Solar PV for WWF office in Asuncion, Paraguay

WWF has an office in Asuncion, Paraguay. The office is connected to the grid, and there are very few power cuts.

Yearly electricity consumption is about 120,000 kWh. For the moment, legislation does not allow to inject electricity on the grid. However, this might be possible in the future.

Therefore, we would like to install a grid-connected PV system, without batteries, and with grid injection control (eg SMA inverter with sunny home manager, Fronius with Fronius smart meter).

Limiting factors for the project:

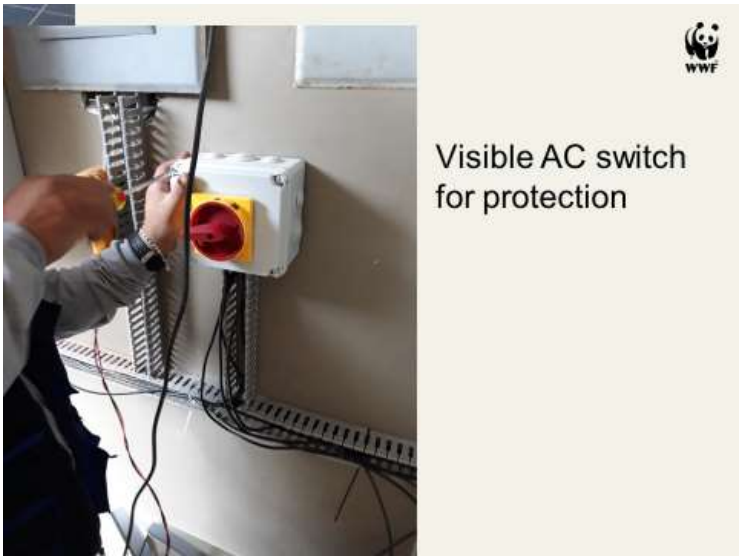
- Roof size will only allow for an installation of about 10kWp (to be checked)
- Instant consumption of the office during office hours varies between 10 and 30kW (red line in graph below indicates 10kW). Since injection on grid is not allowed, oversizing is not recommended

The installation will be connected to the internet via ethernet cable for remote control and monitoring.

Below are some more recommendations regarding the installation.

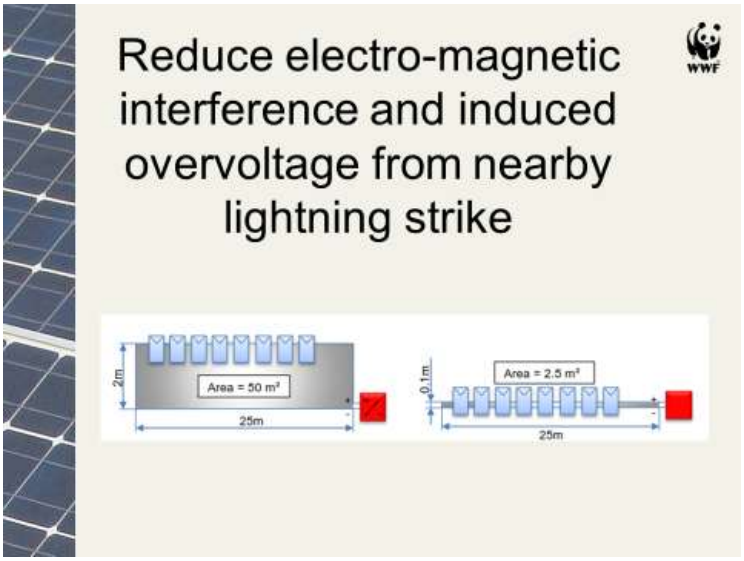
1) The system should be clearly labelled so as to enable ulterior interventions

2) A visible AC switch should be installed for emergency switch off



3) All solar cables should be protected so as to avoid any contact with solar irradiance or rain, animals etc., preferable with aluminium piping

4) The solar cabling should be arrange so as to avoid electro-magnetic interference and induced overvoltage from nearby lightning strikes



5) Testing and commissioning data should be documented (for each string: Isc, Uoc, Riso; for the inverter and arrays: Rpe/Rco)
6) Array structure, including bolts and clamps, should all be in the same material, aluminium.
7) Separate SPD (surge protection) for sure on DC side; and very likely on AC side.
8) PID-free certified modules