

## Magellan Power Energy Storage: Fact Sheet

Magellan Power is at the forefront of Energy Storage development in Australia, having sold systems to Ergon Energy, TransGrid, the Australian National University and other solar projects.

In operation 22 years, Magellan Power has been supplying Australian made rugged, high reliability industrial AC and DC back-up power systems to a large number of national and international projects.

All of our energy storage equipment is designed and made in Australia; so it is perfect for our climate and harsh conditions.

Below is a list of the energy storage systems we make, plus some examples of projects.

### **GPSS – SWR**

#### **Grid Power Support System – Single Wire (Earth) Return**



This energy storage system was designed specifically for the SWER (Single Wire Earth Return) power transmission system. The SWER power lines are used throughout the world, with the network here in Australia being one of the largest, covering 200,000km and servicing approximately 100,000 rural customers. The SWER power lines were first utilised after WWII because they offered a simple, low cost power solution by supplying power through a single wire and circulating it back via the earth.

Currently however, the SWER power line network suffers from poor voltage regulation, poor power factor and overload capability.

The GPSS-SWR consists of a single phase rugged IGBT bi-directional inverter, and 100kWh of Lithium Iron Phosphate batteries. The primary function of GPSS-SWR is voltage regulation, power factor correction, peak current injection (to clear the downstream fuse) and to provide UPS function. The GPSS-SWR was assembled in a 10' container and was supplied to Ergon Energy of Queensland in 2010.

- Supplied 2010 to Ergon Energy
- 25KVA/100kWh/LiFePo4
- Used on SWER power transmission
- Peak Shaving
- Voltage regulation (Statcom)
- Inject peak power to clear fuse-safety
- 4-hour power backup

*Purchased by Ergon Energy.*

## **GPSS – SP**

### **Standard (Grid) Power Residential**

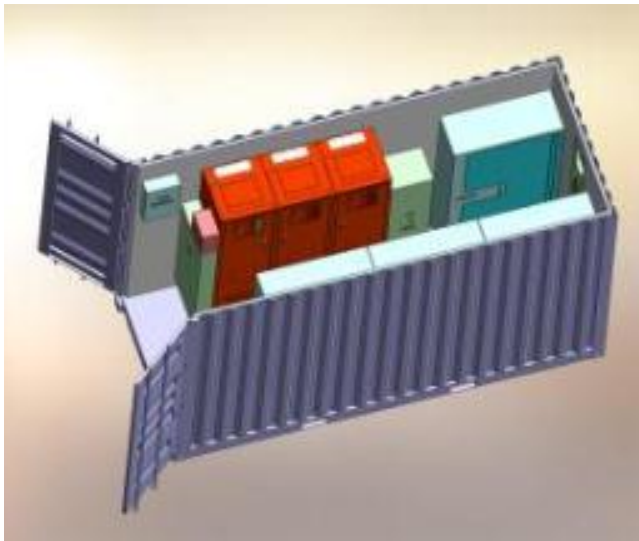


Designed for Ergon Energy, this 5KVA, 25kWh GPSS is used for residential applications for the purpose of voltage regulation, peak shaving, and UPS.

*Purchased by Ergon Energy.*

### **GPSS-SP Container Version**

#### **Standard (Grid) Power**



This Energy Storage equipment consists of 100kVA 3 phase bi-directional inverter and 400kWh of Lithium Manganese Cobalt Oxide batteries chosen for high cyclic life.

- To be supplied to TransGrid- NSW
- 3 phase 100KVA/400kWh/Lithium Manganese Nickel
- Peak Shaving
- Voltage regulation

*Recently purchased by TransGrid NSW.*

## **RE – GPSS**

### **Renewable Energy - Grid Power Support System**



This version of GPSS-SWR comes with a solar charger which stores the solar energy in its batteries, and feeds this power back to the SWER network during periods of heavy loading.

- Supplied 2012 to Ergon Energy
- 30KVA/120kWh/LiFePo4
- PV Input
- Used on SWER power transmission
- Peak Shaving
- Voltage regulation (Statcom)
- 4-hour power back-up

*Purchased by Ergon Energy QLD.*

## **DSS Series**

### **DC Solar Storage**



This is the most cost efficient energy storage solution for residential applications. It has recently been acknowledged with a \$10,000.00 prize in the Horizon Power Renewable Energy Technology Challenge. The DSS is connected to the DC side of grid feed inverters and therefore can work with most existing inverters. It stores solar energy directly from the solar panels and releases it into the grid or the household load when required. Another very useful feature of the DSS is the solar smoothing function. This mitigates the problem of passing clouds by compensating for the abrupt absence of solar power by using the storage batteries.

The DSS utilises the latest generation of cost-effective high-current lithium iron phosphate batteries as the storage elements, and connects these in parallel to the solar array using a high efficiency bidirectional DC-DC converter to manage and smooth the PV power flow.

- 3.0kW, 2.5/5kWh
- Solar Smoothing/ Energy Storage
- Peak shifting
- Low Voltage battery - 48Vdc
- Smart Grid

*Recently purchased by Avant Solar.*

## Energy Storage for Commercial Solar Applications

This series of three phase energy storage units range from 15kVA to 45kVA utilising Lithium Iron Phosphate batteries. This equipment is used in commercial scale solar installations for the purpose of peak shifting and solar smoothing.



- 45kW/ 3-Phase system
- Solar Smoothing/ Energy Storage
- Peak shifting
- Smart Grid

*Recently purchased by the Australian National University*