

PROVEN

E N E R G Y



PROVEN ENERGY

Energy *THAT DOES NOT COST* the EARTH

Proven Energy are passionate about delivering reliable, sustainable energy through our award winning range of wind turbines.



The high performance Proven Turbine is the result of 25 years of innovative research and development, and has become an international market leader, renowned for quality and durability. Key to our success is the unique design of the Proven blade, which adapts to the wind, optimising performance and safety even in the strongest winds.

With over 800 installations worldwide, the Proven Turbine delivers affordable energy security to a wide range of applications. Proven Energy work with Corporate bodies, Government agencies, Local Authorities, Community groups and Householders to provide sustainable energy solutions. Installing a Proven Turbine system will cut fuel consumption and reduce carbon emissions. We hope it will make you as passionate about Green Energy as we are.



The Proven 2.5 has been powering lights at this remote station for 13 years



Proven 6kW outperforms Solar PV in the heat of Saudi Arabia



Proven Special Build Turbines are designed to withstand -60°C



Winner of Channel 4 'People's Choice'
Building of the Year Award,
Sainsbury's, Greenwich

PROVEN *Reliability*

Providing robust, low maintenance electricity generation, Proven Energy's internationally patented turbine has undergone rigorous testing at sites exposed to extreme conditions. Successfully installed in diverse climates, Proven Turbines are generating electricity in the extreme cold of the Arctic Circle and the desert heat of Saudi Arabia.

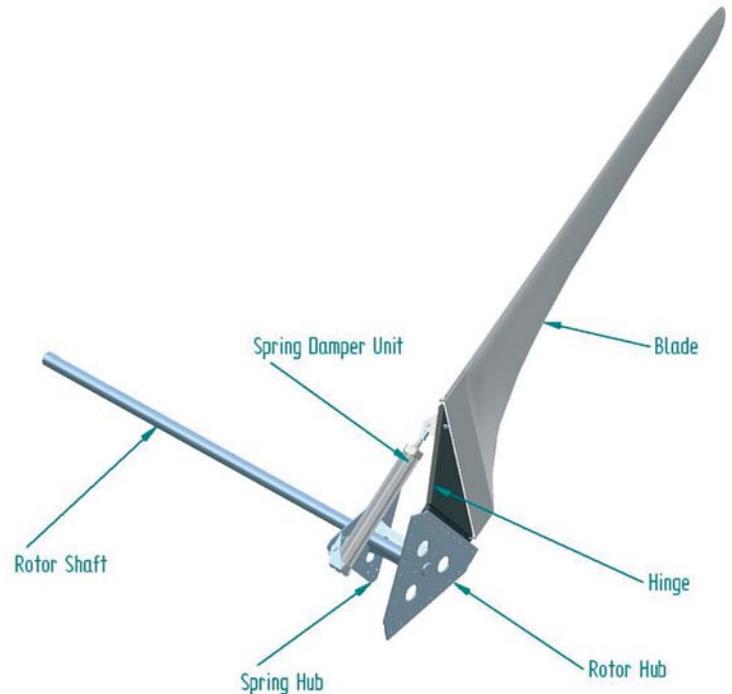
Offering reliable energy generation for a wide range of clients, customers include Telecommunications (Orange, BT), Retail (Sainsbury's), Utilities (Network Rail), Oil companies (BP, Shell) as well as individual households, architects and Local Authorities.

DESIGN & Performance

The patented Proven Flexible Blade System enables the turbine to generate power in light or strong winds. The unique system, a combination of innovative design and the latest techniques in advanced composite technology, allows the blades to bend and flex.

Sustained performance maximises your investment

As the wind gets stronger, the blades twist to reduce their aerodynamic efficiency. This allows the Proven Turbine to keep a high output even in the fiercest storms, unlike many turbines which need to stop producing to protect themselves in high wind speeds. The blades will also regulate their speed, preventing damage, should there be a disconnection of load from the turbine, due to a power cut or electrical fault.



QUOTE "We experienced a super typhoon with recorded top speeds of more than 60m/s (135 mph). The Proven WT2500 at Taku high school, which is mounted on top of the school got the typhoon straight ahead and survived while still running."
Mr Hartmut Hansson **Hantec Ltd.** Japan (**Proven Energy Distributor**).

LOW NOISE & *low maintenance*

Designed to minimise noise and maintenance the Proven turbine has a direct drive generator, which operates without a gearbox.

The generator load is continually monitored to keep blades rotating at a low speed, whilst optimising power output. Proven Turbines probably have one of the lowest blade tip speeds of modern small turbines, minimising sound.

"The Proven doesn't roar away but swishes gently. Most of the time it is inaudible because of noises generated by the wind blowing." Tim Cotter Energy Advisory Officer Falkland Islands Development Corporation.

"The amazing thing was that the wind blowing past the buildings made more noise than the turbine.... a mere 100 feet away." Rick Solinsky, Proven Energy Customer, USA.

The result is that noise from the turbine is reduced to the swish of the blades turning in the wind, virtually unnoticeable compared with background sound. Arrange a visit to an existing turbine to hear for yourself. (Details of Visitor sites can be found on our website).

USER *friendly*

Proven designed controllers run the system automatically and display power output from the turbine, without the need for you to have specialist skills. The power connectors and turbine brake are easily accessible at the base of the mast. On installation you will receive an easy to follow user guide, which will tell you all about your turbine. Annual maintenance checks, which can be carried out by a local distributor, are recommended for optimum performance.



Proven 6kW, Gambia



Taku High School, Japan. Roofmounted



PRODUCTS

Proven Energy produce a series of 3 turbines to offer sustainable energy solutions to a wide range of applications. With many years' experience, we value the importance of intelligent site selection and can help you choose the right system for your needs. Proven Energy, and our distributors, offer a complete system service, from site assessment and system design to supply, installation and maintenance.

Proven 2.5

Generates 2.5kW, and is a similar height to a telegraph pole. The Proven 2.5 can make a substantial contribution to the power required by electrical appliances in a standard 3 bedroom house (excluding heating). The robust 2.5 is also ideal for small lighting systems (Network Rail Stations, Sainsbury's) and offshore power (Shell North Sea Oil Platforms).



Proven 6

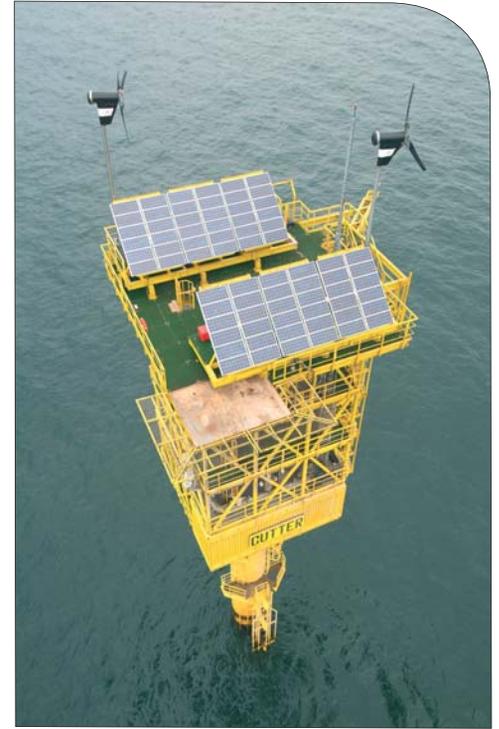
Produces 6kW of power, suited to a wide range of clients. The Proven 6 will supply electricity to a standard 4 – 6 bedroom house (excluding heating), with the potential to sell excess electricity back to the national grid. Schools are using the Proven 6 to generate electricity as well as educate their students, and multiple turbines can be used to power offices or retail units (BP Service Stations).

Proven 15

Available from Spring 2007, our largest model will produce 15kW. The Proven 15 will supply a 6 – 10 bedroom house, with the potential to sell excess electricity back to the National Grid, or supply a group of smaller houses. The Proven 15 is also ideal for commercial applications such as agriculture, larger telecoms towers, small industrial units and mini wind farms.

Proven 600

The Proven 600 is our most compact turbine. Producing 600W it is ideally suited to generating reliable power for unmanned sites. For further information on this product please contact your local Proven Energy Distributor.



Proven 2.5 powering unmanned North Sea Gas Platforms

*Turbines generate the electricity used to produce your turbine,
Wardhead Park, Proven Head Office*



Special Solutions

Special solutions call for special products.

Proven Energy work with leading architects and designers to install turbine systems for sustainable housing, local authority projects, industrial units, offices and schools. Each system is designed to your individual requirements, incorporating controllers, delivery and installation.

Grants towards installation are available for householders, community organisations, schools, the public sector and businesses.

Generating electricity from a wind turbine contributes to reductions in CO2 Emissions and Climate Change Levy Charges.

Proven 600, Japan



6kW, 1.5m at a Primary School in Cumbernauld

SYSTEMS & Applications

All Proven Turbines are available in three standard systems, which manage how the electricity produced is used.

1) Grid Connect : The electricity produced is fed directly into your fuse box or distribution board, providing power to your premises. Any surplus electricity produced can be exported to the National Grid, and sold to an electricity provider. Convenience and the opportunity to sell excess electricity have made this the most popular system.

2) Battery Charging : Energy produced by the turbine is stored in a large battery, to provide a power supply. This is most beneficial in remote locations which are not connected to the National Grid, or rely on a diesel / oil generator. Installing a turbine can reduce fuel consumption by up to 95%.

3) Direct Heating : Energy produced by the turbine is directed to hot water tanks, storage heaters or under-floor heating, rather than providing electricity to feed into your power supply.

Whether you are interested in reducing domestic electricity bills, powering a telecoms site on the top of a hill, or generating green electricity to power your business Proven Energy can work with you to find a sustainable energy solution, that fits your needs.

Want To Know More?

For more information, including costs for example systems, Case Studies and Technical Fact Sheets, or to find details of your local dealer, please visit www.provenenergy.com



From left to right Proven 2.5kW on 6.5m tower; Proven 6kW on 9m tower, 6ft tall man and Proven 15kW on 15m tower



Technical Specification Sheet



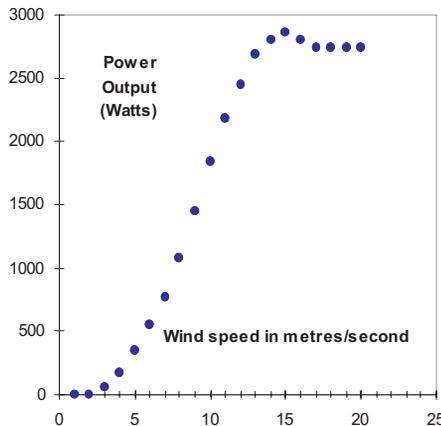
Proven Patented Furling

In winds of above 12m/s or 25mph, the Proven's blades twist to limit power in response to high rpm

Low Speed Equals Durability

Marine Build Quality

All machines are manufactured with galvanised steel, stainless steel & plastic components



MODEL	Proven 2.5 (2.5kW)
Cut In (m/s) ¹	2.5
Cut Out m/s)	None
Survival m/s)	70
Rated (m/s)	12
Rotor Type	Downwind, Self Regulating
No. of Blades	3
Blade Material	Polypropylene
Rotor Diameter(m)	3.5
Generator Type	Brushless, Direct Drive, Permanent Magnet
Battery charging	24 or 48V DC
Grid connect with	
<i>Windy Boy Inverter</i>	230Vac 50Hz or 240Vac 60Hz
Direct Heating	240Vac
Rated RPM	300
Annual Output ²	2,500-5,000 kWh
Head Weight (kg)	190
Mast Type	Tilt-up, tapered, self-supporting, no guy wires (Taller guyed towers also available on request)
Hub Height (m)	6.5 or 11
WT Found (m)	1.6x1.6x1 or 2.5x2.5x1
Winch Found (m)	0.65x0.65x0.65 or 1x1x1
Tower Weight (kg)	241 or 445
Mechanical Brake	Yes
Noise ³ @ 5m/s	40 dBA
Noise @ 20m/s	60 dBA
Rotor Thrust (kN)	5
Sample of commercial customers	British Telecom Scottish Youth Hostel Association British Rail Irish Lighthouse Authority UK Lighthouse Authority T-mobile Orange Shell Exploration Saudi Aramco

¹ metre/second = 2.24 miles per hour=3.6kph

² Output range is quoted to cover typical average wind speeds (annual). Lighter wind sites with typical 4.5m/s will produce lower end of range. Higher wind speed sites e.g. 6.5m/s average will produce upper end of range.

³ All readings taken with an ATP SL-25 dBA meter at the base of the tower at a height of 1.5m.

* A car passing 20m away @ approx 40 mph is 70-80dBA

Technical Specification Sheet



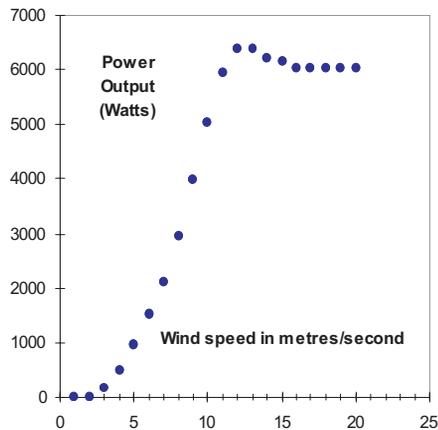
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MODEL

Proven 6 (6kW)

Cut In (m/s)¹

2.5

Cut Out m/s

None

Survival m/s

70

Rated (m/s)

12

Rotor Type

Downwind, Self Regulating

No. of Blades

3

Blade Material

Glassthermoplastic Composite

Rotor Diameter(m)

5,5

Generator Type

Brushless, Direct Drive,

Permanent Magnet

Battery charging

48V DC

Grid connect with

Windy Boy Inverter

230Vac 50Hz or 240 Vac 60Hz

Direct Heating

ac

Rated RPM

200

Annual Output²

6,000-12,000 kWh

Head Weight (kg)

600

Mast Type

Tilt-up, tapered, self-supporting,
no guy wires (Taller guyed towers
also available on request)

Hub Height (m)

9 or 15

WT Found (m)

2.5x2.5x1 or 3x3x1.2

Winch Found (m)

1x1x1 or 1.5x1.5x1

Tower Weight (kg)

360 or 656

Mechanical Brake

Yes

Noise³ @ 5m/s

45 dBA

Noise @ 20m/s

65 dBA

Rotor Thrust (kN)

10

Sample of

commercial customers

British Telecom

Scottish Youth Hostel Association

British Rail

Irish Lighthouse Authority

UK Lighthouse Authority

T-mobile

Orange

Shell Exploration

Saudi Aramco

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* A car passing 20m away @ approx 40 mph is 70-80dBA

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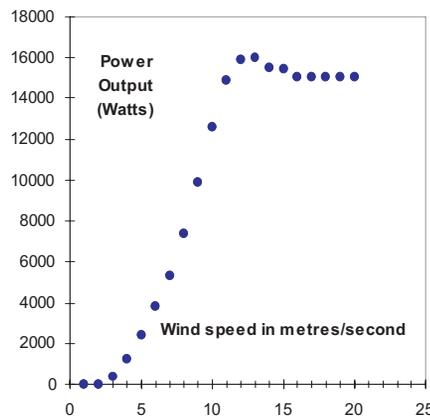
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Marine Build Quality

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MODEL	Proven 15 (15kW)
Cut In (m/s) ¹	2.5
Cut Out m/s)	None
Survival m/s)	70
Rated (m/s)	12
Rotor Type	Downwind, Self Regulating
No. of Blades	3
Blade Material	Glassthermoplastic Composite
Rotor Diameter(m)	9
Generator Type	Brushless, Direct Drive, Permanent Magnet
Battery charging	48V DC
Grid connect with	
<i>Windy Boy Inverter</i>	230Vac 50Hz or 240 Vac 60Hz
Direct Heating	240V ac
Rated RPM	150
Annual Output ²	15,000-30,000 kWh
Head Weight (kg)	1100
Mast Type	Tilt-up, tapered, self-supporting, no guy wires (Taller guyed towers also available on request)
Hub Height (m)	15 or 25
WT Found (m)	3.7x3.7x1.2 or 5x5x2
Winch Found (m)	1.5x1.5x1.2
	(no anchor foundation for 25m)
Tower Weight (kg)	1478 or 2794
Mechanical Brake	Yes
Noise ³ @ 5m/s	48 dBA
Noise @ 20m/s	65 dBA
Rotor Thrust (kN)	26
Sample of commercial customers	British Telecom Scottish Youth Hostel Association British Rail Irish Lighthouse Authority UK Lighthouse Authority T-mobile Orange Shell Exploration Saudi Aramco

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