PROJECT SUMMARY

Essential Energy EV Charging

CLIENT: ESSENTIAL ENERGY | **PROJECT VALUE: $2M** | **ENGAGEMENT PERIOD: 2025 - PRESENT**

PROJECT OVERVIEW

Essential Energy is actively driving the expansion of electric vehicle (EV) charging infrastructure across regional New South Wales through a series of innovative trials and strategic collaborations. The electricity distributor is focusing on leveraging existing network assets to provide cost-effective and accessible charging solutions, supporting the NSW Government's EV Strategy.



Utilities Strategy & Design • Specialist Infrastructure Resourcing

Croí's Role

Croí has engaged to provide EV Charging Detail Design for six depots of Essential Energy (Inverell, Moree, Goondiwindi, Texas, Warialda, Walgett).

The project delivery has been considered to enable a gradual rollout of infrastructure as demand on EV charging is required.

Croí's scope of work:

- Review of proposed EV charging stations
- Safety Considerations
- Detailed consideration into existing switchboard, cabling, transformer compatibility
- Alternative methods of supply
- Cost saving solutions
- Staging of rollout of vehicle chargers
- Future capabilities
- Future recommendations
- Compliance to Standards

Croí's deliverables:

- Single Line Diagrams (SLDs) for MSB & EV DB
- Maximum demand calculations
- Cable sizing and voltage drop assessments
- Protection and earthing schemes
- Site geometry and charger bay layout
- MSB, EV DB and charger location plans
- Bollard placement and trench section drawings
- Typical EV charger mounting details
- Cable and conduit schedules
- Charger schedule with reference IDs, load data, and locations
- Design Report
- Cost estimate
- Post-design support allowance

Key Achievements

The primary objective of this project is to support Essential Energy's transition to a low-emissions operational fleet by enabling onsite EV charging capabilities. The design incorporates AC fast chargers, with provisions for future scalability, including integration with solar PV.

Key Outcomes

Key design considerations include:

- Integration with existing site utilities and infrastructure
- Assessment of transformer capacity and load management
- Compliance with safety standards and operational efficiency requirements

Key Interfaces

- Essential Energy
- Australian Switchgear Manufacturer / Supplier