

Wind Prospect Africa

Sept 2011



Working in partnership. Delivering capacity.

Welcome

to the latest edition of the Wind Prospect Africa Newsletter.

It's been a busy few months for us here moving into our new premises in the heart of Cape Town. We've been recruiting new team members to help us in what is fast becoming the heart of Africa's burgeoning renewable energy sector.

In addition to existing wind resource services, development services and due diligence capability, we now have Construction Management expertise with the secondment of engineer Brian Cunningham from Wind Prospect Ireland.

In this edition, we hope to give you a flavour of the work that we do as well as give insights into some of the key issues facing our industry.

If you have any comments, or would like to get in touch please don't hesitate to contact us at chanda.kapande@windprospect.co.za

Chanda Kapande
General Manager

Brian Cunningham
Engineer



- Site Engineer on 75MW
- Site Engineer for the construction of 19 Vestas V90 project in Cork
- Project managed construction of 5 wind farms

News in brief

Darling's performance update completed

Wind Prospect Africa has recently completed an operational review of Darling Wind Farm on behalf of the Development Bank of Southern Africa. This landmark project was the first grid connected wind farm in South Africa and has four wind turbines, which can supply 5.2 megawatts of electricity.

Wind Prospect carried out turbine and site inspections. A review of the performance of the wind farm was undertaken that included availability, power curve analysis and an operational energy yield assessment. We also assessed the operational and maintenance arrangements, including O&M contracts, budget, future strategy for operation, and a review of the long-term power purchase agreement with the City of Cape Town.

The work provided our client with an independent view on the performance of the wind farm to date and highlighted any issues with the planned operation in the future.

International view on Africa

Wind Prospect recently attended the 3rd Wind Power Africa Conference & Renewable Energy Exhibition.

This was a great opportunity to meet some of our local and international colleagues in the industry. It was also the perfect environment for thought-provoking debate around how best to unlock Africa's wind energy potential.

Wind Prospect's Colin Aimers and Chanda Kapande gave delegates an insight into their combined wealth of international experiences which they hope to bring to the African market.



Triton reduces uncertainty

African customers can now rent or buy the industry's leading remote sensing systems alongside Wind Prospect's wind resource and development services.

SecondWind's Triton uses sodar (sound detection and ranging) technology to measure wind at higher heights than the previous tower-based standard.

Tritons measure wind speeds at the turbine rotor's hub height and beyond, with up to 200 metres reach. They can be used for site prospecting and to reduce uncertainty in annual energy production forecasts. Triton's ease of deployment also streamlines the wind farm development process. There are now 10 units operational across South Africa.

Banking on wind

Wind Prospect has recently been selected to act as Bank's Engineer on two of the first projects to be financed by three of South Africa's leading banks. The role includes pre-financial close due diligence, construction monitoring and ongoing operational support to the lenders over the first two years. The project will be managed by the engineering and wind team based in Cape Town.

Track record



Fail to plan, plan to fail

Top of the priority list for investors, financiers and developers is cost. Given the current economic climate, it's little wonder there is increasing focus on the bottom line. The industry is rife with stories of overrunning construction times and spiralling costs. But, says Colin Aimers, "it's all in the planning."

Developers hoping to deliver future wind energy projects on-budget would be well advised, to forecast capital expenditure costs realistically and address the major risks associated with scheduling and scope in each of the construction phases as a means of ensuring the anticipated Internal Rate of Return (IRR).

"There are a number of phases that developers must work through during the construction of a wind farm and at each stage –



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pre-construction, construction and turbine erection- you can mitigate the risks involved through a series of key steps."

Prior to starting work on site, a variety of pre-construction activities must be completed, including detailed site layout designs, geotechnical investigations, sub-station design, highway and access modification design, and environmental and planning consenting.



In view of the number of separate contractors involved in a wind energy project, it is considered best practice for all contracts in place to be managed by a single entity before work commences on site. Some investors will prefer to negotiate a single turnkey contract with a wind turbine, supplier while others favour appointing multiple contractors, and a project manager to manage interfaces, programme, commissioning and other aspects of the project.

Through thorough planning and by parcelling out the risks to those best placed to absorb them,



many of the issues and problems that often arise during the construction process can be avoided. A developer should tailor this process during the pre-construction stage according to the unique combination of terrain, climate, schedule and turbine types involved in the project.

Once on site, the construction phase typically takes between six months and twelve months, depending on the wind farm size, the location, the ground conditions, and the equipment lead times. There are many variables that can cause project delays, so it is critical that these are anticipated, where possible, in order to keep a project on track.

Wind turbine erection takes place once key areas of the site have been completed and are ready to accommodate the assembled turbine. A specialist contractor or the turbine manufacturer itself generally undertakes the assembly and erection of the turbine. This process is usually straightforward, with weather-related delays

being the main area of concern for the sponsor and contractor alike.

By planning ahead and being proactive throughout the construction developers can reduce risk, cost and programme delay and increase stakeholder confidence in the project.

The three most effective ways to ensure that such cost over-runs are avoided are:

1. to involve all affected parties early on
2. to ensure costs are realistically forecast to account for risks, particularly if projects are in a new market such as South Africa or utilising newer turbine equipment
3. to carefully review the use of sub-contractors, who may have experience of installations in other industries, but not in wind.

