

CHARGING ON THE ROAD—FAST CHARGING

Tasmania's fast charge network allows cars with 200+ km range to reach (almost) all of the state with fast chargers alone (some require the help of slower destination chargers)



Fast charging allows you to extend your journey beyond the range of your battery relatively quickly

Fast charging uses direct current (DC) straight to the battery through the DC port

Charging rates are limited by the car or the charger, whichever is slower

Charging rates are 25 to 350 kW, (20-300 km range/10 minutes)—if your car can take it

Charge rates slow down a lot as the battery gets full. It takes longer to charge most cars from 80% to 100% than it does to charge from 20% to 80%

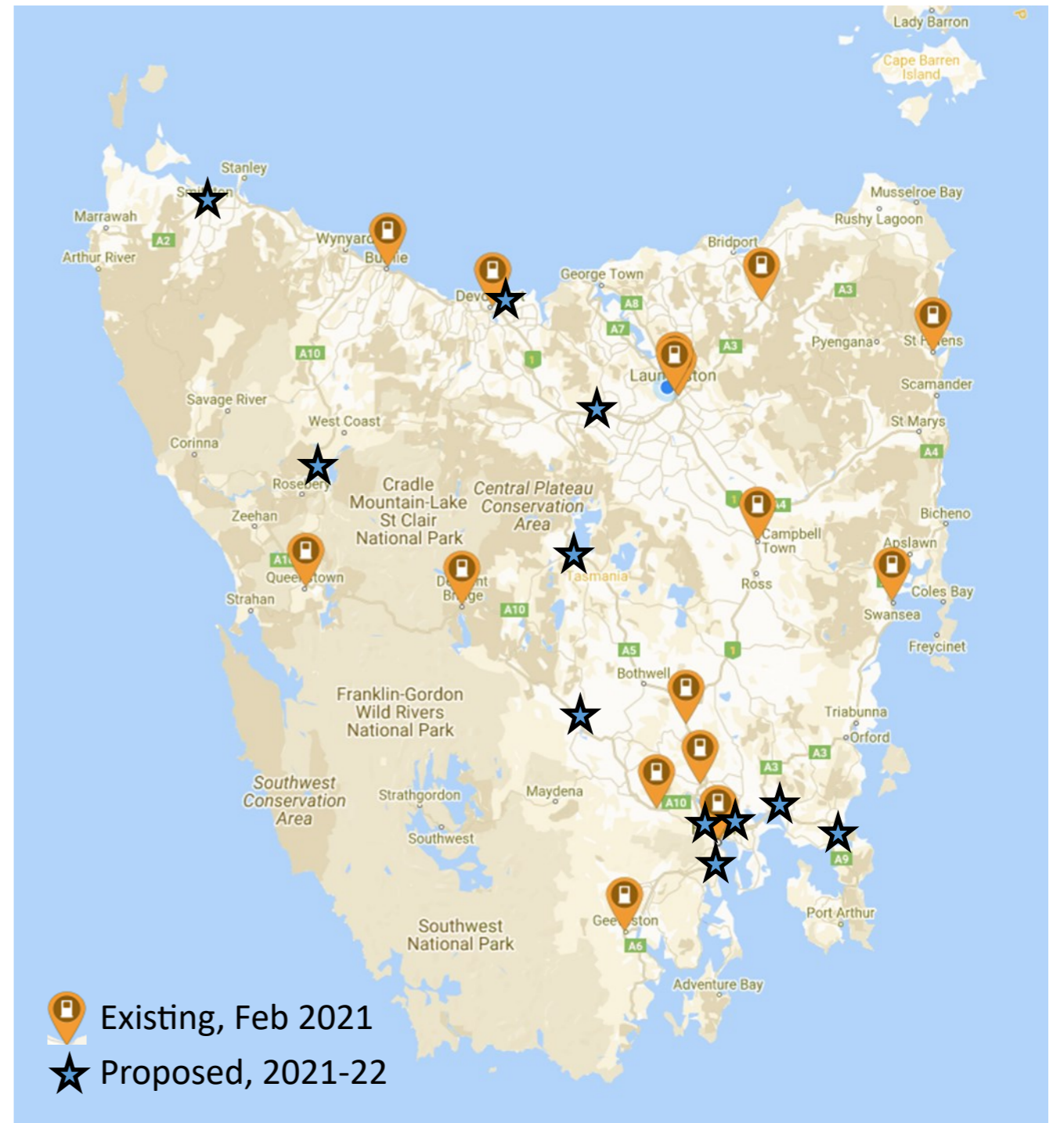
Fast charging is the most expensive way to charge (about the cost of petrol!) — most drivers fill just enough to reach their destination where they can charge cheaply over night.

Fast charge sessions last 35 minutes on average but may be as little as ten minutes.



Payment: Most sites use an app or an RFID card.

There are three billing networks in Tasmania: Chargefox, EVieGo and NextCharge (so 3 apps)



Queuing: Will I have to wait to charge?

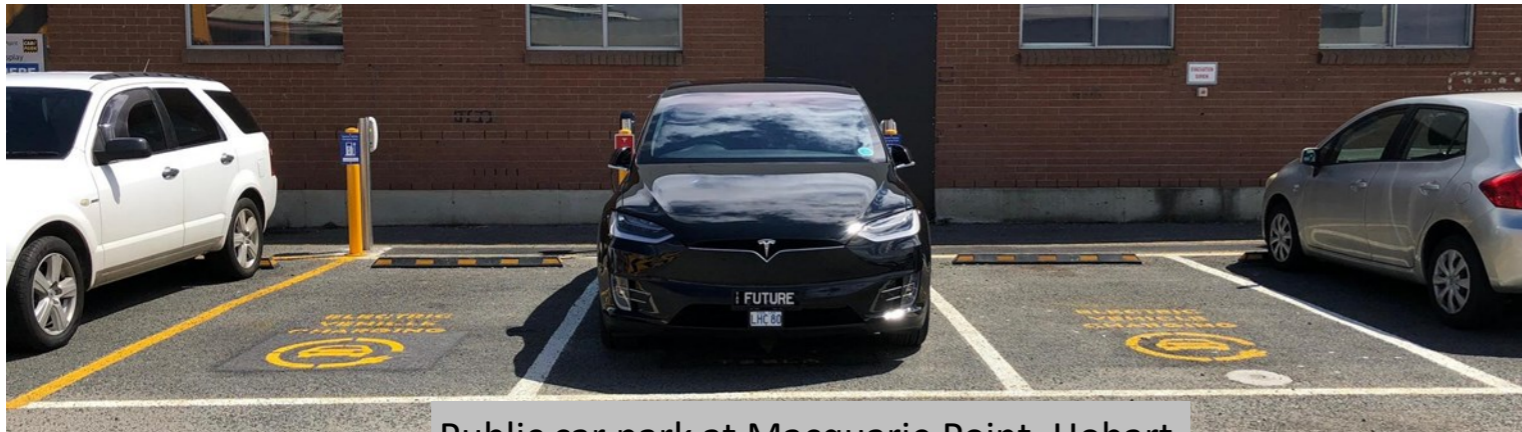
Queuing can happen at busy times. Currently people queue about 4% of the time (1 in 25 visits). Wait times vary but are usually less than 15 minutes.

Operators will expand sites as they get busy to avoid excess queuing.



CHARGING ON THE ROAD—SLOW CHARGING

EVs can charge almost anywhere there is a power point. Many places offer EVs the chance to top up while having lunch, visiting an attraction, parking for business or an overnight stay



Public car park at Macquarie Point, Hobart

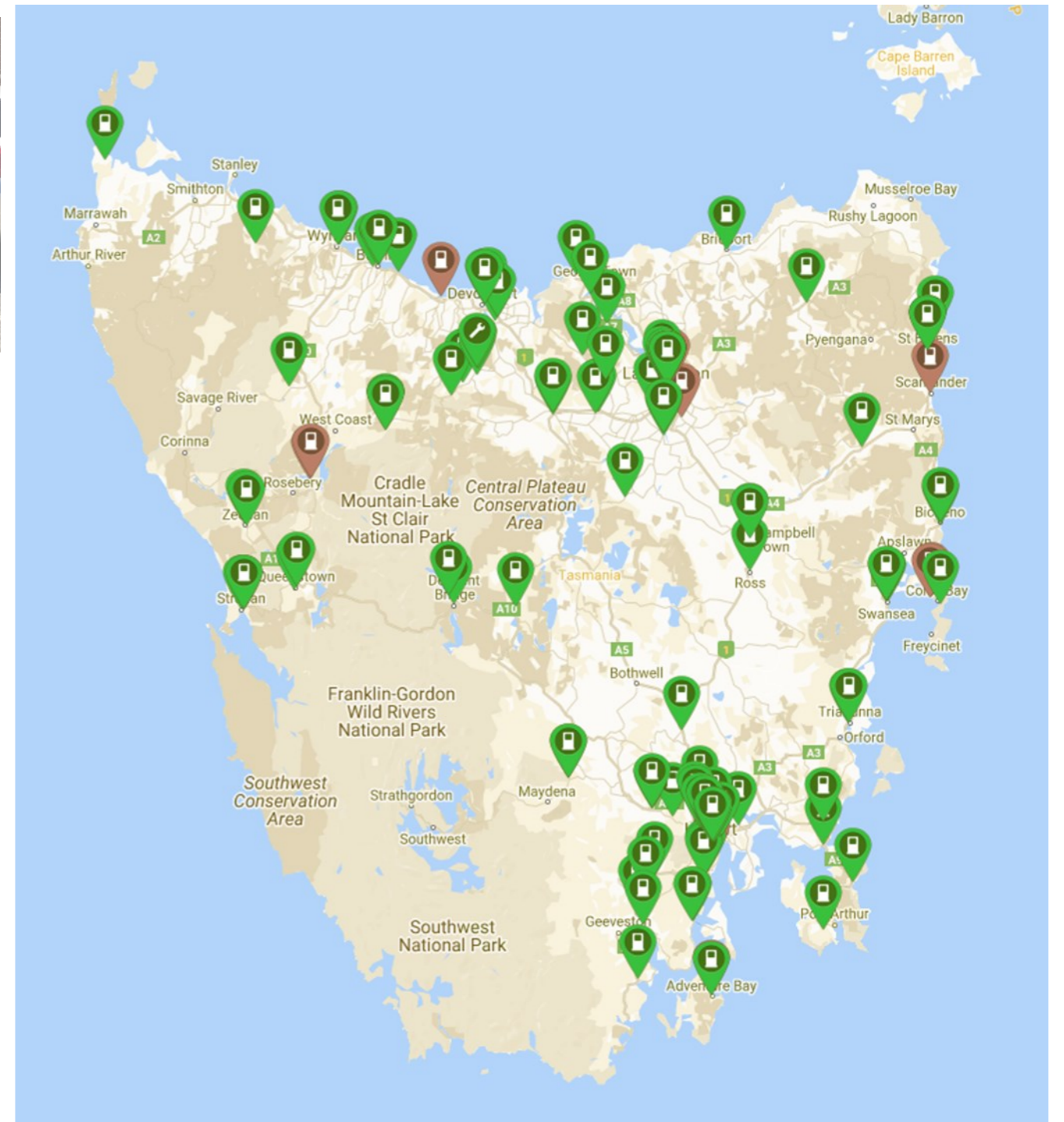
Slow charging, also called destination charging, uses alternating current (AC) feeding the rectifier (charger) in the EV to produce direct current (DC) to the battery.

The EV's rectifier may be single phase or three phase and range from 3.6 kW (15A single phase) to 22kW (32A three phase)

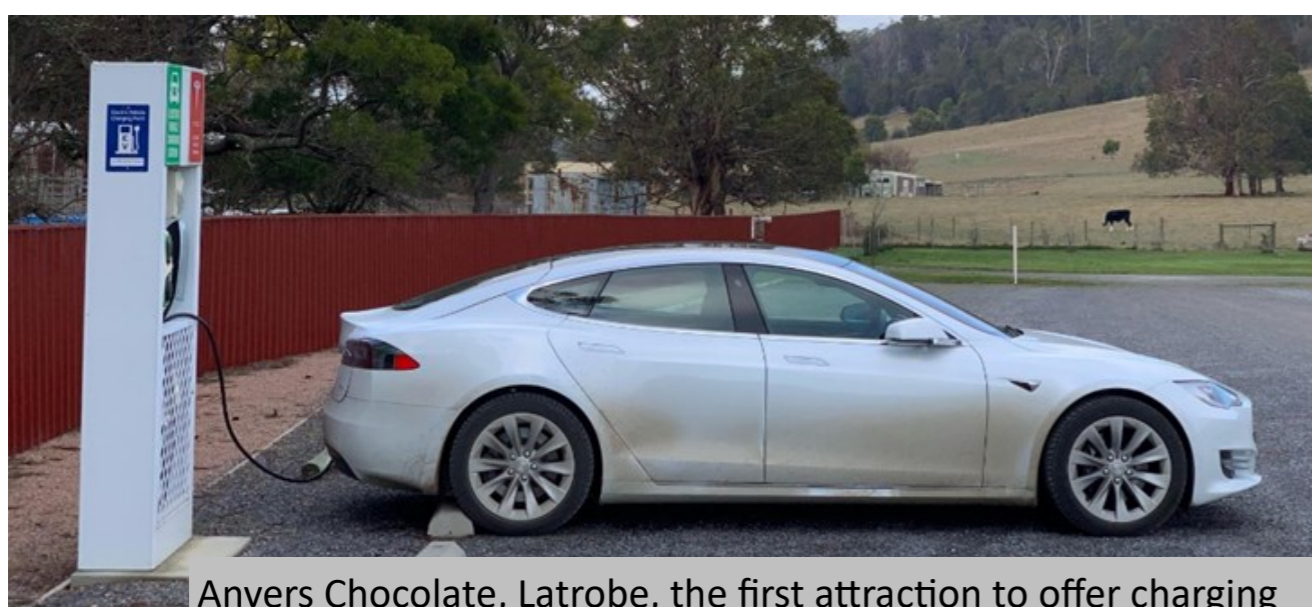
Charging rates are limited by the car or the power provided, whichever is slower, and range from 12 km to 100 km/hour of charging

Destination charging is sometimes free but it is almost always cheaper than fast charging.

Australian vehicles sold since 2019 all use Type 2 plugs but some older vehicles and imported vehicles use Type 1.



Just a power point—you need to bring your own EVSE!



Anvers Chocolate, Latrobe, the first attraction to offer charging



Huonville council car park

>130 sites allow EVs to charge include:

- Attractions
- Wineries
- Caravan parks
- Cafes/restaurants
- Local government
- Accommodation

Some sites have tethered cables.

Some sites have Type 2 sockets and you have to bring your own cable

Australian Electric Vehicle Association -Tasmania branch

www.aeva.asn.au



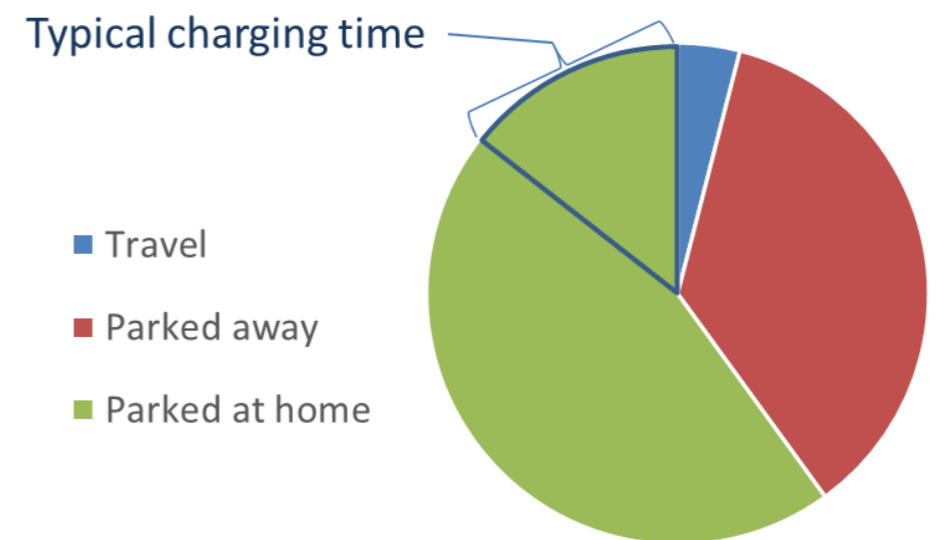
CHARGING AT HOME

90%-100% of most EV charging occurs at home (or fleet base).

Most cars are parked 96% of the time, mostly at home

Charging time required (at home): 1-4 hours

There is a lot of discretion about when to charge



What does it cost to charge?

Solar: one sixth the price of petrol

Off peak: ¼ the price of petrol

Std or peak: <½ the price of petrol

What equipment do I need?

Basic: 15A powerpoint and portable EVSE: \$600-\$900

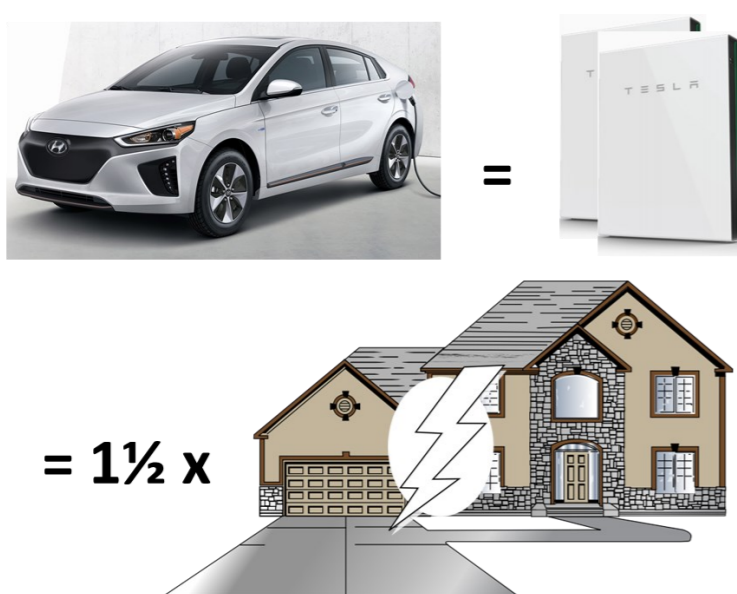
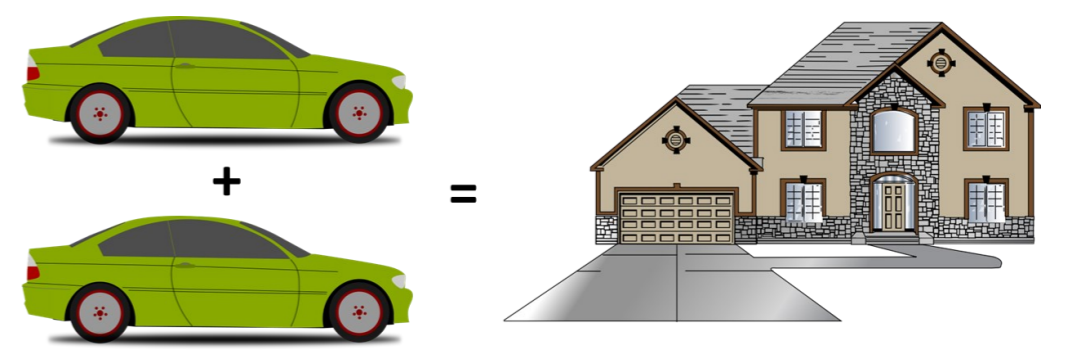
Wall mounted EVSE (15-32A): \$1500-\$2,000

Get your wiring checked first!

An average private car is driven 14,000 km/yr (40km/day)

EV electricity use approx. ~10 kWh/day per car

Average Tasmanian household ~20 kWh/day



Hyundai Ioniq battery = 28kWh capacity

Tesla Powerwall2 = 2 x 14 kWh, >\$20,000 installed

28kWh EV battery ~ 1½ x avg household daily use



Solar Edge inverter with built in EV charger

Can I use solar? Absolutely!

Some chargers can divert any unused solar produced into the EV

Some solar inverters have an EV charger built in

About 2½ kW of solar panels is enough for an average EV

I have three phase? Can I use it to charge my car faster?

Yes, but only if your EV accepts three phase charging.