



Transfield Services Baynton Wind Farm

www.windfarms.net.au

Transfield Services home grown and growing



Company Background

Transfield Services Limited is an Australian-based company that provides a wide range of world-class services to a diverse range of clients globally.

Transfield Services is listed on the Australian Stock Exchange (ASX) and is a top 150 Australian company. Transfield Services has a turnover of \$2.4 billion and has 28,000 employees across Australia, New Zealand, the United States, the United Arab Emirates, Qatar, South East Asia, India, Canada and South America.

What Transfield Services is about

Transfield Services provide services to ensure power is on, gas and oil flowing, telecommunications connected, water and transport services are running and a wide range of facilities and workplaces are operating efficiently.

Transfield Services is an integrated service provider, delivering services across the full engineering value chain, including project feasibilities, project and capital works management, capital upgrades and rehabilitation, operations, maintenance and asset and facilities management services.

The Company provides services to a diverse range of industries, including mining and process, hydrocarbons, power, water, roads, rail and public transport, telecommunications and defence.

Power Generation

Transfield Services use best-practice systems and processes, backed by technically-skilled people to deliver power services.

Transfield Services provides asset management, operations and maintenance services to Townsville and Collinsville Power Stations in Queensland and Kemerton Power Station in Western Australia.

Transfield Services also contract manages the operators wind farms located at Windy Hill in Queensland; Toora in Victoria; and Starfish Hill and Mt Millar, both in South Australia. Transfield Services acquired the Baynton wind farm development in 2007. Transfield Services is in an ideal position to make a major contribution to the Australian Government's renewable energy targets for 2020.

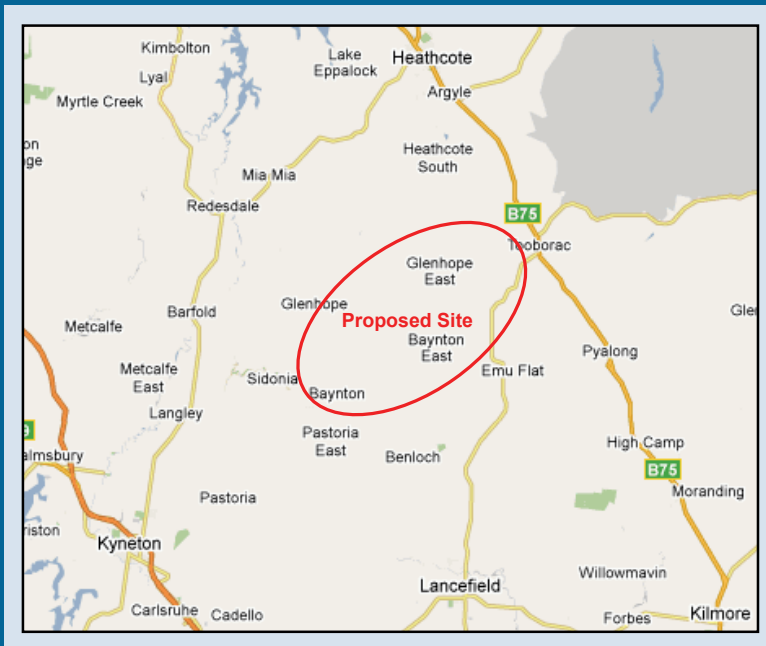
Working with Local Communities – Becoming a Better Neighbour

Transfield Services is committed to becoming a better neighbour. This means taking responsibility, working closely with local communities and operating sensibly in a changing climate. Transfield Services has an extensive geographic presence across Australia and is committed to being an active part of the community, especially in remote and regional areas. Transfield Services aims to build sustainable communities alongside sustainable business.



Baynton Wind Farm General Information

Transfield Services is currently assessing the potential for a wind farm to be developed on the hills west of Tooborac village.



Highlighted above is the proposed site of the wind farm.

The Site

The land on which the Baynton Wind Farm would be developed is privately-owned farmland used primarily for sheep grazing. The site has been chosen as it has an excellent wind resource and limited environmental constraints.

The proposed wind farm would have little impact on farming activities, allowing the land to remain productive over the long-term.

Wind Monitoring

Wind data has been collected at the site over several years from three wind monitoring towers. Each tower measures wind speed and direction at various heights above the ground as well as recording other standard weather observations. The data collected suggests the wind resource could be harnessed to produce clean renewable energy.

Number of Turbines

60 to 80, depending on the individual capacity of the wind turbine generators selected.

Wind Turbine Size:

The turbines are mounted on tubular steel towers up to 90 metres high, with each blade up to 50 metres long.

Energy Produced:

Approximately 150 megawatts – enough renewable energy to supply the equivalent annual needs of approximately 50,000 Victorian homes.

Environmental and Economic Benefits

The Baynton Wind Farm would reduce Australia's greenhouse gas emissions by approximately 400,000 tonnes (CO₂ equivalent) per annum, or 10 million tonnes over a 25-year operating life. This reduction is achieved by displacing fossil fuel energy production with clean renewable wind energy.

Investments in renewable energy are environmentally and commercially sustainable. The Australian Government's renewable energy scheme allows producers of renewable energy to sell the power generated and obtain renewable energy certificates (RECs). Energy retailers are required to purchase RECs to support the generation of renewable energy and achieve renewable energy targets.

Transfield Services would also work with Mitchell and Macedon Ranges Shire Councils and the local community on the design of a community investment program, which would extend over the life of the project. In addition, the construction and operation phase of the wind farm is expected to provide local employment opportunities and stimulus to local business.



What is the Planning Process?

The planning process for a wind farm involves several stages as summarised below.

The proposed Baynton Wind Farm is currently at Stage 3. We anticipate the remainder of the process will take up to 18 months to complete.



Environmental Investigations

Preliminary environmental investigations of the wind farm site have been undertaken. The key findings of these investigations are summarised below.

Ecology

An ecological assessment undertaken in 2006 concluded that very little remnant vegetation remains at the wind farm site, with the landscape consisting of cleared land with scattered remnant trees.

The site is considered to have some botanical significance given the presence of two endangered vegetation classes (EVC) – Grassy Woodland and Damp Sands Herb-rich Woodland. Two significant fauna species were recorded at the site - the White-throated Needle-tail and the Powerful Owl.

Further detailed ecological assessment is required, with fieldwork scheduled to commence in November 2010.

Aboriginal and European Heritage

Preliminary heritage investigations undertaken in 2006 found that no previous archaeological surveys had been undertaken at the site and that areas of archaeological sensitivity are present.

A detailed archaeological assessment is proposed and will include consultation with the Dja Dja Wurrung, Wurundjeri and Taungurung Aboriginal communities. Field surveys will also be required and possibly sub-surface archaeological investigations.



Aeronautical Risk

The impact of the wind farm on nearby aerodromes, air navigation, flight paths, military airspace and other aviation activity has been assessed. No significant impact on aircraft operations to and from Melbourne, Essendon or Puckapunyal army base is anticipated.

The need for obstacle lighting at the wind farm is currently being reviewed in consultation with the Civil Aviation Safety Authority (CASA) and the Aerial Agricultural Association of Australia (AAAA). Transfield Services is hopeful that the number of obstacle lights can be minimised or avoided altogether.

Fire Risk

The Victorian Country Fire Authority (CFA), in its 2007 publication *Emergency Management Guidelines for Wind Farms*, notes that the potential for fire from wind turbines is inherently low. The low fire risk is due to a number of factors:

- Each wind turbine is connected to a control centre which will shut down the turbines if there is a risk of overheating
- Wind turbines are a passive technology and have few flammable materials
- Although wind turbines attract lightning, the built-in lightning protection systems safely dissipate the electricity into the ground, and
- Wind turbines are located in cleared areas, limiting the chance of fires spreading if they do occur.

Transfield Services will consult with the CFA during the planning permit process to seek advice on further minimising the fire risk.

Visual

A preliminary landscape assessment of the Baynton Wind Farm has been prepared. It noted that the site is a highly modified landscape featuring predominantly cleared agricultural land and numerous built features including roads, power lines, communication towers, fences, sheds and residences.

Agricultural land is considered to have low landscape sensitivity as it is not unique. It contains structures such as farmhouses, sheds and silos and regularly undergoes major visual change including grazing, cultivation and cropping. Given their low sensitivity, agricultural landscapes are able to accommodate change.

Transfield Services will shortly commence a detailed visual assessment of the wind farm. This will include mapping the surrounding area to indicate where the wind farm will be visible and preparation of photomontages from various locations in the immediate vicinity of the site. The assessment will also include analysis of the potential for shadow flicker to impact nearby residences.

As noted in this document, the need for obstacle lighting is currently under discussion with aviation authorities. A wind farm in this locality would not pose a significant risk to aircraft operations. Therefore it is hoped the number of obstacle lights can be minimised or avoided altogether.

Telecommunications

A telecommunications interference assessment has been prepared for the wind farm site. This has been undertaken to identify the locations of telecommunications paths within the wind farm site. The wind turbine layout will be designed to avoid these paths and thereby minimise the risk of interference to telecommunications and TV signals.





Noise

The Victorian Government's wind energy planning guidelines require that noise levels from a wind farm are either below 40 decibels or less than five decibels above the background noise level at nearby residences. On a scale of common sounds, this noise level is similar to that experienced in a quiet household.

These limits are in place so the noise from a wind farm does not cause annoyance to residents living nearby. Before a wind farm can commence operation it must demonstrate that noise levels at neighbouring residences will be within these limits.

The simplest way to manage noise from wind farms is to provide a sufficient 'buffer' distance between turbines and residences. For the Baynton project, a minimum buffer of one kilometre would be adopted.

Noise monitoring completed in 2010 established the current levels of background noise near the wind farm site. These data were then used to predict the noise levels from the operating wind farm based on a preliminary layout of turbine locations. The predictions indicate that noise levels will fall within the required limits.

Wind Farm Noise and Health

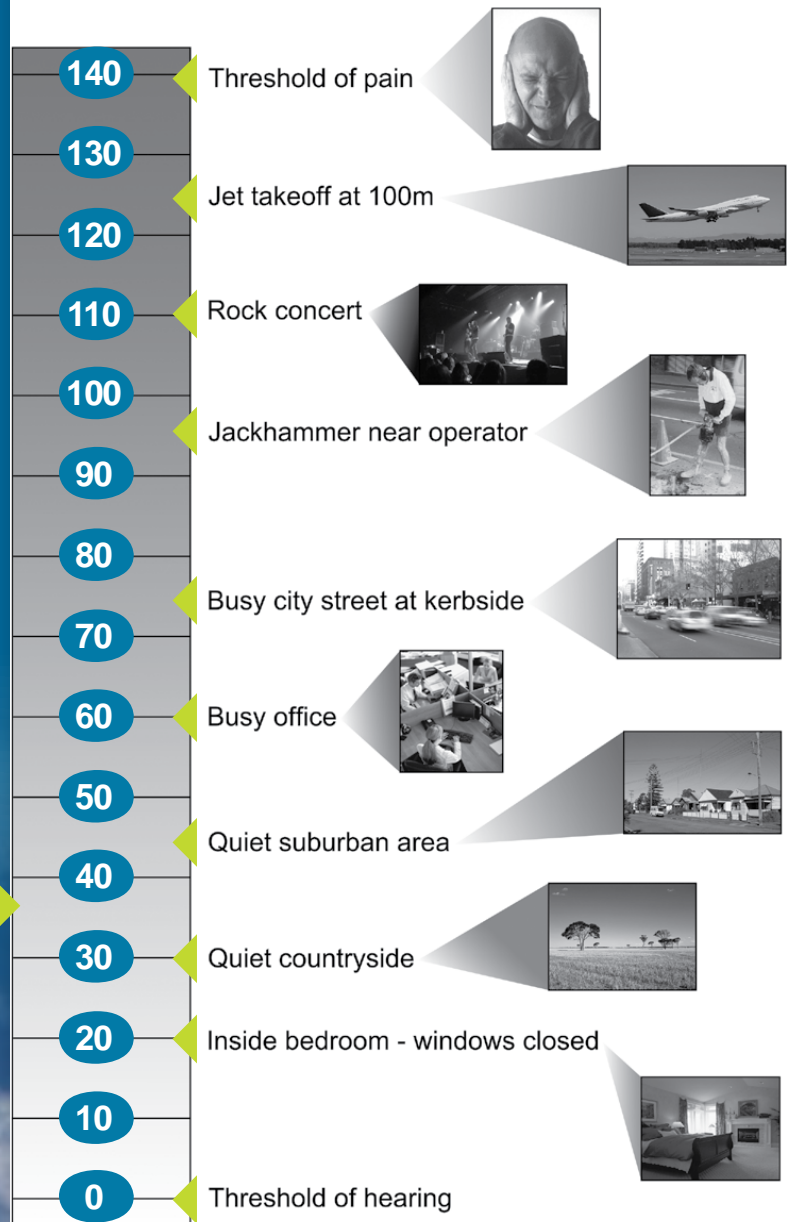
A recent study by Australia's National Health and Medical Research Council (NHMRC) concluded that there is no evidence wind turbines impact the health of nearby residents.

This conclusion has also been reached by numerous health agencies around the world, including the World Health Organisation (WHO).

Wind Turbines at 1 kilometre →

THE LEVEL OF COMMON SOUNDS

Indicative A-weighted decibel (dBA) noise levels in typical situations



Community and Stakeholder Engagement

Community Consultation

Transfield Services is committed to engaging with the community and other stakeholders on all its projects; from inception through to operation and decommissioning. The company has recently made a formal commitment to upholding the Victorian Government's *Good Practice Community Consultation Principles* under the Green Door for Renewable Energy policy. Transfield Services' commitment to these principles involves:

- **Early and inclusive engagement** – our community engagement activities for the Baynton Wind Farm project are commencing at the beginning of the development approval process, allowing us to incorporate community feedback into the wind farm design and scoping of the detailed environmental studies
- **Open and transparent consultation** – Transfield Services will provide the local community and other stakeholders with all relevant information about the project so that they may actively and constructively participate in the project development phase
- **Timely and responsive feedback** – Transfield Services has established a stakeholder database to record community and stakeholder comments, allowing us to respond in a timely manner. We commit to providing feedback to the community on how their comments have influenced the project
- **Maximise community benefits** – Transfield Services will work closely with the community and Macedon Ranges and Mitchell Shire Councils to design our community investment program
- **Conflict resolution** – Transfield Services will engage with groups/individuals in an effort to understand concerns and resolve conflict.

Transfield Services Project Manager, Nick Valentine, can be contacted on (02) 9963 9924 or valentinen@transfieldservices.com.

Aboriginal Community Engagement

Transfield Services recognises the local customary needs of Aboriginal people and the significant importance of preserving their culture and customs. The Company is committed to:

- Respecting the values and beliefs of Aboriginal people by creating a Company culture that respects and acknowledges Aboriginal culture, heritage, values and beliefs;
- Understanding the potential impact our business can have on Aboriginal people and their communities by encouraging and building our peoples awareness and understanding of Aboriginal relations and culture;
- Listening to Aboriginal people and together partnering to ensure mutually beneficial outcomes for Aboriginal communities, our clients, our partners and our business.

Transfield Services acknowledges Aboriginal people as the original carers of their lands and therefore their involvement in our business is vital to our success.



How Wind Farms Work

How Wind Farms Work

Wind turbines convert the energy of the wind into electricity. The turbine blades are turned slowly by the wind, and this rotation spins a generator to produce electricity. The electricity travels through transformers and a transmission line into the local electricity network for distribution to consumers.

Almost all commercial wind turbines producing electricity consist of three blades connected to a hub that rotates around a horizontal axis.

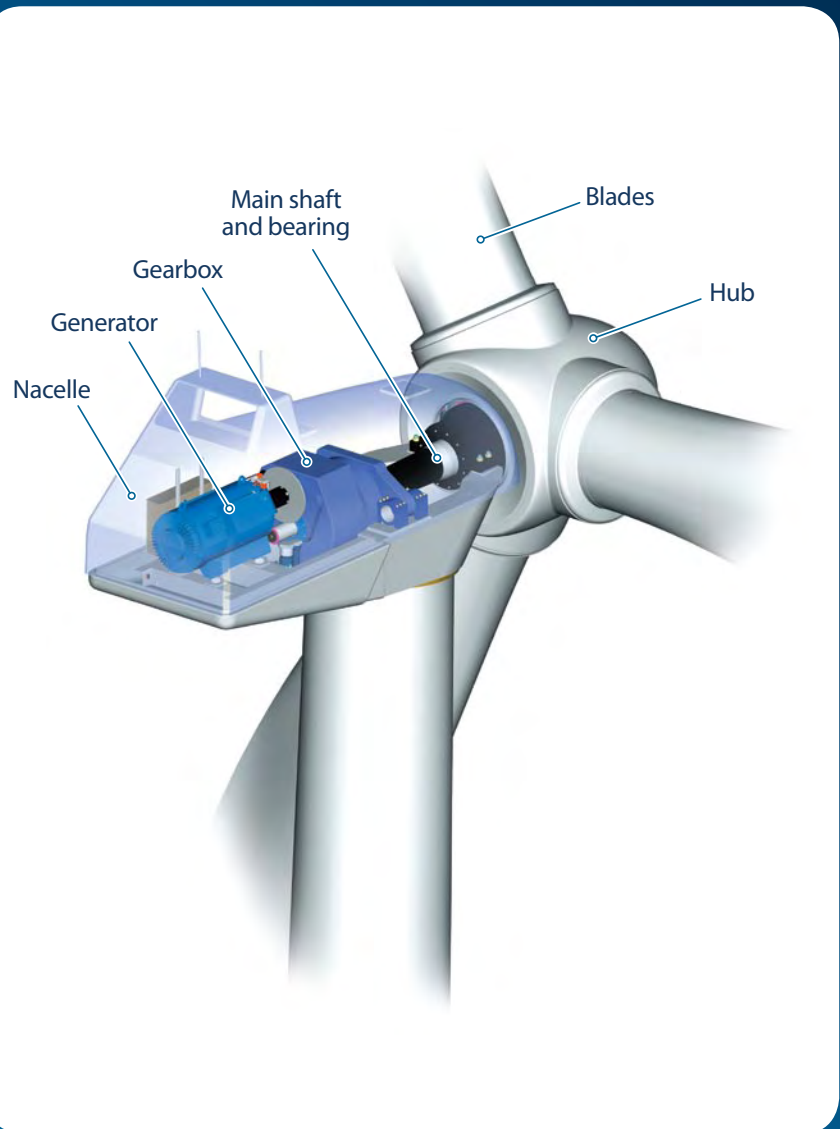
The hub is connected to the gearbox and generator which are located inside the nacelle, the large part at the top of the tower.

The turbine blades and rotor drive a high speed generator via a step-up gearbox.

The generated electricity passes through cables from the nacelle to the base of the tower. Here it is stepped up to high voltage in a generator transformer for supply to the transmission system.

Each of the turbines connects to the transmission system via the on site substation.

The wind turbines start operating at wind speeds of around 13 kilometres per hour and reach maximum power output at around 49 kilometres per hour. At very high wind speeds, such as gale force winds, the wind turbines shut down to avoid damage to the equipment.



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For more information

Contact Transfield Services Project Manager Nick Valentine on (02) 9963 9924 or valentinen@transfieldservices.com with any questions.

