

How to Calculate Electrical Load for Your Growing EV Fleet



If you're planning to expand your EV fleet, you need to know whether your depot can handle the extra power demand.

Calculating electrical load ensures your chargers run safely, efficiently, and without costly upgrades later.

Here's how to approach it step by step.

Assess Your Current Electrical Supply

- Check your main electrical board rating. This tells you the maximum load your depot can handle.
- Review the current consumption of your depot. Include lighting, office equipment, and existing chargers.
- Ask your energy supplier for historical usage data. It helps identify peak load times.

Example:

A depot with a 200A supply may already use 120A for existing operations. That leaves 80A for new chargers.

Determine Charger Requirements

- Identify the type of chargers you plan to install: AC or DC.
- AC chargers typically draw 7-22 kW per unit.
- DC fast chargers can draw 50-150 kW.
- Multiply the number of chargers by their power rating to get total expected load.

Example:

- 5 AC 22 kW chargers = 110 kW
- 2 DC 50 kW chargers = 100 kW
- Total demand = 210 kW

Plan for Future Growth

- Add extra capacity for fleet expansion over the next 3-5 years.
- Consider modular chargers or extra panels that can be added without major upgrades.
- Future-proofing avoids downtime and costly reworks.

Example:

If your fleet grows by 50%, design your system to handle 50% more load.

Tools to Simplify Load Calculations

- Energy monitoring apps can track depot usage in real time.
- Online calculators help plan the number of chargers your electrical supply can support.
- Professional EV charger installers can provide load studies and advise on upgrades.

Questions to Ask Yourself

- Can my current electrical supply support more chargers?
- How many vehicles will charge simultaneously?
- Is there space to add more panels or boards in the future?
- Do I want to integrate smart load management to reduce peaks?

Calculating your electrical load before adding chargers ensures your depot stays safe, efficient, and ready for growth.

By planning ahead, you can scale your EV fleet without disruption or unnecessary costs.