

A photograph of a modern government building with a distinctive white, angular, cantilevered roof structure. The building is surrounded by lush green trees. In the background, a city skyline with various skyscrapers is visible under a clear sky.

Establishing Fast Charging Networks for Government Fleet Managers





Who We Are

Building a Better Transport Future

Everergi's vision is to accelerate the transition to zero emissions vehicles through software and services that simplify the process and amplify the benefits.

- Founded in 2016 - still proud to be privately owned and independent
- On a mission to decarbonise complex fleets
- Transitioning over 200 complex fleets across Asia Pacific, Europe and North America
- Developed BetterFleet and GridFleet solutions through thousands of hours of engagement with our customers
- Spending over 50% of revenue on R&D annually



Problems we Solve

We help solve problems across the journey of transitioning your fleets to zero emissions alternatives using our proprietary software and advisory services.





The Role of Fast Chargers

AC and DC Charging Overview

AC charging is cheaper, places less strain on the grid and is perfect for situations where the vehicle is regularly located at one location for a number of hours throughout the day. Fast charging is ideal when the driver is waiting on the EV.



AC Charger

DC Wall
Charger

DC Charger

Power level	Level 1	Level 2			Level 3				
Common name	Socket Charger	AC fast charging			DC Wall Charger	DC fast charging			Ultra-fast charging
Power	2.3 kW	3.5 kW	7.4 kW	22.1 kW	25 kW	50 kW	100 kW	120 kW	> 350 kW
Time to charge (100 km range*)	> 8 hr	5 hr 43 min	2 hr 42 min	54 min	48 min	24 min	12 min	10 min	< 10 min
Cost per Charger installed	Nil	\$2,000 - \$10,000	\$2,500 - \$10,000	\$5,000 - \$20,000	\$10,000 - \$20,000	\$60,000 - \$250,000			

*For vehicle with driving energy efficiency of 20 kWh/100 km

Changes to Refuelling Behaviours

The recharging times and ubiquitous access to electricity change the most convenient way to refuel from on-route to at your destination.

COMBUSTION VEHICLE THINKING

- Storing petrol at home or office is difficult
- Refuelling at a dedicated site only takes a few moments
- We have built refuelling infrastructure everywhere



**RUN TO NEAR EMPTY THEN STOP ON ROUTE
AND FILL TO FULL**

ELECTRIC VEHICLE THINKING

- Electricity is present at most places we park our vehicles
- Recharging times are longer than is convenient to wait
- EV charging infrastructure being built out




















**GRAZE, NOT GUZZLE AND TOP UP WHEN
THE VEHICLE IS PARKED**

This leads to a change in behaviour to ideally refuel at your destination, not on route

Where Fast Chargers Are Needed

Longer trips and lack of access to overnight destination charging can mean that end-destination charging is not an option which is where fast charging will be required.

MODES OF CHARGING FOR DIFFERENT FLEET USE CASES

Government Fleet Vehicle Use Case	Garage Overnight Charging	Garage Day/Solar Charging	Public AC Top-Up Charging	DC Fast Charging	Mobile Charging
Personal Vehicles (commute)					
Light Vehicle - garaged, <250 km/day					
Light Vehicle - not garaged					
Light Vehicle > 250 kms/day					
Heavy Vehicle - Light Duty					
Heavy Vehicle - Hard Duty					
Plant and Equipment					

Fast Chargers Are Expensive Assets

Fast chargers are a major investment, even at large depots and government sites, and require a high level of utilisation to make them comparable to overnight AC charging if both options are available.

TYPICAL COSTS - 7kW AC CHARGER*

Backbone Electricals	-
Charger	\$1,800
Conduits, Cabling, Trenching etc	\$300
Coms and Software	\$500
Labour	\$800
Bollards, Signage etc	\$1,000
TOTAL COST	\$4,400



- Charger is used for a single car overnight
- If the same charger can charge another car during the day then cost per vehicle is \$2.2k

TYPICAL COSTS - 50kW DC CHARGER*

Backbone Electricals	\$30,000
Charger	\$40,000
Conduits, Cabling, Trenching etc	\$20,000
Coms and Software	\$500
Labour	\$10,000
Bollards, Signage etc	\$2,000
TOTAL COST	\$102,500



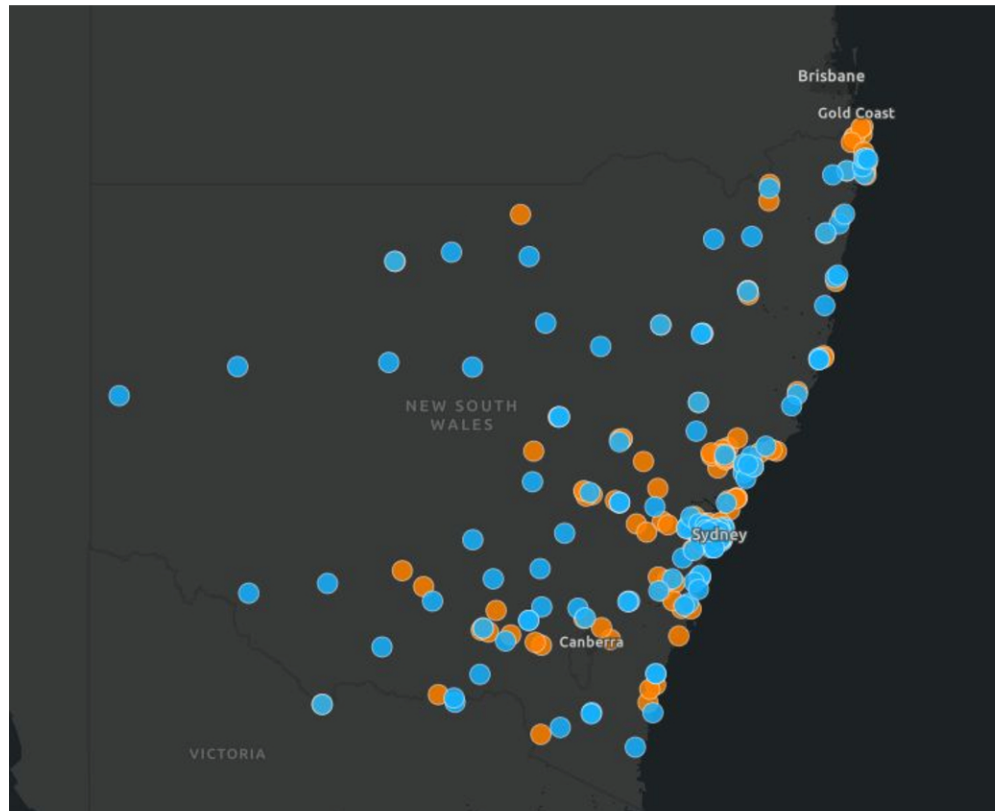
- Assuming each vehicle needs 70kWh, which is 1.5 - 2 hrs
- This means we will could charge 6-7 vehicles in a single shift operation costing \$15k per vehicle
- A 24 hour operation still costs \$7.5k per vehicle

* Construction Estimates based on actual installation estimates and Everergi research.

The Public Fast Charger Network

Public fast charging networks are growing rapidly with significant state government support driving this and ensuring in a few years most routes and destinations will be achievable (still not there regionally just yet).

MAP OF PUBLIC CHARGERS (NSW)



● Fast charger

● Destination charger

OWNERSHIP OF PUBLIC CHARGERS (NSW)

Operator	2 - 22 kW plugs	23 - 50 kW plugs	51 - 350 kW plugs
Chargefox	151	36	38
ChargePoint	118		
Tesla	260		106
Chargebay	10		
Evertly	4	2	
Exploren	4		
Evie Networks		106	52
EVUp		9	
Exploren	4		
AmpCharge			4
NRMA		92	6
JOLT		18	








Fast Charging Options

Fast Charging Ownership Models

There are numerous other means to gain access to fast chargers rather than having to own your own on-site DC chargers, which as shown previously are expensive.

FAST CHARGING OWNERSHIP MODELS

	Own and Operate in Depot	Own and Operate On Routes	Outsourced on Government Land	Charging Hubs	Full Public Charging
Description	Dedicated chargers placed in depots	Dedicated chargers placed in field	Commercial chargers placed on convenient government land	Commercial solution designed for businesses allowing scheduled charging	Commercial public charging which anyone can access
Pros	<ul style="list-style-type: none"> • Can use as desired • No increase in sites • Can do other tasks while charging 	<ul style="list-style-type: none"> • Convenient to use • Dedicated to gov fleet 	<ul style="list-style-type: none"> • Convenient to use • Outsourced mgt • Maybe better usage? (priority booking?) 	<ul style="list-style-type: none"> • Convenient to use • No risk on assets • More economical 	<ul style="list-style-type: none"> • Most economical
Cons	<ul style="list-style-type: none"> • Dead miles during shift • Manually cycle vehicles • Potential elec. upgrades • Likely low utilisation 	<ul style="list-style-type: none"> • Additional sites & costs • Likely low utilisation 	<ul style="list-style-type: none"> • Not dedicated to gov 	<ul style="list-style-type: none"> • Need to book in slots (planning effort) • No control on uptime 	<ul style="list-style-type: none"> • Can not schedule • Not suited to all vehicles • No control on uptime
Rating*					

* Ratings based on typical mixed government fleet. Vehicles such as buses, waste removal and other very high energy demand vehicles are often suited to a fast charger in depot.

Overview of a Charging Hub

A Charging Hub is a concept being implemented overseas which is designed to allow commercial fleets to charge in an efficient way wherein depot/office charging is not possible or ideal.

- Charging Hubs are already in operation in countries such as the UK and China¹
- These facilities are dedicated to charging high energy demand and commercial fleets
- Key features are the ability for companies to book and schedule recharging into their route/workday efficiently and being designed to accommodate larger commercial vehicles both physically and electrically
- The facilities can operate 24 hrs with different fleets charging as suits their work patterns (eg buses at night, waste trucks during the day, logistics and other trucks continuously rotating through)

YUELIANGWAN BUS CHARGING STATION

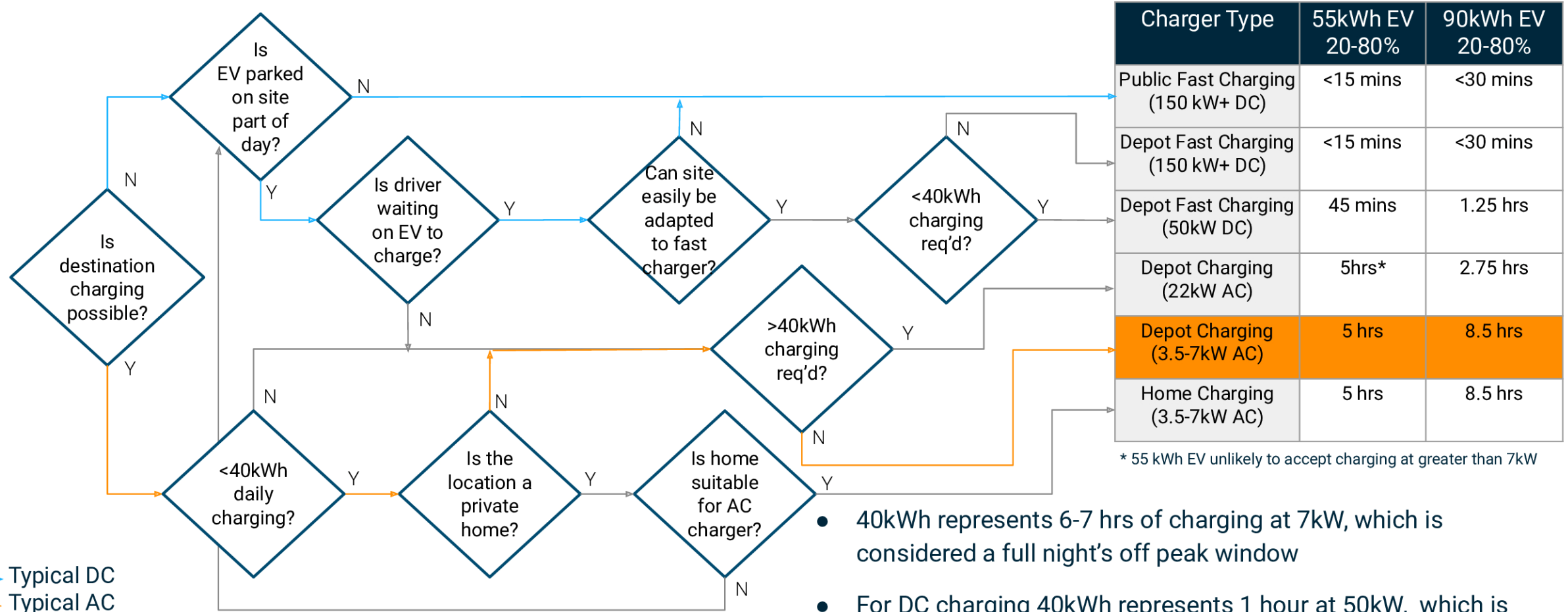


1. <https://energysuperhuboxford.org/europes-most-powerful-ev-charging-hub-energy-superhub-oxford/>

Selecting the Right Charging Strategy

Picking the right charging solution can be tricky, but destination charging options are usually the best where they exist and if not is it about trying to find the most cost effective way to get your fleet charged.

DECISION TREE FOR SELECTING CHARGER TYPE (Simplified)



- 40kWh represents 6-7 hrs of charging at 7kW, which is considered a full night's off peak window
- For DC charging 40kWh represents 1 hour at 50kW, which is considered the maximum waiting time a person would accept



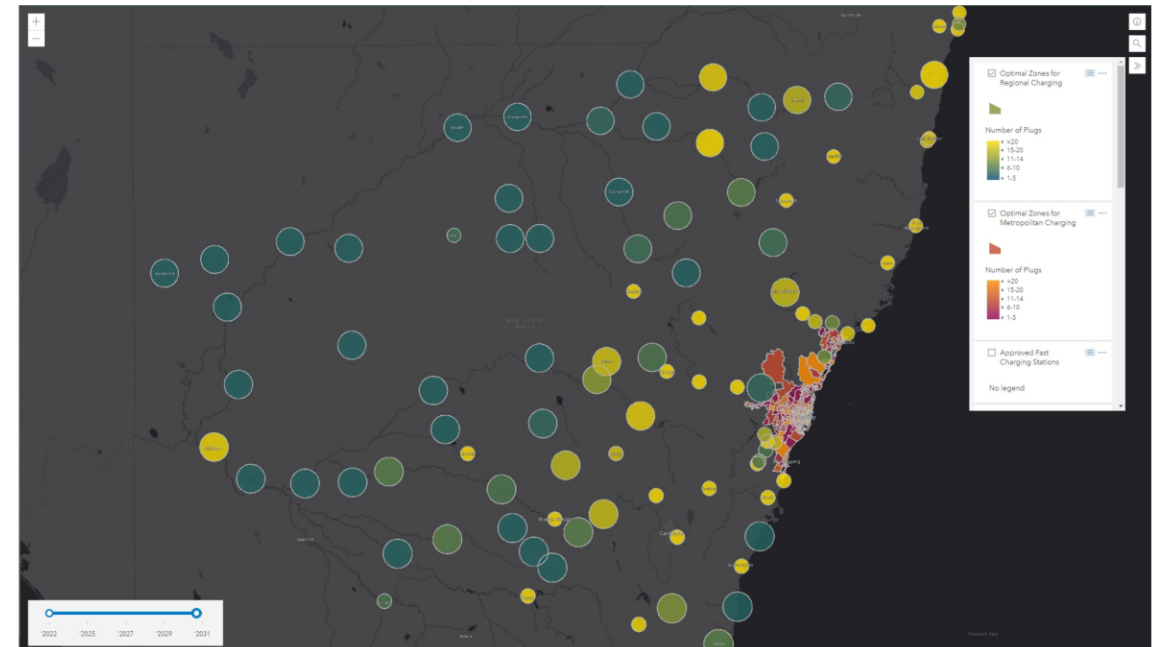
Confirming Fast Charger Needs

Knowing Demand and Supply

Understanding the demand for public charging considering all types of vehicles and where new chargers are already planned is key for developing your own fast charging strategy and optimal locations.

- Analysis exists in numerous states via the state level governments on the forecasted demand for EVs (some public)
- Approved and existing charger location maps also exist in all states publically
- Before embarking on plans to install your own or additional public fast charging bays this information should be reviewed
- Spacing fast chargers out strategically will be essential for meeting your needs, as well as enabling EV adoption across your communities and integrating well with the grid

FORECASTED EV CHARGING DEMAND IN NSW¹



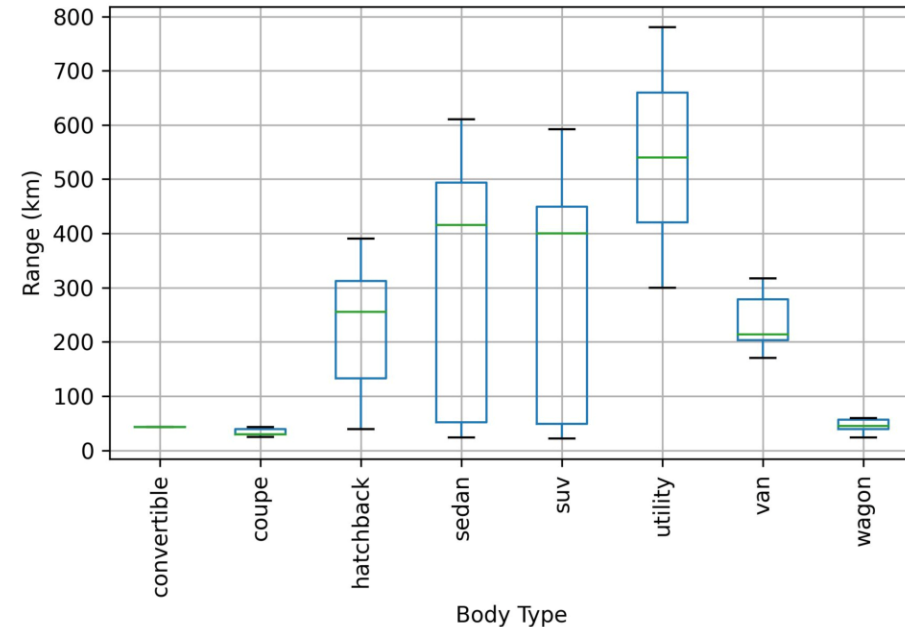
1. Evenergi analysis on multiple population, roads and traffic, EV adoption and points of interest data

Utilising Telematics Data

Telematics data can enable big data analytics to determine firstly if and where vehicles do tend to exceed EV range limitations and also where they tend to work and park to pinpoint ideal fast charger locations.

- Telematics data can be extremely useful in confirming facts
- Vehicle use cases and maximum daily range can be confirmed to firstly understand the ability to transition vehicles
- Heatmaps can be produced showing the amount of time vehicles spend at each location or region to pinpoint the best locations for fast chargers
- For government fleets, which seem to all be on the pathway to installing telematics, this analysis could be conducted cross departments and government levels to help locate shared charging assets

EXAMPLE TELEMATICS ANALYSIS





Future Proofing

EV Ranges and On Route Charging Needs

EV battery technology is still rapidly evolving and this will continue extend the range of vehicles before range anxiety and on-route fast charging is required.

- A range of circa 250 kms presents many problems for travelling in Australia
- Current generation passenger cars in long range options already are breaking 500 kms range, which solves many use cases for typical government fleets
- Next generation passenger vehicles (and not \$\$\$ prototypes) are promising circa 1,000 kms between charges which cover any realistic use case
- We need to be mindful what is a problem today, may not be such a big deal in five years time
- Complete fleet transitions are going to take many years
- Don't try and solve for the hardest use cases right now

INCREASES IN RANGE OF ELECTRIC VEHICLES



2011 Nissan Leaf

117 km



2019 Hyundai Ikonic

230 km



2022 Tesla 3 (Long Range)

547 km



2025 Nio ET5

1,000 km

Key resources

Everergi has a unique team mix of professionals with specialist experience in zero emissions transport.

We have gathered our combined knowledge to develop a content hub that allows you to:

- Stay on top of industry trends
- Keep up with the exploding market of new technologies
- Maintain a clear understanding of requirements for energy and charging
- ..and much more!

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Thank you.

For any questions, please feel free to reach out to the team:

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