

N° 27, August 2009

## Contents

- CEO Intro
- Update on Te Rere Hau
- Long Gully Wind Farm Proposal
- Windflow Looks to Emerging Markets
- Windflow Events:
  - Open Days at Gebbies Pass
  - Pre-Christmas Factory Visit
  - Shareholder Visit to Blade Testing Facility
  - Energy Awareness Week
  - Bluegreen Visit
  - NZWEA Conference and Turbine Display
- Welcome New Staff
- New Web site



*This photo of abseiling out of the turbine was one of 25 shortlisted in a global wind photo competition out of over 300 photos.  
Credit: Darren Webster, Windflow Technology.*

The first half of 2009 has gone by quickly, and it seems timely to provide a brief newsletter update now to follow from the half year report that we released in March.

Windflow's two main focuses, IEC certification and production and installation of turbines at Te Rere Hau, have been progressing very well. Of the 22 IEC calculations that remained last time I reported, we have now finished and submitted all of them. At Te Rere Hau our manufacturing production, transport logistics and on-site installation is going to plan. We now have over 50 turbines installed and operating so we are past the half-way mark.

In a retracting economy what every shareholder wants to hear is that the potential for growth of their investment remains intact. At Windflow we are increasingly confident that your shareholder funds are being applied to some IP, technology and strategy that continue to muster national and international support.

Because of the fundamental weight advantage and the high NZ content of the Windflow 500, we are secure in the knowledge that we stack up well from a cost as well as performance perspective especially while the exchange rate remains favourable to local manufacturing in comparison to imports.

In terms of future projects, there have been several developments over the last few months which we talk about more in this newsletter. NZ Windfarms applied for resource consent for up to 56 Windflow 500s for the Te Rere Hau extension for which submissions closed 27 July. In May we submitted a resource consent application for the proposed 25 turbine (12.5 MW) Long Gully wind farm near Wellington. Submissions closed 26 June with a total of 74 submissions, the majority of which were in support of the proposal.

We also continue to look to markets outside of New Zealand. In May I visited the WINDPOWER 2009 conference in Chicago where 22,000 wind industry people were assembled for four days of presentations and networking. Our market research at that event has clarified where our best opportunity for business lies in the USA. In early July, our American-born Engineering Manager, John Arimond, and I made a follow-up visit to the USA as part of our process to identify both suitable sub-contractors and potential sites to install a Windflow 500 prototype. In the coming year we will be working towards developing a 60 Hz prototype.

We have also progressed our market entry plans for the emerging markets of Chile and Argentina (which are 50 Hz markets, thus can use our standard turbine) where the Windflow 500 has significant competitive advantages.

Over the past few months I have also spoken to our submission on the National Policy Statement on Renewable Energy Generation, completed our submission on the Emissions Trading Scheme Review and, in early April, finalised our submission on the proposed RMA amendment bill. Maintaining a profile for Windflow and ensuring our perspective is heard is important as so many pieces of potential legislation with relevance to the future of wind energy are being debated presently. I am pleased to report that Windflow's presence - as an established manufacturer and employer (directly and indirectly) of about 400 New Zealanders - is being noted more and more, and our perspective is being valued accordingly.

All in all, I am pleased to report steady progress towards our long-term goals. We have been consolidating and securing the transformation we have made in the last two years to continuous manufacturing, while continuing to complete the IEC certification work and to lay other important foundations for our future growth.

Geoff Henderson,  
CEO/Director

## Update on Te Rere Hau

As of late July over 50 turbines have been erected at Te Rere Hau and the number keeps rising. All Stage 2 and 3a turbines have been fully commissioned and every fortnight two more Stage 3b turbines are assembled and erected. Each is then commissioned and completes a 10 day reliability test before handover to NZ Windfarms. 65 turbines, which include all of the Stage 3 turbines, are expected to be operational by the end of October 2009.

On 29 May 2009 NZ Windfarms submitted a resource consent application for an extension to the Te Rere Hau wind farm of 56 turbine sites. If approved, NZ Windfarms would like to preferentially locate most or all of the 32 Batch 4 turbines in this area due to the higher wind resource. The Batch 4 turbines are continuing to be produced although the location and timing of the construction program for Stage 4 will depend on the progress and outcome of the consent application.



*New turbines spinning at Te Rere Hau wind farm.*

## Windflow looks to Emerging Markets

Chile and Argentina are emerging wind energy markets, with many Class 1 wind sites and logistical constraints which favour a mid-size turbine such as the Windflow 500. After researching the market potential over several years, and receiving a growing number of enquiries, we started looking for a suitable local partner. In June, we signed an agreement with Ingenieria Seawind Sudamerica Ltda (Seawind) to be our exclusive reseller for the sale, installation and maintenance of Windflow 500 wind turbines in Chile and Argentina. Seawind South America is based in Santiago, Chile and has support from Seawind Group in the UK. It has extensive wind monitoring through Chile using masts, sodar and computer modelling and is starting to be active in other South American countries. Seawind has developed and on-sold several wind farm sites in Chile, and has experience in wind farm construction and O&M.



*From left: Sebastian Kind (Argentine Renewable Energies Chamber Board Member), Tom Hooper (Windflow COO), Geoff Henderson (Windflow CEO), Marcelo Banto (Seawind South America General Manager)*

Chile and Argentina also have an increasing energy need and are developing policies for renewable energy, so are a growing market for wind energy. We are currently working with Seawind on proposals for several small sites in Chile and a larger site in Argentina. It may take some time to enter these markets but working with a local company will be a great benefit.

In June, Marcelo Banto, General Manager for Seawind South America, and Sebastian Kind, Board Member of the Argentine Renewable Energies Chamber, visited the Windflow team in New Zealand including our manufacturing facilities, the prototype turbine at Gebbies Pass and the Te Rere Hau wind farm.

## Long Gully Wind Farm Proposal

The resource consent application for the modest sized (12.5 MW = 25 turbines) Long Gully wind farm was publicly notified by the Wellington City Council on 21 May and the submission period closed on 26 June. Of the 74 submissions received, 38 were supporting, 28 opposing and 8 neutral.

Work began on the resource consent in mid-2008, and as a result of public consultation and further assessment of environmental effects, the initial proposal has been refined to minimise any civil, ecological, sound and visual impacts. The number of turbines has been reduced from 28 to 25 and some adjustments have been made to the remaining turbines' positions.

The Long Gully wind farm would provide renewable electricity directly to the local Wellington community. The use of mid-size turbines means that existing roads can be used and that this smaller project can be viable. The consent hearing is scheduled to start on 17 August and subject to resource consent, construction and installation would start in 2010. Mighty River Power would own the wind farm and sell the electricity generated.

The full resource consent application can be viewed on the Windflow website ([www.windflow.co.nz/projects/long-gully-wind-farm-consent-application](http://www.windflow.co.nz/projects/long-gully-wind-farm-consent-application)).



## Windflow Events

### Open Days at Gebbies Pass

In December and February Windflow held Open Days on two Sundays. Both days were warm and sunny while having a fresh breeze at the turbine. About 70 people visited the turbine on each occasion.

### Pre-Christmas Factory Visit

Windflow hosted a combined Christmas cheer and factory visit just before the holiday in December for shareholders, suppliers and other stakeholders, many of whom had missed the official opening in May 2008. It was also a good opportunity to show the expanded layout at the back end of the factory and for staff to mingle and show people how the production facility runs day-to-day.



*Approximately 100 people visited the factory for the pre-Christmas visit*

### Shareholder Visit to Blade Testing Facility

The Windflow 500 wind turbine blade has successfully passed the fatigue test at Industrial Research Limited (IRL) required to meet the International Electrotechnical Commission (IEC) blade fatigue test. It represents one of the final steps towards the Windflow 500 achieving IEC certification. This independent certification will open up the market for Windflow turbines here and overseas.

In February approximately 25 Auckland shareholders came to hear a brief presentation on the rigorous testing regime that the blade and turbine have been through, and witnessed the IRL testing of the 16 metre long, 900 kg blade.

The test was designed to achieve a pass in fatigue at 3.2 million cycles on the tension side of the blade - which was achieved. The blade has been further tested to 5.8 million cycles to gain greater confidence in the blade and look for signs of damage in other areas of the blade.

At the same time acoustic emission testing was taking place. It is done with hyper sensitive microphones that can pick up any wood fibres that break. There is no sign of any damage and the blade appears to be in the same condition as it was when new. This gives us even more confidence in the design.

### Energy Awareness Week

In connection with Earth Hour on Saturday 28 March 2009, the Christchurch City Council dedicated the following week to Energy Awareness Week. Geoff Henderson was one of the speakers at a lecture about Renewable Energy. Several study tours were also arranged during the week, one of which was a Wind Energy Tour arranged by Windflow. It was very popular and approximately 60 people attended a tour of the factory, and then went up to see the Windflow 500 operating at Gebbies Pass.

### Bluegreens Visit

On Sunday 15 March 2009, 11 Bluegreen members visited the Gebbies Pass wind turbine with Geoff Henderson. The Bluegreens are National Party members who are interested in environmental issues and this was a great opportunity for us to show them how well the Windflow turbine operates and share our views of the future. Nicky Wagner, a local Christchurch list MP who chairs the Bluegreens Caucus Committee, organised the visit. She is a member of the Emissions Trading Scheme Review Committee and Deputy-Chairperson for the Local Government and Environment Select Committee.



*Nicky Wagner, Geoff Henderson and two other Bluegreen members climbing the Gebbies Pass wind turbine.*

### NZWEA Conference and Turbine Display

The New Zealand Wind Energy Association had its annual conference in Wellington on 21 and 22 April 2009. Windflow's profile was very high at the conference, and it was a very successful conference for us. We attended in strength with nine Windflow staff and three Windflow directors. At the conference dinner Geoff was made a life member of NZWEA in recognition of his role as a pioneer in the New Zealand wind industry, which was a great honour.

Windflow had three displays: the regular display in the conference hall and a display about Long Gully as part of a public display about wind farms in Wellington. The third display was two truckloads of turbine components (nacelles and blades) by the harbour front near Te Papa. Many Wellingtonians noticed the turbine components on their way through the city. Because it was school holidays, many tourists from overseas and around the country also visited and Windflow staff were very busy explaining about the New Zealand made wind turbines. Wind energy people attending the conference also came to see the turbines and many people who have worked in the industry for years mentioned it was the first time they had seen a wind turbine up close.



*The wind turbine display in Wellington attracted many visitors*

## Welcome New Staff

Over the past six months, several new or replacement positions have been filled. We welcome these new staff members to the team.

### Phil Clark - Construction Manager

Phil joined Windflow in January with a background in production management and planning, spending six years as a Production Manager. Other roles have included managing subdivision project work and various technical roles relating to R&D and product development. Phil gained his qualifications at Massey with a B. Tech in Product Development, an additional year was completed with Higgins Contractors to attain an M. Tech. Phil's role as Construction Manager at Te Rere Hau brings a number of these skill sets together to manage, coordinate and plan the erection of the Windflow 500 turbines on site. Phil comments "It's great to see something real for your effort at the end of the day, knowing you have been a part of making it all come together". Phil is married with two boys, so does not have much time for interests, but likes travelling, fishing, table tennis and golf.



### Neil Hudson - Mechanical Engineer

Neil joined Windflow's Design Team in January. Neil has a mechanical engineering degree from Lancaster University in UK. Neil came to New Zealand in 2004 after university and worked a year for Motovated Design and Analysis. After that he went back to the UK and worked for Proven Energy, a manufacturer of domestic sized wind turbines. Neil was keen to come back here so it was a perfect opportunity when this job came up. In his spare time Neil enjoys being outdoors, biking, skiing and kayaking.



### Ian McLean - Windsmith

Ian joined Windflow's Te Rere Hau team in January as a windsmith. He is an electrician and worked for seven years with Danish turbine manufacturer Vestas and spent some time in Denmark as part of his training for that role. Ian is married with three kids and is based in Palmerston North. He enjoys motor bikes and builds off-rovers.



### Mike Lavender - Specialist Buyer

Mike started in January as a Specialist Buyer. Originally from the UK, Mike came to NZ with his family three years ago. He has been working in purchasing for about 20 years. Mike has CIPS accreditation - (Chartered Institute of Purchasing and Supply) and previously worked with Shape Technology, one of Windflow's suppliers. Mike is married with two kids and runs his son's soccer team in his spare time.



### Dave Walters - R & D Manager

Dave joined Windflow in February after working as a consultant for two years on the IEC load measurement analysis based on the data from the prototype turbine. Before that Dave worked at WhisperGen in product development. He has also worked for CWF Hamilton, Steelbro and Wool Research as a design engineer, as well as a stint making furniture between jobs. Dave has a BE in Mechanical Engineering from Canterbury University. Dave is married with four grown kids, with just one teenager still at home. Dave enjoys cycling, running, tramping, motor sports and has two dogs.



### Paul Svendsen - Windsmith

Paul started at Te Rere Hau in January and works alongside Pete Cole as a windsmith with mechanical expertise. Paul was previously working for Feltex in Palmerston North. In his spare time, Paul enjoys flying remote-control aeroplanes.



### Kathryn Taylor - Office Administrator

Kathryn joined Windflow in April when our receptionist Val moved to the position of Accounts Assistant. Kathryn previously worked with Hunter Furniture and before this she did a pre-health science course at Christchurch Polytechnic Institute. Kathryn is born and bred in Christchurch and she likes touch, netball, shopping and going out with her friends.

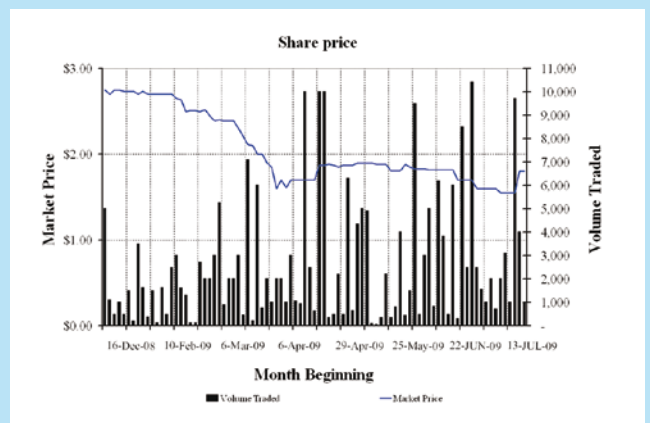


### Alyce Edwards - Windsmith

Alyce joined Windflow as a permanent staff member up at Te Rere Hau in June, but was previously undergoing her Electrical Apprenticeship with Mighty River Power and through them came to work at Te Rere Hau. Before this she worked with Electrics and United Group in her home city of Hamilton.



## Share Graph



## New Website

[www.windflow.co.nz](http://www.windflow.co.nz) has had a major facelift giving the website a much fresher look. If you have any problem viewing it or any other comments, we welcome feedback to: [astrid@windflow.co.nz](mailto:astrid@windflow.co.nz).

This Newsletter is produced by Windflow Technology Limited for the information of its shareholders and other interested people. It will be posted on our web-site. Just type [www.windflow.co.nz](http://www.windflow.co.nz) and follow the links. If you don't have access to the internet remember you can always visit your local library where internet access is readily available. Have we got your correct address details, including current e-mail address? If not, please let us know.

Windflow Technology Ltd, 44 Mandeville St, Riccarton, PO Box 42 125, Christchurch 8149  
Phone: 03 365 8960 Fax: 03 365 1402 email: [info@windflow.co.nz](mailto:info@windflow.co.nz)  
website: [www.windflow.co.nz](http://www.windflow.co.nz)