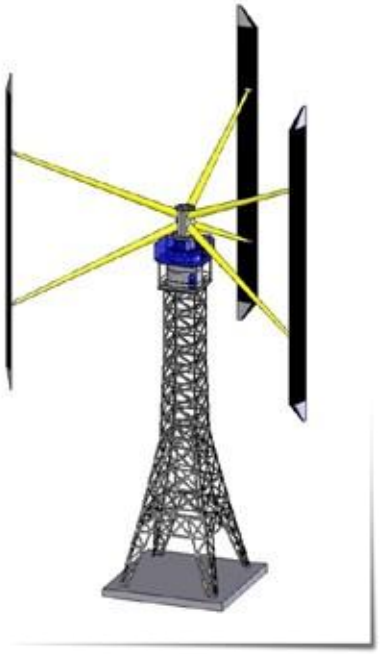
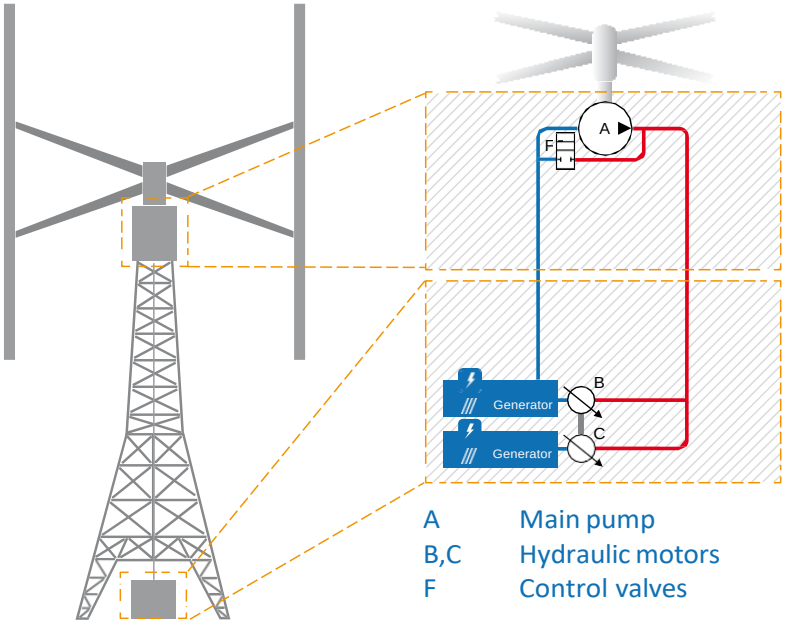
German SUSTAINABLES

German Sustainables vertical axis wind turbine
Type GS-1000 NT - rated output 1,0 MW

Technical data

Overall height:	74,0 m
Rotor diameter:	42,0 m
Length of propulsion wings:	39,5 m
Breadth of wing profile:	2,6 m
Nominal performance:	1.000 kW @ 13,5 m/s @19,5 rpm
Cut-in wind speed:	3,5 m/s
Cut-off wind speed:	28,0 m/s
Survival wind speed:	70,0 m/s
Maximum rotation per Minute:	25 rpm (ultimate)
Tower:	Steel, lattice frame construction, maintenance free fasteners, about 85,0 tons
Propulsion wings:	Aerospace aluminum Control of turbine rpm: through patented spoiler system Emergency brake system: aero-dynamically by spoiler system





A Main pump
B,C Hydraulic motors
F Control valves

Generators, with hydrostatic drive

Output:
2 x 500 kW, 690 V
synchronous w/. external excitation
& stand-alone capacity

Length, mass of generator:
0,75 m x 1,75 m @1,4 tons / each

Grid connection:
directly as generator is controlled by hydrostatic drive to within 1%/rpm

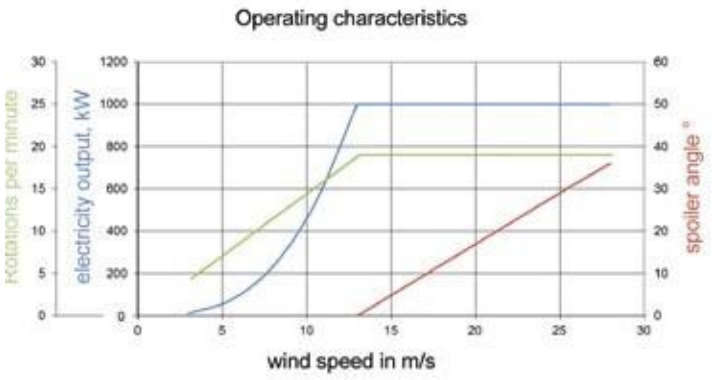
Control of turbine:
Microprocessor control system, including fault detection, condition monitoring, data analysis and reporting capacity

All turbine-, as well as hydraulic- and generator assemblies are housed in a theft- and vandalism- safe container. The hermetic sealed housing will exclude any contaminant (sand, dust, water, insects, etc.) to enter the protected sphere.

Perfect German engineering.

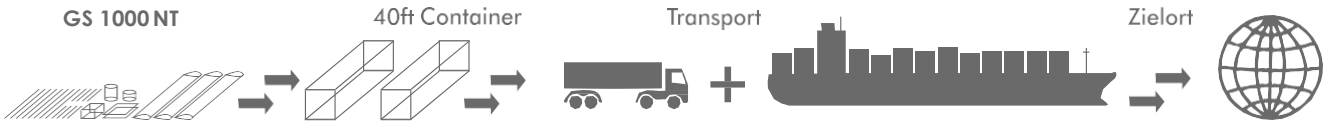
German SUSTAINABLES

State-of-the-art wind power from Germany.



The *operating characteristics* graph demonstrates how the spoilers control rpm and energy production under high winds.

Transportation, another benefit of the GS 1000 NT



All parts fit into 40ft Standard Containers and make the transport easy and low cost.

German Sustainables GmbH

colling@german-sustainables.com
Cell: +49 - 172-451-4626

brandt@german-sutainables.com
Cell: +49-1512-701-7553