

Wooden towers for wind turbines

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Pieter Jan Jordaens

When the height of a tower doubles, the effect from the turbine quadruples. The modular wooden solution developed by Modvion provides the world with tall towers that are not only close to climate neutral, but also store CO2 during their lifetime.



Traditionally wood has been considered a low-tech material. However, wood has amazing potential to develop products that take advantage of the unique features in nature’s own carbon fibre: the strength, the light weight and the carbon capturing function. Putting modules and wood together can be revolutionary for tall towers.

Modvion, a Swedish tech company focusing on engineered wood, currently aims at towers with a hight of 150 m, The potential height of a wooden tower is 1,500 m. Modvion sees a demand for towers up to 150-200 m and expects this to increase over time.

Advantages

Laminated wood (laminated veneer lumber - PVL) has three huge benefits compared to steel: wood has a higher specific strength, which enables a lighter construction. High steel towers need extra enforcement to carry their own weight – which wooden towers do not. And finally, modular steel towers demand a vast number of bolts that need regular inspections while the modular wooden towers are joined together with glue.

The tower, developed by Modvion, is made of modules assembled into several 16–24 m tall cylinders. The modular structure enables transport on ordinary roads, with ordinary trucks for tall wind turbine towers.

The towers have a surface coating that ensures protection throughout their commercial life. The humidity buffering properties of the solid wooden wall and continuous monitoring ensures a stable environment for the tower's load bearing structure.

The tower is designed in accordance with the turbine manufacturers specifications, which is normally 25-30 years. The lifetime of a wooden tower exceeds the lifetime of the mechanical parts of the wind turbine.

A wooden tower’s actual climate impact is lower. Wood is the opposite of concrete and steel: It is a 'carbon sinker'. After the technical life of the turbine is over the tower will be dismounted and the tower wall can be reused as high-strength beams for the building industry.

IP and status

Modvion protected its modular technology concept with intellectual property. According to the company eight patents were filed. Currently, five patents have been published, covering the different aspects of the technology. For example, the method for making the laminated veneer lumber board and the board itself, as well as the rotor blades, wood connections and the laminated wood tower.

On 6 February 2023, Modvion announced that it has raised 11.8 million USD to take its wooden



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ommercial installation
s included.



Source:

https://modvion.com/

Authors



Pieter Jan Jordaens