

# Wind power direct drive generator hoisting wind speed

How does a direct drive wind turbine work?

A direct-drive wind turbine's generator speed is equivalent to the rotor speed, because the rotor is connected directly to the generator. As the rotational generator speed is low, designers placed several magnetic poles in the generator to achieve the appropriate high output frequency.

What is a variable speed direct drive wind turbine?

This type of wind turbine is known as the variable speed direct drive wind turbine and was introduced to eliminate gearbox failure and transmission losses. The rotor is directly connected to the generator, implying that the generator speed is equivalent to the rotor speed.

Are direct-drive permanent magnet generators suitable for high-power wind turbines?

Direct-drive permanent magnet generators for high-power wind turbines: Benefits and limiting determinantes. IET Renewable Power Generations, 6 (1), 1-8 Two experts were interviewed and the literature reporting on the wind turbine drive trains was reviewed. A determinant is considered relevant if it is mentioned by an expert or in one of the papers.

Will direct drive wind turbines become the dominant technology?

However, other experts indicated that the direct drive technology will eventually become the dominant technology. They come up with three arguments. First, the costs for the offshore support structure for direct drive wind turbines is lower than for gearbox wind turbines due to overall lower weight.

Are direct drive wind turbines better than a gearbox wind turbine?

They come up with three arguments. First, the costs for the offshore support structure for direct drive wind turbines is lower than for gearbox wind turbines due to overall lower weight. Second, direct drive has more potential for further improvement.

What are the advantages and disadvantages of direct-drive turbines?

An advantage of direct-drive turbines is the high efficiency of synchronous permanent magnet generators. An important fact is that due to wind inconsistency, the turbines often operate at partial loads. The efficiency of the PM generator excels even in these conditions because it continues working nearly to nominal values.

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