



Mt Emerald Wind Farm Community Newsletter

Issue 3 – September 2011

Welcome to Issue 3 of the Mt Emerald Wind Farm newsletter.

This newsletter will provide you with an update on the progress for the development of the wind farm and to provide factual information in relation to key concerns being raised by the community.

Change in Ownership

In July this year, Transfield Services ownership in the Mount Emerald Wind Farm project was sold to Ratch Australia Corporation Limited (RACL). RACL is 20% owned by Transfield Services Australia and 80% by Ratchburi Electricity Generating Holdings, a Thai based electricity company with over 5,000MW of installed capacity.

As the Transfield Services team have transferred to this new entity these changes will have no impact on the development of the Mount Emerald project and the project manager remains the same.

Status of Development Application

The development application for the Mt Emerald wind farm was finally lodged with the Tablelands Regional Council on 15 August 2011. This was possible only after we spent 18 months investigating a wide range of issues, including the impact on traffic, flora and fauna, view, aeronautics, culture and heritage and creation of shadows and noise around residences in the vicinity of the wind farm.

Shortly thereafter, the Tablelands Regional Council applied to have an amendment made to the planning code to allow them to fully assess wind farm development applications in the region. This amendment is known as a Temporary Local Planning Instrument (TLPI). The TLPI was approved by the State Minister for Planning on the 16th September.

As developers of the Mount Emerald wind farm, we have been in ongoing contact with the Tablelands Regional Council in relation to the proposed requirements of the TLPI and our documentation relating to the project was prepared to address the Council's proposed conditions. As such, **the Development Application addresses the requirements of the proposed TLPI and includes a Statement of Commitments that embraces the conditions outlined in the TLPI.** The application and the supporting studies are available through the local council or can be viewed on the project website.

www.windfarms.net.au/html/development_portfolio/mount_emerald.php

Studies into Visual Impact

The elevation of the site, size of the wind farm structures and the prominence of the land along public viewpoints means that the wind farm will be visible from the surrounding landscape. Because of this, we commissioned a consultant to prepare a 3D model that replicates the anticipated visual impact from the wind farm from various locations. High quality montages have been prepared for 10 general locations around the site while a further 130 computer generated simulations have been prepared for more specific viewpoints such as residences and towns.

The montages and simulations represent the primary human field of view that would be seen from the actual viewpoint position at the same time of day and reflecting the same climatic conditions as those experienced on the day the photograph was taken.

All of these representations have been prepared by Truescape, which is a highly qualified company, expert in the preparation of such images, with views calibrated using on-site survey to ensure the quality and accuracy of the reproductions. Truescape's client base spans many industries, from landscape architecture and engineering firms through to major New Zealand, Australian and US companies. Truescape simulations have been produced as evidence in forums such as the New Zealand Environment and High Courts, Australia's Victorian Civil and Administrative Tribunal and the Supreme Court.

The high quality montages will be available at our next community day but we have a wide variety of other viewpoints available, so to understand what your view of the wind farm will look like, please contact the Project Manager.



Noise

The Mt Emerald wind farm will be designed such that noise emitted by the wind farm remains below specific limits as set out in accepted guidelines and standards in Queensland and Australia.

The following noise limits have been used:

- Audible Noise – the greater of 40dBA or the background noise level plus 5dBA – applicable standards; *Qld Environmental Protection (Noise) Policy 2008 and South Australian EPA Wind Farm Environmental Noise Guidelines 2009.*
- Infrasound Noise – 85dBG indoors – *Qld Department of Environment and Resource Management (DERM) Assessment of Low Frequency Noise, Part A Infrasound*
- Low Frequency Noise – 50dB(Lin) indoors - *Qld Department of Environment and Resource Management (DERM) Assessment of Low Frequency Noise Part B Low Frequency Noise*

The existing noise levels or background was determined by monitoring the noise levels at six locations in close proximity to the proposed wind farm site over a two week period to obtain a collection of data for a range of different conditions and wind speeds.

The levels of background noise recorded range from 26dB to 32dB under a light wind (18km/h) to 30dB to 35dB for a moderate wind of 36km/h. For winds higher than this moderate level the background noise level will continue to increase, however the noise emitted by the wind farm will not increase as the turbines have reached their maximum noise level at this speed.

The results of the noise assessment for audible noise show that noise goals will be met at all locations, with all below the minimum level of 40dBA even under the highest noise emission conditions for the turbines.

Predicted wind farm noise levels are also below the background noise levels at most locations, with only 7 out of the 78 nearby receptors/houses likely to experience a noise level above the existing background. In all of these 7 cases the increase is within the allowable 5dB increase under the guidelines, which is the amount generally accepted to be required for a noticeable change in noise level.

The low frequency and infrasound assessment also shows compliance with the standards, with levels calculated to be below the prescribed limits. For Infrasound the maximum calculated level is 66dBG compared to a 85dBG limit and for low frequency the maximum calculated limit is 56dB(Lin) compared to a 60dB(Lin) limit. An outdoor limit for low frequency noise is used at this time due to specific intricacies involved in modelling the low frequency noise within a dwelling, making it too difficult to undertake for all receptors.

Impact on Aviation

Aviation consultant Lambert & Rehbein determined that even though the Mount Emerald wind farm is located within 13km of the Mareeba Aerodrome, it is not considered to impact upon the operations of this aerodrome. Their analysis, which is available on our website, also indicates there will be no impact upon airborne traffic transiting the area.

Lighting

Current aviation safety guidelines stipulate that objects over 110m should be marked with hazard lighting, however Civil Aviation Safety Authority are presently considering increasing this limit to 150m which would remove the requirement for lighting. If the wind farm is determined to require night-time hazard lighting, the lights will be located on the body of the wind turbine and will include shields to

limit the lighting to areas above a horizontal plane, level with the hub height of the wind turbine. It is expected that only 8 of the turbines will require lights under such a scenario.

Given the wind farm site is approximately 300m above the surrounding land and allowing for a 1° down angle, the lights will be shielded to a distance of roughly 17km from the wind farm.

Agricultural Spraying

Lambert & Rehbein also evaluated the impact on aerial spraying activities and concluded that under strong wind conditions aerial spraying may be difficult downwind of the wind farm, however it is unlikely aerial applications would occur in such winds.

We have been concerned by the misunderstanding that has occurred as a result of the Lambert & Rehbein Aeronautical Assessment report. We have sought clarification from Lambert & Rehbein in regard to aerial spraying operations and can confirm that spraying operations are very unlikely to be affected by the wind farm for the following reasons:

1. Spraying operations are normally conducted at low altitude and often require calm or very light wind conditions – agricultural operators have stated that generally they operate in wind conditions up to 15km/h. At wind speeds of 15km/h, the proposed wind turbine generators are either not rotating or rotating minimally and hence the agricultural operations would not be affected.
2. The wind turbines are proposed on elevated undeveloped ground and reasonably removed from the surrounding agricultural land. As spraying and spreading operations are normally conducted within a height of 90m above ground level, the aircraft is well below the level of the wind turbines on the wind farm site (roughly 300m above the surround land).

Further, we would like to clarify some statements made in the Aeronautical Assessment conducted by Lambert & Rehbein:

Report statement 1: Low level flying such as aerial spreading and spraying operations or inspection of power transmission lines will no longer be feasible on the downwind side of the turbines over the properties on which the turbines are sited, or over portions of some adjoining properties that are sited downwind from the turbines. Wind shear, turbulence and downdrafts in the wake of the turbine rotors can present a critical hazard to aircraft such as agricultural aircraft operating at low level and high weights during application of chemicals and seeding.

Clarification: Wind shear, turbulence and downdrafts in the wake of the turbine rotors occur when the turbines are operating, which is at wind speeds above the normal operational parameters of aerial spraying. As previously noted aerial spraying generally occurs in winds up to 15km/h, the operating range of the wind turbines is 15km/h to 95km/h.

Report statement 2: "Instead of operating at the usual height of 90 m, pasture seeding or spreading of fertilisers would have to be performed from a height in excess of the turbine rotor zenith in order to maintain a safe vertical distance from the rotors and their wake. Substances being spread would impact the rotors, possibly causing damage.

Clarification: This relates to aerial spraying on the wind farm site land only, not on areas outside the leased land. As the land leased for the wind farm is not used for agriculture, no spraying is done and would not need to be done. This would not be required in adjoining agricultural properties.

Report statement 3: "Spraying in stronger wind conditions would be rendered impractical by the rotor wake which can contain downdrafts that may exceed the performance of the aircraft, particularly at high operating weights. This hazard, combined with the undulating nature of the terrain on the wind farm site, could make aerial application of chemicals difficult on properties in the vicinity of the wind farm, particularly those within 5 km downwind from the site."

Clarification: These stronger wind conditions are not suitable for aerial spraying. For turbulence to be felt at 5km distant, the wind speed would need to be significantly stronger than wind speeds in which aerial spraying normally occurs. Aerial sprayers in the region have indicated that operations generally only occur in winds conditions up to 15km/h. Given the operating wind speed range for the wind turbines is from 15km/h to 95km/h, there should be little, if any, restriction to aerial spraying downwind of the turbines under normal spraying conditions.

Given the location and topography of the Mount Emerald wind farm and the surrounding area it is expected there will be very little disruption to aerial agricultural activities. The alignment of aerial spraying approaches and run lines can be easily adjusted to avoid passing over the project site. Provided the wind farm area is avoided on approach and exit there should be no restriction to normal operating procedures. Areas to the east and west of the site should use a predominantly north-south alignment and areas to the north an east-west line.

Provided a common sense approach to the alignment of aerial runs is adopted there is no reason operation cannot be continued. We would like to work with the industry to understand and alleviate any concerns.

Impact on Property Values

The most comprehensive Australian study to date on land values and wind farms was undertaken by the NSW Department of Lands in 2009 for the NSW Valuer General. This study investigated 8 wind farms (2 in NSW and 6 in Victoria) across varying land uses using conventional property valuation analysis. **The main finding was that the wind farms do not appear to have negatively affected property values in most cases.** This outcome is consistent with the findings of other international studies.

Economic Benefits

It is expected the proposed wind farm will bring significant economic benefits (direct and indirect) to the local and regional economy throughout the life cycle of the project. The phases can typically be described as development, construction and operation.

The expected overall cost of the project is estimated to be in the order of \$500 million. **At a direct level, we will strongly encourage our contractors to, procure goods and services from local suppliers and employ people in the local area wherever possible.**

It is anticipated workers and contractors required for the project will include plant operators, truck drivers, mechanics, welders, fencers, electricians, labourers and other individuals typically used in a civil construction context.

At an indirect level, it is expected economic benefit will arise through the provision of short to medium term accommodation, entertainment and goods & services primarily during the construction and operational phases. It is expected this expenditure will occur within the local community as a proportion of wages paid to employees associated with the wind farm. Indirect employment opportunities may also be created as a result of meeting increased demand for these services as well as in the area of tourism.

Environmental Benefits

The development has the potential to supply the annual electricity needs of approximately 75,000 North Queensland homes. This is roughly equates to all of the power needs for the Tablelands Region or 60% of Cairns.

More Information

Please contact: Mt Emerald Wind Farm Project Manager, **Terry Johannesen** on **07 3248 8765** or **terry.johannesen@ratchaustralia.com** with any questions.

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