Advantages: What makes the GF 1000 so lucrative

Vertical-axis technology (Gale Force)

Simple rotor construction

Circumferential velocity is constant along the whole length of the rotors. The rotor blades thus have uniform depth, a uniform pitch and a uniform profile. This allows for cost-efficient production with classic, straightforward Aluminium construction methods. The licensed production of system parts is possible worldwide.

Simple, inexpensive transport of component parts

Due to the simple construction of the rotors, the whole system can be manufactured in sections and transported to its destination in standard 40 ft. containers. This way, our turbines can also be installed and run in areas with poor infrastructure.

Efficient energy production in changeable winds

The system is not sensitive to changes in wind direction, so no complex machinery is needed to keep the rotors facing the wind. Especially In low winds, which generally change direction frequently, output is up to 7 per cent greater.

Perfect for geological problem zones

Vertical axis technology allows the use of multi-leg towers. This simplifies the lateral support of the system, increases stability and decreases the mass of foundations considerably. Our turbines can even by erected in difficult geological conditions (e.g. sandy or rocky ground, or in areas with seismic activity).

Horizontal axis technology

Rotor construction

Significant speed differences between the hub and tips of rotor blades require blades to be thicker, to have a greater angle of attack and a different profile at the hub end. This results in a geometrically complex rotor blade form and a composite construction. This requires a lot of expertise and expensive production facilities (autoclaves).

Special transport for rotor blades

The complex construction of the rotor blades means that they are manufactured in one piece and are difficult to dissemble. For a comparable turbine, the blades are some 22m long and their transportation is complicated and expensive, requiring an established infrastructure.

Lower performance

The rotor must be turned to face the wind. This requires complicated controls and reaction times are slow, therefore conventional turbines are only pointed towards the prevailing wind, and lateral gusts hinder performance.

Large, heavy foundations

The rotor must be able to turn about the whole tower. Therefore only a narrow tower is suitable, which requires a significant foundation to direct lateral forces into the ground.

Convincing advantages advertise themselves.

efficient

Vertical axis technology (Gale Force)

More economical, more robust, smaller generators

Our turbines are equipped with a new and exclusive generator technology. We use a specially constructed, gearless, permanent magnet generator, which guarantees high efficiency and reliability along with low service and maintenance requirements.

Extremely low service costs

Service costs and downtime are considerably less, since all parts of the turbine are readily accessible. There is no complex machinery to keep the rotors facing the wind.

Hardly any threat to the environment

At the same wind speed, our turbines rotate slower than horizontal turbines (max. 25 rotations/min). This results in lower rotor blade speeds (up to max 180 km/h), which in turn leads to a reduced visual signature and reduced bird deaths. The risk of "ice throw" is also much reduced.

Almost silent operation

Lower noise emissions permit installation closer to residential areas.

Individual colour configurations

The aluminium construction allows turbines to be coloured to fit into their surroundings.

Existing rotor blades, new products

The modular construction guarantees tailoring to customer needs. With the existing rotor segments, a whole new product family can be conceived.

Horizontal axis technology

Generators lead to higher costs

Comparable generators are sizeable and heavy. They are frequently more susceptible to service interruption than Gale Force Generators and due to their manufacture in large factory halls, are very expensive to service. Installation is also very expensive, as special cranes are needed to heave them into position.

Complicated, expensive service

Mechanical parts are higher off the ground and difficult to access. The systems needed to keep the rotors facing the wind and maintain the right angle of attack are highly complicated.

Bird deaths and other risks

Due to the rotational speed of the rotor blades, of up to 330 km/h, irritating flickering shadows are thrown and a great danger for birds is created. Risk of ice throw is also considerable.

Noise pollution

The high rotor speeds often result in annoying whistling or whooshing noise.

Turbines must be white

To withstand higher UV and temperature exposure, rotor blades must be white.

New product classes only possible with new rotors

The development of turbines in different performance classes requires the development of new rotor blades

Our arguments are purely technical.