

## Checklist Fronius PV-Genset

Please fill in as accurate as possible

### Location

Location of the PV-Genset system (region, country, specific GPS coordinates, altitude):

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Is the planned system  **Off-grid** (remote), or  **Backup** (sometimes grid-tied)?

If Backup: how often/long does the system operate in backup situation

\_\_\_\_\_ hr/day      \_\_\_\_\_ days/week

Are there any local requirements (codes, standards, zero feed in) to fulfil?  Yes/  No

If yes, which: \_\_\_\_\_

### Sizing – Genset Data

Is it a  **Single PV-Genset** or  **Multi PV-Genset** system?

Are Multi PV-Genset started/stopped manually?

PV-Genset manufacturer/model: \_\_\_\_\_

*Please attach **datasheet of the Genset!***

**PV-Genset controller:** \_\_\_\_\_

Nominal Apparent Power of the PV-Genset(s) in kVA.

Genset A: \_\_\_\_\_ kVA,

Genset B: \_\_\_\_\_ kVA,

Genset C: \_\_\_\_\_ kVA

Nominal/Maximum Active Power of the PV-Genset(s) in kW.

Genset A: \_\_\_\_\_ / \_\_\_\_\_ kW,

Genset B: \_\_\_\_\_ / \_\_\_\_\_ kW,

Genset C: \_\_\_\_\_ / \_\_\_\_\_ kW

*Location*

Please attach a **load profile** for one year!

Please attach Average/Min/Max consumption (if not obvious from the load profile):

	Summer				Winter			
	Night	7-9	9-15	15-17	Night	7-9	9-15	15-17
Max								
Min								
Average								

Planned PV system size in kWp:

Min. \_\_\_\_\_ kWp.

Max. \_\_\_\_\_ kWp.

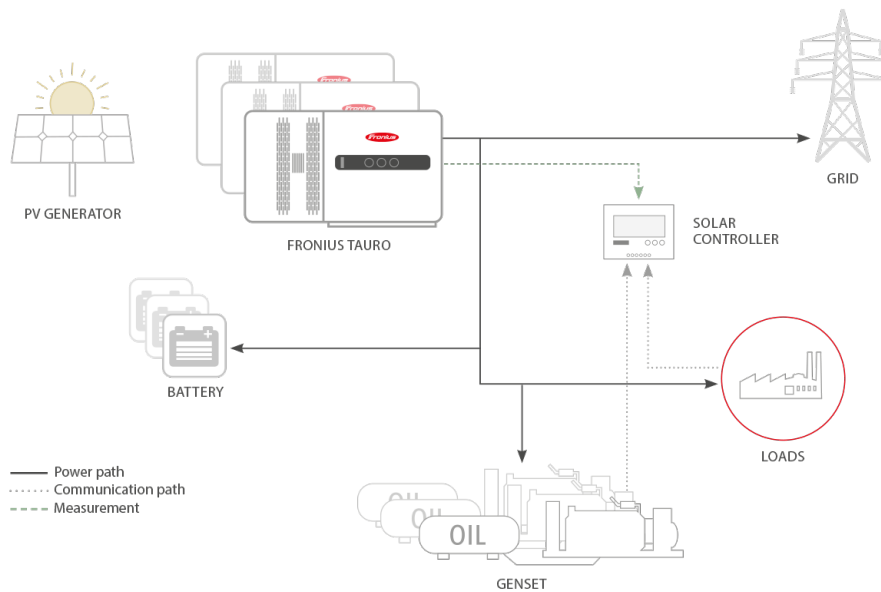
### *Grid voltage / frequency*

- Nominal grid frequency: \_\_\_\_\_ Hz
- Nominal grid **voltage** ( LV or  MV): \_\_\_\_\_ (k)V
- Please attach **schematic** of the (existing) system.

### *Economics*

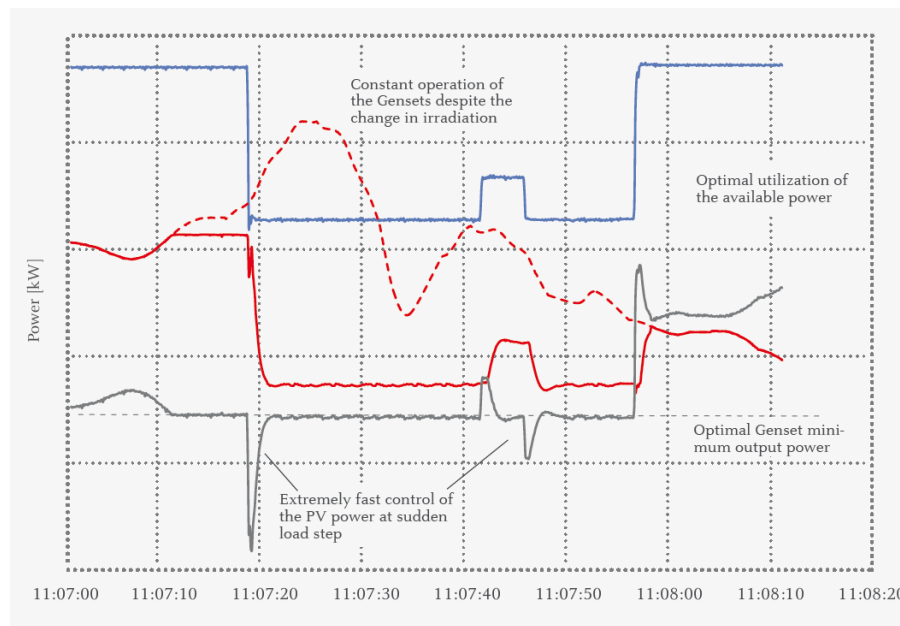
- Diesel price (delivered at site): \_\_\_\_\_ USD or EUR per liter
- or
- Electricity price from the Genset: \_\_\_\_\_ USD or EUR per kWh
  
- Real interest rate: \_\_\_\_\_% if available.
- (Equal to nominal interest rate \_\_\_% minus rate of inflation \_\_\_%)
  
- Amortisation period \_\_\_years,
  - 5 years       10 years       15 years       20 years.

## Schematic of the Fronius PV-Genset solution



## Considerations in designing a PV-Genset Solution

- In a typical configuration the Solar controller is controlling the system in a way that the PV-Genset is operating on at least 30% of its nominal power (configurable)
- The Solar controller is capable of adjusting the PV-power in a very fast way (depending on the communication chosen with a reaction time of <1sec and a time constant of <1sec).
- Nevertheless, in the extreme event of immediate disconnection of a load larger than the operating power of the PV-Genset (e.g. >30%) (see in Figure 2 at time 11:07:19) for a very short time reverse power into the PV-Genset is possible.



Typical PV-Gensets do not have any problem with this short time behaviour, but Fronius cannot guarantee this for all genset suppliers. If the PV-Genset has some kind of additional revers power protection and the disconnection of the PV-Genset shall be avoided the system designer has to take measures to protect the system form unwanted disconnections.