LEGISLATIVE COUNCIL ECONOMY AND INFRASTRUCTURE COMMITTEE

Inquiry into Electricity Supply for Electric Vehicles

Melbourne – Thursday 12 March 2026

MEMBERS

Georgie Purcell – Chair
Richard Welch – Deputy Chair
John Berger
Gaelle Broad
Katherine Copsey
Moira Deeming
Tom McIntosh
Evan Mulholland
Sonja Terpstra

Necessary corrections to be notified to executive officer of committee

WITNESSES

Renate Vogt, General Manager, and

Daniel Bye, Head of Customer Connections and Requests, CitiPower, Powercor and United Energy.

The DEPUTY CHAIR: I declare open the Legislative Council Economy and Infrastructure Committee's public hearing for the Inquiry into Electricity Supply for Electric Vehicles. Please ensure that mobile phones have been switched to silent and that background noise is minimised. I welcome any members of the public watching via the live broadcast. We will just start by introducing the committee members that are here today.

John BERGER: John Berger, Member for Southern Metro.

The DEPUTY CHAIR: I am Richard Welch, Member for North-Eastern Metropolitan.

Gaelle BROAD: Hi, I am Gaelle Broad, Member for Northern Victoria Region.

The DEPUTY CHAIR: All evidence taken is protected by parliamentary privilege as provided by the *Constitution Act 1975* and further subject to the provisions of the Legislative Council standing orders. Therefore the information you provide during the hearing is protected by law. You are protected against any action for what you say during this hearing, but if you go elsewhere and repeat the same things, those comments may not be protected by this privilege. Any deliberately false information or misleading of the committee may be considered a contempt of Parliament.

All evidence is being recorded. You will be provided with a proof version of the transcript following the hearing. Transcripts will ultimately be made public and posted on the committee's website. For the Hansard record, can you please state your name and any organisation you are appearing on behalf of?

Renate VOGT: Hello, my name is Renate Vogt. I am representing CitiPower, Powercor and United Energy.

Daniel BYE: Hi, I am Dan Bye. I am representing CitiPower, Powercor and United Energy.

The DEPUTY CHAIR: Thank you very much. I invite you to make an opening statement. If you could keep that to about 15 minutes or so, then we will have time for questions and answers. Thank you.

Renate VOGT: Thank you, Chair. As I said, my name is Renate Vogt, and I am the General Manager of regulation at CitiPower, Powercor and United Energy. I am joined today by my colleague Dan Bye, who is Head of Customer Connections and Requests. CitiPower, Powercor and United Energy delivers electricity to more than 2 million homes and businesses across Victoria. We operate two of the country's three lowest cost distribution networks, and our customers enjoy service standards that are among the highest in the national electricity market. We are also one of the most tightly regulated businesses in Australia. Every dollar we spend on infrastructure, on connections and on maintenance is subject to approval by the Australian Energy Regulator through a rigorous five-yearly review process. We welcome the opportunity to contribute to this important inquiry and to provide clear, factual information to assist the committee. We would also be pleased to respond to some of the issues raised in the previous hearings.

CitiPower, Powercor and United Energy's core purpose is to connect customers and keep the lights on. We do this for local businesses, for households, for factories and, yes, for EV users right across the state. EVs are a small proportion of the tens of thousands of connections we facilitate each year. Around 120,000 Victorians own an EV today, and of those, approximately 80 per cent, or 96,000, charge or would prefer to charge at home. Like every other connection, this work must be done safely in compliance with our regulatory obligations and in a way that is fair to all customers. That last point – in a way that is fair to all customers – matters to us deeply because when people talk about networks covering connection costs or subsidising new infrastructure we need to be clear about who pays, and the reality is it is all of our customers. Network costs are not abstract; they show up on everyone's bill – customers all across areas of the state, including Victorians on lower incomes and those who themselves will never own an EV.

We know the cost of living is front of mind for Victorians and so investment in our network is crucial, but so is being considered and responsible about what we ask all customers to carry on their bills. In addition, under our

regulations we are required to treat every customer equally no matter their size, location or type of request. CitiPower, Powercor and United Energy are undertaking a wide range of actions to support EV drivers and to prepare our networks for continued growth. We are investing heavily in forecasting and data insights. Using smart meter data and advanced analytics we are modelling EV uptake at both the high- and low-voltage levels. This helps us to identify where even a small number of EVs charging in the same street could create local constraints and to act early. We have been active participants in the Victorian government and AER's network visibility trial and have significantly expanded our published dataset to the extent where every cable on our network, including the wires that run down your neighbourhood street, can be viewed through our portal. This is the same level of data as all other DNSPs have. We are aware that some private companies, such as EV charging providers, would like more detail. We want to be clear on this: no electricity distributor in Australia yet has individual circuit-level network capacity data. The Victorian government's AMI smart meter rollout leads the nation and has given us powerful tools, but even with AMI meters that granularity does not yet exist. We are working towards this and have proposed further expansion in our regulatory submission to the AER.

Secondly, we are using low-cost operational tools where possible before turning to traditional poles-and-wires upgrades; these include dynamic voltage management, flexible export arrangements, load control capabilities and automated connection approvals. Our objective is always to maximise the use of existing infrastructure and, to my earlier point, to keep costs down for customers. Thirdly, we are proposing EV-friendly network tariffs as part of our current regulatory proposals. These tariffs are designed to encourage charging when the network has capacity, particularly during the middle of the day, and to support emerging technologies such as vehicle to grid. They are also designed to support aggregators and retailers who can use flexible devices like home batteries and EVs to provide network support, putting downward pressure on costs for all customers.

We are actively enabling bidirectional charging. We have made the installation of bidirectional chargers as simple as a standard rooftop solar connection, and we treat EVs with vehicle-to-grid capability like a household battery. We recently issued an installation guide to industry partners and are already collecting data as these devices come online. We understand that the customer journey to establish a residential charger takes time. However, we want to assure the committee that this is to ensure the safety of the customer requesting the connection and those surrounding their property. Electricity is critical and dangerous infrastructure; it is not as simple as attaching an extension cord to a plug. Creating or modifying connections is a significant retrospective upgrade to our infrastructure and highly complicated because it is often being done in isolation. Accordingly, it is our responsibility to ensure due and considered assessment before establishment.

Finally, a focus of this inquiry has been access to EV charging for renters, apartment residents and households without off-street parking. We agree that these customers will rely more heavily on public and kerbside charging. That is why we sought from the Australian Energy Regulator to undertake a limited kerbside charging trial. Our trial involves the deployment and maintenance of up to a hundred kerbside chargers in carefully selected locations in partnership with local governments and communities. The chargers will be operated by third-party e-mobility service providers, not by us. Our purpose is not to compete with the private sector; it is to generate evidence on charging behaviour, network impacts and site selection, and the AER has imposed strict conditions to ensure the trial is timebound, transparent and focused on generating evidence.

In closing, Victoria has set a target of 50 per cent of all new light vehicle sales to be zero emissions by 2030. We do see it as part of our role to support this, and that is why we are investing in making the necessary changes, why we are working with charging providers to support their programs and why we are rolling out a kerbside charging trial. To be frank, the suggestion that we are not supporting the rollout of EV chargers is unfair and untrue. The reality is that we are managing a network that we must operate beneath a tight voltage band which is actually determined by our compliance obligations, where too many EVs charging simultaneously on the same street can cut power to an entire circuit; getting this wrong has real consequences for safety, for reliability and ultimately for every customer's bill. Thank you, and we would be very happy to answer any questions from the committee.

The DEPUTY CHAIR: Thank you very much. I will probably start today. Thank you very much for coming in. I understand that you have been monitoring hearings to date, so I am going to assume some knowledge in some of the questions. The evidence and the submissions to date have obviously painted a very particular picture, so I expect today's questions and answers will be robust but hopefully constructive in that sense. We will be robust because of the submissions to date. There are recurring themes across a range of submissions about DNSPs – let us say complaints, frustrations with CPU. There are a range of them, and I will

list them and we can drill down on any one of them. There is constant frustration about access to data. The understanding is that should be readily available – network data – and that the AER said it was a condition of granting you the trial. The inconsistent and opaque processes of reservation of access points, the slow approval process and, in conjunction with that, inexplicable inconsistencies in decisions and a lack of clarity on where future infrastructure is going to be – these are the main common themes. Other committee members might have a couple of others as well. But that was consistent across a range of suppliers and a range of stakeholders, so much so that it is hard to see how they could all be wrong. Would you like to respond to that?

Renate VOGT: Maybe I will start off by responding to the questions and concerns in relation to the lack of data, and then I will pass on to Dan to talk about the slow approval connection process. You noted that there was a comment in terms of lack of infrastructure, so maybe I will make a comment on that as well. In terms of data, as I said, we have a platform called MapInsights that is readily available to everyone. We have the same level of granularity of data as every other network service provider in Australia. To date, that provides asset information and it provides consumption and solar generation, but it only provides capacity up to the substation. We have proposed to the AER additional investment to provide what proponents are really looking for, which is data at the low-voltage network. What a lot of proponents are looking for is thermal and voltage constraints at that level: 'Can I install an EV? Can I install a battery?' We are working towards that, and we are in a really good position in Victoria because we have nearly full penetration of AMI smart meters. These tools will give us the ability to provide that data and hopefully, going forward, to provide that data in nearly real time.

The DEPUTY CHAIR: But if I may, Renate, the submissions to us were that this information is available in New South Wales on a much more readily available basis, and they do not feel that there is a forward momentum to provide it. In fact it is deemed to be held as a market control mechanism, control of the data.

Renate VOGT: Yes, I did see that, and I did not quite understand that comment. I even went back to other New South Wales network service providers' portals, including Endeavour and Essential, and it is the same level of data. As I said, the other jurisdictions do not have AMI smart meters, so they are not going to provide that real-time data at the low-voltage network – it is nearly impossible – while Victoria will be able to with just additional investment.

The DEPUTY CHAIR: If I may, Renate, how is it that you are expressing surprise at their complaints? Their complaints are loud, clear and unambiguous, so surely this is not new information to you.

Renate VOGT: That is; the desire for more data is not, and certainly we are hearing that loud and clear. That is why we proposed additional investment, because we have been working very collaboratively with the Victorian government and the AER on their network visibility trial. We think that is a really important piece of work, and we want to improve that level of data granularity for our consumers and third parties. So yes, more work needs to be done.

The DEPUTY CHAIR: Which of the complaints were you aware of and which ones were new information?

Renate VOGT: In terms of the desire for more data, yes, we are aware of those complaints, and we are working towards providing a greater level of granularity. The comments that other network service providers provide a greater level of granularity and the suggestions about the low-voltage network I was surprised by.

The DEPUTY CHAIR: But it was not just that, it was also ease of access, immediacy of access, timeliness of access et cetera. There were a whole range of things – completeness of access et cetera.

Renate VOGT: I think we have got to be really careful and considerate in what we are talking about. There is data access, being able to access the data, and certainly they can do that through our MapInsights. That can easily be done – anyone can do it.

The DEPUTY CHAIR: Clearly that is insufficient, because they are not happy with it.

Renate VOGT: Yes, it is insufficient in that it does not go down to the low-voltage network, and that is why we have proposed additional investment.

The DEPUTY CHAIR: And that, you feel, is the only obstacle they are confronting in terms of data?

Renate VOGT: In terms of data, in terms of the connection process – the cost of connection is a different issue, and I will pass on to Dan to address that.

The DEPUTY CHAIR: Well, just before we leave data, that also flows on to whether they can do any variable pricing or any other sorts of things. Is that data being provided?

Renate VOGT: Well, when you say 'variable pricing' are you talking about the actual EV charging proponent? Maybe let me take a step back. The Australian Energy Market Commission, the rule-maker, is actually doing a wholesale review of network charges, and network charges make up in Victoria circa 27 per cent of the total retail bill. They are shifting towards an approach where there will be a component of the charge that will be a fixed charge and then there will be a component which will be like a dynamic congestion charge. The long-term goal and future is that that charge will be able to actually be localised.

The DEPUTY CHAIR: But why would you wait for that? We want a competitive charge point marketplace. You are actually under obligation to enable one, to be an enabler of it. Why do you need to wait for this separate inquiry to do it? Why can't you just do it?

Renate VOGT: Well, in terms of charging, we cannot; we are regulated in terms of how we actually determine not just the price; the actual structure of the network charge is actually determined by regulator.

The DEPUTY CHAIR: But reporting that information.

Renate VOGT: Yes. That is something that not only CitiPower, Powercor and United Energy is working on, it is the entire industry – about actually getting more granular, localised, dynamic network pricing. That is the long-term future, but it takes time. We are talking about street-to-street constraints. You might have a constraint on your street, because you have a certain-sized transformer on your street, and it depends, you might have X amount of customers who have solar, while the other street might be totally different. We are talking about a really granular level of data, and that takes time and investment.

The DEPUTY CHAIR: I struggle a little bit with this, because in one breath you will talk about how sophisticated your system management is and the tools you deploy on that et cetera, and then in the next breath, 'Oh, we don't have that.' If you have got the granular data to provide sophisticated network management –

Renate VOGT: We have got the tools, which are the AMI meters, but to date we do not have the systems in place. There needs to be additional investment in place to ensure that we can provide that data in real time, so more investment is required.

The DEPUTY CHAIR: If that is your position, why don't the DNSPs know that?

Renate VOGT: The charging operators?

The DEPUTY CHAIR: Sorry, the CPOs.

Renate VOGT: I am not sure why they do not know that. It is certainly clear, and it is public knowledge. It is in our regulatory proposal. I cannot speak on their behalf.

The DEPUTY CHAIR: Thank you.

Renate VOGT: I guess my final point is that more work does need to be done. The network was built – large single-way flow for these large generators pumping energy onto the network to our homes and businesses. The consumer is now being the prosumer. They have got batteries, they have got EVs, they have got solar and they are actually exporting and importing energy onto the network. The whole system of the electricity network is changing fundamentally and very, very quickly. We found with solar that uptake came very, very quickly. The business, the network, the industry, government and regulators I think were unprepared for that uptake. Luckily, we have been able to do really, really smart things, like the dynamic voltage management system, to ensure that customers can fully export, get a benefit from their investments and help lower emissions. We want to be better prepared for the upcoming uptake of EVs.

The DEPUTY CHAIR: Actually, you have prompted another question. You said there is more work to be done and you are doing more work, but we heard evidence from the AER that one of the reasons they granted

you the trial was that the quid pro quo was that you would do this work, which implies, on the basis of their submission, you would not have done it unless you got the trial.

Renate VOGT: No. That is an interesting comment, but no.

The DEPUTY CHAIR: It was their submission.

Renate VOGT: There are two separate things. There is, one, we saw investment in relation to improving visibility on the low-voltage network. That visibility is not just for EV proponents, that can be for customers and communities. That is a separate issue. Then there is the EV ring-fencing waiver. We sought that waiver because, as I said, we wanted to be better prepared for the uptake of EVs, and we were very alive to the fact that a lot of our customers in our inner-city suburbs do not have off-street parking. We thought that a potential option is for kerbside charging.

The DEPUTY CHAIR: As I said, I think this is problematic. I do not want risk misquoting the AER, but their transcript will be there. It was pretty clear to me in those exchanges with them that you would not have done this unless you got the waiver.

Renate VOGT: Yes.

The DEPUTY CHAIR: Therefore that to me creates alarm bells of monopolistic practice, because we need a competitive marketplace; this is critical to a marketplace, but you will only do it if you get access to the sector that benefits.

Renate VOGT: We were talking about data and data visibility. What you are talking about is our ability to actually install EV chargers.

The DEPUTY CHAIR: Sorry to speak over you, but the AER implied this was about the data access as well.

Renate VOGT: That is certainly a condition of the EV trial. As I said, we want to be better prepared. EVs currently are considered a contestable market, and we are a monopoly. As a consequence, the AER decided to ring fence us out of that market. In particular circumstances – we had community batteries, and now we have got the EV trial – the AER can grant a ring-fencing waiver. This waiver is very, very limited. It has an expiry date from 30 June 2031, and there are a whole series of conditions on this waiver about gaining insights and understanding in terms of what impact EVs will have on the network for voltage or network constraints.

The DEPUTY CHAIR: Why did there have to be a quid pro quo?

Renate VOGT: Because this is a trial and the learnings that we gain – we would have done that anyway.

The DEPUTY CHAIR: I am not asking about the merits for you of the trial; it is the access to the data that all the other CPOs are seeking but is only now going to be available because you are participating.

Renate VOGT: Do you want to respond to that, Daniel?

Daniel BYE: I do think we are talking about two different things, just in the sense of there is a condition on our waiver around publishing data specifically for our trial, as in the data that we learned. I will come back to another bit.

The DEPUTY CHAIR: So you can generate the data for your trial, but you cannot generate the data for every other participant in the marketplace.

Daniel BYE: Yes, I will just be clear around the data that we are going to generate from the trial.

The DEPUTY CHAIR: Yes, please.

Daniel BYE: What we are learning from the trial is the impact of the infrastructure that we are installing specifically on that infrastructure, and we have to be able to publish that under strict terms under the AER. The other bit around access to our standard data that we are fundamentally talking about is that exists today and has existed in the marketplace for three years. That gets updated on our visualisation portal. Today around our

assets, consumption, solar, exports, constraints – all of that exists today on our network visualisation portal, and it is open to the public today. If you were to jump on our website, on your phone, and search for the network visualisation portal, you could log into there and access that data today.

The DEPUTY CHAIR: So the new data you are deriving from the exercise is data that only you uniquely can obtain. The other providers, the other stakeholders, could not provide this information back into you. Only you uniquely could provide this data. Is that the argument? Is that the case?

Daniel BYE: That infrastructure today does not exist in Victoria – as in, those assets are not on our poles today for us to gather that data. There are certainly 500-odd in New South Wales. But pole-mounted infrastructure en masse in Victoria does not exist, so in order to be able to gather that information, in order to be able to plan for it –

The DEPUTY CHAIR: Hang on, hang on, hang on. It does exist. Are you saying it does not exist to a scale that it requires?

Daniel BYE: So, to date, there are four pole-mounted EV chargers connected to our network, and they have only come on line since around November. This process started around 18 months ago.

The DEPUTY CHAIR: There are only four pole-mounted – but there are plenty of charging points, which CPOs are –

Daniel BYE: Correct. There is certainly plenty of charging in Victoria, but our trial is specifically around pole-mounted charging infrastructure. It is not about DC. We are not installing any DC fast chargers. It is purely around –

The DEPUTY CHAIR: Okay, this is confusing, because we heard plenty of submissions around CPOs seeking access to poles. They said, 'Well, we could be providing this at scale if the DNSPs would just play ball with us.' So again, why is this a trial that you uniquely can perform? If you gave access to those who had been demanding and crying out for it, you would have that infrastructure.

Renate VOGT: Maybe it might be useful, Dan, to talk about the engagement –

The DEPUTY CHAIR: Well, could we answer that question?

Renate VOGT: Yes, but that is what the engagement is that we have had to date with third-party providers who have sought pole access for kerbside charging.

Daniel BYE: Yes, sure. We currently have two parties that have master access agreements with us that we have been engaging with over the last sort of three-ish years, EVX being one of them and ChargePost being another. We have been working with those guys – in particular EVX – for about three years in order for them to deploy assets on our poles. One of the big concerns that we have heard is around pole access charging, which I am sure we will come to, which we have discounted at a very heavy rate in order to enable them to deploy. So we have been working very hard with these guys for a long period of time in order to enable access to our infrastructure to a point where they are now deploying on our assets.

Renate VOGT: Obviously it is new for kerbside charging, but we rent our poles, for example, to telecommunication companies. Renting our poles to third-party providers to provide a particular service is not new.

The DEPUTY CHAIR: So why are they finding it so difficult, and why couldn't they participate in the trial rather than you being the deployer as the monopoly?

Daniel BYE: Yes, sure. Just going back to EVX, we first spoke with EVX in mid to late 2023 in order to install 10 chargers in the City of Bayside. That was a trial that we instigated with them in order to, again, do that, but to date none of those chargers have been deployed.

The DEPUTY CHAIR: And whose fault is that?

Daniel BYE: Well, I cannot answer that question. Whether it is EVX struggling with councils, whether there is no longer demand there, I cannot answer that question.

The DEPUTY CHAIR: You know, this is completely –

Daniel BYE: But what I can say is that we have been engaging with these third-party providers to deploy these assets.

The DEPUTY CHAIR: And because you have been following the hearings, you understand this is completely contradictory to the previous evidence we have received.

Daniel BYE: I cannot comment on that.

The DEPUTY CHAIR: Both states cannot be true.

Renate VOGT: Yes. I mean, we are in the business of connecting customers, whoever they are. We actually have to provide an offer to connect – it is actually a compliance obligation – unless there is a safety reason. To be frank, that is good for business; we want to see an increase in consumption, so we are not going to be a roadblock to other proponents wanting to connect. To date, this for us is simply a trial. We have not as a business made any decision at all in terms of whether or not we want to be able to extend our role in the EV market. That has not even been discussed at our EMT, let alone our board. It is simply a trial. We are a poles-and-wires business. We are about connection and we are about the transport of electricity.

The DEPUTY CHAIR: I would like to just test that a little bit.

Renate VOGT: Yes, sure.

The DEPUTY CHAIR: You call it a trial, but it is a long trial; it is several financial years. So how much capital and how many employees are dedicated to the trial?

Renate VOGT: Would you like to answer that one, Dan?

Daniel BYE: Yes, sure. In terms of capital, it is sort of circa $1.2 million. Now we are thinking we are going to do it for less than that, but that is certainly the initial –

The DEPUTY CHAIR: $1.2 million?

Daniel BYE: Yes.

The DEPUTY CHAIR: How many points are you going to deploy?

Daniel BYE: Charge points or chargers?

The DEPUTY CHAIR: Both, either.

Daniel BYE: So there will be a mixture of single-port and dual-port charging. Where it makes sense to deploy dual-port charging for our consumers, we will look to do that.

The DEPUTY CHAIR: And will there be a customer service element to it?

Daniel BYE: Yes.

The DEPUTY CHAIR: Is that included in the $1.2 million?

Daniel BYE: We do not take care of the front-end customer side of that. All of that is managed by the charge point operators or e-MSPs. So if we think of, say, Zuup, for example, they are a charge point operator who are accessing our chargers. They handle the customer enquiries; that is on them. If they have got a billing issue et cetera, all of that is handled by them, so we actually are not customer facing in that aspect.

The DEPUTY CHAIR: Do you pay them for that service or anything like that?

Daniel BYE: No. Other than deploying the chargers, we have no other financial involvement. We have given free and open access to these charge point operators to access our charging. So they access the charger for free. We have not charged them a cent and we will not charge them a cent to do that.

The DEPUTY CHAIR: And how many will you deploy over the trial?

Daniel BYE: We will deploy up to 100 chargers.

The DEPUTY CHAIR: And how geographically spread will that be?

Daniel BYE: So right now we have deployed eight in Boroondara and we are working with about 16 or 18 other municipalities right across our networks, so from the far north of the state all the way down to the south-west and then all the way down to the Mornington Peninsula and everywhere in between.

The DEPUTY CHAIR: And you will have dedicated maintenance crews for these?

Daniel BYE: We have got maintenance crews who will take care of these assets in order to keep them up and running.

The DEPUTY CHAIR: That is all within the $1.2 million?

Daniel BYE: Correct.

The DEPUTY CHAIR: And at the end of the trial, whether by your decision, AER's decision or anyone else's decision, you do not proceed, what will happen to those assets?

Daniel BYE: Under one of the licence conditions at the end of the trial, whether that is in three years or five years, whenever that happens to be determined, one of two things needs to happen: either a rule change is made by the rule makers that we are obligated to operate under, or they need to be removed or tendered out to the market for them to take them over. So one of those three things will occur.

The DEPUTY CHAIR: Okay. Thank you.

Renate VOGT: I note also that the AER can actually, if they are not happy, end the ring fencing waiver prior to the expiry of 2031.

The DEPUTY CHAIR: Yes. There was another strange anomaly in that as well in that AER has given you the waiver, but the conditionality – the enforcement of the conditionality around data – is not something that they enforce, it is another statutory body that does the enforcement of the data, and I forget the acronym now.

Renate VOGT: Was it the essential services?

The DEPUTY CHAIR: No, it was another regulator. It is a bad question because I do not have the detail for you, sorry.

Renate VOGT: I would have thought the Australian Energy Regulator, because they have actually implemented the ring fencing waiver and determined the condition, that that is enforceable by them.

The DEPUTY CHAIR: But they said they cannot enforce it.

Renate VOGT: Oh. That was not our understanding.

The DEPUTY CHAIR: Some other body enforces it. All right, I think I have probably hoarded enough time. I will hand over to Mr Berger. Thank you, though.

Renate VOGT: Thank you.

John BERGER: Thank you, Chair. Thank you both for your appearance today. I want to touch a bit on the network itself and its capacity to do what we are thinking it is going to do in time and what your experiences might be from other overseas providers of these services. Where do we stand?

Renate VOGT: Do you want to talk about AC and DC charging? I can talk about charging – because the majority of customers are going to actually be just charging from the home, maybe I will talk about that.

Daniel BYE: Yes, sure. In Victoria we have around 120,000 EVs or thereabouts. Around 80 per cent of those will charge from home and prefer to charge from home because it is cheaper and it is easier, and so that is where they will ultimately charge. There are two types of connections that we have. We have DC fast charging, and then we have these pole-mounted AC chargers, which are much, much smaller and much, much easier to connect in terms of capacity. Then we have these DC chargers. DC chargers are big in terms of size. They are about 350 kilowatts. Just to put that in perspective, that is like connecting basically 100 apartments. To be brutally honest, it is really difficult to find that spare capacity in our LV network. It basically does not exist. That is basically a transformer dedicated to that type of service. The reality is for most large DC connections we are augmenting the network in order to be able to facilitate that.

In terms of capacity on the network, it is much easier for us to find AC 63-amp supplies. It is much easier for us to find that capacity. We are seeing that right across the board in terms of everyone's electrification journey. For the vast majority of residential EV-charging installations, they do not need to engage with us because their existing house supply is big enough for them to install – it might be a dedicated 15-amp power point, or it might be a 7-kilowatt single-phase charger. Most of those installations are big enough today and have the capability to install that charging today. It is when we start to get into large three-phase at-home installations that they may need to come and engage with us. To date that is very rare.

We receive around 10,000 applications in terms of increased capacity a year, and around 20 per cent of those are what we call 'supply available'. The capacity is there in the network, off you go, it is available. Then there are a lot of those others that we need to investigate more fully in order to be able to do some form of augmentation. That might be switching, it might be a fuse upgrade or it might be HV augmentation in order to facilitate the question. The grid is capable today.

Renate VOGT: I will use this opportunity to talk about one of the challenges we are seeing emerging from households with EVs. We are seeing an emergence of undervoltage. The network is very sensitive. It needs to operate within a certain voltage band, between 216 volts to 253 volts. What we are finding is we are seeing a spike of electricity consumption load in the middle of the day. We did the same with our daytime saver tariff. You have got, for example, retailers like OVO who are offering free electricity in the middle of the day, which makes perfect sense. There is excess solar: you should consume in the middle of the day – charge your EV, put on your dishwasher. But because of this spike in electricity consumption, this really big increase in demand, we are seeing undervoltage. As a consequence what happens is that potentially a customer's EV charger might stop. They might get flickering lights. Worst-case scenario: their appliances might brown out. It does not just impact that customer, it can potentially impact all the customers on that street circuit. We are just seeing this problem emerge. We are assuming that as we see a greater uptake of not just EVs but electrification, this problem will increase. It is public knowledge. We have proposed investment to the Australian Energy Regulator to actually address this undervoltage because we want to be proactive.

With solar what happened is we had overvoltage, and as a consequence customers were not able to fully export their solar. I think the whole industry and government were running behind the eight ball, but we did some really smart things in addressing that, including investing in technologies like the dynamic voltage management system, where we actually tapped the transformers. That resulted in reducing voltage, and so customers were able to fully export their solar and benefit from that investment. As I said in my opening statement, you do not just plug in something and it happens – there are consequences.

John BERGER: You mentioned in your opening statement about getting it wrong. Give us some examples of what that might look like.

Renate VOGT: Like I said, in terms of getting it wrong, you know, people will not be able to use their EVs, they will get flickering lights, and instead of proactively addressing this growing problem, we will be reactive.

John BERGER: Do you envisage that there will be any damage – like, damage to appliances, damage to EVs – because of those?

Renate VOGT: Yes, and we have stated that to the AER, and that is why we have sought investment to upgrade the network.

Daniel BYE: Both undervoltage and overvoltage cause damages to appliances. You could burn out your TV, you could burn out your washing machine et cetera, so yes, these have real-world consequences for our customers. That is why, you know, we do trials like we have proposed and are now undertaking, in order to learn now so we can prevent that into the future. It is really important that we get these things right.

Renate VOGT: Absolutely. And we are there to enable customers' choice, whatever, whether or not they have a battery or an EV, and that they can actually benefit from these free retail offers and help in reducing emissions.

John BERGER: It goes back to my initial question about the network itself in terms of age. Is it fit for purpose, or does it need some significant work to then be able to deal with the increase that is probably coming?

Renate VOGT: I would not say it needs significant work, but it does need upgrades to manage these changes in technologies, and as I said, you know, we have got it on the public record. Our infrastructure – yes, we replace our assets. Yes, it ages, like everything, like us; and yes, we seek to replace everything, our poles and our wires, to ensure that they are sustainable.

John BERGER: If you use the Boroondara example where the eight new chargers are down there, were there any infrastructure changes that needed to occur there to bring those online, or was it all sort of ready to go?

Daniel BYE: The purpose of our trial is to understand whether we can utilise not only the infrastructure but EVs in particular around assisting in constrained areas, thus to avoid augmentation. Take EVX as an example. They want to avoid constrained areas so that way we do not have to reduce their power supply at any time so they can have this full offering to their customers, which makes perfect sense. The purpose of our trial is to go into those constrained areas to hopefully unlock those issues that we are seeing today, thus avoiding the augmentation in the first place.

John BERGER: Can you explain a bit more about the augmentation and what that means.

Daniel BYE: Yes, sure. Where we have got a constraint and the customer needs to connect a new supply to that area, in order to be able to facilitate the connection we would need to upgrade – it might be conductors, it might be transformers, it might be fuses, or in some cases it is actually installing all things brand new and dividing circuits up. That is what augmentation is, and it might be to a hospital; it might be to a pole charger. It could be to a DC fast charger. What the purpose of our trial is is understanding the impact of these assets. Can we use EVs to help facilitate a reduction in the constraint in those areas? Thus avoiding that augmentation in the first place or even delaying it into the future, trying to push that expenditure out. That is the purpose of our trial. We think it is certainly possible, hence why we have gone down this path, and we are really excited to launch those first eight in Boroondara.

John BERGER: Thanks, Chair.

The DEPUTY CHAIR: Thank you. Over to Ms Broad.

Gaelle BROAD: Thank you very much for appearing today, because we did want to ensure that you had that right of reply because there has been a lot spoken of during this inquiry. I do want to pick up on some of the charges that we heard previous witnesses talk about. Bernhard Conoplia is from Evie Networks. To quote from his correspondence, he was talking about the connections and the examples where they had challenged the costs:

> We had one cost that came through at $75,000. When we challenged it, it got reduced to $34,000. We had a quote for a quote that was $20,000 – not for design work, but a quote to produce a quote that was 88 hours at $207 an hour. Someone was being paid $400,000 inside that DNSP to produce a quote, and they were going to spend 2½ weeks on it. There is that example. We had another one at $35,000, and it was literally switching off a substation and switching it back on. It was one day of work. There are many examples. We had a $300,000 quote for a 40-metre cable run, and there was another one, I think it was $100,000, but no transparency. They would not provide any data.

Earlier you mentioned providing free and open access and not charging them a cent, but how does this kind of feedback compare?

Daniel BYE: The access to data is more around our network data, the physical assets and the distribution substation capacities – the maximum demands – and, ultimately, available capacity within those substations. That is free and available, and that is on our website. What we are talking about here are augmentation costs as we were just mentioning. The methodology of those augmentation costs is heavily regulated by the AER, and there are strict formats that we need to be able to issue to our customers. Just in terms of –

Gaelle BROAD: But if they are regulated and they are set costs, how can it jump from one – the minute that they questioned it, it literally halved.

Daniel BYE: Yes. Sure. I do not know the specific examples that Bernhard was going to, but typically –

Gaelle BROAD: I am happy for you to take those examples on notice and get back to us on those particular examples.

Daniel BYE: Yes. We will take those away. But what I would like to say is, typically, a price may change for two main reasons. One is the scope has changed. For example, they may have asked for 500 kilowatts worth of charging and now they want to go down to 300 kilowatts for whatever reason. Therefore we do not need as much augmentation in order to facilitate that change of customer demand. Or an assumption that was made at the time in order to be able to produce that quote has either not rung true or something has happened in that instance. I would say that that is an odd occurrence, but that does happen. People make assumptions. That may ring true at the time. They produce a quote. The customer comes back and says, 'Actually, that's not what I need. I actually need this'. Then we go, 'Okay, no worries', and we will ultimately change it and go back to the customer. But I will take those on.

Gaelle BROAD: They do seem to be providing quite a few examples. To deliver a quote – is that standard practice?

Daniel BYE: What we have is a process around what is called a specification design inquiry. When we are unsure about what work needs to happen to facilitate a connection, we go through a design process in order to be able to go, 'That is exactly how we're going to do that work.' So really complex connections – think hospitals, high-power DC charging – can go through that process in order to be able to do that work, and all of that is typically recovered from the customer. That is the standard process that we are obligated to go under.

Gaelle BROAD: With the dispute resolution, they seem to indicate that they can only go backwards and forwards between you. They question it. What is your understanding of the process?

Renate VOGT: As Dan said, it is regulated, and if they are unhappy with the estimate that we have provided, they are able to go to the Australian Energy Regulator and dispute that. We do get customer complaints from time to time in terms of connections, and then the AER will require us to provide detailed information on the cost breakdown and make an assessment.

Gaelle BROAD: Is there a time requirement for responding in that situation?

Renate VOGT: With the Australian Energy Regulator? Yes. The Australian Energy Regulator will put tight deadlines on us, and we have to respond.

Gaelle BROAD: Okay. I do have a further question. This is to pick up on what Mr Welch was talking about earlier, because we have received a lot of evidence to suggest that there are issues with data access and transparency. To quote Andrew Forster, who spoke in the previous hearing:

> … the data transparency obligation would solve for a lot of that. I mean, if you look at TasNetworks in Tasmania, Energy Queensland and Essential Energy in New South Wales, all of them have a publicly accessible capacity map that anyone can log into and drill in most cases down to the local substation and determine what its peak capacity is and how much on average is being used through –

And he goes on to say:

> … in fact Endeavour Energy in western Sydney tell us to go and do that ourselves. We do not even do a capacity check with them. They say, 'Look, just go look at the map. You tell us.'

And then they were asked if they are dealing with every DNSP around the country, and they said yes. Can you just respond to that evidence?

Daniel BYE: Sure. As Renate indicated before, we have a publicly available network visualisation portal that has the exact same information that Endeavour, Essential, Energy Queensland and TasNetworks have today. We have had it for three years. It is available on our network today and it has that distribution substation information around the size of it and the maximum demand that is coming from it today.

Gaelle BROAD: Is it available for them to look up without contacting you?

Daniel BYE: It is available today, correct.

Renate VOGT: It is.

Daniel BYE: If they want to see what a particular substation in your street happens to be able to pull, they can log onto that portal today free of charge, entering their name and their email address, and that is around just the legal terms and conditions about using that data and checking with us first before they make any commercial decisions. They can access that today.

Gaelle BROAD: Okay.

Renate VOGT: I wonder, would it be helpful for the committee afterwards for us to provide a link to that?

Gaelle BROAD: I think that would be excellent, and probably around some of this, even a bit of a guide that could be distributed to those wanting to connect.

Renate VOGT: Yes.

Daniel BYE: Yes, absolutely. There is quite a lot of information on that. It has got the capacities; it has even got solar capacities and constraints from solar consumption. There is quite a lot of information on the portal.

Renate VOGT: And as I was stating before, for all network service providers, that is up to the substation level. What we are wanting to do is, because we have got AMI smart meters, we want to go even further and provide granular-level detail at the street circuit level, and we have the tools to do that through our AMI meters, which no other state in Australia does.

Gaelle BROAD: And what was the timeframe for that being operational and accessible?

Renate VOGT: Well, yes, we are hoping in a couple of years.

Gaelle BROAD: Okay – 'Hoping in a couple of years.'

Renate VOGT: Sorry, let me rephrase that. We are aiming in a couple of years.

Gaelle BROAD: Aiming for AMI.

Renate VOGT: Yes.

Gaelle BROAD: I am just interested in delays with connection. We heard that in New South Wales the process from concept to connection could be six months; in Victoria it has been about two years. Can you explain why it takes so long in Victoria?

Daniel BYE: Yes, sure. Two years is a very, very long time. I certainly have heard in the other sessions that it has taken two years to get the access agreements. I have not necessarily heard that around augmentation projects specifically, but –

Gaelle BROAD: Do you know what the average connection time is for someone applying?

Daniel BYE: Every project is completely different, and I will give you some examples. If you want to connect your house, that might take five to 10 days after we have been given permission from the retailer. I guess there are different parts. There is a connection once any augmentation has taken place. Once the REC have done their work, and they have applied through our applications portal, they may be connected somewhere between five and 10 days, once all the physical work has been done. So that timeframe can happen quite quickly. If there is augmentation, depending on the complexity, that may take some time, and that could

take from a really simple project four or five weeks from what we call pole to pit – that could be quite quick – versus something like a 350-kilowatt fast charger that we might have to order long-lead items for. It may take us four or five months just to procure a kiosk.

Gaelle BROAD: What has been the longest one that you are aware of?

Daniel BYE: From an EV charger perspective, the longest that I am aware of is around seven or eight months. I do not know of any that have taken two months, but what I would say is –

Gaelle BROAD: Two months or two years?

Daniel BYE: from their concept through to that, that may take a long time, because there is a lot of negotiation that they have to do with not just us. There are other proponents that they have to be able to negotiate with as well.

The DEPUTY CHAIR: To be fair, Mr Bye, the evidence was not qualified in any of those terms. The evidence was that you are causing a two-year delay, which makes these projects unviable. That is the evidence here.

Renate VOGT: Is it possible for the committee to actually provide us the cases of that? Or we can just hear it through the hearings?

The DEPUTY CHAIR: It is certainly available on the transcript.

Renate VOGT: We will investigate. But just to build on Daniel's point, we really want to clarify what type of EV charging we are talking about. In terms of the chargers that do take a long time, they are, as Dan said, those DC fast chargers, where it could be anywhere between 50 kilowatts to 350 kilowatts. That can service, as Dan said, like, 100 homes. That can be substantial. So that would be in a car park, a shopping centre or a highway, and you know, potentially sometimes we even have to build a substation to manage that.

Daniel BYE: For 350 kilowatts, yes.

Gaelle BROAD: Actually, just on that, I am interested, because you referred earlier that too many EVs on the same street can cut power to the whole area.

Renate VOGT: Potentially, yes. Potentially it can.

Gaelle BROAD: Potentially, and I guess I am just interested in what the risks are. Because currently I know in areas like Euroa – and that is not necessarily where you cover, but – 17 power outages in a couple of months, already a very fragile electricity supply system. We have a huge growth in population in Victoria that is also going to increase the demand. With fuel prices that I have seen – up to 259 cents for diesel today – that might push more people to EVs. If there is a rapid uptake and a lot of people wanting to plug in, what are the risks that we are facing at the moment?

Renate VOGT: So today regional and rural customers do experience a lower level of reliability than our urban customers, and there are a range of reasons for that. Our rural and regional networks are not meshed, like they are in the city. There is less undergrounding, there is more vegetation and they do tend to experience a lot of the extreme weather events such as bushfires. So today, yes, regional and rural customers do experience a lower level of reliability. We are very alive to that, and we did propose investment to the Australian Energy Regulator to upgrade a number of SWER lines in regional and rural Victoria, particularly around south-west Victoria. The AER did reject that in their draft decision, and we are continuing to have negotiations with them on that to improve network infrastructure in regional and rural Victoria. It is a challenge because the AER is an economic regulator. They will only approve investment that they consider efficient and prudent. The challenge is, using the framework that they apply – I am an ex-regulator myself – that the lower the customer density the more challenging it is to demonstrate that there is a higher benefit relative to the cost. This is an issue. The Australian Energy Market Commission, the rule maker, are actually going to be doing a wholesale review of the National Electricity Rules, and this is something that certainly will be discussed around equity. We need to shift from efficiency to equity, because electricity is not a discretionary good, it is an essential service. Certainly we have done an enormous amount of engagement in our regional and rural areas, and they do not want to be left behind in the energy transition. They want to benefit, as we all do.