



inCharge

EV CHARGING FOR APARTMENT BUILDINGS



Simplify
Installation.



Prevent Power
Theft.



Maximise
Access.



Recover
Charging Costs.

Do you want to:

- Add EV charging to your Apartment Building without major electrical upgrades?
- Ensure tenants have fair, convenient access to EV charging?
- Account for tenant charging costs from common-area power?

The EV revolution is upon us

Australians are adopting EVs faster than ever: 11% of all new car sales in 2023 were plug-in electric, more than double the previous year. EVs are set to change the face of transport in the current decade, bringing many economic and environmental benefits to Australian communities.

Despite these clear benefits, EVs present unique challenges for apartment complexes and buildings with shared, common area parking. Most apartment buildings have electrical systems with limited capacity in shared parking areas, capacity that can be easily exceeded by the combined load of multiple EV chargers.

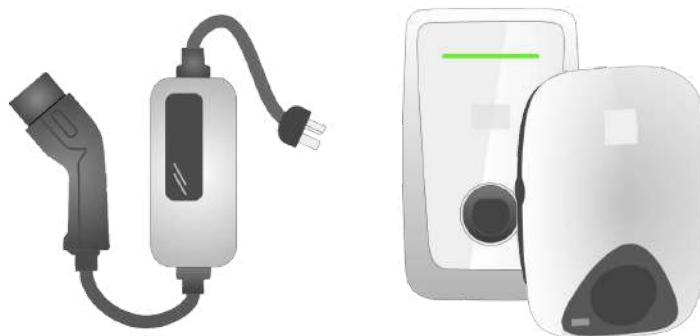
Body Corporates and Strata managers are presented with the challenge of accounting for the costs of EV charging by individual tenants using shared power resources. For EV chargers to become widely available in apartment buildings, a system for authorising, tracking and reconciling charge sessions is crucial.

Presenting *inCharge*

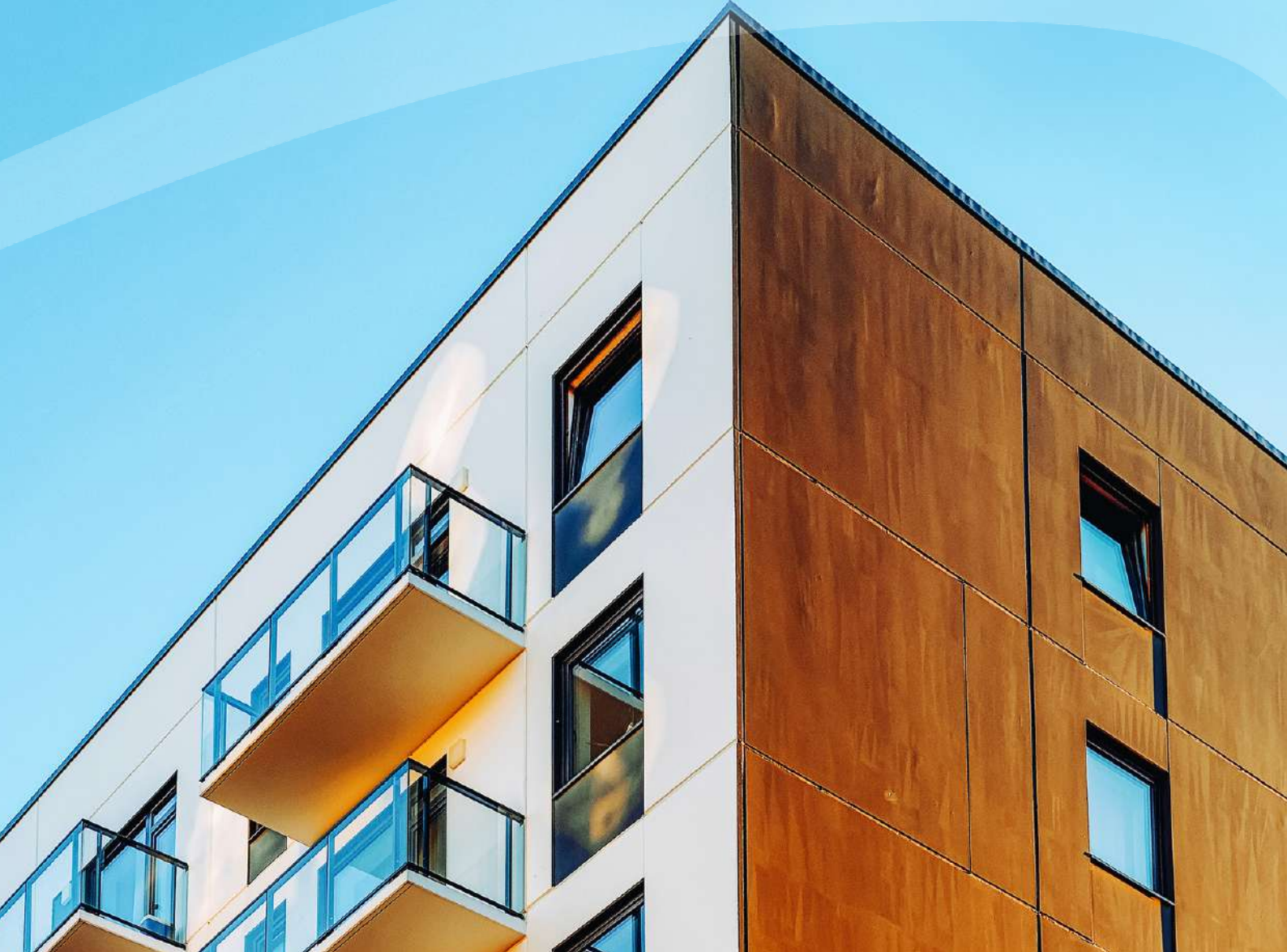
Combined Energy's *inCharge* solution for apartment buildings provides a complete solution to the challenges of deploying EV chargers in urban residential settings.

inCharge coordinates all EV chargers in the building together to ensure the total charging load remains within the limits of the building electrical system. This gives building managers the freedom to deploy as many charge points as required to guarantee fair access for tenants, eliminating the frustrations of waiting for a charger or outlet to become available before connecting.

inCharge includes powerful energy and cost accounting tools for building managers, facilitating on-demand report generation for reconciliation with tenants.



inCharge can manage any combination of Level 1 (Portable Chargers)
and Level 2 Electric Vehicle Supply Equipment



Simplify Installation.

inCharge takes the headache out of preparing apartment buildings for EV charging by freeing the system design from the limits of the existing building wiring and protection devices. The system monitors key circuits in the electrical system and defers or throttles charging sessions to ensure the total circuit load remains within limits.



Maximise Access.

The freedom *inCharge* gives building managers to install more charge points means fairer, more convenient access to EV charging for tenants. Tenants can connect to a charger and authenticate their charge session at any time, as well as track their charge session schedule and history via the Combined Energy *atHome* app.



Prevent Power Theft.

inCharge supports RFID and App authentication via QR code for tenant charge sessions, enabling comprehensive access control and reporting of charge sessions on a per-tenant, per-charger basis. The authentication system can be used to control access to the shared-area power as well as to secure tenant-owned power outlets.



Recover Charging Costs.

The *inCharge* dashboard provides building managers with live monitoring of charger availability and utilisation, as well as reports generation tools to reconcile tenant charging session history, energy consumption and cost.

inCharge

How it works

A typical *inCharge* deployment consists of the following components:



The Combined Energy Energy Management Unit (EMU) - the brains of the system - which controls and coordinates the EV charging resources in the building.

The Combined Energy Power Meter, which monitors the building electrical system at key locations to enable the EMU to manage electrical constraints.

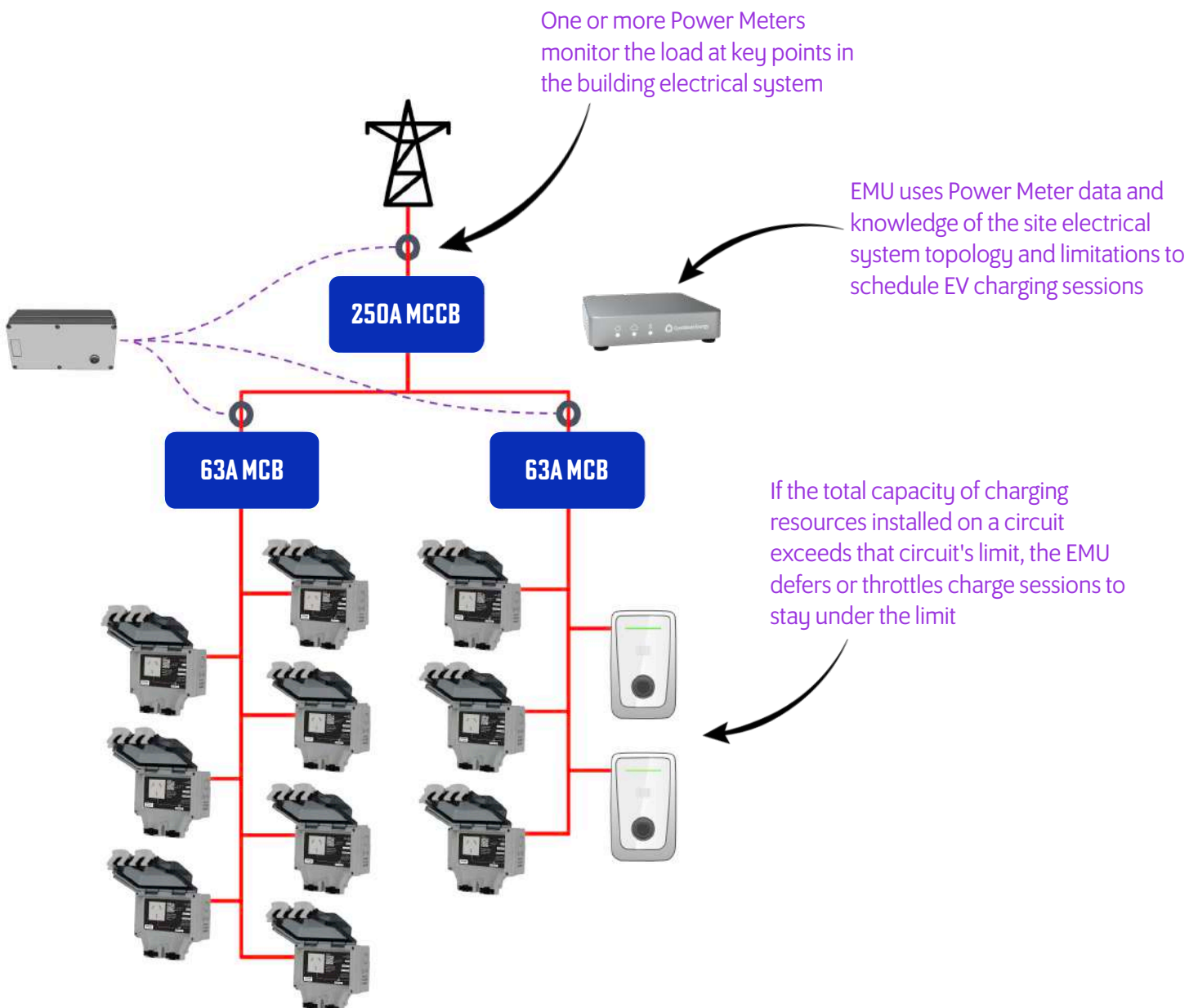


Level 2 Chargers - The Combined Energy *inCharge* system integrates all Level 2 EV chargers that support OCPP or have the option for direct connectivity via RS485 or Ethernet.

Portable plug-in chargers (Level 1 chargers) can be integrated with the *inCharge* system by deploying Combined Energy's *Portable Charger Adapter* to parking areas. This product provides a smart outlet that controls the power supply to a customer-supplied portable charger. Tenants simply plug in their charger and authenticate with RFID (or via the app) to begin charging. The smart outlet is applicable beyond EV charging as a swap-out replacement for existing outlets in common areas, granting authenticated access to power for any purpose (e.g. cleaning).



Load Management



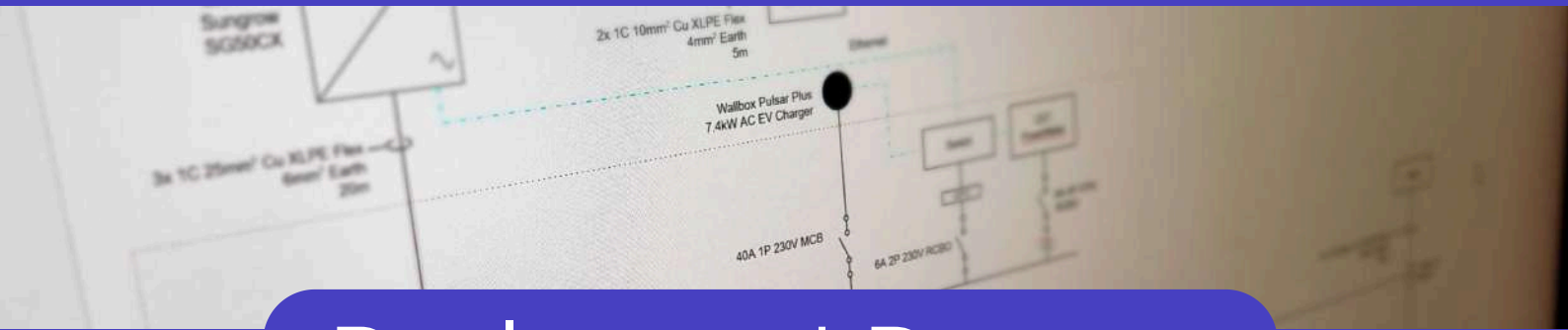
ACCESS IS EVERYTHING

Ubiquitous charging infrastructure addresses the social and technical challenges of EV charging in apartment buildings and shared parking lots.

The barriers to EV charging in apartment buildings are often issues of simple logistics: if a small number of high-capacity chargers are congested, drivers are forced to monitor and manage the sequencing and sharing of chargers. The process is frustrating, time consuming, and inefficient.

inCharge addresses these practical problems by presenting building owners with an affordable and scalable charging solution, with **convenience** and **automation** as foundational goals.





Deployment Process

Define Requirements



The first step is to decide how many charging points are required for the building, and what their power requirements should be. Would one 10A smart outlet per parking space be best? Or perhaps a mix of smart outlets and high power Level 2 chargers? In most cases the ideal combination depends on the specific circumstances of the building and tenants.

System Design



With the charge point requirements identified, the next step is a detailed system design. We can help! Combined Energy offers services for system design, electrical system mapping and SLDs, constraint planning, and product selection. Please contact us to learn more.

Installation



Electrical installation of *inCharge* system components is performed by a qualified electrician, who then works with Combined Energy's support team to commission and test the system.

Configuration and Tenant Access



Once the hardware is deployed, the next step is to set up the *inCharge* profile for the building. This process involves nominating representatives to manage the system on behalf of the Body Corporate / Strata, creating a user account for each tenant, and configuring details like the preferred policy for charging priorities when a system is constrained.

Ready to go



The final step is to provide tenants with an RFID fob (or app access via QR code), and start charging!

After Deployment

Monitor Constraints



inCharge gives building managers and electrical contractors access to detailed reports of charge point utilisation and circuit loading as EV uptake increases at the property over time. As circuits become more constrained, tenants can be advised to preferentially use specific charge points and to expect deferred charging (e.g. overnight).

Plan Upgrades



Visibility of circuit loading and charging patterns allows building owners and contractors to better plan for and design electrical system upgrades in order to keep pace with growing demand. *inCharge* provides not only a means to defer upgrade works, but also to more accurately determine required upgrades into the future.



Energy Management Network

All components of the system (EMU, Power Meters, Comms Adapters, Portable Charger Adapters) communicate using Powerline Communications (PLC) over the existing building wiring. This creates an independent, secure communications backbone for energy management in the site and greatly simplifies the process of initial installation and expansion of the system over time. Wired Ethernet is also supported as an alternate communications option.

Integration of Level 2 Chargers

Combined Energy's Power Meters and Comms Adapters provide Ethernet and RS485 connectivity options for connecting a wide range of Level 2 chargers to the energy management network.

inCharge for tenants

Convenience

Tenants can connect to a charger and authenticate a charge session at any time. In cases where stress on the building electrical system causes the session to be limited or postponed, tenants are notified via the Combined Energy *inCharge* web app, and optionally via SMS or email.

Visibility

Each tenant's charging session history is available to them via the *inCharge* web app, as well as information on the status of their account and any limitations imposed by the building's charging policies.

Security

Tenants can be confident that they will only be charged for the energy they use when they authenticate at a charge point. Tenant-owned socket outlets in common areas can be secured with a Portable Charger Adapter to prevent power theft.





inCharge for building managers

Access Control

inCharge supports RFID and App authentication via QR code for tenant charge sessions, enabling comprehensive access control and reporting of charge sessions on a per-tenant, per-charger basis. Tenant accounts can be created and managed via the *inCharge* dashboard.

Monitoring and Analysis

The *inCharge* dashboard provides building managers with live monitoring of charger availability and utilisation, as well as visibility of the most acute electrical system constraints for planning future upgrades.

Flexible Administration

Where electrical system limitations prevent simultaneous charging for all connected vehicles, *inCharge* can be configured to enforce a preferred policy for prioritising sessions. This can include limiting the max charging power or total energy, or specifying explicit priorities for tenants based on their individual circumstances.

Cost Recovery

inCharge includes powerful energy and cost accounting tools for building managers, facilitating on-demand report generation for reconciliation with tenants.



Combined Energy Technologies Pty Ltd (CET) is an Australian technology company specialising in energy management for residential and commercial applications. CET develops its own hardware and software in Australia and operates thousands of customer systems for energy cost optimisation, solar self-consumption, grid compliance, and load management applications.

For more information on *inCharge* and other CET Products, please reach out to our team by email at contact@combined.energy

Compatible with



And all 10A/15A plug-in chargers (Level 1) via the Combined Energy Portable Charger Adapter