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Dear Mr Turley

AEMO draft 2023 inputs, assumptions and scenarios report

CitiPower, Powercor and United Energy welcome the opportunity to provide comments on the Australian Energy Market Operator's (AEMO) draft 2023 inputs, assumptions and scenarios report. Ensuring that the inputs, assumptions and scenarios (IASR) are as accurate and realistic as possible will promote better decision-making capability and more credible forecasting outputs.

Specifically, we provide the following feedback:

- the committed Victorian Government carbon emissions reduction targets of 75 to 80 per cent below 2005 levels by 2035 and net-zero by 2045 should be met in all of AEMO's proposed scenarios
- it is consistent to assume high DER uptake in both the orchestrated step change scenario and diverse step change scenario given similar emissions outcomes
- AEMO's reduction in electrification in its diverse and orchestrated step change scenarios compared to its 2022 step change scenario appears inconsistent with the likelihood and magnitude of government policy further supporting electrification
- the new convenience EV charging profile likely understates the amount of EV charging during the evening because the charging patterns from early trial participants are not representative of likely charging patterns during mass-market adoption, and the prevalence of home charging installations will increase over time.

We expand on these issues below.

The committed Victorian Government carbon emissions reduction targets of 75 to 80 per cent below 2005 levels by 2035 and net-zero by 2045 should be met in all of AEMO's proposed scenarios

AEMO's IASR states that its scenarios do not explicitly reflect the Victorian government election pledge to bring forward its legislated net-zero target to 2045. However, AEMO highlights that its green energy exports scenario reflects assumptions that are reasonably consistent with this commitment.

AEMO's 2022 ISP considered step-change the most likely scenario. If AEMO determines in its 2024 ISP that one of its new step change scenarios remains the most-likely, then its current forecast will almost certainly need a material revision. A more robust approach would be to reflect committed policies in all scenarios from the outset.

It is consistent to assume high DER uptake in both the orchestrated step change scenario and diverse step change scenario given similar emissions outcomes

AEMO considers that there will be high DER uptake (including solar PV, batteries and EVs) in its orchestrated step change scenario while only considering moderate DER uptake in its diverse step change scenario. We believe this is inconsistent because both scenarios aim to limit warming to 1.8° C and DER uptake is fundamentally required to reduce emissions. If the emissions outcomes under both scenarios are the same, it is reasonable and consistent to assume that DER uptake under both scenarios is also the same.

In addition, if the emissions outcomes are the same, it is also reasonable to assume that Government commitments and policies are also the same. Government policies are strong drivers of DER uptake, further evidencing that DER uptake under both scenarios should be high.

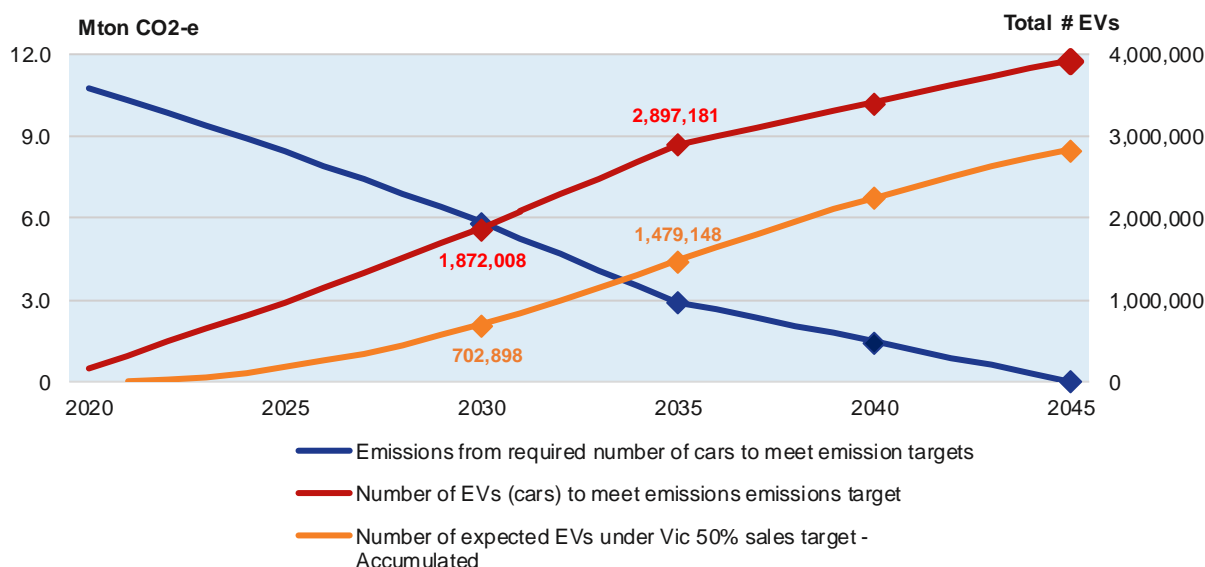
AEMO’s reduction in electrification in its diverse and orchestrated step change scenarios compared to its 2022 step change scenario appears inconsistent with the likelihood and magnitude of government policy further supporting electrification

Total electrification in AEMO’s 2023 diverse step change and orchestrated step change scenarios is lower than AEMO’s 2022 step change scenario. This result appears improbable given the increasing drive from Governments to pursue electrification opportunities.

As outlined above, it is highly likely that the Victorian Government will legislate its 2035 and 2045 net-zero policy commitments. Our analysis demonstrates that the achievement of these policy targets will include stronger electrification policies.

For example, Victoria’s required EV uptake to decarbonise Victorian road transport in line with committed emissions reduction targets far exceeds required EV uptake to achieve current EV policies. Figure 1 below depicts the number of cars that would be required to meet emissions targets pro-rata (red line)¹ compared to the number of expected EVs on the road under the current Victorian EV sales target of 50% EV sales by 2030² (orange line).

Figure 1 - EV cars required under emissions targets vs expected under sales targets



¹ Transport emissions by vehicle type are taken from Victoria’s greenhouse gas emissions report. Linear interpolation is used to derive the number of EV cars required to meet known emissions targets each year.

² It is assumed that each year 270,000 residential cars are sold in Victoria and that once EVs are purchased, they are replaced after 15 years. 100% EV sales target is assumed to be reached in 2050. Linear interpolation is used between today’s EV car sales and 50% of sales by 2030.

Over 1.8 million electric cars are required to reduce emissions by 50 per cent and current electric vehicle sales targets are insufficient to meet this target. While the transport sector may not need to achieve 50% emissions reduction by 2030 because other sectors may decarbonise relatively more instead, it is clear that further policies to support electric vehicle uptake will be required to meet Victoria's committed emissions reduction targets.

The new convenience EV charging profile likely understates the amount of EV charging during the evening because the charging patterns from early trial participants are not representative of likely charging patterns during mass-market adoption, and the prevalence of home charging installations will increase over time

The convenience EV charging profile in the draft 2023 IASR has materially changed from the convenience EV charging profile in the 2022 ISP. Most notably, EV charging during the evening has more than halved.

The 2022 ISP convenience charging profile was based on sales data for the size of home charging installations, while the 2023 IASR convenience charging profiles were informed by Australian trial data. While we support evidence-based insights from trials, early usage habits and charging patterns from innovators and early adopters of new technologies are not representative of likely charging patterns during mass-market adoption. We expect in general that mass-market adopters of EVs will be less engaged with electricity services than innovators and early adopters and are more likely to charge during the evening. This view is supported by the broad lack of customer engagement with electricity retail offerings even though many customers could save money on their electricity bills.

AEMO indicates that the new trials also suggested that dedicated high-power chargers installed and used at home are less common than previously believed. However, we expect that the prevalence of high-power chargers installed at home will increase over time as;

- new construction developments will have chargers installed as standard
- more customers acquire several EVs per household rather than one
- government rebates or funding for home charging becomes more available.

Increasing installation of home charging equipment is likely to increase the amount of EV charging during the evening peak.

We welcome further engagement on forecasting with AEMO and the wider industry through this period of rapid change in the energy sector to help ensure a safe, secure, reliable and affordable network for our customers. If you have any questions regarding this submission or would like to discuss its content, please contact Chris Gilbert at cgilbert@powercor.com.au

Yours sincerely,



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