ESS Assistant manual

(rough draft)

1. Introduction

This manual will be very similar to the Hub-4 Assistant manual, but then also explain the major additions:

- Works the two types of ESS systems
  - with grid meter. A full or partial grid-parallel system.
  - without grid meter. All loads connected to AC-out. And in case of PV Inverters, also connected to AC out.
- Power from an MPPT can now also be fed back to the grid. Enabled/disabled by a user setting on the CCGX: Settings → Energy storage system.
- Added Fronius Zero feed-in option
- PV Inverter Assistant is now built-in: no need to add that separately in case of AC-Coupled loads

For details in the improvements, see the draft blog:
https://www.victronenergy.com/blog/?p=7656&preview=1&_ppp=2216339b68

2. Migrating from other Assistants

2.1 Hub-1 Assistant -> ESS Assistant

Policies

Hub-1 policies that are deprecated in favor of ESS:

- Policy 1: Connected to mains, feedback: use ESS and enable solar charger feed-in.
- Policy 4: Prevent feeding energy to the grid: two options, one use ESS and do not enable Solarcharger excess feed-in and it will be always be connected to the grid. Or, use the Virtual Switch with ignore AC-Input.

Hub-1 policies that will be replaced by ESS, once we implement “Keep batteries charged” option. (december)

- Policy 2: Keep batteries charged: You could use ESS, but it will not charge with power from the grid. Solution coming soon.
- Policy 5: Connected to mains, no feedback. Perhaps a better name would have been Keep batteries charged, no feedback. You could use ESS, but it will not charge with power from the grid. Solution coming soon.

Above leaves us one policy where the Hub-1 Assistant can do things that ESS cannot.

- Policy 3: Disconnect from the mains when possible: Keep Hub-1 Assistant or, often a simpler and therefor better solution, use the Virtual Switch with Ignore AC-Input.

Load shedding feature: deprecated

Loadshedding is a feature in Hub-1 that is not often used, and therefore we did not implement it in the ESS Assistant. Instead of sticking to Hub-1, which we do not recommend and also not support(1), consider using other options.

For example (mis-)use the genset/start stop in CCGX.

2.2 Hub-2 (v3) Assistant -> ESS Assistant

Policies

- Disconnect at night: disconnecting at night is not possible with the ESS Assistant, but why would you want to do that? Disconnecting only causes problems with overload, flickering, etc. With the ESS Assistant you can obtain the same or a better level of self-consumption without having to disconnect.
- Invert priority: use the virtual switch instead.
- Connect to AC input when available
- Connect to AC when available, keep batteries charged: not deprecated yet, but will be deprecated soon.

Make use of 'off peak tariffs'

Not available in the ESS System yet, but coming somewhere in 2017.

Winter mode

Replaced by battery life, and the (soon coming) Keep batteries charged option in the CCGX.

Load shedding

Load shedding is a feature in Hub-2 that is not often used, and therefore we did not implement it in the ESS Assistant. Instead of sticking to Hub-2, which we do not recommend and also not support(!), consider using other options.

For example (mis-)use the genset/start stop in CCGX.

Prevent feeding energy back to the grid

The ESS can do this when you have a Fronius inverter. See the Zero feed-in option.

For other brands of PV Inverters, you'll have to keep using the Hub2 v3 Assistant. Do read suchandsuch section in the blog post.

2.3 Hub4 Assistant -> ESS Assistant

- Battery capacity is no longer asked by the Assistant. Instead, enter the capacity on the General tab.
- It will ask for the grid code as a first thing, instead of giving an error after almost completing the Assistant
- The PV Inverter Assistant is included in the ESS Assistant: it is no longer necessary to separately add it.
- Fixed a overload and high temperature bugs

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