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Turning Decommissioned Wind Blades into Noise Screens

Wind turbines have often been accused of generating too much noise and bothering neighbours, however, in the future, some of them will actually help to prevent noise nuisance. The material from retired wind turbines will be turned into noise screens along Danish roads.

By State of Green (Photo: Miljøskærm), 2017.04.07

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When the Danish Vindeby Wind Farm is decommissioned, the worn parts will be reused to the greatest extent possible. For instance, blades from 11 of the wind farm's turbines will be reused as noise screens along Danish roads.

The man behind the project is Jakob W. Nielsen, owner of Miljøskærm. The idea to reuse the blades came to him back in 2011, and he has worked to realise the project ever since.

- I started working [on the project] in 2012. It came to me in 2011, when I heard the news reporting that we did not know what to do with the old wind turbines that would be decommissioned. So I thought of the growing problem of traffic noise and thought that it might be an obvious way to utilise them, and strangely enough no one else had thought about doing that, says Jakob W. Nielsen, owner of Miljøskærm.

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The glass fibre that the blades are made of absorb noise. When the decommissioned wind blades are granulated, the noise-absorbing glass fibre can be utilised for noise screens along the roads.

At [Dong Energy](#), they welcome the initiative to reuse the old, decommissioned wind blades:

In coming years, the number of decommissioned wind turbines will increase slowly and steadily, and the quantity of materials will grow as well. We are therefore glad that someone has come up with a good idea to reuse the glass fibre in the blades, says Jens Nybo Jensen, information officer at Dong Energy.

Asset Manager at Dong Energy, Leif Winther agrees:

- There will be many outworn wind turbines for decommissioning and recycling in the future. In this regard, the glass fibre is not very perishable and it will take many, many years for it to degrade in

nature. We naturally adhere to the current legislation concerning waste deposits and all other aspects of our work but because it takes such a long time for glass fibre to degrade, we would rather see it reused.

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- We are pleased with the collaboration with Miljøskærm in regards to the blades from Vindeby and we can only encourage the industry to start developing new solutions for the future reuse of large quantities of glass fibre from the wind industry.

On a trial basis, wind blades from Vindy Wind Farm will be decomposed and used as noise screens in Aalborg.

Consisting of a 5 MW test site near Vindeby, the wind farm was established in 1991 as a part of Elkraft. Dong Energy now runs it.

Energy-saving recycling

The Danish company [COWI](#) has made an environmental screening where they compare 100 square metres of noise screens made from respectively of aluminium and mineral wool – which is the product visible along most Danish roads – with a noise screen produced from recycled glass fibre and plastic. Their results showed that a noise screen made out of recycled glass fibre and plastic meant an approximately 60 percent reduction in CO2 emissions and a reduction of approximately 40 percent in energy consumption.

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- Normally, you crush the glass fibre and dig it down or burn it but by reusing it, you come across many benefits. For instance, the fact that the material enters into a circular economy instead of just ending up in a waste deposit. In addition, many noise screens along roads and highways are made out of aluminum and mineral wool which requires a lot of energy to produce. Those are all savings you get. In other words, you receive a great environmental reward by reusing the blades the way that we do, says Jakob W. Nielsen.

After the decommissioning of offshore wind turbines and foundations, Dong Energy Nearshore Wind is obliged to safeguard a restoration of the sea floor.

A total of 10 companies are involved in the recycling process of wind turbines from Vindeby and all that is reusable will get a new life with a new purpose.

- **Source:** [Energy Supply](#) + [DR](#)