

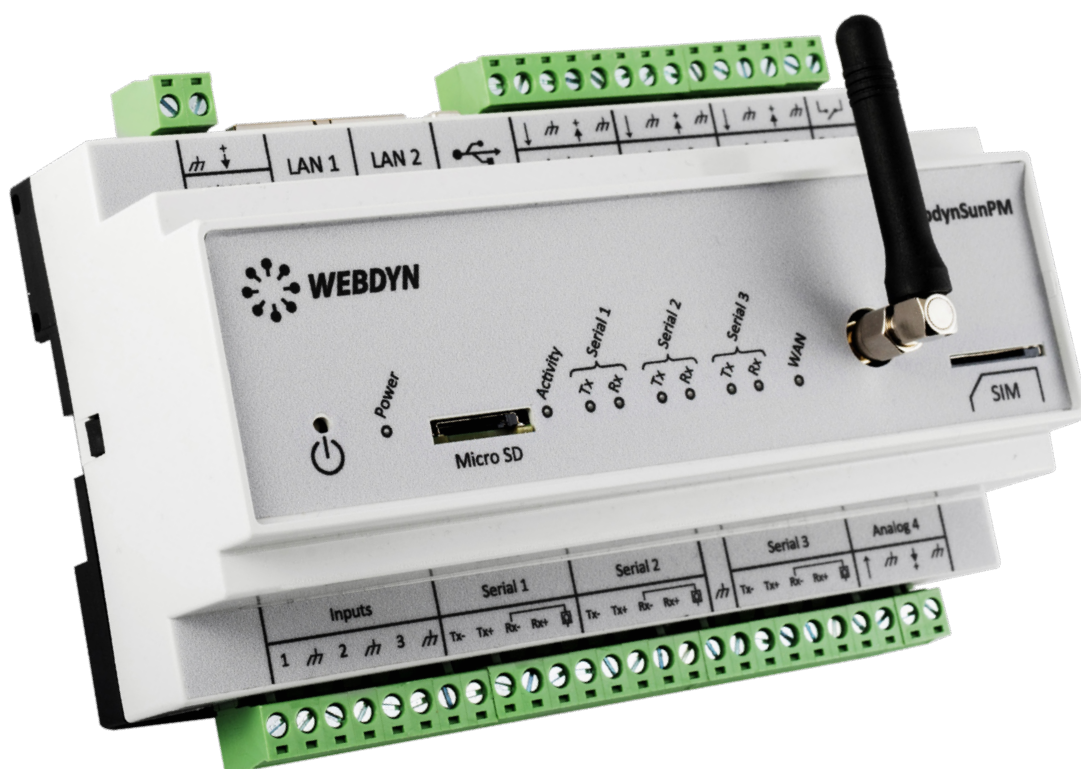
WEBDYN

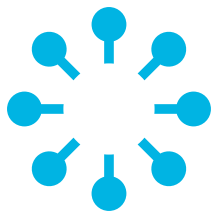
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MANAGEMENT OF A ZERO INJECTION SITE USING THE WEBDYNSunPM





WEBDYN

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MANAGEMENT OF A ZERO INJECTION
SITE USING THE WEBDYN**SUNPM**



INTRODUCTION

This application note describes how to configure and parameter the WebdynSunPM product in the specific case of a basic site zero injection.

EXPRESSION OF NEEDS

A zero injection site is one of which the renewable energy production must remain for local use. This energy cannot and must not be injected into the public energy grid and must be used by local electric installations.

The objective is therefore to be able to couple photovoltaic production depending on the energy consumption of an industrial site.

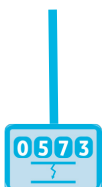
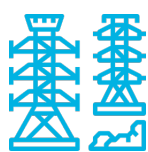
Synopsis

The WebdynSunPM product is used to couple renewable energy production depending on the site's actual energy consumption.

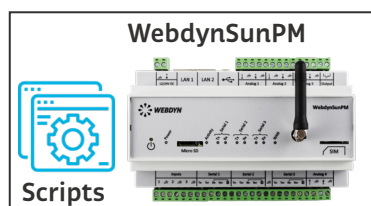
This coupling is local using an LUA scenario that:

- ⊗ Analyses site consumption as recorded by an electric meter.
- ⊗ Analyses energy production by querying the power inverters.
- ⊗ Reduces or increases this energy production depending on actual consumption.

Public Grid

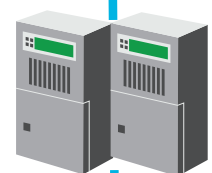
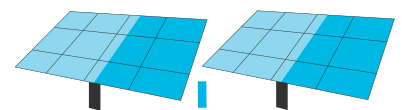


Drawn
power

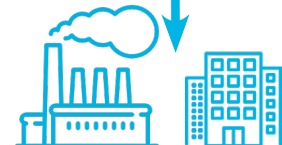


Injected power
.....
Power reduction

Photovoltaic network



Inverters



Consumed energy

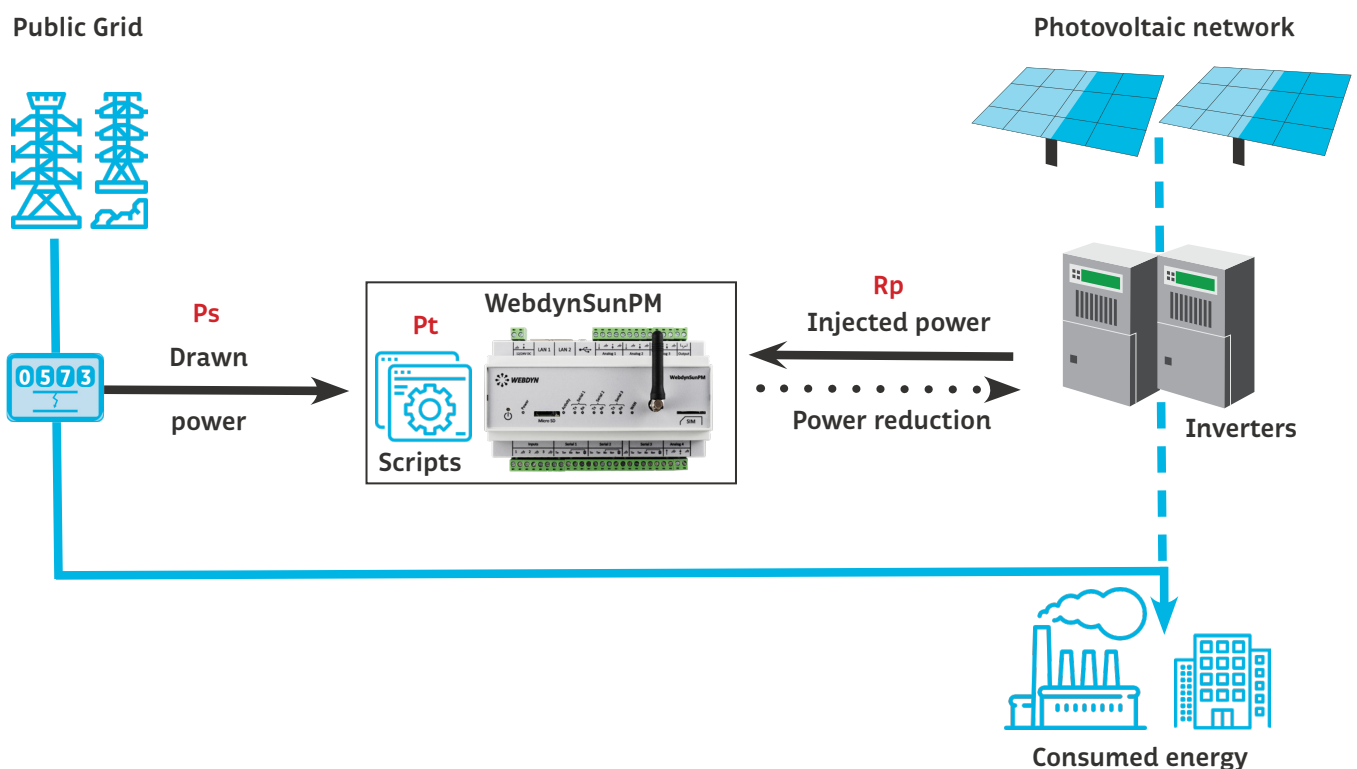
Power reduction factor calculation

The calculation of the power reduction coefficient is done according to the setpoint of the tolerance threshold of the drawn power configured in the scenario and the drawn power measured at the injection point.

- ⚙️ R_p = Power reduction (%)
- ⚙️ P_s = Drawn power from the public electrical grid (kW)
- ⚙️ P_t = Tolerance threshold of the drawn power (kW)

If the drawn power from the electrical network is greater than the predefined tolerance threshold, it is considered that the photovoltaic production is not sufficient: the production of the inverters is increased accordingly.

If the drawn power from the electrical network is less than the predefined tolerance threshold, it is considered that the photovoltaic production is too high: the production of the inverters is reduced accordingly.



DEVELOPMENT

Prerequisite

Inverter coupling using a LUA scenario depends on the static parameters and the measured values. Knowledge of the data below is therefore needed to be able to properly configure the scenario:

Parameters

Injected power tolerance threshold in kW authorised?

Manufacturer/type of meter used to measure the consumed power?

Number of inverters to couple?

Inverter specifications:

Max. injection power?

Inverter manufacturer and type/model?

Parameters - continued

Inverters bus topology:

Ethernet or serie?

Bus speed for series topology?

Serial port used and inverter distribution?

Meter manufacturer/type used to measure produced power?

Ideally, have a drawing of the installation featuring the specifications of each item of equipment.

Equipment configuration

All the equipment to be monitored must first be configured before creating the LUA scenario. This configuration can be created using the local HMI or remotely using the configuration files.

The variables the scenario needs to calculate the coupling need to be identified once the equipment has been added to the WebdynSunPM configuration:

- ⚙ Power taken from the public grid in kW. “totalPwrkWatt” tag

The variables the scenario needs to control the coupling need to be identified once the equipment has been added to the WebdynSunPM configuration:

- ⚙ Variable for power reduction control in kW for the inverters. “cmdPwrkWatt” tag.
- ⚙ Or variable for power reduction control in % for the inverters. “cmdPwrPercent” tag.
- ⚙ Variable to activate the inverter power reduction (depending on certain cases). “cmdPwrMode” tag.

This is done by associating tags/labels to each variable for each item of equipment using the HMI: