

PLAN 07	Provisions for Electric Vehicle Infrastructure in Development Control Plans - Financial Implications Report
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Strategic Objective	Liveable, Sustainable, Resilient Deliver effective and efficient planning and high-quality design to provide best outcomes for a growing city
File Ref	304160.2023
Report By	Danielle Hijazi - Strategic Planner
Approved By	Lina Kakish - Director Planning & Compliance

EXECUTIVE SUMMARY

This report responds to a Council resolution from the 30th August 2023 meeting to defer a report seeking endorsement from Council to amend relevant Development Control Plans (DCPs) to incorporate requirements for electric vehicle (EV) charging infrastructure in new dwellings. The deferral decision was made with the intention of a report back to Council with *the financial implications of the infrastructure including the installation costs and operational costs* before a decision can be made.

RECOMMENDATION

That Council:

1. Receives and notes the financial implications including installation and operational cost associated with EV infrastructure in new dwellings;
2. Endorses the draft amendments of the Liverpool Development Control Plan 2008, Liverpool Growth Centre Precinct Development Control Plan, and Edmondson Park South Development Control Plan 2012 to include controls for EV charging stations as detailed in (**Attachment 1**);
3. Place the draft amendments to the Liverpool Development Control Plan 2008, Liverpool Growth Centre Precinct Development Control Plan and Edmondson Park South Development Control Plan 2012 on public exhibition for a minimum period of 28 days; and

4. Delegates to the CEO the finalisation of the draft Development Control Plans should no objections be received; or receive a report summarising the details of the submissions upon conclusion of the exhibition period.

REPORT

Background

At the 29 September 2022 Council meeting, Council resolved to:

1. *Investigate suitable planning controls that will require new development in Liverpool to make provision for electric vehicle charging infrastructure.*

Subsequently, at the 29 March 2023 Council meeting, Council resolved to endorse the *Climate Change Policy* and *Liverpool Climate Action Plan*. The Liverpool Climate Action Plan identifies the key actions and priorities Council must undertake to achieve emissions reduction pathways for Liverpool Council Operations and the Community.

One of the key actions detailed in the *Liverpool Climate Action Plan* is for electric vehicle planning provisions to be made in all new buildings.

At the 30 August 2023 Council meeting, a report was prepared seeking endorsement from Council to amend Council's relevant Development Control Plans (DCPs) to incorporate requirements for electric vehicle (EV) charging infrastructure in new dwellings. The amendments align with existing state government policies, including the Electric and Hybrid Vehicle Plan and the Electric Vehicle Charging Infrastructure Guidelines, the State Environmental Planning Policy (Transport and Infrastructure) 2021 and the National Construction Code (NCC).

The proposed amendments to Council's Development Control Plans will only apply to *new dwellings* ensuring the controls do not contradict or hinder what is already legislated by the Transport SEPP and the NCC.

The proposed amendments are as follows:

Objective added:

- a) *To ensure the adoption of sustainable transportation practices by the integration of electric vehicle charging infrastructure in all new dwellings.*

Control added:

1. *Any new dwelling shall be provided with a dedicated 32-amp circuit provided in the electricity distribution board for the purpose of vehicle charging, and:*

- a. *a minimum of 1, 7 kW (32 A) type 2 electric vehicle charger located in the garage, carport or other parking area, Or*
- b. *That the electrical distribution board is adjacent to the garage, carport or other parking area, Or*
- c. *In instances where the electrical distribution board is not on the wall adjacent to a garage, carport or other parking area, an electrical conduit, pull-string and cover-plate is provided between the electrical distribution board and the vehicle parking area in a manner which permits a vehicle charger to be installed without penetrating any wall, ceiling or floor.*

Council deferred the decision pending a report back to Council with the *financial implications of the infrastructure including the installation costs and operational costs.*

Financial implications of EV infrastructure

Installation Costs

The NRMA website has a dedicated Electric Vehicle Hub section which details the costs involved with installing the infrastructure required for EV charging as well as estimating the operating costs involved.

The proposed amendments to the DCP require *a minimum of 1, 7kw (32 A) type 2 electric vehicle charger*. The NRMA website states: *the cost of the charging station itself can range from \$600 to \$2,500, depending on the brand and features. The installation cost can range from \$500 to \$1,500, depending on the location of the installation and any necessary electrical upgrades.*

The proposed amendments to the DCP also state that: *In instances where the electrical distribution board is not on the wall adjacent to a garage, carport or other parking area, an electrical conduit, pull-string and cover-plate is provided between the electrical distribution board and the vehicle parking area in a manner which permits a vehicle charger to be installed without penetrating any wall, ceiling or floor.*

The projected cost analysis for the installation of an electrical conduit, pull-string, and cover-plate hinges primarily on the skilled labor expenses incurred by a certified electrician. This estimation falls within the range of \$100 to \$250.

It is important to note that the estimated installation costs outlined within this report pertain to the outfitting of existing dwellings. The contemplated amendments in the Development Control Plan (DCP) are wholly applicable to new residential dwellings only and would be incorporated into the overall cost assessment for a new home build with negligible impact on the future homeowner.

Operational costs

Table 2: *EV charging rates (Source: EV charging at home NRMA)*

	Level 1 EV charging	Level 2 single-phase EV charging	Level 2 three-phase EV charging
Charge rate	2.4 to 3.7kW	7kW	22kW
Range added per hour of charge*	~16.9km (@ 2.4kW)	~47.7km	~154.8km
Empty to full charging time*	~18h 4m (@ 2.4kW)	~6h 12m	~1h 59m
Installation requirements	<ul style="list-style-type: none"> Standard 240-volt AC home wall socket Only requires charging cable supplied with the EV to be plugged into wall 	<ul style="list-style-type: none"> Standard single-phase AC home wiring run directly to wall charger Quote and installation by a qualified electrician required 	<ul style="list-style-type: none"> Three-phase AC wiring run from grid to wall charger Quote and installation by a qualified electrician required

**Estimate based on EV with 39kWh battery and 305km range*

The NRMA website states:

The time it takes to charge an EV depends on a few factors:

- *Charge rate: The power output of a charger in kW factoring in a 10% loss in power as energy passes through an EV's onboard AC to DC inverter.*
- *Battery capacity: An EV battery's capacity, measured in kWh.*
- *Level of charge: The current charge of the EV. Batteries tend to charge fastest within the 30 to 80% capacity range.*

For instance, to calculate charging time for an EV with a 39kWh battery capacity using a Level 2 charger at a 7kW charge rate, we would use the below formula:

$$39kWh / (7kW \times 0.9) = 6 \text{ hours } 12 \text{ minutes}$$

$$\text{Battery capacity} / (\text{Charging power} \times 0.9) = \text{Total empty to full charging time}$$

Based on the above formula the operating costs are estimated to be as follows:

Level 2 EV charging = approx. 6hrs using 7kw/h

Therefore, cost would be 6 x 7 x 0.3424 = **\$14.38 for one charging session (approximately)**

**Estimate based on EV with 39kWh battery and 305km range*

Other factors including individual electricity providers and rates would need to be considered in the operating costs.

Further costs estimates can be found on the below website:

NRMA Electric Vehicle Hub: [Electric Vehicles Australia: Driving the Future With Sustainable Mobility \(mynrma.com.au\)](https://www.mynrma.com.au/electric-vehicles-australia-driving-the-future-with-sustainable-mobility)

Next Steps

If supported by Council, the proposed amendments to the Development Control Plans (**Attachment 1**) will be placed on public exhibition for 28 days. Council officers will consider all submissions during the public notification period and the following two potential scenarios are likely to arise:

No objections received

Council delegates authority to the CEO to adopt the changes to the abovementioned Development Control Plans as outlined in attachment 1 of this report.

Submissions received from the community

If there is community objection, or reason to reconsider the proposed amendments, a report will be prepared for the next available Council meeting outlining a recommendation based on the submissions received.

FINANCIAL IMPLICATIONS

There are no financial implications relating to this recommendation.

CONSIDERATIONS

Economic	There are no economic and financial considerations.
Environment	Enhance the environmental performance of buildings and homes.
Social	There are no social and cultural considerations.

Civic Leadership	Act as an environmental leader in the community.
Legislative	Environmental Planning and Assessment Act 1979 Environmental Planning and Assessment Regulation 2021
Risk	There is no risk associated with this report. The risk is considered within Council's risk appetite.

ATTACHMENTS

1. Council Report and Resolution - 30 August 2023