Validation of a Energy Management Strategy for a BIPV System with a Lithium Ion Battery Demonstrator

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BIPV System Demonstrator

Lithium Ion Battery:
- 5kW nominal power
- 31.8kWh capacity
- 302.4 V Vmax / 194.4 V Vmin
- 5C (200A) max discharge
- 3C (120A) max charge

Battery Inverter: 5kW nominal power

PV installation: 3.224 kWp (a-Si)

PV inverter: 5kW nominal power

P setBat = P pv - P load
P grid = P setBat - P bat

Due to battery operational limits (voltage and SOC), a control to avoid overdischarge/charge was implemented.

Conclusions:
Within the battery operational SOC limits the strategy achieved a minimized peak power (50W) exchange with the grid.

For more information see also poster “Validation of a Energy Management Strategy for a BIPV System with a Vanadium Battery Demonstrator”.

Self Consumption Optimization Strategy

General Objective:
Study of grid interface in rooftop PV systems with energy storage.
The specific objective for this energy strategy is to maximize the consumption of locally produced PV power, hence minimizing the injection of power into the electrical grid.

Implementation:

For more information see also poster “Validation of a Energy Management Strategy for a BIPV System with a Vanadium Battery Demonstrator”.

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