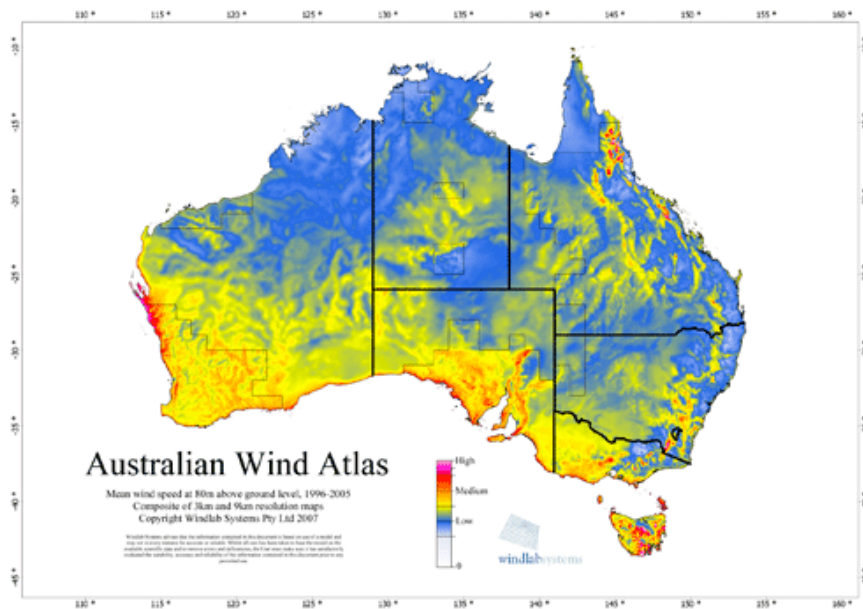


## Good prospects for local wind-mapping company

Mary-Lou Considine

**Windlab is a renewable energy success story that began as a CSIRO spinoff in 2003. But, it hasn't all been plain sailing. Finding investors willing to plough money into a 'risky' renewables venture proved a challenge; weathering the politics around renewable energy policy and carbon pricing has been another.**



Credit: © Windlab Systems

When Queensland recently announced the construction of a 720-kilometre high-voltage transmission link between Townsville and Mount Isa, it opened a door for Australian-based company Windlab Systems to advance the development of the country's largest wind farm – a 750 megawatt facility near Hughenden, southwest of Townsville.

It's a major coup for the company, which began when CSIRO scientists Dr Keith Ayotte and Dr Nathan Steggel headed up a spinoff to commercialise a CSIRO wind modelling and mapping program.

Their WindScape program determines a site's wind resource potential by generating high-resolution maps from existing meteorological data of mean annual wind speed and annual energy yield for target sites. Dr Ayotte describes it as a remote 'prospecting' tool for initial assessment of site viability without the need for field measurements.



Credit: Windlab Systems

However, good wind conditions don't guarantee a successful wind farm. The program's wind information is therefore combined with powerline and land-use data to assess proximity of grid connections and land-use types in the vicinity. This integration of data reduces risk by shortening development timeframes. It also increases the likelihood of selected sites leading to commercially viable projects that address local community and environmental concerns.

The wind-mapping program is complemented by a turbulence-flow modelling program, which ensures turbine longevity through minimising operations and maintenance costs.

Today, Windlab has evolved from a wind-mapping consultancy to a wind-farm developer that uses its mapping and modelling technologies to identify large-scale projects and take them from concept to financial close.

The transition has not been without its challenges, says Luke Osborne, Chief Operations Officer at Windlab.

'We had the usual cash-flow challenges in the commercialisation "valley of death", but we made it through,' he says.

'To survive the loss of government support for renewables early on, we began operating offshore – in New Zealand, North America and South Africa. We also took on a joint venture partner: Investec Bank. By taking on more risk, the returns were a lot higher.

'What we do now is bind our wind-mapping tools very tightly to our business processes and risk management. For example, if you move into an area that's already got some wind-farm activity, the first thing you do is build a wind map and build economic models of everyone else's wind farms, so you can understand where you are positioned in the market,' Mr Osborne explains.

Dr Ayotte, now Windlab's Chief Technology Officer, says one of the biggest constraints in Australia is the sparse electricity grid.

'You tend to find yourself scratching around for places that are windy and near the grid,' he says. 'We have the advantage, because we can really burrow down into the data to find less obvious locations.'

Collgar Wind Farm in Western Australia, Oaklands Hill in Victoria and Coopers Gap in southern Queensland are all examples of 'less obvious' inland locations identified through WindScape.

Once a grid connection point is identified, the next constraint is the high cost of connecting to the transmission line.

'That can kill the economics of your wind farm, unless it is big enough that you can spread the cost among a lot of turbines,' says Dr Ayotte. Windlab focuses on large-scale wind farms, from 100–200 megawatt capacity and upwards.

According to Dr Ayotte, another challenge facing Windlab – and the rest of the renewable energy sector – is the uncertainty around the introduction of a carbon price in Australia, which makes nervous renewables investors even jumpier.

'What really kills business is uncertainty,' he says. 'If you were asking yourself whether or not you wanted to be getting into any game, you would be pretty reluctant if you didn't know what the rules were.'

Despite this uncertainty, the prospects for Windlab look good. Its projects in Australia and South Africa are multiplying, and Queensland's proposed \$1.5 billion Kennedy wind farm project – an installation of up to 300 turbines – is set to create 1000 jobs and boost Queensland's power generation capacity by six per cent.

From ECOS online <http://www.ecomagazine.com/?paper=EC10120>