T R A N S C R I P T

LEGISLATIVE ASSEMBLY ENVIRONMENT AND PLANNING COMMITTEE

Inquiry into Renewable and Affordable Energy for Apartments

Melbourne – Thursday 30 April 2026

MEMBERS

Juliana Addison – Chair
Martin Cameron – Deputy Chair
Jordan Crugnale
Daniela De Martino
Wayne Farnham
Martha Haylett
David Hodgett

WITNESS

Glen Morris, General Manager, Smart Energy Lab.

The CHAIR: Welcome back to the broadcast. Today we are doing the public hearing for the Legislative Assembly Environment and Planning Committee's Inquiry into Renewable and Affordable Energy for Apartments. All mobile telephones should now be turned to silent. I am very pleased to welcome Glen Morris from Smart Energy Lab.

All evidence given today is recorded by Hansard and broadcast live on the Parliament's website. While all evidence taken by the committee is protected by parliamentary privilege, comments repeated outside this hearing, including on social media, may not be protected by this privilege.

You will be provided with a proof version of the transcript to check. Verified transcripts and other documents provided to the committee during the hearing will be published on the committee's website.

A very warm welcome to Jordan Crugnale, who is Zooming in from Bass. Glen, I invite you to make a 5-minute opening statement, and this will be followed by questions from members.

Glen MORRIS: Thank you, Madam Chair. I am glad to be here with your fellow committee members. This is the first time I have done this, so it is kind of exciting. It feels a bit like being in court but hopefully not as severe.

The CHAIR: Can I say this is the nicest committee you will ever appear before. They are very outstanding people, every single one of them.

Wayne FARNHAM: And you get parliamentary privilege.

Glen MORRIS: This is kind of fact-finding too, because you are going to ask me lots of questions. Maybe I will set the scene a little bit with what I do and who I am. I am the Smart Energy Council's representative on Standards Australia. We call ourselves the SEC, but it is confusing in this forum. It is one of the main bodies that represents the renewable energy industry in Australia. I am their technical person. I help write the standards for solar and batteries, so that is my special expertise. I run a test facility called the Smart Energy Lab, where I test a lot of products, some of them before they come to the market, so I know the tech side of things. I am also a big advocate for supporting community initiatives. I speak at community groups a lot about solar and batteries and EVs and all that sort of stuff.

I am really enthusiastic about the possibility of better options for apartments for renewable energy. One of the areas that I put in my submission really was about the ability for apartment owners to not have to engage through the body corporate or whatever it is called – an OC, I think – a licensed electrician to be able to access renewable energy. These systems are already available in many other countries, sometimes called things like balcony power or balcony solar. For example, in Germany there are something like 800,000 apartments that already allow this. The reason why they allow it is because they can make it safe. In Germany the standard, the VDE, has requirements for that sort of equipment. I have some of it in my lab, which I have tested, and I can confirm the safety features of this. What this means is that you could go to Bunnings on a weekend and buy a couple of solar panels and maybe a battery as well – that is another option – plug them in when you get home, attach them safely to your balcony or some area where the sun might shine and supply some of the power to your home as renewable energy. That would not involve a large initial assessment by a company, by an electrician, to install it; you would just go out there, purchase a product and plug it in.

What are the impediments? The impediments are partly to do with Standards Australia, which ironically, I am on the committee of. We have never considered such products in the writing of our standards. At the moment it is not possible – you could say it is not even legal – to plug in an inverter that can export power from a solar panel back to your home without getting a licensed electrician to install it and having it inspected by a licensed electrical inspector. That is because it is very important that those things are safe, so all those installed solar systems need very high standards for safety, whereas for something like an appliance – you go and buy a coffee maker or whatever – it has already met certain safety standards and you are allowed to plug it in. What I am saying is that there are products like this which we are not allowed to plug in.

From a technical point of view there are some concerns because Australia and New Zealand have slightly unique electrical safety standards. They are somewhat different than Germany, so there have been a few concerns raised. For instance, will your safety switch still work when you are sending power the wrong way up a circuit? Some of these need testing, and in fact I would say that this is something we would want to make as part of the test standard for this equipment. If it is going to be sold in Australia, it has to be safe to our electrical standards. So that is really a technical solution: to provide a test standard for those sorts of products to make it possible to have plug-in solar and plug-in battery. That is my pitch.

The CHAIR: Excellent. How interesting. Who would like to start things off?

Martin CAMERON: I can go again. Thanks, Glen, for coming in. It is interesting talking about the standards, being able to plug it in. What stops Wayne from Warragul going to Bunnings and getting his solar panel to stick on his balcony or veranda five, 10 storeys up and thinking to himself, 'Well, the sun's shining better a metre around from my balcony, so I'm over the edge of the balcony, and I'm going to install it on the side the building'? So we are creating a space where it does become an issue for that individual that can fall off, and through no fault of the people that are manufacturing it or complying to be able to plug it into the energy source – just the sheer stupidity of a person putting it in the wrong spot. How do we combat that area, whether it is plugging into the wrong socket or using the extension lead or placing it in danger for themselves?

Glen MORRIS: Okay. Yes, those are very valid points. The fact that you are going to hang something off perhaps a multistorey building is a considerable safety consideration. We allow people to put their champagne glasses on the edge of their balconies, but something as heavy as a solar panel is probably a bit different. So how do they address that in Europe? They have kits which actually are designed to attach safely to balconies. Those kits are certified for that use, so you have got a mounting system that meets the requirement. You would also, obviously, need permission of the building, the OC for the building, and that is one of the obstructions too: how do you get through it? I think in the previous session I heard someone talking about those sorts of issues. So yes, that is another one. But in terms of actually plugging into the right socket, it actually does not matter. Any socket outlet in Australia or New Zealand even is already rated for 10 amps. The maximum output of these systems is 800 watts – that is the German standard, and that is internationally being applied. I keep saying Germany, but there are many, many other countries that approve this. The USA is doing a lot too. The maximum output is a fraction of what that circuit is rated for, so it is not going to overload any socket you can plug into.

Martin CAMERON: Thanks.

The CHAIR: I know that in your submission you talked about solar for social housing and benefiting vulnerable Victorians. This is something that I am really interested in. What really are the benefits for social housing apartments to support vulnerable Victorians?

Glen MORRIS: I guess, even broader, people who rent, who often fall into that category. All of the federal rebates for solar and now batteries have all been associated with owner-occupiers, so if you do not own the property, you cannot access those rebates. So there is a disparity. About 30 per cent of Australians rent. I think about 12 per cent of Victorians live in apartments, and they have not been able to access those incentives. Those incentives are amongst the strongest in the world. I mean, currently we are the biggest battery market in the world, just little old Australia, because of our government scheme for the cheaper home batteries program. So making available to vulnerable communities a cheaper way of saving the cost of electricity is a big plus.

The CHAIR: Any particular focus on community or social housing – I know we have got further presenters later on – and the real social benefits that this might provide? Any thoughts on that, or are you more focused on the testing and technology?

Glen MORRIS: Yes, probably. I am not sure if anyone has already covered this, but you have probably heard of apartment-sharing systems. We adopted that in the latest edition of our standard to permit that. Previously it was not permitted. From 2024 onwards you could have inverter power-sharing devices – great idea. An apartment can have one system on the roof, and everyone can benefit from that. So it is a sharing system, and that would apply to social housing too. Roofs are your asset. At the moment we have got about 33 per cent of Australians' freestanding homes with solar on them and probably hardly any apartment buildings, so there is a great asset there that is not being taken up.

The CHAIR: Terrific.

Martha HAYLETT: Glen, you have touched on Germany a little bit, but I am just wondering who you think is doing it best interstate potentially in Australia but also overseas and what learnings we can take from them. Is it mostly Germany? Is it others that are the gold standard? We obviously do not want to completely reinvent the wheel with this, but who is the best, and what can we learn from them?

Glen MORRIS: If you are talking about plug-in solar, nowhere in Australia is doing it because of our standards, so we cannot look to ourselves at the moment. But Germany probably is the gold standard because they did it early. They adopted, through their VDE standard, a safe test requirement for those systems, so anything sold into that market has to meet that. So yes, they are somewhat the gold standard. There are international groups now set up to promote plug-in solar, plug-in batteries. Because they see that Germany has proved it, other countries want to follow. It is a very hot topic in the US at the moment too.

Martha HAYLETT: That testing that Germany did, because I imagine that is a bit of a barrier here, that we have not done all of that testing to make sure that the regulations around it are safe – was that straightforward? Was that a complex way to go about it? Are there any learnings from the testing side of it?

Glen MORRIS: I cannot speak for German testing – I am not across their systems – but I can for Australia. Any inverter that you connect in Australia has to meet a test standard, 4777.2. To modify that standard to have a little bit extra added to it for, say, plug-in solar is not a big deal. The testing for that is something that could be done within our state, for instance. Energy Safe Victoria do assessments of the safety of equipment, but that would be overseen by a NATA-certified test lab, for instance. So yes, we could do it here. I mean, I have done it in my lab. It is pretty simple stuff.

Martha HAYLETT: Thank you.

Wayne FARNHAM: Thanks for coming in, Glen. I am going to go to the balcony solar panels. We are touching on the Australian standards, and you have just leaned into it now. What is the biggest difference between the German model, what they put on their balconies and plug in – how come that cannot be adopted here? And really what is the technical change that needs to be made to the Australian standards? If it works in Germany, how come we cannot incorporate it here? I know it is an Australian standards issue, but what is the real problem with it? It cannot be that unsafe if 800,000 Germans are using it across Germany, so what is the reason?

Glen MORRIS: I will have to get a little bit technical here.

Wayne FARNHAM: That is all right. I used to be a builder. I will follow you.

Glen MORRIS: It is about the electrical systems. The electrical systems in Germany are different from Australia. We have what is known as a TN-C-S system, or MEN, as it is often referred to, and our safety switches, which protect human life, are designed for that system. Now, there is some concern that our safety switches could be – the terminology is – blinded by reverse power, with a small DC component. Inverters do generate a small DC component, and that is allowed, so certainly an installed system with that has no trouble because it is not fed from a residual current device, an RCD; it has got its own dedicated circuit. But when you plug something into an existing circuit which has an RCD, if it were to be blinded by the fact that you are exporting energy on that circuit, then it becomes unsafe. The problem is partly historical too, because Australia allowed a type AC which is not alternating currents. The technical term is RCDs, which are not tolerant of DC. So any DC just does not function correctly, whereas about four years ago we mandated a change to type A, which does tolerate a small amount of DC, so we are moving in the right direction. The German system is not affected by that because of their different safety switches and also their electrical design. So we still have a potential problem with older safety switches, but that is something that should be tested. I actually have not had a chance to test that to see if it is really an issue or not, but that is something that we should address before promoting it fully.

Wayne FARNHAM: Would it be as simple as going forward with, say, new construction? It is going to be very hard, obviously, on retro construction, but going forward on new construction, would it be as easy as putting an external power point on your balcony that is a dedicated line so that you could get the solar panel?

My dumb mate Marty from Morwell, who is just a plumber – you have got to keep it simple for people, so that he can just get it, plug it in and not blow his house up.

Glen MORRIS: Yes, I think that is a good move. Certainly anything installed now will have the newer type A RCDs, which are tolerant of DC. So that is definitely a plus, but it would not be a dedicated circuit because it could be used for anything if it is a socket outlet.

Wayne FARNHAM: What if we just had a dedicated circuit for plug-in solar?

Glen MORRIS: You would need a special plug so nothing else could be plugged in, which is quite achievable – something that stops you plugging in your heater or your air fryer.

Wayne FARNHAM: Because I just do not want old mate to electrocute himself.

Glen MORRIS: Yes, yes.

Martin CAMERON: Thanks, mate.

The CHAIR: As Chair, I am trying to think of something constructive to say, but I am going to leave it right there. Daniela.

Daniela DE MARTINO: Just coming back to the fact you were saying then, that you could do the testing of this, what is holding us back from this being tested? Is it just that there has been a lack of a call for it up until now and it is just now that this is generating interest?

Glen MORRIS: Yes. Interestingly, I was actually contacted by the federal minister for energy's office about this. They saw it. I presume it is kind of partly political that 30 per cent of Australians are renters and have not been able to access government rebates. They were asking exactly that question: 'What is the obstruction?' I said, 'Well, Australian standards, that's the problem.' They take quite a long time to be updated. To rewrite is about every five years, amendments maybe one to two years. This would be an amendment possibly. It can take quite a while for those changes to occur. Also, state safety regulators need to be on board, because they look at Australian standards and go, 'Yeah, yeah, no, no'. They will choose what bits are allowed. If Energy Safe Victoria was on board with it as well, that would be a really big push forward. I think the federal government, state government and energy safety regulators – getting those on board would really, really help.

Daniela DE MARTINO: Can I drill into that a bit further as well? If the Australian safety standard says yes, states can go, 'Not too keen.' But can states go in the other direction, or does it have to be permitted first as an Australian standard before the states can then determine which path they will take? Can we go it alone? That is my question at the end of the day.

Glen MORRIS: I think that is above my pay grade. I am just thinking on my feet here. In fact there is even another level, which is the networks themselves. The networks, because you are plugging into their network, have to be happy with it as well.

Daniela DE MARTINO: Yes, because they need to ensure that it is safe and there are no live lines. When they think they have terminated a line to isolate it, they need to make sure that the linesperson working on it is not going to get electrocuted.

Glen MORRIS: Correct.

Daniela DE MARTINO: Okay. Thank you.

David HODGETT: Again, I just agree with the conversation. Many people I speak to would be quite excited about some of the things that we have learned here today. When you hear of phone battery packs catching on fire or bicycles catching on fire, people will adopt a really cautious approach, so I think those standards of things are important to give the consumer confidence. I am interested in your views today. Thanks for that.

Glen MORRIS: In terms of safety, particularly batteries, solar panels are less of a risk in a way, but yes, it is a major concern. Australia has some of the toughest regulations around the safety of battery systems. The

media has been giving us a bit of a hard time lately because of a Clean Energy Regulator report. The headline was 60 per cent or 69 per cent of systems are substandard. It turned out to be the labelling. The labelling was mostly substandard. It was not about the product. If you look at the stats in terms of the safety of battery systems, you would be way more concerned about your downlights and your electric appliances like heaters and stuff in your home than you would be about your battery.

Wayne FARNHAM: I will go, Chair, if I can.

The CHAIR: Please do.

Wayne FARNHAM: With everything that is on the market at the moment around renewables or energy-saving products or whatever, what is the one thing that excites you the most? You are the expert in the field. You do the research. What is the one thing that you think could make a significant change at a minimal cost?

Glen MORRIS: I think from a customer's point of view, energy autonomy – being in control of the cost of energy and the availability of that. I am coming back to the battery thing again. It has meant that now we have got nearly 300,000 systems installed in the last six months under the cheaper home batteries program. Almost all of those provide backup. When there is a storm and there is power lost in the street, those customers are not immediately affected – possibly not at all. Being more in control of autonomy is something that excites me. Actually, I have lived off-grid almost all my adult life, so I am kind of used to being autonomous. A big passion of mine is to give the power back to the end user, literally.

Daniela DE MARTINO: That is a very popular thing out where I am. We have many storms in the Dandenong Ranges, so power outages are a bit of a common feature.

The CHAIR: Jordan, do you have a question? Because if not, I have got one, Jordan. I did not want to put you on the spot.

Jordan CRUGNALE: I was going to ask about embedded networks, because you acknowledge – and thank you for coming in today – that legislative reform is required to enhance consumer protections for households in legacy-embedded networks and to increase the sustainability of these networks. I am just keen to know how the Victorian government can encourage embedded electrical networks to transition to renewable energy generation and storage.

Glen MORRIS: Save you money.

Jordan CRUGNALE: Right.

Glen MORRIS: That is what it is all about. Maybe just a little example. I did a quote for a retirement village. I gave them the costing of it and the payback period. When I presented it to their financial manager, he looked really grumpy and really cross, and I went, 'What's the problem?' He said, 'Why didn't we do this years ago?' That was the concern.

Jordan CRUGNALE: Absolutely. Thank you.

Daniela DE MARTINO: I am very excited that you are here, because batteries are fascinating to me. Often you hear people talk about their concerns with lithium ion fires et cetera, but I know that there are other types of batteries out there – lithium iron phosphate et cetera. What are you seeing that excites you in new generations of battery storage? Obviously the iron phosphate is heavier. It is not portable, but it has got better storage, I understand. What are you seeing emerging that you think is going to maybe give people greater comfort potentially? Because I know there is a concern for people I speak to about potential fires with lithium ion. Over to you, Glen.

Glen MORRIS: It is a very exciting time in terms of the technology of energy storage. There are so many options at the moment starting to emerge. We are a little bit focused on lithium ion technology at the moment. You were referring to the so-called safer lithium, which is lithium ferro phosphate. But already some of the biggest manufacturers in China, like CATL, are looking at sodium ion. For a start, sodium is the fifth most abundant element on the planet – basically sea water, full of it. It is safer, it is lower cost and it is abundant – we will not have sodium wars.

Daniela DE MARTINO: Yes.

Glen MORRIS: And then there are solid state batteries – a lot of experimentation happening around that. It is a very exciting time for energy storage options. I think lithium will have its day. I think probably in 5 to 10 years we will move on.

Daniela DE MARTINO: Yes. Thank you.

The CHAIR: Amazing.

Jordan CRUGNALE: Chair, I have got one more question.

The CHAIR: Please, Jordan.

Jordan CRUGNALE: Great. It is very much off topic because there are no apartment buildings at this facility. I represent an area that has the desalination plant in Wonthaggi. Obviously there is a little bit of salt that gets extracted in that process. Moving slightly off topic here, how can we use that salt or sodium ion as energy storage? Is that something that we should be considering as well?

Glen MORRIS: Actually there are a couple of pathways. One is it can be used in a sodium ion battery. It can also be used in a molten salt battery. Molten salt is actually a very cost-effective way of energy storage – there have been trials at ANU with a large molten salt battery there – because salt, when you melt it at many hundreds of degrees, and I cannot remember what it is, can store an enormous amount of energy in the phase change when it goes from a liquid to a solid. You have two massive tanks, one that is liquid, one that is solid, and between them there is a turbine that generates electricity. So use your salt wisely.

Jordan CRUGNALE: All right. Could we power the whole town of Wonthaggi and more?

Glen MORRIS: You could.

The CHAIR: And that is why you are a magnificent local member, Jordan Crugnale.

Glen, thank you for coming in and sharing your expertise with us. If there is anything else, if you walk out and go, 'Oh, I should have talked about this,' we are happy to hear from you. Just get in contact with the secretariat. We will pause the broadcast.

Witness withdrew.