Bioenergy cluster in Eastern Finland

30.10.2013

Timo Tahvanainen
timo.tahvanainen@carelian.fi

JOENSUU SCIENCE PARK

OSKE
ENERGY TECHNOLOGY
CLUSTER PROGRAMME

Basis for smart specialization in Joensuu region

- **Growth based on world-class knowledge**
  - Companies
  - Research and education
- **Forest bioeconomy**
  - Forestry, forest resources, bioenergy, biomass harvesting and procurement
- **Materials and technology**
  - Photonics, composite materials
  - Forest technology, ICT
- **But also:** services, Russia…

Joensuu – the Forestry Capitol of Europe

Unique combination of forest research:

- European Forest Institute – EFI (headquarters)
- Finnish Forest Research Institute – Metla
- University of Eastern Finland – UEF
- Karelia University of Applied Sciences

…and wider bioeconomy scope:

- Finnish Environment Institute – SYKE
- The Energy and Resources Institute – TERI
- Over 600 experts in bioeconomy sector

EFI METLA UNIVERSITY OF EASTERN FINLAND Karelia UNIVERSITY OF APPLIED SCIENCES SYKE teri

Joensuu – the Forestry Capitol of Europe

Full package of forestry education

University of Eastern Finland (UEF)

- Bachelor
- Master
- Licentiate
- Doctor

Master programme in Wood materials science

of Science in Agriculture and Forestry

Karelia University of Applied Sciences

- Bachelor of Natural Resources
- Masters Degree of Environmental Technology

North Karelian Technical College in Valtimo

- Forest machine operators, loggers, timber truck drivers, forest service enterpreneurs, excavator operators

Forestry-oriented high school in Eno and

ENO-Environment Online (http://www.enoprogramme.org/)

- Over 10,000 schools joined, over 100 million trees planted

World class know-how in North Karelia
Forest machine technology and material handling solutions:

JohnDeere, Kesla, Waratah OM, Outokummun Metalli, Pentin Paja,
Mantsinen Group, Konepaja Antti Ranta, Konepaja Riikonen, A. Hirvonen…

Strong support from neighbouring regions

- **Research:**
  - Lappeenranta University of Technology - LUT
  - University of Eastern Finland – UEF Kuopio campus
- **Companies:**
  - Harvesting technology
    - Ponsse in Vieremä
    - ICT for logistics and for forest machines
  - Combustion technology
    - Large-scale fluidized bed biomass boilers in Varkaus
    - Foster Wheeler
    - Andritz

JOENSUU SCIENCE PARK

- What about us?

Facilitates cooperation between research, companies & education

- Links to best available knowledge
- Utilization of key technologies (optics, nano, hybrid…)
- Utilization of R&D funding and demonstration platforms, project generation

Promotes sustainable and knowledge-based business development in the region and in the bioeconomy sector

- Clustering and structural growth processes, industrial hot-spot development
- Internationalization

Promotes knowledge-based investments in the region

- Bioeconomy-based production and Invest in processes
  - Fortum pyrolysisi oil, slow pyrolysis, pellets, small DH and CHP, biogas
- Clean technology & ICT

Centre of Expertise Program (OSKE), Bioeconomy INKA program, …