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, 15 JUNE 2023

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

By authority of the Legislative Assembly for the Australian Capital Territory

WITNESSES

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Amended 20 May 2013

The committee met at 9.34 am.

RATTENBURY, MR SHANE, Minister for Water, Energy and Emissions Reduction
WRIGHT, MS FIONA, Executive Group Manager, Climate Change and Energy; Environment, Planning and Sustainable Development Directorate

THE CHAIR: Good morning. 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 we are hearing from Minister Rattenbury and Ms Wright.

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, and we would like to acknowledge and welcome other Aboriginal and Torres Strait Islander people who may be attending today's event or are watching from other countries.

We are recording and transcribing, and we are broadcasting and web-streaming today. We have had quite a lot of journalistic interest in this inquiry so far, so I would not be surprised if we have an audience out there. If you take a question on notice, it would be great if you could use the words, "Thank you; I will take that on notice." That helps our secretariat track down the answers. On that note, welcome, Minister Rattenbury, and officials. Have you seen the privilege statement and do you understand the protections and obligations afforded by parliamentary privilege, and do you agree and accept those?

Mr Rattenbury: Yes; thank you.

Ms Wright: Yes.

THE CHAIR: Thank you. Excellent. We are not having opening statements. We will jump straight to questions. Thank you very much for joining us. Our previous hearing was with Evoenergy. We heard quite a lot of information about their upgrades to the grid and we thought it would be a good idea to circle that and find out from the energy minister's point of view how that is going. Evoenergy told us that they provide around a third of the grid's capacity. They told us some information about the upgrades that they think they will need to make with EV transition in particular but also with the getting-off-gas transition. They suggested that the requirements on the grid might double in the next few years, and they had quite a lot of information about the predictions for the upgrades they would need and how much money those might cost. They also told us that all these changes might lead to about a $7 increase on bills.

My questions are: have you had a chance to review their hearing information; how do you feel their information is going; and how do you feel we are going with our upgrades to the grid to accommodate any new demands from EVs?

Mr Rattenbury: In the macro, it is fair to reflect that we are forecasting in an

uncertain future. There are a lot of variables in the equation, in terms of the impact that both electrification of the city and, in particular for this inquiry, electric vehicles will have on grid capacity, grid requirements, and the like. EVs will impact on the electricity grid, but the extent of that impact is dependent on a number of factors. Those include the times at which drivers charge their cars, the concentration of EVs in a particular geographical area, the rate of uptake of electric vehicles, and also any government or distributor interventions that influence charging behaviour, whether that is regulatory, software based or even pricing signals. So there are a significant number of variables. That said, the ACT government has commissioned modelling, and we are very happy to go through the details of that. That is perhaps the broad answer to your initial question.

THE CHAIR: It has been suggested to me that, with a fixed price cost on our network, on our infrastructure, if we use more electricity the cost per unit of electricity might decrease over time. Is that likely to happen?

Mr Rattenbury: Sorry?

THE CHAIR: Was I clear? We have fixed costs for how much it costs for us to build and maintain the network, so, if we are using more electricity over time, does that mean that, regardless of whether you own an EV or not, the unit cost of electricity is likely to stay the same, is likely to increase or is likely to decrease?

Ms Wright: If I understand the question correctly, it really depends on how we are using that electricity. If all the electricity is being used at the same time and we are increasing the peak—for example, in Canberra, a cold winter's evening is when peak electricity usage is seen—if everyone decides to plug their EVs in at the same time, which is what we term "convenience charging", then we will need to build bigger infrastructure because we need to cope with that increased peak. However, if we have tariffs in place, if we have regulation in place that smooths out the electricity, then we will see what you have proposed, which is that, over an entire day, more electricity is used and that will average out to be a lower cost overall.

THE CHAIR: That is interesting. Evoenergy told us that they were using tariffs to reduce peak demand and encourage people. With EVs being charged at different times of the day and the energy being stored in the battery, does that mean that we do not need to increase the peak demand as much; we may simply be using the energy at different times of the day for our EVs?

Ms Wright: Yes; that is correct. At the moment, it is probably quite a lumpy kind of curve, in terms of how electricity is used. The idea is that we smooth that out and we basically utilise the infrastructure that is there to a higher capacity at other times of the day when it might be underutilised.

THE CHAIR: Interesting. Thank you. Mr Parton.

MR PARTON: Thank you, Chair. Team, I am going to get straight to the crux of my concerns. Mr Billing, when he appeared, stated that we are staring down the barrel and that our electricity needs to be more than doubled by 2025. He talked about a potential sixfold increase by the time we get to the end of this process. Mr Rattenbury,

I like your terminology better than the way we set up this hearing—the "electrification of the city"—because that is the biggest thing that we are talking about here. It is not just about EVs; it is about the electrification of the city.

I have three concerns. There is Evoenergy's physical capacity to deliver what I would have thought has to be a massive increase in infrastructure required to get us to that point, and the cost of that network upgrade and the impact that it will have on electricity bills, irrespective of the evidence that Evoenergy and Mr Billing have given us—that it is a $90 million additional cost in the next five-year term. And this is the third and final concern, but it is probably my biggest concern: how on earth the national grid is going to physically provide enough electricity to the market to accommodate such a massive increase in demand, not just in this jurisdiction but also in every other jurisdiction.

I recall going down a line of questioning at a previous hearing in which you, Mr Rattenbury, and Mr Rutledge, chuckled at the premise of us running out of electricity. I know that you would have examined this at great length. I want to know how it is possible to increase demand fivefold or sixfold and keep finding power somewhere. There must come a point in demand at which the grid cannot supply the power that is needed.

Mr Rattenbury: Thanks, Mr Parton. We have looked at those matters very carefully. In 2022, the ACT government engaged a specialist consultant, GHD Advisory and ACIL Allen, to model the impacts of both gas transition and electric vehicle adoption in the ACT. That modelling looked at a range of scenarios. Basically, the modelling found only a relatively small impact on the grid from the increased rate of EV adoption across a range of scenarios. Under the base case, which is what Ms Wright describes as convenience charging, where people do whatever they want, they basically found the total contribution of EVs to the ACT's peak load varies, from 3.3 per cent in 2030 to 9.5 per cent in 2045. This signifies the limit impact of EVs on the grid at that stated forecast. Adding a sensitivity to reflect more convenience charging increases the peak load by about 1.12 per cent to 4.42 per cent in 2030. It is still a quite different figure to that sixfold figure you were talking about.

The alternative scenario, which is colloquially known as "decentralisation is king"—and what that refers to is the idea that people use the solar batteries at their own home and the like—delivers better outcomes, where the ACT peak load impact from EVs is 2.6 per cent higher in 2030 and four per cent higher in 2045, a rise of 3.24 per cent under the convenience charging profile. There are a lot of numbers there, but basically what it shows is—

MR PARTON: They are encouraging figures, though, are they not?

Mr Rattenbury: They are. The government is now having that modelling redone because the rate of EV uptake is so high. It is higher than under the original models, so we are redoing that modelling now, and that will be available later this year. On those figures, it is not as concerning as perhaps on some of the figures the committee has previously heard.

MR PARTON: So why did Mr Billing talk in the terms that he spoke? Why did he

talk about such a massive increase in needed supply?

Mr Rattenbury: I think it is because we are at a point in this transition where there are, as I touched on earlier, a lot of uncertainties. Depending on the scenarios that you build, you can come up with a range of different answers. That is why we are having the modelling redone, to double-check the ACT's considerations. We have further figures that show the peak demand contribution from passenger EVs is 26 megawatts in the base case. In the scheme of the amount of electricity, we have just had Berrybank Wind Farm come online this week, and that is 109 megawatts. That goes to your subsequent question around the overall capability of the grid.

In terms of the national grid, that is obviously something energy ministers are focused on as part of the national work, where all the energy ministers, particularly the NEM ministers, are working together. What I can say is that there is a lot of work being done to increase supply. There is a lot of new generation coming into the system. There is also significant work on improving transmission so the energy can be shifted around the national electricity grid. And, finally, there is a lot of consideration of the decentralisation agendas, so that we do not have to keep building bigger infrastructure. The infrastructure has to meet peak demand, so, if we can smooth out peak demand, we do not need to spend as much on infrastructure. That peak demand can be managed through a range of things, whether it is about the time people use energy or the energy efficiency. There are things like our Energy Efficiency Improvement Scheme in the ACT, where people do not need as much power for particular devices or to run their homes. There is a series of mitigating strategies which we believe will mean that we do not have to make such significant upgrades to the grid.

MR PARTON: As energy minister, you are satisfied that Evo will have the physical capacity to deliver the augmentation of the network that is required to get us to this point?

Mr Rattenbury: By that, do you mean enough staff to do the job?

MR PARTON: Yes, enough staff and enough capacity. Obviously, there is going to have to be some outsourcing at some point, is there not?

Mr Rattenbury: The exact model of how to deliver it is probably a management question for Evo.

MR PARTON: Yes.

Mr Rattenbury: What I can say is that there is undoubtedly pressure on the system. There is the scale of the transition across Australia. The skills issue is a significant one. Again, the energy ministers, nationally, are concerned about it. First ministers are concerned about it. There is a lot of work to be done to train enough staff to undertake the transition. There is going to be pressure. There is no question about that.

MR PARTON: Those are good answers. That allays some of my fears.

Mr Rattenbury: In terms of your question—as energy minister, am I confident we can pull this off—what I would say is that, as energy minister, I know we need to do

this. I know there are going to be pressure points and there is a range of uncertainties, but there is a lot of work being done to think about those things. At the moment, we are working on the Integrated Energy Plan, on which we are consulting key stakeholders, and that is putting more detail into the transition plan over the next couple of decades, because there are a lot of questions that need to be answered.

MR PARTON: I am sorry, Chair. I will be done here. At some point, you must focus on the worst possible scenarios in this process, because you cannot just assume that it is all going to go along swimmingly, and those worst possible scenarios are not all that good, are they?

Mr Rattenbury: There is obviously a range of scenarios out there. There are also a lot of positive things happening. We are now seeing that one in four households in the ACT has solar panels. That is obviously bringing a lot more supply into the market. More people are taking up batteries, more cars are developing bi-directional charging—

MR PARTON: Not that it was ever really designed to do that here, though, was it? There have always been questions raised with me about the ability of the network here to cope with such a two-way action going on, in terms of—

Mr Rattenbury: Indeed. Historically, our grids were designed to have large, centralised power stations pushing power in one direction. Now we have literally thousands of small power stations across the city. There is work to be done to make sure that operates effectively.

MR PARTON: Thank you. You have answered those questions exceptionally well.

THE CHAIR: Thank you, Mr Parton. Minister, we often hear different figures. The figures you have given today of a three per cent increase in peak demand by 2030 and possibly a 9½ per cent increase in peak demand by 2045 is a different scenario than we were presented with previously. I wonder if people are sometimes not comparing like with like. Is it right that, when you are looking at the energy your city needs, it is really about the peak energy needs that your city needs? At the moment, we have an energy system where we have certain peak demands and a lot of time when not much electricity is being used at all, and things like smart devices and EVs might use a lot of electricity that is currently not used. That might explain why using a lot more electricity does not actually increase the peak budget; it just smooths it out over the course of the day. Are we perhaps not comparing like with like? Is it more important to look at peak demands than overall demand?

Mr Rattenbury: Ms Wright will add some comments on this, but your central point is spot on. It is the issue of peak demand. That is what costs a lot of money, in terms of needing to upgrade the system, and the capability to smooth that load across the day is what is going to answer a lot of the questions that Mr Parton is raising. We are seeing circumstances now in other jurisdictions where there is so much solar coming into the system in the middle of the day that there is excess and solar systems are being turned off by the central agency or the energy companies because there is too much electricity in the system.

If we can get all the electric vehicles lined up and charged in the middle of the day when all that solar is pouring into the system, people will not go home and do convenience charging from 5 pm to 8 pm, which is our peak demand time. In fact, those cars—which have sizeable batteries in them, compared to a home battery—under the grid scenarios, could put energy back into the system, and so you could significantly reduce the peak of the early evening slot, which is currently the main challenge for the ACT, particularly in winter. Ms Wright, is there anything else we should add to that?

Ms Wright: No. I think that you have nailed the crux of the situation. I would just relate that the difference in our figures is because we are also modelling for a gas transition. Probably the largest impact on the need to increase capacity of the grid will be our gas transition. EVs, with the gas transition, are quite complementary for the reasons that Minister Rattenbury just talked about, in terms of allowing us to have the ability to trade off at times of the day when solar is high and then being able to feed back in at times when we need some peak electricity.

The other point I would add is that there is a 20-year transition to make changes to the grid and Evoenergy works in five-year regulatory periods. Being able to provide them with a clear direction over four of their regulatory periods allows the smoothing of the infrastructure build as well as the smoothing of the transition.

THE CHAIR: That is great. Most people are probably most concerned about the impact on their bills. Not a lot of us think about the grid infrastructure behind it. We heard, quite reassuringly, that Evoenergy was predicting that, over the next five years, there might be a $7 increase in electricity as a result of what they were modelling, which is perhaps a bit more ambitious than needed, given today's information. Maybe it is a $7 increase on bills at a time when people might be not paying for petrol, diesel and gas as a result of the transition. Have you looked at increases on bills at the back end for consumers? Is that sounding like what you are looking at?

Ms Wright: It sounds aligned to what we are looking at, but again it is not an apples and apples response. We have been looking in terms of the wholesale impacts to the networks. If that is something that you would like us to look at, we could take that on notice.

THE CHAIR: If the information is available—the increases that are likely, if that has been modelled—that would be quite helpful.

Mr Rattenbury: To be honest, the bigger impact will be the change in wholesale prices. I think most people would find the figures that Evo provided a bit reassuring, to be honest, and they are in the ballpark of what we would anticipate. We have not broken it down to individual bills, so we can look at that, as Ms Wright indicated, on notice. There is the variation we have seen in wholesale prices. We saw the electricity price determination that came out last week. Wholesale electricity prices are up by 92 or 93 per cent, compared to previous years. Those sorts of margins are going to have a far bigger impact than the network charges that are being discussed here.

THE CHAIR: Thank you.

MR PARTON: A number of constituents have contacted me regarding the recent news stories about EV battery waste and what on earth we are going to do with all those batteries at their end of life. It fits into this inquiry. Minister, you must have given great consideration to this. Please excuse me if government statements have been made in recent days in response to these stories, because I have not seen them, but what is the ACT government's strategy in dealing with this sort of waste on a long-term basis?

Mr Rattenbury: Clearly, we are going to need to see a significant growth in battery recycling capability. It is a somewhat infant industry in Australia. What is interesting is that there is high potential for the batteries that come out of cars to have a second life. The nature of an electric vehicle is that it needs a particularly large and high-performance battery. When those batteries are no longer necessarily up to powering a vehicle, they still have a perfectly good life to potentially be used in domestic or rural environments as a battery back-up. There is a re-use element before there is even a recycling element for these batteries. Again, there is a significant discussion going on across governments about how we will develop that capability in coming years.

MR PARTON: I look forward to more on that. When it comes to EV batteries, Minister, your party prides itself on being champions of ethical trade. We have recently seen Greens members in this building attempting to get us to change our chocolate buying habits, for arguments sake, so that we can look after countries and companies that are looking after their workers. As a fair-trade Green, how can you possibly reconcile the cobalt mining situation in the Democratic Republic of Congo, given the percentage of the world's cobalt that comes from that country? How is it possible to close your eyes and look the other way while we have human misery on such a grand scale happening before our eyes in that absurdly poor country just so that we have the privilege of driving a Tesla?

Mr Rattenbury: I appreciate your deep concern for these issues, Mr Parton, and I thank you for raising the question. No-one is closing their eyes to this situation. Across the planet, we have a range of daily conveniences that all of us utilise, whether it is the fish we consume, the meat we consume, the cars we drive, or a range of other products which are currently unsustainable. I and my colleagues have dedicated most of our lives to try and turn these things around and we will continue to do so. Through every supply chain, there is work to be done to improve the working conditions of employees, to reduce the carbon impact and to reduce the biodiversity impact of land clearing. There are big challenges, and electric vehicles can be no exception to that.

MR PARTON: But they are currently the exception. If these practices were going on in the development of just about any other product, I assume that your party would be saying no to the purchase of those products, but, because we are talking about batteries for EVs, we ignore and just accept it, saying, "Well, it's okay".

Mr Rattenbury: I think you are trying to run a particular agenda here, Mr Parton, and I appreciate what you are trying to do.

MR PARTON: Yes. I understand.

Mr Rattenbury: I am not going to enter into that conversation. As I have made clear to you—

MR PARTON: Why not?

Mr Rattenbury: I have made clear to you that there is a range of products that each of us consumes every single day. If you have a tuna sandwich for lunch, there are problems with where that tuna comes from.

MR PARTON: So you are happy to just accept the situation as it exists?

Mr Rattenbury: No; I am not happy to accept the situation. What I am saying is that, across our entire Western lifestyle, we have significant work to do to make the planet and the way we produce things more sustainable, in terms of both environmental and social considerations. You are trying to make a political point about me and my party. That is the work that we do every single day. It is the reason we are in this parliament.

MR PARTON: All right. Thank you.

THE CHAIR: Excellent. That brings us to the end our time today. I think you did take a question on notice.

Mr Rattenbury: Yes.

Ms Wright: Yes. We have noted that.

THE CHAIR: Thank you very much. Is there anything that you would like to add that we did not cover or that we half covered today?

Mr Rattenbury: No. I think that has covered the main points. Thank you.

THE CHAIR: On behalf of our committee, thank you very much for appearing today.

Mr Rattenbury: Thank you.

MR PARTON: Cheers.

The committee adjourned at 9.59 am.