

Further information supplied by Alpine Energy regarding the technical aspects of the activity.

- a) There are currently 2 types of charger sockets in use in NZ - "Type 2" and "chademo". One is for Japanese imports and one is mainly used by European car makers. Do you know which type is planned for this site? Or are they even going to be interoperable?

The EV chargers are both CHAdeMO and CCS (type 1 and type 2) and will be capable of charging most of the EV fleet in NZ except the French Zoe EV's. Most EV owners who do not have these type of sockets, carry an adaptor to allow interposed connection.

- b) How many charging stations are planned for? 1 parking bay? Or more?

Only one parking bay initially. Overtime I would imagine there to be consumer/tourist demand for more. Please note that the charger proposed is a rapid charger. The roll out of these initially is to help ease an EV users' fear of range anxiety. It is envisaged that most local EV users will charge their EV from their home, place of residence and/or work; which doesn't require a rapid charger. Trickle charges would suffice and generally be used overnight when power supply is more plentiful. For travellers into the area we envisaged the charger to be used for top-up as opposed to full charge (see my answer to question g) below)

- c) Does the power supply to the village easily scale up to cover this activity? Or is it already stretched?

We can easily accommodate for this one rapid charger now. If multiple rapid chargers were envisaged and being used at the same time we would need to look closer at the load profile and asset utilisation and potential network upgrade in part.

- d) the Waka Kotahi (NZ Transport Agency) EV charger map shows that there is already a single charging unit at the YHA. Can you confirm whether this is publicly available at the moment?

Yes, there is a small wall mounted charger at Mt Cook YHA, designed for overnight charging (trickle) and was available to guests before the YHA closed in December.

- e) Do you know what the cost structure of the charging stations would be? And would it incentivise quick turn-overs of vehicles?

Two ways to interpret your question, so two answers provided.

- 1. Yes, one of the reasons Alpine in the past and ECCA now have/are supporting deployment of rapid chargers is to incentivise the uptake and turn-over of vehicles*
- 2. Rapid chargers are invoiced for on a per minute charge time basis and kilowatthours consumed and tied to Chargenet's account and billing system. <https://charge.net.nz/> As mentioned elsewhere EV chargers are often used for top-up as opposed to full charges. On this basis quick turnover between EV users if envisaged.*

- f) Is there going to be a local person appointed as "parking" or "charging station warden"? I am simply asking to ensure we can prevent scenarios where petrol vehicles snatch up charging stations and use them for parking. I would hate for DOC staff to have to sort these issues or have to help stranded electric vehicles because they made it into the village, could not charge all day and are now running too late to continue the journey for the day. Because the station sits outside your office + because you are the local authority, I can imagine visitors to turn to you to help them...

Great question and no, we are not looking to have a charging station warden. Perhaps the erection of friendly warning signs saying vehicles unattended for X

time will be towed at the owners expense. As an EV user there is high awareness of planning journeys to allow for charge redundancy once you arrive at your destination i.e. to allow travel to the next charger. We will also have a Hypercharger (150kW) installed in Twizel and we currently have a 50kW unit available at Lake Tekapo and Fairlie.

There is an easy correlation between kW provided at the charging station and time required for fully charging a vehicle. While 50 or 55 kW seems to be common at the moment for “fast charging”, 150kW chargers are coming. Which would be accelerating charging times - and hence throughput of vehicles.

For EV with larger batteries the overall time to charge may increase, not decrease.

- g) Is there any indication in the proposal regarding the forecasted uptake (vehicles charged per day; or kW used)?

We've installed chargers to date on the basis of helping EV users/owners overcome range anxiety. The charger usage will be monitored over time. Our assumption is usage will be slow to begin with but will pick up over time. Our other assumption is EV users travelling into Mt Cook will have charged their EV prior to travelling into the area, meaning if they do go to charge at Mt Cook it may be a short top-up charge as opposed to a full charge. I spent a day at newly installed EV chargers Bombay, Auckland in 2020 observing usage and while I was there I took the opportunity to talk to EV owners using the chargers. The common reason for usage was to top-up their EV for contingency should their trip not go quite to plan i.e. most were not fully charging their EV.

All six chargers Alpine has deployed to date are used several times per day, they all have very different usage and uplift patterns.

- h) Is there information available re “upgradability” (to 150kW or other faster charging) in the proposal?

We haven't proposed to upgrade to a 150kW or other. It's a 50kW unit. Moving to larger units or multiple units would require a network upgrade to part of our network where the EV charger is to be installed.