

TRANSCRIPT

LEGISLATIVE ASSEMBLY ENVIRONMENT AND PLANNING COMMITTEE

Inquiry into Renewable and Affordable Energy for Apartments

Melbourne – Tuesday 24 March 2026

MEMBERS

Juliana Addison – Chair

Martin Cameron – Deputy Chair

Jordan Crugnale

Daniela De Martino

Wayne Farnham

Martha Haylett

David Hodgett

WITNESSES

Justin McFarlane, Executive Director, ReThink Sustainability;

Dr Andrea La Nauze, Associate Professor, Economics, Deakin University;

Neil McFarlane, Head, Business Development and Government, Smartizer; and

Serjana Sadeq, Chief Strategy Officer, ClearVue Technologies.

The CHAIR: Welcome to this panel 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.

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.

Witnesses 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.

We will run this session in a question-and-answer format. Committee members will ask some questions. If you wish to answer a question, please raise your hand. To make it easier for our Hansard reporters – and I do not think we have been doing this very well – please state your name before you start speaking. There may not be an opportunity for everyone to answer every question. If there are any important points you do not have the opportunity to make during the session, you are welcome to provide additional information in writing.

I invite each of you to make a 3-minute opening statement, and I would really encourage you to keep to 3 minutes so we can get to questions. This will be followed by questions from committee members. We will begin with Justin from ReThink Sustainability, who has a presentation. Thank you, Justin.

Visual presentation.

Justin McFARLANE: Hi. I am Justin McFarlane from ReThink Sustainability. We are here to represent our virtual energy network capability or concept. It is an ability where we can take any excess energy that is available in real time from solar systems, whether they be large commercial-scale systems or residential households that have excess solar at different times, and take that energy and share it to other participants within the grid or within the NEM. All we need for this to work is a smart meter at each location – at the generating site and at the offtaking site – completely irrespective of the scale.

I will run through very quickly and talk about a few different applications. We have five retailers in Australia that are operational today. We have been doing this for about six years in Australia, and it is just now starting to get traction and take off. It is a software-based capability that allows us to match the energy that is being exported with offtakers. We do not need to do it in real time or use blockchain. That just costs more money and uses more energy. Bills are issued about seven days after the end of the period in which the energy has been consumed, so that gives us usually a 48-hour window to make our adjustments based on excess energy that has been available and sharing it to others. There are a number of different mechanisms. Here in Australia the two most common are the matched energy service agreements, which are from large-scale solar, wind and battery capabilities. They can be matched to any other NMI within the NEM, so that energy can be matched based on however much is consumed, and that would typically be at a rate that is less than a standard retail rate. The community energy sharing capability is a peer-to-peer trading capability where people can share excess energy that they are generating or dispatchable stored energy they have with anybody else in the NEM.

I will run through and talk about my own home in a moment. I am an apartment owner here in Melbourne, and I use as much as 80% of the energy in my household through the virtual energy network at rates that are less than what my retail rates would be. We are doing some very interesting things in Italy with an adopt-a-panel program, where you can lease or own a panel in a large-scale solar farm, and you can have that, through this software, enabled to be utilised at your home. In Singapore we are doing some interesting things similarly with large-scale business solar systems sharing energy to residential apartment owners.

This is a very quick snapshot of my home apartment in Southbank. What we are looking at here is a seven-day period in a week from the sixth to the 11th of this month, March. The dark part or the bright yellow component in this graph is the energy that I have used each day from solar that has been provided from as many as 10 other sites around Australia or around Victoria. You cannot really see them on this screen, but the lesser or lightly shaded areas are energy that has been supplied when that solar energy is not available to me through my retail contract, through the retailer at their standard rates. In this particular week in my home 57% of the energy that I utilised came through the virtual energy network.

The Italian example of the adopt-a-panel program – we have got tens of thousands of apartment users using this capability in Italy. There is a 30-megawatt solar farm in Sardinia that is sending energy to apartment dwellers and using this software to account for and provide the pricing through a matching program. The first graph here is showing if someone owned or was leasing a 1-kilowatt solar panel in the 30-megawatt farm, the green part on that left-hand graph at the bottom is showing the solar profile on that particular day of the energy that that panel at that capacity had generated. The yellow part above is energy that that property has used during that day. The graph on the right is showing the matching of the solar energy against the energy that is being utilised at the property, and in the case of Italy, that energy is being provided free. If you adopt a panel or own a panel, you get that energy into your home free.

Back to New South Wales. This is an example of two large-scale solar farms sharing energy to office complexes. There is no reason these cannot be apartment buildings, whether they are embedded networks with everyone in the apartment taking advantage of that, or individual apartment owners with their own NMI or their own bill. What we are looking at in the graph on the left is a solar farm in Leeton, and it is just showing the energy that is going to a Sydney office building highlighted in green, the apportionment of the generation that has been deemed to be net at the office building. The office building is the graph on the right, and it is showing in dark yellow the energy that is being set off from that Leeton solar farm. So for that particular day, 69% of the energy that went into that office building was through the virtual energy network, again, at rates that are less than what the normal retail rate would be. That is a very quick introduction to the virtual energy network, and there are some talking points that might come up in questions later if they are helpful.

The CHAIR: Excellent. Who would like to go next?

Neil McFARLANE: I am happy to. So I am Neil McFarlane – no relation to Justin, just to let you know. Thank you for giving us the opportunity to speak today. I oversee business development in government for the organisation. Smartizer is an Australian designed, developed and owned technology that uses smart, modular home energy efficiency systems, that uses AI to lower energy costs for the consumer. We are a consumercentric company.

We are here today because the energy transition is real. It is currently operated as a two-tiered system: home owners versus renters and apartment owners. Home owners have enjoyed generous subsidies/power bills; a massive segment has missed out. Obviously energy poverty is real. Recent rental bond data from Victoria indicates there are now 736,000 rental homes. For these hundreds of thousands of households, many of them in apartments, the clean energy transition has simply passed them by. They are left exposed to peak retail prices, creating a severe energy equity gap. Energy inequity is real, so how do we fix this from a commercial and a practical standpoint? While innovations in energy-sharing software and advanced building materials are vital for the future, we cannot ask renters to wait for years for complex strata agreements or limit our focus to new luxury developments. We need a solution for the existing legacy housing stock today. The immediate answer is portable plug-and-play innovation, which Smartizer has designed. In that system it can work for renters today. It can work for apartment owners today, because they do not require permanent building modifications. It simply plugs into the three-pin plug in the home – it is that simple. In Germany, as was mentioned by our industry colleagues before, the balcony solar power model is already mainstream. There are now over a million homes. There were 400,000 balcony solar installs done last year. We have actually been contacted by Germany Trade & Invest to take our product to Germany, and we are currently doing that. So this is the aptitude of our product and what we can do.

Victoria has the commercial and regulatory opportunity to lead Australia by adopting this model. You have the opportunity to ease the energy poverty and inequity burden for renters and apartment owners today. To unlock this market, Smartizer is really calling for two core regulatory shifts. Number one is regulatory reform. We need a clear regulatory framework for a safe, low-power plug-in system to bypass strata roadblocks. Strata is

one of the biggest roadblocks to getting these batteries to market. Secondly, portable rebates. Subsidies must evolve to follow the person, not the property, empowering renters to own their energy assets. Because obviously, as one renter moves out, you may have a young renter that is moving in, and they would be stuck without a rebate because it is attached to the property, not the individual.

Finally, we must address sovereign resilience. As we deploy millions of internet-connected batteries, relying on imported hardware with closed firmware presents a systemic cybersecurity risk. Smartizer will actually be manufacturing our inverters here onshore in Australia, which will ensure our batteries will be cyber secure and cannot be isolated offshore – a highly important point. We must treat household energy as critical infrastructure and back Australian-designed technology. What we also require the Victorian government to do is to work closely with its federal colleagues to get regulation changed, sooner rather than later. Innovation is key to solving this problem. Smartizer is ready to provide these energy solutions required to close the energy equity gap and secure our grid. Thank you.

The CHAIR: Thank you very much, Neil. Andrea.

Andrea LA NAUZE: Thank you very much for the opportunity to speak today. I am an energy and environmental economist. I am focused on understanding consumers, how they behave and the implications of their behaviour for broader markets, including the energy market, and the climate. I am here, though, on behalf of our consortium. I am working on a project with Justin McFarlane of ReThink Sustainability; WinZero, who are a community group in New South Wales; and Quantum Energy, who are an energy consulting firm. Together we have been working on a trial of the virtual energy network within a community. WinZero, a community group in New South Wales, started a small community-based trial of the virtual energy network from homes in their region in 2024, and together with funding from Energy Consumers Australia, we have scaled that up to about 300 sites across the national electricity market. About 40% of the sites participating in our trial do not have rooftop solar and about 10% of the sites are renters, and that includes people who are living in apartments. We do not have any people in social housing, but there is no reason why we could not feasibly have them in our trial. One key advantage, as Justin alluded to, is that the virtual energy network enables people to access output from rooftop or grid-scale solar without any additional technical requirements whatsoever. All that is required is a smart meter, and that basically means that every Victorian household or small business should be able to participate.

That being said, the retail market is relatively complex, and there are some behavioural-type barriers that may actually prevent broader uptake of a solution like the virtual energy network. Our friends in WinZero have been piloting some train-the-trainer-style interventions to try and assist people to reduce the complexity of participating in the energy transition.

I think you have heard today about embedded networks and strata. There are potential barriers for people participating via embedded networks and strata, none of which cannot be overcome, but it may be slightly more challenging for them to participate. There are also some other potential barriers to virtual energy network type solutions, including the fact that people who are participating need to belong to the same retailer at the moment, and that is a result of the national electricity market rules. There are also some more economic barriers in that currently, with the way that it is priced, the network does not fully reflect the value of consuming solar output close to where it is produced, and if that was addressed that is something that could really catalyse solutions like the virtual energy network, particularly in things like apartment buildings, combined potentially with other technologies.

Unfortunately, the full results of our study are not available at the moment. We will be releasing them in the middle of the year. We are going to be measuring the benefits of the virtual energy network for people who do not have rooftop solar, for people who do and also for the grid, importantly. That will only be a very short-term picture of what something like a virtual energy network can do. We will not be able to look at, for example, the longer term implications in terms of the investment opportunities that it might open up for people who have either financial or physical constraints to their adoption of renewable energy. The virtual energy network could potentially relieve some of those constraints in the longer term.

The CHAIR: Thank you. Serjana, you are not going to miss out. If we need to, we will go over, because we are desperate to hear from you and are so pleased that you have made time to be here. Over to you.

Serjana SADEQ: Thank you. Chair, members of the committee, thank you very much for this opportunity to address you all today. My name is Serjana Sadeq. I am the Chief Strategy Officer from ClearVue Technologies. We are an Australian advanced building materials company based in Perth, WA. What I would really like to convey today, in the few minutes I have available, is that the rooftop bottleneck, with limited space, creates an opportunity to activate the latent generation capacity of our facades, the vertical facades of apartment buildings. We have proven technology that exists to assist in the decarbonisation of the built environment in high-density settings. Victoria has bold renewable energy targets, as we all know, yet the current frameworks lock out approximately 300,000 Victorians living in apartment-based households. Further to that, 3% of apartment buildings have any form of solar installed nationally, compared to 40% of detached homes – back to that inequity that has been mentioned a few times earlier today. High-rise buildings have significantly more facade surface area than rooftop, yet every current solar program, building standard and metering framework treats the rooftop as the only generating surface.

We are not just a solar company; we manufacture solar glazing products that are facade systems, skylights and cladding, amongst others. These are, first and foremost, high-performance construction materials for new and retrofit applications. Our products are highly thermally insulating, fire-rated and can be manufactured to match any design intent, with the added and incredibly important benefit of generating renewable electricity onsite, in the context of today's discussion. We have spent the last few years solving technical, safety and manufacturing barriers that have historically prevented building-integrated photovoltaics from being broadly deployed in commercial deployment. Our products are fully certified to Australian and international standards for electrical safety, fire performance, structural integrity and IGU reliability.

We have actually modelled in our submission an average Melbourne apartment, showing how an integrated solar facade can easily supply 100% of the household's energy demand, with an incremental payback period below four years. These results are supported by the Hong Kong government's Electrical and Mechanical Services Department's trial, which ended in 2025. They trialled our solar vacuum insulated glass, confirming a 2.6-year payback with local incentives in place and, most notably, a 7.74 degrees Celsius reduction in the temperature of the glass, which significantly reduces the building's energy requirements for cooling.

We are committed to keeping our innovation pipeline active here in Australia, with some world-first photovoltaic products coming to market very soon. We are actively engaged with the innovation ecosystem. We are delivering live ARC-funded projects with some of our university collaborators; a couple of them were in the previous session. ClearVue's recommendations are basically around enabling reforms that are needed to unlock this resource – we want to decarbonise the built environment, which contributes up to 40% of global emissions, as you all know – firstly, proper crediting in the energy performance frameworks for the significant dual benefits of thermal efficiency, as well as the solar generation; second, a legislative framework for fair energy sharing within apartment buildings and simplified strata governance – many of our learned colleagues, Dr Roberts and Professor Gorji, mentioned this earlier, and others – third, a streamlined product certification and a deemed-to-satisfy provision; fourth, equitable access to market programs – currently BIPV is not recognised in a lot of the incentives that are currently available – and fifth, of course, BIPV-ready design mandates that would go hand in hand. As an Australian company, we are ready to collaborate with government, industry and communities to deliver equitable renewable energy and help with the outcomes as well. Thank you very much.

The CHAIR: Thank you. Can I just say that when I watch *Grand Designs* and they have these built-in products, I go, 'I want that' – it is amazing. Thank you very much for giving us some Australian content and the WA connection. We are going to go for 6 minutes of questions, so we are going to ask some questions up to our lunchbreak. If you could try and give short, sharp answers, that would be great. Who would like to go first?

Wayne FARNHAM: I will shoot.

The CHAIR: Thanks, Wayne.

Wayne FARNHAM: Serjana, you were last in and you are the first question up. On the BIPV, how do your material costs compare with traditional construction and also offset against rooftop solar? How do those compare on cost?

Serjana SADEQ: It is not exactly a like-for-like comparison. We like to focus on the incremental payback of our products. The additional cost against standard glazing materials that would already be required on the project, we feel that it is broadly comparable, with a small –

Wayne FARNHAM: If I have got a double-glazed sliding window and you can put a product in, you are saying the cost is like for like.

Serjana SADEQ: Not exactly like for like, but relatively comparable. Depending on the project, we design around the requirements of each project. It is quite difficult to bed down a single number, because some of the projects require specific thicknesses and configurations of cells et cetera, so it does differ from project to project. But we have demonstrated in our models payback periods on that incremental cost of less than four years in most jurisdictions. Where incentives are present, like in Hong Kong, it is 2.6 years, and that was validated by the Hong Kong government, so our calculations are not our own; they are actually externally validated as well.

Wayne FARNHAM: Thank you.

Jordan CRUGNALE: How could that be supported by our Solar for Apartments program?

Serjana SADEQ: At the moment – I assume the question is for me – we find that BIPV is not included in any incentive schemes at all. Some form of recognition and inclusion of this as being a viable option would be great.

The CHAIR: Excellent. Other questions?

Martin CAMERON: Justin, a question for you: with the virtual energy network – and obviously you are participating in it at the moment – is it to a point or can it be to a point into the future where if you could have rooftop solar on your apartment or dwelling where you live, it would be superseded by the virtual energy network? Because I know if you have got the panels on your roof, you have got to dispose of them within 12 to 15 years and add new ones back on. Taking all that into account, is this a way forward for people to be able to afford renewable energy?

Justin McFARLANE: Certainly for renters. A lot of apartments do not have a very large roof and there is a lot of plant often on apartment towers et cetera. So, yes, solar energy can be made available from your mum and dad, your brother or your sister, your next-door neighbour, work colleagues or large-scale commercial infrastructure, and you can take that ability with you, so if you move property or move house, you can still access that capability anywhere if you have a smart meter. I do not know if it supersedes it. Again, I do not think the virtual energy network is a silver bullet. It is a combination of all of these things to get the best decarbonisation and best cost outcomes for people using these systems.

Martin CAMERON: So it could be that dear old Dad living in country Victoria with the solar panels on his roof could be supplying energy for his kids or relatives in the city or anywhere around Victoria?

Justin McFARLANE: Correct. From my home I am sharing energy with my brother-in-law in Wodonga, close to New South Wales; I am sharing energy with people in the Deakin study in New South Wales, up in the Southern Highlands; I am sharing energy with someone in South Australia and people in Brisbane, so you can share the energy anywhere. It is all a virtual netting of the energy profile and a bill settlement based on whoever you have decided to share the energy value with – with who you have bought it from or who you are selling it to. That is up to you, not the retailer or the network, to determine that arbitrageable value on your raw energy rate. It is up to our participants to choose how they wish to share that value.

Martin CAMERON: Thank you.

The CHAIR: That is so interesting.

Martin CAMERON: Absolutely. Just a quick follow-up on that: do you feel that you may get major pushback from energy retailers into the future?

Justin McFARLANE: We kept very quiet coming into the market while we were getting started. We have now got over 70,000 users, so it is a little bit harder to be the little bug getting squashed by the gorilla in the

jungle now. But look, the larger retailers are starting to see value in this capability. The consumers are seeking this type of capability and capacity. And it is an evolution; the energy markets have evolved over a very long time. This is just another evolution in that process and one of the smarter ways of doing things that is coming through. I hope there will be a lot more intelligent, smarter ways for people to be able to share energy and get better financial outcomes and carbon reduction.

Martin CAMERON: Thank you.

The CHAIR: Thank you. Just one for you, Neil, before we wrap up. Other stakeholders suggest legally enshrining the rights of renters and social housing tenants to plug in portable solar or batteries. What benefits and challenges do you foresee arising from this? I know we have talked about this, but are there any real takeaways?

Neil McFARLANE: One of the biggest benefits for social housing et cetera is the unit is portable, so they can just take it with them. I know in New South Wales we have Homes NSW. We are currently talking to them about potentially doing larger-scale in that respect. But they are portable; that is one of the biggest benefits. You will see savings immediately. The technology is LFP, by the way, as well. It is not lithium ion, which is the one that is continually in the news catching fire. It is lithium iron phosphate, which is a brand new – well, it is not a brand new technology, but it is a very safe technology. It could operate at up to 200 degrees, so it is very safe in places like bushfire-prone areas et cetera, which is very important for places like Victoria, but also cyclone areas. In north Queensland and northern WA et cetera, that is highly important.

The other thing is some of the benefits include that solar can be plugged in. The platform is agnostic, so you can plug in anything from a hot water system to air conditioning units, because all the communication is actually done via powerlines. It does not need to be connected to wi-fi, because wi-fi will almost immediately go down in these sort of storms et cetera. I heard anti-islanding devices et cetera. We have an isolator built in. Part of that is because we are building the inverter here onshore in Australia. We are not importing inverters from China et cetera. That is one of the core differences. And there is a very quick payback period, which we have got on the website, which people can access.

The CHAIR: Terrific. It has been amazing hearing about the innovations that are happening not only here in Victoria but across the country, so thank you very much for making the time to be here and share your expertise with this. If there are any other important points you still wish to make, we encourage you to provide additional information in writing to the committee secretariat.

Witnesses withdrew.