Direct drive wind turbine dual wheel wind

What is a direct drive wind turbine generator?

A direct drive wind turbine converts rotor rotation to electrical power directly,without the use of a gear box. Traditional wind turbines use gearboxes to step up the rotational speed (about 100x) from the rotor to the generator,which makes electrical power. This article discusses direct drive wind turbine generators,including pros and cons.

What are the advantages of direct-drive wind turbines?

Direct-drive wind turbines have been implemented in offshore wind developments contributing to a wide range of advantages,such as overall mass reduction,simplification of the structure and compactness.

Why do direct drive turbines need a gearbox?

The high maintenance costfor gearboxes is one of the main motivations for direct drive turbines. Direct drive machines have no need for a gearbox; a special generator creates electrical power directly from the (low speed) rotor rotation. increased efficiency (no power lost in the gearbox,better efficiency at lower wind speeds).

Can generative Design Optimize multi-MW offshore wind turbine electrical generators?

The results achieved for the structure in question during the generative design process open the door to a distinct perspective of the optimization of multi-MW offshore wind turbine electrical generators as a wide range of structural configurations can be discovered and evaluated.

1. INTRODUCTION (HEADING 1) Permanent magnet direct drive type wind turbine is a multi-pole generator directly driven by the wind wheel shaft to generate electricity. Compared with ...

With the rapid expansion of offshore wind capacity worldwide, minimising operation and maintenance requirements is pivotal. Regarded as a low-maintenance alternative to conventional ...

Direct-drive wind turbines have been implemented in offshore wind developments contributing to a wide range of advantages, such as overall mass reduction, simplification of the ...

Continually improving performance and availability EWT"s highly qualified engineers are continuously working to optimize components and improve turbine designs. Experienced Operations ...

In this investigation, the direct-driven alternative to using traditional geared pow-ertrains is presented. A detailed analysis of the IEA 15 MW Offshore Reference Wind Turbine Electrical ...

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6. The Evolution of Direct Drive Technology The concept of direct drive wind turbines is not new. Early wind turbine designs often employed direct drive generators. However, the development of efficient ...

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1 Advantages of Direct Drive Wind Turbines Gearbox problems are responsible for many turbine failures. According to data col-lected by Germanischer Lloyd (GL), 26 % of turbine downtime ...

Abstract The object of research is a wind generator with counter-rotating blades. A special feature of this design is the presence of two wind wheels that rotate in opposite directions.

Employment of a specific technology in the conversion of wind energy to electrical power highly influences the cost and reliability of power generation. To help the selection of the best ...

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