

# What you can't hear can hurt you

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Technician Phil Lewis does maintenance work 80m above ground on one of the giant wind turbines at the Capital Wind Farm near Lake George, Bungendore, NSW. Picture: Stephen Cooper *Source: News Limited*

## NATIONAL SNAPSHOT

**57**

No of wind farms in operation



**6400GWh**

Wind power generated last year



**2.7%**

Percentage of national energy



**90**

No of new wind farms proposed



**1188**

Total number of turbines



**900,000**

Equivalent in homes powered



**30%**

Per annum increase in capacity since 2005



**5891**

Additional turbines this would mean



## RELATIVE SIZE OF THE LARGER TURBINES



Blade length up to 60m

1.12 times taller than ...



**WIND TURBINE HEIGHT**  
Up to **150m**

**THE SYDNEY HARBOUR BRIDGE**  
**134m\***

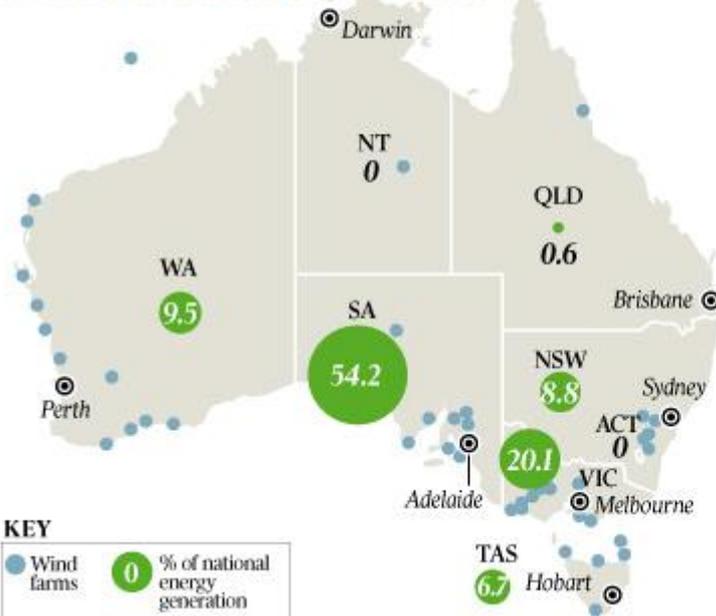
\*Highest point of arch to water level

**128**

Number of turbines on Australia's biggest wind farm – Acciona's Waubra Wind Farm, north west of Ballarat in Victoria, which is 173sq km

Source: The Australian

## WIND FARMS WITH PERCENTAGE OF NATIONAL ENERGY GENERATION

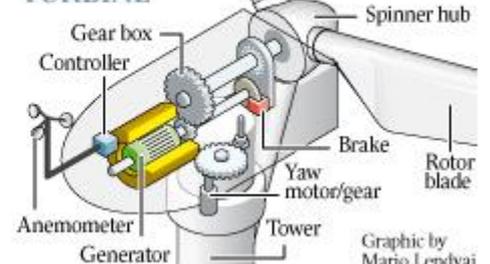


## SYMPTOMS REPORTEDLY CAUSED BY ...

Infrasound (inaudible, below 20 hertz) and low-frequency noise from wind turbines:

- Nausea
- Loss of appetite
- Headache
- Vertigo
- Dizziness
- Inability to concentrate
- An overwhelming desire to get outside
- Anxiety

## INSIDE A WIND TURBINE



Source: The Australian

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**WHEN American noise expert Robert Rand turned up to work in Maine, in the US northeast, in April to investigate the impact of wind turbines on nearby residents he was literally blown away.**

Not only did Rand's readings confirm many fears in the community, he claims to have become an unwitting victim himself.

A member of the Institute of Noise Control Engineering and a technician with 30 years' experience, Rand was working for a philanthropic donor wanting to investigate why wind turbines were causing so much concern.

Rand told The Australian yesterday his experience had been unexpected. He had measured the noise from wind turbines on many previous occasions without difficulty but, in testimony to the State of Maine Board of Environmental Protection in July, Rand said the turbines had delivered "a miserable and unnerving experience".

When indoors, Rand and long-time colleague Stephen Ambrose, also a Member of INCE, experienced "nausea, loss of appetite, headache, vertigo, dizziness, inability to concentrate, an overwhelming desire to get outside and anxiety, over a two-night period from Sunday, April 17 to Tuesday, April 19".



"I know personally and viscerally what people have been complaining about," he says. "Adverse health effects from wind turbines are real and can be debilitating.

"The fieldwork points directly to wind turbine low-frequency noise pulsations, especially indoors, as a causative factor."

Anti-wind farm campaigners across the world have jumped on Rand's testimony and his report as confirmation of a series of key issues of concern. They are:

!That infrasound and low frequency noise from wind turbines is being measured inside the homes of affected people and correlates with wind turbine activity.

!That turbine activity and measured infrasound correlate with the onset/occurrence of symptoms.

That decibel sound levels do not correlate with people's symptoms and are therefore useless at predicting or identifying problems.

That infrasound energy is amplified inside the home.

Rand's testimony shows that, when it comes to wind turbines, what you can't hear can hurt you.

It puts the spotlight on whether governments and the wind industry are hiding behind the reality that you won't find what you don't look for.

It is difficult to reconcile Rand's experience with confidential briefings reportedly given by NSW Health to politicians who claim health impacts from wind turbines are "not scientifically valid".

The Clean Energy Council, an industry body representing wind companies, also rejects claims of health impacts.

"This whole infrasound stuff is completely out of the park," says CEC spokesman Mark Bretherton. "I don't think there is any sort of issues with infrasound whatsoever. I think they are barking up the wrong tree completely.

"If anything it boils down to standards and audible noise.

"It is a case of if you can hear something and it is disturbing your sleep then you will not be sleeping so well, which will lead to stress and pretty much all the reported symptoms," Bretherton says.

Danish wind industry heavyweight Vestas is certainly aware of the infrasound generated by its wind turbines and keen to ensure that any restrictions are minimal.

Last year, the company successfully lobbied the Danish government to weaken proposed infrasound restrictions, fearing they would hurt the company's business globally.

In a letter dated June 11, Vestas chief executive officer Ditlev Engel wrote to Danish environment minister Karen Ellemann claiming the proposed infrasound regulations would hit the company's three-megawatt turbines hardest.

Engel said it was "not technically possible" to meet the proposed infrasound limits of 20 decibels 24 hours a day.

What is missing is rigorous analysis of what impact, if any, infrasound from wind turbines has on human health. In the absence of proper research, testimony such as Rand's is dismissed by wind industry supporters and proponents as anecdotal.

The lack of evidence works in the wind industry's favour. A position paper issued by a national coalition of healthcare groups, the Climate and Health Alliance, yesterday rejected the claims of anti-wind groups that wind power poses a threat to health.

"There is no credible peer-reviewed scientific evidence that demonstrates a link between wind turbines and direct adverse health impacts in people living in proximity to them," CAHA convenor Fiona Armstrong said.

The alliance is made up of a range of organisations, including the Australian College of Rural and Remote Medicine, the Australian Council of Social Service, the Royal Australian College of Physicians, the Women's Health Network and World Vision.

To assess health impacts, most people have relied on a "rapid review" statement issued by the National Health and Medical Research Council published in 2010 that says "there is no published scientific evidence to support adverse effects of wind turbines on health". But in evidence to a federal senate inquiry into the impacts of wind farm developments on rural communities in March last year, NHMRC chief executive officer Warwick Anderson said: "We certainly do not believe that this question has been settled.

"The absence of evidence does not mean that there might not be evidence in the future; it is just that, at the stage when the review was done, it was not there," he said.

At a conference last June, the NHMRC agreed to "undertake a systematic approach to reviewing the literature and use the results to inform any update of the public statement".

Anderson said the review would focus on possible health impacts of audible noise and infrasound. "Depending on the result of this review, a targeted call for research in this area (would) be considered," he said.

For anti-wind campaigners the question is whether that review will come soon enough.

High-profile campaigner Sarah Laurie says the NHMRC's progress has been "glacial at best".

"They seem to have no concept of a public health disaster which is about to exponentially increase, and which they could help to prevent," she says.

"Professor Anderson clearly understands there is a problem from his comments in his oral evidence to the Senate inquiry, but has done little since to expedite either a better review of the literature or to actively encourage medical researchers."

Equally slow has been any practical response to the Senate inquiry recommendation that the commonwealth government initiate as a matter of priority "thorough, adequately resourced epidemiological and laboratory studies of the possible effects of wind farms on human health".

In stark contrast, there has been a steady stream of reports from industry and social groups rejecting concerns about wind turbines.

A CSIRO report released this month said there was stronger community support for developing wind farms than might be assumed from media coverage.

Another report, from wind developer Pacific Hydro, said 83 per cent of people support wind, with only 14 per cent opposed.

The onslaught of pro-wind surveys and literature is a happy coincidence for the wind industry, which considers itself to be one push away from rolling out billions of dollars of new wind farm investment to meet the government's 2020 renewable energy target.

Australia has 1188 wind turbines and 57 operating wind farms, including one located in the Australian Antarctic Territory.

The wind industry is expected to triple by 2020, with an additional 6.9GW of wind power and between 2000 and 2500 turbines.

The industry has faced a backlash from some state governments responding to community concerns about how close wind turbines are built to houses.

Victoria's Baillieu government last year gave landholders an effective right of veto over any wind turbine within 2km of their houses.

Proposed new laws for NSW, now out for public comment, are less strict. Under the proposed guidelines, if a wind farm developer is unable to get written permission from all landholders within 2km, it can apply for a site compatibility certificate.

The application should focus on visual amenity issues and noise, including low-frequency noise, at any houses within 2km.

Bretherton says the wind industry hopes the NSW proposals will be better than those in Victoria. "The gateway process could go either way," he says. "It could work well or it could be unworkable."

He says wind farm protests present a unique challenge for the industry. "The history of the protest movement is a typically left-wing thing with people agitating for change. Now you have got older people agitating for the status quo," Bretherton says.

But for former ABC chairman, Maurice Newman, it is a simple issue of individual rights and government arrogance.

"The harmful health effects, despite peer-reviewed and anecdotal evidence, are dismissed as being unconfirmed, psychosomatic or the politics of envy.

"It's true not everyone who lives near wind turbines experiences adverse health effects," Newman says. "But then, not everyone who smokes contracts lung cancer."

There is, he says, an imbalance when cash-poor residents face governments and corporations.

"Politicians are lending their support to oligopolistic insiders and, in so doing, are destroying the property rights of the very people they have pledged to protect."

### **Renewables hit headwind**

THE ill wind blowing in renewable energy has also cast a cloud over the global solar industry.

The price of solar panel companies has plummeted in recent days after Germany announced plans to accelerate the wind-back of feed-in tariff subsidies.

High subsidies have made Germany the world's largest solar energy market but at an estimated cost to energy users and taxpayers of E100 billion. The cost blow-out is considered to be a threat to the German economy.

Despite the International Energy Agency's positive outlook for renewable energy, assuming the continuation of subsidies, the German decision was enough to crash the global solar market.

German manufacturers have already been struggling in the face of low-cost solar manufacturing in China. Chinese imports have prompted a bitter trade war initiated by German solar makers in the US. In a unanimous decision in November, the International Trade Commission ruled Chinese solar panel and cell imports were harming the US solar manufacturing industry. The US Department of Commerce will soon rule on preliminary tariffs and "critical circumstances" that may mean importers will have to pay retrospective duties on these products.

And in Britain, a new cross-party campaign group is demanding the government drop its support for thousands more wind farms.