origin 360 EV

Smart Charging Trial Update

This Project received funding from ARENA as part of ARENA's Advancing Renewables Program.

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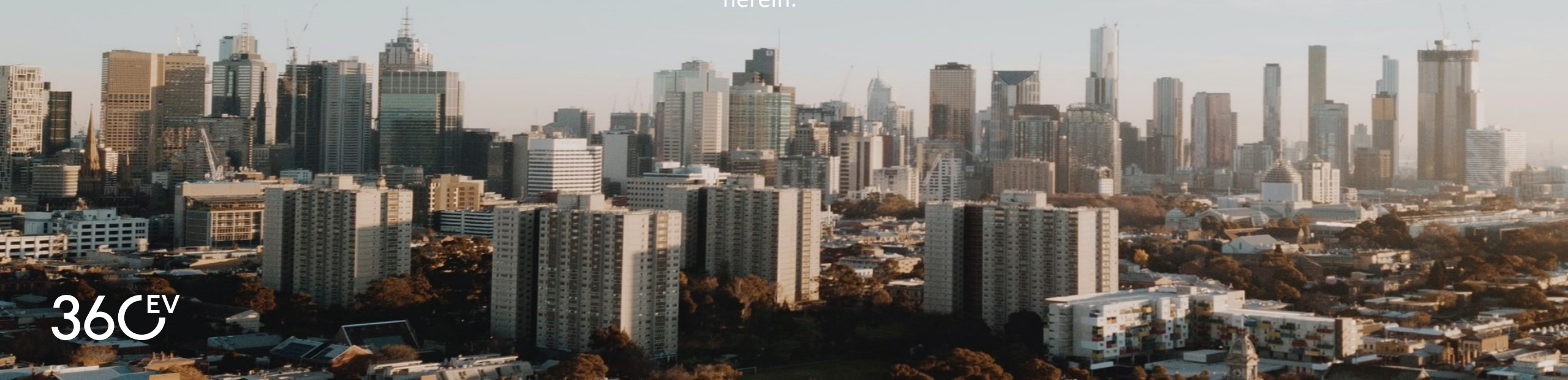
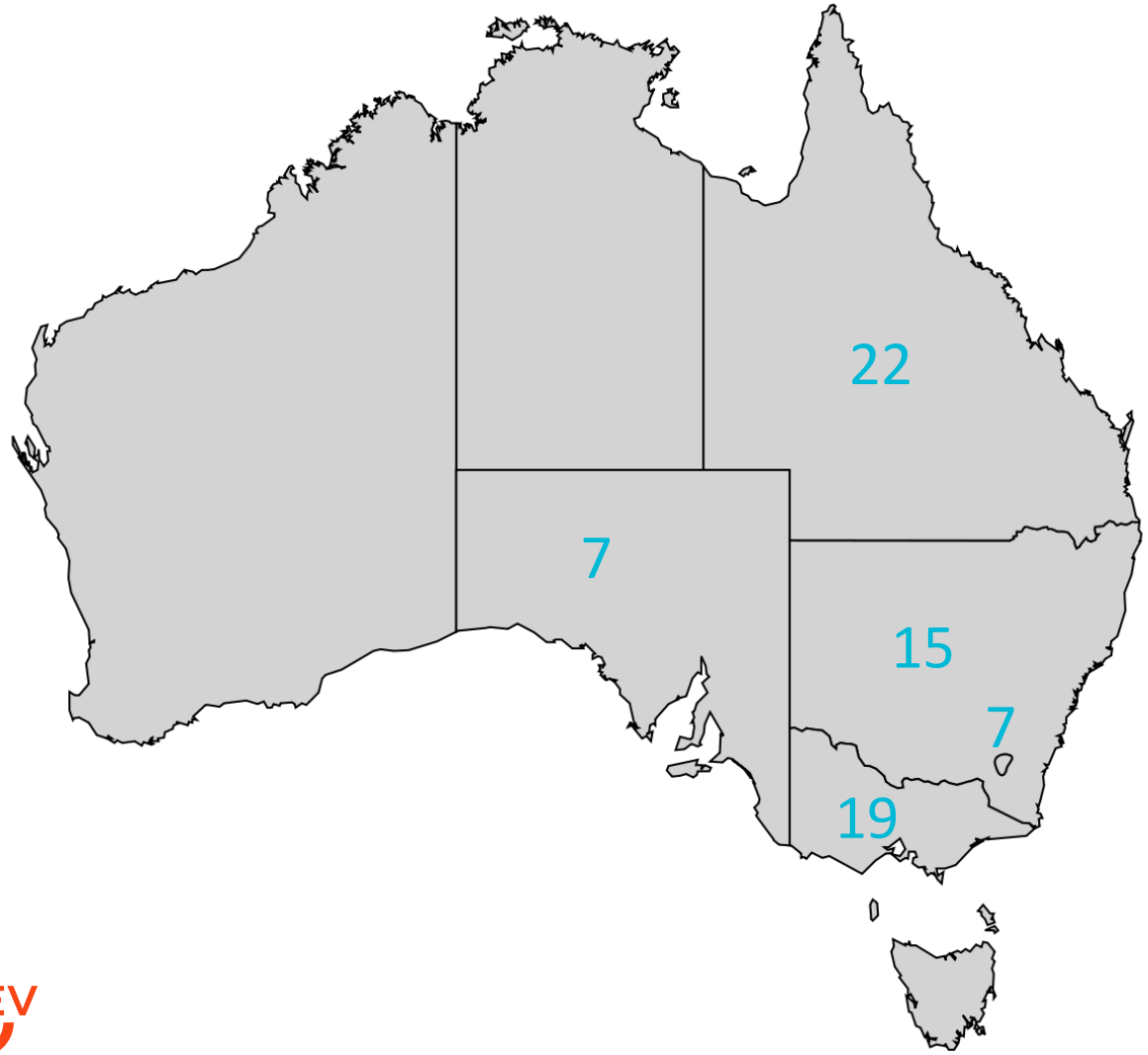


Residential Leads

Residential participants split by state



70

Residential participants

89%

of leads had Solar

Of this

20%

also had a Battery

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The Participants - a disclaimer

The participants in our trial were mostly highly engaged and knowledgeable about EVs and or energy.

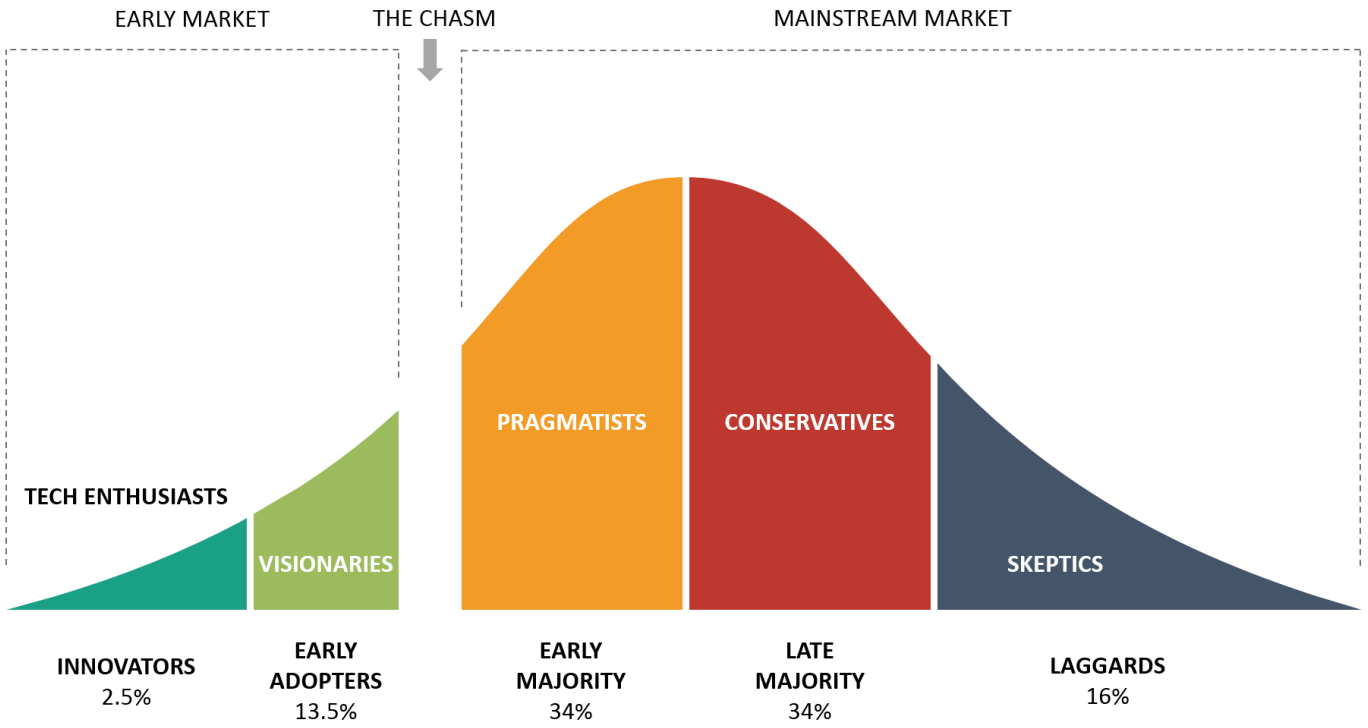
Our trial participants have shown to seek and engage communities and have self selected to be part of the trial. **It's important to acknowledge this as outcomes and opinions are skewed towards the innovators and early adopters.**

90%+

Participants are over 35yo

3 : 1

Male : Female split as primary contact



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Personas

Our initial view of an EV drivers can be categorised by different behaviours and motivators – we created some initial personas to reflect this.

The Tinkerer

Highly engaged with energy and loves to analyse data. Open to new concepts and technology if they can see value or gives them additional data points.

Motivated by optimization and general curiosity for how things work.

Typically conscious of how much they spend on energy.

Did not want the fastest charging, just the smarts

The Evangelist

Loves talking about their EV especially if they're a Tesla driver.

May not have started off as a tinkerer but the thrill of experiencing an EV has opened up a new world for this cohort.

Key to unlocking mass market drivers as they spread the good news of EVs

Set & forget

No knowledge or engagement on energy. Reflective of our typical customer base.

Need guidance and education on EVs, charging and energy in general however simplicity is key and outcomes are more important than data and detail.

The people don't typically use their digital app to monitor usage or even their car app.

Like perception of being Green but are rarely active about it easy for them.

How will each group respond to each experiment? And will they sign up to a product?

Is there a product/service that will cater for all groups

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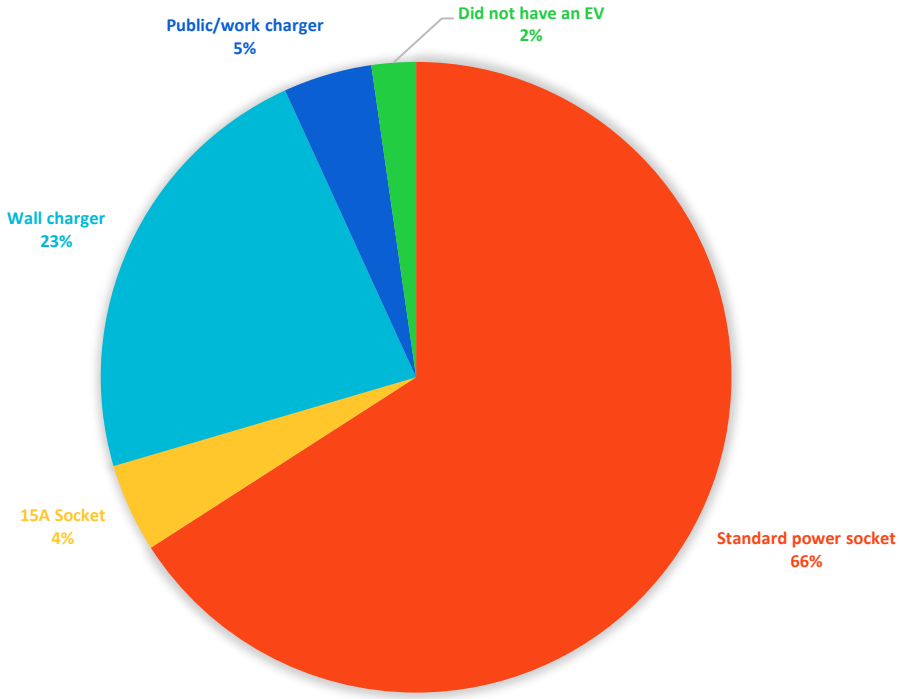
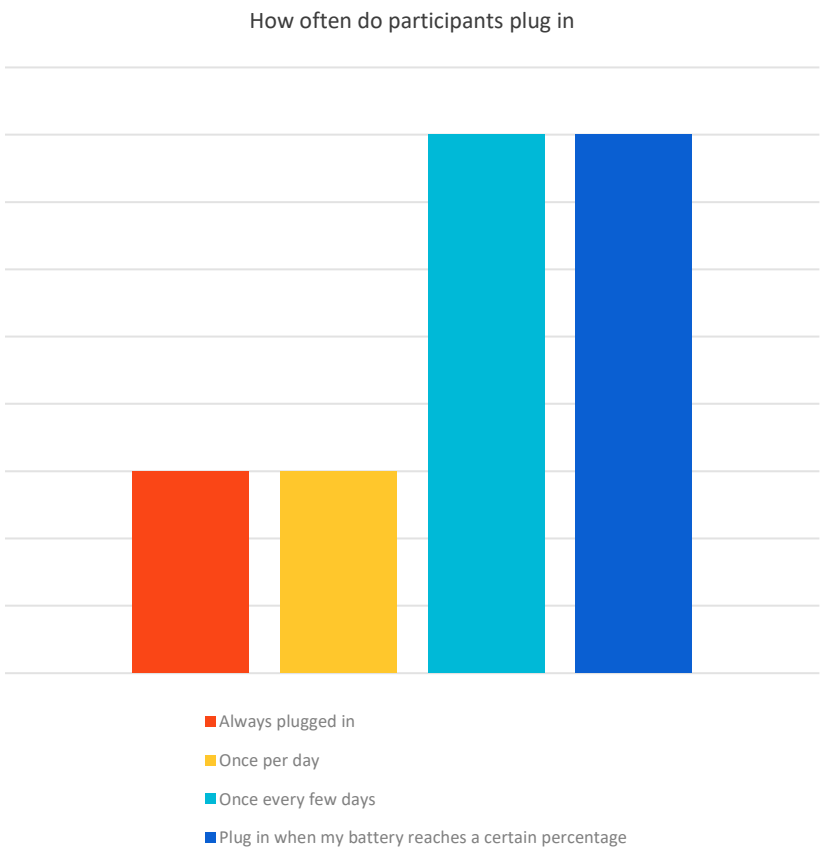
Behaviour (Pre-COVID)

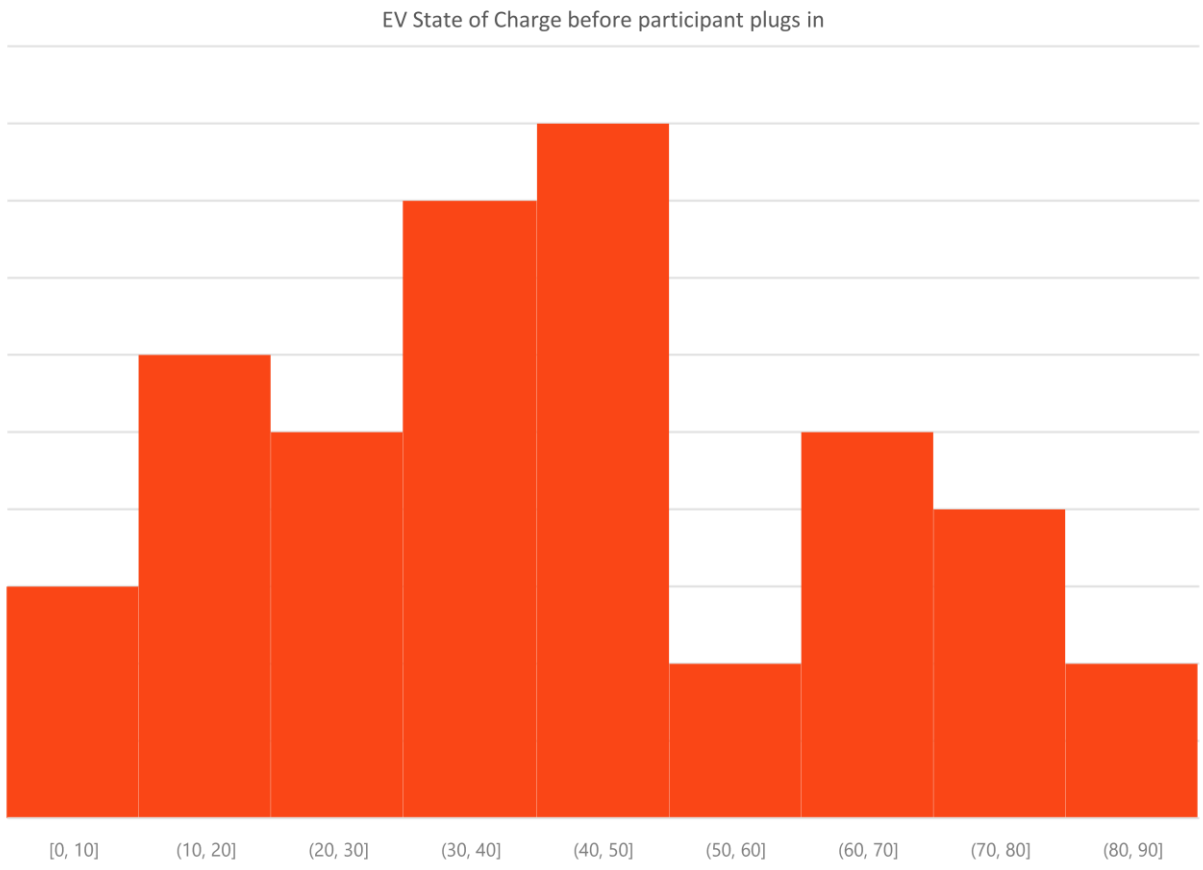
We surveyed our participants to understand how they charged pre-covid



Behaviour (Pre-COVID)

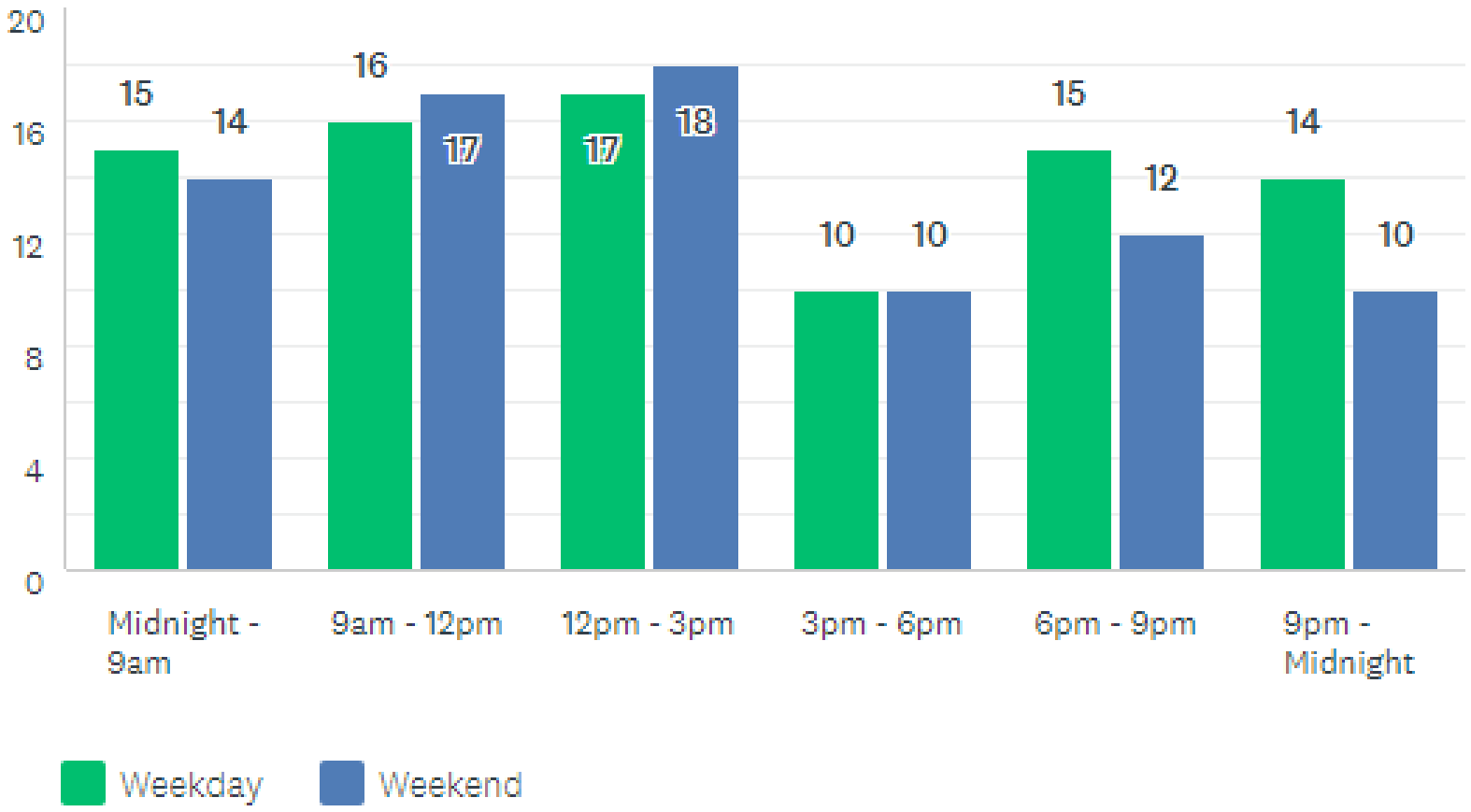
Understanding when people are charging





Charging data (Pre-COVID)

We examined the charging data to see if behaviours changed. How might this change 12 months later?



Charging data (During COVID)

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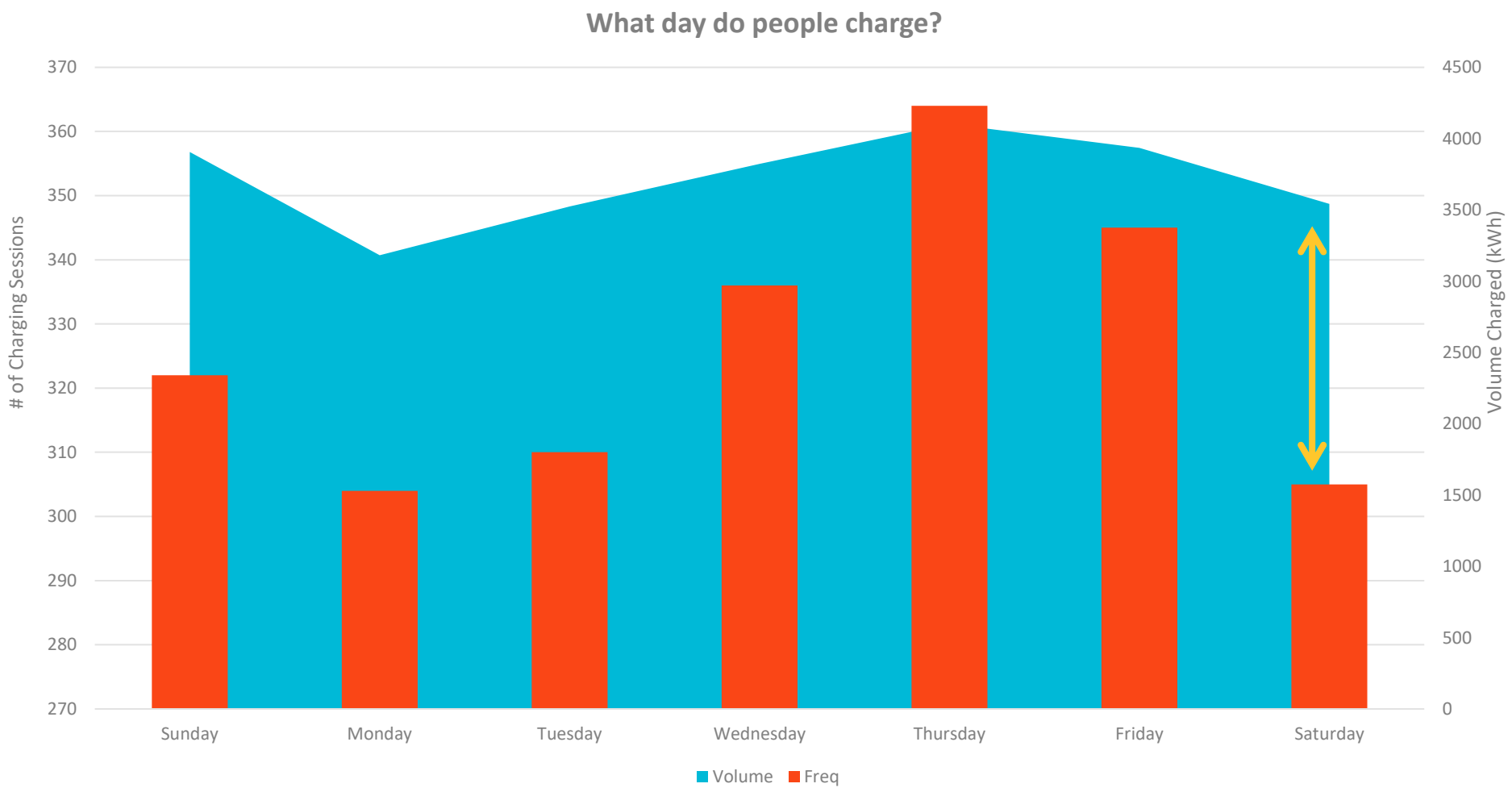

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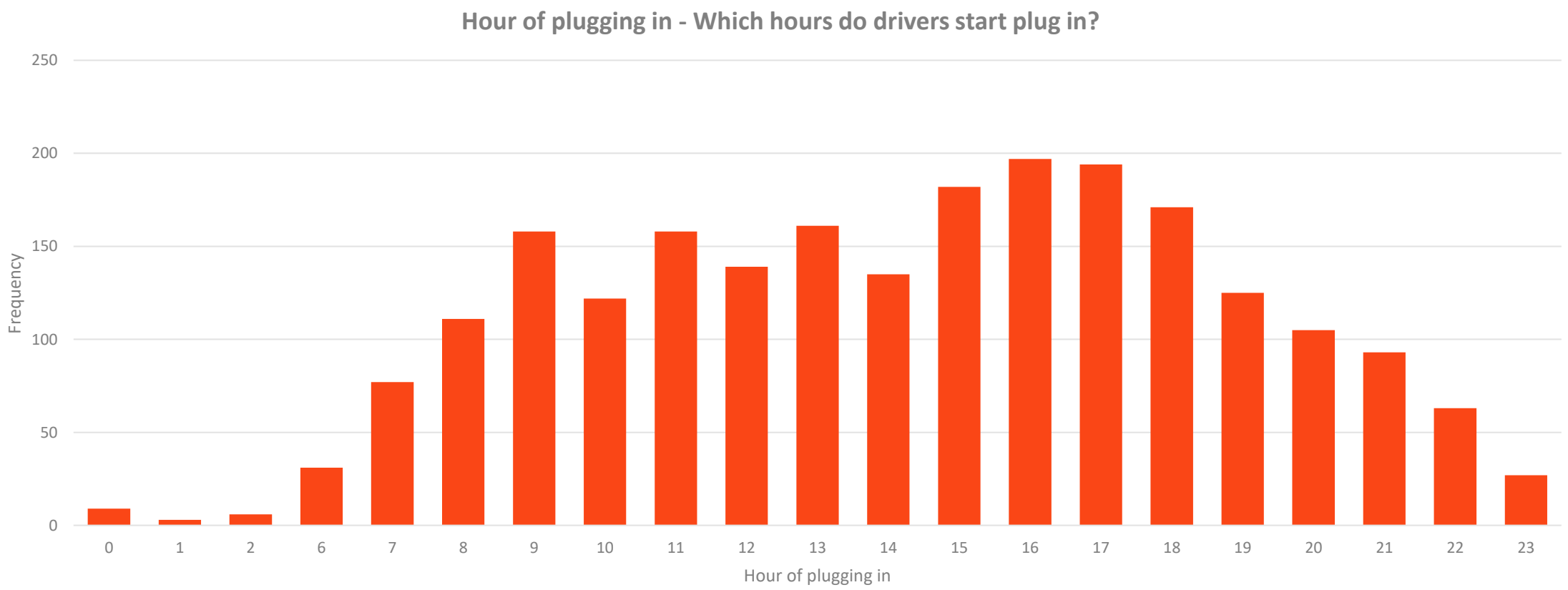

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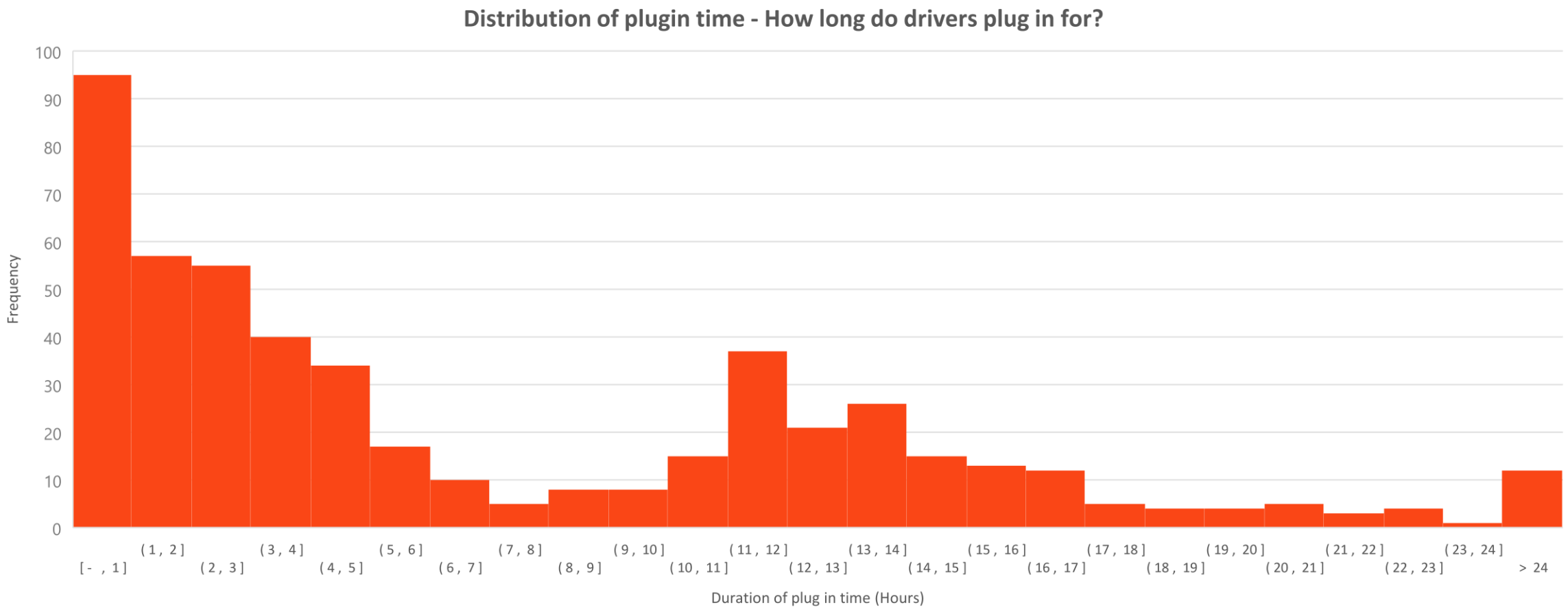

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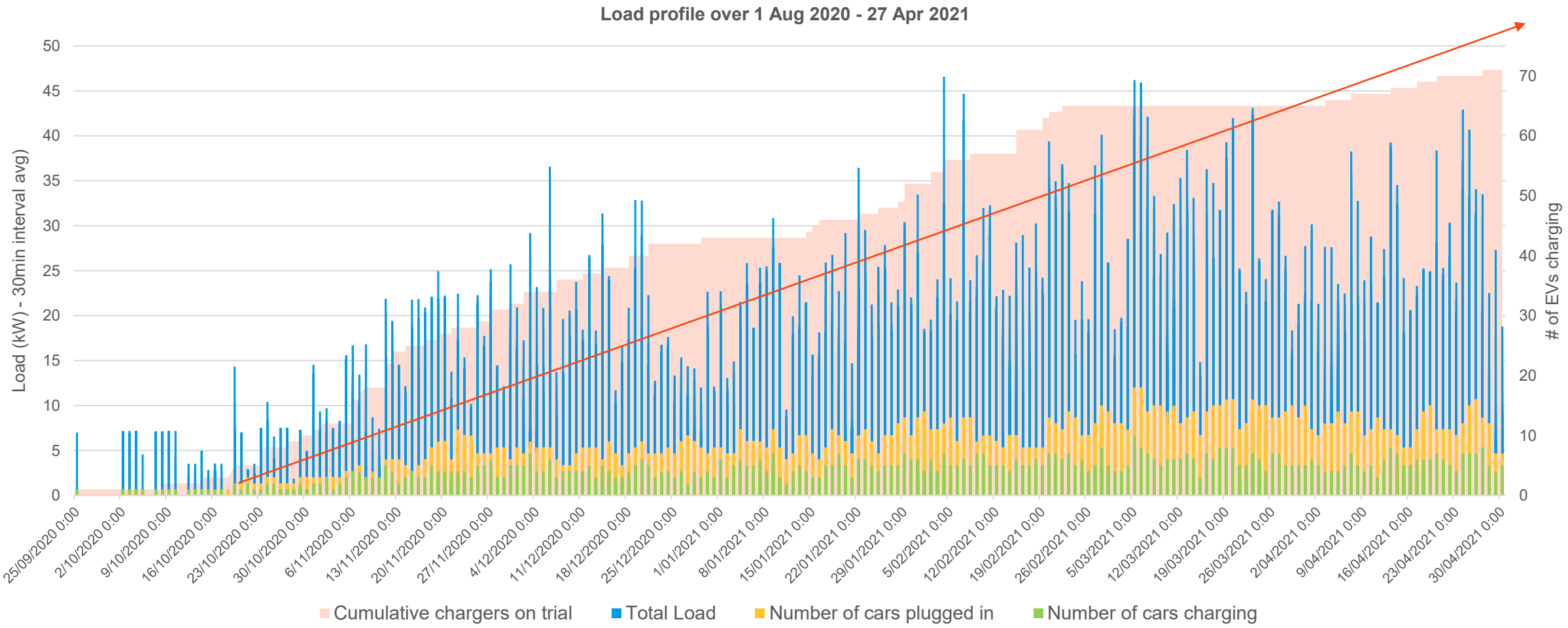
Charging data (During COVID)

Does the meter data tell us a different story?



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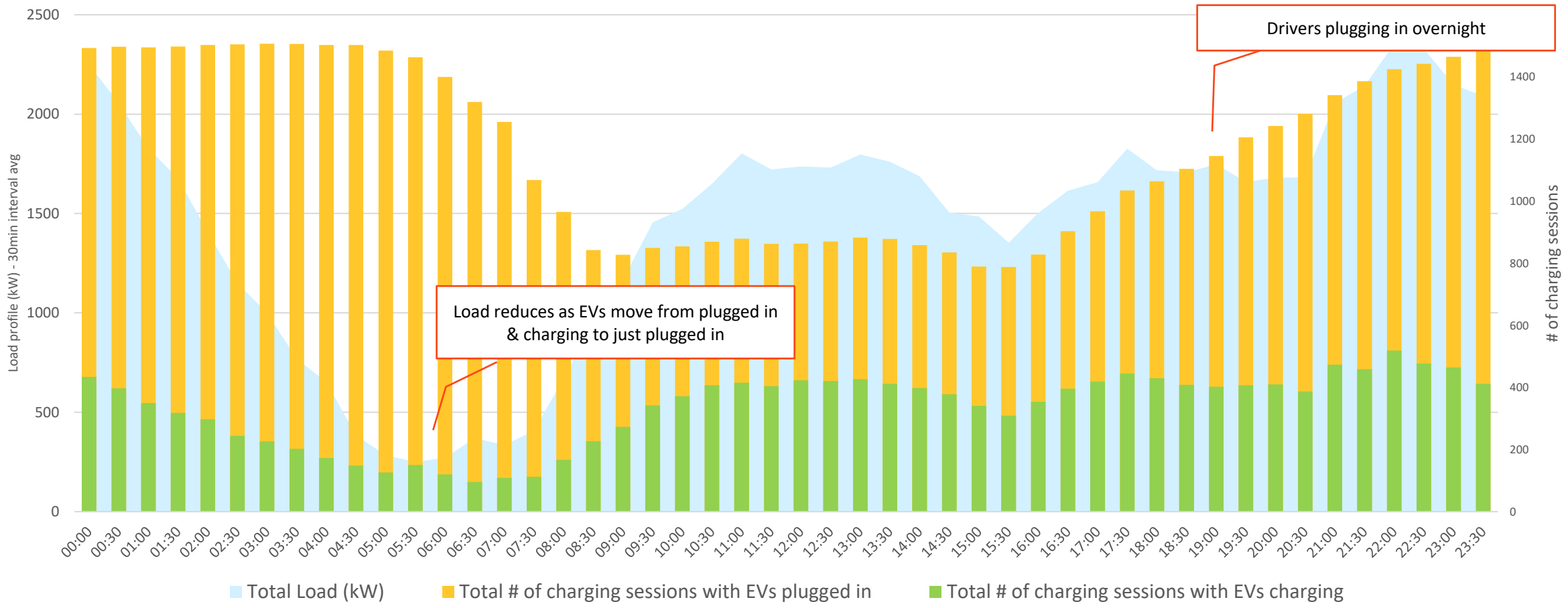
Charging data (During COVID)

When did the top peak loads occur?

30 min interval with average loads >40kW			
30 min interval timestamp (Local time)	Total Load (kW) - Average for 30min interval	Number of EVs plugged in	Number of EVs charging
4/02/2021 13:30	46.6	10	7
7/02/2021 11:30	44.7	7	6
7/02/2021 13:00	41.8	8	6
28/02/2021 15:30	40.1	15	8
5/03/2021 19:00	42.1	14	7
5/03/2021 22:00	43.2	16	8
5/03/2021 22:30	40.5	17	8
5/03/2021 23:00	40.1	17	8
5/03/2021 23:30	46.2	18	10
6/03/2021 0:00	45.8	18	7
6/03/2021 0:30	45.9	18	8
7/03/2021 21:30	42.1	13	7
20/03/2021 0:00	40.9	16	8
20/03/2021 0:30	42.0	16	7
23/03/2021 22:00	43.1	14	7
23/03/2021 22:30	42.3	14	7
24/04/2021 13:30	42.9	10	7
25/04/2021 0:00	40.6	13	6
25/04/2021 0:30	40.7	13	6

Charging data (During COVID)

What do the meter values tell us if we summarised it over a 24 hour period?



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Insights from the process

Every site & customer is unique

Even when an install seems like its straightforward, sometimes there are curveballs that thrown in.

Physical factors – Running cabling over a double storey house, over a driveway etc, questionable set ups.

Customer preferences – Position of EV charger, specifically how does a customer think about placement of charger if they have multiple cars. Is the cable long enough to reach the car.

EVs 101

Understanding of the actual EV itself is important to help serve customers. Knowing max charge rates, connector types, speed of charging, all assists in getting customers comfortable with EVs and the charging experience. Discussions with businesses were really focused on the fleet as opposed to the charging infrastructure.

To meter or not to meter

Origin did not install submeters. Not required however as we think about potential propositions or network tariff reform, there will be considerations

Free is hard to give away

Customers aren't as responsive as when they are paying for a product.

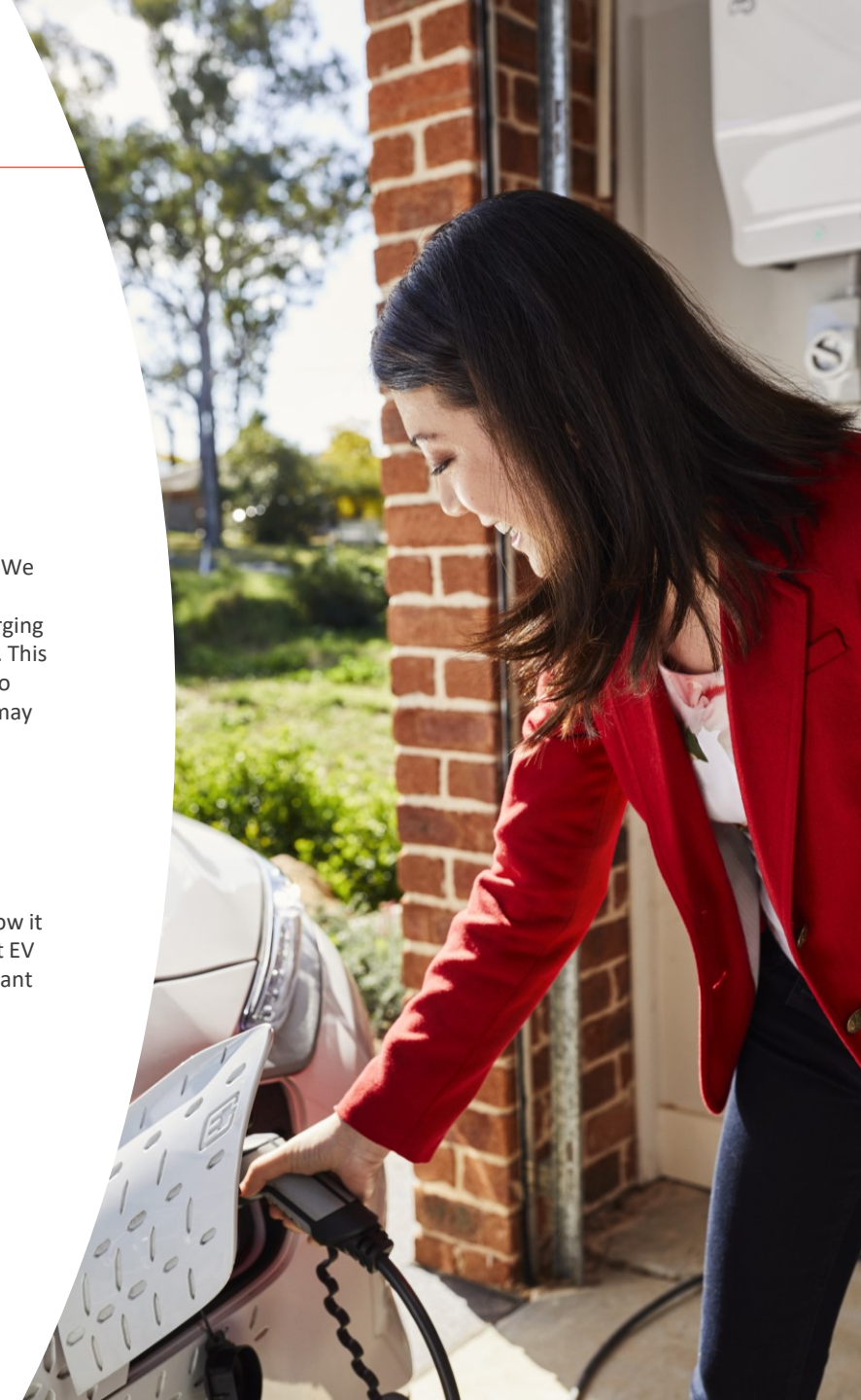
Surprise additional costs can make or break participation.

Open standards vs proprietary technology

In an ideal world, EV chargers would communicate USB ports. We quickly found that creating an ecosystem that supports all EV chargers. Whether its basic communications or control of charging profiles, different hardware providers will be slightly different. This will have the largest impact on business customers who plan to transition their fleet over a longer period of time where they may want to have different chargers.

Data transfer

How data is collected (frequency, type etc) is dependent on how it is being used. Any entity who requires aggregation of different EV chargers will have different requirements. Eg. Networks will want high frequency and higher accuracy but a

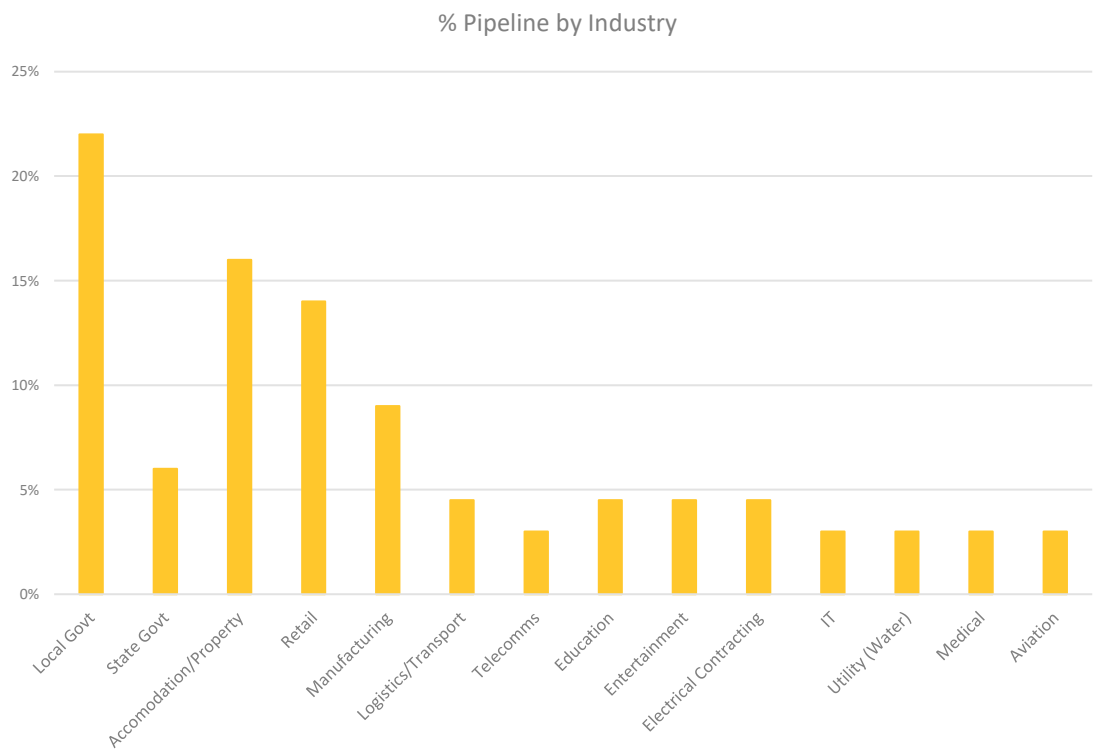


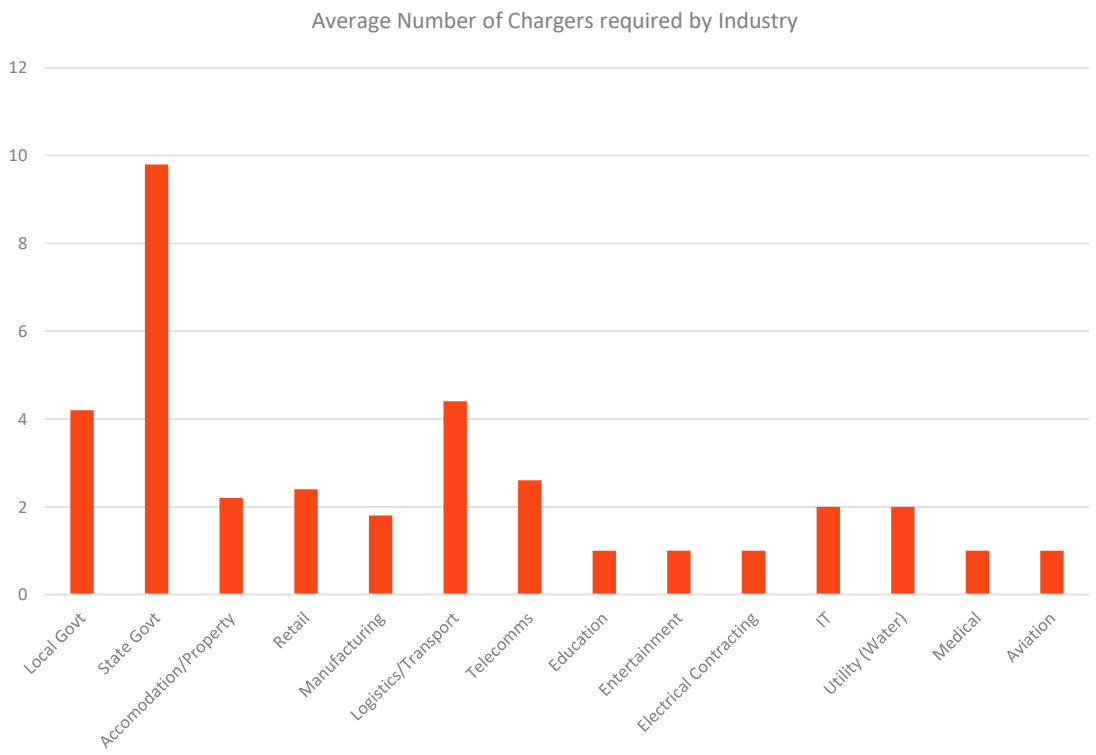
Business Leads

Business leads split by state

Where was the interest from the trial

Over 50 large organisations from a range of industries have shown an interest in finding out how to transition their fleet to electrification.





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Customer Verbatims

Barrier to take up EV's	Customer Feedback
Subsidised infrastructure costs	*"We've been thinking about EV's for a while, this has provided an opportunity to have the discussion internally"* ***Local Govt*** *"We have global commitments to transition to EV's, subsidised chargers make it more cost effective manner"* ***Manufacturing*** *"EV's isn't something we had considered in the past, but if there is a subsidy, we would consider it, as being a good social citizen is important to our business"* ***Healthcare***
Home charging and reimbursements	"*The EV's would be for our sales rep's who are on the road, we'd need the chargers to be installed at their homes, how would we manage the electricity costs to power the car"* ***Retail***
EV Costs	*"We have commitments around EV's, but at this point in time, the costs don't justify us taking that step now"* ***Retail*** ***"****At this stage we have starting using hybrid vehicles, this will help us in the short-term reach our targets. It's a much more cost effective option at the moment"* ***Property Management***
Fit for purpose cars	*We have a global mandate on EV's and right now we have an exemption for Australia as there are no fit for purpose cars"* ***Logistics*** *"We're interested in EV's, but we took an EV for a couple of weeks and the sales team weren't happy to use them, there wasn't enough boot space"* ***Manufacturing***
COVID Impact	*"we really want to be part of the trial, but Universities are feeling the pressure due to COVID, we can't justify the spend"* **Education** *"We have commitments, but COVID has had a significant impact on our business, so we'll need to hold off for 12months"* ***Aviation***

Thank you.

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