

Wind turbine power transmission system





Overview

A wind turbine transmission system is described wherein mechanical power directly from the slow rotation of the shaft of a large wind turbine rotor is carried over to electrical power through a synchronous generator via the circulation of a high pressure gas running in a closed circuit. Which transmission system is used in wind turbine?

Normally, the mechanical transmission system (gear train) is used to transmit the power in wind turbine. But this transmission is not suitable in large scale power production. Currently, hydraulic power system has drawn an attention as a power transmission system in the wind turbine field.

What is power transmission in a wind turbine rotor?

The power transmission from the turbine rotor to the generator is an important and integral part of the wind turbine system. Generally, the power transmission unit is of two types, e.g., mechanical transmission system and hydrostatic power transmission system (HST).

What is a wind power system?

A wind power system integrates different engineering domains, i.e. aerodynamic, mechanical, hydraulic and electrical. The power transmission from the turbine rotor to the generator is an important and integral part of the wind turbine system.

What transmission medium did wind turbines use?

water was used as the power transmission medium (refer Fig. 4). Also, the working fluid (sea water) was through a heat exchanger as shown in Fig. 4 . In addition, some other literatures also used the HST system [5-7, 54-57] to transmit the power harnessed by wind turbines.



Wind turbine power transmission system



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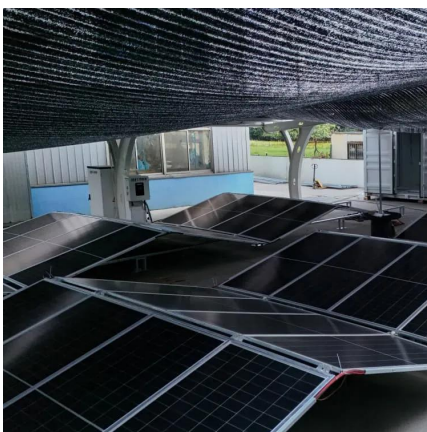
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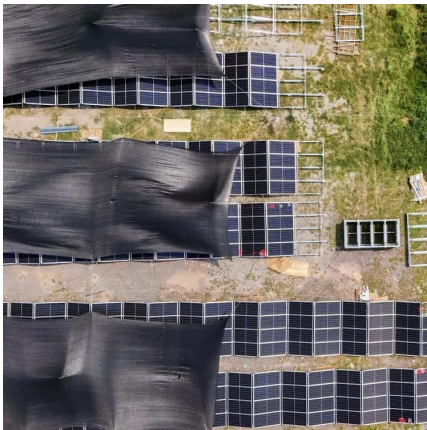


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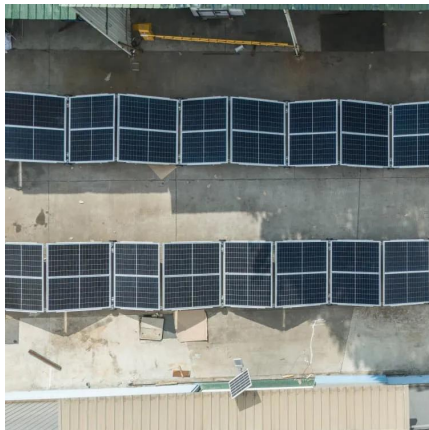
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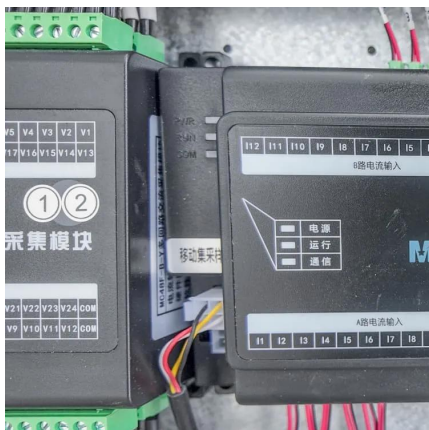


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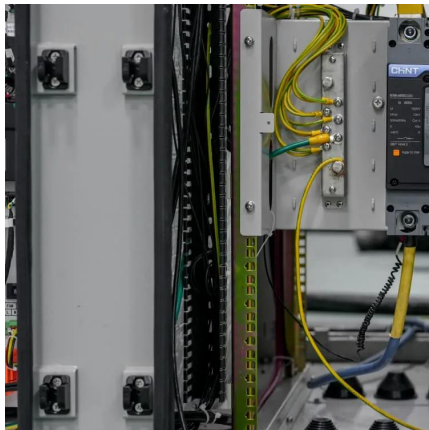
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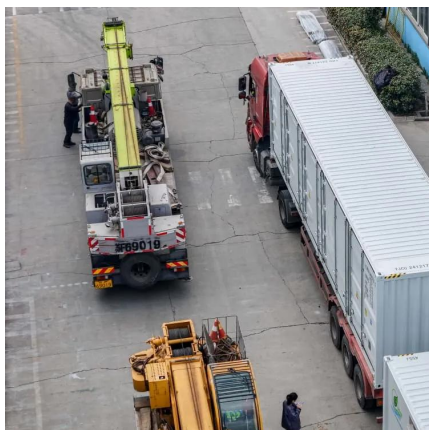


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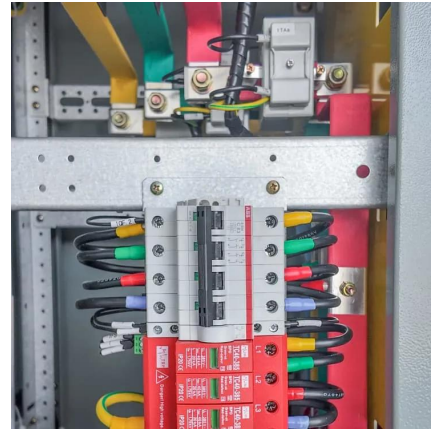
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