Stand Alone Solar Photo Voltaic (PV) for Electricity

In 2010, Nigeria had 0.015GW stand-alone solar PV installation. This figure is given as an approximate value which accounts for solar panels used by individuals and also government development projects which are basically for solar street lights, solar powered bore-holes and vaccine refrigeration in clinics. It is estimated that the solar potential in Nigeria ranges between 4.0kWh/m2/day to 6.5kWh/m2/day for an average of 5 hours every day.

Level 1

Level 1 assumes that solar PV's contribution remains 4GW which produces 7.36TWh by 2050.

Level 2

Level 2 assumes that solar PV capacity reaches 2GW in 2020 and 16GW by 2050. This should produce 29.4TWh with 21% capacity factor. At this level it is assumed that a portion of the supply will be integrated into the National grid system and will power about three states as it is anticipated that the country will have solar farms.

Level 3

Level 3 assumes that solar PV capacity reaches 30GW in 2050 thereby producing 55.19TWh. It is assumed that this figure will account for solar PV installed on rooftops in rural areas and more in urban areas which is estimated to multiply rapidly to accommodate the present demand for solar PV technology.

Level 4

Level 4 assumes that solar PV capacity reaches 60GW in 2050 by utilising 0.05% of Nigeria's land mass which should produce 110.38TWh. Level 4 assumes that more solar PV's will be used as stand-alone (dispersed)

5.5 kWp Solar PV Plant at Laje in Ondo State, Nigeria.