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Re-planning of wind power construction for communication base stations

Overview

A life-cycle cost model for offshore wind farm cluster grid-connection system planning is constructed to consider the project income, and the offshore public station location and capacity, transmission method, and high-voltage cable selection and path are optimized, which are solved by an improved single parent genetic algorithm and a topology repair strategy based on graph theory.Can wind energy be used to power mobile phone base stations?

Worldwide thousands of base stations provide relaying mobile phone signals. Every off-grid base station has a diesel generator up to 4 kW to provide electricity for the electronic equipment involved. The presentation will give attention to the requirements on using windenergy as an energy source for powering mobile phone base stations.

Can communication and power coordination planning improve communication quality of service?

Our study introduces a communications and power coordination planning (CPCP) model that encompasses both distributed energy resources and base stations to improve communication quality of service.

Does increasing wind power transmission capacity increase the cost of system construction?

Lowering the transmission capacity for wind power can reduce the cost of system construction, but it also increases the loss of abandoned wind power. Increasing the transmission capacity for wind power can boost income from wind power transmission, but it also raises the cost of system construction.

How to choose a transmission method for offshore wind farms?

The choice of transmission method is influenced by transmission distance and transmission capacity. The applicable transmission method for wind farms can be obtained by constructing a life-cycle cost model for the grid-connection system of offshore wind farms.

How to optimize the planning of offshore wind farm cluster grid-connection system?

(1) The method is able to optimize the overall planning of the offshore wind farm cluster grid-connection system, including the selection of the location of the offshore substation, the topology design of the high-voltage transmission line and the selection of the submarine cable, and the selection of the location of the onshore connection point.

How does project income affect the construction of wind farms?

Project income has become a crucial factor affecting the construction of wind farms. The construction of offshore wind farm grid-connection system can benefit from cost reduction and efficiency improvement through the concept of offshore public station construction and the availability of multiple transmission methods.

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