

# Generator parameters of various wind power manufacturers

How do I choose the best wind turbine generator designs?

To determine the appropriate generator designs for onshore and offshore wind turbines, different types of wind turbine generators that have been studied in the literature are discussed in this paper, with the criteria based on the speed range, cost, weight, size, and power quality at the grid connection.

How many types of wind turbine generators are there?

There are basically two types of wind turbine generators on the market, namely stall-controlled and pitch-controlled generators. In this research, the pitch-controlled generator is studied. Fig. 1 shows typical power output versus wind speed.

Should a turbine generator be installed at a wind site?

For any kind of power curve model, the wire-frame graph shows that a turbine generator would have a greater performance if it was installed at a wind site that has larger scale and shape parameters. However, some exceptions do exist.

What parameters are included in a generator design?

The present model does not include the main shaft design as a user input, but the shaft radius, generator speed, rated power, generator torque, and target design efficiency are user inputs. The other dimensions were calculated from these given parameters.

Are variable electromotive-force generators suitable for onshore wind turbines?

To expand the operational range of onshore wind turbines, another variable electromotive-force generator (VEG) design with an adjustable overlap between the rotor and stator is investigated [70, 71]; wind turbines with the VEG feature can be employed in areas having a low annual mean wind speed with high fluctuations throughout a year.

Why do wind turbines have different generators?

In the last few decades, wind turbines with different generators have been developed to increase the maximum power capture, minimize the cost, and expand the use of the wind turbines in both onshore and offshore applications.

The HTS field current densities of the HTS wind turbine generator operating at 68 and 40 K are almost 2 and 5.5 times that at 77 K, respectively. The field winding weights of the ...

In [27], control parameters of wind turbines are identified using recursive least squares to accomplish the maximum power point track [28], the generator electrical ...

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In this method, the commercial P-V curves are estimated by estimating their power coefficients ( $C_P$ ), which can be done using some manufacturing parameters such as: blade length of the wind turbine, tip speed ...

To optimize the generator design for the proposed objectives, we chose 16 free parameters. The other dimensions were calculated from the given parameters. The key design inputs for the ...

magnet generators for direct-drive wind turbine generator applications has increased significantly. The significant fluctuations in NdFeB magnet prices has encouraged designers to optimise ...

Another parameter that strongly influences energy production from wind turbines is air density. The power available from the wind (i.e. the pressure exerted on wind turbine blades) correlates ...

the parameter settings of the wind turbine generators (WTGs) ... of the WPP. Validating the dynamic model of a WPP is required to be performed periodically. This is because the control ...

2) To accurately assess the performance of wind turbine power generation, this paper normalizes the actual power curves of wind turbines and iteratively derives the zero ...

The capacity factor is the main factor in assessing the efficiency of wind Turbine. This paper presents a procedure to find the optimal wind turbine for five different locations in ...

The calculation accuracy of the new energy power system is affected by the veracity of new energy model, of which control parameters in the wind turbine controller from ...

Different parameters can affect on the performance of wind turbines which are: the wind speed air density, air pressure, temperature and the length of blades for wind generators. The ...

As an active participant in these various industry groups, EPRI has been working closely with these industry groups and several of the wind turbine generator manufacturers, as well as with ...

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