

# Energy and Emissions Management Project



Centered in a town within metropolitan Perth, the town covers 17.62 km<sup>2</sup> and is home to approximately 38,000 residents. With projections estimating a population increase to 56,000 by 2036 and potentially exceeding 100,000 by 2050, the area is highly desirable due to its proximity to the CBD, Swan River foreshore, and a major entertainment precinct. The project's primary objective was to enhance energy and emissions management within this dynamic and rapidly growing community."

## Aim:

- Establish and maintain an Energy and Sustainability Management System (ESMS) for tracking energy, water, gas, and waste usage, and GHG emissions.
- Develop a comprehensive utility management system for electricity, water, gas, and fuel.
- Monitor 100 kW solar PV systems at Aqualife and Administration Building, and design and supervise three additional 100 kW SPV systems.
- Design a customized carbon emissions dashboard with reporting, data management and analytical tools.

## Challenges:

- Integrating data from various sources, such as utility records and internal data, to establish a comprehensive monitoring system.
- Categorizing the Town's assets for emissions tracking (Scope 1, 2, and 3) and gathering historical data on energy, water, gas, fuel, and waste from town archives and utilities for ongoing updates.
- Assessing current solar PV systems, determining sub-metering needs, and designing new systems for necessary locations.

## Solution:

- Continuous Energy Monitoring includes real-time tracking of energy, water, gas, and emissions data, as well as monitoring two 100 kW solar PV systems for operational insights.
- Designing, implementing, and managing three new 100 kW solar PV systems with integrated solar management.
- Utilizing advanced analytics and AI for comprehensive analysis and resource planning.
- Predictive maintenance and fault detection for immediate alerts and prevention of breakdowns.
- CCR's ESMS offers agility and scalability for seamless integration of additional components and multiple sites on one dashboard, ensuring adaptability to smart solutions and enhancing sophistication.

## Network:

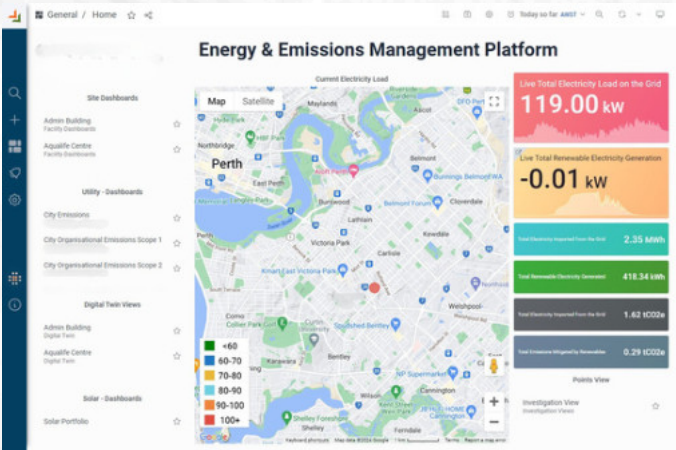
Modbus, Bacnet, 4GLte, LoRa, LoRaWAN, Ble

## Scope of Expansion:

- Future expansions encompass air quality management, temperature control, EV charging, smart traffic management, and water quality analysis, among others.
- This diversification not only adds value to the Town's facilities but also unveils exciting, innovative possibilities on the horizon. The journey toward a greener and smarter future is just beginning.

## Success Criteria:

- Significant reductions in carbon emissions.
- Achieve the project objectives within specified time and budget constraints.
- Implemented a complete system with smart monitoring, control, and analytics.
- Provided value in alignment with project goals.



Key Outcomes	
Multi- Parametric Advanced Analytics	Agile & Scalable
Real-time Monitoring & Management	Reduced Carbon Emissions

