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ENERPARC

Case Study

WebdynSunPM Diesel Generator

DG-PV Management solution

Depending on the customer's needs, the main energy source can be the grid, the photovoltaic system or the generator set. The system can be connected to the grid or not. In all cases, these energy sources are used to complement each other. Whether the objective is to fill the gap created by a grid failure or to reduce energy costs (fuel or other), the photovoltaic system can supply the additional energy. Batteries can also be used to store excess energy for later use.

The objective is therefore to be able to regulate the injection of photovoltaic energy depending on the energy consumption of an industrial site and the use of a second energy source such as the electricity grid or generator sets.

Challenge

The customer's name is Enerparc Energy Private Limited, and they are one of the leading Solar Developers.

The DG-PV Management solution is successfully deployed by our customer and its technical details are as follows:

|Solar PV Rating is 1.5 MW| DG Rating & Nos. are 1500 kVA and 3 nos| MFMs of Schneider 6400NG make| Inverter makes are Solis and Sungrow with ratings of 100 kW and 250 kW| No. of Inverters are max 20| Server Type- FTP|

Logic is as follows, when we are working with 3 DG's; when 1st DG starts running, then minimum 30% of the DG capacity (30% of 1500kVA = 450kVA) is utilised by the loads, and the remaining power shall be catered by solar till its maximum. (If plant load is 1000kVA, 450kVA will be taken from DG and remaining from Solar, based on Irradiation). If the load increases beyond the DG's maximum rating (1500kVA), then additional DG will get added. Similarly, when 1st and 2nd DG both are working at the same time, then 30% of (DG1 + DG2 capacity i.e., 900kVA) will be utilized by load and remaining power shall be catered by solar. If all the 3 DG are working at the same time, then 30% of (DG1+DG2 + DG3) will be utilized by load and remaining power shall be catered by solar. Other Protocols like SFTP is used based on requirement and additional devices like DI, AI, DO, RS485 to TCP converters for additional RS485 ports are also used.

"According to Enerparc Energy Private Limited, the main objectives are to deliver economically viable solar energy solutions, to save environment by reducing diesel consumption, reduce OPEX and help our clients achieve their sustainability goals."

Webdyn Solution

The WebdynSunPM product is used to control renewable energy production depending on the site's

actual energy consumption and a second energy source.

Production control is local using an LUA scenario that:

- Analyses site consumption read from an electric meter.
- Analyses energy production by querying the power inverters.

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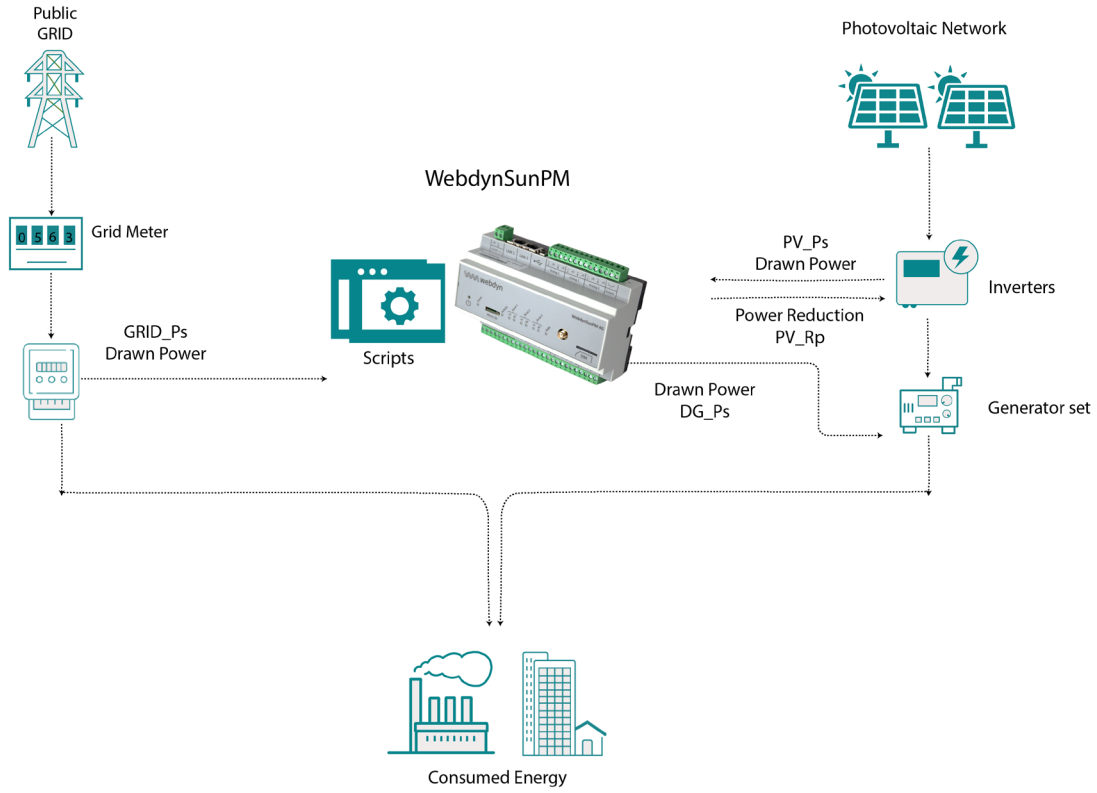
• Analyses energy production by querying the generator set energy meters.

• Reduces or increases this energy production depending on actual site consumptioncell phone or LTE-M network.



Benefits

- Usage of maximum green energy
- Avoids frequent DG tripping (with solar)
- Protect DG from excess solar power and maintains the spinning reserve of DG.
- Maintain spinning reserve at about 30% (when the load is less than solar power)
- Optimizes solar generation while running with DG.
- Monitoring solar, DG, and load parameters

Contact "gosolar@enerparc.in" for any business inquiries.