FACT SHEET 9

Wind Farming On A Traditional Farm

Many wind farms in Australia are on freehold grazing property where the landowner enters into an agreement to host the machines in return for rental payments over the 20-25 year life of the development.

Can Wind Farming & Traditional Farming Coexist?

Yes. Most wind farm developers lease only a part of the property for the wind farm - that affected by the turbine footprint and access tracks - leaving the owner to continue their normal farming on more than 99% of the land. Broad acre agro-forestry however is sometimes prohibited because it reduces the commercial returns of the wind farm by slowing the wind. This may not be an issue if the wind resource is good enough.

In some ways, wind farms can be thought of as a vertical crop. Once construction is complete, traditional agriculture can continue underneath and around the wind farm. In most cases the land occupied by the wind farm becomes the most productive part of a holding.

How Much Land Is Required?

Theoretically, 20 machines with a rotor diameter of 40 meters can be accommodated on as little as 40 Ha. In practice however much more land is usually required after topography and other layout constraints have been taken into account.

Access tracks to each turbine need to be about 5m wide and are made from material like limestone or gravel. Interconnecting cabling between turbines is normally installed underground, alongside the access tracks. By being buried between wind turbines, ongoing cropping is not compromised.

For some developments, a single substation - about 40m by 30m - may be required to house the electrical plant, associated switchgear and metering equipment. Security fencing around the substation is also usually installed. The electrical interconnection to the existing grid is normally a common pole mounted three phase power line.

Developers are required to comply with noise regulations which impact the positioning of wind generators relative to residences. Setbacks from existing residences are usually a few hundred metres and sometimes buffer zones within which no houses can be built, need to be defined. Agriculture however, will normally be able to continue unaffected.

How Much Rent Is Paid?

Income payable to the farmer is normally agreed on a per turbine basis. Payments vary according to turbine size and wind regime, but are typically in the order of $5,000 per machine per annum.

What Agreements Are Needed?

Formal agreements range from initial option agreements, which may give the developer the right to collect wind data and other feasibility studies over a few years, to full lease agreements. These set out the responsibilities and obligations of both parties over the life of the wind farm project. Owing to the long life of a wind farm, the developer's rights will need to be transferable to any future purchaser of the host property.

What Are The Impacts During Construction?

Construction typically takes around 12 months. During this time there can be relatively high impacts compared to those experienced during ongoing operation, including frequent traffic movements that could cause disturbance.

All weather access tracks are built to link the wind turbines and can dramatically improve access across

the property. Where possible, the existing farm track network is used. New fencing and gates may be required where access tracks cross pre existing fences. As part of these works, there is sometimes an opportunity to create laneway systems for stock.

Trenches and excavations are generally left open for only a few days. Appropriate fencing is used during this period. Each foundation takes approximately one week to prepare and a day to pour. The formwork is removed from the foundation a day or two later and backfilled within a week. Following approximately 4 weeks of curing, the wind generators can be erected.

Several foundations may be constructed in parallel and typically, the excavated material is stockpiled for back filling and road making. The large volumes of concrete required are mixed on site using a mobile batching plant.

Impact on livestock is minimal provided there is good communication between farm management and the construction team. Electric grids can be used to control stock as gates will generally need to be left open during construction hours to minimise delays to traffic. Stock must be kept away from excavations, usually using mobile electric fences. Alternatively, stock may need to be moved from a particular paddock for a short period of time.

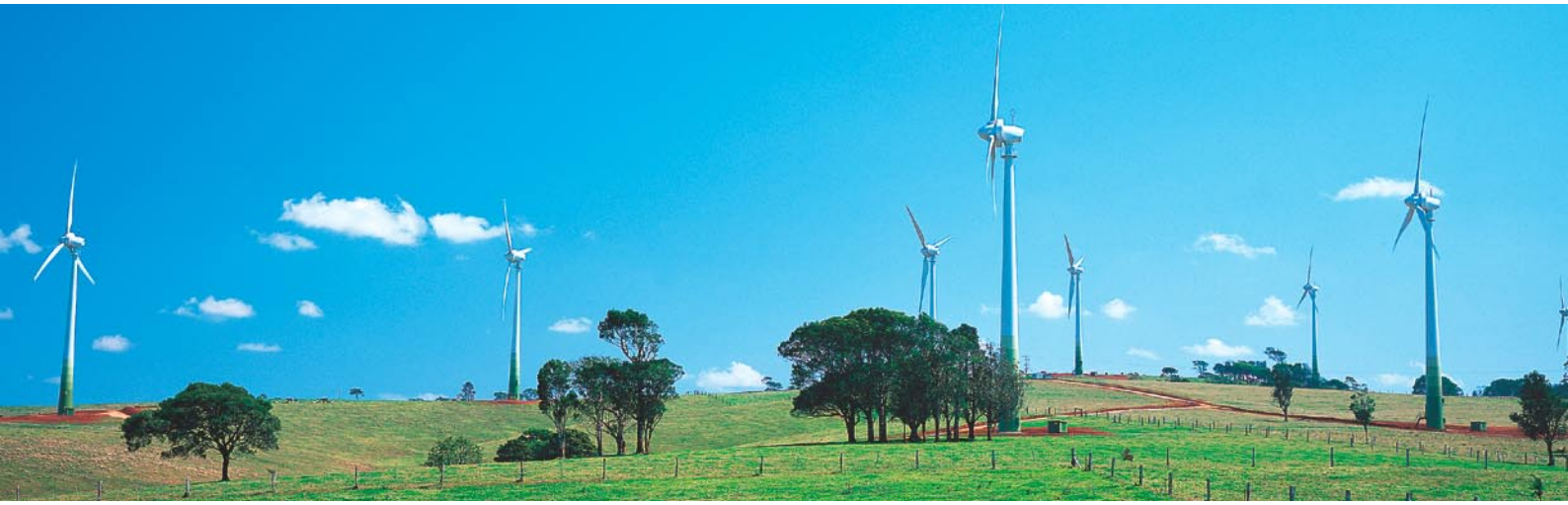
Impact on cropping is mainly due to the access tracks. Normal sowing patterns may be disrupted as it is unlikely that turbines will all end up on unproductive land or in the corners of paddocks. This said, careful planning and consultation will usually enable the landowner and developer to come to a mutually acceptable outcome.

Generally, pivot irrigators cannot be used in the vicinity of wind turbines because of the large area they occupy.

Depending on the site, agricultural aviation such as crop dusting or super phosphate spreading may be impacted. Agricultural pilots are highly trained and operate very manoeuvrable aircraft at very low altitudes (as low as 2m). They are very experienced in hazard management and the local operator is best placed to assess the potential impact.

Extensive tree plantings can slow the wind and cause turbulence and both of these factors reduce the commercial returns of the wind farm. Stock shelters and environmental plantings can however normally be accommodated.

Local microclimate effects are negligible. In the field measurements show little or no change in air temperature or carbon dioxide concentrations as a result of wind turbine movement and evapo-transpiration from the soil is not changed. Thus moisture content of the soil is unaffected.



Local and passing tourist interest will be stimulated by the wind farm construction. Landowners may receive phone calls from a variety of people including neighbours, the media, government departments, tourism operators, and other farmers considering wind farming, etc. Some wind developers help landowners manage enquiries of this nature.

Construction of new residences or other buildings may be restricted. This may be due to either the impacts on the wind resource, or in the case of occupied buildings, noise criteria. Detailed noise modelling during planning can provide a very good idea of "no go" zones for future residences.

How Are Farming Operations Impacted After Construction?

Impact on livestock is minimal. Sheep, cows and horses are not disturbed by wind turbines and typically graze right up to the base of the towers which they often use as rubbing posts or for shade.

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