Question 1 - The purpose of Orion's investment in EV chargers was explained in our 25 May 2018 letter to the Commerce Commission, responding to the Commerce Commission's open letter on Emerging Technology.

Our 25 May letter set out, our reasons for undertaking EV charger investment are many and varied, and a simple Yes or No response to each of the questions listed in Q1, would not reflect the subtleties of Orion's potential future involvement with EVs, and the reasons why we have invested in EV chargers to date.

We have attempted to provide further detail on each "purpose of investment" question contained within this Section 53ZD request below.

Q1a) Earn income from the supply of electricity – As set out in our 25 May letter, currently we receive no direct revenue from EV chargers, and so no revenue is recorded. Orion is an enabler and supplier of 'confidence' to our community. Orion wishes to ensure that our community has confidence in converting their transport to electricity. Range anxiety is central to this challenge. We do not wish to dominate the EV charger market but to accelerate the up-take of EVs compared to uptake without seeding.

Given an overall approach by Orion of wishing to seed the market and promote EVs, we have adopted a policy of allowing the public to use free of payment the standard (22kW) EV chargers we have installed – 19 public installations to end FY18. Given the low number of EVs on the road currently, we also note that the cost to collect any revenue from these standard chargers is likely to exceed the revenue collected, making any decision to collect payment ill-advised.

With regard to the five fast chargers we own, a use fee is charged to the public. In this area we are collaborating with ChargeNet. This fee set is at exactly the same level as ChargeNet have set for their nationwide network of chargers – we are not undercutting their charging rates. Four of the five fast chargers installed by Orion were purchased from ChargeNet, and ChargeNet provide the billing platform to Orion to collect usage fees from EV drivers. ChargeNet, at our request, are currently holding, on behalf of Orion, all revenue earned to date from the fast chargers.

We have rolled out EV chargers on a broad ratio of four standard chargers to every one fast charger, given our strategy to seed the market and promote EVs. With a significantly lower cost to install, we view standard chargers as being a relatively low cost means of conveying to current ICE drivers that 'range anxiety' need not be an issue preventing them from consideration of an EV purchase.

Q1b) Develop future growth of electricity distribution services – We aim for our business to be sustainable financially and for our customers to have lower overall energy (not just electricity) bills.

By encouraging the uptake of EVs, by installing EV chargers at a time when the EV market is still well within the "innovators" stage of market development[1], we are wishing to encourage future

[1] The "early adopters" stage of an emerging technology market is generally regarded as not occurring until there is at least 2.5% market penetration. EV uptake is currently at less than 0.3% penetration.

conversion from fossil fuels by our customers to use of cheaper renewable electricity. Increased usage of electricity will naturally lead to future growth of electricity distribution services.

Consequently, we view the EV chargers we have installed as indirectly growing electricity distribution services. However, we note that as EV usage increases this will lead to a lower customer average cost per kWh used, as a significant percentage of EV charging is likely to occur at periods when network load is low.

We do not view installation of EV chargers as directly growing electricity distribution services, other than via the very low, as proportion of our total RAB, amount that we intend to include on RAB as a result of EV charger installation. This is a very proportionate response to promoting a technology for the long term benefit of our customers, community and New Zealand.

Q1c) Seeding a market other than for growth of electricity distribution services

We wish to lower our customer's total energy bill, and positively impact the local/national/international climate and environment.

Orion's regulated business does not wish to be involved in the EV public charging market long term (for a discussion of potential unregulated ring-fenced activities see Q4). In the April EV report to the Orion board, which sought approval from the board to continue to rollout EV chargers in FY19, management stated:

> *"Beyond 2021 we would hope that the EV market is of sufficient size, and with good growth prospects, that the need for Orion to install EV chargers will decline, and the owners of car parks (e.g. supermarkets, malls) will begin to install EV chargers themselves."*

We see EVs and EV chargers as being a classic "chicken or egg" scenario. There is a risk that EV uptake will not occur as quickly as it otherwise would unless a seeding party installs chargers. The alternative is simply that EV chargers will not be widely installed quickly, and EV uptake will be slower.

Any slowing of EV uptake would not be in the best interests of enabling customer choice in emerging technology and hence this is why Orion has elected to install EV chargers.

This thinking is the same as that identified by many overseas electricity market regulators that have approved EV chargers being added to network company regulatory asset bases – to enable the market to "kick start". Then competitive providers can enter the EV charging space at a later date when the business proposition allows them to.

This two-step approach was referred to in our 25 May letter and we again refer the Commerce Commission to it.

"We also appreciate that a discussion of the role of EDBs in stimulating the transition to the mass uptake of EVs, and becoming informed about the implications for demand and network investment, also includes a discussion about when the function of stimulation and learning ends, and commercial provision begins.

We are interested to discuss this with the Commission. We know that today we are unfortunately some way from the demand and supply conditions in the Christchurch market supporting commercial provision of EV chargers, and we expect the regulatory treatment of investments to change when that occurs. But again these types of questions will be an important part of the next phase of discussions and we look forward to engaging with the Commission on those topics."

We continue to encourage the Commerce Commission's engagement with Orion and other EDBs on this topic.

Q1d) Potential to sell electric vehicle chargers as an asset or a business

Like nearly all businesses we do not wish to close ourselves off from potential profit and growth opportunities. However, we are very mindful of our role as an enabler of the future and the need to allow the market to compete on a level playing field basis. Consequently, should a future business opportunity present itself in the EV charging area we would consider it within the context of the related party and ring-fencing provisions of the IMs.

Q1e) Load control where an EDB has active control

With Orion's long history of load management and Upper South Island load co-ordination, we are well aware of the potential EV charging offers to lower peaks and smooth out usage. This is particularly the case for management of at-home EV charging.

However, we do not see management of the EV chargers installed to date as being necessary at this early stage. As previously stated we do not wish to be involved in public EV charging in the medium term (instead we wish to kick start the market) so learnings on public EV charging load management offer us little help in relation to our core activities at present.

Potentially, load management of our head office chargers may be useful both to limit our own head office peaks and to generate learnings which other businesses converting their fleet to EVs may find useful. We are finding more and more local businesses are coming to Orion for advice on EVs and EV charging, as locally no-one else has our experience or is willing to fill this void. This is another example of how, if we leave it simply to the competitive market, the uptake of EVs will be slower locally than if Orion can promote EVs and assist others.

Q1f) Charging EVs owned by EDB in order to provide electricity distribution services

As stated at note 1, at 31 March 2018 we have installed 19 EV chargers at our head office to service 19 EVs in our fleet.

Aside from supporting our own efforts to reduce Orion's carbon impact, we see conversion of our fleet to EV as being helpful in stimulating the EV market through eventual on-sale and promotion –

all of our EVs are branded as being EVs and consequently mobile billboards for taking the step to EV conversion. Also our staff live in our community and provide a marketing channel.

Q1g) R&D for an electricity distribution service

Our rollout of EV chargers has been part of our research efforts into understanding the impact of EVs on our network. The charger rollout has been an absolutely vital step in the process of becoming engaged with the EV community and developing relationships with them. As stated in our 25 May letter:

> *Investments like Orion's EV chargers generate public awareness, and EDBs gain an understanding of, the network effects of widespread rollout – for example on demand profile – of such innovations, which again are network technologies with interrelated effects and cannot be treated as isolated developments.*
>
> *It has been notable that deployment of EV charging infrastructure has facilitated the building of relationships with suppliers and users. We now have a direct link with the EV community, what's happening and what their thinking is on EVs. These are important relationships for moving forward into the future emerging technology environment to ensure all parties understand benefits and consequences of technology uptake.*

Q1h) R&D not associated with electricity distribution services

Whilst non electricity distribution services opportunities haven't been a focus for Orion, the learnings gained from "R&D for an electricity distribution service" are naturally transferable.

Q1i) Other

Two fundamental reasons for our investment in EV chargers have been left off the "Purpose of Investment" list in Schedule 3. These being the positive environmental impact EVs bring to both society, and to Orion directly as we seek to reduce our carbon impact, and secondly that EVs are good for our customers long term – financially and environmentally.

We believe the absence of these items from the "Purpose of Investment" list, is potentially reflective of the Commerce Commission's current narrow perspective in this area. We urge the Commerce Commission to focus on the long term benefit to consumers from network companies kick starting EV uptake, and consider a need to adopt a two-step approach to EV charger investment, and treatment on or off RAB, as discussed in our answer to Q1c).

Q6) Each EDB must explain their business case for investing in electric vehicle chargers, including:
- any details that may assist in understanding the strategy or reasons for the investment in this technology;
- why investment in this technology has been chosen for regulatory purposes over other potential solutions;
- what future investment the EDB is planning;
- why, if any, discounts of line charges have been made;
- description of other purpose(s) of investment from question 1 above; and
- description of other revenue associated with regulatory investment from question 5 above.

In response to this question, we refer the Commerce Commission to our letter of 25 May 2018, responding to the Commerce Commission's open letter on Emerging Technology, and our answers above to Q1. We welcome discussion with Commerce Commission on this matter.

Questions 2, 3 and 4

As at 31 March 2017, Orion had recorded $0.3m of capital expenditure on public EV chargers in our RAB. This was disclosed to the Commission in Schedule 6a of our FY17 disclosures.

On 9 May 2018, the Commerce Commission published an open letter which included *"information on how emerging technology costs and revenues should be accounted for in order to comply with their regulatory requirements, including <u>new</u> guidance on when investments in electric vehicle chargers can be included in their regulated asset base"* (a direct quote from the Commerce Commission with emphasis added by Orion). The guidance provided was different from Orion's previous interpretation of the regulatory requirements and discussions with the Commerce Commission.

Following the 9 May 2018 open letter, Orion has adopted a conservative approach to the treatment of costs related to public EV chargers. We have removed all expenditure related to public EV chargers from our regulated business, including the FY17 capital expenditure. This removal of expenditure is reflected in our FY18 disclosures – box 9, schedule 14 and schedule 5g.

The removal of all expenditure is pending discussion with the Commerce Commission, and hopefully clarification, on the costs that can and cannot be included in the regulatory asset base. Two discussions need to occur:

- Orion believes that all costs incurred to date on EV chargers have been for the long term benefit of customers. For this and other reasons discussed in our 25 May 2018 letter to the Commerce Commission, responding to the 9 May open letter, we believe the Commission should adjust its guidance.

- Should the Commerce Commission decide not to adjust its guidance, we seek clarification on where the Commerce Commission considers the point of supply with regard to EV chargers is – the point of supply being the 'demarcation' point for cost inclusion on the regulatory asset base. In particular we seek guidance on whether the point of supply is beyond the boundary if Orion holds an easement on the private land the charger is installed on.

Subsequent to these discussions with the Commerce Commission, should the Commerce Commission decide not to adjust its guidance and the point of supply is established as being beyond the boundary in instances where Orion holds an easement for the EV charger, then we would look to bring costs back into our regulatory asset base. To provide the Commerce Commission with a full picture of our investment in EV chargers, had this possible cost approach been adopted by 31 March 2018 the following numbers would have been recorded in Schedule 3:

2. a) **Capital expenditure** that is **directly attributable** to **electricity distribution services**	$000's				190	418
b) **Capital expenditure** that is not **directly attributable** to **electricity distribution services**	$000's				0	0
c) The proportion of **capital expenditure** in b) above that is allocated to **electricity distribution services**	$000's				0	0
3. a) **Regulated service asset value** that is **directly attributable** to **electricity distribution services**	$000's					593
b) **Regulated service asset value** that is not **directly attributable** to **electricity distribution services**	$000's					0
c) The proportion of **regulated service asset values** in b) above that is allocated to **electricity distribution services**	$000's					0
4. a) **Operating costs** that are **directly attributable** to **electricity distribution services**	$000's				26	15
b) **Operating costs** that are not **directly attributable** to **electricity distribution services**	$000's				0	0
c) The proportion of **operating costs** in b) above that is allocated to **electricity distribution services**	$000's				0	0
5. Revenue associated with **regulatory investment** in **electric vehicle chargers** other than revenue earned through **prices**						**See answer to Q1a) in attachment**
a) Supply of electricity	$000's				$0	$0
b) Sale of data collected	$000's				$0	$0
c) **Capital contribution**	$000's				$0	$0
d) **Vested assets**	$000's				$0	$0
e) Other - explain in question 6 below	$000's				$0	$0