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The Commercial EV Charging Infrastructure Guide

8 pre-commission questions for property managers, facilities directors, and fleet managers planning EV charging at commercial premises

WHY THESE 8 QUESTIONS MATTER

Specifying EV chargers without first resolving the upstream electrical infrastructure is the single most common and costly mistake in commercial EV projects. LV board capacity, DNO agreements, and cable route planning must all be confirmed before any charger is ordered. This guide walks through the 8 questions every site owner must answer at feasibility stage — before any commercial commitment is made.

8 PRE-COMMISSION QUESTIONS

- [ ] **1. Does your LV board have spare capacity for EV charging loads?**

  Every EV charger draws significant power — a 22kW AC unit needs a dedicated 32A 3-phase circuit. Before specifying any charger, a qualified electrician must inspect the LV board for available ways, assess the total connected load, and confirm available fault current and protection device ratings. Upgrading the board adds cost and programme time — confirm this at day one.

- [ ] **2. Has a full EICR been carried out on the existing electrical installation?**

  An up-to-date Electrical Installation Condition Report is essential before adding significant new load. EV charging infrastructure is typically commissioned for a 10–15 year design life — installing it on an ageing or non-compliant electrical system creates liability. Any C1 or C2 defects identified in the EICR must be remediated before EV works begin.

- [ ] **3. Is 3-phase supply available at your meter position?**

  The majority of commercial EV chargers above 7.4kW require 3-phase power. If only single-phase is available at the meter, the maximum AC output per charger is limited to 7.4kW — significantly extending charging times for fleet vehicles. Confirm 3-phase availability with your DNO before specifying charger hardware, as a 3-phase supply upgrade can add 8–20 weeks to the programme.

- [ ] **4. What is the cable run distance from the LV board to the charging location?**

  Cable distance directly affects conductor size, voltage drop calculations, and cost. BS 7671 limits voltage drop to 3% for circuits — at 22kW over a 100m run, a 16mm² cable may be insufficient. Longer runs require larger conductors or a sub-distribution board closer to the chargers. Map the cable route early and include containment, penetrations, and fire-stopping in the scope.

- [ ] **5. Is existing ducting available, or does groundwork need to be planned?**

  Cable containment — whether steel conduit, trunking, or underground ducting — forms a significant proportion of EV infrastructure cost. If groundwork is required for underground routes across car parks or access roads, civils costs can exceed the electrical works. Engage a groundworks contractor in parallel with the electrical specification, and clarify ownership of reinstatement before works begin.

- [ ] **6. Does your total connected EV load exceed 69kW? (DNO notification threshold)**

  Under the Distribution Code and G99/G100 regulations, any installation with a total maximum demand exceeding 69kW must formally notify the Distribution Network Operator before connection. DNO approvals can take 4–16 weeks and may require load limiting or smart charging infrastructure. Nexgen designs all EV systems with DNO compliance built in from day one.

- [ ] **7. Will sub-metering be required for tenant billing or energy management?**

  In multi-tenancy commercial properties, sub-metering is essential for accurate energy cost apportionment. Sub-meter architecture must be decided at board level — not retrofitted after installation. CT-clamp sub-meters or smart meters with Monta back-office integration should be specified in the initial design, as the board architecture, protection devices, and cable sizing all change depending on metering strategy.

- [ ] **8. Has the groundworks and civils scope been agreed before electrical specification begins?**

  EV charging infrastructure projects regularly overrun on programme when civils and electrical scopes are not coordinated from the outset. Groundwork for cable routes, concrete bases for charging posts, and reinstatement of surfaces must be planned as a single coordinated programme. Nexgen manages the full scope — from LV board to charging post — ensuring a single point of accountability.

The commercial EV charging market has a structural problem: charger manufacturers start at the car park, not the LV board. Properties are regularly committed to EV programmes against infrastructure constraints that were not identified until mid-project — when the cost and programme implications are at their worst. The eight questions in this guide ensure that conversation starts in the right place, at feasibility stage, before any commercial commitment, groundworks, or hardware orders are placed.

Nexgen manages the complete scope — from LV board feasibility and DNO engagement through cable route design, civils coordination, and charge point commissioning. As Rolec-accredited installers operating the Monta back-office platform, we deliver compliant, future-proofed EV infrastructure with a single point of accountability across every element of the project.

KEY TAKEAWAYS FOR FACILITIES AND PROPERTY TEAMS

- Confirm LV board capacity and 3-phase supply first — before specifying any hardware
- Sub-metering strategy drives board architecture — decide at feasibility, not at handover
- DNO approval above 69kW can add 4–16 weeks — build this into your programme
- Civils and electrical must be scoped as one programme — separate contracts create risk

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