



# Towards green transition in EU regions: case study East and North Finland

Future Aspects of Forest Sector in East and North Finland

27.4.2022

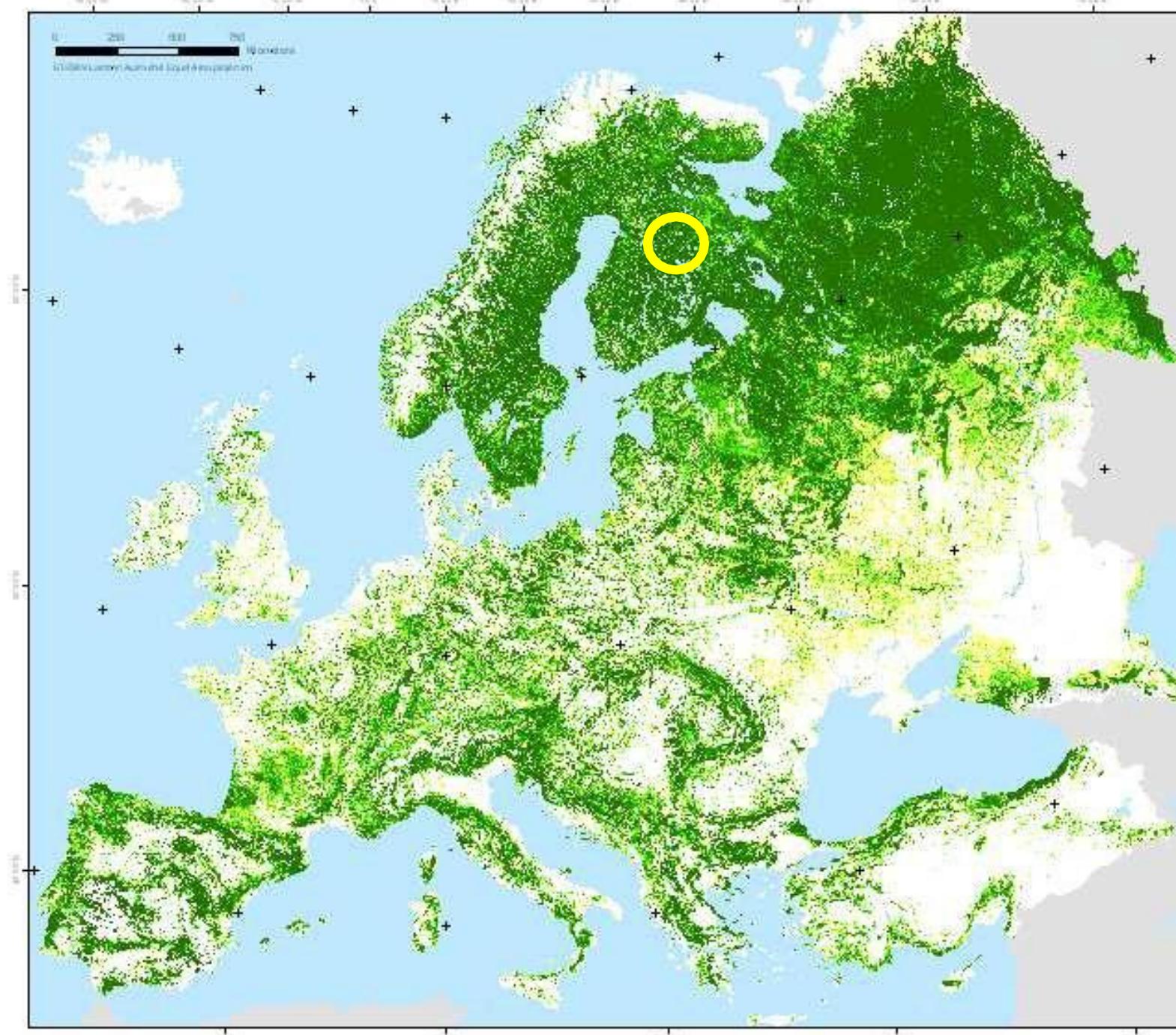
Pentti Malinen

# Objective of the mission

## Towards green transition in EU regions: case study East and North Finland

The aim of this expert mission, funded by the European Commission Joint Research Centre (JRC), is to contribute to the development of new approaches for regional and local authorities aiming to boost support for **green transition** of their economies through smarter innovation policies.

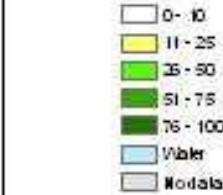
- The on-site visit of the experts will last around three days. During the visit, the experts aim to meet the following types of persons – either bilaterally, or in groups:
- **Main relevant public funding bodies** and intermediary organisations supporting the region's innovation ecosystem;
- Representatives from each main relevant 'community' involved in the ecosystems - in particular the education/research and business communities;
- Beneficiaries of relevant EU and/or domestic public funding policies – including key persons in charge of flagship-type projects for the green transition of the region;
- 'Society' representatives (e.g. interest groups) / end users affected by transformative innovation-led policy approaches.
- The aim is gain practical understanding, from multiple points of view, of **how to bring about genuine green transition.**



## FOREST MAP OF EUROPE

geographical Europe, Cyprus and Turkey

Proportion of forest from land area  
(% at 1 km x 1 km resolution)



Share of areas by country (Millions ha claimed) and/or carriage from individual Tandj arnot:

Year	Publications
1990	577 (57%)
1991	447 (44%)
1992	1,071 (10%)
1993	2,074 (20%)
1994	3,417 (34%)
1995	4,000 (40%)
1996	11,026 (11%)
1997	11,761 (12%)
1998	12,271 (12%)
1999	12,471 (12%)
2000	11,026 (11%)
2001	11,751 (12%)
2002	11,271 (11%)
2003	11,471 (11%)
2004	11,026 (11%)
2005	11,751 (12%)
2006	11,271 (11%)
2007	11,471 (11%)
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2027	11,471 (11%)
2028	11,026 (11%)
2029	11,751 (12%)
2030	11,271 (11%)
2031	11,471 (11%)
2032	11,026 (11%)
2033	11,751 (12%)
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2041	11,751 (12%)
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2068	11,026 (11%)
2069	11,751 (12%)
2070	11,271 (11%)
2071	11,471 (11%)
2072	11,026 (11%)
2073	11,751 (12%)
2074	11,271 (11%)
2075	11,471 (11%)
2076	11,026 (11%)
2077	11,751 (12%)
2078	11,271 (11%)
2079	11,471 (11%)
2080	11,026 (11%)
2081	11,751 (12%)
2082	11,271 (11%)
2083	11,471 (11%)
2084	11,026 (11%)
2085	11,751 (12%)
2086	11,271 (11%)
2087	11,471 (11%)
2088	11,026 (11%)
2089	11,751 (12%)
2090	11,271 (11%)
2091	11,471 (11%)
2092	11,026 (11%)
2093	11,751 (12%)
2094	11,271 (11%)
2095	11,471 (11%)
2096	11,026 (11%)
2097	11,751 (12%)
2098	11,271 (11%)
2099	11,471 (11%)
2100	11,026 (11%)

For more information about the study, contact Dr. Michael J. Hwang at (319) 356-4000 or email at [mjhwang@uiowa.edu](mailto:mjhwang@uiowa.edu).

<sup>1</sup> This study is based upon data from the household component of the 2000 U.S. Census.

Extra forces will allow us to run the 100-107% growth target.

For additional information contact:

<http://www.jrc.ec.europa.eu/eurostat/> (Eurostat) – 2009

—и с ним, и с Юрием Михаиловичем, — сказала Елена Ильинична, — я просто в

Frontiers in Bioengineering and Biotechnology | www.frontiersin.org | Volume 10 | Article 633333 | 10

предмета, о котором говорят в предыдущем тексте.

Journal of the American Statistical Association, Vol. 94, No. 447, December 1999  
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（三）增加和规范的税种

400-800-1000-1000

#### Contact information

Journal of Health Politics, Policy and Law, Vol. 36, No. 3, June 2011  
DOI 10.1215/03616878-36-3 © 2011 by the Southern Political Science Association

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 [www.safecanada.ca](#)



FOUNDATION FOR  
EUROPEAN FOREST STANDS



# Finland's forestry strategies

- The economic importance of forests in Finland is exceptionally great.
- Forests directly employ 65,000 people and **20%** of exported goods are forest industry products.
- In Finland, more than 600,000 people (one out of ten) own forest.
- In Finland, forests have of great importance to people. Almost everyone use forests in some way: people sell wood, collect wild berries, admire the scenery or go outdoors to relax, sport and for other activities.
- During the corona crisis Finns' relationship with nature, especially that of city residents, has strengthened.
- In East and North Finland economic importance and also future potential is greater than in Finland as whole!



# Forest policy tools in Finland

## Legislation e.g. Forest Act (the first Forest Act 1886)

- Statutory forest regeneration
- Conservation of small ecologically valuable habitats

## Strategies & programmes

- Bioeconomy strategy
- National Forest Strategy 2025
- Regional Forest Programs (14)
  - -> own RFP in each region of East and North Finland
- Policy coherence (Climate, Biodiversity, Envi, Multiple use... )

## Financial incentives, Kemera (90-year experience)

- Forest improvement
- Biodiversity conservation
- Incentives activates private forest owners for forest management

## Information and advice (Suomen metsäkeskus)

- Publicly funded forest resource database
- Forest management support (Metsaan.fi)
- Communication and education

(Main source: Ministry of Agriculture and Forestry, Natural Resources Department, Forests and Bioenergy)

# Links - Synergies with Multiple levels: EU – national – regional -local



(Source: Ministry of Agriculture and Forestry, Natural Resources Department, Forests and Bioenergy)



# Regional Forest Programmes: Obligatory programmes

The Forest Act (1093/1996),:

***“Metsäkeskus draws up a **regional forest programme** for its operating area and monitors its implementation. The programme shall be reviewed if necessary. When drawing up the programme, the Forest Centre must **cooperate with representatives of the forest sector and other necessary parties.**”***

The Finnish Forest Centre Act (418/2011):

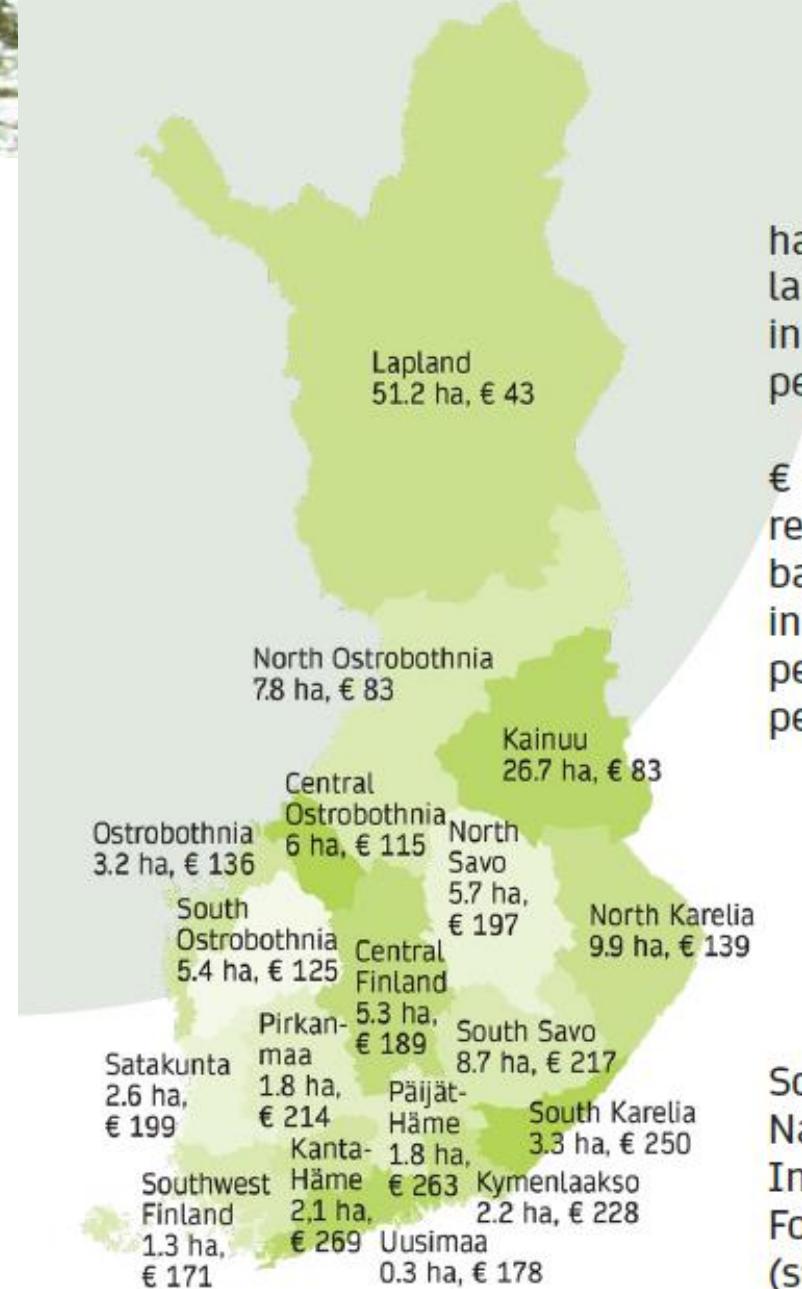
The task of the **Regional Forestry Council** shall be: ... ***to draw up and adopt a regional forest programme and to monitor and promote the implementation of the programme;***



# Different regions, different programmes and actions

On the website of the Finnish Forest Centre at:

<https://www.metsakeskus.fi/fi/metsan-kayutto-ja-omistus/alueelliset-metsaohjelmat/tietoa-alueellisista-metsaohjelmista>



ha = forest land area in the region per capita

In Kainuu 26,7 ha/inh.

€ = operating result of forest-based sector in the region per hectare per year

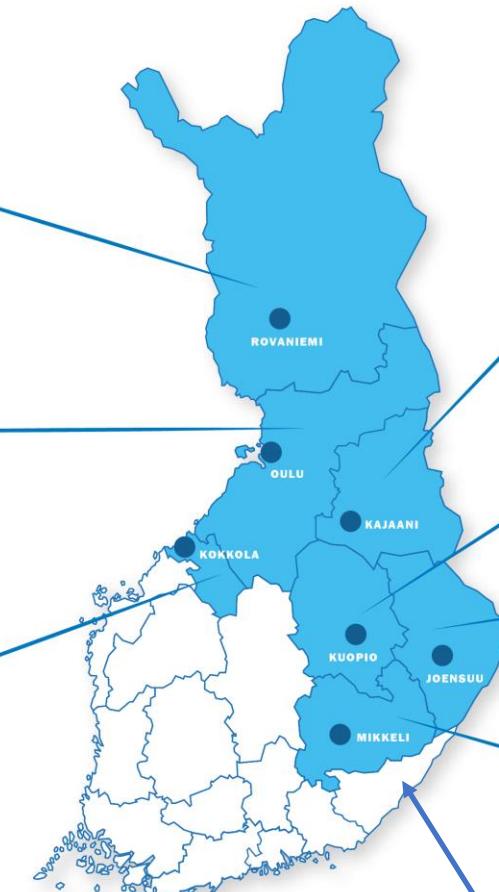
In Kainuu 83€/inh.

Source:  
Natural Resources Institute Finland,  
Forest statistics  
(stat.luke.fi/en/metsa) metsäkeskus

# East and North Finland



Lapland



Kainuu



Oulu region



Pohjois-Savo



Central Ostrobothnia



North Karelia



South Savo



South-Karelia



# **Importance of Forest Bioeconomy in East and North Finland 2018**

	<b>Finland</b>	<b>East&amp;North Fin</b>	<b>ENF (%)</b>
<b>Inhabitants</b>	5 516 224	1 290 937	23
<b>Total output of forest bioeconomy (milj. eur)</b>	28 900	8 649	30
<b>Value-added of forest bioeconomy (milj. eur)</b>	9 500	3 223	34
<b>Employment of forest bioeconomy</b>	70 300	24 599	35
<b>Investments in forest bioeconomy (milj. eur)</b>	1 450	485	33
<b>Value-added of forest bioeconomy (eur/inhab.)</b>	1 722	2 497	

**Source: Metsäbiotalouden arvoketjut maakunnissa**  
Tapion raportteja nro 47 2021, Jouko Lehtoviita ja Tommi Tenhola

# Forests in East & North Finland



- Forest coverage is 77% of the area.
- The annual growth is 65.5 million cubic metres and the annual felling is 44 million cubic metres.
- Of the forestry land in the ENF, 37% is peatland. 79% of Finland's peatlands are located in the ENF area.
- The number of private forest owners by place of residence in the eight ENF regions is 213 780.
- The forest sector employs around 60 000 people throughout Finland, paying an average of €2.2 billion in wages and salaries each year.
- In 2020, renewable energy consumption in Finland was 44.6%, of which 71% came from biofuels. They account for 28% of Finland's total energy consumption and were thus the most used energy source.
- East and North Finland has strong forest expertise (Luke + higher education institutions).

# Forest working group of ENF

**Decision-making power and control over forest policy must remain with the Member States – multilevel governance must be preserved.**



The balance between environmental, economic and social needs must be taken into account in the EU's targets for biodiversity enhancement measures.



It is important to ensure flexible coordination between local means and operational forest uses in order to promote overall sustainability.



At present, EU forest objectives are largely focused on restoration, protection and afforestation.



We need clear EU-wide definitions of forests, such as primary and natural forests and old growth forests.



3rd largest  
**22 687 km<sup>2</sup>**  
land area

POPULATION DENSITY  
**3,6 inhab/km<sup>2</sup>**

Space, tranquility  
and clean nature

FORESTS  
**1,93 M. ha**  
90 % of the land

LAKES  
**4 639**  
12 % of the land area

CLEAN AIR  
small particle pollution 2nd  
lowest of the provinces

POPULATION  
**71 664**

OVERNIGHT STAYS  
**992 000**

SUMMER COTTAGES  
**12 800**

RENEWABLE ENERGY  
**55 %**

GDP €/inhabitant  
**33 117**

**3**  
supercomputers

WORKPLACES  
**27 700**

UNEMPLOYMENT  
**11,4%**  
03/2021



# KAINUU

Distances: Helsinki 568 km, Oulu 181 km, Bryssel 2000 km



## 8 MUNICIPALITIES

Hyrynsalmi, Kajaani, Kuhmo, Paltamo, Puolanka, Ristijärvi, Sotkamo, Suomussalmi

### In Kainuu you find:

- ★ LUMI: One of the world's fastest supercomputers (2021) (Kajaani)
- ★ UNESCO literature city (Kuhmo)
- ★ Tourist Area of the Year 2019 (Sotkamo)
- ★ The best ski resort in 2020 (Vuokatti)
- ★ The youngest National Park in Finland (Hossa, Suomussalmi)
- ★ Finland's widest open lake (Oulujärvi)
- ★ Most championships in Finnish baseball (Sotkamon Jymy)

updated 4.5.2021

REGIONAL COUNCIL  
OF KAINUU

arctic  
LAKE LAND

# ECONOMIC TRENDS IN KAINUU'S TOP INDUSTRIES 2015-2019



Turnover +534 M€, 72 %



Employees +1190, +18 %

## Bioeconomy



+13 % turnover

+11 % employees

## Forest-based bioeconomy



+28 % turnover

+11 % employees

## Energy sector



-9 % turnover

-23 % employees

## Food sector



+47 % turnover

+9 % employees

## Mining industry



+392 % turnover

+110 % employees

## Tourism



+21 % turnover

+8 % employees

## ICT and electronics



+23 % turnover

+13 % employees

## Metal industry



+58 % turnover

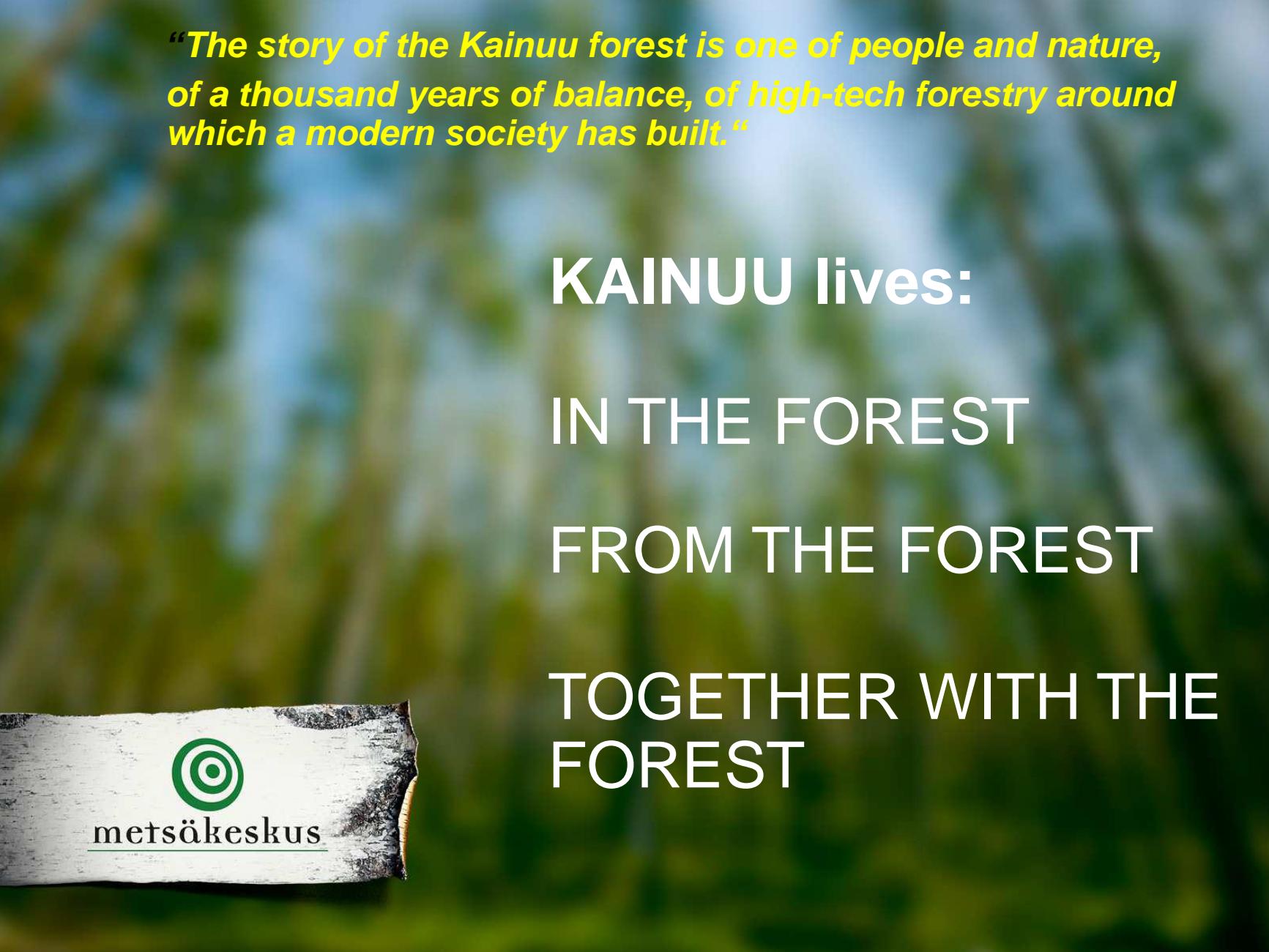
+5 % employees

Kainuun liitto, 9.9.2020

Data: Statistics of Finland

REGIONAL COUNCIL  
OF KAINUU

arctic  
**LAKELAND**



*“The story of the Kainuu forest is one of people and nature,  
of a thousand years of balance, of high-tech forestry around  
which a modern society has built.”*

KAINUU lives:  
IN THE FOREST  
FROM THE FOREST  
TOGETHER WITH THE  
FOREST



# Forest Potential Kainuu

At the moment (per year):

- Growth 7 milj. m<sup>3</sup> (7 000 000 m<sup>3</sup>)
- Sust. cut potential 5 milj. m<sup>3</sup>
- Average cut 3 milj. m<sup>3</sup>
- Local processing 1 milj. m<sup>3</sup> (... 2 milj. m<sup>3</sup> exported...)
- Available cut potential 2 milj. m<sup>3</sup> (spared every year...)

Aim now and in the future:

⇒ Growth of the local economy from forest / f. products

**Aim: More local wood processing (2-3 milj. m<sup>3</sup>)**

- => Bioenergy (bio oil, biodiesel, wood chips, etc...)
- => Sawmills, Wood construction
- => Other wood products

# KAINUU 2040 REGIONAL DEVELOPMENT PLAN

*Muuttovoiton ja monipaikkaisuuden Kainuussa on vapaus ja mahdollisuudet luonnonläheiseen merkitykselliseen elämään.*

## KAINUUN DEVELOPMENT PROGRAMME 2022 – 2025:



**HYVINVOINTI JA  
TYÖLLISYYS**  
Hyvinvointi ja työllisyys  
Tasa-arvoinen  
aluekehittäminen  
Positiivinen  
maakuntakuva  
Kulttuuri



**ELINKEINOT JA  
OSAAMINEN**  
Osaava työvoima  
Koulutus ja osaaminen  
Yrittäjyys ja investointit  
Digitaalinen siirtymä  
Älykäs erikoistuminen  
Kärkielinkeinot



**SAAVUTETTAVUUS JA  
ALUERAKENNE**  
Uudet liikkumisratkaisut  
Sähköiset palvelut  
Infrastruktuuri-  
investointit  
Kestävä aluerakenne  
Monipaikkaisuus  
Toimivat palvelut



**GREEN AND JUST  
TRANSITION**  
Environmentally and  
climate sensitive  
development  
Innovations,  
employment and added-  
value

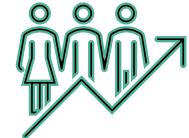
**ARVOT: Positiivisuus • Koko Kainuun huomioiminen • Yhdenvertaisuus • Kestävä kehitys**

**Kansainvälistyminen, yhteistyö, kumppanuus ja sopimuksellisuus vievät tuloksiin**

# Vihreä ja oikeudenmukainen siirtymä 2040 tavoitteiden toteutumisen mittarit.

Mittari	Lähtötaso 2020	Tavoitetaso 2025	Tavoitetaso 2040
Uusiutuvan energian osuus energiankulutuksesta (%)	61 %	75–80 %	100 %
Energiaomavaraisuus	61 %	65 %	100 %
Kasvihuonekaasupäästöt (CO2-ekv)	602,5	500	80 % vuoden 2007 tasosta
Kainuun hiilinielu (CO2-ekv)	Kainuun nielut ovat suuremmat kuin maakunnan kasvihuonekaasupäästöt.	Kainuun nielut säilyvät suurempina kuin maakunnan kasvihuonekaasupäästöt.	Kainuun nielut säilyvät suurempina kuin maakunnan kasvihuonekaasupäästöt.

# Maakuntaohjelma 2022 – 2025



## Kärkitoimialat: biotalous

**Kainuun biotalouden kärjet** ovat:

**1. Metsäbiotalous**, joka sisältää metsä- ja puuklusterin ohella myös metsien tarjoamien uusiutuvien raaka-aineiden jalostamisen muiden tuotteiden raaka-aineiksi (esim. puun eri jakeiden, marjojen ja niiden jalostuksen sivuvirtojen jalostaminen kosmetiikka- ja terveysvaikuttisten tuotteiden raaka-aineiksi) sekä **ruoan tuotanto**, joka sisältää maatalouden ohella luonnontuotealan.

**2. Uusiutuva energia** on merkittävä kasvuala, jonka ajureina ovat ilmastonmuutoksen hillintä sekä yhteiskunnan ja talouden vihreä siirtymä. Kainuussa erityisesti tuulivoima ja metsäenergia ovat merkittäviä investointien kohteita.

**3. Näiden lisäksi olennaista on vahvistaa kaikkien Kainuun uusiutuvien luonnonvarojen kestävää hyödyntämistä ja kehittää **uusia biotalouden innovaatioita**.**

# Biotalous 2022-2025

**Yleistavoite:** Biotalouden ja siihen liittyvän vesiviisaan biokiertotalouden (biologiset kierrot) tuotannon määrä sekä tuotteiden ja palvelujen jalostusaste nousevat, työntuottavuus paranee, vienti kasvaa ja Kainuuseen saadaan lisää teollisia ja palvelualan investointeja. Biotaloudessa saavutetaan vuoteen 2025 mennessä noin 760 miljoonan euron liikevaihto ja noin 3700 henkilöstömäärä.

**Kehittämistavoitteet:** Metsäbiotalous ja uusiutuva energia

- Vuoteen 2025 mennessä yhteisarvoltaan noin 1,2 miljardin euron teolliset investoinnit metsäbiotalouteen ja uusiutuvaan energiaan

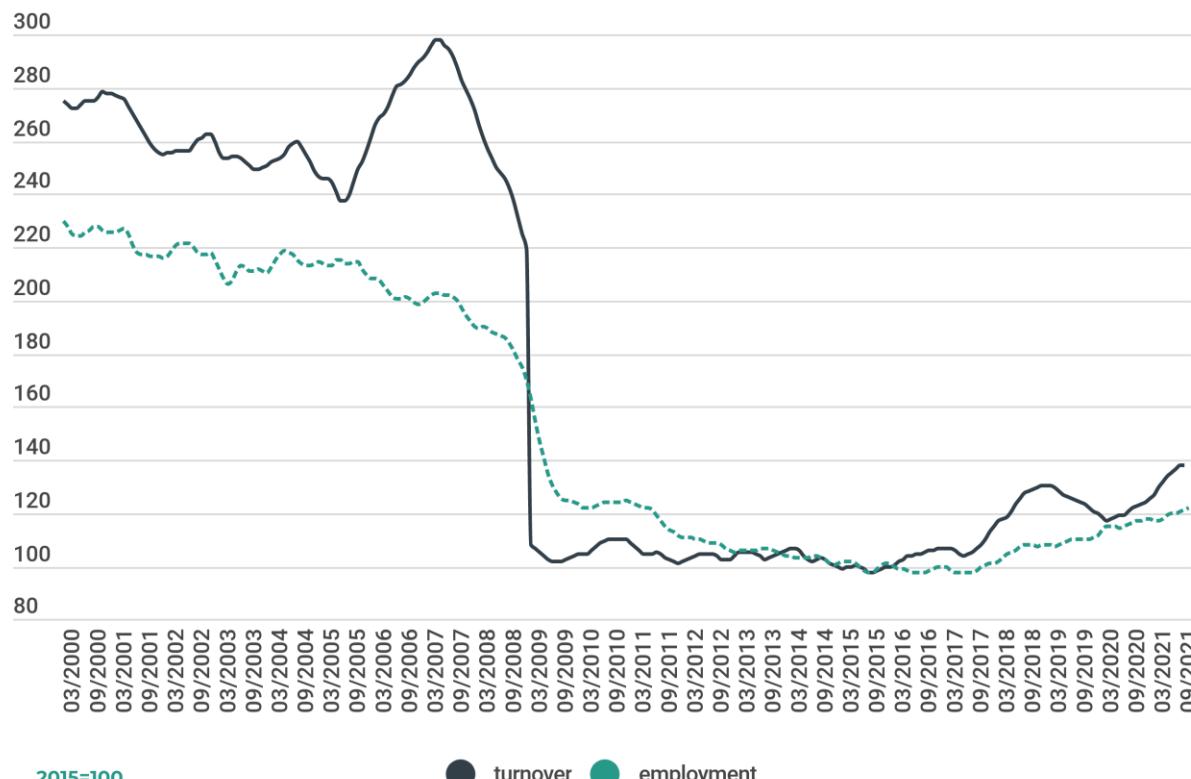
**Tavoitteen strategiset toimenpiteet 2022–2025**

- Varmistetaan **Paltamon** biotuotetehtaan investointi, **Kuhmon** Kantolan puutuoteteollisuusalueen kasvutavoitteiden toteutuminen sekä uusien investointien saaminen **Kajaanin Renforsin Rannan** teollisuusalueelle
- Varmistetaan tuulivoimaan noin 200 miljoonan euron investoinnit

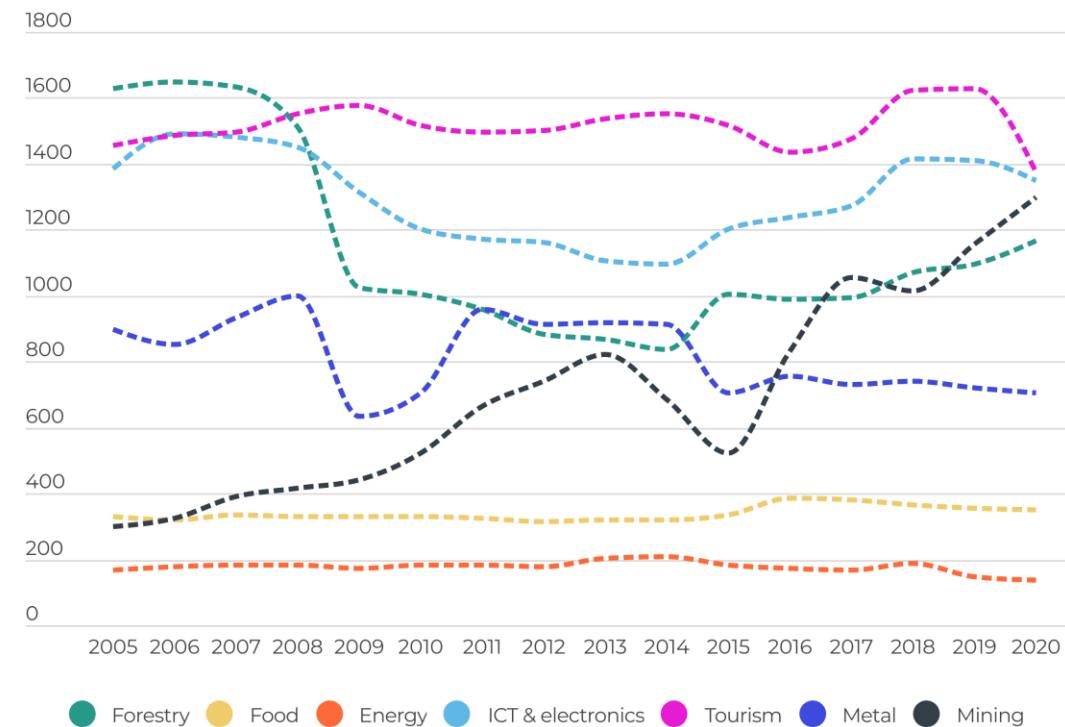
# Collapse of Forest Industry in Kainuu in 2008

## Trends in forest cluster

Turvoer and employment 2000-2021



## Employment in Kainuu clusters 2005-2020



Metsäsektorin tuotos  
milj. euroa

# Total turn-over on forest industries in Kainuu by 2000 - 2018

Maakunta  
Kainuu

Vuosi  
Useita valintoja



Leinonen

● Metsätalous ● Massa-, paperi- ja kartonkiteollisuus ● Puutuoteteollisuus

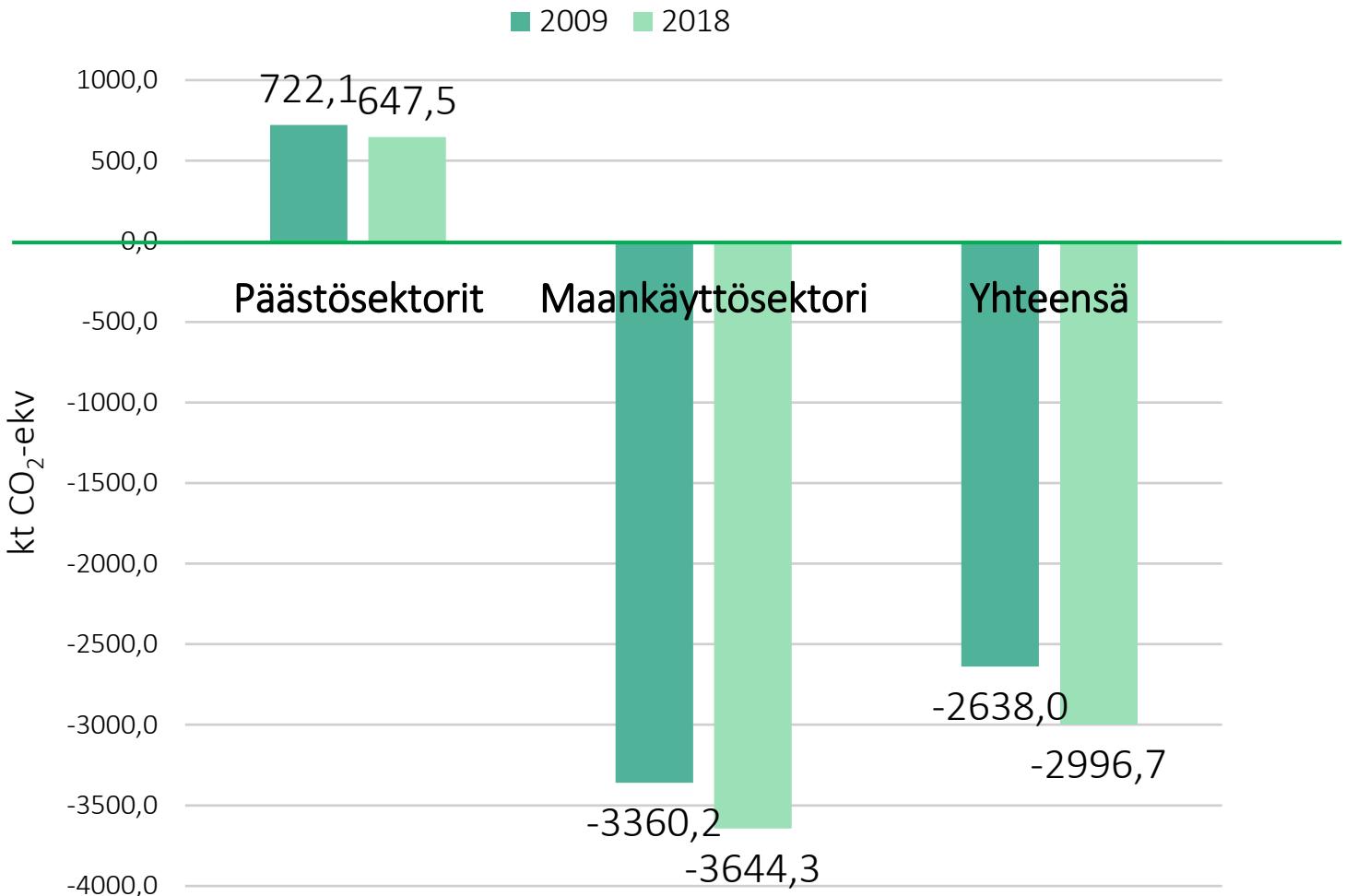


Lähde: Tilastokeskus aluetilinpito, Smk Amo-seuranta  
2.12.2020



# CO<sub>2</sub>- emissions and carbon sinks in Kainuu Region

In Kainuu carbon sinks are 5 times higher than CO<sub>2</sub>-emissions within the region!



# Renewal energy production in Kainuu

- In EU by the target level of REDIII- directiv is to higher the share of renewal energy use 32 %: to 40 %
- In Finland the aim of government is 51% by the year 2030
- In Kainuu our current level in 2020 was already **61 %**
  - This includes water, wood and wind energy; no use of coal
  - In the next years the production on wind energy will rapidly increase  
-> Kainuu will be producing green energy more than its is used in the area (or it may attract new investments in the area)
  - E.g. In Kajaani is located a supercomputer (EuroHPC, LUMI) which is carbon neutral and is producing 20% on heating power of the town

# Three local economic ecosystems of forest bioeconomy in Kainuu: Woodpolis, Renforsin Ranta and Paltamo



Woodpolis - puutuoteklusteri: 20 yritystä, liikevaihto n. 156M€, henkilöstömäärä 356.

Yritystoiminta on suuntautunut palvelemaan hyvin monipuolisesti rakentamisen tarpeita: sahatavara, CLT-levyt, taso- ja tilaelementit, hirsitalot, höylätavara, puiset elementit, ikkunat, puurakentamisen suunnittelupalvelut, erilaiset rakenteet.



RENFORSIN RANTA  
YRITYSVALUE • KAJANI

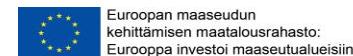


Prometec



OULUN YLIOPISTO  
UNIVERSITY OF OULU

- Biojalostuksen mittaukset -professuuri
- prosessiteollisuuden on-line mittausratkaisut ja ympäristömonitorointi
- uudet teknologiat biomassojen ja niiden sivuvirtojen hyödyntämisessä
- ligniinin mahdollisuudet -tutkimus
- Kainuu investointistrategia -hanke
- Kainuu älykäserikoistuminen
- BERRY+ biotalouden kv-innovaatiokumppanuus
- Puurakentamisen terveysvaikutukset –tutkimus



- Investoi Paltamoon -hanke



Vipuovoimaa  
EU:ltä  
2014–2020

KAINUUN LIITTO

# KUHMO, WOODPOLIS CLUSTER SITE

KUHMO OY (sawmill, 800 000 m<sup>3</sup>, 150 employees) KUHMON AA-PUU OY (plane)  
OY TIMBER FRAME LTD (log houses) CROSSLAM (CLT-elements)  
KUHMON IKKUNA OY (windows)  
KUHMON PUUPALVELU OY (garden products) KUHMON PUUELEMENTTI OY  
(wooden houses) PUUHANSKI OY (timber)  
M-PELETTI (wood pellets)  
KUHMON LÄMPÖ OY (heat and electricity)  
TIMBER BROS OY (planner, wood house projects)  
WOODPOLIS (education)

- > 20 companies
- ~10 educational/development partners
- By 2020: 300 employes, turnover 200 000 000 €

Picture: [www.woodpolis.fi](http://www.woodpolis.fi)

IITTO

## Small town of Kuhmo deep in Finlands forests has developed a complete supply chain – while reinvigorating the local economy



The Kuhmo sawmill purchases 900,000 cubic metres of raw wood per year. Photo: Hannes Mäntyranta



<https://forest.fi/article/this-small-town-deep-in-finlands-forests-has-developed-a-complete-supply-chain-while-reinvigorating-the-local-economy/#d9522f76>

- The Kantola business district in Kuhmo looks just like the many other industrial estates found all over Finland. However, Kantola's factories produce a surprising volume of wood products – sawn timber, Cross laminated timber (CLT) slabs, flat and modular elements, log houses, and wood construction design services, planed timber and windows and doors – worth a total annual turnover of 100 million euros.
- The source of the cluster's buzzing activity lies just beyond the industrial area – the forest. This small town in Kainuu is surrounded by huge swathes of boreal forest.
- It was speculated that the more that this wood supply was processed locally, the more local jobs and prosperity would be created. Therefore, the city of Kuhmo wanted to extract more from the forest than just lumber. It founded Woodpolis in order to promote innovation in wood construction as well as to educate companies and students in the field.

# KUHMO, wood construction



For the Green Transition the main contribution on East and North Finland – and Kainuu – is to substitute the use of fossil raw material with wood-based (renewal) products!

- Wood products e.g. wood construction supports CO<sub>2</sub> storage



**A new school centre constructed in Kuhmo is the first one in Finland to be built from CLT and a local masterpiece**

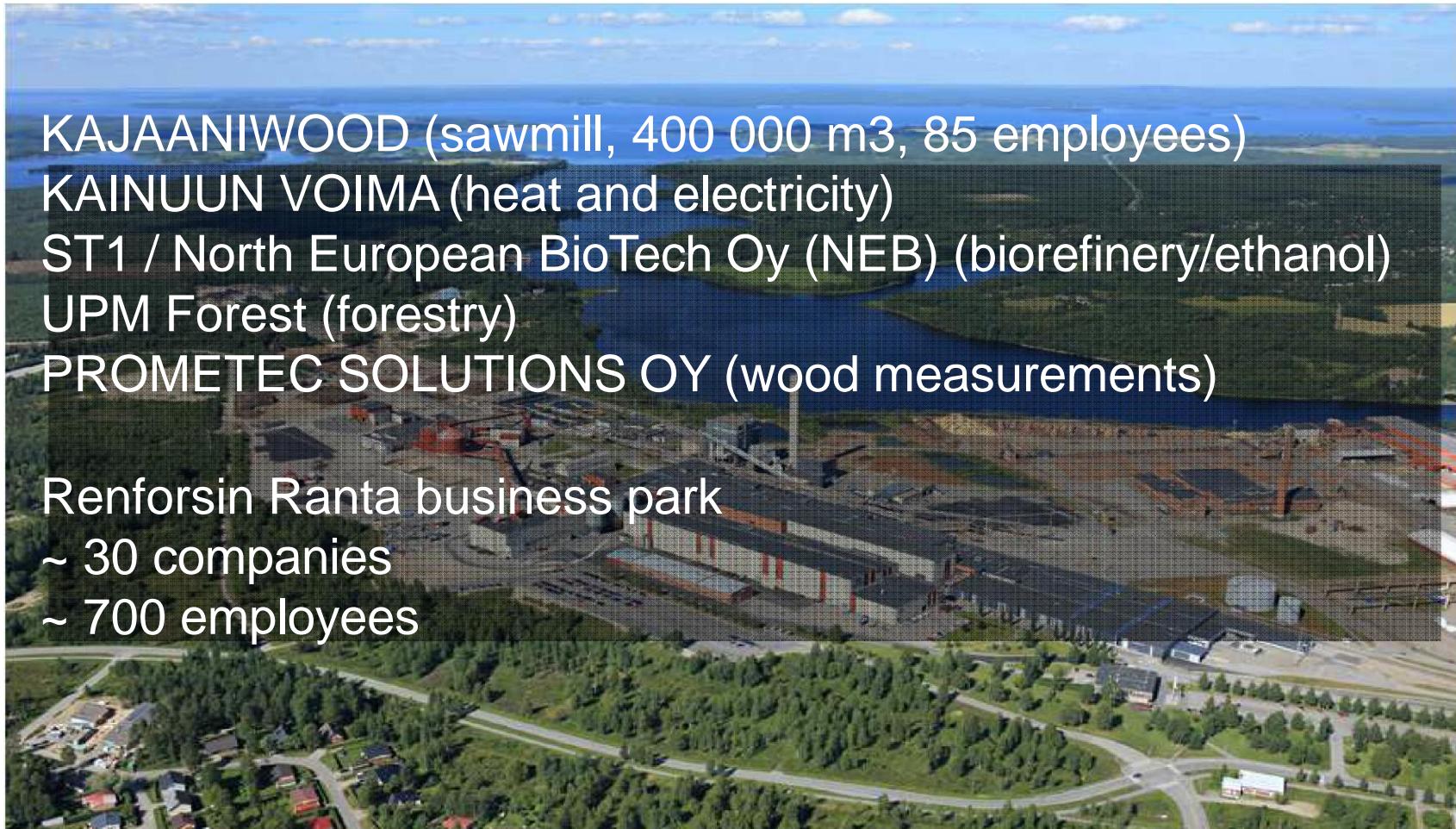
CLT is known for its strength and rigidity. In addition, thanks to sanding, it has also a beautiful finish, making it ideal for both load-bearing structures and visible wall material.

More information:

<https://forest.fi/article/how-to-build-eco-friendly-and-local-a-showpiece-from-eastern-finland/#d9522f76>

<https://www.crosslam.fi/en/products/construction-with-crosslam-boards.html>

# KAJAAANI, RENFORS BP WOOD CLUSTER

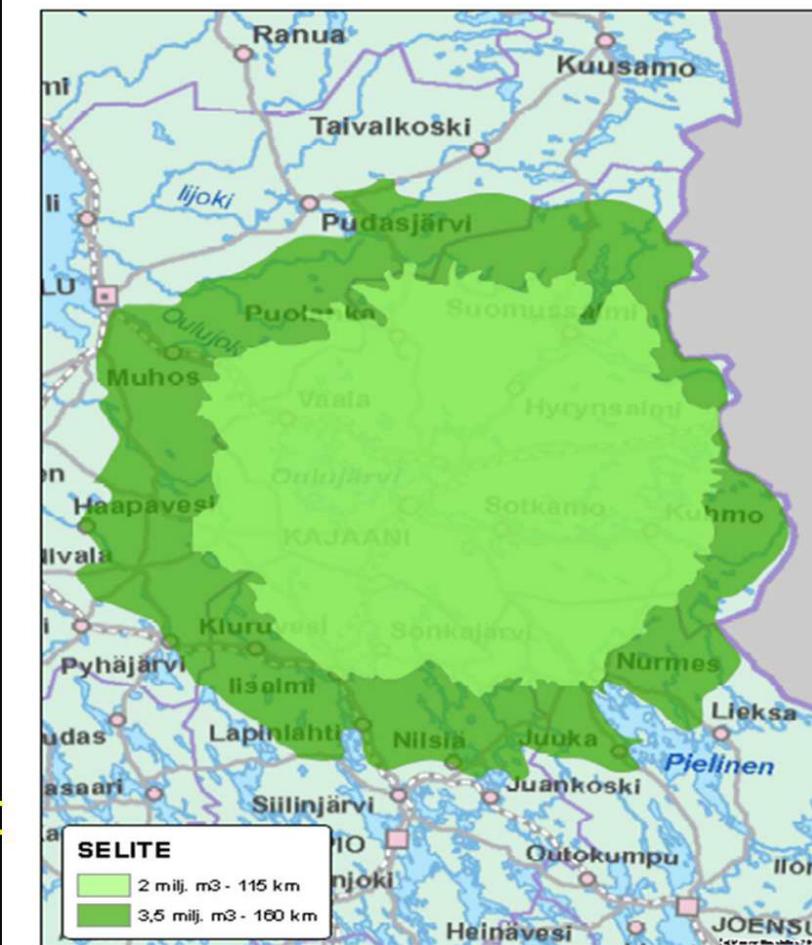


# PALTAMO, Pulp and Bioproducts Mill Project, KajCell Fibers Ltd.

Raw material and logistics options presented by the factory concept survey:

- pine and spruce pulpwood harvest potential 2.0 M m<sup>3</sup>
- + sawmill wood chips 0.5 M m<sup>3</sup>
- => 2.5 M m<sup>3</sup> raw material available

Potential conifer (pine and spruce) purchasing area and radius when 75 % of the potential sustainable harvest is directed to the Kainuu refinery



# Company and Objectives

- Following a 2015 preliminary study by the Regional Council of Kainuu on the optimal way to utilise the Kainuu region's substantial pulpwood resources, KaiCell Fibers Ltd. was founded in January 2016.
- A directed share issue was conducted in 2020 to realign the ownership base and provide further funding. After the share issue, the company has 25 shareholders.
- The share issue ensured funds for completion of the environmental permit process, as well as further preparation measures towards mill implementation.
- The company's objective is to construct a 600,000 admt pulp mill in Paltamo, Kainuu. The mill will produce bleached softwood and birch pulp. Further processing of pulp in the area is a serious option. Total raw material demand for pulpwood and wood chips is approx. 3.5 Mm<sup>3</sup> / year.
  - Readiness for investment decision around 2022.
  - Construction phase 2023-2024
  - The goal is to start production during 2024/2025



The forest  
gives!

# Permitting Processes

- The required environmental impact assessment (EIA) procedure for the mill finished in October 2018, as documented by the liaising authority issuing an evaluative finding..
- Environmental and water permit was granted by the Northern Finland Regional State Administrative Agency (AVI) July 15, 2020. The permit procedure allows appeals, the merits of which are considered in the court system. Once appeals are rejected, the permit is ratified and gains the force of law.
- A disposal area is needed for surplus landmass from mill site landscaping. An EIA process for this disposal area was conducted in 2021, and the required permit approved in April 2022. The permit awaits ratification and is thus subject to potential appeals.
- A letter of intent between the company and the municipality of Paltamo is in place for acquisition of the mills site. The zoning procedure for industrial use is complete and ratified.



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gives!

# Wood Procurement

- Wood raw materials about 3,5 Mm<sup>3</sup>/year
  - Softwood
  - Birch wood
  - Wood chips from sawmills
- Paltamo's location in the middle of raw material resources is optimal
  - Average truck transport distance to the factory is 100 km
  - At present all harvested Kainuu pulpwood is hauled to other areas for processing
- Sustainable wood procurement
  - Forest growth in Kainuu is about 7.3 Mm<sup>3</sup> / year
  - Harvesting in Kainuu 2015-2019 about 3.5 - 3.9 Mm<sup>3</sup>/year\*
  - Total reductions (harvesting + natural removal) average 2.8 Mm<sup>3</sup> less than growth
  - The harvesting target in Kainuu is approx. 4.8 Mm<sup>3</sup>/year\*
  - Most pulpwood is derived from thinnings
- More than 90% of Kainuu's forests are certified

The forest  
gives!

## Wood Sourcing Area and Existing Pulp mills

- The closest existing pulp mills are 150– 250 km from Paltamo, giving KaiCell a competitive edge when sourcing wood from the Kainuu region.
- Currently all harvested Kainuu pulp wood incurs high transport costs to distant users.
- Due to high share of young and mid- aged forests, sustainable harvesting in northern Finland can be increased by est. 7–10 million m<sup>3</sup>
- Almost circular procurement area with excellent road and rail connections for efficient logistics.
- Having several sawmills in the region equals good availability of wood chips.
- Distance to Russia border access point by road and rail 130 km.



## Projected Economic Impact on the Regional Economy of Kainuu

- Long-term benefits to the region estimated at > EUR 200M.
- The mill would directly and indirectly employ around 1200 people in the region, plus have a national employment effect of another 600.
- The benefits to the regional forest economy are more than those derived from wood procurement: The knock-on effects of substantial local fibre wood utilisation on overall harvesting and forest stewardship are significant.
- The construction phase would provide employments boosts of approx. 1500 regionally and over 6000 nationally.

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