EVERTY

# ELECTRIC VEHICLE CHARGING SOLUTIONS

# ABOUT US

- EVERTY was established in 2017
- Software to charging station operators to easily monitor, manage and monetise chargers
- EV driver app to find, start/stop and pay for charging

- Founder and CEO
- Board member of the Electric Vehicle Council
- CleanTech experience (Enphase Energy)
- NABERS rating scheme

# EV CHARGING Plug Types

## CHARGING LEVELS

| | LEVEL 1 | LEVEL 2 | Level 3 |
|---|---|---|---|
| Voltage | 230 Vac | 230 Vac | 400-1000 Vdc |
| Current Range | 10-15a | 6-80(Typical 30 A) | 63-400 A |
| Charging Times | 12-18 Hours | 3-4 Hours | 10-60 Minutes |
| Connector |  10 amp wall socket  15 amp wall socket |  Type 1 (J1772) (phased out)  Type 2 (CCS) (voluntary standard) |  CCS Combo 1 (phased out)  CCS Combo 2 (voluntary standard)  CHAdeMO (voluntary standard) |
| Driver Behavior | Convenience/Home Charging | Destination Charging | Transit Charging |

# EV CHARGING TECHNOLOGY

## CHARGING STATIONS

| | AC | DC (SLOW) | DC (FAST) |
|---|---|---|---|
| KW | 7-22 | 25 | 50-350 |
| LOCATIONS | Home, Work, Parking, Kerbside | Fleets/Depots, Dealerships | Highway, Airport, Service Station |
| RANGE PER HR | 7KW ~40km/hour<br>11-22kW ~60-120km/hour | 25KW ~100-150 km/hour | 50kW DC ~40km/10 min<br>350kW DC ~400km/ 15 min |
| Make/Model |  ABB Level<br>  Delta Mini Plus<br>  Schneider Electric EVLink Parking<br>  ABB DC Wallbox<br>  Delta DC Wall Box<br>  Delta Dual Quick Charger<br>  Tritium Veefil-RT<br>  ABB Terra Series | | |

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# EV CHARGING: THE NEW NORMAL


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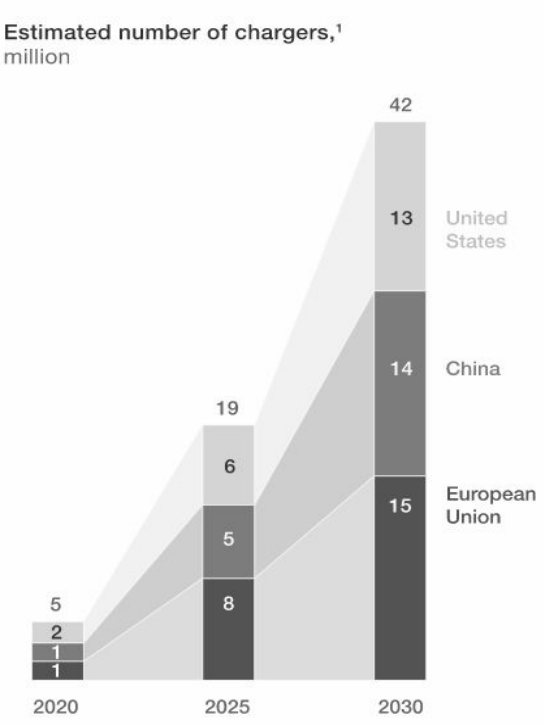
# INTERNATIONAL MARKET GROWTH




[1]Figures may not sum, because of rounding.

McKinsey&Company

**x 6.5**

**x 14**

**x 15**

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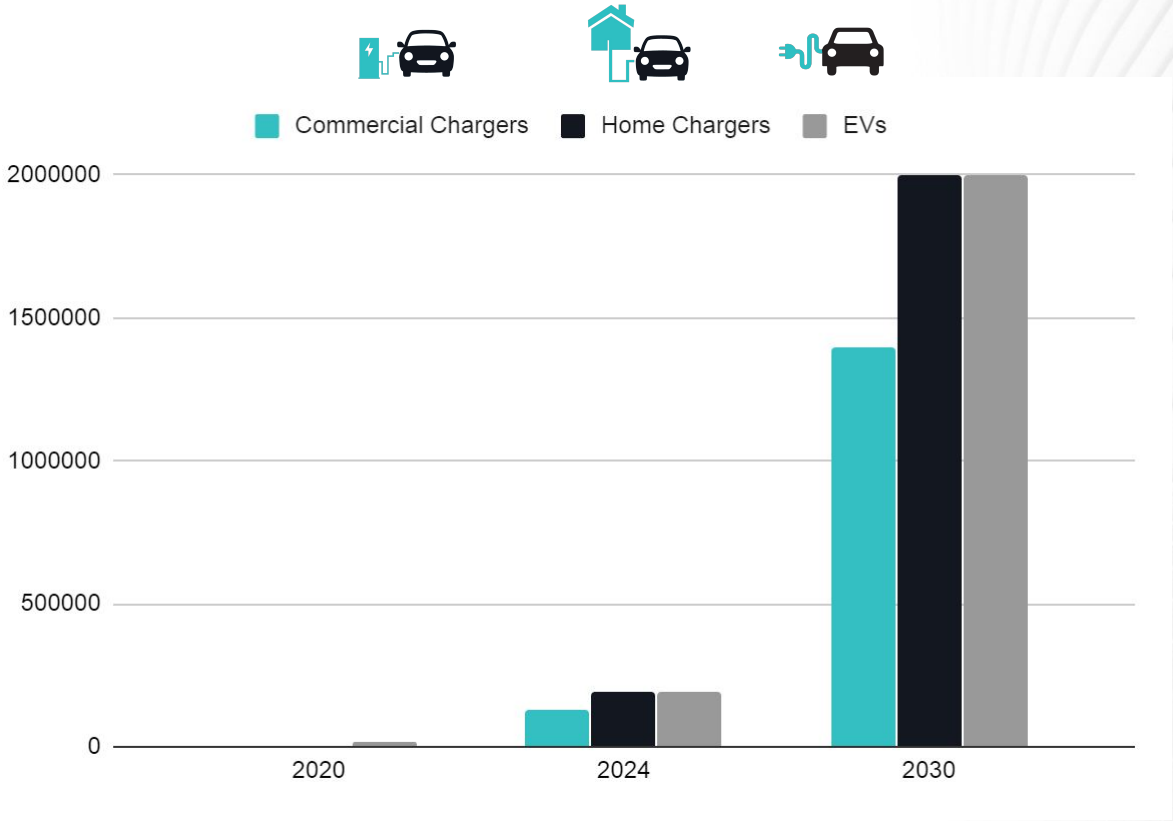
# AUSTRALIAN MARKET GROWTH

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# PROBLEM AND CHALLENGES

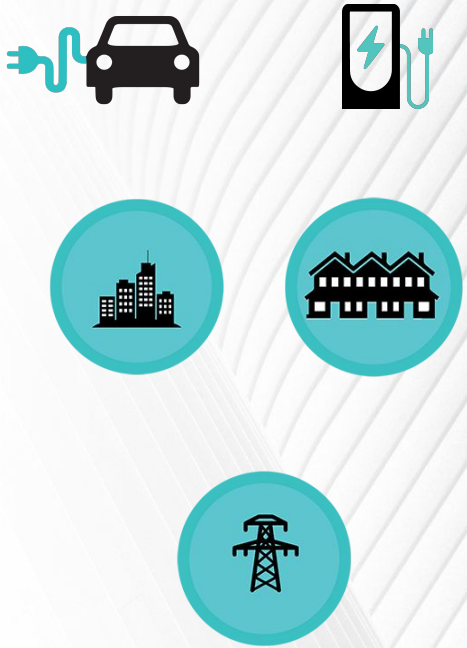
Today

**01** Fragmented and decentralised

**02** Electricity constraints in buildings

Future

**03** Grid constraints



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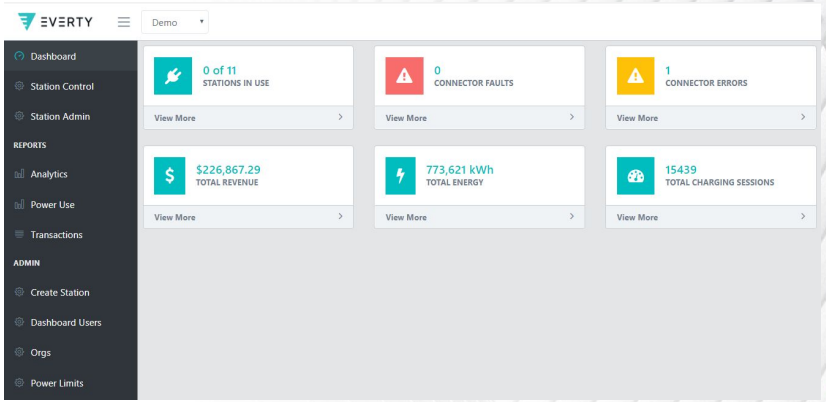
# EVERTY'S SOLUTION

## Electric Vehicle Drivers


Find + Start/Stop → Pay

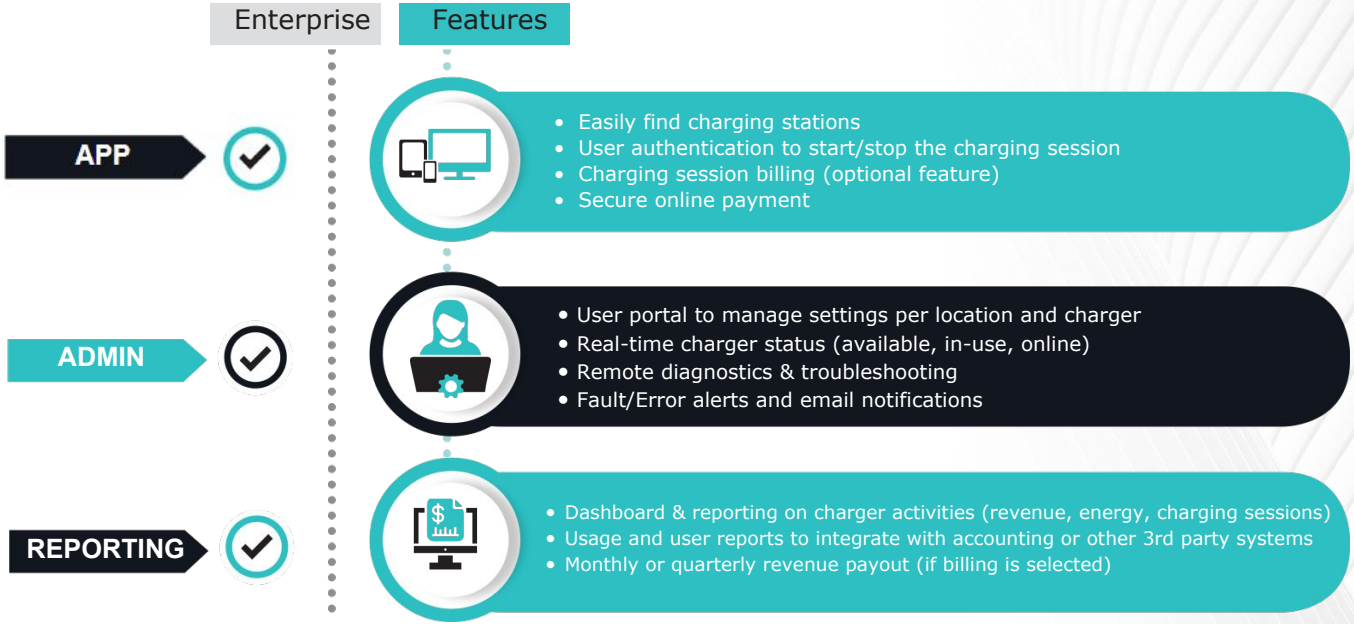
## Charging Station Operators




Charger Management Tool

# AUSTRALIAN-BUILT PLATFORM FOR COMMERCIAL CHARGER MANAGEMENT

The Everty network and charging station management system is designed and developed in Australia, with a focus on addressing the needs stakeholders including drivers, charge point operators and grid operators.

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# CHARGING FLOWS

**Electron flows**

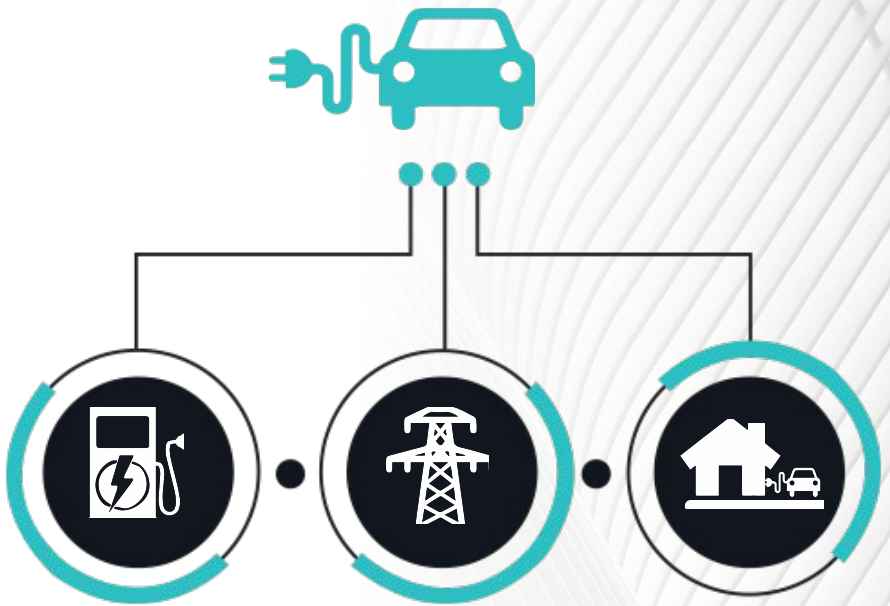
- Energy management
- V1G, V2X

**Data flows**

- Session management
- Metadata

**Money flows**

- Optional
- Business Model dependent



**V1G**
Unidirectional
Controlled Charging

**V2G**
Vehicle
to Grid

**V2H/B**
Vehicle to Home /
Building

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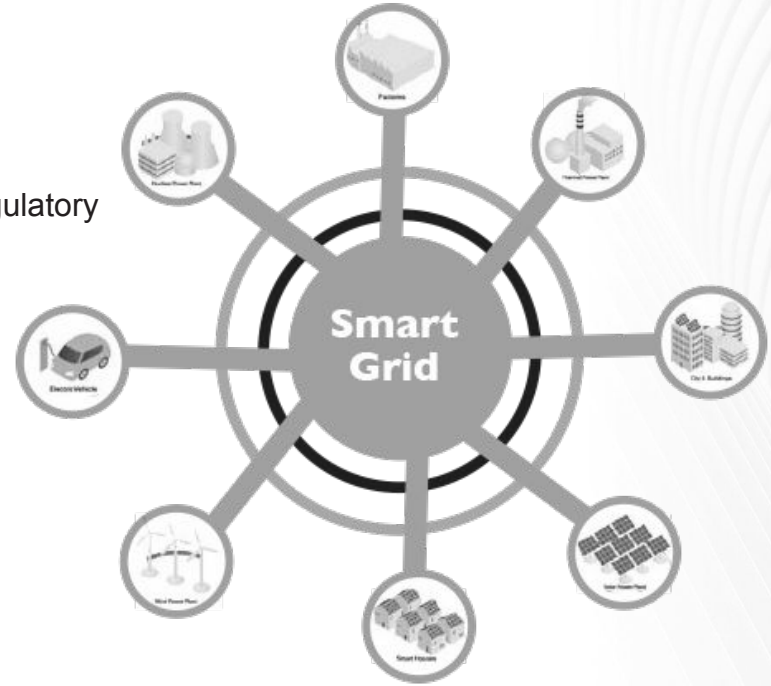
# EV ECOSYSTEM

- Environmental Issues
- Political, Standards & Regulatory
- Australian Design Rules
- Building Codes
- Transport & Parking
- Incentives
- Social Implications
- Energy




- Smart Grid
- Generation
- Transmission
- Distribution
- Storage
- Demand Management
- eMSP – eMobility Service Providers
- CPO – Charging Point Operators

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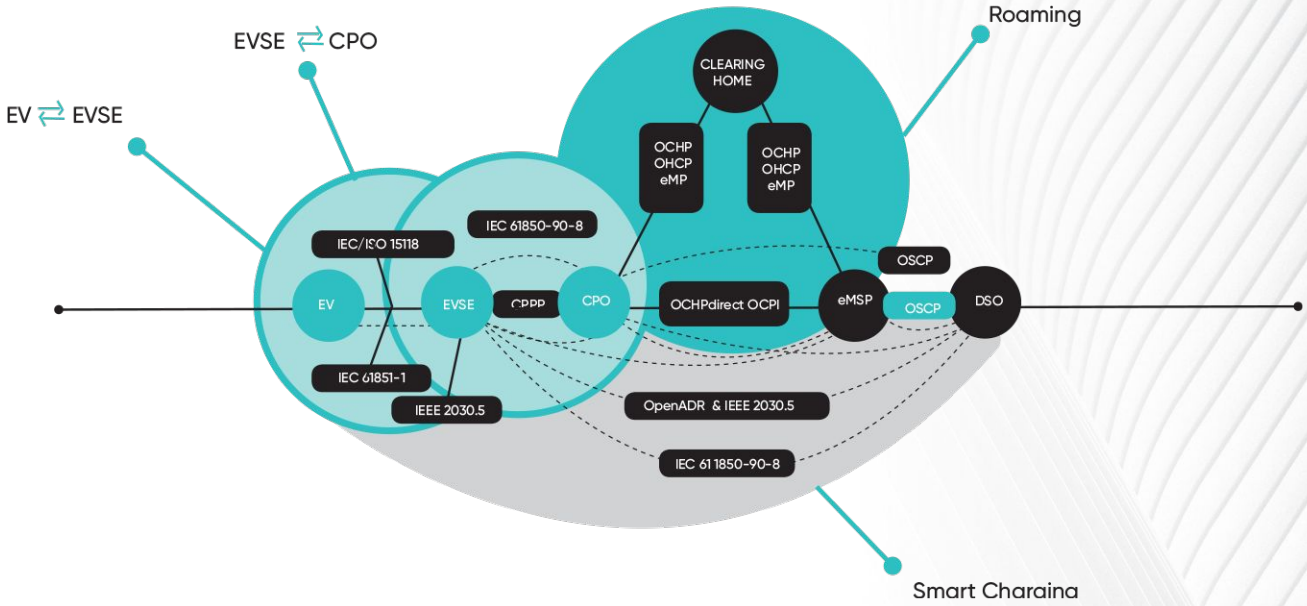
# POTENTIAL SERVICES
# EVS COULD OFFER THE GRID

| SYSTEM FLEXIBILITY | | LOCAL FLEXIBILITY | |
|---|---|---|---|
| **Wholesale Market** | **Transmission System Operator** | **Distribution System Operator** | **Behind the Meter** |
| • Peak shaving<br>• Portfolio balancing | • Frequency control<br>• Primary, secondary and tertiary reserve<br>• Other ancillary service (e.g., voltage management, emergency power during outages) | • Voltage control<br>• Local congestion and capacity management | • Increasing the rate of Renewable Energy self-consumption<br>• Arbitrage between locally produced electricity & electricity from the grid<br>• Back-up power |

THE ELECTRIC CAR BECOMES AN INTEGRAL PART OF SUSTAINABLE ENERGY SYSTEMS

# COMMUNICATION PROTOCOLS




Protocols Related to EV Charging Source: ElaadNL (www.elaad.nl)

Credit: IRENA (www.irena.org)

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Level 2, 11 York St,
Sydney NSW 2000 Australia

+61 451 280 006

carola@everty.com.au

www.everty.com.au