

HELICAL WIND TURBINE BASED HYBRID POWER GENERATION BOTH BY WIND/WATER

ABSTRACT

Wind Turbines extract energy from the ambient wind and convert it into electrical energy. They are mounted on roof top or tower where wind speeds are higher than those on ground. If wind turbines are installed in under the vehicles, they face wind speed equal to the vehicle speed which is higher than the ambient wind speed and hence produce more energy. As train runs on smooth and level rails, it is preferable to install wind turbines under the train of it compared to other transport vehicles which move on uneven surfaces. Most of the world's energy resources are from the sun's rays hitting earth. Some of that energy has been preserved as fossil energy; some is directly or indirectly usable; for example, via wind, hydro- or wave power. The term solar constant is the amount of incoming solar electromagnetic radiation per unit area, measured on the outer surface of Earth's atmosphere, in a plane perpendicular to the rays. The solar constant includes all types of solar radiation, not just visible light. It is measured by satellite to be roughly 1366 watts per square meter, though it fluctuates by about 6.9% during a year—from 1412 W/m² in early January to 1321 W/m² in early July, due to the Earth's varying distance from the sun, and by a few parts per thousand from day to day. For the whole Earth, with a cross section of 127,400,000 km², the total energy rate is 174 pet watts (1.740×10¹⁷ W), plus or minus 3.5%. This value is the total rate of solar energy received by the planet; about half, 89 PW, reaches the Earth's surface.

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