



CROSSWINDS

THE FUTURE OF WIND

# TAKING A CUE FROM NATURE

Laminated wood is stronger than steel at the same weight and by building modularly, wind turbines can be made both higher and at lower cost. (Courtesy: Modvion)

*Using wood instead of steel, Modvion AB has successfully erected a wooden wind tower in Sweden, making the turbine climate neutral before it even begins creating energy.*

By WIND SYSTEMS STAFF

Sweden's first wooden wind tower has been constructed on the island of Björkö outside Gothenburg. The tower is 30 meters high and recently was erected by the development company Modvion. The wood construction is as strong as steel and makes the wind turbine climate neutral from the start. As early as 2022, the first wooden towers will be built on a commercial scale.

"This is a major breakthrough that paves the way for the next generation of wind turbines," said Otto Lundman, CEO of Modvion AB. "Laminated wood is stronger than steel at the same weight, and by building in modules, the wind turbines can be taller. By building in wood, we also reduce carbon dioxide emissions in manufacturing and instead store carbon dioxide in the design."

The wind tower now erected on Björkö is 30 meters high and will be used for research purposes. But the first wooden towers will be built on a commercial scale by 2022.

Modvion has signed declarations of intent with Varberg Energi for a 110-meter-high tower and with Rabbalshede Kraft for 10 towers, at least 150 meters high.

## RESEARCH GRANT

A few months after the wind tower was constructed, Modvion was granted 6.5 million euros from the EU EIC Accelerator program. The European Commission specifically highlighted the contribution that Modvion's technology can make to restarting the post-coronavirus economy.

The call proved to be the toughest yet within the EIC Accelerator program, with only 72 of 3,696 applicants granted financing. Half of the companies offer solutions for slowing the spread of the coronavirus, while half will contribute to the EU's recovery plan for rapidly getting the economy up and running again after the pandemic.

"That we are one of the few companies to receive grants in such fierce competition is a seal of quality," Lundman said. "This financing creates security for us, our partners, and potential investors. We can now focus on increasing the workforce, building

The wooden wind tower on Björkö is 30 meters high and will be used for research purposes. (Courtesy: Modvion)

a new development facility, and constructing the first full-scale wooden wind turbine tower."

## MODULAR CONCEPT

The 30-meter tower was built together with Moelven at the gluewood factory in Töreboda. The lower weight of the wood and the modular concept make it possible to build taller towers, the sections of which can be transported on public roads.

"Wood has fantastic properties, and we need to build much more in wood if we are to meet the climate goals," said Johan Åhlén, CEO of Moelven Töreboda. "For us, it is hugely inspiring to participate in this pilot project where we have been able to use renewable wood in a design for the production of renewable energy."

Wind towers in wood can be built at a significantly lower cost than steel, which lowers the production cost of the wind-generated electricity. The carbon dioxide absorbed by trees as they grow is stored in the wooden towers, which means that the wind turbines are climate neutral right from the start.







Wind towers in wood can be built at a significantly lower cost than steel, which lowers the production cost of the wind-generated electricity. (Courtesy: Modvion)

The Swedish Wind Power Technology Centre at Chalmers is the client for the wooden tower in Björkö.

“Wind power is expected to be the EU’s largest power source as early as 2027,” said Ola Carlson, director of the Swedish Wind Power Technology Centre and assistant professor of renewable power generation. “With wind towers in wood, we get even more climate-smarter renewable electricity to face the climate crisis.”

#### ‘ENORMOUS DEMAND’

The intention is that manufacturing will continue to take

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The first wooden towers will be built on a commercial scale by 2022. (Courtesy: Modvion)

place in cooperation with Moelven Töreboda AB. The activities are financed by the Swedish Energy Agency, the Västra Götaland Region, and the EU program Horizon 2020 SME Instruments Phase 1.

“We are seeing an enormous demand for our wooden wind turbine towers,” Lundman said. “Laminated wood is stronger than steel at the same weight and by building modularly, wind turbines can be made both higher and at lower cost. Building in wood also radically reduces carbon dioxide emissions, allowing us to offer climate-neutral wind energy.”

Among other things, the EU grant will be used to build a development facility in the Gothenburg area. This is where the first tower on a commercial scale will be constructed for Varberg Energi.

“This support from the EU is clear proof of the enormous potential of wooden wind turbine towers, and it will help us develop as a company at an even faster pace,” Lundman said. “We are now one step closer to being able to offer commercial, climate-neutral wind turbine towers.” ↵

#### ABOUT THE COMPANY

Modvion is a Gothenburg company that develops demanding designs in laminated wood, nature's carbon fiber, for large-scale construction. Wooden structures enable radical emission reductions by replacing emission-intensive materials such as steel and concrete. For more information, go to [www.modvion.com](http://www.modvion.com) ↵