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- IEC Class 1A certified
- Quality manufacturing
- Proven in strong winds
- Cost effective
- Low visual impact
- Easy grid integration
- Easy to transport & install



CEO Introduction

With 98 turbines now up and spinning in NZ and IEC certification under our belt, we have fulfilled a large part of the vision that the company set out to achieve – proving the Windflow 500 in one of the toughest testing grounds in the world.

The vision of a sustainable wind turbine manufacturing operation in New Zealand is however proving somewhat more difficult.

The wind turbine market in New Zealand has stalled against a backdrop of lower electricity demand and long consenting times and the UK market opportunity which looked very favourable late last year has also failed to deliver the orders that our distributor envisaged. High demand for planning consents and electrical connections have pushed out timeframes, the UK FIT review announcement in February has caused considerable uncertainty, and the turbine market has become more competitive.

The consequent immediate gap in our sales and production pipeline has resulted in staff cutbacks and a fundamental uncertainty which the Directors signalled in early June. For our 1000 shareholders, the resulting share price of the company seems a poor reflection of our achievements over the years.

The company is therefore working towards several options to realise shareholder value, including licensing our proven core technologies, IP and lightweight cost-effective design, which would mean that manufacturing of the Windflow turbines, at least for some markets, would move predominantly outside of New Zealand. While this was not part of the original vision, the environment in which we are operating at the moment and foreseeable future, such as the high NZ dollar, makes it a necessary strategy. While not necessarily the best economic option for New Zealand as jobs would disappear offshore, it will likely be one of the best ways to realise shareholder value going forward.

We and our partners are continuing to promote the Windflow 500 strengths and work towards securing a pipeline going forward. Of particular interest in the UK, it is the highest output turbine with a tip height under 50 meters, which has advantages in the planning process. Full IEC certification provides technical confidence, and is combined with proven track record in New Zealand's "Formula One" winds.

We are still working towards securing orders in New Zealand in the mid term.

Discussions are continuing with MRP, our cornerstone shareholder, regarding options to proceed with the consented Long Gully site for 25 Windflow turbines. The Mt Cass wind farm, which potentially could utilise around 70 Windflow turbines, has an environment court hearing at the end of June in Christchurch. The decision dates or likely outcomes of these projects are outside of our control, which is why we must continue to pursue opportunities in other markets at the same time.

I spent two weeks in the UK in late March, early April visiting our distributor VG Energy, potential customers, and financiers to give them confidence that Windflow and Christchurch were still open for business, and also to better understand the market view and when the orders may start coming through given the uncertainty created by the Feed-In Tariff review.

In summary it is evident that the company needs to raise further capital in order to continue with its plans (as signalled in the half year report). The Directors are considering options in the best interests of our shareholders and will make an announcement shortly.

Although this has implications for 'what could have been' with regard to growth in the NZ economy we must remain flexible and open minded about how we grow the Windflow business. Licensing enables us to more easily penetrate the more

hospitable US economy and to leverage the strengths of the IP without carrying cost and complexity. It is an exciting manoeuvre and reflects the benefits of remaining small and agile in our thinking.

Shareholders should remain optimistic about our work in this marketplace.

The world has not been the same for us in Christchurch since the February earthquake and we expect further changes for the company in the next year as we recognise that we have to grow to survive in order to compete with the large companies now dominating the turbine supply market.

We continue to work in the best interests of our shareholders and are making every effort to get turbine sales, have our turbine included in the consenting process, lobby in our target markets to give certainty to the industry to invest in wind projects, and continue to keep our turbines operating well and 'strutting their stuff'.

Geoff Henderson
CEO/Director

Factory Winds Down and Windflow Slims Down

The last TRH nacelles left the Windflow assembly factory on 13th May with a mix of celebration and sadness. As the factory workload has slowed right down and the length of production gap is uncertain, our assembly team and some of the procurement and quality staff positions have been made redundant.

Everyone who has been part of the Windflow team has done a fantastic job and can be proud of their part in the unique NZ made wind turbine industry. Nearly 100 NZ-made turbines are generating in New Zealand and are testament to the team's efforts.

We are working towards securing new orders in NZ and around the world and would welcome the day when we could re-establish manufacturing here.

97th Turbine Installed at Te Rere Hau

The last Stage 4 turbine was installed at Te Rere Hau on 24 May, with the nacelle proudly flying a New Zealand flag as it was lifted up onto the tower.

Although the last turbine is still to finish its official commissioning test-run, the wind farm has finished the construction phase and is likely to remain at 97 turbines unless NZ Windfarms decides to utilise the 52 remaining consented sites.

Te Rere Hau was the first commercial wind farm project that Windflow was involved in. Windflow's CEO Geoff Henderson originally found the site and set up a company to buy the land, then Windflow set up NZ Windfarms to consent, develop and own the site. Windflow eventually sold its interest in NZ Windfarms. The two companies have worked together

as wind farm owner and wind turbine supplier to complete the build and will continue to work together to operate the wind farm and the turbines. We say farewell to some of the construction staff, within Windflow and some of the contractors that we had the pleasure of working with in cold, windy, and often muddy conditions.

Many Windflow and NZ Windfarms staff and shareholders will remember the blustery day in September 2006 when the then Prime Minister, Helen Clark, turned on the five Stage 1 turbines on the top ridge. The turbines were switched on while the winds were averaging 25 m/s, which is when most other wind turbines shut down! Since then, the wind farm and its turbines have produced enough electricity to power around 20,000 houses for one year.

The 97th turbine at TRH being lifted flying a NZ flag from the nacelle



NZ Market Outlook

The marketplace in New Zealand for the Windflow 500 remains challenging in terms of wind farm consenting considerations and uncertain timeframes for decisions and consequently orders for turbines. Wind farm activity overall is stagnant and decreasing with several very large farms still in the consenting process. Those that are consented, are not being built as overall electricity demand is down.

We are continuing to drive the message that the consented 12.5 MW Long Gully wind farm near Wellington should proceed and we are working with Mighty River Power to reconsider the options for this site.

Mt Cass in North Canterbury is another possible wind farm opportunity but one that is hindered by a lengthy environmental court hearing, ecology concerns, and an unknown outcome. We consider that the Windflow 500 is an excellent solution given its low environmental impact, proven performance and of course having a service centre just down the road and being able to pay in local currency. MainPower has benefited by including three turbine options in its consenting envelope when it started the process in 2006, which means that if they do get approval they are not tied in to only buying from overseas.

We are also still in discussions with other NZ wind farm developers for future potential projects, but as these are not yet in the consent process it would be sometime before these could result in orders.

New Zealand policy is not particularly favourable to wind energy or particularly encouraging of creating or retaining manufacturing jobs. We have provided politicians information on the key benefits that the high value engineering innovation brings and the multiple flow-on effects of spending hundreds of millions of dollars with local companies. Although Windflow shareholders will likely benefit from licensing, the NZ economy will be the one that loses the benefits that we have worked so hard to establish.

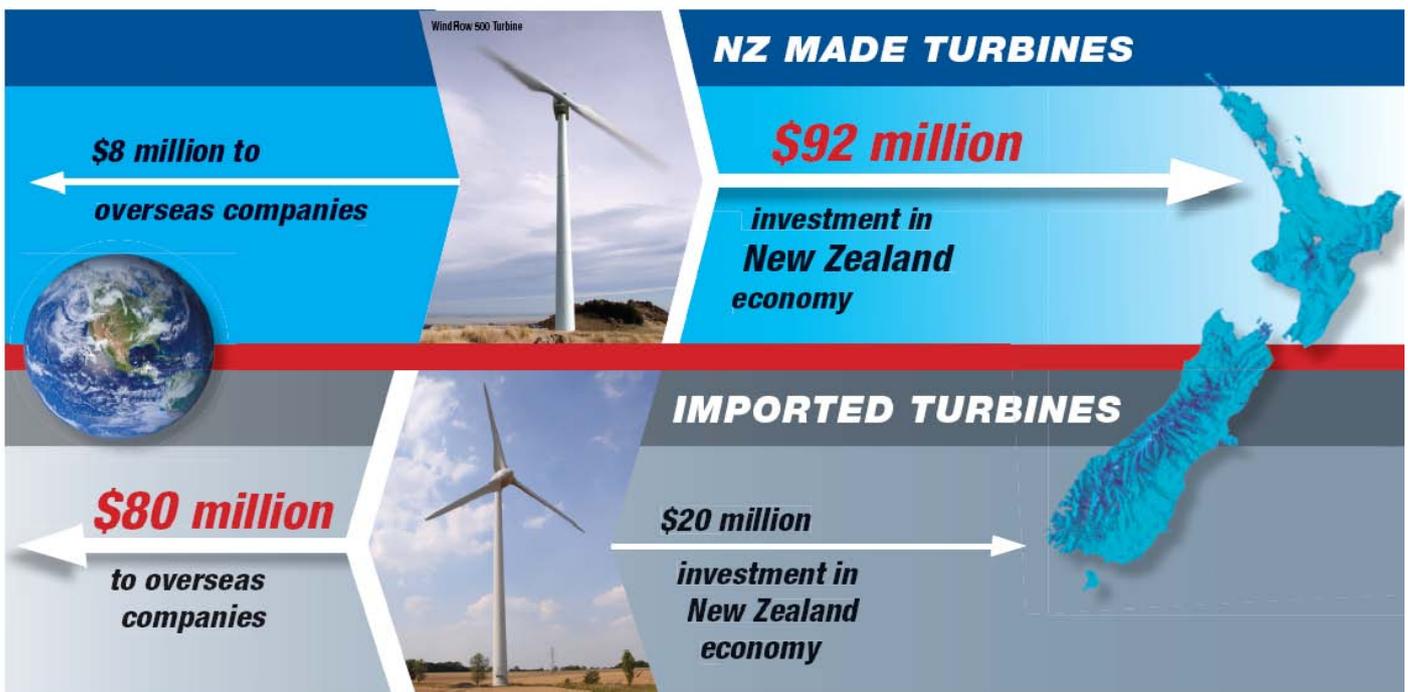
"In total, an average \$1m increase in the gross output of the domestic manufacturing industry results in an additional \$0.93m in value added and 8.87 FTEs."
www.icn.govt.nz/contentimages/berl.pdf

- Benefits of NZ manufacturing:**
- When at its target minimum build rate (60 turbines or 30 MW per year), Windflow Technology directly or indirectly employs 400 New Zealanders
 - Local content is over 90%, so for every \$100 million worth of windmills/turbines, \$90 million is spent in New Zealand. Its first wind farm project has had around \$120 million invested in it of which the turbine content is about two-thirds
 - The international wind business has grown from 2 GW installed in 1990 to 180 GW installed now (25% p.a. compound growth rate). It is now about 33 GW per year worth about \$100 billion per year, three times the size of the international hydro power industry and 200 times the size of the international geothermal power industry
 - Manufacturing creates 9-10 times the value for the New Zealand economy (per dollar of total project size) that technology licensing does, so there is a compounding of value whereby the size of the market that Windflow is addressing can be multiplied by a greater value per dollar of total project size



NZ Made vs Imported Turbines Comparative investment in New Zealand Economy

Based on a \$100 million Wind Farm Development



UK Market Potential

The Windflow 500 continues to be a good option for UK landowners keen to own their own turbine and earn 19.7 p/kWh revenue (plus another 3 p/kWh for energy exported) under the Feed-In Tariff.

The Windflow 500 is the largest available turbine which has a tip height under 50 m. As such it is the best option for those that want a faster and simpler planning process than using taller turbines. It also is one of only two fully IEC certified turbines in the 100 – 500 kW range, and being Class 1A can best handle the strong winds found in the north. Its synchronous generator gives technical and cost advantages particularly on weak electrical grids such as those in the north of the UK.

However, as the 100-500 kW FIT band is so good it has attracted a significant number of new competitors, including several turbines which have been de-rated from 800 and 900 kW. These have larger rotors and very much impose themselves on the environment. Where planners are prepared to grant permission for this scale of turbine we cannot compete in terms of the total return available to the landowner. Therefore we have sharpened our marketing focus onto those sites where we do compete strongly, as outlined above.

To date, one Windflow 500 turbine has been granted planning permission in South Lanarkshire in December 2010. Another 17 are still awaiting determination in the planning process. The enormous interest arising from the FIT has overwhelmed the resources available to councils and power companies, resulting in delays to the processing of planning applications and line surveys. Combined with the effect of the FIT review, the upshot is that the first UK orders for Windflow 500 turbines are expected to be delayed until after June 2011.

Various Windflow staff have been assisting UK distributor VG Energy in their marketing and promotion efforts. Sheralee MacDonald, Marketing Manager, spent 3 weeks in UK in January, attending trade shows, the Scottish Renewable Planning Conference and also meeting with developers and consultants who were interested in the Windflow 500.

Geoff Henderson our CEO, spent two weeks in March/April, and Astrid Kirketerp, Marketing Assistant, joined Windflow UK staff Nick Bowmar, Andy Strowbridge (see New Staff) and VG Energy representing the Windflow turbine at the All Energy event in Aberdeen in May which attracted over 7000 visitors.



Andy Strowbridge (second to left) and Nick Bowmar (furthest right) talking with potential customers at the All Energy conference in Aberdeen.

FIT Review

In February this year, the United Kingdom Energy Secretary announced a comprehensive review of the Feed-In Tariff (FIT) scheme following growing evidence that large scale solar farms could soak up money intended to help homes, communities and small businesses generate their own electricity.

The review will assess all aspects of the scheme including tariff levels, administration and eligibility of technologies. Tariffs remain unchanged until April 2012 (unless the review reveals a need for greater urgency). Previously the tariffs were not expected to change until April 2013 at the earliest. The outcome of the review may be as late as the end of the year but the market expectation in the UK is that information will be released before the parliamentary recess in July.

While this review is causing some uncertainty, according to Windflow's UK distributor, VG Energy Limited, "the market anticipates the review will not substantially change the FIT terms as they relate to wind generation". This market belief is based on the review being accelerated due to the unexpected use of the FIT by large scale solar arrays, covering arable land (not just rooftops) in not-so-sunny Britain.



Windflow's UK distributor VG Energy now have around 40 staff. VG Energy installed 10% of all FIT wind projects (0-5 MW) in the UK from April 2010 to March 2011.



OWL directors (on left) meeting with Blueskin Resilient Communities Trust Directors (on right)



Our Wind Ltd

In March, Our Wind Ltd (OWL) was launched in response to demand from community groups who wanted to see community wind projects succeed in NZ. OWL has signed its first Memorandum of Understanding with Blueskin Resilient Communities Trust to work together towards a community owned cluster of wind turbines at Blueskin Bay, north of Dunedin.

OWL envisages a number of partnerships with communities where OWL provides technology support, wind resource measurement and negotiations with local lines companies, or Trusts, and users.

Windflow has funded the initial start up costs of the organisation,

and has been hosting the board of director meetings. The directors include former Green Party Co-leader Jeanette Fitzsimons and former Parliamentary Commissioner for the Environment, Dr Morgan Williams along with several Windflow board members.

Dr Morgan Williams, chair of the OWL board, said "Local ownership of renewable generation is a powerful contribution to the resilience of communities. It strengthens community engagement, provides a local investment opportunity and diversity in electricity supplies".

To see the media release and read more about the directors, check out the website: www.ourwind.co.nz

Technical Comparators: Swept Area preferred over Rated Power

Some people use capacity factor as the basis for comparing wind farms and turbines.

Capacity factor is the average kilowatts produced over a period, divided by the rated output power of a wind turbine (kWa/kW).

It has appeal as a technical comparator because it is dimensionless, however performance based on swept area is used in the international wind industry for technical and economic comparisons.

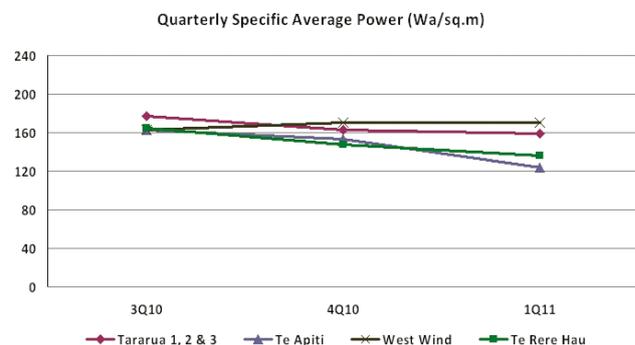
Reasons being:

For economic comparisons, swept area is a more significant driver of turbine weight and cost than rated power.

For purely technical comparisons, swept area is a more significant driver of average power output than is rated power. Swept area determines the amount of wind energy being intercepted by the turbines and thus provides a better comparison between turbines operating in similar wind regimes.

Specific average power (SAP) is the average power divided by the swept area of a turbine or wind farm. It has units of average watts per square metre (Wa/sq.m). All else being equal, differences in SAP will reflect differences in wind conditions or turbine availability, whereas Capacity Factor is a misleading comparator because identical wind conditions can result in significantly different values of capacity factor even at 100% availability.

The following graph shows the output in 2010 of the Te Rere Hau wind farm expressed as SAP and compared with the other wind farms in the lower North Island. It shows that all the wind farms produced similar amounts of power per unit of rotor swept area. By contrast a comparison of capacity factor would show large, but meaningless, differences.



Windflow has deliberately optimised the turbine for high wind conditions, with a very high value of specific power rating (SPR, W/sq.m). Thus a capacity factor comparison is entirely predictable and completely irrelevant without further information about \$/kW (or \$/sq.m or \$/kg).



2011 is the third year of Global Wind day which took place on 15 June. It is an awareness campaign for the promotion of wind energy worldwide. The messages are clear: wind energy tackles climate change, it boosts energy independence and it is an intelligent investment.

Several competitions are running over the next month in New Zealand. Details are available via the link on our website to the Global Wind Day NZ facebook page.

Kids Drawing Competition

In recognition of Global Wind Day, Windflow ran a competition for local intermediate level (1-13 year old) school children. Windflow asked for drawings of a two bladed wind turbine. The competition is still running as the newsletter is being drafted, but finishes on 29 June. We'll be able to report more in the next newsletter. Below are two drawings.



Welcome New Staff

Clinton Hancock – Windsmith

Clinton joined Windflow's Te Rere Hau team in February 2011. Clinton is an electrician by trade and has previously worked for Downers where he was maintaining the electrics at the telecommunication sites. Clinton is originally from Palmerston North and he likes hunting in his spare time.



Andy Strowbridge - UK Sales Manager

As part of concentrating efforts on UK sales, Windflow appointed Andy Strowbridge as UK Sales Manager in March 2011. Andy is an experienced engineer, business transformation consultant and project manager. He has a Masters degree in Engineering and a post-graduate Certificate in Design, Manufacture and Management from Cambridge University. Andy comes to Windflow with more than twenty years experience in a career which includes four years in the wind industry with Wind Energy Group Ltd in the early 90s. Wind Energy Group (WEG) is the company where Geoff Henderson worked in the late 80s when he was in UK and developed some of the technologies for the Windflow 500. Andy is based near London, but will initially spend much of his time supporting Windflow's sales team in Scotland. He will work alongside Nick Bowmar, Windflow's UK Business Development Manager, who moved to Scotland from Christchurch (New Zealand) in December. Nick has been working closely with Windflow's exclusive distributor in the UK, VG Energy Ltd, which is based in Galston near Glasgow.



Sean McCullough – Windsmith

Sean has been working at Te Rere Hau as an Electrical Apprentice for Mighty River Power for a few months before he joined the maintenance team in June 2011. Sean is originally from Tauranga.



Share Graph



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