StrataPack

THE ELECTRIC VEHICLE CHARGING Solution For Apartments

Electric Vehicle Charging Solution for Apartments and Private Car Parks

www.chargestar.com.au

ABOUT CHARGESTAR

Chargestar is an MSP (Managed Services Provider) that supplies, installs and maintains charging stations and provides network management services for charging station networks.

Chargestar creates charging station infrastructure solutions designed to help our clients transition to a zero emissions transport future and optimise revenue from commercial electric vehicle charging operations. Chargestar is not aligned to any charging station manufacturer or network management system software platform. Chargestar designs optimal solutions for its clients using a variety of hardware suppliers and software platforms.

CORE SERVICES

- **DESIGN AND CONSULT –** Our electrical engineers will design a cost effective solution that minimises the upfront capital expenditure required to install the electrical infrastructure needed to support electric vehicle charging stations.
- **SUPPLY -** Charge Star provides a variety of AC and DC charging stations from various manufacturers designed to suit the specific requirements of the customer. Decisions about the choice of hardware suppliers are made objectively.
- **INSTALLATION -** Charge Star only utilises a team of highly experienced electrical contractors that have received training provided by the charging station manufacturers.
- **NETWORK MANAGEMENT -** Network management and driver management services for charging station providers either on the Charge Star Network or as a managed service on the customer's network with customer branding.
- **LOAD BALANCING -** Cross platform load balancing solutions for both AC and DC charging stations. Compatible with all OCPP smart charging complaint charging stations.
- **BILLING AND ACCESS CONTROL -** Billing solutions for public and private charging. APIs for integration with existing third party billing solutions and embedded metering systems in commercial developments and apartment blocks. Complex tariff models including time of day charging, peak time charging and charging by driver group. All charging stations come with a credit card option.
- **WHITE-LABEL OPTIONS –** White labelling of smart phone payment systems for own brand marketing is available with a variety of different platforms to choose from.
- **FLEET CHARGING -** Our Fleet Manager Portal empowers you to manage and control all aspects of your EV fleet charging operations to maximize utilization and reduce energy costs by leveraging smart charging capabilities.

StrataPack is an integrated electric vehicle charging station solution deigned for private parking operators such as Strata Managers and Body Corporates. StrataPack provides the hardware and software required to install and operate electric vehicle charging stations in private car parks. StrataPack is suitable for locations where cars charge for an hour or more during the day or charge overnight. StrataPack reduces capital expenditure by monitoring and load balancing charging stations so that expensive grid upgrades are not required. StrataPack ensures the charging load does not exceed the power capacity of the parking area or the power capacity of the building.

STRATAPACK COMPONENTS

CHARGING STATIONS

- Wall mounted or bollard mounted electric vehicle charging stations
- Single phase or three phase. Single phase recommended for overnight charging
- Tethered cable or socket only
- Network capable, OCPP compatibility, DC leakage protection and MID certified meters

PAYMENT SYSTEMS

- Credit Card/EFTPOS/NFC
- RFID card/smart phone app
- Integration with existing embedded network metering systems
- APIs for integration with third party payment systems on request
- Charge per kWh, per minute or any combination of the two
- Dwell time charges.
- Time of day differential pricing for peak demand periods
- Group tariffs for customers such as taxi drivers, sales people, etc
- Fuel card option for fleet managers. Charge on any Hubject enabled network
- 24 hour hour payment cycle. Funds paid directly to the charging station owner
- Parking meter model. The charging station owner is the electricity retailer.
- GST receipts issued with charging station owner ABN contact details.

NETWORK MANAGEMENT

- Monitoring and reporting
- Firmware and software updates
- Remote control of charging stations
- Telephone support for drivers
- Web based network management and administration portal
- Sub portals with granular permissions can be created for charging station owners
- Dashboard overview with network map
- APIs for integration with third party control systems such as building management systems
- APIs for load control and demand response signaling by grid operator.
- Interoperability with other networks via Hubject
- ISO 15118 Plug & Go Charging capable
- Supported out of Melbourne and Perth.

LOAD BALANCING

- Proprietary or cross-platform
- Static across charging stations where the charging stations use a dedicated power supply
- Dynamic across charging stations where the charging stations use a shared power supply
- APIs for integration with third party control systems such as building management systems
- AC and DC capable. Load management of AC and DC charging stations in the same cluster
- On-site appliance or cloud based load management
- GDPR compliant and ISO 27001 certified.
- Optional hosting in German data centers for optimum protection.

ENEXT ELITE

Networked charging station for business users

The ENext Elite is a networked charging station for business users. The station is OCPP compliant and compatible with any OCPP compliant charging station network management system. The station has an NMI R-46 (OIML R46/Mid Certified) compliant meter, embedded 4G modem, wi-fi, ethernet and an RFID card reader. The station has on-board DC leakage protection. Outlets can be socket only or tethered cable. The station can be connected to a Beon CT clamp for static load control. The station can respond to demand response grid utility load management signals via a contactor open and closed by a remote signal. The station can be wall mounted or pole mounted.

FEATURES

- The charger's housing is made of ABS plastic which is both robust and UV resistant, providing protection against mechanical stress and severe environmental conditions.
- Communications via ethernet port, 4G/ modem (optional) and Wi-Fi.
- Compatible with the Circontrol THOR proprietary dynamic load management system and cross-platform OCPP smart charging systems.
- The eNext Elite guarantees the best level of protection thanks to integrated DC leakage detection and welded contact detection.
- NMI R-46 (OIML R46/Mid Certified) compliant meter,
- Clear charging instructions and operating status are shown on the bright LCD display.
- The eNext Elite offers flexible authentication, meaning that the user can authenticate either before or after connecting the cable to the EV.
- Additionally, the authentication process can also be disabled for the Connect n'Charge mode.
- Remotely activate charging of the eNext Elite through an external ON/OFF signal (a timer, for example).
- Scheduling features available via the on-board web configuration page.
- Only charge at set times and at set amps.
- Wall mounted or pole mounted.

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PAYMENT SYSTEMS

PUBLIC CHARGING VS PRIVATE CHARGING

PUBLIC CHARGING STATIONS

Billing systems for public charging stations operate on a pay as you go basis because the driver is unknown and payment needs to be enforced at the point of sale. Public charging stations are sometimes installed in visitor car parking bays in private car parks.

The payment options for public charging stations are:

- Tap and go terminals for credit/debit cards and NFC enabled smart phones.
- On-board the charging station or via a physically separate terminal.
- Smart Phone Apps or QR codes if payment terminals are not available.

Billing systems for public charging stations are generally more expensive because of the additional infrastructure that has to installed and the transactions fees levied by the billing company. Payments for charging sessions are batched up and paid every 24 hours via Stripe directly to the merchant account of the charging station owner.

PRIVATE CHARGING STATIONS

Private charging stations are generally provided for use by office tenants and apartment occupants who are known to the charging station provider. These drivers can be billed in arrears as the charging stations are located in designated private parking bays and there is an existing contract in place between the changing station provider such as the strata management company and the occupants.

Billing in arrears is the most cost effective billing method for private car parks where the driver is known to the charging station provider. Monthly or three monthly invoices are issued by one of:

- An existing embedded metering system such as Winconnect. A Winconnect meter is placed each charging station circuit.
- An existing strata software management system such as StrataMax. A CVS file is downloaded every month from the charging station network management system and uploaded to StrataMax. Each charging station has an internal meter.
- The billing module in the charging station network management system. The CNMS generates invoices in the livery of the strata management company. The strata manager has access to a portal for bill setup and invoice generation. The power is metered by an internal meter in each charging station

BILLING FEATURES

PUBLIC CHARGING – VISITOR CAR PARKING BAYS

- The strata management company is the electricity retailer
- Real time billing per charging session
- 24 hour payment cycle. Direct payment to the merchant account of the charging station owner via Stripe within 24 hours
- Multiple EV billing tariffs and plans support, including pre-paid, post-paid, etc
- Credit Card/EFTPOS/NFC/RFID card/smart phone app payment systems
- Time of day differential pricing for peak demand periods
- Generation and delivery of transaction statements and GST receipts for drivers issued in the name of the charging station provider.
- Transaction fees apply.

PRIVATE CHARGING – PRIVATE CAR PARKING BAYS

- The strata management company is the electricity retailer
- Billing in arrears
- Monthly statements/invoices generated for occupants.
- CSV file downloads for input into strata management software such as Stratamax.
- APIs available for integration with embedded metering systems such as Winconnect.
- Invoices and statements can be generated by the charging station network management system if required
- No transaction fees.

ACCESS CONTROL

Access control is necessary in common area car parks to prevent unauthorised charging. Access control may be implemented via a mechanical lock, RFID card or smart phone app. The charging station access control mechanism is dependent on whether the charging stations are designated for public or private use. Public charging stations are provided for members of the public who may use visitor parking spaces in a private car park. Private charging stations are configured for use by designated drivers who are known to the charging station provider such as office tenants and apartment occupants. Public charging stations are configured for pay as you go charging. Private charging stations can be configured for post paid charging as the drivers are known and can be billed in arrears.

Access control is managed using RFID cards or Smartphone Apps. RFID cards issued by Strata Management and compatible with MiFare car readers can be used to control access.

CHARGING STATION NETWORK MANAGEMENT SYSTEM

Management, monitoring, reporting and access control

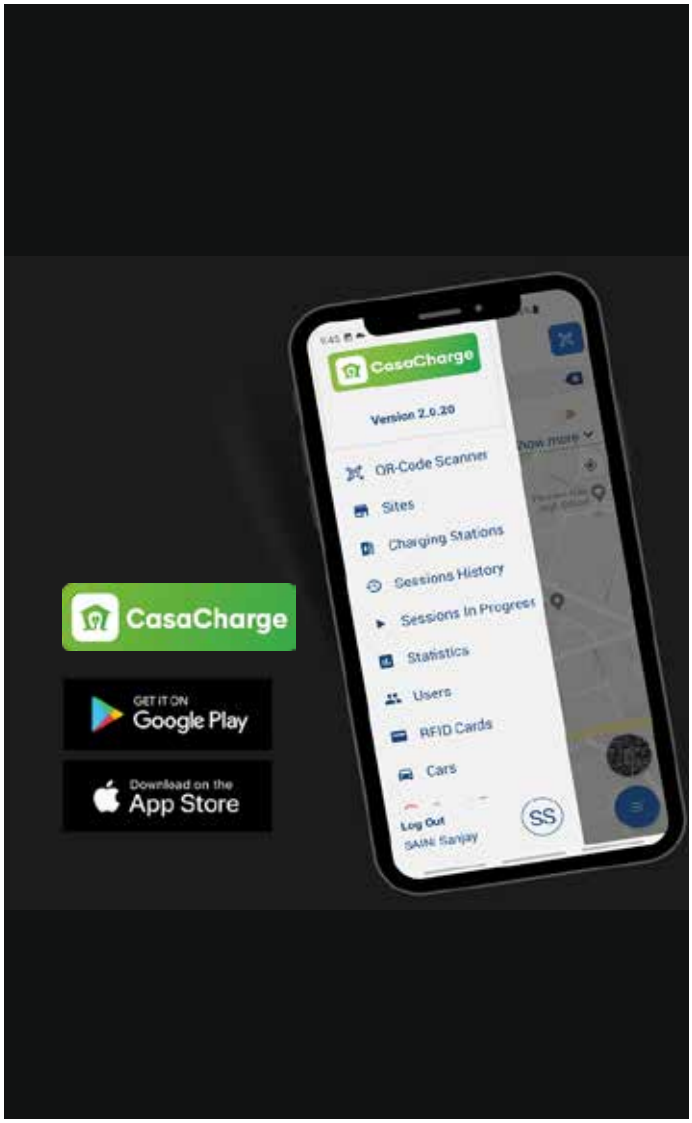
The charging station network management system manages and monitors the charging stations and all charging activity. Reports can be viewed on-line and downloaded in CSV or Excel file format.

Dashboards allow remote control, maintenance and firmware updates. An automated malfunction reporting system ensures that the charging station management company is informed of any outages.

Email alerts for charging station outages are generated automatically and error reports are collated.
ISO 27001 certified for data security

NET WORK MANAGEMENT FEATURES

- Web based network management and administration portal.
- Sub portals with granular permissions can be created for charging station providers.
- Dashboard overview with network map.
- Error reporting by network and by station.
- Error notification by email alerts.
- Station status and information including IP address, firmware version, OCPP Level, last heartbeat and map location.
- Remote configuration of stations including display settings for map and smart phone application, tariff per connector, max time allowed for charging, tariff per kWh or per minute.
- Remote retrieval of log files.
- Clustered stations. Multiple stations at a single location appear as one entry on the smart phone app.
- Local list management for authorisation. Clear cache option.
- Remote hard and soft resets of charging stations.
- Change availability status of station or an individual connector to operative/inoperative.
- Remote lock/unlock connector.
- Remote start/stop of charging sessions.
- Remote firmware updates.
- Full integration with smart phone applications.



CONEVA DYNAMIC LOAD MANAGEMENT SYSTEM

The Coneva Smartbox is an on-site appliance based dynamic load balancing system for electric vehicle charging stations. Smartbox can load manage mixed clusters of AC and DC charging stations that share the same power supply. On-site appliance based load balancing provides faster response times in comparison to cloud based load management. On-site load balancing continues to operate normally during network outages as there is no dependency on a remote system for load balancing.

Coneva Charging is developed by Coneva GmbH, a wholly owned subsidiary of SMA Solar Technology AG, a leading global specialist in photovoltaic system technology.

Coneva Smartbox is interoperable with the network management system. All non load management OCPP commands are passed between the charging stations and the NMS through Coneva

KEY FEATURES

- Dynamic load management of AC and DC stations in the same charging node or cluster.
- On-premises appliance. Can operate without an internet connection.
- Cross platform. The Smartbox appliance load balances any compliant OCPP 1.6/2.0 charging stations enabled for smart charging.
- Smartbox operates in tandem with OCPP compliant network management systems for network management and billing.
- Support for an unlimited number of charging stations.
- Can be configured to incorporate power sources such as solar PV, battery storage and wind power.
- Can be integrated with building management systems and other SCADA control systems.
- Supports orchestrates charging. Can respond to signals from the grid operator.

DYNAMIC LOAD MANAGEMENT

Coneva Charging is designed to reduce the charging rate of electric vehicle charging stations when there is insufficient power to allow charging at the full rated capacity. This can occur where the power supply used by the charging stations is shared with other devices in the building/site and power usage varies during the day or there is a power shortage.

Coneva charging avoids the need for costly grid upgrades needed to facilitate electric vehicle charging by ensuring peak demand never exceeds the capacity of the site grid connection.

Dynamic Load Management