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POWERING A BETTER NEW ZEALAND TOGETHER

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11 May 2023

Ministry of Transport
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Submission on Charging our Future: A Draft Long-Term Electric Vehicle Charging Strategy

Introduction

1. Energy Resources Aotearoa is New Zealand's peak energy advocacy organisation. We enable constructive collaboration across the energy sector through and beyond New Zealand's transition to net zero carbon emissions in 2050.

2. This document constitutes our submission on *Charging our Future: A draft long-term electric vehicle charging strategy for Aotearoa New Zealand* (the Strategy) and its accompanying discussion document.

Overarching points

The role for government in supporting growth of the EV charging network

We agree that EV charging infrastructure is a key enabler of an orderly low-emissions transition

3. New Zealand can expect to see significant growth in uptake of (initially light) EVs over the coming years – uptake is already running 3-6 years ahead of forecasts from the Government and Climate Change Commission. This brings with it a significant infrastructure component. In some parts of the network there may be a role for government to help remove barriers to investment (i.e., address market failures). These could include:

    - the 'chicken-egg' problem of scaling infrastructure fast enough to reduce range anxiety and meet growing needs in future – which could in some areas mean incurring capital costs in advance of sufficient demand and associated cashflow to justify them;

    - co-ordination problems, such as ensuring charging demand doesn't exacerbate existing peak demand challenges, and ensuring grid capacity upgrades are efficient and aligned with anticipated demand;

- addressing issues of interoperability and consistency between technologies (e.g. EVs and chargers; interoperability with smart home networks; etc); and

- possible social issues such as geographic and socio-economic inequity of access to EV charging services.

The case for government support/intervention should be clearly evidenced on a case-by-case basis, and periodically revisited

4. The role of government in addressing market failures and externalities such as those listed above will be specific to the context and may change as the EV charging network matures. The speed and nature of this change will differ across geographies, technologies, and market segments, but the need for intervention is neither default nor indefinite. For example:

    - some parts of the network are already commercially viable, with private investment identifying and meeting growing consumer needs, and emerging competition between providers trying to differentiate their offerings by price and/or service in both public and private charging; and

    - in other areas – such as geographic 'gaps' in the rural network, or areas where there are barriers to high-capacity charger hubs in network nodes – there may be a stronger case for government intervention or facilitation.

5. We expect government's role will progressively retreat as rising EV uptake improves the commerciality of charging services. We see the long-term role for government as establishing, maintaining, and enforcing regulatory bottom lines for health & safety, environment, and market rules that support a vibrant and competitive market for EV charging services. The Strategy is a chance to chart a roadmap to that future state, appreciating we are not there yet as some market failures remain – and to identify the potential 'off-ramps' for government measures as the market matures.

The Strategy should clearly articulate its guiding policy principles

6. The Strategy could make this roadmap clearer by:

    - more clearly articulating the intended role for government (and corresponding role for the private sector) in the rollout of the national EV charging network. This might include reference to an intervention hierarchy, with a high-level preliminary view on how this informs the government's approach to different segments of the network;[1] and

    - stating upfront the principles that will shape how government will tailor and apply this role over time.

1 Here 'intervention hierarchy' refers to the range of potential measures government could take – rising from doing nothing, through providing information and voluntary measures; through providing subsidies and other concessions; through to compulsion (i.e., mandates, regulation).

7. Each outcome and associated focus area in the draft Strategy contains a series of discrete but interconnected policy problems to solve. It is appropriate that the relative costs and benefits of intervention are considered on a case-by-case basis, so we appreciate that the Strategy cannot provide all the answers at the outset.

8. However, a clear statement of the government's role and strategic principles will help the sector understand how the government will approach these problems, and what it expects the private sector's role to be. This framework will support policy predictability and stability, which in turn supports long-term investment confidence.

9. Some of the principles we would expect to see upfront can be inferred from the Strategy as drafted. We suggest principles should include the following:

    - government will focus on identifying and addressing well-evidenced market failures with proportionate solutions – such as regulations, or subsidies to unlock commercial investment – that are justified on cost-benefit basis relative to the status quo and alternatives;

    - market-led – investments should be made on a commercial basis wherever possible, recognising the private sector is better incentivised to take risks and invest to meet (projected) demand;

    - competition and consumer choice – any government measures will focus on reducing barriers to market entry, expanding consumer choice, and exposing consumers to cost-reflective market incentives and information so they can make optimal decisions; and

    - technology agnostic – government will avoid picking winners by ensuring policy settings remain open to alternatives, such as new technologies and business models.

10. We note the Strategy as drafted largely captures existing work already underway, much of which is not EV charging specific. Overarching principles could also be supported by more specific commitments to new actions where required – whether these are laid out in the Strategy itself or an implementation plan.

Our suggested priorities for the Strategy

11. The discussion document seeks stakeholder views on which elements of the Strategy should be progressed with priority/urgency. We think these should include:

    - clarifying the overarching principles of the strategy (see previous section);

    - developing an implementation plan and work programme in consultation with the private sector; and

- addressing barriers to establishment of EV charging nodes, which might include coordination to support electricity network connections/upgrades, and addressing any planning barriers (e.g., consenting for new charging hubs).

Comments on specific areas of the Strategy and discussion document

Outcome 1: Our national EV charging system is underpinned by affordable, reliable, secure, and safe power supply and infrastructure

12. We support this proposed outcome and its associated focus area. The opportunity and problems are well articulated and understood. As we increase our reliance on the electricity system by shifting transport energy demand to electricity, and that electricity system is increasingly intermittent (renewable), residential EV charging is a significant potential dispatchable/controllable load.

13. We note that this area is already subject to several existing policy and regulatory workstreams across MBIE, EECA, the Electricity Authority, and the Commerce Commission. The primary focus of effort in this outcome area should therefore be enhanced co-ordination between these agencies, whether this is via the existing Council of Energy Regulators or an alternative. See the final section of this submission for further discussion on institutional settings to support the Strategy.

14. Our general view is that the market is already incentivised to provide solutions to the peak demand problem, such as smart EV chargers in homes, and favourable price offerings for off-peak charging. Any number of innovative business models and customer retail offerings can drive consumer decisions toward off-peak charging overnight. On this basis, the policy focus should be ensuring that regulation supports:

    - improved distribution peak pricing signals and smart managed tariffs;
    - competitive flexibility markets; and
    - virtual network investments (which if enabled can be low-cost alternatives to physical infrastructure upgrades).

15. We support the existing voluntary efforts undertaken to date to provide robust and credible information to consumers and service providers, such as the Publicly Available Specifications for EV chargers issued by EECA.

16. Any proposals to go further, for example by mandating sale/installation of smart EV chargers, or mandating default off-peak EV charging, might be justified to establish a robust platform for a more dynamic and responsive energy system.

These proposals should be carefully considered on a cost-benefit basis.[2] The regulatory risks of technology lock-in should also be seriously considered, and any regulatory requirements shaped to mitigate these (i.e., by remaining flexible to enable new technologies or approaches). Retaining the option for consumers to 'opt out' should be considered, so that households can optimise for their own preferences.

17. Consistent with the suggested principles in paragraph 9 above, we prefer that consumers are empowered to make decisions (or contract these decisions to a third-party provider) in response to price signals. We are optimistic that the aggregated 'size of the prize' (i.e., potential energy and cost savings) for homes with controllable EV charging, and space and water heating, will be sufficient to encourage a competitive market in energy management services to address the peak demand problem arising from increased residential electrification.

Outcome 2: All EV users can safely access and use EV charging when and where needed

We support directional targets, but more specificity and clarity will be critical

18. The Strategy proposes targets to set overarching direction:

    - a national target of establishing a public EV journey charging hub every 150-200 km on main highways by 2028, equating to approximately 25-34 hubs;
    - an urban (Wellington and Auckland) target of one public charger for every 20-40 EVs; and
    - a non-urban target of all settlements with a population of 2,000 or more having public charging at municipal facilities by 2025.

19. To the extent these targets provide some general sense of direction and ambition, we support them as a starting point. At this stage of network maturity – i.e., where we have now established broad coverage of slow-charging across most of the highway network – it's appropriate that the targets signal the need for more depth and density in the network.

20. We caution that EV charging technology has changed very quickly in the past two years and will continue to do so as the market matures. This creates the risk that EV charging targets set now are rendered irrelevant soon. This might be mitigated by placing assumptions about the types of chargers against the targets, so they can be adapted to new technologies as these emerge.

2 We would be particularly wary of any proposal to mandate the roll-out of smart EV chargers (as opposed to standardising EV charger specifications), given the experience in Victoria, Australia – see the Victorian Auditor-General's Report here: https://www.audit.vic.gov.au/sites/default/files/20150916-Smart-Meters.pdf. This contrasts with New Zealand's smart meter rollout, which was driven by the private sector.

21. The draft Strategy notes that there will inevitably be regional and community variation in EV charging requirements, and we agree. The targets are useful directional tools at the national level but should not be determinative or prescriptive.

22. Taken together, the proposed targets capture some of the key elements of our public charging network that could be more clearly articulated in the Strategy (and certainly in any subsequent implementation plan). These include:

    - coverage – i.e., the frequency with which EV drivers will encounter publicly available charging stations on their trip;

    - density – i.e., the number of chargers at each charging station on average (i.e., the number of EVs that can charge concurrently); and

    - capacity – i.e., the speed with which they can be charged.

23. The targets alone do not provide the private sector with specificity or certainty about how the government expects they will be achieved. We note that Round 5 of EECA's Low Emissions Transport Fund will establish two pilot EV charging hubs to explore the barriers and to demonstrate the charging model, but more information on the anticipated direction of government's support/role beyond this would be helpful to investors.

24. We strongly recommend that an implementation plan be prepared to clearly identify the role of government and the private sector, particularly as it relates to these journey charging hubs, which are likely significant infrastructure investments. An implementation plan could surface several key issues/questions, which include:

    - how will the co-funding role of government – as it relates to journey charging hubs and other types of charging – evolve beyond the initial two charging hub pilots?

    - how will government manage competition issues which arise where co-funding supports a charging hub that subsequently 'locks in' a market position in a stretch of main highway?

    - relatedly, how will the location of journey charging hubs be selected – i.e., will this be driven by government direction, the market, or some combination of the two?

25. Again consistent with the principles in paragraph 9 above, our preference is that the roll-out of these journey charging hubs is driven by market participants as much as possible, with government playing an enabling role by facilitating exchange of information about distribution network capacity, ensuring regulatory barriers are minimised, and addressing other barriers as necessary.

Comment on other actions identified for this focus area

26. We agree that the role of existing vehicle service providers and fuel retailers to improve regional and rural EV charging provision should be explored, but we do not believe a requirement for large fuel retailers to include EV charge points in all forecourts is necessary. Many forecourts around the country already have these installed in the absence of such a mandate; but in others this may not be commercially feasible. New Zealand's fuel retailers have deep commercial experience in matching fuel supply with consumer demand, so are best placed and incentivised to invest across their networks to achieve this in the EV market.

27. Fuel forecourts are naturally well-placed to progressively build out the coverage and density of our EV charging network and can do so by replicating the familiar consumer experience of refuelling ICE vehicles with complementary services (food, drink, etc).

28. Several other areas are flagged in the Strategy for potential government co-funding, including rural charging infrastructure to support rural communities; vehicle-to-grid technologies; and stationary battery storage and other charging innovations for rural locations. The case for subsidy should be carefully considered in each case, and the risk of 'crowding out' private investment should be treated seriously.

Outcome 3: The EV charging system is underpinned by integrated and streamlined cross-sectoral planning and standards

Payment systems

29. Deterioration in consumer experience because of fragmenting payment systems is a risk that should be monitored and managed, so we support the inclusion of this issue in the Strategy. We caution, though, against consistency being the sole objective in considering any additional measures. It is, after all, in providers' interests to make payment for their services as easy as possible. But we also know that apps and memberships are a way to differentiate user experience in a competitive market, which is what we see in comparable markets such as the fuel market.

30. We suggest the issue is monitored, but on face value do not see a case for pre-emptive regulatory measures, particularly if these measures constrain competitive innovation in offerings to consumers.

Considerations for local government

31. We support voluntary guidance for local authorities to inform them about EV infrastructure issues and to encourage best practice. The draft Strategy acknowledges that local authorities have the best understanding of local transport needs and behaviours, and through their planning function can play a key role in enabling private investment in EV charging infrastructure.

Outcome 4: The EV charging market functions effectively, can adapt and evolve over time, and is attractive to users, operators, and investors

32. We agree with this focus area, which identifies an end state of a dynamic, competitive, and efficient market for EV charging services. We agree with the focus noted here in maximising the extent to which the roll-out of charging infrastructure is market-led and have recommended that this point is elevated in the Strategy to one of our suggested principles.

33. See our comments on Outcome 2 above for our view on the role of government in accelerating commercial investment.

Outcome 5: The EV charging system supports the transition to, and use of, low-emissions transport modes across the wider transport system

Cost-recovery of local network upgrades triggered by investment in public and private chargers

34. We are supportive in principle of exploring measures to address the 'first mover disadvantage', which could slow investment in EV charging, where this problem can be identified and evidenced.

35. However, in many cases the more fundamental issue is ensuring that electricity distribution businesses (EDBs) work closely with existing and potential customers to understand their energy needs and possible solutions. Supporting growing electricity demand requires EDBs to manage equity, risk, and timing considerations that affect the delivery of reliable and affordable electricity to all consumers on their network. Robust data on EV charging demand and electricity network capacity would enable better forward planning by EDBs.

36. We note the issue of ensuring that local network upgrades support electrification is not specific to EV charging. We thus encourage government to take a broad view in assessing these issues to ensure it considers the whole electrification picture (e.g., industrial and commercial fuel switching).

Institutional arrangements

37. The discussion document asserts that "current arrangements to co-lead EV charging work from within existing agencies are unlikely to be sufficient to deliver and implement the range of interlinked actions the draft EV Charging Strategy identifies". Several options for alternative institutional arrangements within government are identified.

38. We suggest government needs to be clearer what problem these options are solving. While it is not explicitly stated as such, we infer the potential problem(s) could be:

- the challenge of co-ordinating the efforts of multiple agencies with different functions, powers, mandates, priorities, and resources toward system outcomes;

- ensuring capability and capacity is available in the right place to deliver the Strategy's outcomes; and/or

- managing necessary tensions between policy direction and operational delivery.

39. Any of these are challenging at the best of times. But care should be exercised in assuming the solution is alternative institutional arrangements. Existing institutions already have in place the means to facilitate the collaboration and co-ordination that is required.

40. Earlier in this submission we strongly recommended a clear implementation plan be developed. This would identify the (new and existing) workstreams that support the delivery of the Strategy; their timeframe and deliverables; and, most importantly, the responsible Minister(s) and accountable organisation(s) for each deliverable. This implementation plan could be developed in partnership with the private sector to ensure it has wider buy-in and visibility and captures the respective roles and expectations of the public and private sectors in delivering the continued network rollout.

41. Our preference is for more effective collaboration and co-ordination within existing structures. We believe interdependencies, overlaps, and trade-offs between workstreams and outcomes can and should be reconciled through existing institutional arrangements – i.e., through effective collaboration between Ministers and their officials.

42. The existing Council of Energy Regulators – which we understand has considered cross-agency work on EV charging in the past – appears an obvious starting point as a low-cost platform for interagency collaboration. Likewise, the Clean Car Sector Leadership Group could be a useful vehicle for co-ordination between government and the private sector.

43. Establishing a new agency or entity for EV charging (at the extreme end) could serve to further splinter functions, with the new entity fragmenting the EV charging specific functions of the Ministry of Transport, MBIE, EECA, Electricity Authority, and more. This could have the effect of increasing the number of interagency relationships to be managed, thereby worsening the problem it seeks to solve.

44. Below we provide some brief comments on the long-list of possible institutional options:

Option	Comment
New public sector department / ministry and/or departmental agency	A separate entity for EV charging would actually further fragment the respective functions (e.g. taking the EV-relevant functions from any of the existing agencies creates new overlaps and gaps between them and the new entity). Either would incur significant set-up and administrative costs to solve what is essentially an inter-agency coordination issue. An autonomous agency would still run into issues of coordination with other organisations. The Strategy requires coordination at the policy, regulatory, and operational level, which a departmental agency can't achieve.
Interdepartmental Executive Board	We would prefer the Council of Energy Regulators is used as the starting point, and properly resourced to oversee the cross-agency work programme. The Council is already constituted of the relevant Chief Executives, and we understand it has discussed EV charging work previously.
Company options (Schedule 4A, Crown entity, SOE)	Government's primary role in EV charging is to reduce barriers to commercial (private) investment (whether by co-funding or otherwise), so we see no need for a company structure to facilitate asset ownership. There is already significant and growing private investment in the sector. We see no compelling case for Govt ownership or commercial operation of EV charging infrastructure.

Conclusion

45. The Strategy could set the general direction of travel as we continue to build out New Zealand's EV charging network. We acknowledge that government can play a role to address residual barriers to achieving these targets and ensuring EV charging capacity and coverage keeps pace with EV uptake, particularly in areas where commercial drivers alone are insufficient to do so. The case for government support or intervention should be considered on a case-by-case basis, and revisited periodically, to ensure it is not constraining innovation, locking in redundant technology, or 'crowding out' private investment.

46. We strongly recommend that an implementation plan is developed with haste, ideally in close collaboration with the private sector. The plan would clearly

articulate the government's preferred role in the medium term and would identify a range of workstreams with responsible Ministers and departments, deliverables, and timeframes.

47. We also recommend that that least-cost and least-disruptive institutional arrangements are prioritised. Complex cross-agency policy and delivery challenges are nothing new, and we are concerned that significant organisational changes or establishment of new organisations will compound rather than ameliorate this complexity.