



NEXTGEN NRG

Company Profile

The wind power technology team of the NRG Group has used a new way of thinking to overcome the breeze power generation technology since 2003. During the period of hundreds of trials, it finally succeeded in developing the true breeze wind turbine in 2013. The new blade of research and invention can ingeniously transform the resistance during operation into a booster wind, so that the blade can be started at a very low wind speed, and the leaves are moved, and the blades are rotated.

The non-resistive vertical axis blades developed by our company have broken through the performance barrier that has not been able to break through since the advent of this type of wind turbine in 1924. From the resistance type breakthrough to the boost type, it has subverted the technical level in the industry.



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Scenery complementary streetlamps can not only save limited power generation resources efficiently, but also play a social environmental protection and energy saving aspect. Under the general direction of actively promoting new energy and environmental protection around the world, the wind-solar hybrid power generation system is a major development direction for social energy conservation and environmental protection in the future.

Performance highlights: soft wind start, light wind, breeze power generation, automatic air boost, high efficiency power generation, long life, maintenance free. With "five anti-" (rust, corrosion, moisture, water, sand)

Our advantages: soft wind can start 0.5m / s, light wind can generate electricity 2.0m / s, wind can reach full load power generation 7.0m /s. The technical level is leading the industry.



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Scenery complementary streetlight solution

- **Wind turbine 100w: What is the concept of 100w?**
- Answer: 100 is equal to 0.1kw. The concept of 1kw is that the generator can send 1 degree of electricity per hour when it reaches full load. 100w is equal to 0.1kw, that is, 0.1 degree of electricity per hour, 10 hours. Power. The 100w motor is only suitable for monitoring and lighting systems. The average streetlight of 100w power is 0.5 kWh per night.
- **S-type vertical axis fan: What are the other commonly used fans? What are the advantages compared with commonly used fans?**
- A: The mainstream wind turbines in the general market are two types: the vertical axis and the horizontal axis.

First, the generator is different: the vertical axis generator generally uses a non-core permanent disk motor or an outer rotor motor, the starting torque is small, the breeze can be started, which is quite suitable for use in cities or low wind speed regions such as southern China; Shaft generators generally use iron core generators with low cost, and the starting torque is often large, which is not suitable for low wind speeds such as urban roads and southern China.



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Second, the structure of the wind blade is different: the vertical axis wind turbine is a vertical structure with universal wind, regardless of the direction of the wind, keeps rotating in the same direction, better utilization of wind energy; and horizontal axis wind turbine There is a tail specially designed to adjust the wind direction of the wind turbine. Whenever the wind comes, the wind direction of the wind turbine must first be adjusted. This not only wastes wind energy, but also the horizontal wind turbine and the flange supporting the motor. It is also necessary to install a transmission bearing, which has more transmissions, which will cause mechanical fatigue, which will cause the fan to easily break or fall off.

Third, the vertical shaft power generation efficiency is higher than the horizontal type under the same wind speed conditions, especially in low wind speed areas;

Fourth, in high wind speed regions, vertical axis wind turbines are more safe and stable than horizontal ones; in addition, a large number of cases at home and abroad have proved that horizontal wind turbines often do not rotate in urban areas, and high wind speeds in the north and northwest. In the area, wind turbines are often prone to breakage and falling off, which may cause dangerous accidents such as pedestrians and vehicles.



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V. Wind energy utilization rate The China Aerodynamics Research and Development Center has conducted wind tunnel experiments on horizontal axis wind turbines. The measured utilization rate is about 23%-29%. Experiments conducted by the China Aerodynamics Research and Development Center show that the wind energy utilization rate of the vertical axis is above 40%. In addition, in the actual environment, the wind direction is constantly changing. The windward surface of the horizontal axis wind wheel cannot always face the wind, which causes "wind loss", while the vertical axis wind wheel does not have this problem, so it is considered. After the wind loss, the wind energy utilization of the vertical axis wind wheel completely exceeds the horizontal axis wind wheel.

According to various factors, vertical axis wind turbines are the development direction of wind power in the future. Since horizontal axis fans have been produced and developed in China for nearly 20 years, the development and production of vertical shafts is also the time in recent years, so The misunderstanding of its advantages will gradually become popular as the horizontal axis.

- **What is a rare earth permanent magnet generator?**

answer: Rare earth permanent magnet The motor is a new type of permanent magnet motor that appeared in the early 1970s due to the high magnetic energy product and high hardness of rare earth permanent magnets. Coercivity(especially high internal coercivity), the rare earth permanent magnet motor has a series of advantages such as small size, light weight, high efficiency and good characteristics.



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Since the rare earth permanent magnet material has excellent magnetic properties, it does not require additional energy after magnetization to establish a strong permanent magnetic field, and the rare earth permanent magnet motor made by replacing the electric excitation field of the conventional motor is not only efficient, but also The structure is simple, the operation is reliable, and the volume is small and the weight is light. It can achieve high performance (such as special high efficiency, high speed, and high response speed) that cannot be compared with traditional electric excitation motors, and can also be made into special motors that can meet specific operational requirements, such as elevator traction motors, automotive special motors, etc. .

The combination of rare earth permanent magnet motors with power electronics technology and microcomputer control technology has improved the performance of motors and transmission systems to a new level. Therefore, improving the performance and level of the supporting technical equipment is an important development direction for the motor industry to adjust the industrial structure.



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○ Starting wind speed 0.2-0.5m/s: What is the concept and what level?

A: We compare the performance of the top ten companies in the industry to the performance of the same product.

There are dozens of manufacturers of small wind turbines in China. We have selected the top 10 manufacturers with certain visibility in China to compare their technical performance. Among them, Guangzhou Hongying New Energy Co., Ltd. and Yangzhou Shenzhou Wind Turbine Co., Ltd. The highest. Some of the following manufacturers have product performance parameters introduced in the website, and some need to ask the other business personnel for product performance parameters.



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1. Guangzhou Hongying Energy Technology Co., Ltd. Website: <http://www.hyenergy.com.cn/Chinese/>

Reference product: 400w wind turbine (horizontal axis) starting wind speed 2.0m / s rated speed 12m / s

1000w wind turbine (horizontal axis) starts wind speed 2.0m/s rated speed 12m/s

2. Yangzhou Shenzhou Wind Power Co., Ltd. Website: <http://www.china-swtgs.com/>

Reference product: 100W wind-solar complementary street light (vertical axis) starting wind speed 3m / s rated wind speed 13m / s

1000W wind turbine (horizontal axis) start custom 2.5m / s rated wind speed 12m / s

3. Shenzhen Taima Fengguang Energy Technology Co., Ltd. Website: <http://www.typmar.com/>

Reference products: 300W wind-solar complementary street light (vertical axis) Starting wind speed 1.3m/s Rated wind speed 12m/s

1000W wind turbine (vertical axis) starts wind speed 1.5m/s rated wind speed 13m/s

4. Wuxi Naier Wind Power Technology Development Co., Ltd. Website: <http://www.fdjskf.com/>

Reference product: 100W wind-solar complementary street light (horizontal axis) starting wind speed 2m / s rated wind speed 11m / s

800W wind turbine (horizontal axis) Starting wind speed 2m/s Rated wind speed 12.5m/s

5. Ningbo Fengshen Wind Power Technology Co., Ltd. Website: <http://www.winpower.cc/>



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Reference product: 300W wind-solar complementary street light (horizontal axis) starting wind speed 1.5m / s rated wind speed 12m / s

1000W wind turbine (horizontal axis) starts wind speed 3m/s rated wind speed 12m/s

1000W wind turbine (vertical axis) starts wind speed 2m/s rated wind speed 11m/s

6. Guangzhou Zhongke Hengyuan Energy Technology Co., Ltd. Website: <http://www.zkenergy.com/>

Reference product: 100W wind-solar complementary street light (horizontal axis) starting wind speed 2m / s rated wind speed 11m / s

1000W wind turbine (horizontal axis) starting wind speed 2.5m/s rated wind speed 12m/s

7. Nanjing Europower Electric Transmission Co., Ltd. website <http://www.china-oulu.com/flfdj/43.html>

Reference product: 200w wind turbine (horizontal axis) starting wind speed 2m / s rated speed 12m / s

1000w wind turbine (horizontal axis) starts wind speed 2.5M/S rated speed 10m/s

8. Shenzhen Green Power Technology Co., Ltd. Website: <http://www.szldk.com/>

Reference product: 100W wind turbine (horizontal axis) starting wind speed 3m / s rated speed 12m / s

200W wind turbine (vertical axis) starting wind speed 1m / s rated to 13m / s

1000w wind turbine (horizontal axis) starts wind speed 3m/s rated speed 12.5m/s

9. Zhuhai Hongfeng Wind Energy Technology Co., Ltd. Website: <http://cn.hopefulenergy.com/>

Reference product: 200w wind turbine (vertical axis) starting wind speed 3m / s rated speed 12m / s

1000w wind turbine (vertical axis) starts wind speed 3m/s rated speed 12m/s



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1000w wind turbine (horizontal axis) starts wind speed 3m/s rated speed 12m/s

10. Guangzhou Xinbao trace wind turbine website: <http://shop1401156731779.1688.com/>

Reference product: 200W wind-solar complementary street light (vertical axis) starting wind speed 1.5m / s rated wind speed 12m / s

400W wind turbine (vertical axis) Starting wind speed 2m/s Rated wind speed 12m/s

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Reference product: 100W wind-solar complementary street light (vertical axis) starting wind speed 0.5m / s rated wind speed 7.0m / s

300W wind turbine (vertical axis) starting wind speed 0.5m / s rated wind speed 7.0m / s

600w wind-solar complementary street light (vertical axis) starts wind speed 0.5m/s rated wind speed 7.0m/s

1000w wind turbine (vertical axis) starting wind speed 1.0m / s rated wind speed 8.0m / s



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For the concept of wind speed, please refer to the wind speed comparison table below.

风力等级与风速对照表					
风级	名称	风速（米）*	陆地物象	海面波浪	浪高（米）
0	无风	0.0-0.2	烟直上	平静	0
1	软风	0.3-1.5	烟示风向	微波峰无飞沫	0.1
2	轻风	1.6-3.3	感觉有风	小波峰未破碎	0.2
3	微风	3.4-5.4	旌旗展开	小波峰顶破裂	0.6
4	和风	5.5-7.9	吹起尘土	小浪白沫波峰	1
5	劲风	8.0-10.7	小树摇摆	中浪折沫峰群	2
6	强风	10.8-13.8	电线有声	大浪到个飞沫	3
7	疾风	13.9-17.1	步行困难	破峰白沫成条	4
8	大风	17.2-20.7	折毁树枝	浪长高有浪花	5.5
9	烈风	20.8-24.4	小损房屋	浪峰倒卷	7
10	狂风	24.5-28.4	拔起树木	海浪翻滚咆哮	9
11	暴风	28.5-32.6	损毁普遍	波峰全呈飞沫	11.5
12	飓风	32.7-	摧毁巨大	海浪滔天	14
*注：本表所列风速是指平地上离地10米处的风速值					

Our company's fan performance is far ahead of the industry. The popular point is that as long as the hair is moving, the fan of our company will turn. When the fan of our company rotates, the fans of other companies can only stop. As long as the leaves move, our company's motor will start to generate electricity. When the company's wind turbines generate electricity, other companies' fans have just turned. This gap in technology leadership is unobstructed.



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- **Rated wind speed 7.0m/s: What is the concept and what level?**

A: When the wind speed is 7m/s per second, that is, when the wind is 4th grade, the rated power of the motor can be reached.

Then, under this wind speed condition, other products in the same industry can only reach half of the power generated by the motor.

Moreover, in most cities across the country, the annual average wind speed is only 3-4m/s. At this wind speed, most manufacturers of wind turbines can only be in a situation where they can rotate but cannot generate electricity. The tourism project has caused a huge market loss.

Then our company's wind turbines can achieve half of their own power generation under this low wind speed condition, which is beyond the hope of the entire industry.



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- **Normal operation for 10 consecutive rainy days: What is the level in the industry?**

A: The number of quality rainy days given by the same peer companies is about 3-4 days. Even if it can reach 7 consecutive rainy days, it is required to install a large-capacity battery, and it can be achieved when the battery is fully charged. According to the actual case of our company, in the actual situation of Nike (China) Logistics Park in Taicang City, Jiangsu Province, we have continued to illuminate after 13 consecutive rainy days. In the industry, this is almost no similar product. Possible thing. We did it! When the rainy days come, the solar panels can't effectively generate electricity. We can only rely on wind turbines to maintain power generation. If there is no reliable and efficient wind turbine system, then it is impossible to continue to keep the streetlights from normal lighting.