TE MANATŪ WAKA
MINISTRY OF TRANSPORT

14 February 2024 OC230964

Hon Simeon Brown **Action required by:**

Minister of Transport Friday, 23 February 2024

cc Minister for Energy

INITIAL BRIEFING ON ELECTRIC VEHICLE CHARGING NETWORK AND INFRASTRUCTURE

Purpose

Seeks your feedback on the scope and direction of the cross-government work programme to progress your commitments to expand public electric vehicle (EV) charging infrastructure.

Key points

- The Government has committed to delivering a comprehensive, nationwide network of 10,000 public EV chargers by 2030.
- You have indicated your expectation that the role of government is to:
  - facilitate private investment by addressing coordination and regulatory barriers,
  - limit and direct co-funding where necessary to areas where the private sector is unlikely to invest and it is not yet economically viable, but where investment is needed to achieve a comprehensive, nationwide charging network.
- The Ministry of Business, Innovation and Employment (MBIE) is providing you with advice on regulatory work programmes that address barriers to private investment in EV charging [*MBIE 2324-1792 refers*].
- You have an opportunity to consider how you would like to scope this work programme and the range of options that you would like to explore, including considering funding models. This note outlines some initial scoping ideas for your feedback.
- We understand your office is scheduling a deep dive with officials to discuss your priorities for EV charging, and that you are also considering a roundtable discussion with sector stakeholders. This briefing could help inform those discussions.

Recommendations

We recommend you:

1 **note** advice on regulatory development work programmes relating to resource consenting, network connection costs and connection processes will be provided to you in your capacity as Minister for Energy through an MBIE/MfE *Electrify NZ* briefing [*MBIE 2324-1792 refers*].

2 **provide** feedback to officials on your priorities for the EV charging work programme, and particularly the scope options outlined in paragraph 26. Yes/No

3 **agree** that Ministry of Transport officials work with MBIE, the Energy Efficiency and Conservation Authority (EECA) and other relevant agencies to progress a cross-government work programme to deliver your public EV charging commitments. Yes/No

Siobhan Routledge
Acting Deputy Chief Executive, Policy
14 / 02 / 2024

Hon Simeon Brown
Minister of Transport
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Minister's office to complete: ☐ Approved ☐ Declined ☐ Seen by Minister ☐ Not seen by Minister ☐ Overtaken by events

Comments

Contacts

Name	Telephone	First contact
Siobhan Routledge, Acting Deputy Chief Executive, Policy	9(2)(a)	
Nick Paterson, Manager Environment Team	9(2)(a)	✓
Emma Wardle, Senior Adviser Environment Team	9(2)(a)	

INITIAL BRIEFING ON ELECTRIC VEHICLE CHARGING NETWORK AND INFRASTRUCTURE

Background

Rapidly growing the public charging network is key to support a growing electric vehicle (EV) fleet and as a means to decarbonise transport

1 *Supercharging EV Infrastructure*[1] committed to delivering a comprehensive, nationwide network of 10,000 public EV chargers by 2030. The National-ACT Coalition Agreement noted this work would include robust cost-benefit analysis to ensure maximum benefit for government investment.

2 You are scheduled to meet with officials to discuss the second emissions reduction plan (ERP 2) on 19 February 2024 and the Minister of Climate Change on 26 February 2024 [*OC231127 forthcoming*]. 9(2)(f)(iv) [redacted]

There are currently around 1,000 public EV chargers in New Zealand

3 The existing public charging network of around 1,000 chargers can charge 1,200-1,300 vehicles simultaneously. A breakdown of charger types currently on the network is provided in **Annex One**.

4 The majority of these chargers have been delivered with government co-funding through the Energy Efficiency and Conservation Authority's (EECA) Low Emission Transport Fund (and the Low Emission Vehicles Contestable Fund that preceded it).

5 In addition, there are approximately 250 chargers in development that have been approved in recent EECA funding rounds, capable of charging about 450 EVs simultaneously.

6 EECA co-funding is provided though contestable funding rounds held several times each year. More detail on the design of the EECA programme is in the 26 January EECA briefing to the Minister for Energy titled *Update on EECA's public EV charging activity* [EECA 2024 BRF 001 refers].

The government has two parallel roles in delivering public EV charging

7 To deliver on the 10,000 charger commitment, you have indicated your expectation that the role of government is to:

- facilitate private investment by addressing coordination and regulatory barriers,

[1] https://assets.nationbuilder.com/nationalparty/pages/18364/attachments/original/1693957243/Supercharging_EV_Infrastructure.pdf?1693957243

- limit and direct co-funding where necessary to areas where the private sector is unlikely to invest and it is not yet economically viable, but where investment is needed to achieve a comprehensive, nationwide charging network.

There is a strong case for government to facilitate private investment through addressing regulatory barriers

8 The commercial viability of the public EV charging business model in New Zealand still faces challenges due to the relatively small number of EVs in the fleet that do not create high enough demand/utilisation for chargers. 9(2)(ba)(i)

9 Beyond current demand for chargers, there are other barriers that prevent private investment. Addressing these barriers could improve the viability of the EV charging business model in the near-term.

10 Many of these measures fall within the energy portfolio. However, we will continue to work closely with the Ministry of Business, Innovation and Employment (MBIE) to maintain a joined-up approach on EV charging.

High and inconsistent connection costs pose a barrier to private investment

11 CPOs state that that they face prohibitively high costs in connecting to electricity networks. CPOs have noted that connection costs are much higher in New Zealand than in other jurisdictions and, within New Zealand, connection costs and processes vary dramatically between Electricity Distribution Businesses (EDBs). It is not clear that these costs can be recovered from charging customers given the early stage of market development.

12 EDBs have wide discretion in what they charge for complex customer connections of this kind. Regulation of the distribution sector is shared between the Commerce Commission and the Electricity Authority, but these connection charges are not set or capped by regulators. Broadly speaking, the Commerce Commission regulates overall revenue, and the Electricity Authority regulates prices.

13 *Electrify NZ*[2] committed to address connection cost issues. MBIE officials are briefing you in parallel (jointly with the Ministry for the Environment (MfE)) on work to realise the aims of *Electrify NZ.* This includes measures to reduce consenting barriers (including making the connection of public EV chargers a permitted activity) and work underway across the Electricity Authority and the Commerce Commission to address challenges relating to network connection costs and processes.

Lack of network capacity is creating long lead times to connect to the grid

14 Network upgrades are often required to accommodate large new electricity demand. On some networks, new connections can take over a year to be operational. Additionally, some CPOs have raised concerns that they lack clarity regarding networks' capacity to accommodate new chargers in specific locations.

[2] https://assets.nationbuilder.com/nationalparty/pages/17865/attachments/original/1684306518/Electrify_NZ.pdf?1684306518

15 *Supercharging EV Infrastructure* contains a commitment to increase the visibility of network capacity information. MBIE and MfE's *Electrify NZ* briefing will also detail work underway to improve the visibility of network capacity at specific locations.

Government co-funding will continue to have a role but is best focused where the most significant market barriers exist

16 In 2016, the previous National Government put in place a co-funding model to help address the issue of the public EV charging business model not yet being commercially viable. Given the scale and pace of changes in the EV market over this time, it is appropriate to consider whether the design and application of the current co-funding model remains fit for purpose.

17 *Supercharging EV Infrastructure* set out the intention to revive the Ultra-Fast Broadband investment model to rollout EV charging infrastructure, and to transfer responsibility for government investment in EV charging infrastructure to the new National Infrastructure Agency (NIA), once established.

18 The Minister of Infrastructure is receiving initial advice from the Treasury on the form and functions of the NIA. It is too early to provide detailed advice on the role the NIA could play in delivery of EV charging infrastructure. However, we will continue to engage with the Treasury and provide updates as work progresses.

19 In the interim, we can work with MBIE to provide you with advice on any changes to the existing co-funding model. We expect this advice would include multiple options to achieve your objectives that could be implemented more or less quickly (i.e. tweaks to improve the effectiveness of the existing model through to applying the Ultra-Fast Broadband model to EV charging).

20 This presents an opportunity to consider the Government's preferred model for delivering the public charging network, the relative roles of different players (e.g. CPOs, EDBs, central and local government), and the best co-funding approach to implement this model. The intent would be that a market-led approach is retained, and that any public funds are targeted to areas where commercial investment is unfeasible.

21 Further advice on this topic will be informed by feedback shared with officials through an upcoming deep dive session scheduled by your office.

Investment in EV charging infrastructure will be subject to robust cost-benefit analysis (CBA)

22 The National-ACT Coalition Agreement noted the commitment to deliver a network of 10,000 chargers would include robust CBA to ensure maximum benefit for government investment.

23 Work is underway to scope this CBA, with the analysis to be complete by November 2024. As a first step, we are progressing necessary work to understand the link between EV charger rollout and EV uptake, and the potential impact on emissions. The scope of the analysis will be informed by decisions you and your ministerial colleagues make on the work programme and any changes to the co-funding model.

We will use your feedback to progress a cross-government work programme on public EV charging

24 Upon your agreement, we will work with MBIE, EECA and relevant agencies to progress a cross-government work programme to deliver on your public EV charging commitments. This would include advice on addressing barriers to private investment in charging, and changes to the government co-funding model.

25 Many relevant actions have been previously identified in *'Charging Our Future: National electric vehicle charging strategy for Aotearoa New Zealand 2023-2035'* (the EV Charging Strategy), published in October 2023.[3] Industry and key stakeholders supported the EV Charging Strategy but have indicated that an updated strategy reflecting the Government's EV charging priorities would be helpful. Our view is that the EV Charging Strategy could provide an input to the work programme but be refined to focus on priority actions.

26 In developing the work programme, we seek your feedback on its scope. Some of our starting assumptions are as follows:

26.1 The network of 10,000 public chargers by 2030 would cover the full range of public charging needs for light vehicles.

This would include ultra-rapid charging on the highway network; fast charging at journey locations; moderate charging at shopping centres, supermarkets, and community facilities; and slower AC charging in suburban locations. More information on public charger types is attached as **Annex One**.

26.2 The work programme would progress work to understand expected changes in charging needs and the market's ability to meet these needs over time.

As demand rises and the public EV charging business case develops, the need for government co-funding is expected to reduce. Rising demand will improve the commercial viability of use cases like state highway charging hubs. Meanwhile, there may continue to be little commercial case for installing or retaining chargers in remote and rural communities. Continued work is needed to understand these changes and how any public funding is prioritised over coming years.

Charging needs will also be influenced by factors such as housing trends. For example, mainstream EV adoption will increasingly require public charging that accommodates those without off-street parking who are unable to charge their vehicle at home.

26.3 The work programme would progress work on integration across, and user interface with, the charging network.

As the EV charging market expands, integration, standardisation and interoperability can enable market participants to make well-informed investment decisions, improve customer experience, and promote use of the network.

26.4 The work programme would also consider public charging needs for heavy vehicles.

[3] https://www.transport.govt.nz//assets/Uploads/EV-Charging-Strategy.pdf

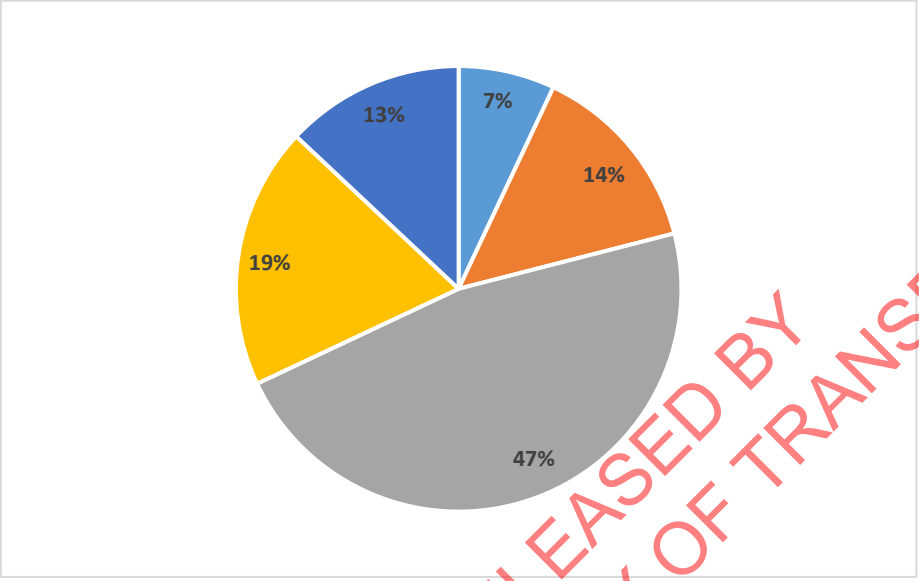
While it is expected that most heavy vehicle charging will occur at private depots, a public heavy vehicle charging network will be needed to complement this. This will enable electric trucks to complete a wide range of journeys and give operators further confidence to transition their fleets.

27 We would welcome your feedback on the scoping topics outlined above. Alternatively, you may wish to provide this feedback as part of the proposed deep dive with officials on EV charging.

ANNEX ONE – CHARGER TYPES ON THE PUBLIC NETWORK

The public chargers on the network vary in power rating and application. The current split of public charger power ratings is illustrated below.

Approximate current distribution of public EV charger power ratings



Power rating description	Example application
Ultra rapid: 150kW+ DC	Where an EV is on a journey exceeding the range of the car and needing a full charge quickly (i.e. on a state highway, similar to a petrol station).
Rapid: 50-150kW DC	
Fast: 25-50kW DC	Where an EV will be for 30 minutes to 2 hours. Described as an opportunity charge usually in a destination location such as a shopping mall, gym or marae. Most chargers on the state highway network are 25-50kW chargers, but these are increasingly being replaced with higher power chargers.
Moderate: 22kW AC	Used in both destination locations and where an EV will be for 4 hours or more, however most EVs are not able to charge at 22 kW AC (usually a maximum of 7-11kW).
Slow: 3-11kW AC	Where an EV will be for 4 hours or more. Usually in the home but could be workplace, hotel, motel, or holiday park.