Doubly-fed generator for wind turbines

What is a doubly fed generator for wind turbine?

Doubly fed generator for wind turbine. Doubly fed electrical generators are similar to AC electrical generators, but have additional features which allow them to run at speeds slightly above or below their natural synchronous speed. This is useful for large variable speed wind turbines, because wind speed can change suddenly.

What is doubly fed induction generator?

One of the generators that are widely used in MW scales wind turbines is the doubly fed induction. This paper presents control method which is called the grid voltage-oriented vector control method...2013 4th IEEE International Symposium on Power...Doubly Fed Induction Generator (DFIG) is widely used for wind turbine electricity generation.

Is double fed induction generator suitable for grid-connected wind energy conversion system?

This paper presents the control strategies and performance analysis of doubly fed induction generator (DFIG) for grid-connected wind energy conversion system (WECS). The wind power produces environmentally sustainable electricity and helps to meet national energy demand as the amounts of non-renewable resources are declining.

What is a doubly fed generator?

Instead of the usual field winding fed with DC,and an armature winding where the generated electricity comes out,there are two three-phase windings,one stationary and one rotating,both separately connected to equipment outside the generator. Thus,the term doubly fed is used for this kind of machines.

What is advanced control of doubly fed induction generator for wind power systems?

Advanced Control of Doubly Fed Induction Generator for Wind Power Systems is an ideal book for graduate students studying renewable energy and power electronics as well as for research and development engineers working with wind power converters.

What is a doubly fed induction generator (DFIG)?

The doubly fed induction generator (DFIG) system presented in this article offers many advantages to reduce cost and has the potential to be built economically at power levels above 1.5 MW, e.g., for off-shore applications.

2016. The doubly-fed induction generator driven by a Wind Turbine has recently received a great attention from the industrial and scientific communities, due to easily produces a fixed frequency voltage from the stator windings when the ...

This thesis deals with the analysis, modeling, and control of the doubly-fed induc-tion machine used as a wind

turbine generator. The energy e ciency of wind turbine systems equipped with ...

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Advanced control of doubly fed induction generator for wind power systems. John Wiley & Sons; 2018. Google Scholar . 18. Karakasis, N., Tsioumas, E., Jabbour, N., et al . ...

The rotor-circuit (RC) of the doubly fed induction generator-based wind turbine (DFIG-WT) consists of various equipment in which faulty conditions must be immediately ...

The doubly fed induction generator (DFIG) distinguishes itself among wind turbine generators 3, 4 due to its adoption of independent winding excitations and low cost. Consequently, the ...

This review paper provides a survey of wind turbine control system practices and controller trends specific to doubly fed-induction generator. This work will be helpful in ...

A 9 MW wind farm consisting of six 1.5 MW wind turbines connected to a 25 kV distribution system exports power to a 120 kV grid through a 30 km, 25 kV feeder. Wind turbines using a doubly-fed induction generator (DFIG) consist of a ...

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generator connection methods for a 2 MW wind turbine. A simple analysis of the rotor voltage for the doubly-fed connection method is included as this demonstrates the dominant components ...

Doubly fed induction generator using back-to-back PWM converters and its application to variable speed wind-energy generation A.Pena J.C.Clare G.M.Asher Indexing terms: Doubly fed ...

It is now recognized that many large wind farms will employ doubly fed induction generator (DFIG) variable speed wind turbines. A number of such wind farms are already in operation and more ...

This article shows that adjustable speed generators for wind turbines are necessary when output power becomes higher than 1 MW. The doubly fed induction generator (DFIG) system presented in this ...