

FOREST REFINE PARTNER – BIOFUEL REGION

Forest Refine is a cross-border research project between Sweden and Finland about the raw material supply to biorefineries. Forest Refine has seven participating organizations, three from Sweden and four from Finland. This presentation of the participating organizations is about BioFuel Region in Sweden.



BioFuel Region was founded in 2003 and is a partnership between municipalities, businesses, regional associations, county councils, and universities in the four northernmost counties. Today there are seven people employed, situated in Piteå, Sundsvall and Umeå. The organisation is funded by its members and from current projects.

WHY?

Overall aim is to become a leading region in the transition to a sustainable society, economically, socially and ecologically. The driving forces behind working with the transition to renewables are to contribute to the fight against climate change, increase self-sufficiency and regional development.

WHAT?

Focus areas are renewable energy with emphasis on transports and products based on biomass.

How?

Working together with the members to develop the region's raw material, skills, business and society by:

- Promoting our region – north Sweden
- Cooperating with members
- Networking – triple helix
- Exchanging knowledge
- Influencing opinion
- Engaging young people



CURRENT PROJECTS

- **Biogas Norr** – A networking and regional cooperation among biogas actors in the four northernmost counties to develop production and market for biogas
- **Electrical Vehicles** – A network to establish and promote electrical vehicles in north Sweden
- **Forest Refine** – efficient raw material supply to biorefineries
- **KNUT** – School project engaging young people and teachers on energy-, resource- and climate-issues
- **Place Branding** – A joint project between key actors aiming to promote our region as a unique place for developing new products from the forest
- **SECRE** - Social Enterprise in Community Renewable Energy - will develop services that allow social enterprises to apply renewable energy solutions in local economic development.

BIOFUEL REGION IN FOREST REFINE



Magnus Matisons at BioFuel Region is project manager in Forest Refine and he is coordinating all five sub-projects within Forest Refine.

Forest Refine, raw material supply a cross-border project on to Nordic biorefineries



The Forest Refine project will study how supply of biomass to Nordic biorefineries can be organised and done in an efficient way. The pulp industry supply chain of roundwood and wood chips is efficient and well established. However, as biorefineries also use e.g. stumps, branches and tree tops, it is a must to develop an efficient supply chain for this raw biomass assortment.

The project is a Swedish-Finnish cross-border cooperation where the participants have complementary knowledge about biorefining as well as wood supply chains. It is run by BioFuel Region between January 2012 and April 2014. Swedish participants are BioFuel Region, Swedish University of Agricultural Sciences (SLU) and Processum. Finnish participants are Foresta for an Research Institute (METLA), CENTRIA, Mälaren Chertona Landbrukssystem and the Chertona Institute.

"It is of great importance that the project takes the whole biorefinery production value chain into account, although the project will deal with just the raw material supply, our research team," says Magnus Matisons, BioFuel Region and project manager for Forest Refine. "In Sweden, the initial step is to map and describe all biorefinery activities going on in Finland and Sweden, as these countries are world leaders in wood raw material biorefining."

"There are four types of biorefineries we will be looking at in this study regarding the best possibilities for biomass production and it is therefore logical to assume that they will have different quality demands on their respective raw materials as well as in which way they need to have it delivered. This will decide the design of the respective biomass supply chain."

Wood raw materials from the mills

"The present situation in northern Sweden is such that pulp mills, sawmills and CIPs are located along the coast and the wood raw material is often very far from these plants in the inland," Magnus continues. "Wood is supplied either as roundwood by truck direct from the saw falling areas or by railway from inland terminals, or as wood chips by truck from sawmills."

"The raw materials for biorefineries, however, will partly have the same physical form as for traditional pulp mills like e.g. the biorefinery in Denmark producing mainly specialty cellulose, dried lignin and

Primary biorefining of biomass will be important

"In order to access raw material far away from industrial inland terminals will play an increasingly important role in the raw forest. Somehow between the raw falling areas and the biorefinery, the raw material may be upgraded or sorted according to end-use quality demands."

How can the different raw material fractions be separated from each other?

"Such technologies can be used for this purpose! How should the different fractions be separated for efficient transport? Can certain decomposing methods reduce the need of increasing transport distances for any biorefinery?"

"There are many other questions, our research will deal with in the project," Magnus stresses. "I would say that the main purpose of the project activities are planned to be scientific industrial ones, i.e.

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Magnus is cooperating with national, regional and local stakeholders. In this important work networking with the academia, politics and business he is lecturing and initiates collaboration between stakeholders such as joint outreach activities. He is also part of a national network highlighting these issues and the need for long-term rules and legislation. Magnus is an important part of Sub-project 5, Outreach activities and communication, when lecturing about the fossil-based economy and the need of transition towards a bio-economy based on biomass from forest.



The aim of the sub-project is to communicate the results of how effective raw material supply can be developed. The objective is to facilitate communication among project partners and to reach out with the results from the researchers and the analyses of accumulated knowledge. Communication and outreach will be done using three languages, English, Swedish and Finnish.

Responsible for outreach and communication activities within Sub-project five are Barbro Kalla at BioFuel Region in Sweden together with Katri Kulkki at Central Ostrobothnia rural institute in Finland. Her work covers writing news, editing and promoting info sheets written by the researchers, writing the monthly newsletter together with Katri and translating it to Swedish. This cross-border team is also planning and implementing outreach and communication activities and updating the web page; www.forestrefine.se



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