



NEWSLETTER N°2  
MAY 2002

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### mission statement

“To become the leading  
supplier  
of wind turbines for  
wind power projects.”

# Welcome to

## Windflow

*In this our second newsletter* we report on progress with our exciting venture and the people who are part of it.

Since the New Year we have employed two new staff, made good progress with the engineering of the first wind turbine, found a new site, held an Open Day to initiate the resource consent process, and held our first AGM.



Our chairman, Neil Cherry, has been in the news this year for the best and worst of reasons. The good news was that he became an Officer of the New Zealand Order of Merit in the Queen's New Year's Honours List for his services to science, education and community. The nomination (see our web-site <http://www.windflow.co.nz/thepeople>) mentioned (among many other things) his wind energy work, when he led the New Zealand and international wind energy resource surveys.

Our congratulations go to Neil for this richly-deserved recognition.

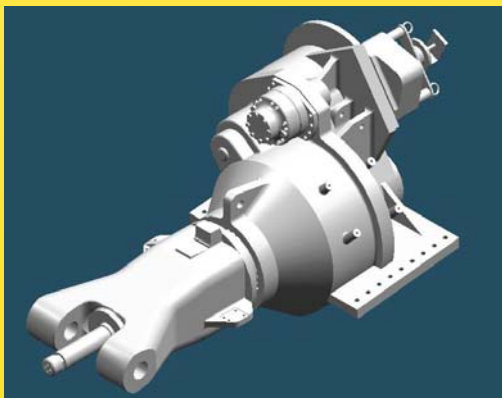
The bad news is that he was diagnosed with motor neuron disease, a progressive and incurable disease which will rob him of his mobility and shorten his life-span. Neil is displaying great courage in dealing with this, making the decision to go public in the New Year, and to give priority to the things in his ultra-busy life which give him pleasure. His role as Windflow chairman is one of those things, and he has continued to carry out that role diligently (in amongst his overseas trips as part of his international consultancy work, writing scientific papers and serving as a Canterbury Regional Councillor!). We are hugely grateful to Neil for the leadership and public endorsement he has given to Windflow, and admire the courage and quiet indomitability of spirit he brings to this as he does to every challenge.

## AGM Report

*Windflow's first AGM* took place on March 27<sup>th</sup> 2002. It provided a good opportunity to bring shareholders up to date with expenditure and developments to date as well as dealing with a couple of procedural Constitutional amendments. A copy of the draft minutes is enclosed with this newsletter. A further AGM will take place towards the end of this year when audited accounts to June 30, 2002 will be presented.



# Project Engineering Progress



Engineering procurement work has focused on the four main long-lead items. Overall there have been delays due to false starts with an Australian gearbox supplier and the site selection process but the programme is still on track for commissioning by mid-October.

## **Blades**

In early January the order for the blades was placed with Auckland company Wind Blades Ltd (formerly EBL Ltd), who is one of our advance subscribers under the prospectus. Since then good progress has been made and the 16 metre long half-moulds are now complete. Laying up the first blade will commence shortly. A shareholder function will be held at the blade factory on May 16<sup>th</sup> (see notice at the end of this newsletter).

We have selected radiata pine as the main blade material, purchasing two packs of veneers from the large plywood plant at Tokoroa. We obtained a Techlink grant from the government to test wood-epoxy specimens at the University of Canterbury. These tests have confirmed the suitability of radiata as a substitute for the African mahogany used in Britain.

## **Blade bearings and yaw bearing**

These are now complete and being shipped from France, due to arrive in Lyttelton in July.

## **Gearbox**

There have been some delays in placing the order for the gearbox. The bad news was that the proposed supplier in Australia failed to provide us with a proposal which met our specification. But the good news is that an Auckland company, AH Gears Ltd, has come forward with an excellent proposal. Contract negotiations are at an advanced stage and AH Gears have already commenced detailed design work.

A particular highlight in recent weeks has been the participation of Welsh gearbox designer, Ray Hicks, in the detailed design process. Ray is a distinguished, brilliant engineer who was awarded the MBE for his services to British industry. In 1964 he invented a feature which results in particularly compact planetary gearboxes by ensuring excellent load-sharing. The Windflow gearbox uses this feature.

Ray spent nearly three weeks with Windflow and AH Gears providing the details of this feature and helping refine the overall gearbox design. This puts AH Gears in a strong position to complete the detailed design for the Windflow gearbox.

## **Hub and Pitch-teeter Components**

The drawings for these have taken second priority to the gearbox specification drawings but these are now complete. An order for these components has been placed with Dunedin firm, Farra Castings Ltd.

## **Site planning**

A new site has been identified for the first turbine in the Gebbies Pass area, about half an hour from Christchurch. This follows testing at the initial site which showed a surprisingly poor wind resource.

The wind resource at the new site appears to be very good, and road and transmission access is good. The land-owner has signed a preliminary lease agreement.

Preliminary work has been done on the resource consent process, including a site visit with the planning officer from the local district council. Consultation with affected parties is now under way (see also Open Day report below). We will file our resource consent application as soon as possible.

# Gebbies Pass Site Open Day

An Open Day to introduce our proposal to install a wind turbine near Gebbies Pass was held at the Palmdale Café (formerly the Black Tulip), corner of SH 75 and Gebbies Pass Rd on 27th April, from 10:00 am to 3:00 pm. A bus provided transport throughout the day to the top of Gebbies Pass to view the proposed site.

We were keen to hear the views of the neighbours, interested organisations and the general public on the proposal before we submit our resource consent application to the Banks Peninsula District Council in May.

The environmental impacts of wind turbines are primarily visual and noise. The latter can, and in our case will, be reduced to negligible impact by a combination of good design and good siting to ensure that sound pressure levels at the nearest residence are no more than 40 dBA. This is a fairly quiet background level - in other words the wind turbine would not normally be audible above normal countryside noises. This leaves the primary impact as the visual one. It is a matter of opinion whether wind turbines enhance or detract from the landscape.

We believe that this unit (which is the only one being proposed for this site at this stage) will be an acceptable addition to the Gebbies Pass landscape. In addition, we believe it will be seen as a visual statement that our community supports sustainability.

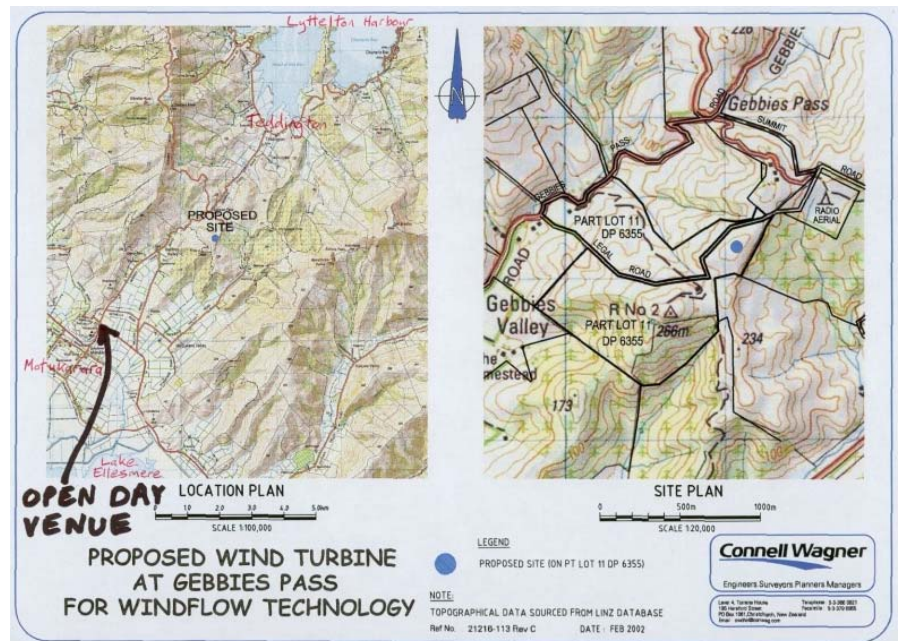
Attendance at the Open Day was excellent, with 120-150 attendees. At one point about 80 people were inside the Café, whereas we had expected up to 20 at a time. Most people expressed support and the main concerns of local residents centred around sound levels. It was agreed that we would follow up on the Open Day with visits in order to address specific sound level concerns in more detail on a site-by-site basis.

Further information about the Open Day is on our web-site, including more photomontages and a stunning 360 degree panorama. This was taken from a balloon tethered 30 metres off the ground (hub-height for the proposed windmill) at the proposed site.

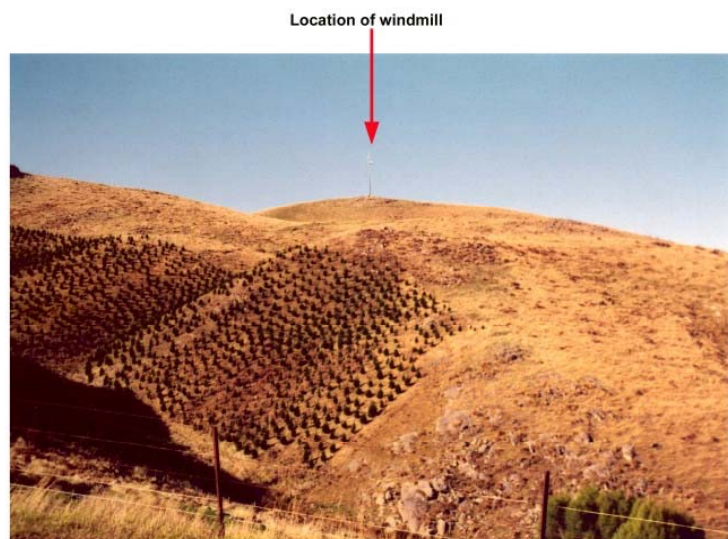
## The Gebbies Pass Site

The maps below show the proposed location for the turbine. It also shows the Open Day venue. There are two options for road and power line access (not shown on this map):

- Option A involves a new track coming in from the radio mast site,
- Option B involves an existing farm track plus a short length of new track.



Photomontages of the proposed installation were shown at the Open Day, viewed from various locations. The photographs were taken using a 50 mm focal length lens (giving a similar field of view as the human eye) and a computer image of the proposed wind turbine was superimposed on them. The following example shows the view from the nearest sealed road. The main structure of the wind turbine is 30 metres high and each blade is 16 metres long. By comparison, the neighbouring radio mast is 120 metres high.



View from road - side just south of the top of Gebbies Pass.



# Blade Factory Visit

## Share Sale

Only one parcel of Windflow shares (2011 shares) has been traded. The sale took place on April 13 and the price was NZ\$1.85.

### LET A FRIEND KNOW

Pass this on to a friend or email us their information and we will send a copy to them.

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

Thanks to all those who let us know they are happy to receive the newsletter by e-mail only. In order to save time, money and paper, we have decided that as a rule we will not send future newsletters as hard-copy where we have an e-mail address. In other words **this is the last newsletter that many people will receive twice.**

Please contact us if this does not suit, i.e. if you want to receive e-mail **and** hard-copy newsletters.

This newsletter will be posted on our website.

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(Check out the Latest News and Archives pages of the web-site.)

Thursday May 16<sup>th</sup>  
5-7 pm  
we are holding a  
Shareholder Function  
at the  
**Wind Blades Ltd**  
factory  
18 Ben Lomond  
Crescent, Pakuranga,  
Auckland.



The main purpose of the function is to give shareholders an opportunity to view at first-hand the progress with these large and important parts of the Windflow turbine. It will also provide an opportunity for shareholders who may not have been able to attend the AGM in Christchurch to meet the board.

Please RSVP if attending to Heather, phone 03-365 8960 or e-mail to [info@windflow.co.nz](mailto:info@windflow.co.nz).

## Staffing

We now have six staff members and a seventh starting on May 20th.

In addition to:

- Geoff Henderson, Executive Director
  - Heather McNaughtan, Office Manager
  - Marina Roman, Design Engineer
  - Wernher Roding, Electrical Engineer
  - Warwick Payne, Mechanical Engineer
- we have:

### Assistant Mechanical Engineer – Francis Jackson

Francis is a South African who has been studying Mechanical Engineering in Canada and is in New Zealand under a Universitas 21 Exchange Scholarship. A top student at the University of Toronto, he has completed his 3rd undergraduate year at the University of Auckland on this exchange. He is with Windflow only until August when he will be returning to Canada to complete his degree.

“A man of many talents”, these include skydiving video-work – he is current New Zealand Champion Freestyle Cameraman.



He has been keen on wind energy since his final school year (1996) project, building a 500 W wind turbine.

Between March when he joined and August when he returns to Canada, Francis is helping us out with engineering calculations and web-site design work.

### Purchasing Manager – Alan White

Alan has had a long and varied career including 8 years as Purchasing/Technical Supplies Officer with Air New Zealand. In this position he was responsible for purchasing aircraft engineering supplies worth \$85 million annually. He brings tremendous energy, enthusiasm and a “can-do” attitude to any job he undertakes.

The position of Purchasing Manager is (as budgeted) only a part-time position (2 days a week) for the last six months of the Stage 1 build. It will involve assisting the engineering staff to follow up on the major items which have been ordered to date, and to take a leading role in procuring the many minor items which have yet to be ordered.