Clean Energy
Fact sheets

Wind turbines and low frequency noise

1) Do wind turbines emit low frequency noise?

Modern wind turbines can generate noise across the frequency range of human hearing. As with most sounds, some of this energy occurs below the level of human hearing.

Human hearing ability ranges from 20Hz to 20,000Hz, with 1dB being the smallest change in noise that humans can detect.

Low frequency noise refers to noise in the range of 10 to 200 Hertz (Hz) and infrasound occurs in the range of 20 Hz down to 0.001 Hz – below what the human ear can pick up.

2) Does low frequency noise from wind turbines make people sick?

No. There is currently no scientific data to suggest that the levels of low frequency noise emitted by wind turbines make humans sick. Research to date has not shown any negative health effects at the noise levels produced by operational wind turbines.

Advances in technology mean that noise from wind turbines is minimal. Research conducted on modern wind turbines has shown that the levels of low frequency noise and infrasound are below accepted thresholds (British Wind Energy Association 2005). Wind energy companies are concerned for the wellbeing of local communities, as well as the many staff they employ who work and live around wind turbines every day.

3) How long have turbines been in operation globally?

The first wind turbines began operating around 50 years ago. There are now more than 100,000 turbines installed globally, and some of these have been in place for more than 20 years.

With decades of successful wind turbine operation, there has been ample opportunity for any negative effects to be identified. The fact that none has supports the prevailing view that wind power is one of the safest ways of generating electricity.

4) What are the approval processes currently for wind farms in Australia?

There is a considerable approval process for every wind farm development which includes rigorous noise assessment. Compliance is required with relevant state EPA guidelines and regulation.

Clean Energy Council

Many development permit conditions also reference the requirements of either:

- New Zealand Standard NZ 6808:1998 Acoustic – The Assessment and Measurement of Sound from Wind Turbine Generators; or
- Environmental Noise Guidelines: Wind Farms (SA EPA 2003)

Under the SA EPA guidelines, background noise is measured before the wind turbines are installed for two weeks at 10 minute intervals. Ongoing monitoring of noise levels is undertaken after construction throughout the life of the wind farm.

The Commonwealth and State Governments of Australia, through the Environment Protection and Heritage Council (EPHC), are currently developing national guidelines for wind farm developments. These guidelines will address the management of noise from wind farms.

5) What rights do communities and residents have?

Communities near wind turbines have the full range of rights available to them under Australian law.

Residents should discuss any concerns that they have about noise with the wind farm project developer. Wind energy developers acknowledge local communities are very important and take all community concerns very seriously.

If necessary, individuals can also talk to their state Environment Protection Authority about their concerns.

Useful information and articles

http://www.canwea.ca/media/release/release_e.php?newsId=37 – Information about wind turbines and human health from Canadian Wind Energy Association

http://www.bwea.com/pdf/lfn-annex.pdf - Low frequency noise information from British Wind Energy Association.

http://www.wind.appstate.edu/reports/06-06Leventhall-Infras-WT-CanAcoustics2.pdf - Infrasound from Wind Turbines: Fact, Fiction or Deception – Dr Geoff Leventhall, Canadian Acoustics 29 – Vol. 32 No. 2 (2006).

http://www.berr.gov.uk/files/file31270.pdf - The measurement of LFN at 3 UK wind farms - report for DTI by Hayes McKenzie Partnership – 2006

http://www.canwea.ca/images/uploads/File/CanWEA_Infrasound_Study_Final.pdf - Wind turbines and Infrasound 2006 - Report for Canadian Wind Energy Association (CanWEA)