

What are the requirements for wind power in communication base stations



Overview

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.

Why do off-grid telecommunication base stations need generators?

As the incessant demand for wireless communication grows, off-grid telecommunication base station sites continue to be introduced around the globe. In rural or remote areas, where power from the grid is unavailable or unreliable, these cell sites require generator sets to provide power security as prime power or backup standby power.

How can ICT improve wind power integration?

The use of ICT in the modern wind power plants has also become the norm and offers numerous benefits in addressing the challenges of wind power integration. ICT can support the efficient scheduling of wind power generation and energy dispatch, and can be used in automation, protection, and even in reactive power control applications.

Why do wind turbines need ICT systems?

The ICT systems have to enable effective Operation and Maintenance (O&M) and seamless control of individual wind turbines and the WPP as a whole. Each plant or wind farm may be composed of many wind turbine units manufactured by different vendors.

What is the basic structure of a WPP network topology?

The basic structure of a WPP network topology implemented based on the IEC 61850 and IEC 61400-25 standards comprises three levels, including the

station, bay, and process levels .The connection of the two control devices, i.e. the local SCADA system and remote control centre, is implemented at the station level.

How to reduce ETE delay in wind power systems?

In this respect, the analysis of the network bandwidth is very important to minimize the amount of ETE delay. The implementation of a communication network architecture based on wireless or hybrid wired/wireless connection can lead to the lowest possible ETE delay in the future wind power systems.

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