

Wind Power

In Nigeria, wind energy resources at 10m shows that some sites have wind regime between 1.0 to 5.1 m/s. The wind regimes are classified into four regimes; $> 4.0\text{m/s}$, $3.1 \leq 4.0\text{m/s}$, $2.1 \leq 3.0 \text{m/s}$ and $1.0 \leq 2.0 \text{m/s}$. Hence, Nigeria falls in the poor / moderate wind regime. The wind speeds in the country are generally weak in the South except for the coastal regions and offshore, which are windy. Currently there are wind power plant of few kW mainly for water system and pilot project.

Level 1

Level 1 assumes that 0.01GW of wind power is commissioned by 2015 and remain up to 2050. Which should produce 0.018TWh of electricity with 20% capacity factor.

Level 2

Level 2 assumes that there should be 1GW wind power plant by 2050 which should produce 1.75TWh of electricity with 20% capacity factor.

Level 3

Level 3 assumes 4GW capacity of wind power plant should be available by 2050 contributing 7.01TWh of electricity with 20% capacity factor.

Level 4

Level 4 assumes 14.7GW of wind power plant by 2050 which should produce 25.74TWh of electricity with 20% capacity factor.



5kW aero generator in Sayya Gidan Gada, Sokoto State, Nigeria

