PIENAAR ENERGY (PTY) LTD

# Wind power generation in parallel

## Overview

The work paper explores the possibility of wind power conversion systems developing by parallel coupling of main different types power AC generators such as induction generator and permanent magnet synchronous one in isolated grid. one gearbox coupled to a generator with a power converter). Here powertrains with single-input-multiple-output subsystems are analyzed with Markov tate space models in order to quantify any improvements in availability. A baseline powertrain's availability and that of different. This paper proposes a new series–parallel structure for an all-DC wind power generation system. The series end uses a DC/DC converter based on the Cuk circuit to solve the current consistency and power balancing problems of the series wind turbine through current control, whereas the parallel end. Therefore, a generator with constant frequency and constant voltage energy that can be emitted when the variable speed wind turbine is running at a variable speed must be used to realize the connection with the power grid.

## Wind power generation in parallel

### Design of a Series-Parallel All-DC Power Generation System Based ...

Such technology does not require bulky frequency transformers and can well solve the aforementioned problems of reactive currents and overvoltage. This paper proposes a new series-parallel structure ...

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### (PDF) Dynamics of Parallel Generator Operation in Wind Systems

The work paper explores the possibility of wind power conversion systems developing by parallel coupling of main different types power AC generators such as induction generator and permanent ...

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### Design of a Series-Parallel All-DC Power Generation System

The new series-parallel all-DC power generation system proposed in this paper is not only suitable for offshore large-capacity wind farms but also for onshore wind farms, which is conducive to ...


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## Design of a Parallel All-DC Wind Power System With Turbine-Side ...

Based on PSCAD/EMTDC, the simulation model of the parallel all-DC wind power system with turbine-side boost based on a new DC converter was established.

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## (PDF) Parallel Wind Turbine Powertrains and Their Design for High

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 wind to

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## Optimisation of topology, rating, control and insulation coordination

This paper presents a systematic design method for a large 1 GW series-parallel DC windfarm that simultaneously considers all the challenges of determining the optimal generator ...

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## Performance of Wind Energy Conversion System with Parallel ...

In this paper, a parallel connected Wind Turbine generation units based on variable speed directly coupled Permanent Magnet Synchronous Generator (Type-4) system is proposed.

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## Parallel wind turbine powertrains and their design for high

Table V: Input data for different parallel powertrain configurations: (a) Generator and power converter in parallel (b) Parallel generator only (c) Parallel power converter only

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## Variable Speed Wind Turbine Drives Doubly-Fed Asynchronous ...

The following figure shows the connection between the variable-speed constant-frequency power generation system composed of variable-pitch variable-speed wind turbines and ...

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