



Clean Energy Council's Submission to the National Construction Code 2025 Public Comment Draft

The Clean Energy Council (CEC) welcomes the opportunity to provide feedback on the National Construction Code 2025 Public Comment Draft to the Australian Building Codes Board (ABCB).

The CEC is the peak body for the clean energy industry in Australia. We represent and work with Australia's leading renewable energy and energy storage businesses, as well as a range of stakeholders in the National Electricity Market (NEM), to further the development of clean energy in Australia. We are committed to accelerating the transformation of Australia's energy system to one that is smarter and cleaner.

Please find on the next page the CEC's Response Sheet regarding Volume One and the Housing Provisions. We are interested in ongoing consultation with the ABCB regarding the current and future proposed changes in the National Construction Code and view this a critical step in securing the best outcomes for integration of consumer energy resources into new builds.

If you have any queries or would like to discuss the submission in more detail, please contact Con Hristodoulidis at christodoulidis@cleanenergycouncil.org.au.

Clean Energy Council NCC 2025 Response Sheet

Name: Con Hristodoulidis

Organisation: Clean Energy Council

Email or Phone No: christodoulidis@cleanenergycouncil.org.au

Response(s)

NCC Volume(s): One Two Three Housing Provisions Liveable Housing Design Standard

Clause/Figure/Table: J9D4(1)

Recommended change to draft:

No suggested changes to draft clause, see clause below.

(1) Subject to (2), a carpark associated with a Class 2, 3, 5, 6, 7b, 8 or 9 building must be provided with—

(a) electrical distribution boards dedicated to electric vehicle charging—

(i) in accordance with Table J9D4 in each storey of the carpark; and

(ii) labelled to indicate use for electric vehicle charging equipment.; and

(iii) installed such that a cable run from the distribution board to the car spaces described in (2)(e) will be no longer than 50 m; or

(b) busduct dedicated to electric vehicle charging—

(i) labelled to indicate use for electric vehicle charging equipment; and

(ii) installed such that the car spaces described in (2)(e) are within 10 m of busduct; or

(c) a combination of (a) and (b).

Comment/reason for change:

The Clean Energy Council is supportive of the proposed changes to facilities for electric vehicles (EV) charging equipment regarding electrical distribution boards and busducts.

We ask the Australian Building Codes Board (ABCB) to consider the upcoming AS/NZS 4777.1 inverter requirements installation standards change. This change is expected to allow for the ability for bidirectional energy distribution in electric vehicles. While the provisions for switchboards may still allow for this change, there should be a specific clause to ensure the infrastructure will be suitable for the new standards requirements.

NCC Volume(s): One Two Three Housing Provisions Liveable Housing Design Standard

Clause/Figure/Table: J9D4(2)(e)(i)

Recommended change to draft:

(2) Electrical distribution boards or busduct dedicated to serving electric vehicle charging in a carpark must—

(e) be sized to support the future installation of a 7 kW (32 A) type 2 electric vehicle charger in—

(i) ~~400%~~ 80% of the car parking spaces associated with a Class 2 building in addition to electric vehicle chargers required by J9D4(6), or

Suggested addition to J9D4

(6) In a carpark or carparking area associated with a Class 2 building, electrical vehicle charging equipment with a capacity of at least 7kW (32A) must be installed to serve at least 20% of carparking spaces.

Comment/reason for change:

The Clean Energy Council is supportive of the requirement for all parking spaces within Class 2 buildings to be outfitted with electrical infrastructure to support the future installation of EV charging within multi-resident buildings. However, we believe there should be more immediate EV charging support provided for these households, allowing more equitable access to EV charging for residents of Class 2 buildings.

We note that Class 2 buildings have a higher likelihood of renter households, reducing the ability and agency for tenants to install charging equipment in their parking spaces. The inclusion of J9D4(6) as an addition to J9D4(e)(i) ensures EV charging provisions for residents without the resources to install charging infrastructure and negates difficult conversations between landlords and tenants.

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Clause/Figure/Table: J9D4(3)

Recommended change to draft:

(3) In a carpark or carparking area with more than 40 carparking spaces, electrical vehicle charging equipment with a capacity of at least 7kW (32A) must be installed to serve at least

— ~~40%~~ 15% of carparking spaces associated with a Class 3, 5 or 6 building;

or 10% of carparking spaces associated with a Class 9 building;

or ~~45%~~ 5% of carparking spaces associated with a Class 3, 7b, 8 or 9 building;

Comment/reason for change:

These changes in percentages reflect the influence of different occupancy types and vehicle usage when planning for EV charging infrastructure. Class 3, 5 and 6 buildings, such as shopping centres, hotels and offices tend to require visitors to stay for extended periods of time or overnight, therefore should have a higher percentage of EV charging sites. Alternatively, Class 7b and 8 buildings, such as warehouses or industrial centres are less likely to have regular visitors other than employees, reducing the demand for charging infrastructure.

We encourage the ABCB to consider the occupancy types when allocating requirements for EV charging installation and ensure this best reflects the needs of EV users. Additionally, there should be further clarity provided on the expectations for calculating car park spaces from a percentage, as this will not always be a whole number. The Clean Energy Council recommends that J9D4 specifies that car spaces should be rounded up to the nearest whole number.

We also note that the ABCB will need to consider the increase in the load for sites with EV chargers, which in turn will have flow on effect on a site's electrical infrastructure and distribution supply networks.

NCC Volume(s): One Two Three Housing Provisions Liveable Housing Design Standard

Clause/Figure/Table: J9D5(2)

Recommended change to draft:

(2) A building must be provided with an on-site solar photovoltaic system—

(a) that covers 100% of the roof space, excluding areas—

(i) shaded for more than ~~10%~~ 25% of daylight hours; or,

(ii) where the roof pitch exceeds 45° relative to horizontal; or,

(iii) used as an open terrace, open carpark, open roof garden, roof/sky light or the like ; or

(iv) designated as trafficable area, access for height safety systems or plant maintenance

access; or

(v) used for plant equipment, services installations or the like; or

(vi) above exhaust air flows from heat rejection equipment: or

(vii) ~~where provision of solar photovoltaic panels is impractical on account of panel size or mounting system limitations; or,~~

Comment/reason for change:

The provision J9D5(2)(a)(i) is too large of a restriction for the installation of an on-site solar photovoltaic system and will reduce the amount of mandatory solar installation in commercial buildings. The Clean Energy Council recommends this be increased to a minimum of 25% shading. This change will still allow for adequate exposure to daylight hours for the solar system. The usage of microinverters or D.C Conditioning Units (DCU's) can also maximise the energy output of a system negating the time shaded. Additionally, we recommend the ABCB clarify the definition of shading in this clause, to improve the transparency and obligations for commercial buildings.

The provision J9D5(2)(a)(iii) may allow for the exclusion of roof space used as a terrace, car park or roof garden with covered spaces. The Clean Energy Council recommends clarification in this section, such as the addition of the word 'open' ensuring areas of roof space with additional covering will not be exempt from and an on-site solar photovoltaic system.

The provision J9D5(2)(a)(vi) is supported by the Clean Energy Council.

The provision J9D5(2)(a)(vii) does not adequately consider the ability to adapt panel size and mounting systems, in particular mounting system limitations are no longer relevant constraints for installation. The Clean Energy Council believes there are currently too many solutions to circumvent 'impractical' roof space to allow this as an exclusion. The ABCB should clarify if this exclusion has been proposed to address narrow roof spaces, and apply a tighter definition, as the use of the term 'impractical' is too broad and creates loopholes.

NCC Volume(s): One Two Three Housing Provisions Liveable Housing Design Standard

Clause/Figure/Table: Table J9D5a

Recommended change to draft:

Minimum solar photovoltaic system installed peak output (W) ~~per m2 of conditioned space~~, for buildings without gas

Comment/reason for change:

The minimum peak output (W) for Table J9D5a only considers the space rather than usage of the building. The Clean Energy Council recommends that this table be modified to consider how the building is used, as large buildings with minimal electricity usage may result in large daytime exports. This approach may create a greater need for solar curtailment and emergency backstop deployment in networks with large building with minimal energy usage.

We encourage the ABCB to consider storage systems as an additional requirement or solution for buildings with large roof space but low daytime energy consumption. This would reduce the need for curtailment of daytime solar and allow commercial building to contributed to grid stabilisation and storage capacity.

NCC Volume(s): One Two Three Housing Provisions Liveable Housing Design Standard

Clause/Figure/Table: 13.7.10

Recommended change to draft:

- (1) Subject to (2), where gas is used for any domestic services, a minimum of 8 empty single-phase circuit breaker slots must be provided in a switchboard.
- (2) Where electricity is used for the domestic service of space heating, hot water or cooking, the number of empty single-phase circuit breaker slots required by (1) may be reduced by the number of single-phase circuit breaker slots used by the domestic service, so long as a minimum of ~~4~~7 empty single-phase circuit breaker slots are provided.
- (3) Where the empty single-phase circuit breaker slots required by (1) are located in a switchboard other than the main switchboard, supply to that switchboard from the main switchboard shall be sized to permit at least 32 A single phase maximum demand.

Comment/reason for change:

The Clean Energy Council is supportive of the proposed changed to Class 1 switchboard capacity, however, we recommend additional single-phase circuit breaker slots be provided for electrified homes to better integrate consumer energy resources, such as rooftop solar, home storage systems and electric vehicle charging equipment.

The minimum of 7 empty single-phase circuit breaker slots would allow space to be reserved for future solar photovoltaic systems, energy meters/monitoring, and home battery systems in residential homes. This should include allowances for additional circuit provisional space on the switchboard, but also additional physical space in the switchboards themselves to allow for larger cables and monitoring/control devices. This may need to be discussed at a State level with electrical safety regulators and Distribution Network Service Provider's as part of their metering rules or Service and Installation Rules requirements.

This suggestion considers the forecast and modelling in the Australian Energy Market Operator's 2024 Integrated System Plan (ISP) Step Change scenario, requiring four times more rooftop solar and 34 times more distributed battery capacity by 2050. Hence, residential homes should be built with these figures in consideration.

NCC Volume(s): One Two Three Housing Provisions Liveable Housing Design Standard

Clause/Figure/Table: 13.7.11

Recommended change to draft:

No suggested changes to draft clause, see clause below.

Where a building is provided with one or more car parking spaces, the main switchboard must be provided with at least one single-phase circuit sized to support a load of 32 A, with active conductors of at least 6 mm² cross sectional area, that terminates at one of the car parking spaces with—

- (a) a general purpose outlet of at least 15 A labelled to indicate that its purpose is for electric vehicle charging; or
- (b) electric vehicle charging equipment.

Comment/reason for change:

The Clean Energy Council is supportive of the provisions outlined for electric vehicle charging in residential homes. We note that networks normally allocate households 40 A, hence this may create difficulties for consumers with loads up to 32 A for electric vehicle charging.