

E-STATION

"Be Part of Something Better"




Regular	2.69
Midgrade	2.99
Premium	3.99
Diesel	2.99
Electric	0.99



E-Station Capability Statement 2018

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E-Station - The Charging Station Company

E-Station is Australia's leading supplier of electric vehicle charging stations and network management systems. The company was founded in 2010 in Perth and has since expanded operations across Australia. E-Station has a presence in every state.

E-Station provides charging station technologies and network management services to a variety of markets such as local government, building and construction companies, parking providers, charging station network operators, shopping centers, strata managers/body corporates, embedded metering companies and the motor trade. Domestic consumers account for a small percentage of sales as the number of electric cars sold in Australia is relatively low.

E-Station provides charging station network management services under the Charge Star brand. Services include planning, installation, access control, metering systems, billing systems, marketing and network support.

Products & Services

- Wall mounted and bollard mounted AC charging stations.
- FAST DC charging stations for service stations and destination charging.
- Charging Station access control.
- Metering and billing systems for charging station networks and strata managers/body corporates.
- Load balancing for charging station clusters.
- Charging Station network management.
- Charging station installation and electrical contracting services.
- Charging Cables for electric vehicles.



Join the

Revolution

The electric car revolution is underway. The sale of petrol and diesel cars will be banned all over Europe by 2040. All the major car manufacturers have announced plans to move away from petrol and diesel vehicles.

"In July of 2017 Volvo president, Håkan Samuelsson, announced that starting in 2019 the company would no longer be producing combustion engine vehicles. So from 2019 onwards, Volvo will be producing only electric or hybrid vehicles".

"Toyota has announced that it will be offering electric versions of every model of its vehicles by 2025, and hitting a target of selling 5.5 million electrified vehicles by 2030. By 2025, the automaker will have every Toyota and Lexus model available as a dedicated electrified vehicle, or it will have a hybrid option available".

"Daniele Schillaci, executive vice-president at the Nissan, said that the prices of battery vehicles and traditional cars will draw level in 2025".

"German auto giant Volkswagen Group has unveiled detailed plans to super charge its production of electric vehicles. CEO Matthias Müller said VW – which owns 12 auto brands including Porsche, Audi, Bentley, Lamborghini, Seat, Skoda and Bugatti – would be launching a new electric car "virtually every month" starting in 2019. By 2030, Müller said that every one of VW's 300 models would have an electric variant."

Half the cars sold in Australia will be electric by 2025. The tipping point will be the peoples' car; an electric vehicle with a range of 300+ km and a price of \$30,000 or less. Consumer research indicates that cheap rate home charging is one of the biggest attractions of owning an electric car and that petrol and diesel cars simply cannot compete with this advantage.

Seismic Shift in Fuel Distribution

There will be a seismic shift in the fuel distribution market from oil companies to electricity retailers. Most electric vehicles will charge at home or at work. The electricity utilities and the electricity retailers own the electricity distribution system. The oil companies will be locked out of the market.

New Revenue Opportunities for Parking Providers

Most cars will charge overnight in homes, communal car parking areas and office car parks. There will be opportunities for car parking providers who offer overnight parking. This includes stratas, body corporates and commercial parking companies. These parking providers can buy power on the open market at cheap commercial rates and sell power to building occupants who own electric cars at the standard domestic rate. Circontrol charging stations integrate with embedded metering systems such as the Expert Power platform provided by SATEC.

Embedded metering systems are commonly installed by energy procurement companies who negotiate cheap bulk rates for office blocks and residential apartment blocks. Overnight charging will double or triple the power consumption of a building. This will enable energy procurement companies to negotiate an even better rate for the parking provider and lead to improved margins for the energy procurement company.

E-Station - Competitive Advantage

E-Station is perfectly poised to take advantage of the switch to electric vehicles.

The E-Station brand is well known and recognized. The E-Station team has built up a wealth of experience in the supply, installation, maintenance and operation of charging station networks.

E-Station has an installed footprint of over 1500 public and private charging stations in Australia. The NEXTCHARGE smart phone application is used by over 1000 electric car drivers in Australia. NEXTCHARGE is the gateway to the Charge Star network which includes the only pay charging network in Australia, The RAC Electric Highway™. The data gathered from the Charge Star network provides E-Station with unique and valuable insights into the behaviour of electric car drivers and potential future trends in electric vehicle charging including vehicle to home.

The charging stations supplied by E-Station are manufactured by Circontrol of Spain, one of Europe's leading providers of electric vehicle charging technology solutions. Circontrol charging stations comply with tough European standards and meet all Australia requirements.

Circontrol charging stations have market leading features such as on board load balancing, master/slave configuration, dynamic load balancing for charging station clusters and advanced reporting features. The Charge Star network management system is one of the most advanced in the world while the NEXTCHARGE smart phone app has 50,000 registered users worldwide.



Capabilities



Charging Stations - Supply, Install, Maintain

E-Station provides turnkey solutions for charging station installation projects, including the selection of the most appropriate charging stations for the customers, charging station procurement, project management, site preparation, installation of the charging stations and maintenance of the charging station network.



Charge Star Network Management Services

Charge Star is an electric vehicle charging station network operated as a managed service by E-Station on behalf of multiple local authorities and private clients in Western Australia, South Australia and Queensland. The RAC Electric Highway™ is part of the Charge Star network. E-Station has been managing charging station networks right across Australia since 2016. E-Station has a proven track record of providing robust and reliable charging networks and ensuring that electric vehicle drivers have a smooth and trouble-free charging experience.



Charge Star Billing Services

Charge Star Billing is a billing solution for charging station network providers and body corporates who wish to provide public charging station networks or charging station facilities in communal car parks. Drivers can initiate charging sessions using NAYAX credit card payment terminals and/or the NEXTCHARGE smart phone app which has an embedded billing facility. NAYAX credit card payments are transferred directly to the merchant account of the parking provider. NEXTCHARGE payments are batched up and reimbursed to the charging station provider every month.



Integration with Embedded Metering Systems

Charge Star integrates with embedded metering systems such as the SATEC ExpertPower™ platform. A SATEC meter is placed on each charging station circuit. The meter has its own network connection which sends data back to the ExpertPower™ application for analysis. ExpertPower™ monitors power usage and the ExpertPower™ billing module generates invoices for the building occupants. Charge Star is used for access control and load balancing. The charging stations can be programmed so that access to a charging station is restricted to one or more RFID cards which are then issued to the building occupants. This ensures that building occupants cannot steal power from each other. CSV report files can be downloaded from the stations and input into software packages like Stratamax and Strata Master so that strata managers and body corporates can independently audit the power usage.

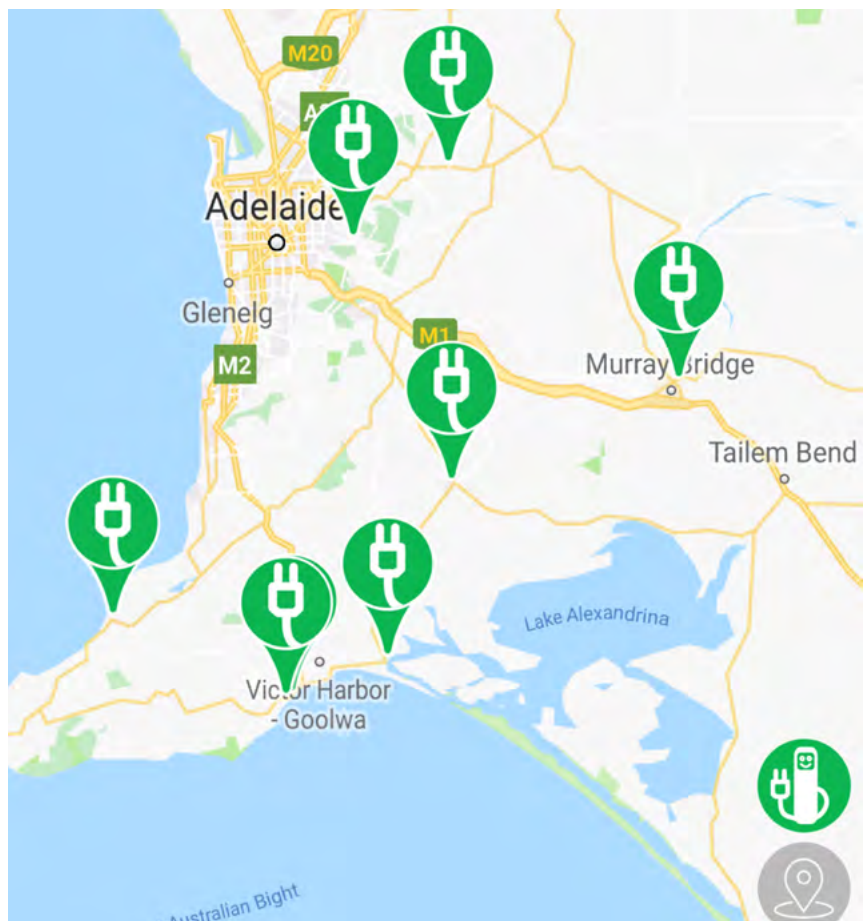
RAC Electric Highway

The RAC Electric Highway™ is a network of 11 DC fast charging stations linking Perth to the Margaret River region. The network is operated and maintained as a managed service by E-Station on behalf of the local authorities who were gifted the stations by RAC WA in return for providing charging station sites and granting permission for the use of RAC WA livery on the charging stations. E-Station also provides driver management services and billing systems for the local authorities as well as a customer portal for each local authority that provides usage statistics for data analysis. The stations are connected to the Charge Star network.



Fleurieu Hills Charging Station Network

The Fleurieu Hills charging station network consists of 10 AC charging stations linking Adelaide with the Fleurieu Hills wine region. The network is operated and maintained as a managed service by E-Station on behalf of the local authorities who provide the stations. E-Station also provides driver management services and billing systems for the local authorities as well as a customer portal for each local authority that provides usage statistics for data analysis. The stations are connected to the Charge Star network.





City of Wanneroo Charging Station Cluster

E-Station supplied and installed 16 charging stations at City of Wanneroo in preparation for the electrification of the City of Wanneroo pool car fleet. The units are a mixture of 7 kW and 22 kW Type 2 wall mounted and bollard mounted stations. The stations are connected to the internal network and will be load balanced using the THOR dynamic load balancer when the electric car pool fleet reaches critical mass.

Grosvenor Building Sydney 225 George Street, Sydney

E-Station installed two twin socket charging stations in the Grosvenor Building at 225 George Street, Sydney for the Deloitte's team. The sockets are rated to 22 kW and the stations are equipped with Type B auto closing RCDS. The stations are connected to the Charge Star network and managed as a service by E-Station.

City of Townsville DC and AC Stations

E-Station installed one fast DC and one AC station for City of Townsville. The DC station is located on the Palmer Street café street. The station is rated to 50 kW and is equipped with CHAdeMO and Combo CCS 2 cables. The stations are connected to the Charge Star network and operated as a managed service by E-Station.

Murray Bridge

E-Station installed two twin socket bollards outside the offices of Rural City of Murray Bridge in South Australia. The sockets are rated to 22 kW and the stations are equipped with Type B auto closing RCDS. The stations are connected to the Charge Star network and managed as a service by E-Station.



City of Wanneroo
Charging Station
Cluster



Grosvenor
Building Sydney
225 George
Street, Sydney



City of Townsville
DC and AC
Stations



Murray
Bridge

Various Local Authorities.

E-Station has installed charging stations for several local authorities. The stations are connected to the Charge Star network and managed as a service by E-Station.

- City of Townsville
- City of Perth
- Alexandrina Council
- City of Vincent
- City of Wanneroo
- Adelaide Hills Council
- City of Perth
- Shire of Harvey
- Rural City of Murray Bridge
- Shire of Augusta Margaret River
- City of Mandurah
- District Council of Yankalilla
- Shire of Bridgetown
- City of Swan
- City of Victor Harbour
- City of Bunbury
- Shire of Nannup
- City of Onkaparinga
- City of Busselton
- City of Joondalup
- Shire of Donnybrook
- City of Cockburn

Projects



E-Station has supplied charging stations to high quality residential apartment developments in Perth. Psaros is a well known property developer in Perth that specialises in high quality, sustainable, boutique apartments. E-Station installed charging stations in 11 Psaros developments.

More information available [here](#)



Dempsey Construction is among one of Australia's most progressive construction firms. Dempsey Construction has an outstanding track record of residential commercial and retail projects. E-Station installed charging stations in the flagship Blue Water and Taskers developments.

More information available [here](#)



The stations in these developments are connected to the Charge Star network and managed as a service by E-Station on behalf of the strata management companies.

Home & Office Charging Stations

E-Station provides a wide range of wall mounted charging stations designed for home and office use. The stations can be supplied in Type 1 or Type 2 format and are rated up to 7 kW single phase and 22 Kw three phase. Networked stations can be connected to the owner's network or Charge Star via ethernet CAT 5 cabling or 3G modem and SIM card. Features such as remote control, remote monitoring, load balancing, access control via RFID card, credit card payment and charging session activation via the NEXTCHARGE smart phone application are available in networked models.

More information [here](#)



Bollard Mounted Charging Stations for Street Charging

E-Station recommends bollard type charging stations for street locations and outdoor areas. The bollards have two sockets with each socket rated up to 22 kW. The Output kW can be dialed down via a software configuration change if the power supply is inadequate for the rating of the station. A two-socket bollard can be positioned between two parking spaces. Networked versions can be connected to the owner's network via ethernet CAT 5 cabling or 3G modem and SIM card. Features such as remote control, remote monitoring, load balancing, access control via RFID card, credit card payment and charging session activation via the NEXTCHARGE smart phone application are available in networked models.

More information available [here](#)





Raption DC Fast Charging Station

The Raption is an attractive slimline DC fast charging station suitable for installation indoors or outdoors in stand alone or against the wall configurations. Easy access is provided by the lockable front door. The station can deliver a DC fast charge of up to 50 kW to CHAdeMO and CCS compatible cars. The maximum output of the Raption can be limited to 25 kW by an over the air software change. This makes the Raption suitable for installations where the power supply may be insufficient to cater for 50 kW devices. The Raption has a Type 2 AC charging cable that delivers up to 22 kW of power to type 2 IEC62196-2 (Mennekes) compatible cars such as the Tesla Model S. The Raption is fully OCPP compliant and integrates well with the Charge Star driver management services payment system and the Next Charge smart phone application. The station has an 8 inch daylight readable touch screen that provides clear charging instructions, plug status and language selection options. The Raption 50 will charge an average sized electric car to 80% in 20 minutes using the CHAdeMO or Combo CCS DC cables.

More Information [here](#)



Charge Star

For Billing & Metering



Charge Star Billing is the billing and metering solution provided by E-Station. There are two payment options, payment by credit card via NAYAX payment terminals and payment by the NEXTCHARGE smart phone application which offers payment by credit card, Paypal and Apple/Android Pay.

Credit Card/Debit Card Contactless Payment.

The charging stations use a [NAYAX contactless payment solution](#) for credit and debit cards using NAYAX Amit 3.0 secure payment Terminals.

- ④ Driver presents card to NAYAX card reader.
- ④ Reader requests authorisation.
- ④ Card is authorised.
- ④ Reader sends signal to the program logic controller on the charging station via a serial port connection.
- ④ The PLC activates the charging session.
- ④ The charging session is stopped when the driver presents the card to the reader a second time or the car terminates the charging session because the car is fully charged, or the driver stops the charge from within the car.
 - The NAYAX payment terminal sends the serial number of the credit card to the program logic controller on the station.
 - The program logic controller records the serial number of the credit card that activates the charging session on one of the charging sockets and holds it in memory until the charging session is stopped. Only the active credit card can stop a charging session. A non-active credit card cannot stop a charging session. There can be two active credit cards in memory at the same time, one matched to each socket.
 - The NAYAX credit card reader is physically separate to the Circontrol RFID card reader.
 - The same instructional messages are displayed for both the NAYAX credit card reader and the Circontrol RFID card reader.

NEXTCHARGE Payments.

The NEXT Charge App can be used to activate charging sessions on paid charging station whether or not the station has a NAYAX terminal.

- ④ A driver can download the NEXTCHARGE smart phone app and start charging straight away.
- ④ A map and a list of stations are presented in proximity order. The closest station is the station the driver is standing beside.
- ④ The driver selects the station then selects the socket.
- ④ Charging starts automatically. No further intervention is required.
- ④ If the station is a paid charging station, first time users are asked to enter their credit card details. The app connects to the Braintree payments system and debits the driver's credit card. Credit card details are stored by Braintree for future use. No credit card details are stored on the NEXTCHARGE app.

More information

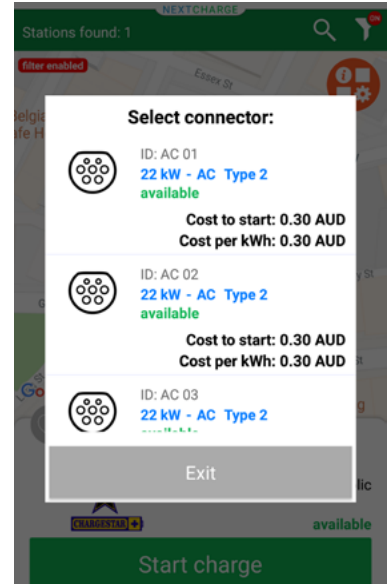
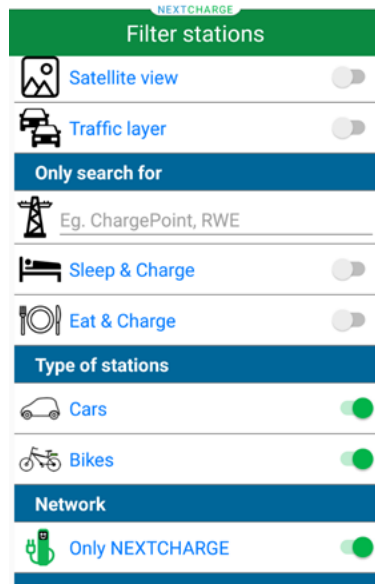
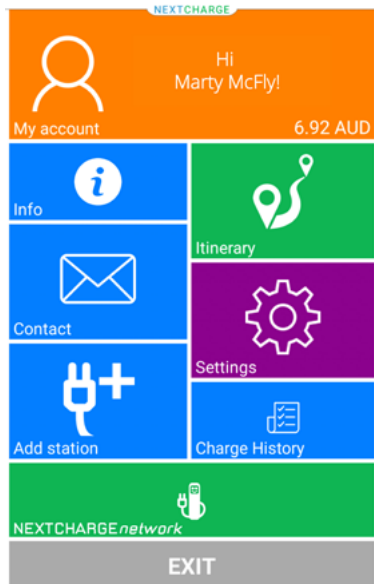
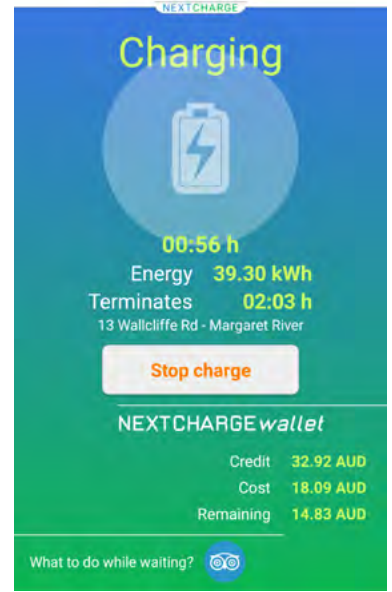
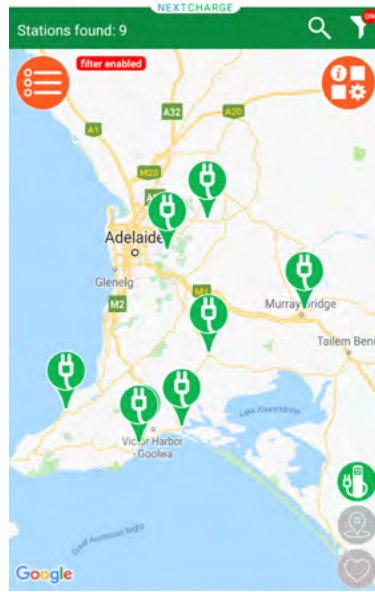
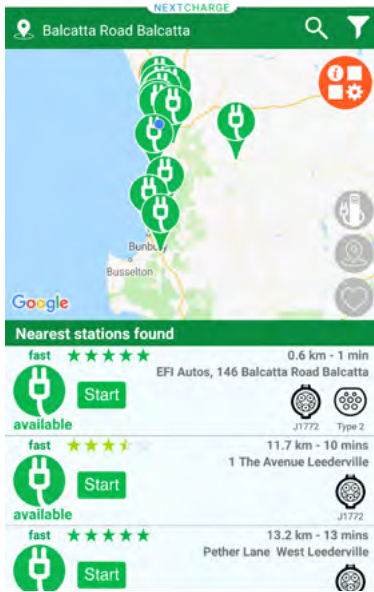
[NEXTCHARGE](#)



[CHARGE STAR BILLING](#)



NEXTCHARGE Smart Phone Application



The NEXTCHARGE smart phone application is an enterprise scale fully functional charging network portal for electric vehicle drivers that allows drivers to locate charging stations, activate charging sessions and pay for charging sessions using Visa, Mastercard, Paypal, ApplePay and Android. The application can be downloaded on the spot by any driver who wishes to activate a charging session. There are over 50,000 users and over 10,000 stations registered on the NEXTCHARGE platform.

The driver is presented with a map of the charging stations and a list of charging stations in proximity order. The assumption is that the driver is parked beside the station at the top of the list. The driver selects the station and activates the charge. No manual intervention is required. No buttons

to press. The application provides real time feedback during the charging session. It displays charging time, power used in kWh, energy being drawn by the car in kW, estimated duration of charging session to fully charged and current cost of the charge if a charging session is activated on a paid charging station. NEXTCHARGE maintains a charging history in the app that can be viewed by the driver. Drivers are emailed a PDF invoice for paid charging sessions. Charging sessions are stopped by the app. NEXTCHARGE notifies the driver when the charge has stopped. The driver can restart the charging session remotely if required.

More information > [NEXTCHARGE](#)

Charge Star

Network Management Service

Charge Star is an electric vehicle charging station network operated as a managed service by E-Station on behalf of multiple local authorities and private clients in Western Australia, South Australia and Queensland. The RAC Electric Highway™ is part of the Charge Star network.

Charge Star provides network management and driver management services for all charging stations on the Charge Star network. This means that the charging station providers have zero network management overhead. Any operational issues, network issues and driver/usage issues are handled by the Charge Star help desk which operates a 24 hour help line: 1300 661 895. The stations are monitored in real time and any software updates or configuration changes are administered remotely. The charging station providers have little or no contact with drivers. Charging station providers refer all queries to Charge Star. The Providers have put signage in place with instructions to call Charge Star on 1300 661 895 if they need information or experience any charging issues.

Most providers do not have the resources to train and staff a help desk or run a charging station network. Only one local authority (City of Hobart) provides charging stations support.

Charge Star supports heterogeneous charging stations from different manufacturers such as Circontrol,

Delta, Schneider. However, Charge Star recommends Circontrol charging stations because the quality of the product is excellent, backup support is very good, the operating software is technologically advanced, and the stations are aesthetically pleasing and blend nicely into the streetscape. The Circontrol stations have a 99% uptime and do not need to be restarted unlike some of other stations.

E-Station operates the Charge Star network as a managed service. The stations on the Charge Star network are connected to the Charge Star OCCP servers and managed directly by ChargeStar. The charging station providers are given access to a charging station provider portal. The portal can be used to check the status of charging stations and to display and download usage reports. The charging stations operate 24/7. Tariffs and any other configuration changes can be configured remotely on request from the charging station provider.

Demo Portal Site:

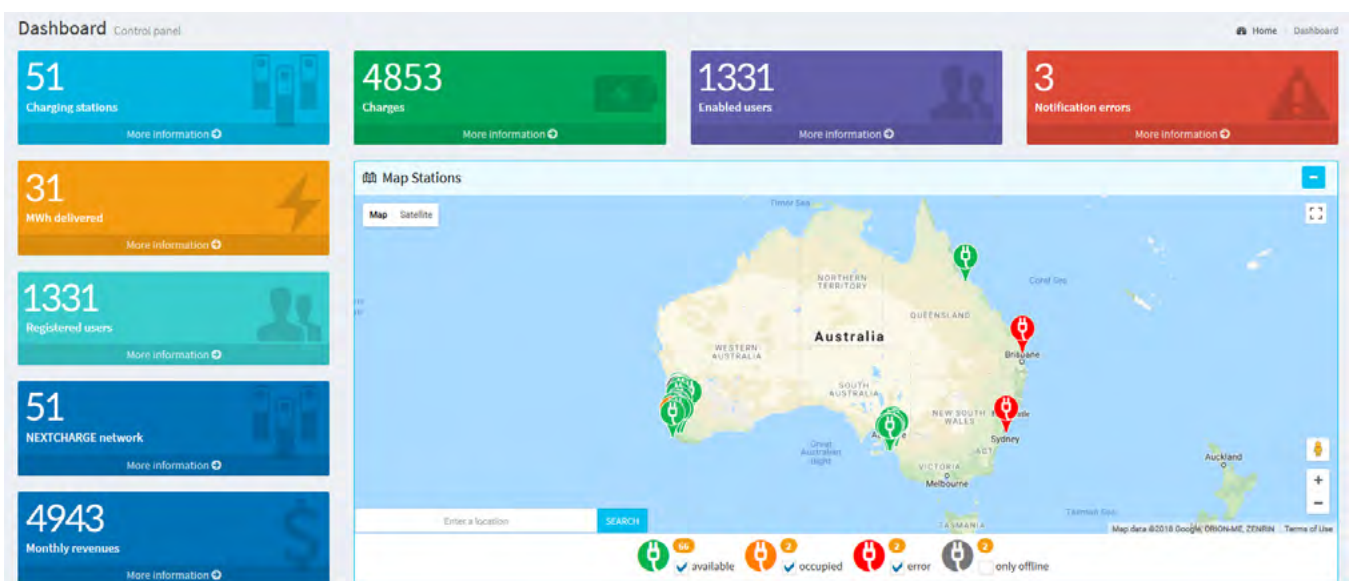
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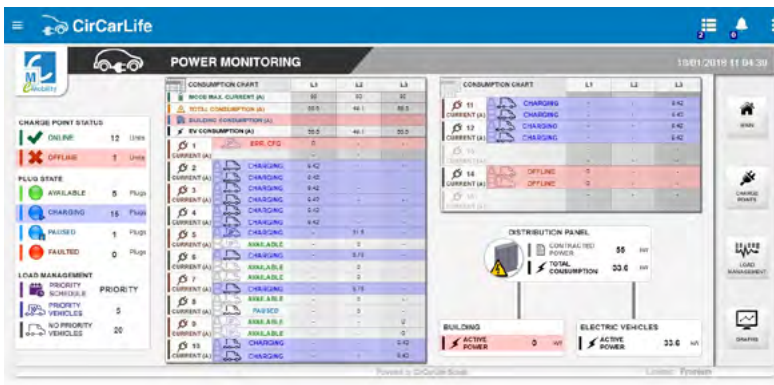
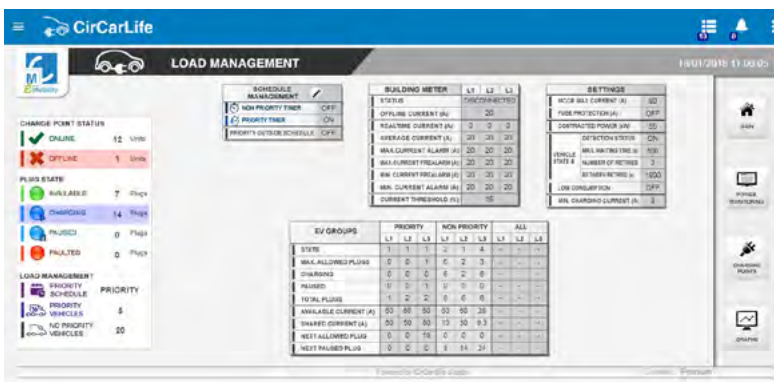
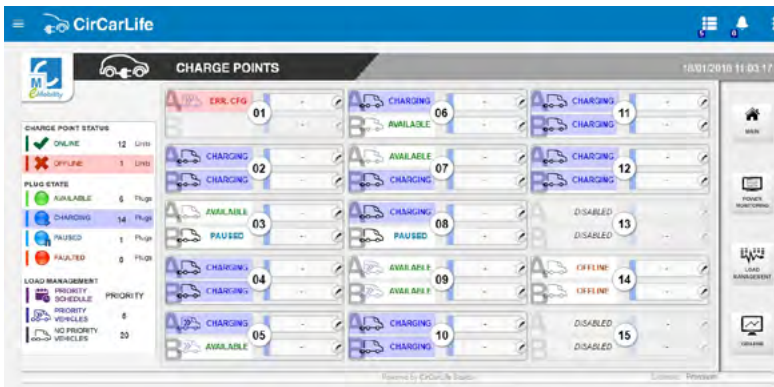
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More information on the Charge Star Network can be found [here](#).



THOR Dynamic Load Balancing



The THOR dynamic load balancing system is designed to manage the power requirements of multiple charging stations when the total rated power requirement of the charging stations exceeds the power capacity of the parking area or the power capacity of the building.

Dynamic load balancing may be required when the cost of adding additional electrical capacity to cope with peak demand from charging stations is prohibitive or it is simply not possible to build in the electrical capacity required to run all the charging stations at full capacity at the same time. Existing peak demand is between 17:00 and 19:00 and it is likely that electric cars will add to peak demand as drivers arrive home in the evening and plug in. Surge pricing may also be another reason why the parking provide may want to restrict electric vehicle charging at certain times of the day.

THOR Dynamic Load Balancer Solution is a Java application that installs directly on to the customers' PC. It is not a hardware solution. Each charging station is connected to the customers' network and is allocated an IP address. THOR connects to each charging station and manages the load on each station. THOR uses a custom interface to dynamically load balance charging stations because OCPP 1.6 lacks the requisite load balancing functionality.

THOR shares out the available power between the charging stations and then reduces the power allocated to each charging station when the power limit is reached. The power limit is either a hard limit which reflects the maximum amount of power that should be available in the parking area or a dynamic limit which is dependent the maximum amount of power available to the building as a whole.

[THOR Dynamic Load Balancer](#)





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