PUBLIC EV CHARGING INFRASTRUCTURE IN THE ACT
KEY RECOMMENDATIONS OF THE
ACT BRANCH OF THE AUSTRALIAN ELECTRIC VEHICLE ASSOCIATION
VERSION: 26 MARCH 2024

INTRODUCTION

This statement is a revised version of statements issued previously by the Australian Electric Vehicle Association (AEVA) ACT Branch since January 2021. The current revision includes a detailed recommendation on disability access. It also further limits recommended requirements for the CHAdeMO charging standard.

PRINCIPLES

The recommendations are based on two key principles for public charging infrastructure:

- First, the helpful conceptual model for EV charging infrastructure based on a tree, with three classes of facilities for different situations[1]. The roots of the tree represent slow, private home and workplace charging. The trunk of the tree represents public fast charging stations as found at highway service centres. The branches of the tree represent slow- to medium-speed destination charging at locations such as hotels, caravan parks, shopping centres and tourist destinations. **All** elements are needed in a network of charging infrastructure.
- Second, site selection must consider the typical dwell time at that location. Sites such as shopping centres and tourist destinations can provide slower charging suited to the duration of a typical stay, whereas locations catering to long-distance travellers should provide very fast charging.

KEY RECOMMENDATIONS

[1] There should be a mix of DC fast charging (50kW+) and slower AC charging (typically around 7kW). Intermediate speeds such as 22kW could be considered. Some locations will be most appropriate for fewer, expensive, DC chargers while other locations would favour a much larger number of cheaper, slower AC charging points.
[2] Charging infrastructure should preferably be available 24 hours per day, 7 days a week. Sites should be signposted, well lit and be located in populated areas to improve safety.
[3] Public charging infrastructure must be inclusive for all and be fully accessible to people with a disability. In lieu of an Australian Standard, the Royal Automobile Association of South Australia (RAA) *Design Guidelines for Accessible EV Charging Stations* should be adopted in the interim. Key requirements include:

- providing circulation space along one side and the front of **one** accessible charging bay per station;
- not using wheel stops in accessible charging bays;
- thoughtful placement of bollards to protect chargers but not restrict access; and
- signage (“Priority Bay Use Last”) to keep accessible charging bays available to those who need them.

[4] Charging points should be located near amenities such as toilets and food outlets.

[1] 2030 National Charging Report, US National Renewable Energy Laboratory

[5] Each of the seven Canberra town centres (North Canberra/Civic, South Canberra, Woden, Belconnen, Weston Creek/Molonglo, Tuggeranong and Gungahlin) should have at least six DC fast charging plugs.
[6] All DC fast chargers should support the CCS2 standard, and at least one plug per site should support the CHAdeMO standard.
[7] Some AC charging should be placed alongside any DC fast charger(s). In case of an outage, there is a backup, albeit slower. A driver who plans to be away from their car for a while could be encouraged through lower cost to not use the DC fast charger and instead use the AC charging point.
[8] Charging sites should cater for a wide range of EVs: not just cars, but also vehicles such as motorbikes, electrically-assisted bicycles and electric scooters.

- A few standard power points alongside car charging outlets would meet the needs of electric bicycle users. They would also be a back-up of last resort for electric cars in case of charger outages because they could be used with a driver's portable EVSE charge cord.

[9] There should be at least six public fast DC charging plugs and multiple AC charging outlets in the zone bounded by the National Library of Australia, the National Gallery of Australia, and Australian Parliament House.

- Visitors to the institutions and workers in this area are likely to be away from their vehicles for several hours so the provision should favour a larger number of slower chargers.

[10] AC outlets should be provided at major shopping centres and popular entertainment and restaurant precincts.
[11] 'Park and Ride' and other long-stay car parks are also ideal locations for large banks of AC outlets. Slower charging does not matter if a vehicle is parked for many hours; it is better to have plenty of charging outlets.

- A limited available supply capacity at a site (say 300kW) would not preclude installing, say, one hundred 7kW AC outlets. Outlets can be networked to share the available power. With every outlet in use, each would provide 3kW, but each vehicle would get 7kW when only 40 (of the 100) are in use.
- Slow charging through the day would provide a steady load for local roof-top solar exports. It would be even better if the car park includes a solar PV canopy.
- Park and Ride locations could also feature demand management, being slowed at times of high demand on the electricity grid. A minimum charge of (say) 12kWh in an 8-hour period could be guaranteed. This would be provided if the EVSEs were turned down to the minimum charge rate of 6A (1.5kW).

[12] Canberra hotels, motels, caravan parks and other accommodation providers should provide parking spaces that support overnight charging by guests, preferably via AC outlets but even trickle charging on ordinary 10A power points using the car owner's portable charge cord is sufficient.

- This will reduce demand on public charging. 7kW wall-mounted EVSEs are enough to ensure almost any car can be recharged overnight.
- Even an ordinary 10A power point provides 2.3kW, which is enough to add almost 200 km of range overnight.

[13] DC fast chargers should be installed at 'weekend excursion' locations and major routes into Canberra. Bungendore lacks fast charging facilities and should be prioritised. Braidwood, Murrumbateman, Yass, Goulburn and Cooma all have at least one DC fast charging station.

[14] It should be possible for drivers to pay for charging using a credit card. A proprietary app or RFID card should not be the only payment method.
[15] Charging point providers should be preferred if they can demonstrate maintenance capabilities to ensure high availability and prompt response to outages.
[16] The pricing model should discourage charging for longer than 30 minutes at DC chargers.

- Some providers charge both per minute and per kWh rates while others have a penalty for idle time after charging has ceased.

[17] AC charging points could use tethered cables with type 2 plugs or require 'bring your own' (BYO) cables, perhaps dependent on the location.

- The former are more convenient for the majority of cars but the plug and cable are more susceptible to damage or vandalism.
- A small minority of cars have type 1 sockets, but they can use a type 2 plug via an adapter that they could keep in their car.
- Car owners would generally carry a BYO cable with the appropriate type 1 or type 2 plug for their vehicle so the inconvenience would not be great if providers prefer to install outlets requiring a BYO cable. Cars generally have an option to remain locked onto the plug when charging ceases, which prevents theft of the cable.

CONTACT DETAILS

This list of recommendations was prepared by the ACT Branch of the Australian Electric Vehicle Association (AEVA).

It is available from our website at https://act.aeva.asn.au/
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