25 June 2026

Submissions Team
Australian Energy Market Commission
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Sydney NSW 2000

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Dear Commission,

Re: ERC0436 — National Electricity Amendment (Facilitating electric vehicle charging infrastructure under Commonwealth grants) Rule 2026

I submit the following response to the AEMC's consultation on the above rule change request in my capacity as Program Leader of the Electric Vehicles research program at RACE for 2030 Cooperative Research Centre (RACE for 2030). I also serve as Senior Advisor to the Vehicle Grid Network (VGN) and hold a designation as Future Energy Leader for Australia, awarded by the World Energy Council.

RACE for 2030 is an industry-led cooperative research centre established in 2020 to drive energy innovation across the supply chain. The Electric Vehicles program leads a national research portfolio spanning consumer adoption, EV-grid integration, fleet electrification, and charging equity for apartment dwellers and renters. RACE for 2030 co-funded Australia's National Roadmap for Bidirectional EV Charging in partnership with ARENA.

This submission has not been directly informed by a specific RACE for 2030 research project. It draws on extensive consultation with researchers and industry across the topics of vehicle-grid integration and EV charging infrastructure. The views presented do not necessarily represent the views of RACE for 2030 research, government or industry partners.

Three principal observations are raised:

- The rule change and program design contain no specification of minimum technical or interoperability standards for EVCI. This creates a mechanism to recover costs from all electricity consumers for assets that carry a material risk of stranded asset outcomes well before the end of their regulatory depreciation life.
- The EVCI Mapping Tool, which functions as the primary evidence base for site selection under the program, is operated by a consultancy that provides external services that relate to site selection.
- The quantitative evidence base supporting the rule change contains significant methodological problems that appear to overstate the benefit-cost case for socialising program costs onto electricity consumers.

Yours sincerely,

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Executive Summary

This submission does not dispute that barriers to kerbside and regional EVCI deployment exist, nor that public investment has a role in addressing them. The observations raised relate to the regulatory architecture proposed to give effect to the program, and three specific gaps that risk locking in substandard infrastructure funded by all electricity consumers.

Observation 1: Stranded Asset Risk from Absent Technical Standards

Neither the rule change request nor the program design consultation specifies minimum technical or interoperability standards for EVCI to be deployed. Assets installed to outdated or proprietary protocols will be unable to participate in the smart charging, demand response, and vehicle-grid integration services that underpin the broader system value of EV adoption. Those assets will require upgrade or replacement well before the end of their regulatory depreciation life, at further cost to electricity consumers. The proposed rule allows DCCEEW, rather than the AER, to determine which costs enter the RAB, without establishing any technical floor against which prudency can be assessed. This creates a stranded asset risk that the current program design does not address.

Observation 2: EVCI Mapping Tool Governance Inadequate for Its Regulatory Role

The program's site selection framework is anchored to the EVCI Mapping Tool developed by EV consultancy Evenergi. Evenergi also provides commercial consulting services on charging installation and depot management, activities directly affected by the deployments this tool recommends.

Observation 3: Methodology Overstates the Benefit-Cost Case

The $809 million NPV emissions benefit is the primary justification for socialising approximately 70% of program costs onto all electricity consumers. This figure rests on a 30 EVs/charger ratio that functions as a visibility metric, not a usage or causal attribution measure. The methodology does not separate EV uptake attributable to kerbside charging from concurrent policy drivers, does not account for lifecycle emissions, conflates all public charging types, and applies a fleet-average ICE emissions intensity to marginal EV purchasers. These problems appear to materially overstate the benefit.

Responses to AEMC Consultation Questions

Question 1: Problem Statement

AEMC Question 1: *Do you agree with the problem statement as described by the proponent? If not, why?*

1(a): Chicken and egg problem for AC kerbside EVCI

A structural deployment challenge exists for AC charging in metropolitan areas, particularly for residents without access to off-street parking. The chicken-and-egg framing is broadly consistent with the literature and with what practitioners in the sector consistently report.

It is worth noting the scale of the addressable market this program targets. Based on available survey data, the population without practical home charging access, primarily renters and apartment dwellers, is estimated at 25-35% of Australian households. Of those, approximately 15-20% express intent to purchase an EV within three years. If those distributions were independent, the overlap would suggest a total addressable market of around 570,000 households. Given the well-documented inverse correlation between dwelling type, household income, and EV purchase affordability, the realistic figure is likely considerably lower. The program's emissions methodology does not account for this segment-specific analysis, applying a single charger-to-EV multiplier across all public charging types regardless of whether it actually serves people who cannot otherwise charge.

1(b) and 1(c): Market failure in regional blackspots and DNSP process barriers

Market failure may exist in uncommercial regional and remote locations, and DNSP connection processes, site identification, and facility access fees have contributed to slow deployment. These barriers are well-documented through the AER's ring-fencing consultation processes and consistent with broader industry feedback.

Observations with how the problem is characterised and evidenced

While the broad problem framing is accepted, two specific observations arise with the evidence used to characterise its scale.

Infrastructure gap methodology: conflation of charging types

The 78,000 public charge point target and the charger-to-EV ratio underpinning it are derived from a US/Canada comparison that treats all public charging as equivalent, regardless of power level, dwell time, or use case. The program targets AC kerbside slow charging and DC fast charging in uncommercial blackspots, which are fundamentally different asset classes with different utilisation profiles, grid interactions, and consumer behavioural effects. Averaging across these categories obscures whether the proposed mix of 13,720 kerbside AC chargers and 373 DC units actually addresses the structural gap used to justify the program. The comparator selection is also methodologically selective: the rule change notes that Scandinavian countries and South Korea have significantly more chargers per EV but sets them aside on the basis that they make the target appear conservative. The choice of comparators determines the size of the stated gap and, by extension, the scale of the program.

EVCI Mapping Tool:

The program places the EVCI Mapping Tool, developed by EV consultancy Evenergi, at the centre of its site selection process. Under all three program designs, DCCEEW and DNSPs use this tool to identify eligible sites. It is the primary determinant of blackspot eligibility under the Regional Design.

Two observations arise:

- Governance: The tool was originally developed as a market information resource, not as a regulatory planning instrument. Its current function, determining which sites and regions qualify for publicly funded infrastructure, should require independent data quality assurance, regular methodology review, and formal accountability to a public body.

  Provision of consulting services: Evenergi provides commercial EV charging consulting services on the installation and management of charging infrastructure at depot locations, activity directly affected by the deployment of regional blackspot and kerbside charging under this program.

Question 2: Emissions Reduction Methodology

> **AEMC Question 2:** *Do you have any views on the proponent's assessment of the emissions reduction benefits?*

The $809 million NPV emissions benefit is the primary quantitative justification for socialising costs onto all electricity consumers. Each of the problems identified below pushes this figure upward; taken together they suggest the benefit is overstated by a margin that should concern the Commission.

The 30 EVs/charger ratio is a visibility metric, not a causal model

The emissions calculation rests on the assumption that each charger installed under the program will support 30 additional EVs. This ratio is drawn from observed charger-to-EV counts in the United States and Canada. It describes how many EVs exist per charger in those markets at a point in time. It does not establish any causal relationship between charger installation and EV purchase decisions, and it does not model charging sessions, occupancy rates, kilometres charged, or vehicle throughput.

Used as a causal multiplier, the ratio asserts that the visible presence of a charger in a location induces 30 additional EV purchases. This is a behavioural visibility claim, not a utilisation or emissions claim. If this is the underlying logic, the program is more accurately described as a behavioural visibility intervention than as charging infrastructure delivery. Framing the program as emissions-reducing infrastructure while calculating its benefit using a behavioural visibility assumption misrepresents both what the program does and what evidence would be needed to justify it at the scale proposed.

EV growth attributed to kerbside is not separated from other policy drivers

The methodology attributes the full charger-multiplier benefit to the program without separating EV growth attributable to kerbside charging from growth driven by other concurrent factors: import arrangements, purchasing incentives, falling vehicle prices, OEM supply improvements, and the fuel price shock the rule change itself identifies as a significant driver of consumer behaviour. The rule change notes that recent global events have resulted in significant fuel supply challenges and an acute market-wide increase in liquid fuel prices. If fuel price volatility is independently accelerating EV uptake, the marginal contribution of kerbside charger installation to purchasing decisions is substantially lower than the ratio implies. No counterfactual or marginal analysis is presented.

On-road emissions only, with no lifecycle accounting

The emissions benefit is calculated solely on operational emissions: the annual on-road CO_2 difference between an ICE vehicle and an EV based on average distance driven. Vehicle manufacturing emissions, which are substantially higher for EVs than for comparable ICE vehicles due to battery production, are excluded. The grid emissions intensity at the point and time of charging, which varies across NEM regions and changes over time as the grid decarbonises, is also not accounted for across the vehicle lifetime.

A full lifecycle emissions comparison over a ten-year vehicle lifetime would produce a materially different result, particularly for vehicles charged in grid regions with higher current average emissions intensity. Infrastructure investment assessment typically applies lifecycle analysis for precisely this reason. Operational emissions figures are insufficient for long-lived asset decisions and using them here produces an overstated near-term benefit.

Fleet-average ICE emissions intensity applied to marginal purchasers

The ICE emissions intensity of 190.8 grams of CO_2 per kilometre is a fleet average. New EV purchasers are more likely to be replacing newer, more efficient ICE vehicles than the fleet average. Applying the fleet average to each marginal EV purchase systematically overstates the emissions avoided per vehicle.

PHEVs included in the denominator

The 30 EVs/charger ratio is derived from counts that include PHEVs alongside BEVs. PHEVs continue using liquid fuel for a significant proportion of kilometres driven and deliver substantially lower emissions reduction per vehicle than BEVs. Including PHEVs in the vehicle count while implicitly applying full BEV displacement benefit to each vehicle in the emissions calculation overstates the result.

Recommendation

The AEMC should seek independent quantitative review of the emissions benefit calculation before making a rule. At minimum, DCCEEW should provide: a causal attribution model that separates charger-induced EV uptake from concurrent policy drivers; a lifecycle emissions comparison rather than an operational-only comparison; disaggregated analysis by charging type; and sensitivity analysis across alternative assumptions for the EVs/charger ratio. The current methodology does not provide a sufficient evidence base for a decision to socialise costs onto all electricity consumers.

Question 4: Contributions from All Electricity Consumers

AEMC Question 4: *Do you consider it appropriate for EVCI projects approved as part of the funding program to have a difference between the total project costs and the amount CPOs are willing to pay funded through a combination of government funding and contributions from all electricity consumers?*

Cost socialisation to all electricity consumers can be appropriate where a program delivers common benefits, particularly emissions reduction, that are not captured by direct users. That principle is not contested here.

The appropriateness of socialising approximately 70% of residual program costs cannot be assessed against a benefit-cost case that is, for the reasons set out in Question 2, materially overstated. The $809 million NPV figure rests on a visibility metric used as a causal multiplier, does not separate program-attributable uptake from concurrent policy effects, and uses operational rather than lifecycle emissions. If the true benefit is substantially lower, the case for cost socialisation at the proposed scale is correspondingly weakened.

A related concern: the rule change proposes to transfer expenditure assessment from the AER to DCCEEW, with DCCEEW-determined amounts binding on the AER for RAB adjustment purposes. Without minimum technical standards governing what those assets must be capable of doing, this removes the usual prudency check without replacing it with an equivalent safeguard. Electricity consumers would bear the cost of assets that carry a material risk of becoming stranded within a fraction of their regulatory depreciation life.

Recommendation

Confirmation that consumer cost socialisation is appropriate should be contingent on an independent and methodologically robust benefit-cost assessment, and on minimum technical standards being embedded in grant eligibility criteria so that the assets consumers are funding represent prudent and efficient long-term investment.

Question 5: Proposed DNSP Recovery of Residual Costs

AEMC Question 5: *Do you agree with how the rule change request proposes that residual costs for approved EVCI projects be recovered by DNSPs?*

The rule change creates a mechanism whereby DCCEEW, rather than the AER, determines which capex and opex amounts enter the RAB, with those amounts binding on the AER at the next regulatory determination. The administrative rationale for this is understood. The concern is not with the mechanism itself but with what it currently lacks.

Stranded asset risk from absent technical standards

The AER's normal role in assessing whether proposed expenditure meets the NER's prudent and efficient investment criteria (clause 6.5.7) is effectively bypassed for program costs. A competitive grants process is substituted, but grants assessment does not evaluate whether the technical specification of assets constitutes prudent long-lived investment.

The risk is concrete. EVCI installed to OCPP 1.6 or proprietary protocols, which remain common in current market deployments, will be unable to support the smart charging, demand response, and vehicle-grid integration functions that AEMO's 2026 ISP identifies as core to the system value of EV adoption. These are not future enhancements; they are the capabilities that justify treating EV infrastructure as shared public benefit warranting cost socialisation. An asset that cannot participate in managed charging or grid services cannot deliver that benefit yet will continue to draw opex recovery from electricity consumers through the RAB for its full depreciation life.

Australia's National CER Roadmap has identified minimum operating standards for government-supported public EV charging (action T.0.1.3) and minimum EVSE technical standards (action T.0.1.2) as committed actions. The Accelerating EV Charging Program represents the largest single deployment of government-supported public EVCI in Australian history. Proceeding without aligning to those commitments would set a precedent that makes them progressively harder to enforce across the broader market.

The minimum technical floor for EVCI funded under this program should require OCPP 2.0.1 as the protocol standard for all charger-to-CSMS communications, with a documented path to OCPP 2.1 as the standard matures. For DC fast chargers under the Regional Blackspot Design, ISO 15118-2 compliance should be required to support potential implementations of Plug and Charge, with a documented path to ISO 15118-20 to support bidirectional power transfer as that standard is adopted. AC kerbside chargers should be required to use hardware that is metering-compatible with bidirectional measurement and communications-ready for ISO 15118-20 upgrade, so that future V2G capability is not foreclosed by a procurement decision made in 2027.

Prudency gap and cybersecurity

Neither the rule change nor the program design consultation specifies cybersecurity requirements or open API obligations. Chargers without encrypted communications and certificate-based device authentication represent an unmanaged risk on assets that, once they enter the RAB as standard control services, connect to DNSP network management systems. DNSPs that are responsible entities under the Security of Critical Infrastructure Act 2018 will face remediation obligations the program does not contemplate. The cost of addressing these gaps post-procurement will fall on consumers.

Recommendation

Minimum technical standards should be embedded in grant eligibility criteria before guidelines are finalised. These should include: OCPP 2.0.1 as the protocol floor for all charger-to-CSMS communications, with a documented pathway to OCPP 2.1; ISO 15118-2 compliance for all DC fast chargers under the Regional Blackspot Design, with a documented pathway to ISO 15118-20; hardware future-proofing requirements for AC kerbside chargers covering metering compatibility with bidirectional measurement and communications readiness for future protocol upgrade; encrypted and certificate-based device authentication; and open API obligations prohibiting proprietary CSMS lock-in. These standards are aligned with the CER Roadmap minimum operating standards for government-supported public EV charging and should be treated as conditions of prudent and efficient investment, not optional features.

Question 9: End of Asset Lives

AEMC Question 9: *What do you think should happen with the EVCI assets that DNSPs may be responsible for installing under the different proposed funding models at the end of the EVCI's life?*

This question cannot be meaningfully answered without first resolving what technical standards the assets must meet, and therefore what end of life means for those assets. There are two distinct asset lifetime questions embedded in the program that the rule change does not distinguish.

Mismatch between EVCI hardware life and enabling infrastructure life

EVCI hardware units may carry a standard depreciation life of 7-15 years. The pole upgrades, civil works, metering assets, and connection infrastructure enabling those chargers are long-lived network assets that will remain in the RAB long after the hardware above them has been replaced. The rule change does not establish a framework for managing this mismatch: who is responsible for ensuring the long-life enabling infrastructure remains fit for purpose across successive generations of EVCI hardware, and how the boundary between the two asset classes is drawn for depreciation purposes.

Technical obsolescence as a distinct end-of-life trigger

Where EVCI is installed without minimum technical standards, effective end of useful life may arrive well before physical depreciation, at the point where the protocol compatibility or capability of the asset is no longer adequate for its intended regulatory function. A charger installed to OCPP 1.6 in 2027 may be technically unable to participate in AEMO's managed charging framework or support any form of grid services within five to seven years, even if it continues to dispense electricity for fifteen. The rule change has no mechanism to manage this outcome: the AER would inherit RAB assets at the next determination without a technical benchmark against which to assess whether ongoing opex is justified, and consumers would continue funding assets that cannot deliver the system benefits used to justify their inclusion in the RAB.

The rule change notes that the AER would determine what happens with sites after EVCI is fully depreciated during its next regulatory determination. By that point, consumers may have been funding functionally obsolete assets for years, with limited remediation options short of full replacement.

Recommendation

The program should establish: an asset registry distinguishing long-life enabling infrastructure from EVCI hardware, with separate depreciation treatment; minimum technical standards embedded at procurement, including OCPP 2.0.1 and ISO 15118-2 where applicable, so that end of life is assessed against a defined capability baseline rather than hardware-only measures; and a review mechanism that triggers technical adequacy assessment at a defined point within the first regulatory control period following RAB entry, not deferred to the end of the depreciation schedule.

Question 10: Supplementary Views on the Enduring Role of DNSPs

AEMC Question 10: *You may wish to share early views on the role of DNSPs in EV charging, including as provider of last resort for kerbside charging in metropolitan areas and as the provider of EV charging for uncommercial regional blackspots.*

DNSPs as infrastructure enablers rather than operators

The most defensible enduring role for DNSPs in EV charging is as neutral infrastructure enablers, providing connection capacity, site identification, and grid-side management capability, rather than as EVCI owners and operators. The program's Design 1 and Design 3 structures, where DNSPs own residual EVCI sites and appoint e-MSPs, create a durable entanglement between regulated and commercial activities that ring-fencing rules exist to prevent. While the rule change includes a temporary carve-out from ring-fencing for program purposes, the assets and commercial relationships created during the program period will shape the market long after the program concludes.

Where DNSPs play a provider-of-last-resort role, this should be conditional on interoperability obligations that prevent the incumbent network position from translating into market advantage: open standards at every layer of the charging stack, no proprietary CSMS lock-in, and public reporting on asset availability and fault rates.

Minimum interoperability as a precondition for enduring market design

The central structural question in the program, and in the broader enduring market design, is whether publicly funded EVCI establishes a common technical floor from which competitive services can be built or creates a fragmented landscape of proprietary assets that forecloses future market development.

Australia's National CER Roadmap has committed to minimum EVSE technical standards and minimum operating standards for government-supported public EV charging. The Accelerating EV Charging Program is the largest single deployment of government-supported public EVCI in Australian history and should give direct effect to these commitments, with OCPP 2.0.1 and ISO 15118-2 as the current minimum floor and clear pathways to OCPP 2.1 and ISO 15118-20 as those standards mature. Proceeding in advance of those commitments without equivalent safeguards sets a precedent that will be difficult to reverse across future deployments.

Recommendation

The Commission's consideration of the enduring role of DNSPs through the Electricity Network Regulation Review should proceed on the explicit assumption that minimum interoperability and technical standards will be in place for any EVCI entering the RAB. The current program should not be permitted to set a precedent for cost recovery of technically unspecified assets. A technical working group convened by DCCEEW, in consultation with the AER and Standards Australia, should be tasked with developing minimum standards as a *condition of grant eligibility, aligned with the CER Roadmap commitments and anchored to OCPP 2.0.1, ISO 15118-2, and their successor standards.*

About This Submission

This submission was prepared by the RACE for 2030 CRC Electric Vehicles program. It draws on publicly available materials and on extensive consultation with researchers and industry across the topics of vehicle-grid integration and EV charging infrastructure. It has not been directly informed by a specific RACE for 2030 research project. The views presented do not represent the views of RACE for 2030 research, government or industry partners.

Sources drawn on include:

- RACE for 2030 / Vehicle Grid Network, EVCI Technical Standards and Future-Proofing Requirements for the Accelerating EV Charging Program (Policy Briefing, May 2026)
- DCCEEW, Accelerating Electric Vehicle Charging Program: Rule Change Request to the AEMC (28 April 2026)
- AEMC, Consultation Paper ERC0436 (28 May 2026)
- National Roadmap for Bidirectional EV Charging in Australia (RACE for 2030 / ARENA, 2025)
- National CER Roadmap, Department of Climate Change, Energy, the Environment and Water (2024)
- AEMO, 2026 Draft Integrated System Plan
- AER, Ring-fencing waiver submissions: CitiPower, Powercor, and United Energy (2024)

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