

Newer wind turbines could be just as harmful as prototypes

Graham Lloyd [The Australian](#) July 27, 2013

MODERN wind turbines could cause the same health impacts for nearby residents as an older prototype rejected by the industry because of proven concerns, says the author of a 1987 study that established the link.

Neil Kelley, who presented the findings of a comprehensive study prepared for the US Department of Energy to the renewable energy industry 25 years ago, said in-home testing of low-frequency noise from wind turbines was the only way to establish the truth.

The wind industry in Australia has rejected the findings of the 1987 NASA study because the type of wind turbine studied was no longer in use.

The study used laboratory simulations to prove a link between low-frequency noise from the older-model wind turbines and health impacts. It found the impact of low-frequency noise generated by wind turbines was often "confined to within surrounding homes" and that residents became more sensitive to the impact over time.

The National Health and Medical Research Council is conducting a review of its guidelines on whether wind turbines can cause health concerns.

Leading public health officials have said publicly that reports of ill health are the result of a "nocebo effect", with symptoms caused by apprehension about possible dangers.

Mr Kelley, who served as the principal scientist (atmospheric physics) at the National Renewable Energy Laboratory's National Wind Technology Centre in the US from 1980 to 2011, said research had shown it was possible for modern wind turbines to create "community annoyance".

"Many of the complaints I have heard described are very similar to those from residents who were exposed to the prototype wind turbine we studied."

He said the original research was performed to understand the "totally unexpected community complaints from a 2MW downwind prototype wind turbine. "While follow-on turbine designs moved the rotors upwind of the tower, the US Department of Energy funded an extensive multi-year research effort in order to develop a full understanding of what created this situation.

"Their goal was to make such knowledge available to the turbine engineers so they could minimise the possibility of future designs repeating the experience.

"We found the majority of the physics responsible for creating the annoyance associated with this downwind prototype are applicable to large upwind machines."

Mr Kelley said the 1987 study revealed it was the low-frequency content of the turbine noise and its impact on the homes that was responsible for the annoyance of the residents involved. "It is similar to the noise and vibration that occurs when a heavy truck rumbles past a house with the windows closed," he said.

"The house walls filter out much of the higher frequencies and leave only the low-frequency sounds and vibrations."

In Australia, the wind industry has been reluctant to conduct in-house testing despite a Senate recommendation it be done.

Wind turbine manufacturer Vestas has argued in a submission to the NSW government that low-frequency noise from wind turbines not be measured.

Mr Kelley said if low-frequency noise from turbines did not influence annoyance within homes, "then why should (the industry) be concerned?"