

Wind power generator set supporting equipment

Are all generators designed for wind turbine applications?

All generator types are specifically designed for wind turbine applications. Electrical performance of an individual generator is optimized in co-operation with the wind turbine manufacturer. This close co-operation ensures a superior generator design, with high electrical performance at full and partial load.

What are wind turbine generator technologies?

This chapter presents an overview of wind turbine generator technologies and compares their advantages and drawbacks used for wind energy utilization. Traditionally, DC machines, synchronous machines and squirrel-cage induction machines have been used for small scale power generation.

Is there a best wind turbine generator technology?

Despite continued research and development effort, however, there are still numerous technological, environmental and economic challenges in the wind power systems. In summary, there may not exist the best wind turbine generator technology to tick all the boxes.

What are the different types of wind turbine generators?

Other types of wind turbine generators have started to penetrate into the wind markets to a differing degree. The analysis suggests a trend moving from fixed-speed, geared and brushed generators towards variable-speed, gearless and brushless generator technologies while still reducing system weight, cost and failure rates.

Is direct drive a good choice for wind turbine generators?

Since wind turbine generators are operated with power electronic converters, direct drive topology can provide some flexibility in the voltage and power requirements of the machines. Nonetheless, a drawback of the direct drive is associated with the low operating speed of the turbine generator.

What makes a good wind turbine?

In competition on the wind energy market, one thing above all counts: lowest generation costs - Cost of Energy (CoE). And these, in turn, require highly efficient wind turbines that run smoothly and without disruption. Wind turbines with powerful, reliable components, seamlessly integrated and with optimum availability.

Rotor and stator support structures of significant size and mass are required to withstand the considerable loads that direct-drive wind turbine electrical generators face to maintain an air-gap clearance that is open and stable. With ...

A grid-connected wind turbine can reduce your consumption of utility-supplied electricity for lighting, appliances, electric heating and cooling, and vehicle charging. If the turbine cannot deliver the amount of



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energy you need, the ...

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