



# ENERGY MANAGEMENT SYSTEMS & EMBEDDED NETWORKS

At Engenuity Solutions, we have a long & proven track record of providing clients with innovative energy management solutions crafted to their specific needs. We:

- Conduct studies on brownfields & greenfields embedded network projects to determine the optimal embedded generation solution.
- Manage supply authority embedded generation applications to simplify the connection of renewable energy systems.
- Implement innovative and flexible energy management systems to achieve your embedded generation strategy.
- Design bespoke protection and control systems for generation and load management that optimises energy usage.
- Consider innovative means of energy storage, self-consumption and energy trading.
- Develop standalone and grid connected solutions.
- Value our customers and base our success upon satisfied clients.

## OUR SOLUTION OFFERING

Over the past decade, there has been an explosion in the amount of embedded generation installed throughout Australia, with installers ranging from miners, businesses, shopping centres and councils to manufacturing facilities, multi-dwelling residential developments and schools.

All these users have taken up renewable generation, particularly solar, as an effective way of reducing their energy bills, offsetting greenhouse gas emissions, ensuring supply stability/security and generating additional passive revenue.

However, the challenges that come with the installation of this generation mean that many users are not getting the full benefit of their renewable energy. This can be due to a multitude of challenges, ranging from network utility export limits to sub-optimal generation/load balancing.

Engenuity has a demonstrated record of providing clients with energy management systems (EMS) that:

- Maximise export to the electricity grid while remaining compliant with requirements of the utility.
- Incorporate on-site battery storage, both centralised and/or de-centralised, to minimise grid energy usage, reduce peak demand and achieve other project specific outcomes.
- Monitor & manage power quality, ensuring you have the best quality energy you can.
- Work with all forms of energy supply, making grid supply, diesel generators, solar systems, wind & batteries work in harmony.
- Ensure client, personnel and end-user safety and comfort.

In conjunction with our sister company Engenuity Technologies and their Energy Maestro™ product, we have delivered projects across the Australian eastern states to provide optimised solutions that are compliant with all network and regulatory requirements – giving us the edge you need to make your project a success.

# SAMPLE PROJECTS

## GemLife Woodend – Residential Embedded Network Solar (VIC/PowerCor)

The GemLife Woodend over 50's lifestyle resort is an embedded network residential development with 245 villas. The Energy Maestro™ system allows for a single-phase inverter to be installed at each of these residences while being centrally coordinated to meet compliance requirements, such as phase balance and export limitation and maximise site generation.

## Parkridge Noosa – Residential Embedded Network Solar & Batteries (QLD/Energex)

Design of an embedded network solar & battery installation (>100 kW) using small, distributed hybrid inverters coupled with batteries. Due to site requirements, a portion of each battery was designed to be held in reserve & used to prevent residents exceeding the supply availability during evening peak periods. The Engenuity Technologies Energy Maestro™ was used to meet this control functionality as well as all other supply authority requirements.

## Sherwin Rise – Residential Embedded Network Solar (VIC/AusNet)

Located in Victoria and operating within the AusNet network, Sherwin Rise residential development sought to install solar for its homeowners. As an embedded network, the installed generation required the Energy Maestro™ to achieve compliant central management of the 149 solar inverters, including multiple inverter makes and models.

## Maroochydore – Residential Embedded Network Solar & Central BESS (QLD/Energex)

This residential embedded network required Engenuity to design & implement a solar installation consisting of 258 inverters. A late addition to the design was a centralised battery system for ancillary services trading. We were able to accommodate the BESS and an Energy Maestro™ was setup to provide key metrics to the BESS and ancillary services platform, along with meeting the compliance obligations for the installation.



## WHY ENGENUITY SOLUTIONS

**Trusted experts** - We are experts in our field and value the trust placed in us by our clients.

**Innovative** - We offer a holistic and innovative approach to our audits and investigations, maximising value from your assets while maintaining integrity and safety.

**Mindset** - We possess not only a depth of auditing expertise, but a breadth of experience in a variety of other industries which fuels our inventive thinking.

**Solutions** - We have a proven track record of delivering valuable & original solutions to complex & challenging problems.

**Quality** - We execute systematically and with discipline to ensure high quality; yet remain nimble enough to quickly respond to a project, market or technological change.

**Outcomes** - We work with you to find the best possible solution for challenges that others can't solve, delivering nothing less than the best.

