Defeng semi-direct drive wind turbine

What is a direct drive wind turbine?

Because the direct-drive wind turbines do not have a gearbox, mechanical noise is reduced as well as fewer rotating components. Moreover, this type of wind turbine has a single main bearing for the rotor assembly and generator, which additionally reduces the number of moving parts, as well as the maintenance and repair costs.

What is a wind turbine drivetrain?

This paper presents the state-of-the-art technologies and development trends of wind turbine drivetrains - the system that converts kinetic energy of the wind to electrical energy- in different stages of their life cycle: design,manufacturing,installation,operation,lifetime extension,decommissioning and recycling.

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.

What is direct drive permanent magnet synchronous wind turbine?

With the continuous progress of power electronic technology and computer control technology,large-scale wind turbine can use the technology of direct driven permanent magnet wind turbines. Direct drive permanent magnet synchronous wind turbine is characterized by low speed and high torque requirements,,.

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 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.

Within all wind turbine direct-drive trains, the rotor and generator rotor planes of rotation are axially separated. Hubs support the rotor blades and transfer aerodynamic and ...

This paper presents the state-of-the-art technologies and development trends of wind turbine drivetrains - the energy conversion systems transferring the kinetic energy of the ...

Through this paper, following the classification of wind turbines in four main topologies based on their generators, different aspects of the two dominant and state of the art concepts of wind ...

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A semi-direct-drive wind turbine transmission chain and a gear box used thereby comprise a front box body (6), a rear box body (14), a main shaft (5) and a planet carrier (10), and also ...

The model has a rotor diameter of 260 metres and a swept area of 53,000 square metres, and can generate 72 GWh of electricity annually, enough to power around 36,000 households, according to the company.. The ...

This study reviews the state of the art of the drivetrain technology in the wind turbine industry and discusses future develop- ment trends. The focus is on conventional and widely used ...

China Haizhuang H256-16MW unit adopts the third generation semi direct drive line, which solves the technical problem of bottleneck restriction of the core component of ...

Considering the depletion of oil, coal, gas and other fossil energy, and the increasingly serious environmental pollution, all countries in the world are developing clean and renewable energy, such as wind energy, ...

Abstract-- The objective of this paper is to optimize direct drive permanent magnet synchronous generators for offshore direct drive wind turbines in order to reduce the cost of energy. A 6MW ...

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