

Wind Energy Case Study

You never know where wind will take you

To the casual observer, a wind farm may look simple and elegant on the hillside. But there is a wide range of work that needs to be done on site to maximise its electricity production. And this work is creating business and career opportunities for many Kiwis.

Starting small

"It all started with a \$25 job for the local wind farm operation at Te Apiti, near Ashhurst," says David Hoskin, Managing Director of Ashhurst Engineering and Construction. "It was almost more hassle than it was worth, but over the years the business has grown and grown. Now our work with wind farms represents at least 20% of our turnover," says David. "In real terms there are up to eight families that are being supported by our work in and around wind farms."

Ashhurst Engineering's work in and around wind farms has taken them all over the world. They have built specialist equipment for use at wind farms and create innovative solutions to new challenges. "It is important to be on-site because you can see what the real problems are and come up with practical ideas to fix them," says David. Some of Ashhurst Engineering's solutions have led him and his team to America where they have applied their Kiwi knowledge and experience.

"Working with wind technology is interesting work," says David. "Our staff are motivated by the unique opportunities wind energy production gives us." David's team provide a level of service that is uniquely Kiwi. "An engineer could be up at a wind farm in the middle of the night if there is a problem," says David. "We also spend a lot of time keeping our skills and training up to scratch. Health and safety is a key component that everyone is focused on."

Being based near one of the windiest sites in the world has certainly helped Ashhurst Engineering. It is now one of the largest employers in Ashhurst and the future looks rosy. "Wind energy production is only going to grow," says David. "Wind has minimal environmental impact and it is renewable."

For farmers it is a great option. The towers take up very little land. Stock can still graze and most farms that have a wind farm on them get the added benefit of new roads and fencing as well as an extra income stream.

Career opportunities

Te Apiti is one of the most productive wind farms in the world, says Hamish Scott, site manager for Meridian Energy. Te Apiti, commissioned in 2004, was Meridian's first wind farm and it outperforms many other wind farms across the world. The wind near the Manawatu Gorge is consistently strong.

"There is still a strong interest by people wanting to come out and look at the turbines. We easily get over 50 cars a day on the weekend to the visitors' car park," says Hamish.

Hamish's job is to ensure the wind farm runs smoothly. He used to be hands-on, climbing the turbines to maintain them. Nowadays he has responsibility for the big picture and ensures all the turbines at Te Apiti are maintained and managed properly. But one of the jobs he enjoys most is sitting on the Meridian Community Fund panel, where he assists community members in handing out grants to local projects. "We have just helped a school get fibre optics installed and upgraded two community halls," says Hamish.



Ashurst Engineering and Construction

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Next door to Te Apiti is the largest wind farm in the country, Tararua wind farm with 134 turbines. Garry Lamb, a technician with wind turbine manufacturer Vestas, is one of 16 technicians kept busy ensuring that all of Tararua wind farm turbines are maintained to the highest standards. Garry used to be an electrician, but now has a whole new set of skills. "I have been sent for training to India, Denmark and Australia," says Garry. "It is a different and challenging job."

"Working on the wind turbines means that you can't be afraid of heights." Some of the largest towers have lifts, but for the others there is a 45 metre climb up a ladder. The key is keeping each turbine as productive as possible. There is so much data available that I can jump on a laptop and compare each turbine with industry averages or just the turbine next door."

"The wind does provide challenges though," says Garry. "We have to do much of our work on low wind days because when it is really blowing we prefer to leave the turbines to produce power."

Using specialist skills in new situations

Malcolm Blunsdon is a boat builder. So it was quite surprising to see him at Te Apiti wind farm. "Because of our boat building skills we are experts in working with shaped fibre glassing," says Malcolm. "The blades cut through the air like a boat through water and they need maintaining."

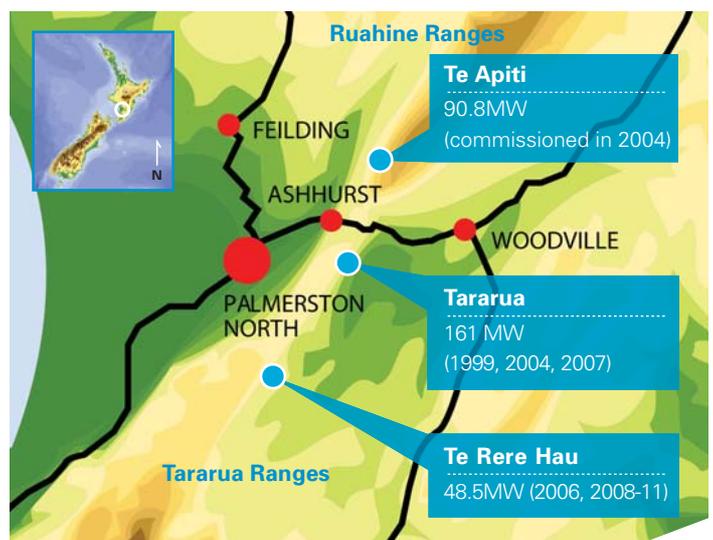
The quickest and easiest way to maintain the blades is to actually climb up the tower and get into the blades themselves. "We are all highly trained in working at heights and regularly conduct safety training," says Malcolm. This niche business has grown over the years and Malcolm now employs seven staff.

Craig McIntosh, Managing Director of McIntosh Cranes, has also developed specialised skills and equipment to work on wind farms. "We have specialised cranes that mean we can access the sites and lift up the turbines and blades." McIntosh Cranes has been involved in construction work at Te Rere Hau wind farm, south of Te Apiti and Tararua wind farms. It can take up to one and a half to two days to build the wind turbine towers and mount a nacelle and blades onto a tower at Te Rere Hau. But the work does not stop there, explains Craig. "We not only help build the towers, but we also help maintain them. Wind farms not only generate power they also generate work."



Erecting turbines at Te Rere Hau

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 October 2010

The New Zealand Wind Energy Association (NZWEA) is an industry association that works towards the development of wind as a reliable, sustainable, clean and commercially viable energy source. We aim to fairly represent wind energy to the public, government and the energy sector. Our members include 80 companies involved in New Zealand's wind energy sector, including electricity generators, wind farm developers, lines companies, turbine manufacturers, consulting firms, researchers and law firms. Find out more about wind energy and wind farms in New Zealand at www.windenergy.org.nz