

8 June 2018

Low-emissions economy
New Zealand Productivity Commission
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Dear Commission members,

Re: Orion submission on Low Emissions Economy – Draft Report

1. Thank you for the opportunity to comment on the Low Emissions Economy – Draft Report (“Draft Report”).
2. Orion is the electricity distribution company serving central Canterbury. Given our area of expertise, we shall confine our comments on the Draft Report to the matter of electricity, and in particular issues impacting electricity distribution businesses (EDBs).

Focus on connecting customers to electricity

3. Chapter 12 of the Draft Report, the ‘Electricity’ chapter, examines *“the challenges in reducing electricity emissions efficiently, while ensuring that electricity supply meets demand at all times”*.
4. In discussing how the electricity industry can contribute to emissions goals, we believe it is essential to continually recognise that the most crucial role the electricity industry can play to achieve New Zealand’s low-emission goals is to provide the confidence to businesses and residential customers to use New Zealand’s renewable electricity, and move away from fossil fuels. To achieve real gains the electricity industry, and regulators, should focus on ensuring that *“supply meets demand”* rather than *“reducing electricity emissions”*.
5. This is because, as the Draft Report recognises, New Zealand already has, and will continue to have under all future scenarios, a highly renewable electricity system.
6. This is not to say that we shouldn’t strive to reduce electricity emissions – we should. But we need to be mindful that, if concentration on a further increase in the proportion of renewable electricity supply occurs at a cost to encouraging the conversion of transport or heat processes to using electricity, this is likely to be counterproductive.
7. This “big picture” realization needs to be a key driver of the policies that are developed in relation to the electricity sector, and as a country we shouldn’t lose sight of this in any discussion of

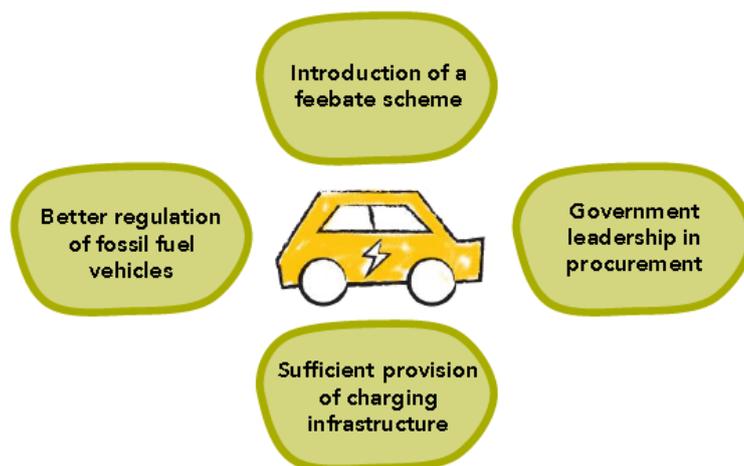
electricity sector emissions efficiency.

8. It is for this reason we support the Draft Report's view (at para F12.5) that with an effective emissions-pricing system, a statutory objective for the Electricity Authority to have regard to reducing greenhouse gas emissions in electricity is unlikely to incentivise efficient emissions reductions across the economy as a whole.

A coordinated policy response is needed

9. In many parts of the Draft Report the value of a coordinated policy response to emissions reduction is recognised. We agree that such a co-ordinated policy response is needed – it again comes down to the issue of focusing on the “big picture” rather than a fixation on the detail. Unfortunately, we see examples of a lack of coordination, and highlight some examples.
10. As the Draft Report states, EVs offer the most significant opportunity to reduce transport emissions in New Zealand. Consequently we would submit, and agree with the Draft Report, that a co-ordinated policy response is required to ensure conversion of the transport fleet occurs as quickly as possible.
11. The Draft Report, on page 298, states that the Productivity Commission has identified four key components of a policy package to achieve a level of EV uptake consistent with a low-emissions economy (as shown in the figure below from the Draft Report).

Figure 11.12 Key components of an effective policy package to support EV uptake



12. However, in relation to the “sufficient provision of charging infrastructure” component, a co-ordinated policy response appears to occur in other jurisdictions, but not currently in New Zealand.
13. As both the Treasury and the Productivity Commission recognise, private firms may not invest in charging infrastructure until there is sufficient uptake of EVs, but uptake of EVs might not occur until sufficient charging infrastructure is in place (page 303 of the Draft Report). Recognition of this “chicken or egg” problem is the reason why many overseas electricity regulators, in response to whole of government aims, have encouraged and directly approved EDBs to install thousands of EV

chargers. For example on 31 May 2018, New York and California state regulators approved plans for utilities to spend over \$1bn on EV charging infrastructure, and this follows previous approvals for expenditure in those states and many others.

14. In New Zealand, our policy approach is fragmented.
15. On page 303 of the Draft Report it's stated that *"the provision of charging infrastructure has been relatively strong with the current level of government support"*. We would suggest that one of the reasons for much of the existing charging infrastructure rollout to date has been due to EDBs and their ability to put a limited number of EV chargers to their asset base as they "seed" uptake of EVs. We estimate that around one-third of New Zealand EV charging infrastructure to date has been installed by two of New Zealand's EDBs – namely Orion and Vector – using this approach.
16. However, in May 2018, the Commerce Commission advised that public electric vehicle chargers are no longer to be included within the regulated assets of EDBs, unless under very restricted circumstances. As a result of this advice Orion has decided to pause its EV charging infrastructure rollout, and other network companies may too.
17. Whether or not the Commission has made the right decision regarding treatment of regulated assets by an EDB is debatable. However, regardless of one's view of the Commission's decision, it does highlight the lack of a coordinated policy response across government agencies and how this can undermine efforts to achieve the overarching lower emissions goal.
18. Another example of where industry players and government parties need to work together and collaborate to overcome the challenges faced in achieving emissions targets is data sharing. In particular, collaboration and sharing of data relating to the location of EVs.
19. The identification of where EV drivers live (and charge up their vehicles) has been a major issue for overseas countries with a greater penetration of EVs than New Zealand. This is because an inability to identify where EV drivers live is a major obstacle to allowing electricity companies to monitor network impacts and communicate with EV owners on how to charge their vehicle in a manner that minimises increases in system peaks and hence reduce the need for peaking polluting generation to be built¹.
20. We understand that a number of countries are considering release of EV registration details in some form to electricity companies to allow such communication and network monitoring. We suggest that consideration of the release of EV registration details, in a highly secure manner to certain electricity industry participants in New Zealand, may be appropriate given the potential cost and emission impact non-release of this information may cause.
21. We believe collaborative discussions across relevant government departments, including the Privacy Commission, and the electricity industry on the issue of release of EV registration details should be held. These discussions should determine if release of EV registration information, in a

¹ Concept Consulting, "Driving change" – Issues and options to maximise the opportunities from large-scale electric vehicle uptake in New Zealand, March 2018.

manner that protects the privacy of people but provides to the electricity industry the necessary information to ensure ongoing security of electricity supply to EV drivers and other consumers, can occur.

Integrating distributed energy resources (DER) and demand response (DR)

22. Another key issue with the uptake of emerging technologies, like EVs and in-home batteries, is load management. Load management is the process of reducing electricity demand during peak usage times, which in turn reduces costs and emissions by eliminating the need for peaking power plants.
23. Our desire to reduce peak electricity usage and emissions has been one of the reasons why we've been a key partner to Community Energy Action (CEA) for more than 20 years. CEA is a charitable trust that provides insulation and energy advice services to the most vulnerable in our community. Its objective is to create warmer, healthier and more energy efficient homes. Consequently, given our long standing views on the matter, we fully support the Productivity Commission's position at R15.3 re continued government support for the uptake of energy efficiency in buildings, and its opinions stated in getting to this position.
24. Aside from encouraging energy efficiency in homes, particularly low incomes ones, Orion has extensive hands-on load management experience. We've made coordinated load management a central part of our operations including coordinating load management for seven other networks in the upper South Island.
25. Orion has also been a significant early adopter and encourager of EVs, through sponsoring EV events, introduction of EVs into our operational fleet, and installing EV public charging infrastructure. Through both our load management and EV activities we feel well positioned to offer considered advice on the opportunities and challenges new technologies present in regards to integrating DER and DR into the electricity system.
26. Consequently, we are actively involved in many of the Electricity Authority's work streams in this area - as summarised in the Draft Report. Given the Electricity Authority's leading work in this area, there is probably no need to comment on the Draft Report summary of this work, however we do believe it is worth reiterating the need for any Productivity Commission input to bear in mind the "big picture" we have previously alluded to.
27. By way of a possible example, if working towards the goal of integrating demand response of EVs into the power system slows the uptake of EVs, we believe the Government/Productivity Commission needs to determine if that is a better or worse result for the country? This example is purely hypothetical but it demonstrates a potential trade-off we may need to make in the future. We need to be aware of these potential trade-offs and sometimes perhaps be willing to "give a little to gain a lot".
28. A further example is the use of time of use pricing for EV charging.
29. It is often suggested that time of use pricing could be used to manage the timing of EV charging. Indeed the Draft Report infers this too. However this observation ignores the fact that at high EV

penetration levels, which New Zealand must reach to achieve its emissions targets, widespread uptake of time of use pricing will likely result in power system and market stability issues.

30. This is because with time of use pricing, at the switch over time between a high price period and a low price period, unless some type of coordinated EV charger management occurs, a large electrical load will come on almost instantaneously. Electricity supply instability is likely. Rather “smoothing out” or staggering the start time of EV charging, so that not all EV charging starts at the same time, is needed.
31. However, the means to achieve such smooth and coordinated EV charging management is as yet not agreed.
32. We absolutely agree that the country and industry needs to continue to explore how we can achieve smooth and coordinated EV charging management, and Orion is actively participating in trying to arrive at such a solution.
33. However, when the industry does narrow down on the options, the industry/government need to make sure it asks the question whether the cost to the country, and consumers, of achieving smoothed out staggered charging is greater than the country-wide cost of simply allowing drivers to charge up when they want.
34. With an effective emissions-pricing system hopefully some of these “big picture” issues and questions will be more efficiently and easily answered.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'David Freeman-Greene', with a stylized flourish at the end.

David Freeman-Greene
General Manager Commercial