



Commercial EV Charging Perth

GUIDE 03 · FREE DOWNLOAD

Commercial EV Charging: Site Power and Load Management Guide

Find out if your site has enough power for EV chargers, how load management shares what you already have, and when you really need a supply upgrade.



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IN SHORT

Knowing your building has three-phase power, the heavier supply most commercial sites have, does not tell you if it can run EV chargers. What matters is **the site's supply, how much of it the business already uses, and when the vehicles need to charge**. Many sites have far more spare capacity at night than at 2pm, and **load management** lets the chargers share it. Only decide on a supply upgrade after an assessment has looked at the site and the fleet's real needs together.

KEY POINTS

- Three-phase power alone does not tell you if the site can charge a fleet
- Spare capacity at 10pm can be far higher than at 2pm
- Load management keeps the whole site inside its limit
- Size the system on what each vehicle needs tomorrow, not on 100% every night
- Priority charging fills the critical vehicles first
- Battery storage is an option for genuinely tight sites, not a default

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Three-Phase Power Does Not Answer the Question

One of the first things businesses ask when planning EV charging is whether they have enough power. Knowing the building has three-phase power, the heavier supply most commercial sites have, does not settle it.

What matters is the site's total supply, how much of it the business already uses, when the vehicles need to charge, how many charge at the same time, and how much energy each one needs before its next trip.

A Simple Example: 100 Amps In, 70 Already Used

Amps measure how much electrical current the site draws. Picture a site with a 100 amp supply that uses about 70 amps when the business is busy. If several EV chargers then ask for another 45 amps at the same moment, the total is 115 amps, which is more than the site can supply.

That does not automatically mean an expensive supply upgrade. Load management, also called dynamic load balancing or managed charging, watches what the site is using and turns the chargers up or down so the total stays inside a set limit. When other loads drop, power goes back to the chargers.

Spare Capacity Changes Through the Day

A site that looks short of power at 2pm may have plenty to spare at 10pm. Air conditioning, lighting, machinery and computers drop away when staff go home, and for a fleet parked overnight that spare capacity is exactly what is needed.

So instead of designing around every charger running flat out, the system can be designed around the energy the vehicles need and the hours available to deliver it.

Start With What Each Vehicle Needs Tomorrow

Start by asking what each vehicle needs before it leaves again. A well-designed system does not assume every EV has to charge at full power or reach 100% every night.

- How many EVs are charging now, and how many are expected in 12 to 24 months?
- What battery level, or state of charge, do the vehicles usually come back with?
- How many kilometres does each one have to travel the next day, and how predictable is the route?
- How many hours is each vehicle parked?
- Which vehicles genuinely need to be ready first?

- Do they need 100%, or just enough for the next day's work?
 - What actually happens if a vehicle is not charged enough?
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Check the Fleet Data Before You Size Anything

It is easy to default to a rule like every pool car must be full every morning. Sometimes that is justified. A pool car might be booked at short notice for a 280 km round trip, and leaving it at 60 to 70% could create a real problem.

But before the infrastructure is sized around a rule, confirm it. Look at the telematics, the tracking system in the vehicle that logs every trip, or the odometer readings, booking records or trip logs. If there is no good data, a one or two week manual log is a useful start.

If the fleet really does need every car full each morning, the system can be designed for that. Checking first makes sure the money goes on a real need. The answer can change the number of chargers, their power, the load management and whether any extra electrical work is justified.

Not Every Vehicle Needs the Same Priority

For a larger fleet, software can charge vehicles in order of importance. Say 20 vehicles come back at 5pm and leave at 7am, and ten of them do early starts or long runs. Those ten get priority. As they fill up and draw less, the spare power moves on to the rest.

Think of it like an accordion: the available power expands and contracts across the fleet. What matters is that each vehicle has enough charge when it has to leave, even if some bays get more power than others.

Dedicated Bays or Shared Bays?

The design also depends on how you want the parking to work. Some fleets want one charger per vehicle. Others are happy for vehicles to share bays.

- Dedicated bays mean less work for drivers, but more chargers and more infrastructure.
- Shared bays cost less to install, but may mean moving vehicles or clearer procedures for staff.
- On larger systems, software and priority rules can cut down the manual shuffling.
- The right choice depends on the fleet size, the parking layout, how staff behave and how critical each vehicle is.

When Load Management Matters Less

A small office putting in one or two chargers, with plenty of spare capacity and cars parked for long overnight stretches, may not need sophisticated load management straight away.

Growth still matters, though. It is often worth choosing chargers and wiring that let load management be added later, so the system does not have to be redesigned when the fleet grows.

When Load Management Earns Its Place

It becomes especially valuable when any of these apply. Our [load management](#) service covers how we set it up, including an option that works across charger brands.

- Several EVs may charge at the same time.
- The site already uses a lot of power.
- Demand changes a lot through the day.
- The business wants to avoid or delay an expensive supply upgrade.
- The fleet is expected to grow steadily.
- Some vehicles need priority over others.
- The business wants charging to make the most of the capacity it already has.

When the Power Genuinely Is Not Enough

Load management cannot create energy that is not there. If the fleet needs more energy in its charging window than the site can physically supply, the project needs a different strategy. A site with public DC fast chargers, the high-power units that charge far faster than the common AC kind, or a depot turning vehicles around in a short window, can genuinely outgrow its supply. The options are:

- Check again whether every vehicle needs the energy that was assumed.
- Extend or shift the charging window where operations allow.
- Use a different mix of slower AC chargers and faster DC chargers. Our article on [whether a fleet needs AC or DC charging](#) covers how to pick that mix.
- Stage the move to EVs, or the infrastructure, over time.
- Assess a supply or switchboard upgrade.
- Consider battery storage where the operation and the numbers support it.

Battery Storage for Tight Sites

A battery energy storage system, often called a BESS, is a large battery installed on site. It can help in some high-demand situations. For example, an electric truck may need a lot of energy in a short overnight window, while the site has spare capacity for most of the day while the truck is out.

The battery can slowly fill up over those daytime hours, then help charge the truck faster at night. It is not automatically the right answer, because storage adds cost, takes space and needs its own engineering. It is one option when the site's capacity and the charging window do not line up.

Pre-Assessment Checklist: Do We Have Enough Power?

Answer as many of these as you can before the site assessment. The ones you cannot answer are useful too, because they show where the data is missing.

QUESTION	YOUR NOTES
Fleet today How many EVs are you introducing now?	
Fleet growth How many do you realistically expect in 12, 24 and 36 months?	
Vehicle type Passenger cars, vans, utes, trucks or a mix?	
Daily kilometres What does each vehicle actually travel on a normal day?	
Return state Roughly what battery level do vehicles come back with?	
Charging window When do vehicles come back, and when must they leave?	

QUESTION	YOUR NOTES
Readiness Which vehicles genuinely need to be ready first or close to full?	
Evidence Are those needs backed by trip data, or are they assumptions?	
Parking One charger per vehicle, or shared bays?	
Site operations What major electrical loads run while vehicles charge?	
After hours Does the site's demand drop a lot overnight?	
Existing supply Do you know the main supply rating and the switchboard capacity?	
Future loads Is new machinery, air conditioning, solar or a battery planned?	
Software Do you need priority charging, reporting, access control or remote monitoring?	
Risk What happens if a particular vehicle is not ready in the morning?	

What a Site Assessment Should Give You

Do not decide you need a power upgrade, or assume you do not, until the site's demand and the fleet's real charging needs have been looked at together. A good assessment should give you:

- The site's existing capacity and how much it already uses
- A realistic energy requirement based on how the vehicles operate

- The recommended number of chargers and their power
 - Whether load management is needed now or should be allowed for later
 - A charging priority plan, where it matters
 - Options for growing in stages
 - Where extra electrical work may be needed
 - Clear alternatives before you commit to an expensive upgrade
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Start With the Fleet's Energy Needs

Work out how much energy the fleet needs, when it needs it, and how to deliver it safely within what the site can supply. That answers the power question. Maximum charging speed is not the goal unless the operation genuinely needs it. If you are just starting out, our guide to [EV charging for business fleets in WA](#) covers the whole process.

Common Questions

Does load management lock us into one charger brand?

It depends on the system. Some load management only works with chargers of its own brand. One of the options we install works across brands, so chargers you add in three years do not have to match the ones that went in today. Ask any provider this before you commit.

Do we need load management for one or two chargers?

Not always. A small office with plenty of spare capacity and cars parked overnight may not need it yet. It is still worth choosing equipment that lets you add it later, so growth does not mean starting again.

What is a battery energy storage system?

A large battery on site that fills up slowly when spare power is available and then helps charge vehicles faster when they need it. It suits a few high-demand sites, such as trucks with short overnight windows, and it costs more and takes up room.

How do we find out what our site can carry?

A site visit. We look at the switchboard, the existing demand and the distance to the proposed bays, then design to what is there. That assessment happens before anything is quoted.

Not sure what your site can support?

Book a commercial site assessment. We look at the vehicles, the switchboard and the parking before anything is quoted, then give you options with the cost of each.

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