

# K 100 2.5 MW



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The K100 2.5MW wind turbine generator is a variable speed, pitch regulated machine with a distributed drive train. The electrical concept is based on a full conversion system with an electrically excited synchronous generator. Matured component design with demonstrated reliability will be the basis for a proven and economic design with high availability for sustainable investment.

Best possible component reliability which is crucial for the stable operation of wind turbine generator system is the integral element of the design of this wind turbine platform.

## COMPONENTS

### Rotor

The machine is equipped with an up-wind orientated rotor. The rotor blades will be made of glass fibre reinforced plastics (GFRP).

Power regulation will be realised by a full-span pitch system based on AC-technology with 3 independent drives for high system safety.

### Drive train

The mechanical drive train is realized in proven 3-point arrangement (distributed drive train). The main bearing is a double row spherical roller bearing, taking the entire rotor thrust. The gearbox is a multiple stage system with planetary stages and one conventional spur gear stage.

An oil filtering and an efficient cooling system provide proper oil conditioning under operation. The system can optionally be equipped with a condition monitoring system for monitoring of main bearing, gearbox and generator condition.

A brake on the high speed side off the gearbox is used only below a rotational speed of 500 rpm, in order to bring the rotor to a complete stop if needed.

### Electrical system

An electrically excited synchronous generator is combined with a full size IGBT-converter.

The converter system will be based in the tower bottom to allow easy access by the service personnel.

The generator as well as the converter is water-cooled allowing a high ambient operation temperature environment.

The transformer location will be based on local requirements, also in the tower base or alternatively in an additional transformer housing close to the foundation.

### Nacelle and yaw system

Active yawing is realised via a ball bearing slewing ring with outside gearing that is fixed to the main frame and the tower top flange. Four yaw drives, consisting of high transmission planetary stages with AC-drives and motor brakes, are used for the alignment of the nacelle to the main wind direction.

This system is combined with a brake disc and hydraulically activated callipers for handling the torque on the machine head due to sudden change in wind direction.

### Tower and foundation

The machine will be available with different hub heights. Standard towers will be available for 85 m and 100 m hub height.

The foundation will be designed as flat and pile foundation depending on site-specific soil conditions. The tower connection will be realized by means of a foundation ring, embedded in reinforced concrete connecting the tower through an L-Flange.

### ABOUT KENERSYS

KENERSYS was founded as RSB Consult in 2003 as a design & consulting company for leading wind power and component manufacturers. As a wind turbine manufacturer today our considerable experience is based upon more than 400 accumulated years of expert knowledge of our engineers at the KENERSYS CENTER OF INNOVATION in Münster, Germany.

The technological competency ensures quality and reliability for our customers and provides KENERSYS with a sound basis for expanding its position in the wind turbine market.