

# Directors' report

## Facts about Norsk Treteknisk Institutt

Norwegian Institute of Wood Technology (Treteknisk) is a private research association for the sawmills and the timber industry in Norway. Our 128 member companies represent sawmilling, woodworking, glulam, roof truss and timber frame industry, as well as related industry.

The institute has 32 employees. Our main tasks are research and development projects, quality control, quality documentation, laboratory tests and diffusion of knowledge from R&D work for the Norwegian timber industry.

## Vision statement

Treteknisk shall be the preferred R&D and knowledge partner for the Norwegian timber based industry and other companies in the wood value chain.

## Business idea

The Institute shall contribute to profitability of the member companies by using updated knowledge about wood, its properties, processing methods and usage. The means to succeed in this are R&D by objectives, distribution of knowledge, consulting and quality documentation.

## Financing

The total turnover for 2016 was 44.3 MNOK. The membership fee amounted to 9 % of the turnover. Foreign sales accounted for 26 % of all assignments and projects.

## Quality documentation and certification

### Testing laboratory and inspection body

Treteknisk plays an important role as a testing laboratory, as well as a certification and inspection body. The demand for these kinds of services are increasing, due to authorities' requirements for documentation, and the market demand for documented product properties. The Institute has invested in competence, laboratory equipment, a comprehensive quality system and the formal status to be an internationally recognized testing and inspection body for the wood industry.

Since 1994, the laboratories have been accredited for both mechanical and chemical testing according to EN ISO/IEC 17025, and from 2015 accredited according to EN ISO/IEC. The Institute is appointed by the Ministry of Trade and Industry as notified body for attestation of conformity with the Construction Products Regulation (CPR). This applies to structural timber products and wood based panels. This means that the institute can perform testing, inspection and certification as basis for CE marking of building products.

### Certification

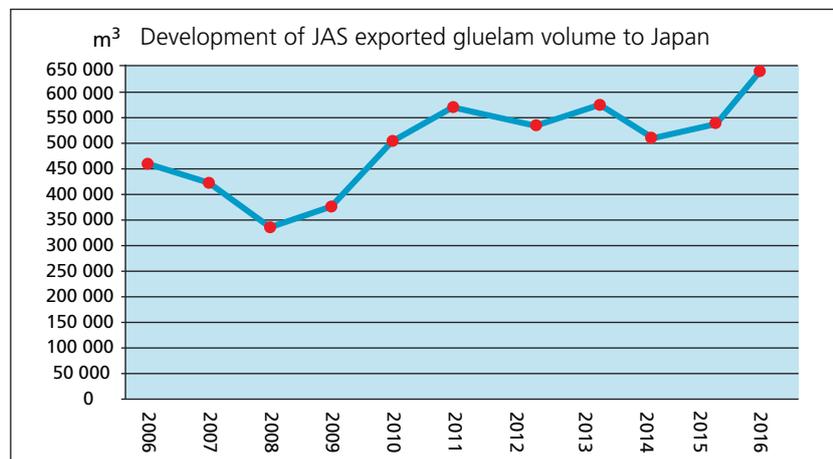
Treteknisk has for several years worked with product certification, for JAS (Japanese Agricultural Standardisation) and CE marking. During the autumn Treteknisk was appointed as a notified body for PEFC certification.

### PEFC

PEFC documents that a product originates from certified wood, verified by a third body. Both EUTR (EU's timber regulation) and BREEAM-NOR requires such certifications.

### Japan – JAS-certification

The Institute has gained a leading position in Europe concerning JAS-certification of glulam. 19 glulam companies, 2 sawmills and 1 CLT company have now their JAS-certification through Treteknisk. The volume of glulam exported to Japan from companies certified through Treteknisk amounted to 644 000 m<sup>3</sup> in 2016.



---

## Quality control schemes

Treteknisk is for the time being inspection body and/or testing laboratory for the following quality control schemes, certification and approval bodies:

- Norwegian Strength Grading Inspection Scheme.
- Norwegian Control Scheme for Preservative Treated Wood.
- Norwegian Glulam Control for end jointed materials for load bearing constructions.
- Fire Control Scheme for the Wood Working Industry.
- Control Scheme for Norwegian log houses.
- Technical Approval of Building Elements (SINTEF Byggforsk).
- Inspection of painted wood cladding.
- JAS (Japanese Agricultural Standards).
- CE marking of glulam.
- CE marking of structural timber.
- CE marking of fingerjointed structural timber.
- CE marking of particleboards.
- CE marking of roof trusses.
- CE marking of fire protected claddings, panels and boards.

## International R&D and cooperation

### InnovaWood

InnovaWood is a European association of organisations working as R&D and education providers. The organisation represent the research and education society cooperating with industry, e.g. in connection with the technology platform.

### COST

Treteknisk is participating in several COST-actions.

### CEN

Treteknisk is involved in several CEN committees. The European standards from CEN are of great importance for the competitiveness of the industry.

## Wood2New

### - Competitive wood-based interior materials and systems for modern wood construction

Interior spaces and indoor air quality significantly affect our physical and mental well-being and comfort, especially in healthcare and living environments. Materials and products with environmentally, socially and economically sound values should have an advantage, if they can deliver competitive performance. The aim of Wood2New was to reinforce and improve the competitiveness of wood-based interior products and systems based on these values. The achievements of the Wood2New project include an established protocol for long-term monitoring of indoor air quality, laboratory test confirming haptic properties, moisture buffering effect and the hygroscopic effect for various wood species and variations of VOC emissions due to changes in moisture content. The project carried out energy assessments and operationalization of results for use in building applications and a study of hospital patients and potential impacts of visual wood surfaces on well-being and health outcomes.

Wood2New is a European collaboration project funded under the WoodWisdom-Net ERA-NET+ scheme.

### WoodWisdom - Net CreoSub

Creosote oil is one of the oldest and most effective wood preservatives, mainly used in heavy-duty applications outdoors such as railway sleepers, utility poles and timber bridges. Due to its toxicity, creosote is highly controversial within the European Commission and its approval for future use is questionable. The overall objective of the project CreoSub is to develop alternative protection technology that shows a better health and safety profile than creosote. In the course of the project, the efficacies of the new protection systems against wood destroying fungi are investigated, impregnation processes are optimized, and physical and chemical properties of wood treated with the systems are examined. The project also includes an environmental assessment (LCA-methodology) of railway sleepers, utility poles and timber bridge elements made of wood treated with the new protection systems. CreoSub is funded under the 4th Call for joint European research projects within the WoodWisdom-Net Research



Programme. The consortium coordinated by Treteknisk comprises partners from Norway, Germany, UK and Finland. The project duration is from 2014 to 2017.

### **Abracadabra H2020**

There is a big investment gap in the deep renovation sector for buildings due to the fact that high investments are required up-front, high risk and long payback times. The project focuses on creating substantial increase of real estate value through architectural transformation by add-ons to existing buildings and energy upgrades. By reducing payback time of the energy upgrades, key investors' confidence will be strengthened and a market acceleration towards NZEB buildings can be achieved. The project received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 696126.

## **Selected National R&D**

### **HOME**

#### **- holistic monitoring of indoor environment**

The project aims at reducing energy consumption using rapidly responding technologies and hygroscopic materials. The project is funded by the Norwegian Research Council.

### **Tresterk**

The aim of this project was to sort out wood with higher strength and stiffness than is usually done. Already during the summer of 2015, the first sawmill could successfully sort out C40. In the project, new technology was developed to find the strongest logs. Thanks to this achievement, it was possible to build the world's first network arch bridge in wood, where wood is the main supporting structure. The "Steien bridge" is the longest one-span wood bridge in Norway with a length of 88.2 metres.

### **Use of wood in buildings to reduce CO<sub>2</sub>-footprint**

Treteknisk has several projects for documentation of the reduced CO<sub>2</sub>-footprint by use of wood in buildings. Wood used indoor has a cooling effect during the day and a heating effect during the night due to uptake and release of humidity. Wood thereby regulates both the temperature and the humidity in the indoor air. This is especially effective in food stores with a lot of aggregates and coolants. These effects must be balanced with the ventilation system, which seldom is constructed or dimensioned from a wood perspective.

### **EPD software for wood products**

Treteknisk has developed a software together with a software company for efficient calculation of EPD's for wood products. The software can be used as a company EPD-generator for interested companies.

### **Prospects**

Treteknisk do feel the increased competition on government funded research project. Simultaneously there is an increase in contract research, consultancy, quality control and certification. All in all the forecast for 2017 is good.