



**LEGISLATIVE ASSEMBLY FOR THE
AUSTRALIAN CAPITAL TERRITORY**

**STANDING COMMITTEE ON PLANNING, TRANSPORT
AND CITY SERVICES**

(Reference: [Inquiry into electric vehicle \(EV\) adoption in the ACT](#))

Members:

**MS J CLAY (Chair)
MS S ORR (Deputy Chair)
MR M PARTON**

TRANSCRIPT OF EVIDENCE

CANBERRA

THURSDAY, 18 MAY 2023

**Acting secretary to the committee:
Ms M Ikeda (Ph: 620 50199)**

By authority of the Legislative Assembly for the Australian Capital Territory

Submissions, answers to questions on notice and other documents, including requests for clarification of the transcript of evidence, relevant to this inquiry that have been authorised for publication by the committee may be obtained from the Legislative Assembly website.

WITNESSES

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Amended 20 May 2013

The committee met at 09.30 am.

BILLING, MR PETER, General Manager, Evoenergy

HINCH, MR LEYLANN, Group Manager, Strategy and Operations, Evoenergy

THE CHAIR: Good morning and welcome to this public hearing of the Standing Committee on Planning, Transport, and City Services for our inquiry into electric vehicle adoption in the ACT. Today the committee will hear from Evoenergy.

The committee wishes to acknowledge the traditional custodians of the land we are meeting on, the Ngunnawal people. The committee wishes to acknowledge and respect their continuing culture and the contribution they make to the life of this city and this region. We would also like to acknowledge and welcome any other Aboriginal and Torres Strait Islander people who may be attending today's event or may be watching from this country or another country.

We are recording and transcribing today, and we are livestreaming. We are broadcasting and will be publishing. There has been quite a bit of interest in these hearings so I would not be surprised if somebody has a little look at them. If you take a question on notice, please use the words, "I will take that question on notice." That helps our secretariat to track down the answers, and we will do a check-in at the end to see if there were any questions.

Welcome, Mr Peter Billing, General Manager, and Mr Leylann Hinch, Group Manager, Strategy and Operations, from Evoenergy. Did you receive and read the privilege statement, and do you understand and agree with the rights and responsibilities contained in that statement?

Mr Billing: I have received and understand, thank you.

Mr Hinch: I have received and understand, thank you.

THE CHAIR: Great. Thank you. We are not inviting opening statements but will proceed to questions, and I am going to hand the first question over to Mr Parton.

MR PARTON: Thank you, Chair. Gentlemen, in your written submission to the inquiry you stated:

Evoenergy expects EV charging to have a material impact on the ACT electricity network ...

With regard to the phase-out of internal combustion engine vehicles in the ACT, you said:

... we must ensure our electricity network is planned and managed accordingly.

In the first instance—and I know it is a quite broad statement—can I get you to summarise what your organisation has described as a "material impact on the ACT electricity network". What do you mean in layman's terms?

Mr Billing: What we meant by that is that we have looked at what we think the likely impacts of EV charging and the gas transition are on our network, and we believe that between now and 2025 we could see in the order of two to 2¼ times growth in the network. If you think about the network having been developed over 100 years, it could double in the next 20-odd years. That will come down to the way in which people charge and when they charge.

As to what creates the size of the network, it is developed on the basis of peak demand. If you think of it from a road perspective, if your electricity slowed down every time you were in peak-hour traffic, then you would not be very happy with your network. Our network has to be able to cover those peaks. The opportunity to reduce the amount we might need to grow the network is to try and flatten that additional load. But the reality is that EV charging is quite a substantial load, relative to a dishwasher, a refrigerator or any of those sorts of items.

MR PARTON: On a city-wide basis, when you talk about the load of EV charging—and I know it is difficult because this is a living, breathing, dynamic thing, in terms of the number of EVs that we have continuing to increase. So sometimes it is difficult to plot a point, but, at a certain point, whether that is a year or two years from now, what is the percentage of load that would be attributable to charging electric vehicles? What would it be now and what would it likely be in two years from now?

Mr Billing: Probably the best way to answer that is to extend it out a little bit. We have just submitted our submission for funding for the five-year period from 1 July 24 through to 30 June 29, and in that period of time we have looked at the inputs that might cause growth in the network. EV charging is one of those key inputs, and also conversion from gas. Through that process, we have identified that we believe we would need to put around \$90 million of additional investment in the network growth over that period of time.

MR PARTON: That is \$90 million for the five years, from 2024 to 2029?

Mr Billing: The five-year period. That is not the total capital—

MR PARTON: That is the increase?

Mr Billing: The increase from where we are in our current regulatory period, which finishes 30 June 2024.

MR PARTON: I know the call is going to come back to me, so I am happy to pass back to you, Chair.

THE CHAIR: Thank you. I will continue on the same thread. You have obviously done some modelling to look at the impact of the increase in EVs. We now know they are small proportion of the fleet, but they are a rapidly increasing proportion of the fleet. One in five new vehicle registrations here is an EV. What is the charging pattern that you have modelled? When somebody has an EV, how often and for how long are you assuming that they are charging for you to work out when, where and how much charge they will be using off the grid?

Mr Billing: For background, in the submission I just referred to in the previous question, we looked at the charging profiles that the CSIRO had put forward and we chose what is called convenience charging, which is evening charging. We also modelled whether it was daytime charging. Whilst we would anticipate a lot of residential people would take up daytime charging, particularly if they have solar on their roof—logically, they are charging while that is in place and they have input through their solar—there are days in Canberra when that solar output is quite low. A period of days similar to today, when there is very little charging through solar and therefore batteries are not getting replenished in the way one would expect, could drive a greater peak during the day.

We will continue to do two things. One is to look at what the advice from people, like those at CSIRO, says to us around the charging profiles and what that might look like. We are also looking very closely at ACT government statistics around registration. When we did the draft submission, which we put out at the end of August last year, we were looking at the middle range profile of EV uptake in the ACT based on the Deloitte report that was put out. By the time we got to January, when we put our final submission in, we moved to the optimistic because we were looking at that uptake. Regarding the figure you just referred to—about 20 per cent—that goes above the optimistic. What I am saying is that we are continuing to look at those signals to try and identify whether the plans we have put in place are going to meet the expectations and what is actually happening. It is not an exact science. The reality is that we do not know for sure how people will respond—when they will charge. We have to escalate when we think the majority of that charging will happen, but nobody knows that until it happens.

THE CHAIR: Sure. I might try and simplify my question a little bit. Does the CSIRO modelling, or the modelling that you are using, assume people are charging every day, all the time or once a week, or is there a range? I will tell you the reason I am asking: I know that when a lot of countries that are further down this road than us, such as UK, initially looked at the load on the grid from EVs, they assumed that people would plug them in all the time, and what you find—I have an EV and charge it about once a week. I am wondering whether we are updating it with the real world and what the assumptions are.

Mr Hinch: In our submission to the AER, we modelled, as Peter said, convenience charging data available at the time. During this process, the CSIRO updated their modelling. Their convenience charging data has reduced significantly. Now it is a weighted average of charging, significantly reducing the impact on the evening peak. All these things, in our terms, are rapidly changing. We are taking in every available source. We are looking at EV grid trials and we have been involved in some trials to get some local information, but the cohort was fairly small at the time. We are certainly looking at charging patterns.

We have another revised submission process with the Australian Energy Regulator which will be due in December this year, so we have some more time to pull together more data and model the expectation of charging behaviour in the ACT. The CSIRO model is basically ACT and New South Wales combined, and, since we are a leading jurisdiction, there are some differences that we are seeing, especially in uptake rates,

as you have said. Charging patterns are likely, depending on early adopters, like yourself. When people come on more mainstream, patterns may change again, but, as I said, we will just keep searching for new data sources to try and improve how we forecast.

THE CHAIR: Thank you. I would not consider myself an early adopter. I did not have to build the car myself! Mr Parton.

MR PARTON: I want to get back to the network investment and the augmentation to the network. In that submission regarding the spending from 2024 to 2029, you have suggested that there is an additional \$90 million. I am not an electrical engineer, but that seems like a small amount to me, based on information from the people that have contacted me regarding what needs to be done to the network. Given that this inquiry is looking at barriers to EV transition that potentially go beyond 2029—we are focusing on the next 15 years or so—can you walk me through what needs to be done between now and 2035 to get to a point where the grid can cope as a whole with, potentially, a private car fleet that in the majority is electric and how the local networks would cope with that increased load? What is it that actually has to be done?

Mr Billing: I will give a little bit of additional context in relation to the \$90 million. Broadly, our total capital funding, other than direct customer contributions for the 2019-24 period, was about \$360 million. The total capital that we have asked for in our current submission, for 2024-29, is \$521 million, with which there is an additional \$90 million to specifically augment the network for the increased load. So the \$90 million is not the total capital; it is just a portion.

MR PARTON: The additional—

Mr Billing: Yes. What we have done with the modelling to date is to get a sense of what it might look like in 2045—that was the reference to anywhere between two times and perhaps 2¼ times the size—so that we have the opportunity to say, “What would our business need to look like and how should we consider how we would need to operate if we are going to facilitate that transition as we go forward?” What we will then do is basically, through this regulatory process, bring that down to five-year blocks.

We are suggesting \$521 million. That is a process that has to go through the Australian Energy Regulator. They might decide they think it is less or they might decide it is more, but we will go through that process. Then we will continue to review, as Leylann referred to in the previous question, what the next period might look like: what is the investment that may be needed; what have we learned from behaviours; how quickly are people transitioning; and what will that do to our total forecast? We think we have a robust process in place from the perspective of both what the network would need to look like and how we would resource that to go forward, because we have taken that full 2045 look.

MR PARTON: Could I get to a more specific question?

Mr Billing: Sure.

MR PARTON: Most houses in the ACT have single-phased power, as you know. They get a superfast charger and homeowners need three-phase power. How many of these three-phase transitions are you expecting to roll out? How much will each one cost? Who will pay for it? And, given that at present, today, there is a six-month period required for Evoenergy to even consider the connection, how will you cope with a 100-fold increase in demand for that?

Mr Billing: As I said, we have thought about what that resourcing might look like and how we might move forward. You can actually install not a superfast charger but a fast charger now without notifying us that you are doing it, depending on your installation, so we will not always see all the information until we are actually informed that there might be a problem in a particular area—that there is a load issue. That is an issue that we just have to manage as we go along. But, as we get those inquiries, we will try to ensure that we build our business progressively as we go along to be able to meet those needs. There is a process when we get more connection inquiries, we are looking at the bonds and we are trying to forecast what that needs from a churning perspective within the organisation—do we need to increase resources, improve process, and so on, to keep those time frames as short as reasonable? Again, we will continue to grow the organisation, both internally and externally, to be able to meet those needs as it goes forward.

MR PARTON: You talked in the submission about planning for increasing network peak demand and the network peak demand that may result from the co-incident EV charging, which in your submission you said could put pressure on the grid. What does that actually mean when you say it could put pressure on the grid? When I read that statement, as someone who is not in this space, my first thought is: does that mean that, unless we increase the amount of power coming into the ACT, we will not have enough electricity to power the grid? Is that what that means?

Mr Billing: Not from the way we have described it. We are talking specifically about the wires, or the underground cables, that go down the street and the transformers that are in the street, and the zone substations that supply them. We are talking about our infrastructure when we make that comment. The Australian Energy Market Operator, AEMO, are looking at that through their integrated plan to see what the total generation needs to look like, recognising there will be a lot of generation at home, as well as centralised generation through wind farms, solar farms and so on. Our reference is purely on the poles, wires and cables that we own and operate. That is our reference.

MR PARTON: But, Mr Billing, surely electricity is not infinite. You talked about doubling the network here in 10 years, and of course we are not the only jurisdiction that is doing this. Where will this additional power come from? Other jurisdictions will be in the same boat. One of the things that has been raised with me by people who are in industry, and a stack who are out of it, is that they do not understand how this level of electricity is provided to Australians when we are down here now. How does that work?

Mr Billing: Again, you are talking about generation, which we do not have any direct control over.

MR PARTON: But it must concern you.

Mr Billing: The primary concern that we have is that our network can deliver the services that our customers are looking for. We input the data that we are receiving from our customers around what that growth in demand looks like. We put that information back in through TransGrid, who is the transmission provider, and also through AEMO, the Australian Energy Market Operator, so that information can go into their overall planning. That is where the responsibility lies for ensuring there is enough generation to support the broader grid pieces.

MR PARTON: I am sorry, Chair. Just to close that line of questioning: if we flipped a magic switch tomorrow and all the cars in Canberra were EVs tomorrow—never mind the fact that access to chargers would be a problem, so let us say there were a magic switch so that chargers were available as well—how far short would we fall in keeping them all charged? What do we have to do to progress to the point that we need to be by 2029? How far short would we fall?

Mr Billing: We would suggest that it is the investment that we are putting in for the regulatory submission. That is where we would fall short. It is around that \$90 million to augment our network. Most of that money is associated with what we call zone substations. They are on one, two, three or four acres of land. The power transformer takes the voltage from 132,000 volts down to 11,000 volts. Eleven thousand volts is what then radiates out of those areas and goes to transformers that convert it to 415-230. We see that most of the work is either at that zone substation level or in providing the feeder connections.

MR PARTON: How many zone substations across the ACT are part of that network? How many zones substations are we talking about?

Mr Billing: Currently, there are 14.

Mr Hinch: But, most likely, it will not be uniform, and they have different load profiles. Some are more residential zone substations—for example, the Gold Creek zone substation around Gungahlin has a largely residential profile, so it has a morning peak and an afternoon peak, whereas our City East zone substation supplies the city area, which is much more commercial. It has stronger demand in the middle of the day because it follows the profile of the offices and the users in that area. It will be different in different areas, and that is what we model.

Mr Billing: We have started development of a new zone substation at Molonglo. That will continue to be developed through that period. There is a specific investment which comes to that. We are also seeing that there may be at least two other zone substations that will need to start to be built during that time, as well as in excess of 20 additional feeders. They are the main lines that come out of those zone substations. What we have based that on is the heat maps around the likely proliferation of EVs, and, on the basis of that, that is where we are expecting the load to come.

THE CHAIR: Thank you, Mr Parton. I will pick up on a couple of those points. The question started with a discussion of fast chargers at houses. In my experience, most houses are not using fast chargers, and the people I know who have bought a fast

charger for their house regret it, on the basis that most people with freestanding houses just plug into the wall and it takes a very low-level trickle charge over a long period of time. Is that what you are finding as well? Are there a lot of fast chargers needed?

Mr Hinch: What has come out in the CSIRO update for 2022 was exactly that, which is why the convenience charging profile that they have forecast is actually much lower. Predominantly, for people using trickle chargers, we call them, where they are directly plugged into the power point, it takes a long time to charge a car. If that suits their lifestyle, then that is the way a lot of people may charge. I expect some people who maybe commute a lot will have a different profile need.

THE CHAIR: And perhaps professional drivers might be in a different category, for instance. They will be a different user type. I note that removing petrol and diesel cars from the fleet and replacing them with electric vehicles obviously uses more electricity. We have a grid, and we have electricity generation that is infinite, really. There are solar panels. There is only so much you can send through at once, depending on your equipment, but the sun does not run out. Noting that a lot of EVs are trickle-charging, having a lot more EVs charging might be at low peak times, so they are not actually taking more overall; they are just evening out the charge. Is that what we are finding?

Mr Hinch: Certainly the CSIRO modelling, as I said, has reduced the impact on the traditional evening peak. Some of our modelling is suggesting in some commercial areas they do not have a strong evening peak, they have a stronger demand during the middle of the day. We have a tariff proposed for our next regulatory submission, called solar soak tariff. It is to encourage people to use energy during the middle of the day, which is perfect for electric vehicles, if they can charge at that time.

In some locations that is probably not ideal for our network because it may accelerate the peak in the middle of the day. Once the highway or the pipe gets full, that is where the constraint is and where we may need to expand it. So, it does not really matter what time of the day the peak occurs, the peak is the peak. That is what we have to build for. It is probably quite normal across most distributors that they will have slightly different profiles in different locations.

Our network is not really any different to that in some cases. We will have to manage where the demand falls, at which time of the day. So trickle charging, yes, it will in some ways be a benefit, but also you could understand that consumption still will fill the pipe over time when the volume gets large enough. At some point, no matter when you charge, a constraint will appear. That is what we are trying to forecast. We have to be a few years ahead of when the constraint appears or we forecast it to appear, so we can build the infrastructure in time so that people get the service they want when they want it.

Mr Billing: Today there are three sources of energy. There is electricity, gas and liquid fuel. The broad assumption that we are making is ultimately by 2045, predominantly there will only be one source of energy. So, in some way or another we will see a growth. I think the modelling we have done is a dynamic model, so we can continue to change those assumptions to see what it is suggesting. Again, it is only

one input into our ultimate forecasting. And then our forecast—we do those regularly as well to ensure we are seeing what the latest signals are, what consumer behaviour looks like, but also what is the impact on the network as far as additional load coming on online. So, we will continue to adjust what we need to do relative to what we see come over the next few years.

THE CHAIR: Just as we have seen EVs were a very slow uptake and then suddenly a fairly sharp peak, there is quite a lot of other technologies that are coming into play alongside EVs. We have batteries in EVs that might be used as the battery for the house. I know there is vehicle to grid but a lot of people are talking about vehicle to building as an easier way to go. We are in the very early days of community batteries. We have a lot of solar uptake, which is very mature and still expanding rapidly. We have smart devices, which I think are not widely adopted yet but are the sorts of things that will easily say, “You do not need to charge your EV when you are running every other appliance in the house.” You could actually charge your EV at 3 am when nothing else is running, and it will do the same for your heater and your air conditioner and all of those things.

Do you see that as we roll out from 2023 to 2045, all of those other things will probably get more adoption, and we will get more community understanding and more uptake, and thus we will not have as high a need for the wires and the massive increase in electricity because it will be evened out?

Mr Billing: Yes, is the short answer to that. In our modelling we have assumed much higher uptakes of solar and much higher uptakes of batteries. At the moment, we have not made a big assumption around community batteries because we did not have the data at the time to know what that might look like, but that will continue to be factored in. We do think community batteries are a slower uptake, but they will absolutely come. So yes, we have considered all those things. And again, as we see both proliferation and use and the way it happens, then we will see what that looks like and how that plays a role. The thing with a community battery, as an example, is it still needs to get to the homes in which it is working. So it still a flow that goes through our network. It is whether that flow is equal to the current demand, or it is greater, or the combination of what is happening in the household is greater. But it still uses our network to be able to operate.

THE CHAIR: Yes, it absolutely does. A panel with a battery in a car that is operating as a battery for the house does not however need to travel. Have you modelled in vehicle to building and smart devices, the devices that will regulate when you use electricity?

Mr Billing: We have modelled what solar would look like and what battery would look like. We have not done any modelling really around vehicle to grid because that is actually not available at the moment. We know it will come. So those sorts of things we will adjust in our model as they go along. As we see those things go forward, we can then draw an assumption around that, or there is data from sources like CSIRO or other sources, then we will add those to our model.

MR PARTON: Gentleman, you have spoken today about an additional \$90 million in the five-year period from 2024. But, certainly based on other things you have said

about the large change that is required between now and 2045, my assumption is that the really heavy lifting is going to come in the decade after that. Who is going to pay for it all? Because my assumption is that all those costs would just be rolled into electricity bills. Given the level of network augmentation that is required, does this mean we are staring down the barrel at the largest increases in electricity prices in our history, simply so we can charge our cars?

Mr Billing: The estimate we have made in our regulatory submission for 2024 to 2029 is an increase on average for a residential bill of around \$7; that will cater for the investment we would need to make. It does make an assumption that the volumes of energy will go up during that time but those two things do go hand in hand. It does not take into account CPI because we cannot measure that, although we can measure what is estimated.

So, we do feel that over time, during that period to 2045, that bills relatively will not rise greatly because the utilisation of the network will significantly increase. It is the issue of—you do not have a gas bill anymore, so your gas load is now in some form or other in your electricity bill. You will not have a fuel bill necessarily; it is likely to be in there. So the utilisation of our network goes up, which actually helps to moderate what might happen to bills. But that is purely from our side of the bill. Currently our bill is 25 to 30 per cent of the total electricity bill. What we obviously do not control is the cost outside of that, which is the broader generation cost, the use of the transmission network and so on.

MR PARTON: You speak in your written submission of driving behaviours in electricity usage patterns, which we have spoken a bit about today to try and avoid what you described as critical peaks. What is the worst possible case scenario here if you are not able to drive the behavioural change that you speak of, or if the planned network augmentation is delayed, it cannot be completed before a larger chunk of our private vehicle fleet is transitioned? What is the worst possible case scenario? Are we simply facing brown-outs? Is that what I am looking at?

Mr Billing: Yes, sure. Pardon me, could you just remind me of the first part of that? I had my response and then I have—

MR PARTON: So that is: you have spoken about driving behavioural changes in electricity usage patterns to try and avoid critical peaks.

Mr Billing: Yes. So, the behaviour piece, that would require more investment which is more cost and therefore likely to have an impact on bills. The piece we are trying to balance is to understand what that growth is going to be in a period so that we have the funding to be able to build the network, to stay in front of the demand. That is what we are trying to achieve through our regulatory submission. We are trying to have that—what do we think that uptake would look like? We do not do that on our own. We have sought advice from a number of sources in coming up with that. As I said, the AER will look at it as well. They will cast their eye over it and they will use their economists and other support they have to come back to us and ask additional questions.

So the first key is to get the funding. Once we have the funding in place, we believe

we have a plan to be able to deliver that in those five-year periods. Our modelling has said, if what we think is the worst case at the moment, we have a plan to be able to deliver across that. We just need to continue to adjust it. If it goes down through the use of technologies, then we wind back. If it goes up through behaviours, then we need to increase our plan. So, this is very much a dynamic conversation.

The big issue we face is that we are funded on five-year periods. We have to get our views really solid and clear; then have the right debate with the Australian Energy Regulator around the funding we require; then have them approve that appropriate funding; and then take that funding forward to deliver on what customers are asking for.

MR PARTON: When you say, approving the funding, please excuse my ignorance here, but that is, they are approving the spend for you. They are not actually supplying the money—it is coming from consumers, is it not?

Mr Billing: What they are doing, is ensuring that the money we recoup from consumers through the electricity bill, is to that level of funding—

MR PARTON: Yes. So they are not actually approving funding and saying, “Here you go, here is a big wad of cash.” They are just saying, yes, this is what you can spend and roll it into bills.

Mr Billing: That is correct, yes. And assuming then that the amount we recover through the bills from our customers matches the funding we have been approved, then yes, that is how that process operates. They do review from year to year. So if we have under-recovered in one year, then there is an increase in the next year. If we have over-recovered in one year, so the volumes have been higher, then we reduce our funding. So they are trying to ensure that by the end of the period we have only recovered the amount that they approved initially.

THE CHAIR: I am just going to confirm, I think I heard you say the increase in our electricity bills from your side of the picture, which accounts for about a third of it, is in the order of \$7 plus CPI, was that—

Mr Billing: Yes, that is correct. Yes.

THE CHAIR: And that would be coming at a time when families that have managed to upgrade are no longer paying for petrol, diesel, or gas heating or cooking. So that is actually sounding quite promising, is it not?

Mr Billing: In preparing our regulatory submission we did a lot of public consultation. We had a customer reference group, customer panel, we talked to them about all the options we had in front of them. The very strong message they gave us was, you need to manage the impact, particularly on those that are least able to afford increases but you must ensure you invest to meet the demand that is likely to come. We think the proposal we put to the Australian Energy Regulator is the right balance of that. The CPI side of it we cannot control but we can control the other piece. So yes, we think it is the right balance. Nobody wants to see their bill go up, of course, but the reality is there is investment during that time.

MR PARTON: I have only one line of questioning left, and it is regarding the work that will be needed to ready the electricity network for mass EV charging. Never mind the cost, how are you going to provide the labour and the expertise to make all this happen? How many workers do you need? Where will they come from?

Mr Billing: The simple answer, which will not answer your question I suspect, is we can grow our workforce and we are looking at our apprentice programs to continue to grow so that we continue to have a strong viable internal workforce. But we can also receive support from external contract providers and there are a number of large contracting firms that can do the sorts of work that we are talking about. For example, we are building a zone substation at the moment and that is being done by a contract resource coming in.

MR PARTON: I had an understanding that the ACT does not allow contestability on its network. That you would have to change that status to allow the market to be opened up to local contractors. Have I misunderstood that?

Mr Billing: No, that is contracts we are letting, as opposed to the customer specifically deciding, do I want Evo to build that or could I choose somebody else. So that is the contestability you are talking about and it does not exist in the ACT at the moment. But we have the ability to bring those additional external resources in through the letting of our contracts and again, we built that into our pricing proposals that we put in our submission.

MR PARTON: All right. Excellent. That answers that for me. When we had the other hearing, one of the things that stuck in my head was we had some people from some apartment complexes who talked about the fact they had been given the advice that you have to get rid of these gas hot water systems, so they have gone with electricity. This is what came from some of the people in the inquiry. They said, once we had done that and gone with electric hot water systems, the advice was that we could not actually get sufficient extra power into that complex to charge multiple EVs and there would have to be work done on the substation for that to occur. Is that a correct reading of the situation?

Mr Billing: Yes, it would be under probably most circumstances. So when the electricity supply to that unit complex was put in, it was on the basis that there was gas hot water, or whatever is there on the gas side, so that component of load was not an electricity load. It was a gas load. And most likely there was not any expectation around EV charging. That situation would be the normal scenario. What they are really saying is now when they do this conversion, they would need to do an upgrade in their building in some form or other, in their switchboards and so on. It is very likely, probably in all cases but certainly in the majority of cases, that we would need to upgrade on our side, because we put in a supply that was relative to what they wanted then and now we would need to upgrade on our side.

MR PARTON: I know the job is not completed by 2029 but when you talk about the additional \$90 million, I am assuming that a great proportion of that is upgrades of substations. I cannot see how you upgrade 14 substations for \$90 million.

Mr Billing: No, we have 14 zone substations at the moment and most of those zone substations will not need any work. Gold Creek, is an example, where we will need to do some work. We are continuing the Molonglo zone substation I talked about. We believe there are two other sites, one in the south and one in the north, which are part of that. Some of the work you are now describing is direct customer contribution, as opposed to the part of that \$90 million we are referring to.

MR PARTON: So what part of it would be direct customer contribution? When you talk about upgrades to substation that are required to get enough power into apartment complexes, surely that is not direct—

Mr Billing: No. No, it is not. It is specific. If we put a transformer there to supply that load at the moment and then if it needed to be upgraded, then depending on contributions and so on, there may be additional capital that the facility may need to put towards it, which is not part of the \$90 million. But the rest of it is predominantly in the \$90 million.

MR PARTON: I think we should be advising a lot of young people to take electrical apprenticeships.

THE CHAIR: I am thinking we should advise young people not to become gasfitters, become sparkies. This is good advice.

Mr Billing: We are obviously also the owner of the gas network in the ACT. Whilst we do not have a workforce that work on the gas network, certainly the gas fitting group that manage our network are very concerned about what the future looks like. The business that operates on their behalf are very much trying to talk to them about it; that there is still a long future here and what the opportunities are. But it is a real issue.

THE CHAIR: Well, I think that brings us to the close of our hearing. Thank you very much for coming in at an unusual time. It was greatly appreciated.

MR PARTON: It was, yes.

THE CHAIR: On behalf of the committee, thank you both. Thank you broadcasting and Hansard and the committee secretariat for your support today. I do not believe we took any questions on notice today.

Mr Billing: I do not believe so.

THE CHAIR: Great. Any member who would like to ask a question on notice can lodge it within five business days of the hearing. Our hearing is now adjourned. Thank you.

The committee adjourned at 10.14 pm.