

Electricity: Wind

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 an ongoing 10 MW grid pilot project.

Level 1

Level 1 assumes that 1.9 GW of wind power is achieved by 2050. Which should produce 3.33 TWh per year.

Level 2

Total installed capacity of 2.5 GW becomes available by 2050 which should produce 4.38 TWh per year.

Level 3

Installed capacity rises to 3.3 GW by 2050 contributing 5.78TWh per year.

Level 4

Installed capacity rises to 14.7GW by 2050 which should produce 25.74TWh per year.

Key Interaction

Short term storage helps balance supply and demand, reducing the generation capacity required to meet peaks. Since back up capacity is often fuelled by gas, this can reduce emissions.

Default Timing Start Year: 2025 End Year: 2050

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Sub-Lever	Units	2015	Level 1	Level 2	Level 3	Level 4
Wind Capacity	GW	0	1.9	2.5	3.3	14.7

