



## Superior wind turbine technology for the home

### Providing Sustainable Energy

With the inevitable onset of global carbon drastically effecting our environment, coupled with recent record setting prices of oil, it has become crucial for North Americans to investigate new and reliable energy sources to help compensate for these changes.

Northwind Power is here to deliver this technology to North Americans in an efficient and cost effective manner.

Through technological advancements, Northwind Power has been able to increase efficiencies of their turbine, produce usable power at lower wind speeds, drastically lower maintenance costs and improve reliability.

Furthermore, this has all been done at a price point which is leading the market in an effort to bring affordable alternative energy to residential, commercial and industrial customers.

**Price** – Our turbines operate using a technology that is not only innovative but has reduced the price point on our systems to ensure a faster return on investment to the end user.

**Robust** – State of the art wind systems equipped with rugged generators ensure that turbines operate in even the harshest of conditions.

**Installation** – The form factor design of our generators allows for installation ease, thereby minimizing up-front costs and minimizing your environmental footprint.

**Specifications** – With the lowest cut-in speed in the industry, electricity is produced sooner and more efficiently.

**Maintenance** – With our AFPM generator, cogging problems are completely eliminated thereby minimizing down time and reducing maintenance costs over the life of the system.



### Northwind Power

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### Comparison Chart

Type	Axial Flux Permanent Magnet	Radial Flux Permanent Magnet
Structure	Permanent Magnet - Rotor (Outside) Coil - Stator (Center)	Permanent Magnet - Rotor (Inside) Coil- Stator (Outside)
Efficiency	Up to 95%	Approx 80%
Torque	Low Torque (Suitable for Wind Turbine)	Stronger than A.F.P.M (Suitable for Motor)
Cogging	NO	YES

## System includes:

- ✦ Blade assembly
- ✦ Generator
- ✦ Slip-ring
- ✦ Interface plate
- ✦ Inverter (stand alone or grid tie)
- ✦ Electronic brake
- ✦ Wind interface box

# Wind power for the home and business

**i3Power**  
WIND TURBINE

**3kW**

The i3Power turbine is designed for easy setup and assembly by our dealers and is suitable for both residential and light commercial applications.

A versatile system in that its design allows for operation both in applications with access to grid power and in applications where grid power is unavailable.

## AFPM Generator Technology and How it Works

Where traditional Radial Flux Permanent Magnets (RFPM) orient the magnetic flux outward from the shaft of the turbine, the Axial Flux Permanent Magnet (AFPM) technology works by orienting the magnetic flux along the axis of the turbine shaft.

In our AFPM generators, a coil is wrapped around a specially designed disc at the centre axis. Magnetic discs then rotate on the sides of the coiled disc and generate electricity, consistent with Faraday's Law. This kind of power generating technology is therefore ideal for wind power generation because its initial operation torque (cut-in speed) is lower than the current Radial Flux Permanent Magnet (RFPM) method.

AFPM power generation is classified into two configurations, the inner type and outer type. In the inner type configuration, only the magnetic disk rotates while the generator housing remains fixed. In the outer type configuration, the whole generator body rotates by fixing the magnetic disk to the body.



Parameter	3.2kW
Rated Power	2.4W-3.2kW
Output Grid Voltage	110,220V/50,60H
Alternator	Axial Flux Permanent Magnet (AFPM) technology
Cut-in Speed	5.6 mph (2.5m/s)
Rated Speed	26.8 mph (12m/s)
Cut-Out Speed	29 mph (13m/s)
Rotor Diameter	11.2 ft. (3.35m)
Direction of Rotation	Clockwise Downwind
Blades	3-T6 Aluminium
Expected blade life	Life (without the possibility of delamination)
Braking System	Electronic with update programming control
Warranty	5 years
Wind turbine life expectancy	30 years

**i3Power 3.2kW Wind Generator**

