


Making net zero
wind power
possible

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The image shows the interior of a wind turbine tower under construction. The walls are made of light-colored, laminated wood panels, creating a warm, textured environment. A central staircase with metal railings leads upwards, flanked by a large, dark, cylindrical duct. The perspective is from the bottom of the tower, looking up towards a bright opening at the top. The overall atmosphere is clean and modern, highlighting the use of sustainable materials.

We build wind turbine
towers.
In wood.

Modvion accelerates the transition to renewable energy and materials by building wind turbine towers made from laminated wood.

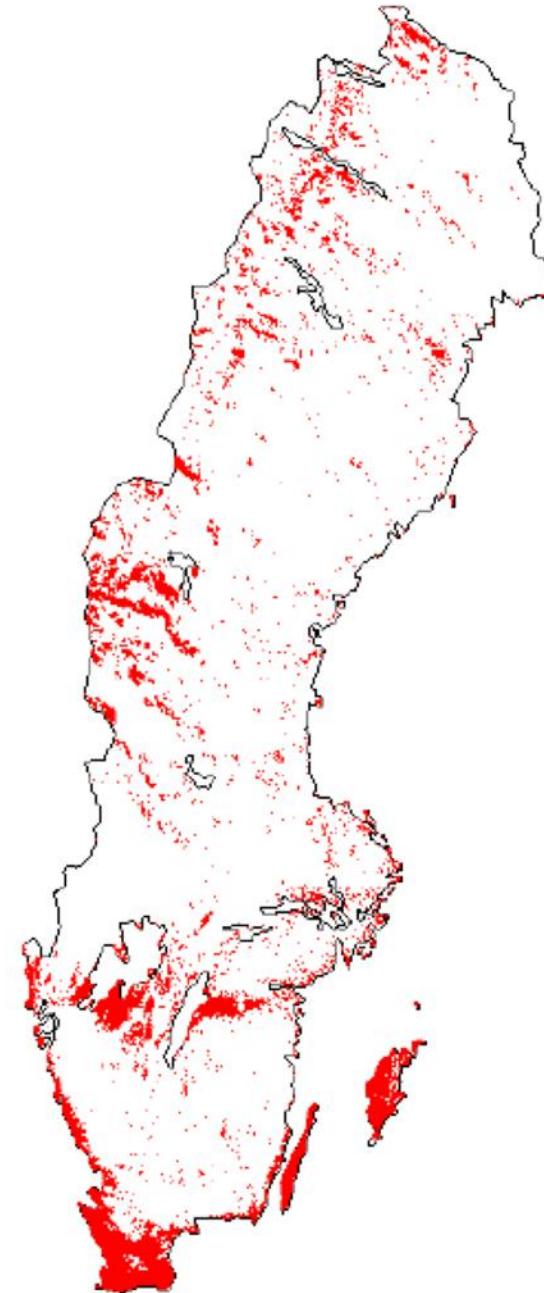
Renewable energy built with renewable materials.

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Wind 35% of global
electricity 2050

Taller towers = stronger
winds and cheaper energy
production

100m height



140m height



Source: Swedish Energy Agency 2019

Conventional towers
limit growth

Wind turbines are
growing but the roads
don't.





Enabling net-zero wind power

>100% less

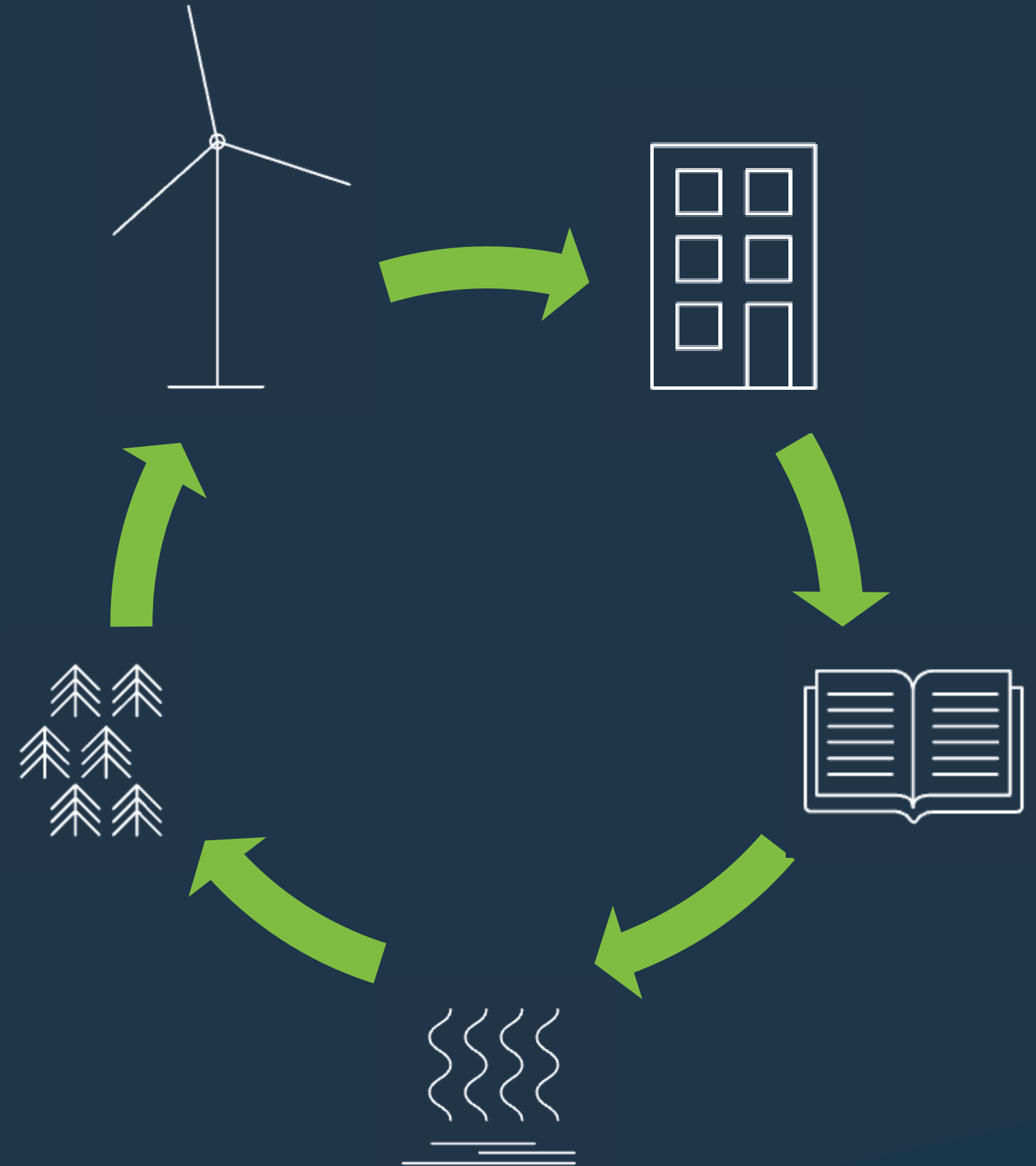
Emissions for the tower

Carbon sink

Wood stores CO₂

30% total

Reduction for the industry



2023: Commercial installation

- The details
 - Hub Height 105m
 - Tower Height 103.3m
 - Base Diameter 5.65m
- Turbine
 - Vestas V90-2.0MW
 - Rotor Diameter 90m
- Location
 - Skara, Sweden.


Tower wall



- Lvl
- Custom lay up
- Bendable in one direction
- Modular load bearing shell design
- 28 curved modules in this tower



Modules for the Wind of Change tower were produced at our factory in Gothenburg. One module is 15m long.

A large, curved wooden tower section is being lifted by a yellow crane. The crane has "MAX LIFT 11.5 TON CERTEX" written on it. The tower section is made of light-colored wood and has a curved top edge. In the background, a tall white tower section is visible, and several wind turbines are scattered across the landscape under a blue sky with white clouds. A green crane is also visible on the right side of the image.

Modules are assembled into tower sections on site.



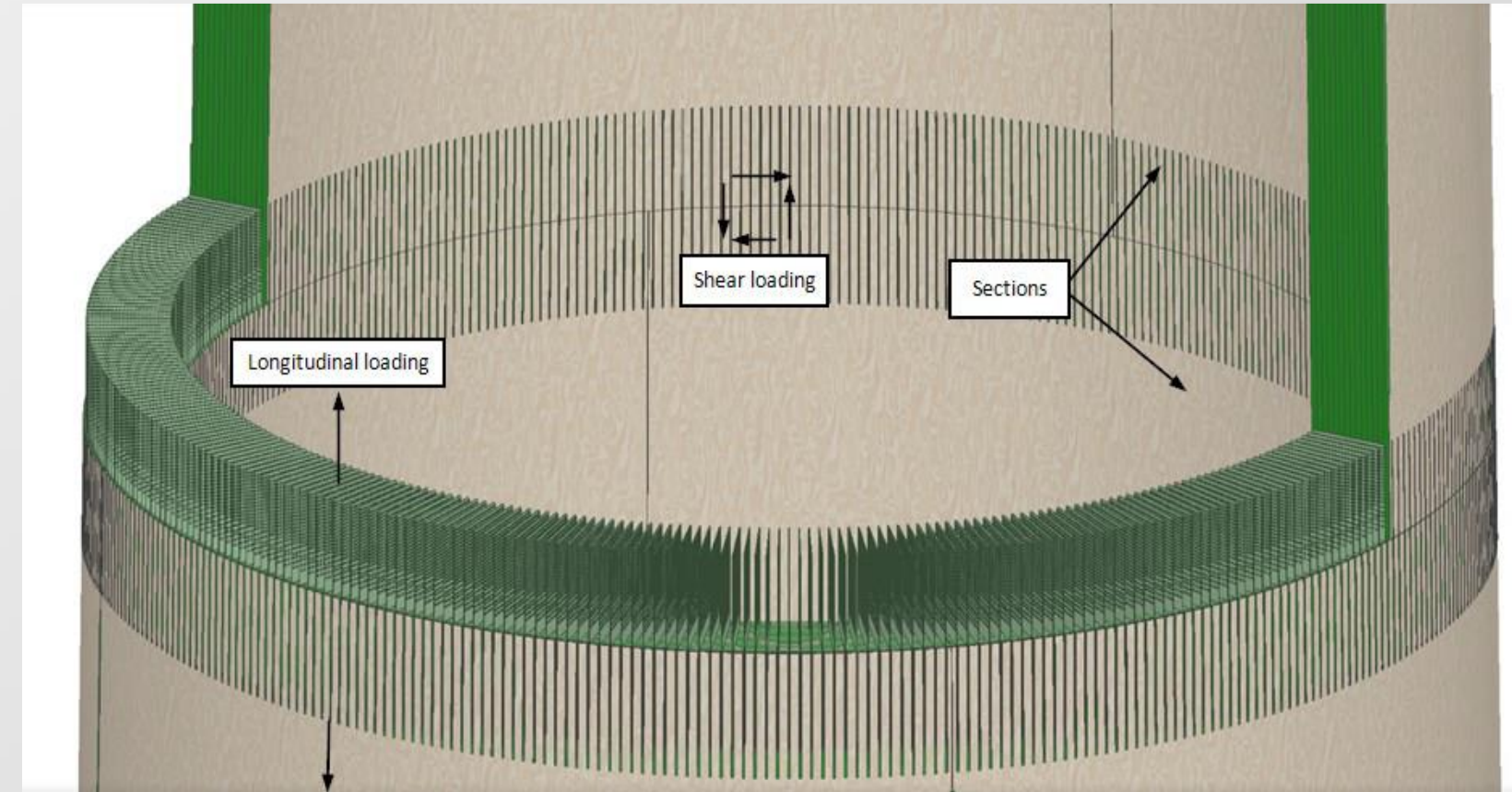
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Joints

- Longitudinal joint
 - Connects the modules along the long edge.
 - Adhesive Joint
- Transversal Joint
 - Connects the tower sections.
 - GiP (Glued in Plates) type joint



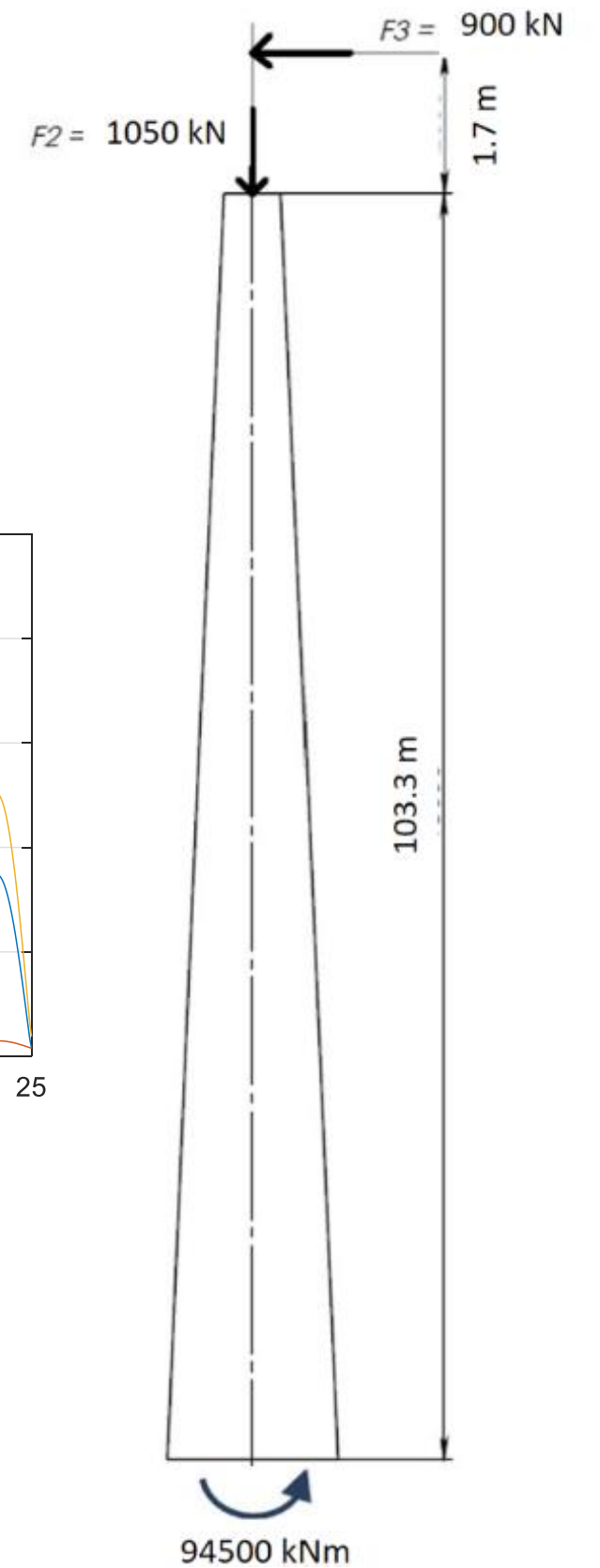
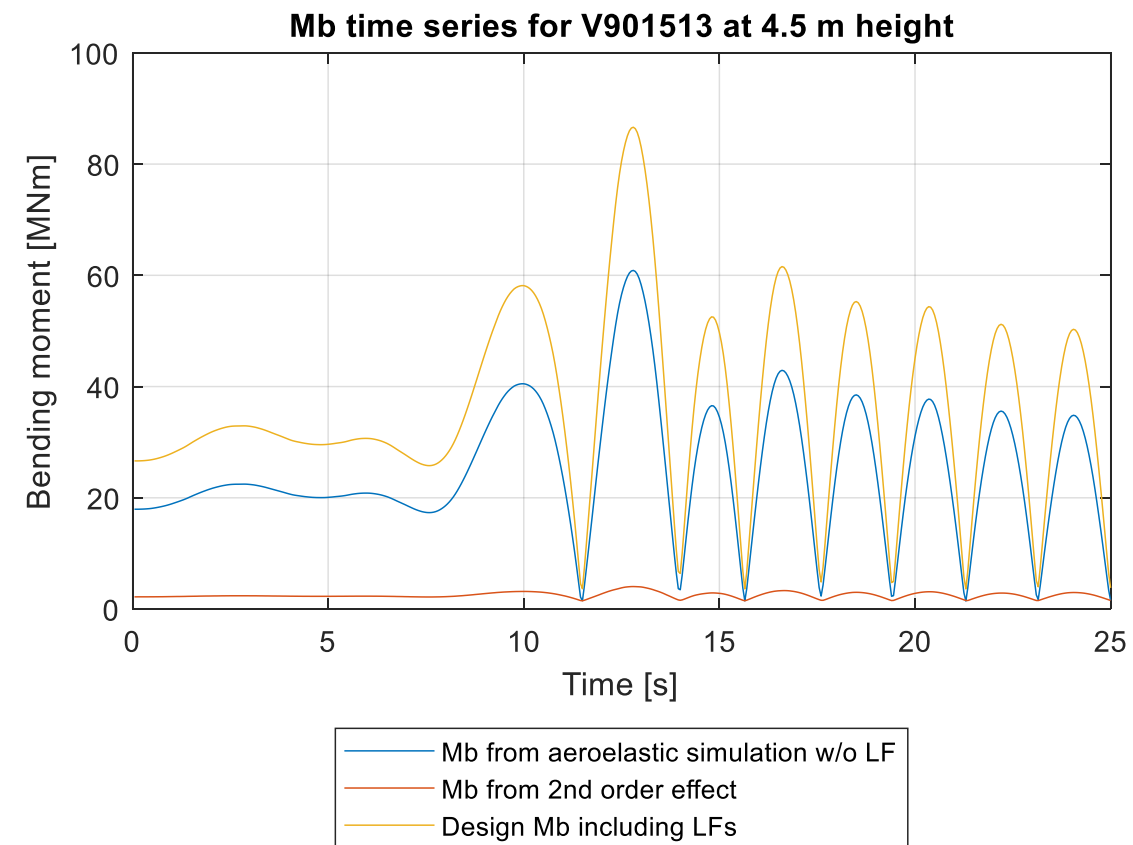
The tower sections are stacked to form the tower.

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Loads

- Many dynamic load cases evaluated
- Extreme stress
- Fatigue damage



Verification

- Standards
 - Design
 - EIC61400
 - Wind turbine industry standard
 - Eurocode
 - Materials
 - EN 14374 – LVL
 - EN 17334 – GiR
- Comprehensive strength test program
 - Tower wall
 - Joints
- Third party review
 - Design basis
 - Design assessment

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This project has received funding from the European Union's Horizon 2020 research and innovation program.

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