T R A N S C R I P T

LEGISLATIVE ASSEMBLY ENVIRONMENT AND PLANNING COMMITTEE

Inquiry into Tackling Climate Change in Victorian Communities

Melbourne—Thursday, 5 December 2019

MEMBERS

Mr Darren Cheeseman—Chair
Mr David Morris—Deputy Chair
Mr Will Fowles
Ms Danielle Green
Mr Paul Hamer
Mr Tim McCurdy
Mr Tim Smith

WITNESS

Heather Smith, Chair, Coalition for Community Energy *(via videoconference)*.

The CHAIR: Welcome to the public hearing. I just want to run through some important formalities before we begin. All evidence taken today will be recorded by Hansard and is protected by parliamentary privilege. This means that you can speak freely without fear of legal action in relation to the evidence you give. However, it is important to remember that parliamentary privilege does not apply to comments made outside of the hearing, even if you are restating what you said during the hearing. You will receive a draft transcript of your evidence in the next week or so for you to check and approve. Corrected transcripts are published on the Committee's website and may be quoted from in our final report. Thank you for making the time to meet with the Committee today. Could you please state your full name and your title before beginning your presentation.

Ms SMITH: Heather Smith, Chair of the Coalition for Community Energy.

The CHAIR: Fantastic. Thanks, Heather. Over to you.

Ms SMITH: Okay. How long would you like me to talk for?

The CHAIR: If you could perhaps give us a presentation touching on the salient points—let us say 10 minutes—and then there might be questions.

Ms SMITH: Okay. The Coalition for Community Energy has submitted a range of points. I am not going to spend a lot of time talking to those because I believe you have met and spent quite a bit of time with people from the community energy sector in Victoria. You are better off hearing those points from them because that is very relevant to the current Victorian political situation and policy context. But I would like to take the opportunity to add more of a national perspective and international perspective, perhaps, on community energy. As well as being the Chair for Community Energy, I received a Churchill Fellowship and travelled in 2016 to look at energy transitions in a number of countries through the lens of community action. I am also doing a PhD at the moment looking at redesigning our electricity systems with microgrids. My interest is partly how useful is it to think about our energy transition in the context of how our local systems could work better, and in fact there is plenty of commentary about us moving away from a centralised system to a decentralised system, but there are no real, detailed designs about what that looks like.

One of the ways to conceive of the community energy sector is that this is a grassroots approach where a lot of communities who are frustrated with the pace of change at the moment have got on and explored a bunch of ideas to see what might work. So I see the community energy sector as a sort of whole range of groups at the innovative edge, exploring the new—exploring what a future energy system looks like. And of course one of the important things they are exploring is how governance could change.

Now, in a decentralised energy system you are actually looking at optimising much more locally, which is why my research is looking at microgrids. We already have, if I compare Australia to the countries I visited—I went to the US, Denmark, Germany, the UK and Japan—by far the highest uptake of rooftop solar. By good fortune or good management our RET, renewable energy target, has driven and incentivised individuals to put generation inside communities in a way that it has not happened in other places. Other places wait for a tax refund, or they wait for other ways to make rooftop solar work. In Australia, instead, rooftop solar worked from the early stages of feed-in tariffs and has grown apace ever since. So we already have a system with a lot of local generation compared to other systems.

What I did see while I was away was how, in the absence of a rooftop solar system making sense for an individual, an awful lot of community groups were stepping up to make local solar or local energy work for a local community. And the reason that did not happen in Australia so much is because 'behind the meter' was given the opportunity, but our local systems do not have the same economics, and no doubt you have heard already about the barriers to the 'postage-stamp pricing' and how that creates a barrier. And I guess our individual versus the central system forgets about what are the collective goods—what is the optimisation we can do at the local level. There is an awful lot of talk about self-consumption in the energy industry: how do we get people with the solar to use more themselves? But the more useful conversation to have is: how do we get

communities with surplus solar to use more themselves, because if you do it at the community level, you unlock diversity. A business uses energy at a different time to a household, and so it is actually useful that you have some surplus from the households going into the business sector.

I think I would like to make the point that one of the things that was evident in the communities that were leading the way internationally was a local institution, and often an NGO—a local institution that sat in the **[Skype dropout]** sector as opposed to the market sector or the private sector. Those groups—Vermont energy efficiency centre, or the Folkecenter for renewable energy, in Denmark—have been around for over 20 years. They existed because over time governments had supported those groups to deliver energy efficiency, largely, but apart from the energy transition, those groups were not constrained by government policy in running off to explore where were the new opportunities. They were encouraged by government policy because often they got a substantial amount of funding from government policy. So I find that really interesting in your framing of community power hubs and how you are now starting to create those local institutions and to know that those institutions can play a really important role in the longer term.

I think all of us might be willing to explore different relationships between government and community and market and community. I think we are in an era of change there, but that is very evident when you travel. When I travelled, physically the electricity system looks the same in any place but on a regulatory basis and from an ownership basis all of these countries have completely different set-ups and completely different cultural contexts of what people expect. So it is no wonder that community is stronger in Germany and Denmark, because it is the general culture and philosophy that has allowed community-based forms to thrive and be accepted as legitimate by the politics of the day. Let us remember in America and Germany local governments still own or control electricity—they franchise it out or in a lot of cases I think something like a third of all American systems are run by local government. So you have still got in other countries a strong connection between the local and the energy system, which we do not have in Australia.

I think local energy is becoming an opportunity, and in the microgrid space we have seen tonnes of commentary around bushfires and the resilience that local microgrids can offer—and I mean grid-connected microgrids, but I mean building some self-sufficiency inside the community using locally generated energy, not just conceiving of the system as being central and centrally controlled. We see an awful lot of conversation about resilience in the microgrid space that is not particularly evident in the way our electricity systems are evolving and the energy corporates are thinking about their role. It is evident in the work that CSIRO did with Energy Networks Australia about the future grid, but there is no real pathway for that change in philosophy that is needed to bring about that new future. So of course community energy is tackling that problem from a different place and from a different source of political power, I guess, if you like. The energy corporates certainly control a lot of the resource and governments control a lot of the authority, but community is coming through as the ones to explore those innovations.

I think that is my opening statement. I am a big fan of local energy. I am not completely wedded to this future that we must radically transform our system—I actually think the future is a mix. But I think the minute we get to **[Skype dropout]** energy forms work a lot better, and energy efficiency and transforming loads and equity at the local level are all things that communities that are willing to work towards and participate in, and I think we should encourage that. As far as community energy as a product, it is a really important part of the mix in innovating in this part of systems change that we are in the midst of and also in participating and doing it. We need different forms, different systems, to make that happen. Thank you.

The CHAIR: Terrific. Thank you so much for your presentation. Through the course of our Inquiry we have heard from different communities that have made it clear to us that they would like to have some form of community entity and that there is a raft of barriers around that. In Victoria, as you would be very much aware, we have the VRET, the Victorian renewable energy target, and effectively corporations have bid into that to secure the opportunity to deploy large-scale commercial renewable energy. To date there has not been an opportunity for community-owned renewable energy to be deployed. What is your view? If we were to make a recommendation to set aside a target for community renewable energy—let us say 100 megawatts or some figure like that—how many projects might be delivered through that kind of approach?

Ms SMITH: Well, if you start with size and scale—and Victorian guys would know these figures better than I do—my understanding is that you are in the 1–10 megawatts space. A community could usefully use and

integrate a plant somewhere in the size of 1–10 megawatts into their community. Obviously that depends on the community's size, but if you look at where the market is going, the centralised market pretty quickly got to 100 megawatts-plus. They are not interested in what scale communities are. But your average community has a transformer at the edge of town—I am talking about regional communities here—and that transformer is anything from 500 kilowatts to 20 megawatts, typically, depending on the size. I know in terms of towns and/or groups in Victoria, off the top of my head I can think of about 10 or 15 active places who are doing stuff. And so you have already got—if they are a megawatt each—a megawatt times 20. Right? You have already got 20 megawatts. But if they are 10 megawatts each, if you go for those bigger towns like Bendigo and stuff like that, you might go bigger. It might make more sense to stick at that sort of smaller scale.

I think the other thing is if you look at a place like Yackandandah—and you will all catch me out here not knowing the details—but microgrids and stuff. If you went to Yackandandah and said, 'What would this town need? What would really help this town?', they would come back to you and say, 'Hang on, we've done a lot, but what we need is actually a small proportion of the 5 or 10 megawatts that feed our town'. So you might get a solar system being the scale that the town wants.

I am not really answering your question about would 100 megawatts be suitable. I compare it to South Australia. It is probably about a third of the size of you. We have got a 3000 megawatt peak, but we have got 1000 megawatts of rooftop solar. So we are already a third in rooftop. We have augmented that with renewable energy forms that are not behind the meter. You would think you would eventually get to another 1000 megawatts, but even starting at a tenth of that—100 to 200 per megawatts—would be a suitable target.

Ms GREEN: Heather, you mentioned Vermont, and I have been really interested in a program that they have there called Fuels For Schools. Are you aware of that? I am also the Parliamentary Secretary for Regional Victoria, so I have seen quite a few different demo projects and things. We funded Pyrenees shire to collect wheat stubble for use in energy, just because then you get rid of the burning at the end of the season and all that sort of stuff. The biofuels industry tell me that they have had trouble getting traction, I feel particularly for the west of the state that are most remote from generation in the Latrobe Valley, but what do you think about those sorts of biofuel type things and how they would be part of the mix in Victoria?

Ms SMITH: There was a great article a while back—and I am not sure whether we can find it—about how important biofuels are for local jobs. Biofuels are not racing into this space on economic competitiveness, but if you look at a bigger picture, biofuels are all about transport costs. They certainly do not seem to work on a large scale because then you have got to collect from a much wider area. If you can find some sort of optimum—'Well, we have this stuff; it's a waste problem', or, 'It is already causing issues elsewhere, so it's worth thinking about it'—there are certainly things worth investigating. My suspicion would be these energy forms are never going to play the big game against wind and solar, which is so much about 'How cheap can we go?'. But if you think about them differently, for a start, they are dispatchable. But when we start to really distinguish between variable renewables and dispatchable renewables, the dispatchable renewables are going to be much higher value products.

On Samsø island it is the commitment to be 100 per cent renewable energy that drives their biofuels, and they use it for district heating. They do not turn it back into electricity. But they have a contract with every farmer on their island to produce a certain amount of biomass, or else they have to top up the diesel tank. It is expensive for a start, so the farmers have become quite creative about the weeds and stuff they are adding to that biomass mix and how they can really keep that working as a unit. Also they optimise the efficiency at the other end. They did not build that district heating plant until they had said to every house in the town, 'You have to reduce your heating needs by 20 per cent with insulation and other investments like that, because then we can build a biomass plant that is a bit smaller'.

So if you think about these things as much more like a system—which local communities are much more able to help you do because these are local systems and all of the dots in the puzzle can be joined by people who are active in that system—then you can find ways to make this part of the mix. I mean, there is no doubt that fuel diversity is going to be one of the challenges. You cannot talk about community resilience and then put all of your eggs in the basket of variable renewable electricity. You are going to need a diverse range of fuels, and you are going to need forms of energy storage. Fuel is just energy stored. They are quite long forms of energy storage. One of our biggest challenges is the difference between summer and winter, where we will need

seasonal storage; if you have a bucket of biomass or a bucket of coal or a bucket of oil or a tank of hydrogen, you have got the same amount stored six months later. They do not degrade in the same way that the energy in a battery degrades.

Ms GREEN: Just for clarification, Heather, did you say Kangaroo Island—or which island did you say?

Ms SMITH: Samsø in Denmark, sorry.

Ms GREEN: Samsø, yes, just for Hansard. Just on your point about it being an ecosystem and it being about jobs—you know, an overall system—my understanding with the Fuels for Schools in Vermont was that the fuels that were collected were from the forest floor, and that was actually wildfire mitigation. So there was that product that was being used anyway and they just sort of sift it to get the stones out, and then they use it to heat schools and then in summer they use it to heat the outdoor swimming pools. I found that attractive in a Victorian context, particularly for towns that do not have reticulated gas—say their boilers for their health facilities, and say heating for schools and maybe aged care.

Ms SMITH: And look the story about biomass in South Australia—if you compare yourself to other parts of the world, you just do not have a lot of biomass, right? It does not rain a lot here. So I think it needs to be couched in: is this a resource? Is this a local resource? Vermont has reached 100 per cent renewables because 20 years ago they built a massive biomass plant and a massive hydro plant. So the biomass plant actually collects far more than the Fuels for Schools would use, so that would be a small proportion of—'Well, let's not turn it into electricity; let's take it straight to schools to use directly as a fuel'. But it is a great lot of thinking about [inaudible], which is really important.

Mr FOWLES: Hi, Heather. I have just got a couple of questions about the grid connectivity. To what extent have the community energy sector turned their minds to the importance of local storage, given that the grid, particularly in Victoria, is designed to operate in one direction and a lot of these community projects are at the end of the line rather than at the start of it? And also related to that: to what extent can community energy projects do you think assist with locating for grid optimisation rather than generation optimisation?

Ms SMITH: What do you mean by grid optimisation?

The CHAIR: Grid stability.

Mr FOWLES: Yes, grid stability—putting generation facilities in locations that are similar to where they are at the moment, rather than where the abundant wind or sun resource is perhaps.

Ms SMITH: Look, I am aware of community energy groups that are obviously part of the conversation about household storage. So a lot of community energy groups have supported bulk-buyers for solar, and of course the conversation about storage is the next one that people are wanting to have. Let us remember that at the moment we do not have any way or any forms for all of the solar panels on people's roofs to be optimised across a community or all of the storage inside people's houses to be optimised for a community. We have virtual power plants that are optimising for the market, not for the network. I know the Total Environment Centre is doing a study and ANU are doing a whole lot of research about community batteries—so trying to tease out that equation.

I would characterise the storage investment opportunity as not as lucrative as the solar investment opportunity. So you will be aware that the South Australian Marshall Government has put aside $100 million for household storage and they have not had the uptake they were hoping for from that scheme. I believe it is because it is a shorter term investment: you know, your battery is not expected to last much more than 10 years, which is different to a 25-year solar panel, and it does not pay itself off as well as a solar panel. So I am not convinced the economics of today really help that conversation along.

I know the networks are having a lot of conversations about how to fix their voltage problems. I mean, they basically have a system that they built for one-way electricity. In dealing with two-way electricity, in South Australia we have had a spike of phone calls to complain about voltage. It is possible that people know about that because their solar panel cuts out. The person at the end of the street furthest away from the transformer loses their solar output at that moment. The power networks are grappling with this problem. It is an inequality

problem because it is about where you are located on a street. It is a voltage problem because they have no visibility as to what the voltage is at that end of the street, but it could be outside of the code of what they are expected to supply to people. So there are a bunch of over-the-network issues that I think are going to emerge over time. I am really not sure how much you want to incorporate that in your thinking. But obviously the communities you are talking to and the reliability of their network and things like that—they are going to be prepared to wrap their heads around these issues as they start to understand them.

When you are talking about grid stability, in the sense that, you know, the Hornsdale big battery is providing FCAS into the South Australian market, is that the sort of grid stability you were thinking about as well?

Mr FOWLES: No. I was referring more to having generation assets at the wrong end and feeding back in and creating those voltage spike. I think you have addressed that. Thank you.

Ms SMITH: Look, I think one of the problems with our storage conversation—

Energy efficiency was the poor cousin to solar panels, right? Solar panels were far more sexy, easier to deal with, a single investment, energy efficient, much more personal and gave you far better payback and long-term benefits, but it is really hard to do and customise for people. Demand management and other forms of in-house storage, if we think about it like that, is far cheaper than battery storage, but we simply are not in a space to have those conversations and unlock them. So if I put it to you that thermal storage is a third of the cost of battery storage, and most houses already have a hot-water tank, which is a form of thermal storage—

Now, we can talk about this as storage or energy flexibility, but either way we can do a lot of the load shifting and things like that by talking to the households and developing a market for those smart devices. So we have been talking about those smart devices for a long time, but the markets are not there because there is no way to get it to pay for itself very easily. There are a whole lot of ways, and again by tackling this at the local level, you can help communities have the conversation and decide what is worth doing for them.

I know the Z-Net Uralla project. You are in the midst of Z-Net Hepburn Springs—there is that project—but Uralla started a little bit earlier. Their volunteer group runs energy audits for everyone in town and helps to have those conversations about energy use and greenhouse emissions, and they do it for free because we cannot make energy efficiencies pay for themselves. Governments have moved away from providing that conversation with households. I think we can really expand that, and I think the narrative is going to change. So households will get the benefits if they can work out new ways to make their house not energy efficient but energy flexible. Some of this is about changing the story that we need to have as well so that people really do understand all their options for making the system cheaper to run.

Mr HAMER: I just wanted to ask a question about the community energy sector in general. We have taken evidence and spoken to a few providers in which, I guess, the start-up cost was primarily funded through donations, and there was not a large expectation that there would be a return on capital for those donations. The community was getting together, I guess, for the greater good of the community to provide that. I am wondering if we are coming to a stage that there might be a bit more of a robust business model around a community energy plant. Have you done any research as a peak body about how that might change in the future or if there are any barriers preventing that from actually happening—from making it a more financially sustainable model?

Ms SMITH: I would challenge you to give me an example of any project developer that is small-scale that is able to genuinely guarantee—'guarantee' is the wrong word. All of our projects have the problem about project development—who the hell pays for project development? What does project development genuinely cost? I volunteered for Carina. We lent money to put solar panels on the roofs of community buildings. The amount of volunteer time we burn in ensuring that those quotes from installers are sized right and that there is good equipment and that the recipient actually knows that they are going to make money out of it—there is a huge amount of time tied up in that. And sometimes we would spend a couple of days of volunteer time with an organisation and then they would go and get a grant, so we do not even get to use our business model at all.

So that front end of project development, of bringing a project from an idea through to a fundable project—shovel-ready or whatever you want to call it—when I look at the renewables market, obviously the solar

installers have a range of ways that they finance that project development and customer acquisition work. Then you quickly jump to big project developers who are prepared to take the risk, who can sit around for two years developing a project, who have deep pockets because they have so many projects on the go. Not that I am characterising the business model correctly there. Bendigo Solar talked to us at Carina to say it would really help them to be able to borrow that money. Carina is not in a position to do risky investments at the moment because that is not what we have asked our donors for. But it definitely seems that up-front finance for that project development work that could be paid off if the project goes ahead by the project itself is a really valuable area to look at: well, what is fair to offer communities in terms of financing? Communities cannot afford to take a risk. Obviously if they ask for donations, they have spread the risk amongst all their donors, haven't they? I do not know. I would be interested to hear what you think, but that is not how this conversation works.

Mr HAMER: No, I know the up-front costs are a barrier, and that was really just, I guess, exploring some of those options, if there are other options. I take it that if there were some form of a low-interest loan scheme that some of these organisations may be able to apply for, then it might be able to expand that opportunity.

Ms SMITH: I think you need to look at both things. You need to look at, yes, the availability of that finance, but you also need to look at the risk that that finance is taking. Maybe the risk is lower because these community projects have so much community support to get them over the line. Of course, there is also the element of the actual project funding itself, and I do not think the sector needs to settle on that. I think it is great that the sector has everything from donation-based systems that are like a grant to donations which are a loan with zero-interest finance through to 'You could go to another financier, but you can get it from us and we'll own the system', or 'We'll take some of the risks, but you give us an 8 per cent return'. So the sector encompasses that range of finance under the mantra of, 'If we spread the financing across lots of people'. This is community financing, and this is one of the fundamental democratic changes in our energy system.

The CHAIR: Thank you for your presentation. It was very thoughtful, and we certainly very much appreciate it.

Ms GREEN: And informative, yes. Thanks.

Ms SMITH: Thanks very much for having me.

Witness withdrew.