FACT SHEET 8

Wind Farms & Bird & Bat Impacts

Do Wind Farms Present A Collision Risk To Birds?

Wind turbines, like virtually all tall man-made structures, present a collision risk to birds and bats. The risks however are far lower than many imagine – especially when compared to risks of collision with other structures such as communication towers, tall buildings and transmission towers. The impact of wind turbines on birds and bats is insignificant compared to the impact of domestic cats and the loss of habitat through development or even more dramatically, the chronic impact of ecological change due to climate change and rises in sea level induced by increased greenhouse gas emission. In Australia, collision rates are generally around one to two birds per turbine per year.

What Are The Other Risks?

Wind farm construction and/or operation may impact the way some birds move about in a particular area. This might include direct impacts on flight, breeding and feeding behaviour as well as indirect impacts due to disturbance associated with construction activity and noise.

What Do We Know About The Impact Of Wind Farms On Birds & Bats?

Today, bird mortality from wind turbines is probably one of the best researched areas of risk to avian species. Despite some bad experiences early in the US, where wind farms were constructed with little or no understanding about the potential bird impacts, environmental scientists agree that properly sited, today's wind farms present minimal danger to bird and bat populations.

What Is The Experience In Australia?

Wind farming is relatively new to Australia, but evidence from surveys measuring the impacts of Australia's first wind farms on birds and bats, is starting to emerge. Although several years of post construction monitoring are required to fully understand the impacts, the initial results are encouraging.

- At Pacific Hydro's Codrington Wind Farm in Victoria (comprising 14 wind generators and opened in July 2001) a total of four bird deaths and one bat death were reported as a consequence of colliding with wind generators between 2001 and 2003. None of these were rare, threatened or endangered species. The measured mortality rates were used to predict a likely level of mortality from the wind farm as a whole of between 18 and 38 birds per year. Although there were some early concerns about the potential impact the wind farm might have on water birds, behavioural studies showed that this group was adept at avoiding turbines
- Stanwell's Toora wind farm in South Gippsland comprises 12 wind turbines. Between 2002 and 2003 six bat corpses were found. Common starlings, Australian magpies and ravens declined in numbers after operations started (although no fatalities were recorded), while the numbers of skylarks and gold finches increased. Wedge-tailed eagles were regularly observed before and after operations began, but these avoided the turbines by flying around or between them, not into them. The survey found no evidence that the wind farm has caused significant levels of bird mortality and stated that the impact seems to be confined to localised, indirect effects on common, farmland birds. No threatened bird species were observed on the site during a total of two years of surveys and whilst bats have been impacted, the effect is not of conservation significance.
- For Stage 1 of its Woolnorth Wind Farm, Hydro Tasmania has released results of bird studies conducted from October 2002 to October 2003,

during which wind turbines were monitored for evidence of any collisions. The wind turbines were monitored daily during peak activity periods and twice weekly throughout the remainder of the year. These studies show that mortality rates for all species are at the lower end of the levels predicted at the development assessment stage. After October 2003, Hydro Tasmania did report an additional nine birds having collided with wind turbines, one of which was a wedge-tailed eagle, which is a threatened species in Tasmania (but not on the mainland). Under the conditions of its planning permit from the Tasmanian Environmental Management and Pollution Control Board, Hydro Tasmania is required to make a contribution to the species' recovery.

What are the Regulatory Controls & Measurement Methodologies?

All Australian wind farm developers must currently comply with planning guidelines set out by Statutory Authorities. At a Federal level, all wind farm developments are accountable under the Commonwealth Environmental Protection and Biodiversity Conservation Act 1999 (EPBC). This powerful piece of legislation prescribes Commonwealth involvement in environmental matters where an action has or will have a significant impact on "matters of national environmental significance". There is specific reference in the Act to consideration of threatened species and listed migratory species.

In June 2003, the Australian Wind Energy Association was awarded a grant to develop bird impact assessment protocols and dataset standards to assist in data recording and analysis for evaluating the level of bird impact and mortality at Australian wind farms. The work supplements recommendations for bird assessment in AusWEA's Best Practice Guidelines and has been put together with the assistance of a broad range of stakeholders including Commonwealth and State Government agencies, bird experts and non-governmental organisations. This work will help :

- Industry in implementing effective monitoring and in addressing the bird impact issue
- Regulators in setting impact assessment and monitoring requirements as part of the development approval process
- Consultants in designing, costing and reporting impact assessment and mortality monitoring work
- Community and environment groups in understanding the significance of the bird and bat impacts of wind farms.

Importantly, the outcomes will provide a transparent and defensible basis for discussions about bird and bat mortality at wind farms in Australia.

How Does Mortality Due To Wind Farms Rate Against Other Causes & Compare With Overseas?

A US study[1] published in 2001 carried out by Western Ecosystems Technology puts wind turbine collisions into perspective with bird collisions with other structures :

- Vehicles: 60 million - 80 million
- Buildings and Windows: 98 million - 980 million
- Powerlines: tens of thousands - 174 million
- Communication Towers: 4 million - 50 million
- Wind Generation Facilities: 10,000 - 40,000

The study estimates that wind farms kill an average of 2.9 birds per turbine, per year in the US – equivalent to less than 0.02 percent of the staggering 200-500 million collision related deaths in that country. This estimate includes the fatalities at wind facilities such as those in Altamont, California which were sited in an area of high avian usage and have caused disproportionately high levels of bird mortality.

As the Australian industry enters its next stage of development, more and more information is coming to light that the mortality rates at Australian windfarms are lower than in the northern hemisphere. This appears to be due to the lack of large numbers of night-migrating songbirds in Australia. These occur in the northern hemisphere by the hundreds of millions and they make up about half of the birds that collide with wind turbines.

Further information can be found in AusWEA's Best Practice Guidelines for Implementation of Wind Energy Projects in Australia, May 2002. www.auswea.com.au.

1 National Wind Coordinating Committee (NWCC) Resource Document: Avian collisions with wind turbines: A summary of existing studies and comparisons to other sources of avian collision mortality in the United States.

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