Micro Waste to Energy Solutions
for Rural Enterprise in the Northern Periphery

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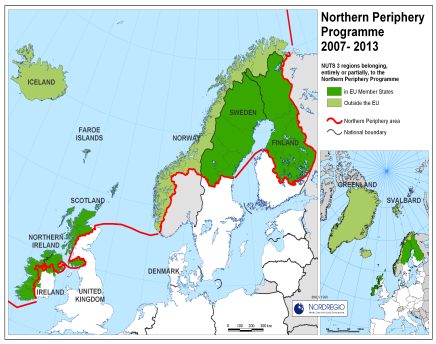
Micro Energy to Rural Enterprise



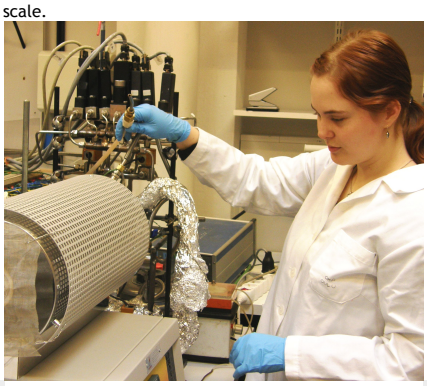
The Northern Periphery area as defined by the Northern Periphery Programme

Implementation

The technologies provisionally identified for development work are micro pyrolysis of wood based products to energy and fuel, micro bio-methane production and purification for vehicles, anaerobic digestion and small scale gasification with heat and power. Targeted are especially SMEs which generate organic by-products and waste, such as food and biotechnology industries. It will have a particular interest in small-scale renewable energy solutions for SMEs and local organisations in rural areas whereby they can generate energy on site from their own wastes and by-products, at the same time as solving their waste disposal problems. The experimental research will be performed at the University of Oulu, Department of Process and Environmental Engineering and will consist of compiling a directory of best practices for biowaste valorization applicable in the NP area, technology testing and downscaling, and evaluation of environmental impacts.

Objectives

The technologies for renewable energy generation are dominated by those which achieve economies of scale. Even those technologies which have been adapted for micro-generation are dominated by urban provision, because the suppliers, retailers and service companies of the micro-generation technology require volume sales in order to be economic, and the volume required can only be found in urban environments. The Micro waste energy business: Micro energy to rural enterprise (MicrE) project seeks to enhance the capacity for self-sustaining business and organisation life in rural NP regions. This will be achieved by developing a service that will make energy from waste technologies for small scale renewable energy generation available to small and medium-sized enterprises (SMEs) in rural NPP regions on a viable and economically feasible scale.



Introduction

Rural areas in the Northern Periphery (NP) face unique challenges with respect to their economical development. Due to their remote location and long winters, NP areas have been very resource intensive and dependent on fossil energy. Over the last 20 years the fossil energy carrier use in fast developing regions such as China, India, Indonesia, Russia, Brazil and South Africa has grown 58% and has surpassed the use rate of OECD countries. The increase in fossil resource use is expected to increase even more, about 60% outside of OECD for the next 20 years. This trend indicates that all NP areas will have to reduce their dependency on imported fuel and make commitments to the use of renewable energy sources that also generate fewer greenhouse gas emissions. This project aims to contribute to the general objectives of the NP Programme by promoting competitiveness through increasing the capacity for innovation and networking in rural and peripheral areas, and strengthening the synergies between environmental protection and growth in remote and peripheral regions.

MicrE

www.micre.fi

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