REF 4

Gaia-Wind Energy

Gaia-Wind develops and manufactures small and efficient wind turbines for supplying electricity to properties such as private houses, farms, offices, companies and swimming pools. With 150 wind turbines already installed, Gaia-Wind has more than 1,000 years of operational experience. From our establishments in Århus, Denmark and Glasgow, Scotland, we can supply you with *'your own wind turbine'*, which in turn will provide you with reliable, abundant and clean energy.

Stuart Goodale

It doesn't have to be so difficult - only four months after making the decision, Stuart Goodale could inaugurate his own household wind turbine. The two-bladed Gaia-Wind turbine stands 18 metres high up to the nameplate, and when the blade points up to the sky its tip stands 25 metres above the ground.

Wind energy for a cleaner environment

News items appear on an almost daily basis, highlighting how CO_2 emissions cause climate change, and how this can affect the environment. Generating electricity with wind turbines significantly reduces CO_2 emissions. The electricity from a Gaia-Wind turbine (typically 30,000 kWh per year) not only delivers clean electricity for everyday use, but the surplus of clean energy compensates for the carbon footprint created by heating, cars, air travel and other carbon emissions through the use of fuel-based energy. A single Gaia-Wind 11 kW turbine will bring the carbon footprint of a four-person household back to zero.

Gaia-Wind
YOUR OWN WIND TURBINE

Key Component Parameters

Twin Blade Rotor	glass fibre, 13m diameter, swept area 133m², mounted on TEETER hub, fixed rotation speed 56 rpm
Gearbox	two stage, gear ratio 18:1, low noise
Generator	11kW, 3 phase, 400V@50Hz (marine grade)
Towers	lattice: 15m 18m monopole: 18m, 27m (hot dip galvanised steel)
Component Weights	nacelle and rotor 900 kg 15m lattice tower 1,556 kg 18m lattice tower 1,955 kg 18m monopole tower 2,511 kg 27m monopole tower 5,275 kg
Standard Presentation	towers: dull grey (galvanised), blade and nacelle cover: grey-white(RAL 9002), reflection free

Operational Parameters

Cut in wind speed (adjustable)
standard setting, 3.5 m/s (5.6 mph)
Shut down wind speed (adjustable)
standard setting, 25 m/s (56 mph)
IEC Turbine class
Conforms to IEC 61400 Class III (suitable for sites with an annual average wind speed up to 7.5 m/s)
Survival Wind Speed
52.5 m/s (117 mph)
Temperature Range
-20°C +50°C
Lifetime and servicing
20 years design life Service once yearly

Control and Monitoring System

Data input and management
Integrated microprocessor with multiple sensor inputs.
Data: wind speed, power, voltages, currents and phase, rpm, vibration and temperature alerts.
LCD display in control box. Can output to local PC or be monitored remotely via internet.

System protection
Base level: Passive stall of blades limits power output.
Second level: Control system activates mechanical brake if:

- Wind speed exceeds 25 m/s
- Abnormal vibration
- Grid disconnected or generator overheats

Third level: Centrifugally activated aerodynamic brakes built into rotor tips as a final safety measure.
Also Manual override button which activates mechanical brake

Certification

UK: Microgeneration Certification Scheme. Certification no. TUV 0002
Denmark: Risø DTU 2009-1

GW-UK 1-6/11

Address: Gaia-Wind Ltd., High Craighall Road, Port Dundas, Glasgow G4 9UD United Kingdom,

Gaia-Wind
GENERATING BETTER VALUE

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More than 20 years of small wind turbine design and innovation.
Performance. Reliability. Safety.

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Noise output

The Gaia-Wind small wind turbine is the quietest turbine in the 10-20kW range.

Low noise output means a greater range of planning options when deciding where to site your turbine.

The Gaia-Wind 133-11kW turbine makes significantly less noise than other similar sized small wind turbines.

Understanding turbine noise output

The main source of noise from a wind turbine is caused by the blade tips cutting through the air.

Our turbine is expertly designed to rotate at a steady and constant speed ensuring that noise levels remain low across its operational range. A quiet turbine offers a greater range of planning options when deciding on its site position.

Noise comparisons

The table below compares noise data for similar sized turbines.

Noise Profile of Accredited Turbines

Turbine	sound power at hub $L_{WA,\ 8m/s}$	noise slope* dB/m/s	noise penalty	Immission sound pressure @ 60m $L_{p,60}$	Distance for 40 dB(A) in 8m/s wind
Gaia-Wind 133 (1)	88.1 dB(A)	1.015	no	44.6 dB(A)	101m
Evoco 10 (2)	96.4 dB(A)	3.180	no	52.9 dB(A)	>800m
Proven 35-2 (3)	95.9 dB(A)	2.680	no	52.3 dB(A)	248m
Xzeres 442SR (4)	88.7	0.180	yes	50.2 dB(A)	135m

** Increase in sound level per m/s increase in wind speed*

(1) MCS certification data, Hayes McKenzie Report
(2) Evoco 10 acoustic report V2
(3) Proven P35-2 Noise Performance Test, Hayes McKenzie Report 2264 R1, 28th Sept 2010, MCS certification suspended
(4) Xzeres UK website

Contact us today to find out how you could benefit from a Gaia-Wind 133-11kW turbine.

Turbine data

Download our data sheet (pdf)

View energy production live

Gaia-Wind 133-11kw turbine

- High energy yield
- Feed in tariff eligible
- Reliable
- Safe
- Quiet
- Clean energy

Contact us today

twitter

February 10, 2012
Very grateful for everyone's mentions and RTs over the last couple of days on announcement of our £5m contract! http://t.co/AT9KN8HY

February 10, 2012
Gaia-Wind on Reporting Scotland. Thanks to the Gillian Marles, BBC for yesterday's visit: http://t.co/gK52K1nZ

February 10, 2012
Alex Salmond parliamentary mention for Gaia-Wind: http://t.co/1n8Pt4Vv

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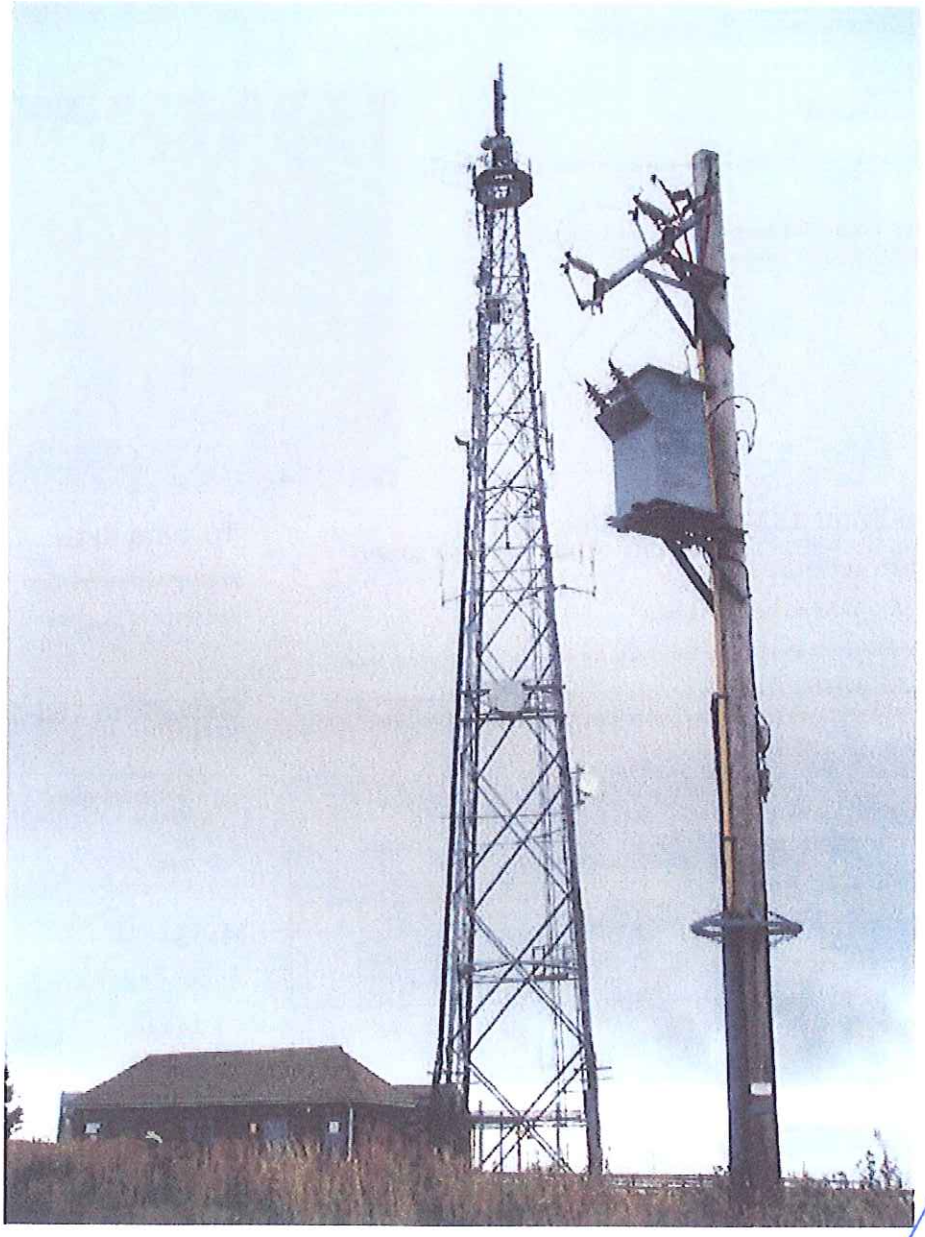
45 metre TV Radio Transmission Mast



Mathew Else Planning- This mast is situated about 1 mile north of Grange Farm

Sunday, 03 April 2011

The Cumberland News

LAKE DISTRICT PLANNERS CHANGE THEIR MINDS OVER WIND TURBINES

EXCLUSIVE By Anna Burdett Farming and Rural Affairs Editor

Last updated at 17:37, Friday, 02 April 2010

Farmers could build wind turbines in the Lake District after a change of heart by the National Park authority.

At a meeting with farmers this week, Carissa Lough, policy planner at the Lake District National Park Authority (LDNPA), confirmed there had been a change in attitude and applications for small turbines of up to 30 metres high would be viewed favourably.

This is a turnaround from the perceived blanket ban on wind turbines in the National Park but large commercial development will still be blocked to protect the landscape.

Ms Lough added: "We do object to large-scale commercial wind developments even if they are outside the National Park boundary. That is why there is a perception that we would say no to any kind of wind development. We are now more active in telling farmers they have this option. The policy has not changed but our new policy on renewable energy that we're adopting in September, is written in a more pro-active way."

Wind turbines would probably suit only a small number of locations in the national park especially as they will not be permitted on top of hills or on a ridge line. But farmers who put them up would benefit feed-in tariffs introduced by the Government this week.

Ms Lough said a turbine would ideally be hidden behind a building although she acknowledged that it would inevitably be visible from some angles.

She said: "It's a change in awareness that not all turbines are necessarily bad. I think it is being realistic about the contribution we can make to renewable energy for the region.

"It is being more pragmatic about the impact of a proposal. Small-scale developments can be economically viable because of advances in technology and the price of oil."

A 15-metre turbine costing around £55,000 could produce enough electricity for the farmhouse and business and would take around seven years to recoup its costs. Many farmers in Scotland have already installed this size of turbine but the technology has been slower to take off on Cumbrian farms.

Farmer Miles Postlethwaite from Armaside Farm, Lorton, has applied to the LDNPA for planning permission to build a 15m turbine on his land. He also runs Turbine Services, which sells and installs turbines, and said he was heartened by the change of attitude. He said: "It is encouraging but I don't think it will lead to a massive number of turbines being built in the park. I think there are some sites that really should have a wind turbine."

Monday night's meeting at Mitchells Lakeland Livestock Centre was the last of five organised by Cumbria Farmer Network to inform farmers about renewable energy opportunities.