



NEWSLETTER N° 15
SEPTEMBER 2005

CONTENTS

CEO's Introduction

AGM

Technical Update

Welcome & Farewell

Building Capability

NZ Windfarms Update

Mission Statement

"To be a global leader in
wind turbine technology
innovation."



NEW PROTOTYPE – NEW GROWTH

It has been another exciting quarter for the company with some significant developments that move us closer to our vision of a New Zealand wind turbine manufacturing industry.

'Neil' is back on Gebbies Pass and commissioning is progressing well. Work has resumed on certification and the engineers find the improved design much easier to work with which augurs well for customer satisfaction! On another positive note, the insurance company has validated our claim, and will cover the cost of damage to the prototype caused by the severe wind shift event of March 10, 2005.

As well as monitoring the performance of 'Neil', work has continued on assembling the five turbines that will make up the first production batch for the Te Rere Hau wind farm. The sale and purchase agreement for 97 turbines, to be ordered in batches over the next two years, is being finalised with NZ Windfarms Ltd, with Windflow Technology acting as project engineer for the balance of plant.

In order to finance the turbine purchase and commission civil works for building the wind farm, NZ Windfarms will soon be seeking to raise capital. To achieve this, we will be asking shareholders to approve an Initial Public Offering (IPO) for the NZ Windfarms company, a move that we have been signalling for some time as part of our long term business plan. By now you should have received in the post, the 2005 Windflow Annual Report, AGM notice (set for 5 October in Christchurch), and proposed resolutions for voting on at the AGM. Please contact us if you have NOT yet received these or if you have any questions. You are also welcome to visit the new prototype turbine on the afternoon of 5 October before the AGM (see page 2).

As well as scaling up manufacturing activity, we are also gradually scaling up the Windflow team. We welcome Emma Patrick, Marie Munford, Magnus Koldau, and Jamie Wallace to the team. Sadly we are also saying farewell to Francis Jackson, who is returning to South Africa.

We have just returned from the NZ Wind Energy conference in Wellington which had a record number of over 235 participants this year. It is heartening to see the growing interest in wind energy and prospect of NZ manufacturing, and we thank you yet again for making this vision a reality.

Geoff Henderson

CEO and Director

AGM

NZ Wind Energy Conference Report

7.30pm Wednesday 5th October 2005

**Lansdowne House, 162 Old Tai Tapu Road,
Halswell, Christchurch**

If you have not received the AGM notice, resolutions, and Annual Report, please contact the office. Proxies are due by 7.30pm Monday 3rd October and we would appreciate RSVPs by Friday 30th September!

Shareholder visit to Gebbies Pass prototype

At 4.00 pm, staff will be available to show people around on site at Gebbies Pass.



The new prototype running

There are two main ways to get to the turbine;

1. From the south-west of Christchurch, take highway 75 to Akaroa and turn left on Gebbies Pass Road just past Motukarara
2. From south of Christchurch, go up Dyers Pass Road, turn right on Summit Road and continue over the port hills and down to Gebbies Pass.

Then drive through the gateway (30 metres north of the Pass from the sealed road onto a dirt road), turn right just before the Radio NZ mast, follow our new track through another gateway, park at the saddle and make your way up the hill.

The wind energy industry has truly come of age in NZ with approximately 235 attendees at this year's conference, 40% more than the previous year. The main themes included public views on wind energy, wind/grid integration, sound, technical issues, and an update on projects under development. One presenter acknowledged the Windflow 500 for its grid integration qualities compared with traditional wind generators. Chris reiterated the Windflow vision and journey, ending with an update on the Te Rere Hau wind farm and plans for NZ Windfarms. Geoff gave a frank presentation on 'Lessons from a Severe Wind Shift' based on the supplement we included in the March newsletter. This was well received, with many people commenting that this is what the prototyping stage is for and they will be 'watching this space' as the turbine builds its track record.

Lessons from a Severe Wind Shift

In short, the lesson learned is that 1 in 50 year wind events teach respect for Mother Nature. The Windflow 500 is designed to avoid everyday, twice-per-revolution fatigue loads and overturning moments through such features as the torque-limiting gearbox and teetering rotor. These allow the components to be much lighter, which equates to less steel and concrete being used, resulting in a cost-effective design. This allows the Windflow 500 to compete in New Zealand's unsubsidised market against imported three bladed turbines, which are heavier in order to cope with higher fatigue loads.

The extreme wind shifts during the event were outside of the IEC one in 50 year design load case, but happened once so could happen again. Modelling of the new design shows that the turbine could withstand any number of similar events. The remedies, which we have now implemented, involve three modifications to the control system and a redesigned bolted joint which would stretch rather than break (the new joint has more than ten times the ductile energy absorption of the original).

Other improvements to the prototype include:

- Hydraulic power unit (HPU) has a 7.5 kW motor instead of 5.5 kW and yaw controls improved. We can now yaw at up to 4°/second (previously 1 °/second).
- HPU rubber mounted to the pallet, and gearbox lube pump submerged in the pallet tank instead of bolted to the side (quieter)
- Hydraulics and gearbox lube system tidied up
- Gearbox high speed shaft bearings now self-aligning
- Speed sensing resolution increased four-fold
- Improved PLC and software to control the turbine
- Smaller and lighter cladding
- Oil coolers on top of the cladding instead of underneath (for ease of maintenance).



Welcome & Farewell

Building Capability

A big welcome to our new staff members, who will be working alongside our more experienced team members as we build capability moving forward.



Emma Patrick, Mechanical Engineer/Analyst

Emma is a recent University of Canterbury, Mech Eng graduate who hails from Dunedin. Along with Jamie Wallace she will be taking over Francis Jackson's analytical work, which is expanding as we move forward into the IEC Certification process.

Marie Munford, Receptionist

Marie, who has recently completed her Office Skills certificate at Rotorua Polytech, will be assisting Terry Moon whose role has expanded with the growth of the company and now includes the role of Company Secretary.



Magnus Koldau, Control and Instrumentation Engineer



Magnus is an experienced electrical engineer from Germany, who has lived in New Zealand for 6 years. Married to a Kiwi, he has moved down from Auckland to assist Wernher Roding with all the control aspects of the turbine.

Jamie Wallace, Mechanical Engineer/Analyst

Jamie has just completed a Ph.D in Mechanical Engineering, and along with Emma Patrick is well placed to take over Francis Jackson's analytical work.



And it is with sadness and appreciation that we say farewell to **Francis Jackson, our Mechanical Engineer/ Analyst** (photo right) who has been with us in two stints since 2002. Francis is returning to South Africa and we wish him all the best with future endeavours.



Re-installation of 'Neil'

Operation and maintenance documents will be updated and finalised for the production machines, and an internal detailed component accounting system developed for all parts and spares.

We now have a good team on board to make this transition as smooth and efficient as possible. The next few months will see the new engineers becoming familiar with the technology and the whole team preparing for their roles for multiple turbine production.

At the same time certification will continue on the prototype, with work commencing on the Technology for Business Growth research and development project in the next quarter (to prove suitability for islanded generation and fault ride through capabilities). This is an exciting time and we are determined to succeed in this challenging growth phase.



The Windflow team by the new cladding



Sets of blades for production turbines



Synchronous generators in stock



NZ Windfarms Ltd

NZ Windfarms Initial Public Offering

As detailed in the AGM notice, we are asking shareholders to approve the proposed Initial Public Offering of NZ Windfarms later this year, to enable capital raising for the Te Rere Hau wind farm. In anticipation of this, a prospectus is being prepared and the terms which provide Windflow shareholders preference have been defined. We will provide you with the details of the Offer as soon as it is approved by the Companies Office and NZ Stock Exchange. (It is a legal requirement that we cannot make details public before the Offer has been approved).

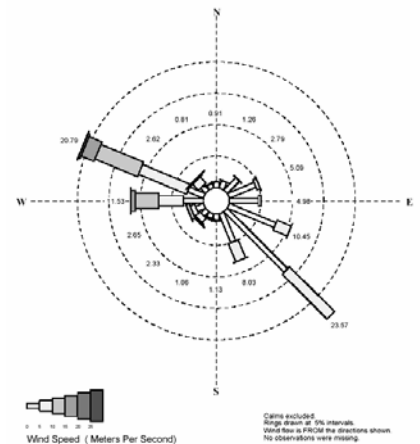
All going well, we should be on track to start civil works for installation of the first stage (5 turbines) this summer.

What makes a good wind farm site?

We are receiving more and more enquiries from land owners who want to know if their land is suitable for wind farming. As a starter, here are some variables that need to be assessed at an early stage:

- Proximity to a distribution line of appropriate voltage and capacity
- Ease of establishing suitable road access to the site.
- Suitability for building a wind farm (e.g. current use, topography)
- Absence of significant resource consent issues
- Acceptability of average wind speed performance

If the first four factors look promising, then it is worthwhile to set up a monitoring station (consisting of an anemometer and wind vane on a 10 m mast, and data logger) and collect wind speed data from the site for at least three months. The monitoring and analysis costs \$5000 + GST and will provide a breakdown of wind speed and direction (windrose plot), and potential energy output possible from the site. If it looks promising then further monitoring is required, usually with a mast over 30 m high and for an extended period.



Windrose Plot

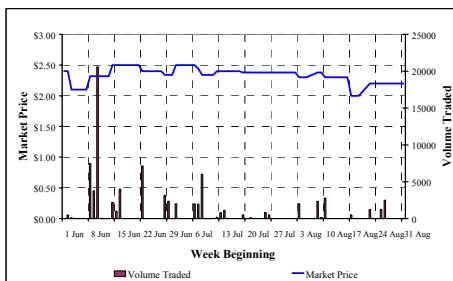
The NZ Wind Energy Association website (www.windenergy.org.nz) also provides some good fact sheets on issues for landowners to consider.

For updates and further information please visit the website

www.nzwindfarms.co.nz

NZAX – Share Trading History

The line graph shows the market price while the columns show the volume of shares being traded.



To view this graph daily go to:

<http://www.nzx.com/nzxmarket/nzax>

and search for stock code WTL

(There is also a link on our website.)

This Newsletter is produced by Windflow Technology Limited for the information of its shareholders and other interested persons. It will be posted on our web-site. Not on e-mail but would like to view the colour version and more photos? Your local library has internet access. Just type www.windflow.co.nz and follow the links.

Have we got your correct address details, including current e-mail address? If not, please let us know.

WINDFLOW TECHNOLOGY LTD

PO Box 13 952

Christchurch

Phone: 03 365 8960

Fax: 03 365 1402

email: info@windflow.co.nz

website: www.windflow.co.nz