

ABC NEWS

Flinders University's five-year study looks into wind farms' effects on health

ABC Radio Adelaide By Sara Garcia

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PHOTO: Wind farms have been a controversial topic for years. (Supplied: Tadgh Cullen (DP Energy))

A study on wind farm noise, being conducted at Flinders University in Adelaide, is setting out to find out just how the noise from wind turbines affects people's health.

The group of scientists, which includes sleep experts and mechanical engineers with expertise in acoustics, is 18 months into the five-year study.

While it is too soon to release any results, Professor Peter Catcheside from Flinders University's Adelaide Institute for Sleep Health told ABC Radio Adelaide he hoped the project would be able to answer questions on the controversial topic of wind farms' health effects on people.

"We got into this area because we recognised that there was an ongoing debate and that there's some unanswered questions in this area, for which we felt we had expertise that could help put this debate to bed," Professor Catcheside said.

So, what is the study looking at?

The Wind Farm Noise Study will for the first time use direct sleep recordings of brain waves and cardiovascular measurements to assess the impact of different noises.

The study, which has three parts to it, includes an in-home study of sleep and noise in people affected by wind farm noise and a laboratory study investigating noise effects in a controlled sleep and noise environment.

"We're really focussing on the sleep elements of this debate, we think if there are adverse health effects, the most likely explanation for those would be through sleep disturbance and really no-one has looked in enough detail at sleep specifically," Professor Catcheside said.

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Key points:

- Adelaide researchers studying the effect of wind farms on people's sleep
- Researchers will be measuring people's sleep for the first time
- It could take a number of years before results are known



PHOTO: The study on wind farms and their effects on health will take five years. (Pexels.com)

"Sleep's quite a hard thing to measure and the only way to do it is to actually measure it with electrodes on people's heads ... they're challenging studies to do and I think that's why they haven't been done to date.

"Our main focus is to specifically look at 'Is wind turbine noise any different from any other noise in terms of the level of sleep disturbance' and we know from quite a big area of literature that noise does disturb sleep, that's already established."

Professor Catcheside said the biggest part of the experiment will be the in-laboratory study, which will measure the sleep of people affected by wind turbine noise and those that aren't.

He said it would be a controlled environment, in which the sleep specialists will play different noises across the night on different nights.

"[What we're looking at] is the specific affect of wind turbine noise compared to other noises on human sleep," he said.

"Really mainly looking at the objective measurements of sleep with [these] recordings to see how well people sleep in that sort of environment and also how much sleep is fragmented and disturbed by discreet noise events."

Is there something unique about wind turbine noise?

According to mechanical engineer and Flinders University lecturer Dr Kristy Hansen — yes.

Dr Hansen's area of study has seen her focus on wind farms and acoustics sounds for the past five to six years.

She said noise created from wind farms are low frequency, which can be more easily heard in a typical Australian residence.

"By the time the windfarm noise reaches their house it's very much dominated by low frequencies," she said.

"So it's almost like if you live in a place near a concert you live far enough away so you can't hear the music you just hear the 'doof, doof, doof' of the bass, so it's a similar kind of thing."

Similarly to the bass sound at a concert, Dr Hansen said the noise wasn't continuous.

"So like if you're in a hotel, a very cheap hotel, and there's a noisy refrigerator in there and it's humming and then not only is that noise annoying because it's a hum, but then imagine if someone starts switching it on and off every second," she explained.

"That's the kind of noise we are talking about — so even if the noise is not particularly loud just because of the nature of that noise it makes it particularly annoying."

Does that kind of noise penetrate a house wall?

The short answer according to Dr Hansen is, again, yes.

"[A house] will block some of it out, but not all of it and certainly a house will be more effective at blocking out the high frequency noise or the mid frequency noise, which is more characteristic of traffic noise," she said.



PHOTO: Research has shown the noise from wind farms are at a low frequency. (Audience supplied: timo29570)

Dr Hansen said current environmental laws assume noise, like that coming from wind turbines, will be blocked out by the home.

"They assume that the house is going to block out the sound for windfarm noise exactly the same way as it would for traffic noise," she said.

"At this stage it is hard to say how far you have to be away to be affected because our current research is looking more into the human response to the noise.

"But in terms of measuring the noise, we've measured a difference between when the windfarm is not operating and when it's operating up to 9 kilometres away."

When will we see results?

It could take a few years yet before any results from the study are released.

"We really need to wait for the evidence to come in before we can really see any firm conclusions," Professor Catcheside said.

"We hope that there will be some elements of the project that we can release before then, but basically we won't be in a position to release any findings until we've got a fully complete study that answers a specific question one way or another."

Professor Catcheside said the project is an independent study that has been funded by the National Health and Medical Research Council.

"It's [the project] been through the Australian peer review system, which is a very tough environment to get funding in to support this area of research and essentially that process ensures that only high quality science is funded to answer legitimate unanswered questions," he said.

Topics: wind-energy, alternative-energy, environment, health, science-and-technology, research, medical-research, adelaide-5000, sa, australia

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