Energy Storage (BESS) Synopsis

There many broad forms of energy storage systems available, but in the framework of renewable energy for small scale applications, the most common form is the battery storage and/or backup system. (BESS)

Those who equip PV solar or wind turbines with a storage system are mostly interested in increasing the on-site consumption of generated renewable energy.
In addition to allowing operators of these types of installations to significantly increase on-site consumption, a storage system also enables them to reduce their dependency on utility companies and ensures that power will continue to be supplied without interruption should the public power grid fail.

Battery storage systems have long been common practice in off grid PV and wind turbine installations in order to ensure that power is continuously supplied without interruption.
In contrast, the use of energy storage systems in on grid installations, which are the norm for installations on private roofs and commercial businesses, allow excess energy to be saved and put it at the disposal of consumers at a later point in time.
Another benefit is that the energy storage system can be recharged during off peak further reducing the cost of energy to the consumer.

Typical forms of electrical energy storage include …

Battery – the most common form of storage using lead acid, NiCad and Lithium
Ultra Battery – a hybrid electrochemical battery system developed by the CSIRO for large scale storage
Capacitor – suitable for short term energy storage and burst-mode power delivery

Typical small scale BESS mounted in cabinets

Typically energy storage systems require an electronic management system, a specific type of inverter and a control system which makes them relatively expensive to purchase and install.
However, the technology is rapidly improving and becoming more cost effective thanks to greater public awareness and the increase in electricity prices.

For connection details please download the Off Grid Connection and On Grid Connection details from this website.