

## Kongres Container

# Design of ESS for inverter energy storage in communication base station



## Overview

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What is energy storage system (ESS)?

### 1. ESS Introduction & features What is ESS?

An Energy Storage System (ESS) is a specific type of power system that integrates a power grid connection with a Victron Inverter/Charger, GX device and battery system. It stores solar energy into your battery during the day, for use later on when the sun stops shining.

Can ESS be used as a backup system?

Use ESS in a self-consumption system; a backup system with solar, or a mixture of both: For example you can use 30% of the battery capacity for self-consumption, and keep the other 70% available as a backup in the event of utility grid failure. When there is more PV power than is required to run loads, the excess PV energy is stored in the battery.

Does ESS work with a grid-tie inverter?

ESS can work with either an MPPT Solar Charger or a grid-tie inverter, and a mix of both. Generally speaking the MPPT Solar Charger will be more effective than a grid-tie inverter in a small system.

What is ESS mode?

The ESS mode is configured to 'Keep batteries charged'. When using a grid-tie inverter, it is connected to the AC output as well. When grid power is available the battery will be charged with power from both the grid and the PV. Loads are powered from PV when that power-source is available.

How does ESS work?

When enabled (default), ESS balances the total power (L1 + L2 + L3) to zero Watt. When disabled, ESS balances each phase separately to zero. For single phase systems, this setting has no effect - whether 'enabled' or 'disabled'- and

can therefore be ignored. When the ESS mode is set to Keep batteries charged, this setting has no effect.

Can ESS be used with a grid meter?

ESS can be used both with an external grid-meter, or without one. Where there is a grid-meter; either a full or partial grid-parallel system can be configured to run alongside. Where there is no grid-meter; all loads are connected to AC-out. And where there is a PV Inverter present, that is also connected to AC out.

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