LAPPEENRANTA UNIVERSITY OF TECHNOLOGY

Bioenergy Technology
LUT Energy

Mikkelin yliopistokeskus
Mikkeli University Consortium

LUT Mikkeli is a part of Mikkeli University Consortium www.muc.fi

RESEARCH TOPICS

RESOURCES
-Forest Residues
-Tree Stumps
-Small diameter energy wood
-Agrobiomass
-Wastes

TRANSPORTATION
-Road
-Waterway
-Railway
-Intermodal

STORAGE
-Terminals
-Chipping and crushing
-Quality control

REFINED BIOFUELS
-Pellets, briquettes
-Biodiesel, bioethanol
-Biogas

ENERGY PRODUCTION
-Small Scale CHP
-Feasibility Studies
-Energy economics
-Local Resource Utilization
-Energy Balances
-Potentials for increase in renewable production
- Biomass supply to BTL-plants

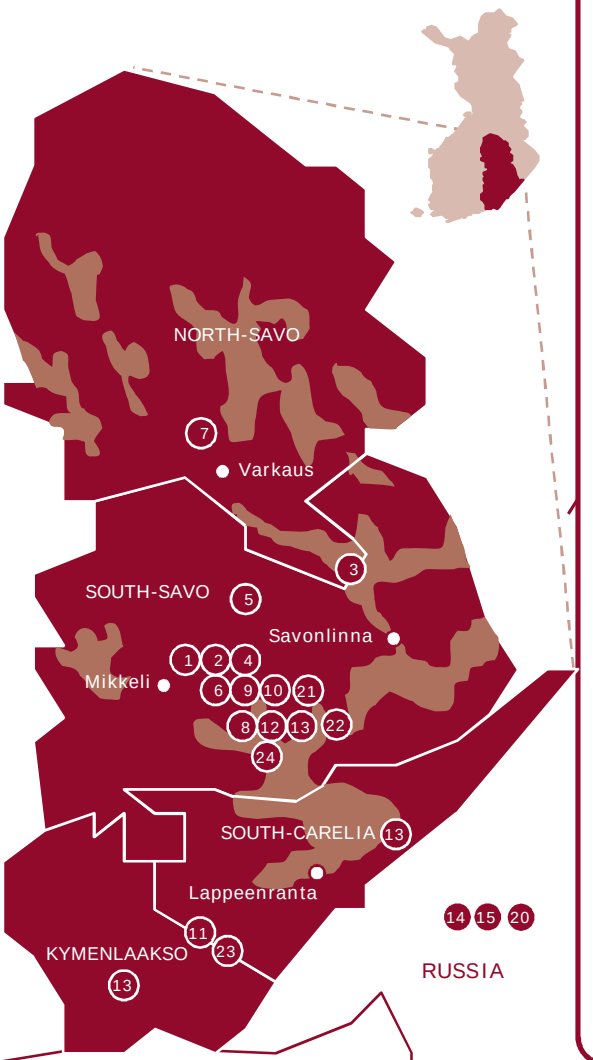
BUSINESS
-Forest owners
-Small/Medium scale enterprises
-Energy producers
-Forest companies
-Service providers

ENVIRONMENT
-Greenhouse gases and other local emissions
-Land use

RESEARCH METHODS

-Geographic information system (GIS)
-Life Cycle Assessment (LCA)
-Tests and demonstrations
-Simulation
-Business case analysis

Business from Bioenergy

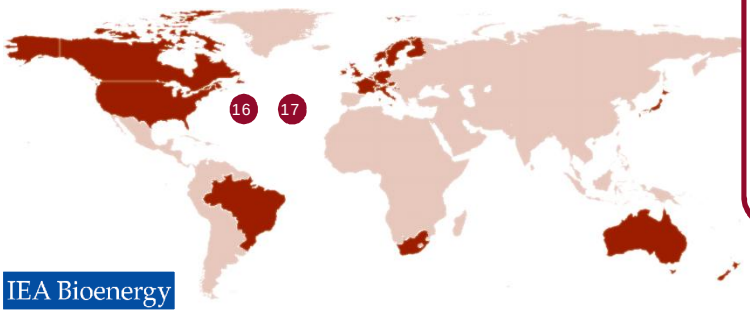


Examples of Research Projects 2003-2010

1. Biofuel terminals, Mikkeli region
2. Energy use of tree stumps, Mikkeli
3. Waterway transportation of forest fuels, Lake Saimaa
4. LCA of energy utilization of waste, Mikkeli
5. Reed canary-grass pellets and briquettes
6. Pyrolysis oil, Mikkeli
7. Energy technology cluster services, Varkaus
8. Liquid biofuels for transportation in South-Savo
9. Small scale-CHP in South-Savo
10. Torrefied wood fuel
11. Supply logistics of biofuels in South-East Finland
12. Bioenergy solutions for farms
13. Regional energy balances
14. Import opportunities of wood fuels from Russia
15. Diploma thesis 'of international master programme in Russia
16. International biofuel trade
17. Bioenergy certification
18. Energy solutions for farms
19. Large-scale biomass supply solutions to BTL-plants
20. Bio heating entrepreneurship concept into Russia
21. Forest chip logistics based on interchangeable containers
22. Small diameter energy wood from South-Savo
23. Business opportunities alongside with increasing forest chip use
24. Business plan for biomass terminal

INTERNATIONAL ACTIVITIES

-IEA Task 40 (Sustainable International Bioenergy Trade) Representative of Finland
- COST Action FP0902, "Development and harmonization of new operational research and assessment procedures for sustainable forest biomass supply "
--Co-operation with universities in St Petersburg, international bioenergy MSc-Programme
- International scientific conferences, joint publications, researcher visits



IEA Bioenergy

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