absolutely.

Mr MELHEM — Sixty cents, 28 cents; now it is 11.3 cents. Now, forget that. It is about: use it.

Mr WEIR — Correct.

Mr MELHEM — If you produce it, you use it.

Mr WEIR — We are starting to move into this battery storage solution, and the notion of the battery solution is that you do not necessarily export it during the day but store it in your battery, and you can either use that in your night-time element or you can sell it into the network. So we are going to see a big impact of batteries. I will give you a quick example of how things are quickly changing with the batteries. Last year Tesla launched a 7-kilowatt battery solution, and it was around about $40 000. This year they launched a 14-kilowatt battery solution for $7000, so in 12 months this market has absolutely flipped, and it is gathering space and gathering pace so quickly.

Mr ELASMAR — In your submission you have recommended the establishment of independent support agencies for renewable energies throughout Victoria. Who, in your opinion, should run these agencies and how should they be funded?

Mr WEIR — I have been involved in going around Victoria and talking to community groups that want to know about the Bendigo model and how to get it running. So I am running workshops and encouraging those guys. As we were all talking we were saying, 'Well, it would great if there was a central repository'. So one of the things that is gathering is that the Moreland Energy Foundation are setting up. They are possibly going to be the spokesperson for the community groups. There is a thing they are going to be setting up. I suspect it will either be Sustainability Victoria or the Department of Environment, Land, Water and Planning that would be the best connection.

Mr CRISP — In peer-to-peer trading in this new world of batteries and the grid—we will for a long time, I believe, need a grid, but in peer-to-peer—are you engaging the grid or are you again working behind the meter? How do you go about making that a value for everybody?

Mr WEIR — So the peer-to-peer in the block chain pathway is keeping an accurate record of everybody in the chain. For a consumer, the only way they know how that energy is is when they get a bill from Origin. But within the block chain process, there is a document or a record created by the generator, by Powercor and by the retailer to the consumer. So it is kind of a simple pathway that you can see.

So it might be in the peer-to-peer that, yes, the power is generated here. It is distributed but may go to a consumer, or the battery may be the similar layout. It would still have to go through Powercor in our case and then go to the household or recipient. So that tracks that and does away with the retailer. It is really interesting because the retailers are required to run support programs for low income users. The people who do not pay—they have got to support them with financial relief, that sort of stuff. How does peer-to-peer work in that environment? A voyage of discovery.

Mr CRISP — Do you have to register yourself as a retailer to make that happen in the current regulatory environment?

Mr WEIR — In the current regulatory environment, yes. Under the Essential Services Act, yes.

Mr CRISP — Are you looking to register yourself as a retailer or get rid of that?

Mr WEIR — No, not to get rid of it, but find friendly retailers, rethink that model. There is a group called Energy Locals who have set up and are starting to think about that. They have gone for their licence. Even though they have got their licence in Queensland and New South Wales, they been waiting for 12 months to get their licence in Victoria.

The CHAIR — I would like, on behalf of the Committee, to thank you for your contribution.

Mr WEIR — Thank you very much. I look forward to seeing the report.

Witness withdrew.