

# Feedback on Victorian Government's Embedded Networks Review: Draft Recommendations Report



The Electric Vehicle Council (EVC) is the national peak body representing the electric vehicle industry in Australia. We represent members involved in providing, powering, and supporting electric vehicles. We are a cross sectoral organisation whose engagement with a wide range of stakeholders supports the advancement of a strong domestic electric vehicle industry.

Thank you for the opportunity to comment on the *Embedded Networks Review: Draft Recommendations Report*. Our submission focuses on how to ensure the proposed ban on embedded networks in Victoria does not have any adverse effects on the provision of electric vehicle (EV) charging services in apartment complexes.

## Electric vehicle charging services in medium-large apartment complexes

Victoria's Net Zero by 2050 and 50% EV sales by 2030 targets will require significant growth of EV adoption, which will be in part supported by widespread access to electric vehicle charging infrastructure. Given medium and large apartment complexes are expected to form a growing portion of Victorian dwellings, the provision of affordable EV charging services in apartment complexes is vital to encouraging and supporting the uptake of electric vehicles in Victoria.

With regards to the provision of EV charging services in medium to large apartment complexes, the Electric Vehicle Council believes that there will be value in permitting a range of EV charging arrangements, some of which may have resemblance to embedded networks in its architecture. This may extend to infrastructure run by third parties or run by the Owners' Corporation itself.

In buildings of this type, it is expected that installation of EV charging equipment will largely comprise of EV chargers in the 3kW to 7kW power range, installed at allocated car parking spaces, for the use of the resident to whom that parking space is allocated. In some cases, faster DC charging stations may be installed in shared spaces. Where it is practicable for the EV charger to be wired from the resident's metered dwelling supply, no special metering or billing arrangements will be necessary. The energy used in charging the vehicle will turn up on the resident's usual bill, and the resident will have all the existing options and consumer protections associated with energy supply to their dwelling.

However, it will often be the case that it will not be practicable to wire the EV charger from the metered supply to the dwelling. In many cases, the energy meter for the dwelling will be on one of the higher floors, and there will not be a convenient pathway to route a cable from that location to the car park. In these instances, energy supply to each EV charger will need to come from either the common property electricity supply in the building or a new supply to the grid.

The common property energy bill in an apartment complex is typically shared according to unit entitlements by all residents. Therefore, if a specific resident is charging their vehicle from common property power, in their allocated parking space, there is a free-rider problem.

Therefore, we need a way to recover the cost of this electricity. This can be done either by the Owners' Corporation itself or by a third party using a variety of metering arrangements.

**The Electric Vehicle Council's central recommendation is that it is in the best interests for consumers if various EV charging metering arrangements are not made unlawful but is instead permitted to continue in Victoria.**

However, the Electric Vehicle Council is concerned that Recommendations 8<sup>1</sup> and 9<sup>2</sup> of the *Draft Recommendations Report* could be read to require that supply to a residents' EV charger in an apartment complex be made only via an on-market meter, which would significantly increase the minimum cost to the resident both up-front and ongoing and decrease the choice for the building in terms of how they operate EV charging.

A possible approach to this issue would be to explicitly identify that the ban on embedded networks is not intended to apply to electric vehicle charging arrangements.

Mechanisms already exist in strata law for attribution of costs to apartment residents along these lines, and it is an approach already in use in Australia.

The Electric Vehicle Council believes that this approach:

- Meets appropriate consumer protections requirements
- Still offers consumers freedom of choice
- Provides a range of low-cost options for consumers
- Will support EV purchasing behaviour
- Is most compatible with forthcoming EV readiness requirements in the National Construction Code.

These benefits are expanded on in *Appendix A*.

We would also observe that there are many potential ways to address the challenge of retrofitting EV charging in apartment complexes. It is a space which will be subject to considerable innovation over time, which will be best fostered with a relatively light regulatory touch.

## Conclusion

Thank you for the opportunity to comment on the proposed changes to the *Embedded Networks Review: Draft Recommendations Report*. Please contact Behyad Jafari at [ceo@evc.org.au](mailto:ceo@evc.org.au) for further discussion.

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<sup>1</sup> Recommendation 8: All private network customers should have access to the energy retail market and it should be easy for them to transfer to an on-market energy retailer. Customers within a private network should not face a greater financial or administrative burden to change retailers than other Victorian customers.

<sup>2</sup> Recommendation 9: Customers within legacy (existing) private networks should not remain stranded within a private network indefinitely. To support the implementation of Recommendation 4, over time, metering and/or other internal infrastructure in legacy (existing) embedded networks should be upgraded and/or changed to enable these customers to access the retail market without imposing a cost burden on customers to do so.

## Appendix A: Electric Vehicle Council Submission on Embedded Networks Review: Draft Recommendations Report

### Consumer protections

There are important distinctions between energy supplied to a private dwelling, and energy supplied to a private vehicle, in terms of the level of consumer protections required.

In supply to a dwelling, there is a natural monopoly in place at a physical wiring level, which creates a risk of predatory practices in the absence of consumer protections, the separation of competitive and monopoly elements of electricity supply, and the economic regulation of the monopoly element.

This is a much weaker concern in relation to energy supply to a vehicle. If the driver does not like the commercial offer at one place for refuelling (or in the case of EVs, recharging), they are entirely free to take their vehicle to another location. This is practical for owners of internal combustion engine vehicles everywhere except perhaps in the most remote and under-serviced locations; and it is increasingly practical for owners of electric vehicles as charging options at public carparks, service stations, shopping centres and workplaces proliferate and bolster options at residential buildings.

The consequences of supply of electricity being cut off to a dwelling are also much more serious than the consequences of cutting off a supply to an EV charger mounted in an apartment complex.

In the first case, cutting electricity supply to a dwelling will typically mean no light, no heat, no cooling, no ability to preserve food or prepare anything beyond very basic meals. For this reason, there are substantial consumer protections in place around disconnection processes.

By comparison, if a private consumer is unable to pay for fuel for their vehicle in full at time of re-filling their vehicle, there is no comparable consumer protection in place; if a private driver cannot afford fuel for their vehicle, it is considered reasonable that they make other transport arrangements.

The freedom of the consumer to procure energy for their vehicle elsewhere than at the dwelling, combined with the less serious consequences of interruption of supply for EV charging at the dwelling, creates an argument in favour of lighter touch regulation around the supply of electrical energy for EVs, by comparison to the supply of electrical energy for dwellings.

It is by making the regulation lighter touch that substantial consumer savings are enabled, as addressed in the next section.

## Provides consumers with freedom of choice and access to low cost options

One of the arguments presented against embedded networks in the issues paper is their cost in comparison to the Victorian Default Offer (VDO).

It is important to note that with EV charging in apartments, different approaches will lead to lower costs and convenience for consumers, depending on the situation. This is why it is important that a variety of approaches are permitted, including ones without an on-market meter. Particularly at this stage and scale of the market, it is important to maintain flexibility in permitted approaches.

The following example highlights why not using an on-market meter could be beneficial for consumers. This is purely for illustrative purposes; in other instances, it could be optimal to install an on-market meter. The optimal approach depends on individual circumstances and needs to allow for innovation which is why flexibility is necessary. However, it is our concern that if the proposed recommendations are implemented, the below approach will no longer be permitted.

### **Example:**

EV charging in an apartment resident's parking space, supplied from common property power, will typically cost \$300/annum for delivered electricity. This is based on the energy required for a typical EV to cover the average distance driven per annum (~3,000 kWh, for ~15,000km driven), and the typical cost of off-peak electricity on a commercial supply contract of ~10c/kWh.

If the Owners Corporation is empowered to manage this process on a cost recovery basis, in accordance with appropriate Owners Corporation by-laws, then the actual annual energy cost to the consumer need not be significantly higher than \$300/annum. In a strata environment, this process can be highly transparent, and will not automatically be treated as a profit centre by an energy service provider (retailer, embedded network operator, or other third party).

Owners Corporations are in fact incentivised against profit-taking in contexts like this one, because profit taking has tax implications for the apartment owners. Substantial work around appropriate bylaws to suit this operational approach has been undertaken by Owners Corporation Network. For the avoidance of doubt, this submission does not suggest that this approach would be appropriate for energy supply to the dwellings, due to the need for robust consumer protections.

By comparison, if the resident is compelled to install a dedicated meter serving their EV charger of a type that enables freedom of choice among energy retailers, then their cost will be significantly higher. Controlled load / off peak electricity supply for small consumers is typically priced at ~18c/kWh, and there is a daily service charge of ~\$1/day associated with this type of metered supply on a retail contract. If we consider the price schedule set out in the 2021 VDO price determination to this requirement, using the controlled-load kWh pricing, the cost is between \$870/annum and \$1002/annum, depending on the Distribution Network Service Provider (DNSP). Embedded network operators will deliver outcomes at this approximate annual cost to the consumer as well; the model of a service charge plus per-kWh usage charge also applies there.

In addition to the ongoing costs to the consumer being on the order of three times higher, the upfront costs associated with requiring separate supply via a typical smart meter are higher as well. An NMI trade-certified energy meter suitable to measure a single EV charger, for the Owners Corporation representative to read locally in the building once a quarter, costs under \$150, and is the size of a single miniature circuit breaker. These are routinely used in caravan parks across the country today for cost recovery. Smart meters are more than an order of magnitude physically larger, are more expensive to procure and install, and require ongoing connectivity to a communications network managed by the DNSP.

## Impact on EV purchasing decision by consumers

One of the core justifications supporting the transition to EVs is that the vehicles are lower cost to operate. This is a crucial advantage for EVs, because they currently come at a significantly higher cost to buy. Without a significant operating cost saving to point to, it is difficult to create a sound total-cost-of-ownership argument for consumers in favour of moving to EVs from petrol cars. This is especially the case in Australia, where (by comparison to the rest of the OECD) there is a general absence of meaningful subsidies or incentives supporting EV purchasing.

If we consider the annual cost of fuel for a typical petrol-powered family car:

- 15,000km driven per annum;
- Average consumption of 7L/100km; and
- Unleaded petrol average price \$1.30/L.

We arrive at \$1,365 per annum. If the cost of electricity to the apartment dweller is \$300/annum for the EV equivalent, we see a meaningful saving of \$1,065/annum over the existing market alternative to the EV. This creates a 'break-even' point permitting the EV to be several thousand dollars more expensive than the petrol car, and still representing a sound economic choice for the buyer.

If the cost of electricity is raised to \$870-\$1002/annum as a result of requiring a smart meter and retailer arrangement under the VDO, the available fuel cost saving is reduced to between \$363 and \$495/annum. If we then add in the recently announced Victorian state government policy of a km-based road user charge at 2.5c/km (\$375/annum), the available fuel cost saving is reduced to between -\$12 and \$120/annum.

Under these policy settings, the economic case in favour of the consumer buying the EV or PHEV instead of the equivalent lower-upfront-cost petrol powered car would be thoroughly compromised. We would therefore expect these policy settings to cause EV and PHEV adoption to lag even further behind OECD norms than is currently the case.

## Compatibility with forthcoming EV readiness requirements in the National Construction Code 2022

At present under the 2019 National Construction Code (NCC), there is no requirement for developers to construct apartment complexes such that they are ready to support EV charging in future. As a result, we are seeing buildings erected today where the retrofit of EV charging equipment in future will be costly, technically difficult, and administratively challenging for all concerned (residents, owners, owner's corporations, electrical contractors, electrical inspectors, etc), and will likely present a headwind to EV uptake.

In recognition of this challenge, and the benefits that supporting EV uptake will provide, the Australian Building Codes Board (which manages the NCC) has been working for some time on a minimum set of EV readiness requirements to be included in the 2022 release of the NCC, with input from many industry stakeholders.

It is not feasible to require EV charging equipment to be made part of the base construction, or even for final circuits to support each future EV charger to be installed. What is potentially possible is to require additional electrical distribution boards in the car parking areas of large multi-residential buildings, such that in future the process for an individual apartment owner to install an EV charger in their parking space is straightforward.

The draft provisions as they presently stand require spatial allowance for metering, but do not require metering to be deployed as part of the base build or specify exactly what form this metering must take. This is a matter for the Owners Corporation to work through once the building is in operation.

One of the potential consequences of Recommendations 8 and 9 being applied to the provision of EV charging is that these readiness measures would be rendered unusable.

For example, under the draft NCC2022 provisions the EV-ready provisions could be satisfied by designing the electrical distribution boards to accommodate the future installation of small, trade-certified energy meters of the type mentioned above in the 'cost to consumer' section – each meter being the size of a miniature circuit breaker. If Victorian regulation aimed at outlawing embedded networks requires on-market metering for EV charging in the apartment context, and there is no physical room to install meters which are an order of magnitude larger, then it may create a situation where the EV readiness infrastructure deployed for compliance to NCC2022 cannot be legally used – meaning the residents in the apartment complex will have paid for it, but can derive no benefit from it, and still can't charge an EV at home.

It is our understanding that creating this type of roadblock to EV adoption would constitute an undesirable and unintended consequence of the intent of the ban on embedded networks - precisely the kind of thing that this consultation process is seeking input in order to avoid.