

CARBON CONCEPTS LIMITED

Alternative Energy Newsletter

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www.carbonconcepts.co.uk



Last summer we were pleased to announce that we were well on the way to completing the development of our vertical axis wind turbine. Our first machine is rated at 2.5 kW, and has now run through the winter with no significant problems. Along the way we have learned some important lessons that will improve the customer machines. Testing at maximum wind strength is falling a little behind simply due to the relatively light winds that have prevailed since Christmas. However, we have tested in some strong winds, and can confirm that even at speed and under load, the turbine is silent.



Mains Integration

We now have our mains integration package, which has been on test at Durham University. This incorporates the over-speed control and braking system. The photograph shows it on test at Durham, where it is powered by an electrically driven generator, similar to ours. We are currently fitting this to our develop-



Generators.

We have built a total of five 2.5 kW generators for development customers and our own use. The prototype has survived testing in the open, during the winter, with no ill effects. Following interest in other

ratings, we have also built two smaller machines rated at 1.5 kW (at 300 rpm), and have started to build a 5.0 kW (at 150 rpm). The 5.0 kW generator takes a step forward in technology and is only slightly larger than the 2.5. We are even looking at a tiny 200 W version! An advantage of our generator is that we can easily change the coils to meet specific customers' requirements. Following the testing that we have already completed, the generators are to undergo detailed evaluation at Durham starting in the next week or so.



We are pleased to offer the generator to individuals and other manufacturers and would be pleased to talk to you.

Wind Tunnel Testing

The main difficulty in testing wind turbines is the variability of the wind itself. It is almost impossible to obtain reliable data in natural wind. To resolve this, we have built a 25% scale wind tunnel model. This is due to be tested at Nottingham University over the Easter break. Photos next time.

Where next ?

- Complete our proving and endurance programmes
- Complete first production specification turbine systems
- Achieve BS EN 61400-2 and CE clearance.
- Confirm the performance in the wind tunnel
- Build 1.5 kW turbine (to be our portable demonstrator)
- Complete and evaluate the prototype 5 kW generator

Finally, we have made a start on our micro-water turbine derivative.

We will keep you informed of what is happening!

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