Task 4.1 – (sub)Regions

” Identification of regions, sources and models to be demonstrated, as well as coordination of the different needs of the rural areas”

Report June 2010

Content

Summary

Our deliveries in month 7 – 12:

- Workshop to exchange experiences between subregions in different countries.
- Web site updates
- Communication with local/sub-regional stakeholders
- Regional identification report

Task 4.1 is running according to project data form. A workshop for WP4 was held 4th – 7th November in Mekrijärvi, North Karelia, Finland. The work within Task 4.1 is strongly coordinated with the work in Task 4.3.

We have identified the regions and know the status of the regional activities. Most of the regions were identified in our workshop in Norway in May 2009. By the end of period 2, January 2010, in total 17 bioenergy regions have been identified. They are closely connected to the regional network points in Task 4.3.

Throughout a series of workshops in WP4, of which the two first is deliveries of Task 4.1, we will visit some of the identified regions. The first WP4 workshop was arranged in May 2009, in the Inland region (Hedmark and Oppland) in Norway. The second was held in November 2009, in North Karelia, Finland. In November 2010 the workshop will be in the region Jämtland and Västernorrland, Sweden. The venue of the last workshop is not decided yet.

Most of the web sites are working now, but there is still a little work to be done to make them good enough. An updated overview of the regional websites is to be found on the project website:
http://www.bioenergypromotion.net/project/regions

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Introduction

The Bioenergy Promotion project will promote the development of a sustainable production of biomass for bioenergy in the Baltic Sea Region. The project started in January 2009 and will last for three years. The Swedish Energy Agency coordinates the project, which is a collaboration between 33 participating partners form ten countries around the Baltic Sea: Belarus, Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Norway, Poland and Sweden. The initiative for the Bioenergy Promotion Project initially came from the Baltic 21 secretariat. The project is part of the Baltic Sea Region Programme, part-financed from the EU, with a budget of about 5 million Euros.

The partners on the list have provided valuable contributions to the report:

- Naturbrukskansliet, Region of Västra Götaland, Sweden
- JILU, Tema Skog, Jämtlands läns Landsting, Sweden
- Institute of Rural Developement of the County of Jämtland, Sweden
- Research Institute of Food and Resource Economy, Denmark.
- Roskilde University, Denmark
- Region Zealand, Denmark
- Forestry Developement Centre Tapio, Finland
- Motiva, Finland
- University of Joensuu, Finland
- Landkreiz Nordwestmecklenburg, Germany
- Chamber of Agriculture Lower Saxony, Germany
- Potsdam Chamber of Commerce and Industry, Germany
- Latvia University of Agriculture, Latvia
- Vides Projekti (State project management Company), Latvia
- Lithuanian Energy Institute, Lithuania
- Lithuanian Institute of Agriculture, Lithuania
- The Energy Farm, Norway
- Norwegian Forest and Landscape Institute, Norway
- Technical University of Koszalin, Poland
- Grodno PLHO, Belarus

The 4.1. task leader Ole Helmer Bjørlien, Arena Bioenergy Inland, Norway has coordinated the work with the report. He has been supported by The Energy Farm and the Norwegian Forest and Landscape Institute.

The project is split into five work packages: administration, information, policy, sub regions and business.

Task 4.1 are part of work package 4 (sub)regions. There are established bioenergy-regions in each country to serve as "testing grounds" for bioenergy promotion. The biomass potential will be assessed, bioenergy related business and industry analysed, new pilot project initiated, strategic management plans developed, and a regional network point will be established.

In task 4.1 we are describing the regions and we also have a close relation to the regional network points (task 4.3.) The regional network points are in many countries the administration centre of the regions. Through the project period we are developing the regions.

The bioenergy-regions are relatively different regarding factors such as size, biomass resources, type of administrative level and more, and the development level in terms of

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bioenergy are different.

This report provides descriptions of the different (sub)regions, and also of some of the ongoing work on developing these regions as "testing grounds" for bioenergy. An example on how the development of a region can take place is what has happened in the Norwegian (sub)region Inland, a project called Arena Bioenergy Inland. Except for in the timber industry, bioenergy has just been fire wood in stoves in Norway until 2003. Norway has throughout the 20th century built out a lot of hydropower from rivers and from the early 1970ties we have found a lot of oil. But the oil resources are limited and we have nearly stopped the development of new hydropower. At the same time the energy demand is increasing rather that decreasing. For this reason and because of the climate changes, Norway also needs to focus on renewable energy. In south-eastern part of Norway we have a lot of forest resources, and also most of the agriculture in the country, therefore it was natural for us to focus on bioenergy and we started a process in the year 2005. After planning a couple of years, firms, public organisations, research and development institutions and education institutions established the Arena Bioenergy Inland with support from the state organisation Innovation Norway in the year 2008. Now we are more than 100 actors in the network, and there is a lot of activity. We have organised harvesting, terminal functions and transport and there is a lot of construction of both large scale and small scale bioenergy plants. Most of the towns and villages are planning or has built out distribution network for hot water. We are building a big bioenergyplant for waste and planning a plant for return wood and fresh wood and in Fredrikstad we have built a factory for biodiesel. We are also building up a education system in the University Collages, and there is research and developement projects going on.

Activities Second Period - August 2009 to January 2010

Our deliveries in month 7 – 12:

- Workshop to exchange experiences between subregions in different countries.
- Web site updates
- Communication with local/sub-regional stakeholders
- Regional identification report

Task 4.1 is running according to project summary. A workshop for WP 4 was held 4th – 7th November in Mekrijärvi, North Karelia, Finland. The work with Task 4.1 is strongly coordinated with the work in Task 4.3. During the workshop Task leader Ole Helmer Bjørlien, Arena Bioenergy Inland, gave a speech about the subjects under this task about Regions. Most of the work in this task is already done. We have identified the regions and know the status of the regional activities. Most of the regions were identified in our workshop in Norway in May 2009. In total 17 bioenergy regions have been identified and they are closely connected to the regional network points. The bioenergy regions are:

- North Karelia, Finland
- South Karelia, Finland
- County of Rotenburg, Germany
- West Brandenburg, Germany
- Nordwest Mecklenburg, Germany
- Pomorian Region, Poland

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- West Pomorian Region, Poland
- Tukums Region, Latvia
- Jelgava Region, Latvia
- Kaunas Region, Lithuania
- Saaremaa county, Leici municipality, Estonia
- Jogevamaa county, Saare municipality, Estonia
- Jämtland and Västernorrlands county, Sweden
- Västra Götalandsregionen, Sweden
- Region Zealand, Denmark
- Hedmark and Oppland County, Norway
- Grodno, Belarus

The main goal is to find cooperation possibilities and areas for business networks. Therefore we sent out a questionnaire for a deeper investigation and a basis for our report in task 4.1.

The main questions to the regions were (appendix 1):

- Coverage land area
- Age
- Driving forces for the establishment of the bioenergy region
- Main BE businesses
- BE production
- BE expertise areas – theoretical knowledge
- BE expert areas - established businesses
- BE potential areas
- Transferable BE "success histories"

To the workshop in Finland we got 10 answers. The answers are later supplied and now we have reports from all the 17 regions.

A short review through the answers shows that:

- Most of the regions have a lot of forest and some agricultural land.
- Most of the regions are young, 0 – 2 years, but there are also some that are more than 10 years old.
- The main bioenergy businesses are wood chip production, bio heat entrepreneurship, some with CHP, biogas plants, pellet production and some with biodiesel production.
- The BE production varies a lot from just a little to 6.5 TWh.
- There is a lot of expertise areas represented, as Wood pellet, black liquor, wood chips, machines and technology, research centres, CHP technique, production and logistics on raw materials.
- There are established businesses in some expert areas as mentioned above and others.
- All the regions have potential areas in Bioenergy.
- Many of the regions have "success histories" to tell.

From the workshop discussion:

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- We must look at the whole chain form raw material to distributed energy or said in another way: "From root to soot".
- What counts when for example raw material are imported/exported in/out of the region? All activity is important.
- We can transform knowledge from the North Karelia region.
- It is a challenge to compete with fossil energy. We have to be cost efficient and it is often necessary to use feed in or state rules or support to help bioenergy.
- Growing forest binds more carbon.
- What is first? A plant or a supply chain. Chicken or egg situation.

The regions represented have expertise in most areas of bioenergy. Cooperation is very important to exchange knowledge efficiently. Now we have to find the important issues that can bring the regions closer together. It must be practical and bring results to be interesting for the companies. Many regions still have a way to go to bring the companies into the cluster with knowledge and the important challenges for the future.

Besides updating and development of the regional homepages, further work that we are doing in Task 4.1 is a deeper investigation of the different regions in order to distinguish expertise areas such as primary biomass resources, businesses and competence. When expertise areas in the region are identified it will be a useful tool to provide exchange of experiences between the regions and also other partners in the project. Results from other tasks within WP 4 will also be of great interest here, and that work is in progress.

Table 1 Overview of identified regions, net work points and their homepages.

	Region	Network point	Status
Finland	North Karelia Pradipta Halder pradipta.halder@uef.fi Paavo Pelkonen Paavo.pelkonen@uef.fi	WENET (Wood Energy Net) www.wenet.fi	Operating
Finland	South Karelia Timo Weckroth timo.weckroth@gmail.com	WENET (Wood Energy Net) www.wenet.fi	Operating
Germany	Rotenburg Alexander Rosenberg alexander.rosenberg@lwk-niedersachsen.de	Rotenburg (Wümme) County Administration http://www.lk-row.de	Operating
Germany	West Brandenburg Torsten Stehr Stehr@POTSDAM.IHK.DE Ines Stalinski stalinski@potsdam.ihk.de	CCI Potsdam www.potsdam.ihk24.de	Operating
Germany	Nordwestmecklenburg Yvonne Rowoldt; y.rowoldt@nordwestmecklenburg.de	Nordwestmecklenburg www.nordwestmecklenburg.de	Operating

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Poland	Pomorskie Voivodeship Katarzyna Bogucka kbogucka@imp.gda.pl	Baltic EcoEnergy Cluster (BEEC) Regional Network Point on Bionergy kbogucka@imp.gda.pl	Recently established.
Poland	West Pomeranian Region Patrycjusz Zarebski patrycjusz.zarebski@tu.koszalin.pl	Koszalin University of Technology www.tu.koszalin.pl	Recently established.
Latvia	Tukums Aija Zucika aija.zucika@videsprojekti.lv	Latvia University of Agriculture aigars.laizans@gmail.com www.videsprojekti.lv	Network point just established.
Latvia	Jelgava Aija Zucika aija.zucika@videsprojekti.lv	Latvia University of Agriculture aigars.laizans@gmail.com http://eng.llu.lv	Network point just established
Lithuania	Kaunas region Romuldas Skema skema@mail.lei.lt Žydrė Kadžiulienė zkadziul@lzi.lt	Lithuanian Energy Institute www.lei.lt	Operating
Estonia	Saaremaa county, Leici municipality Imre Kari imre.kari@eramets.ee	Private Forest Centre www.eramets.ee	R&NP: Started January 2009
Estonia	Jõgevamaa county, Saare municipality Imre Kari imre.kari@eramets.ee	Private Forest Centre www.eramets.ee	R&NP: Started January 2009
Sweden	Jämtland & Västernorrlands county Gabriella Gärds gabriella.gards@jll.se	The Institute of Rural Developement of the county of Jämtland www.jilu.se	Under construction
Sweden	Västra Götalandsregionen www.vgregion.se John Andersson john.a.andersson@vgregion.se	Energigården www.energigarden.se	Operating
Denmark	Region Zealand Bjarne Rasmussen; br@regionsjaelland.dk	Roskilde University www.ruc.dk	Network point under construction
Belarus	Region of Grodno Andrei Bui, turbotaxator@tut.by Yauheni Gerasimovich evga.ru@list.ru		Region and network point under construction
Norway	Hedmark & Oppland county Ole Helmer Bjørlien olehelmer@gmail.com	The Energy Farm www.energigarden.no www.arenabioenergi.no	Operating

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Description of regions and network points

Finland: North Karelia

North Karelia is the most eastern region of Finland and the capital city is Joensuu. The region has 14 municipalities and the population is 169 722 inhabitants with a population density of 9,5 persons/sq. km. The North Karelia Region of Finland is widely known as a region of large forests and biomass recourses and there is already exiting excellent cooperation between research entities, forestry administrative units, regional and municipal authorities, and private sector. North Karelia is administratively uniform culture region.

North Karelia is strongly linked to national expertise networks for forest industries and energy. Both public and private own the greatest forest sector units in the region. Several smaller sawmill units are private. Forest sector in Finland contributes 8.1 billion Euros to the GNP and the share of North Karelia was about 10.5 % in 2006. Forest sector contributes only 5.5 % of GNP in Finland.

North Karelia: Forestry land and whole land area, sq km^2

Area in timber production		Area outside timber production	Other land	Total land area
Productive forestry land	Whole forestry land			
13 830	14 775	1 126	1 862	17 763

In the North Karelian region there is 15 900 sq km2 forestry land which is 89, 5 % of total land area. From all forestry land 87 % is productive land with good forests in timber production (77, 9 % of the whole land area). In North Karelia there are 7 % of the productive forests in timber production in Finland. The region has 9, 3 ha forests per person (2 times of the national average) and more than 50% of forests are privately owned. 51 % of North Karelian forests are pine dominated and the average stem volume is about 114 solid cubic meters per hectare.

In 2004, the consumption of primary energy in North Karelia was approximately 10.4 TWh. Approximately 65% of the region's energy management is based on renewable energy sources, particularly the utilization of forest industry by-products. Wood accounts for over 70% of all fuels used for heat and power generation. This is what makes North Karelia a pioneer, both nationally and internationally.

Finland: South Karelia

South Karelia is one part of earlier Karelia region which was partly moved to Russia government after Second World War. They have together the heritage of Karelia culture in Finland.

South Karelia is located south from North Karelia and is not administratively as uniform than North Karelia. It has several regional centres on the southern shore of Saimaa Lake and national South Karelia is part of other administrative districts in Finland.

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The region has 10 municipalities and the population is 134 448 inhabitants (2008) with a population density of 24 persons/sq. km. The South Karelia Region of Finland is widely known as a region of many forest industry factories, economical and cultural connections to Russia and various energy solutions with e.g. nature gas import from there. Lappeenranta University of Technology is specialized in bio energy and also Russian commerce.

South Karelia is strongly linked to national expertise networks for forest industries and energy. There is maybe the greatest forest industry centralization in the whole world and it uses yearly several millions round wood from outside parts of Finland and also from Russia. Forest sector in Finland contributes 8.1 billion Euros to the GNP and the share of South Karelia was about …% in 2006. Forest sector contributes only 5.5 % of GNP in Finland.

South Karelia: Forestry land and whole land area, sq km^2

Area in timber production		Area outside timber production	Other land	Total land area
Productive forestry land	Whole forestry land			
4 303	4 385	60	1 168	5 613

In the North Karelian region there is 4 445 sq km^2 forestry land which is 79 % of total land area. From all forestry land 96, 8 % is productive land with good forests in timber production (76, 7 % of the whole land area). In South Karelia there are 2, 3 % of the productive forests in timber production in Finland. The region has 3, 3 ha forests per person (a little less than the national average and one third of that in North Karelia). Private persons own 81 % of forest land in South Karelia. In South Karelia forests are mainly pine dominated but they are more productive than in North Karelia because of more favorable climate conditions. The average stem volume is about 142 solid cubic meters per hectare.

In 2004, the consumption of primary energy in South Karelia was approximately …TWh. Approximately ..% of the region's energy management is based on renewable energy sources, particularly the utilization of forest industry by-products. Wood accounts for over …% of all fuels used for heat and power generation. This is what makes North Karelia a pioneer, both nationally and internationally.

Because of several differences in forestry, energy conditions and bio energy use South Karelia is a good comparing area for North Karelia and it will be used in Bioenergy Promotion project in several connections in the work of WP4.

WENET - The regional network point for both regions

Wood Energy Net (Wenet) is a concept for the transfer of business models, technology, and expertise from North Karelia to other parts of Europe and worldwide. It covers the whole chain of wood energy from a forest to a power/heating plant, as well as research, education & training. Wenet started as a project in 2004 (although there was expertise since 1980s in the region). Wenet is ccoordinated by the Joensuu Regional Development Company (JOSEK Ltd) and financed by the Regional Council of North Karelia, European Regional Development Fund (ERDF) and the Government of Finland. Wenet is a network of experts, organisations and companies mainly from Eastern Finland in cooperation with other Finnish partners and partners abroad.

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The core Wenet partners are:

- University of Joensuu
- The Finnish Forest Research Institute, Joensuu Research Centre (METLA)
- European Forest Research Institute (EFI)
- VTT Technical Research Centre of Finland
- North Karelia University of Applied Sciences
- Lappeenranta University of Technology
- Mikkeli University Of Applied Sciences
- Kymenlaakso University Of Applied Sciences

Description of how far each country has come in the establishment of regions and network points, and the remaining challenges

Wenet has already been established in 2004 and now it is well functioning in the region. Now Wenet is trying to expand through out the whole of Eastern Finland and inviting other actors in the wood energy network. There has been growing cooperation with other countries outside Europe such as Canada. In 11-15 May 2009, a team of professionals from the Canadian Bioenergy Association (CANBIO) visited in a study tour in Eastern Finland to experience the state of the art bioenergy projects and forest supply chains. Wenet was involved in the organization of the tour in Eastern Finland. There have been also such kinds of tours in the past where Wenet demonstrated the wood energy expertise to the visitors. In addition, Wenet organized two international conferences on **Wood Energy Solutions** in 2006 and 2008 in Koli, North Karelia.

Challenges: Now the mechanical wood industry is not going well in North Karelia due to the lack of raw materials in the forests and the global economic crisis. Pellet production has decreased in the Vapo Oy's factory in Ilomantsi and the Enocell Paper Mill is having difficulties to run the mill. Due to the decreasing of the mechanical wood industry, the raw material for pellets (i.e. sawdusts) and Black liquor from the paper mill is also in the declining stage. All these add up to a challenge to the wood energy sector in North Karelia.

5. List of people working on the tasks

T 4.5 – Prof. Paavo Pelkonen, University of Joensuu, Finland, paavo.pelkonen@joensuu.fi
Pradipta Halder, University of Joensuu, Finland, pradipta.halder@joensuu.fi

T 4.6 - Prof. Paavo Pelkonen, University of Joensuu, Finland, paavo.pelkonen@joensuu.fi
Pradipta Halder, University of Joensuu, Finland, pradipta.halder@joensuu.fi

Germany: Rotenburg

- Name of country and partner(s)
  - Germany; Chamber of Agriculture Lower Saxony (PP 4)
- Name of region and network point (if established/identified)
  - County of Rotenburg (Wümme): Initiative for Bioenergy Cooperation and Innovation
- Status of regions and network point (e. g. operating phase, under construction/planning, etc)
  - Recently established
- Main goals for the region
  - Strengthening of rural areas
  - Protection and creation of jobs in the region
  - Bioenergy as economic site factor

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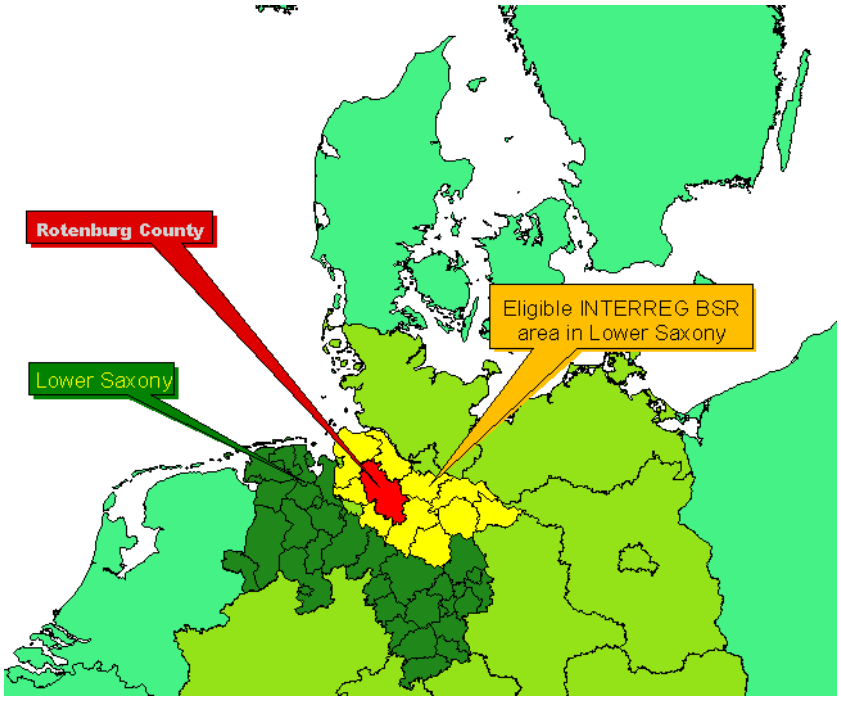

- Brief presentation of the region and network point, and plans that are made in this regard. What is the progress in this work?
  - Rotenburg County is located half way between Hamburg and Bremen; Area: 2.000 km² ; Inhabitants: 165.000;
  - Characterized by agriculture and forestry with high bioenergy potential
  - Sructural changes in agriculture will promote the bioenergy sector
  - Reliable supply with environmentally ffiendly energy will become increasingly important for regional SMEs and industry; although all types of renewable energy are in the focus, bioenergy will gain the biggest importance

- Why have you chosen this region/network point?
  - The initiative already exists, and stakeholders have been cooperating with us already in the former INTERREG III B-Project BALTIC FOREST, which also had a bioenergy component

- How is the region/network point organized? Owners and general organisation.
  - Coordinated by Rotenburg County administration (Unit for Economic Development), chaired by chairman of the regional forest owners´association; stakeholders:
    - Other county administrative units
    - Municipalities
    - NGOs
    - Research Institutes
    - Professional associations (incl farmers´and forest owners´assoc.)
    - Specialised authorities (besides others, 2 of our forest districts and our regional agricultural extension service)
    - Enterprises:
      - Forest industry, sawmills etc
      - Industrial power consumers
      - Agricultural and forestry service providers
      - Energy suppliers

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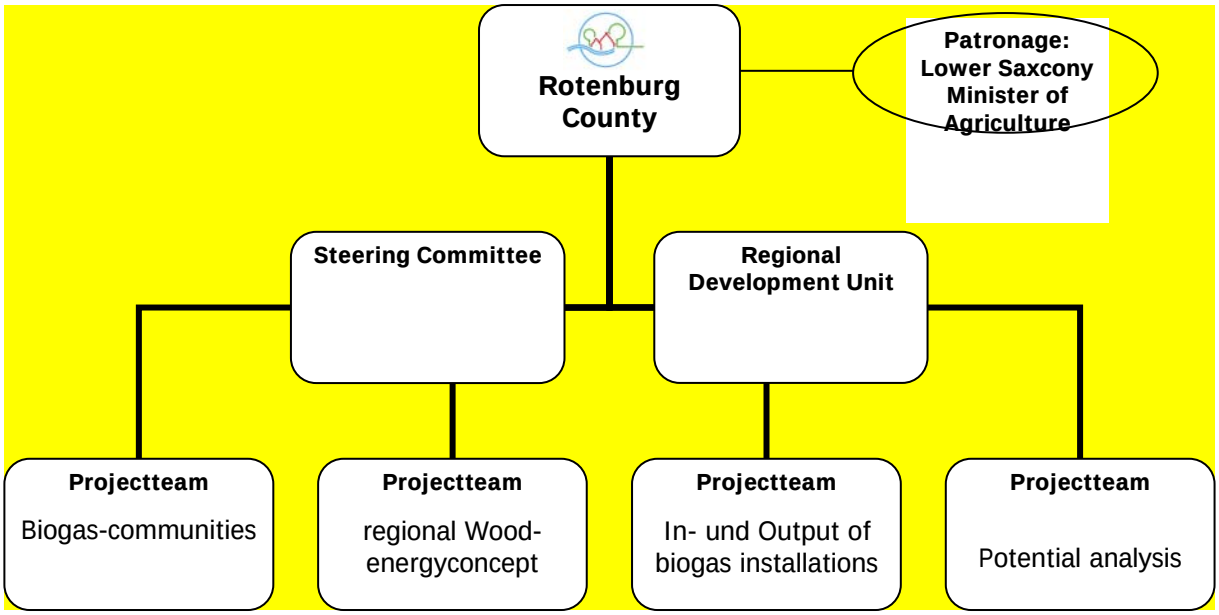

We as BIOENERGY PROMOTION project partner will contribute mainly to regional Wood-energy concept and Potential analysis

- Which challenges do you see in a short and long run for the region given further development of the region?
    - Supply of energy consumers with environmentally friendly (Carbon sequestration – CO2-trade) and locally produced industry
    - Biogas networks
        - Cooperation between milk producing farms and bioenergy
        - Regional nutrient balance aspects
    - Identification of heat consumers for wood-based energy (public buildings, private houses, food industry)
    - Identification of wood-based energy resources
        - We as BIOENERGY PROMOTION partner are focussing on those wood-based resources not competing with traditional timber production or agricultural food production.

- What are your expectations to WP 4 and task 4.1 and 4.3? What are your expectations to other partners involved?
    - Exchange of experience generally
    - We as BIOENERGY PROMOTION partner will
        - Contribute with investigations on wood-based resources not competing with traditional timber production or agricultural food production.
        - Transport information and contacts concerning all common aspects between BIOENERGY PROMOTION partners and Rotenburg County bioenergy initiative

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Germany: West Brandenburg

Description of the region
West Brandenburg consist of 6 Counties and 2 Cities with County status and is situated in the very heart of Europe. The Federal State of Brandenburg is the size of Belgium and has more forests and lakes than any other state in Germany. It also boasts the longest common border in the Republic with Poland.

Facts and figures of the West Brandenburg Region:

- 1,12 million inhabitants
- 13,226 km²
- 85 inhabitants/km²

West Brandenburg covers nearly the half of the area of the Federal State of Brandenburg and it includes Prignitz, Ostprignitz-Ruppin, Oberhavel, Havelland, Teltow-Fläming, Potsdam-Mittelmark as the 6 counties as well as the City of Potsdam and the City of Brandenburg an der Havel.

The population of the target region is 1.12 million inhabitants corresponding to 43 percent of Brandenburg's total population. With only 85 inhabitants/km², it is very weak populated in German relations.

West Brandenburg is bordering to the Federal States of Mecklenburg-Vorpommern, Niedersachsen, Sachsen-Anhalt and to Berlin, the Federal Capital. The capital of Brandenburg is Potsdam. Based in West Brandenburg, Postdam is the seat of the partner institution – the Potsdam Chamber of Commerce and Industry. The Chamber has more than 70,000 member companies in West Brandenburg. The average unemployment rate is 18 percent in the region. The strongest businesses in West Brandenburg are the service sector and trade, followed by the tourism, traffic, industrial and construction sector. Main industries are aerospace, road and rail vehicle production, metalworking, environmental and electrical engineering, electronics, telecommunication, medical and bio-technology, chemicals, plastics, paper, software and film production concentrated around Berlin and Potsdam as well as in a few industrial centres. More remote areas (such as Prignitz County) are dominated by forestry, woodworking, agriculture, food processing and tourism.

Traditionally, the energy sector is very strong – based on lignite in the past, more and more on renewables now. Brandenburg is an energy exporter. The government of Brandenburg has made bioenergy to a priority investment sector over the past years. The half of Brandenburg's area is farmland and one third is forest area and therefore our region has a high potential for the development of bioenergies. In 2007, 80 biogas plants (with 55 MW installed capacity) were counted. The capacity of biodiesel plants in Brandenburg can cover more than 25 percent of Germany's demand. Besides, we have 20 biomass CHP for solid biofuels with a capacity of 160 Mwel and 700 MWth. Already now, we have a competition for biomass here. Brandenburg has an own Energy Strategy. It aims at a reduction of 13 percent in the energy consumption, at an increase of the renewables' contribution of 20 percent to the primary energy production and reduction of 40 percent CO2 emissions till 2020 (basis: 1990).

Furthermore, the regional government has launched a Biomass Action Plan in 2007 where an increase of bioenergy production from 25 PJ to 30 PJ till 2010 is foreseen. A new Biomass Action Plan shall be published within this year.

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Regional network point
Ten years ago, the Brandenburg Energy Technology Initiative (ETI) was established. It is a network platform for companies, researchers and administrations to work on energetic topics within 8 task groups. More than 500 stakeholders in Berlin-Brandenburg work actively within theses groups. ETI's mission is also to implement the Energy Strategy 2020 and the Biomass Action Plan.

The most active task groups within ETI are the bio-energy groups:
- Biogas
- Liquid bio-fuels
- Solid bio-fuels

Meetings, plant visits, trade missions, project discussions were organized in the past. The task groups are lead by specialists from each sector.
ETI will be the regional network contact point. As it is no legal body and it is hosted by the Potsdam Chamber of Commerce and Industry, the network point will be in the chamber at the same time.

Description of how far each country has come in the establishment of regions and network points, and the remaining challenges
The region and the network point are established and are running now. Remaining challenges are on the one hand the missing project manager (after Michael Machon left; but this should be solved very soon) and on the other hand the definition of best practices. As we – the Potsdam Chamber as task leader – see the problem that the left time (1,5 years) is far away from the duration of investment decisions or/and from innovation cycles in the energy sector under normal conditions which is even sharpened by the current financial situation (where we see in our work that companies don't get credits for investments every day), we proposed to include also recently-finished projects as best practices and to reach the planned outputs. This gives us (regarding decision tools/regional incentives, etc.) respectively WP 3 (policy) the opportunity to draw conclusions from the investments, from regional incentives or frameworks and their impacts. This will be hard to get if we have just projects in preparation or not yet finished. Besides, small-scale/easier implemented projects (education in schools or the pellet oven for one party) might be not appropriate to judge the investment tools of various regions or to give recommendations for an EU biomass strategy. But again, we are here in discussion with our WP leader to clarify this.

Description of the work to be done in all tasks
Tasks 4.1 and 4.3
Identification of a pilot region (West Brandenburg), meeting with stakeholders and bio-energy projects, development of an action plan, communication/meetings with local stakeholders, Website updates;

Development of a regional contact point in the Potsdam CCI (contact person will be our project manager) and a bio-energy network on the basis of existing business task groups;
Participation in and contribution to the sub-regions workshop for exchange between the involved countries.

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Task 4.2

Activities	**Partner will for his region contribute (please tick yes or no; each activity has to be done in a region by at least one partner!**
Qualitative description:	Yes
Definition of material	Yes
Description of production process	Yes
Options for increased production	Yes
Description of legal framework	Yes
Identification of main energy carrier	Yes
Identification of main user groups of final energy carrier	Yes
Quantitative description	Yes
Estimate of sustainability	Only brief

Task 4.4
Business assessment report on the sub-region (analysis of the regional biogas, solid and liquid biofuel sector and related industries).

Task 4.5
Identification of three Good Practices for transnational exchange and preparation of a description for dissemination;
Preparation of pre-feasibility studies for possible investments in the region;
Report on investment opportunities in the chosen sub-region.

Task 4.6
Participation in the workshop for sub-regions for an international exchange of experiences;
Development and finalization of a strategic management plan for the regional biomass;
Participation in the final workshop for sub-regions for an international exchange of experiences.

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Germany: Nordwestmecklenburg

Description of the region
The County of North West Mecklenburg is situated in the north of Germany. It's consist of 91 municipalities on an area of 2.076 km² with 117.784 inhabitants (57 inhabitants/km²).

Figure 1:
North West Mecklenburg in Germany

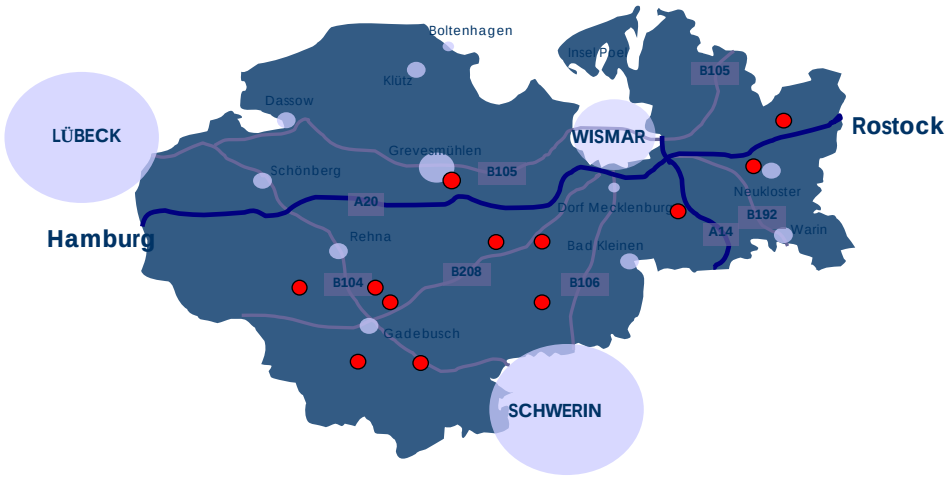

Figure 2:
North West Mecklenburg with biogas plants

Table 1: Type of land use in the County of North West Mecklenburg

Usage	County of North West Mecklenburg [ha]	Proportion [%]
forest area	27.152	13
agricultural area: thereof cropland	(152.328) 126.039	(74) 61
grassland area	16.487	8
area for settlement and transportation	14.992	7,5
water area	8.902	4,5
total:	207.578	100

Source: www.statistik-mv.de

Table 1 shows that the main BE Sector is in agriculture. Today still 12 biogas plant are working. The potential analysis describes that with a view on energy corps and manure an realistic sustainable assumption are 20 new biogas plants for North West Mecklenburg.

Regional network point
Due to the EEG-Law the establishing of biogas plants was rapid and unplanned. So in this sector are a lot of different stakeholders with different interests and perhaps different problems. The last year was used to identify the stakeholders and established a working group.

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These groups had made proposals for the next steps and the content of the strategic management plan.

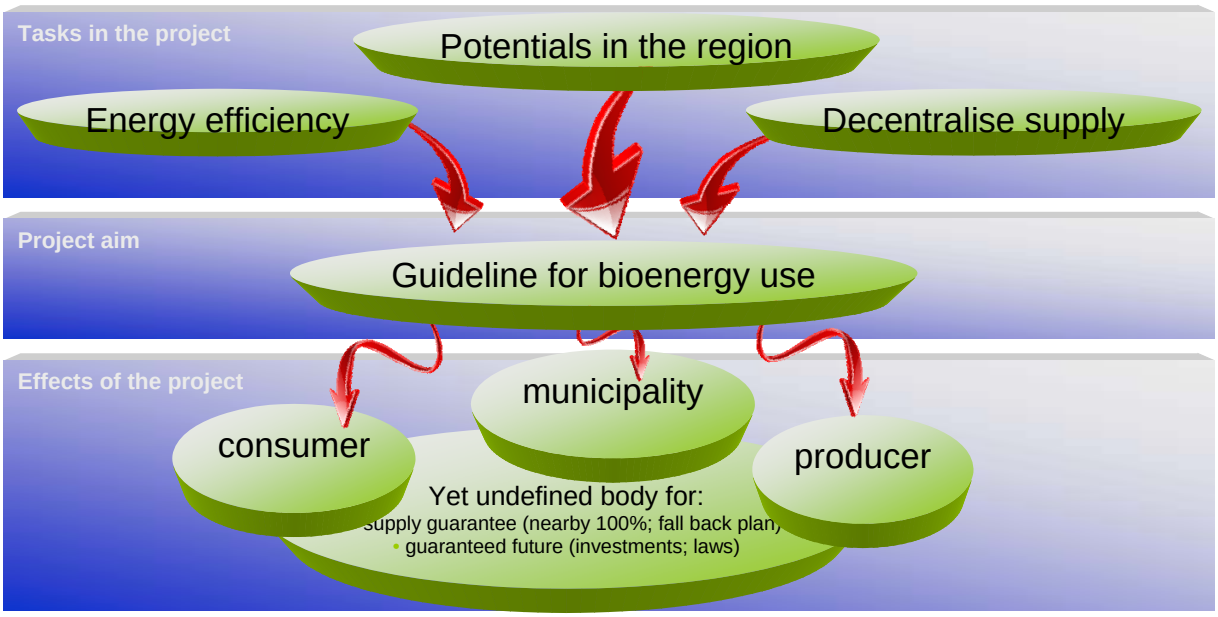
Regional strategic management plan

According to the results of the working group we lay the focus on municipalities and the future of rural living. In contrast of living in a city with short distances between living and working, higher building density and the easier availability of energy, the rural living more depends on the prices of energy (for mobility, heating etcetera)
Main factors are:

- demographical development -> elderly people -> mobility costs = energy costs
- unemployment rate -> low income -> heating costs = energy costs
- level of reconstructed buildings -> energy efficiency -> saving of energy costs

With the project "Bioenergiedörfer MV" we work on these factors or on the impact of these, respectively. Main goal is the social participation of the citizen on local biogas plants, biomass heating plants, local heating networks. With the saving costs should build up regional value chains.

For the energy sector we analyse regional value chains. Which general regulations (EU, Germany laws) and regional conditions are to consider to build up these chains. To give a guideline for municipalities, produces and consumers to use bioenergy.



Partner description
Rostock University bioenergy board – providing applied research experiences in a wide field of bioenergy from biomass crops cultivation until biomass conversion and waste management. The members of the bioenergy board provide experiences in crop husbandry and soil science, technology, civil engineering, Consultant for pilot projects.

Furthermore it can act as a link between the partners of the Baltic 21 Agricultural sector and bioenergy project partners.

We are involved in the WP Policy, so that we have a good linkage and exchange of information's especially to the tasks "criteria for a sustainable energy production", "sub-regional and municipal policy strategies…" University of Rostock will not be a sub-region, but

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we are in close contact to the sub-region "Nordwestmecklenburg".

Partners working on the region Nordwestmecklenburg

Landkreis Nordwestmecklenburg. Contact persons there are Yvonne Rowoldt and Heiko Boje.

University of Rostock: Contact information's in WP 4:

Dr. Andrea Schüch Prof. Michael Nelles	University of Rostock Faculty of Agricultural and Environmental Sciences Department Waste Management and Material Flow Justus-von-Liebig-Weg 6 18059 Rostock, Germany
Phone: Fax: Email:	0049 381 498 3406 0049 381 498 3413 andrea.schuech@uni-rostock.de
PD Dr. agr. habil. Bettina Eichler-Löbermann	University of Rostock Faculty of Agricultural and Environmental Sciences Department Agriculture by Tillage and Crop Husbandry Justus-von-Liebig-Weg 6 18059 Rostock, Germany
Phone: Fax: Email:	0049 381 3064 0049 381 3062 bettina.eichler@uni-rostock.de

In WP4 University of Rostock have budget only in the Tasks 4.2 and 4.5, but we will contribute comments and information also to the other tasks when useful.

Poland: Pomorskie Voivodeship

Short description of the region
The Pomorskie Voivodeship (also translated as Pomorskie/Pomeranian Province and sometimes Pomorskie Region, in Polish: "Województwo Pomorskie", NUTS 2) is situated in the Northern Region of Poland (NUTS1), on the Baltic Sea and occupies an area of 18 310 km^2. The voivodeship comprises 16 poviats (counties), 4 poviat cities and 123 gminas (municipalities): 25 urban municipalities, 17 urban-rural municipalities and 81 rural municipalities.

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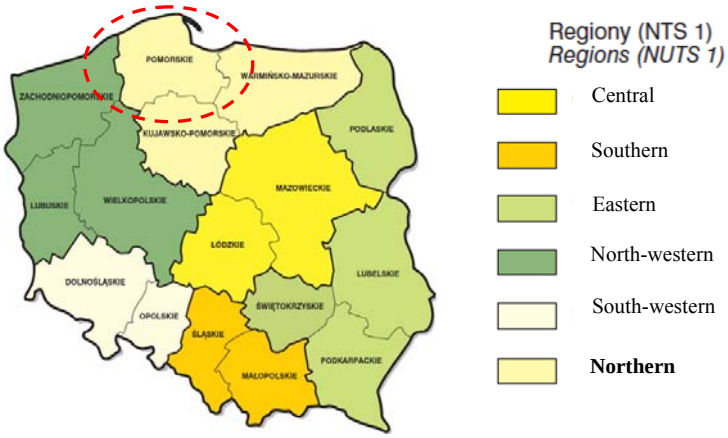
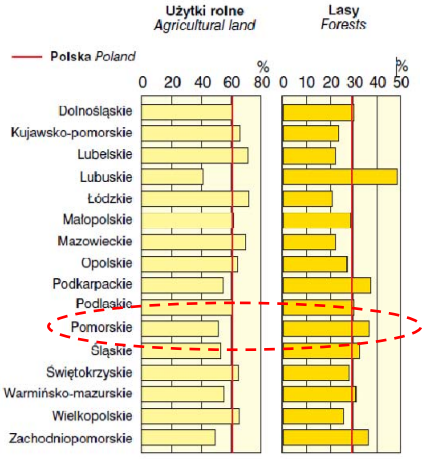


The division of Poland by Regions (NUTS1) and Voivodeships (NUTS2)
Source: Central Statistical Office, "Regions of Poland", Warszawa 2008



Structure of Agricultural lands and Forests
Source: Central Statistical Office, "Regions of Poland", Warszawa 2008

The Pomorskie Voivodeship's diversity – challenges

- The region has a strong spatial diversity in its development potential;
- The division between socio-economic development in the metropolitan area and areas outside the cities inhibits the development of the region's territorial cohesion;
- Underdeveloped infrastructure in villages and small towns is one of the barriers to development in these areas;

Economy in brief

- In comparison to the rest of the country, the Pomorskie Voivodeship's economy is good, but its economic growth does not help to eliminate intra-regional disparities;
- There is relatively little investment activity;
- High value and dynamics of exports;

Agriculture and forestry in brief

- The region has extensive forest areas of high environmental, recreational and ecological value; The forest cover indicator in the Voivodeship (36%) exceeds the national average value (30%) as well as European average value (32%).
- The region's agricultural space is well positioned for ecological and high-yield farming, because of its good environmental and soil assets as well as economic and social conditions, including the fact that there are numerous small and medium-sized family farms.

Energy outlook in brief

- Pomorskie Voivodeship is a significant energy/electricity importer at the national scale;
- Pomorskie has significant sources of renewable energy;
- Need for improvement of security of energy supply;

Renewable energy sources, biomass and wind in particular, constitute an opportunity for the region to improve its security of energy supply. Among all the renewable energy sources, biomass plays the most important role. There exists a number of installations utilizing solid biofuels (mainly wood, waste wood and straw) in the Pomorskie Voivodeship. Interestingly, 4 biogas-fueled CHP plants were built recently in the west-southern area of the Voivodeship. The figure below gives an overview of the localization of the biomass-fueled installations in the region:

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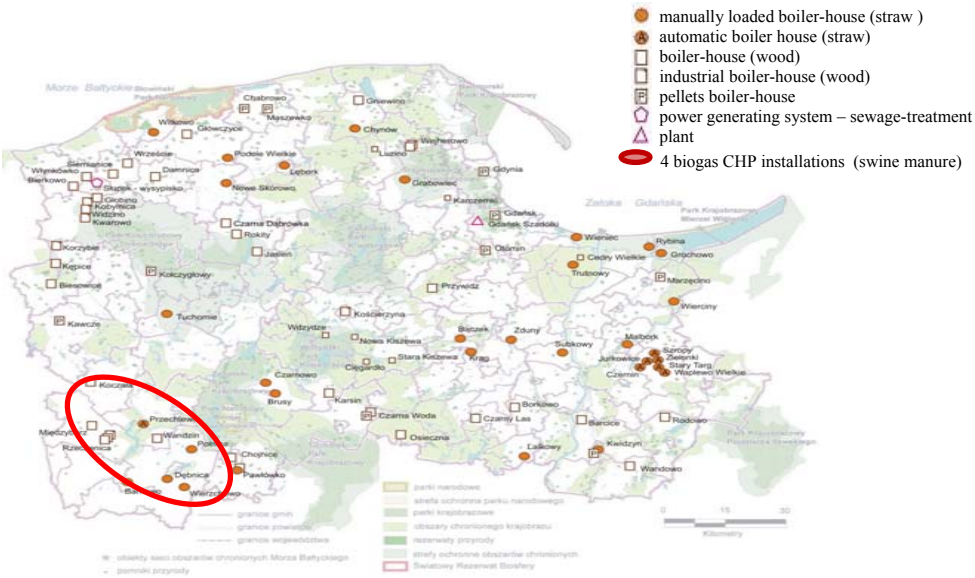

Source: Baltic Energy Conservation Agency, www.bape.com.pl

Heat production from RES in the Pomorskie Voivodeship

The annual heat demand in Pomorskie Voivodeship is shown in the figure below (on the left). Heat is produced from coal (70%), natural gas (16,5%), oil (6,9%), electricity (1,2%) and renewable sources (primarily biomass) in 5,4%. The utilization of biomass for heat production is gradually increasing, as shown in the figure below (on the right):

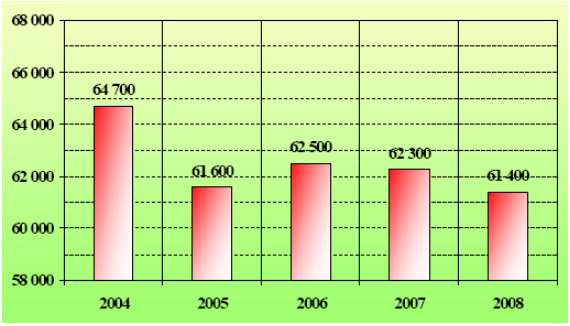

Fig. Annual heat demand in Pomorskie Voivodeship [TJ]

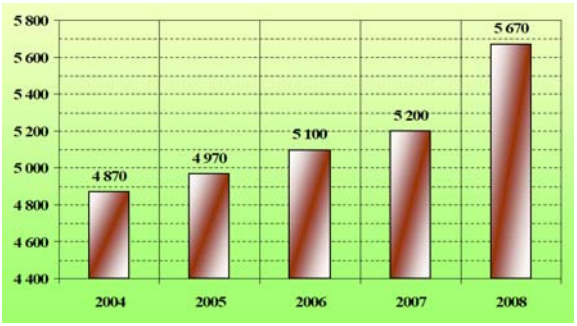

Fig: Biomass utilization in heating sector (TJ)

Source: Office of the Marshal of Pomorskie Voivodeship, www.woj-pomorskie.gov.pl

Electricity production from RES in the Pomorskie Voivodeship

The below figure illustrates the electricity production from three main RE sources in years 2005-2008. (The total electricity demand in Pomorskie Voivodeship was 6500 GWh, in 2008).

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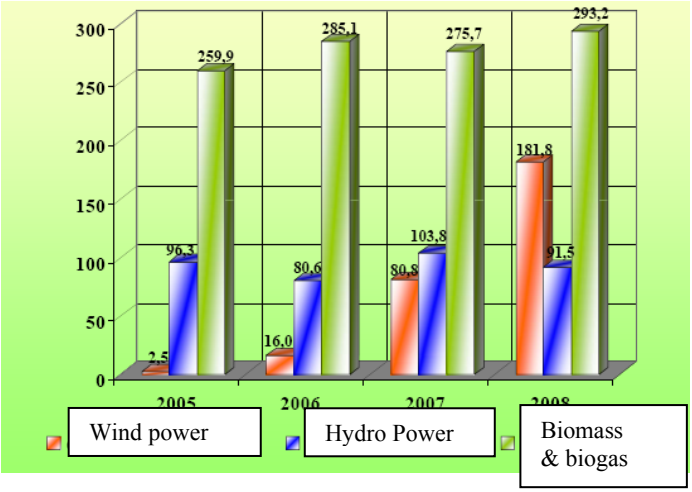


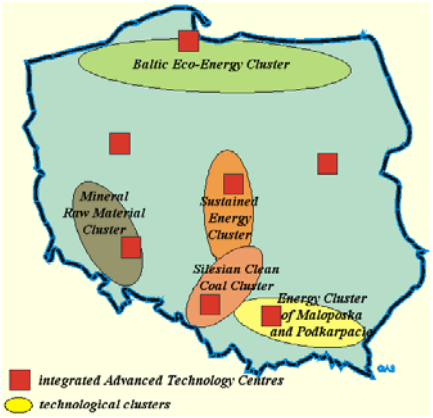
2004	2005	2006	2007	2008
Share of RES in production of electricity				
15,4 %	17,3 %	18,7 %	21,6 %	26,8 %
Share of RES in energy consumption				
5,2%	6,0%	6,1%	6,9%	8,7%

Fig. Share of RES in electricity production and utilization in the Pomorskie Voivodeship
Source: Office of the Marshal of Pomorskie Voivodeship, www.woj-pomorskie.gov.pl

Fig. Electricity production from RES (GWh/year) in the Pomorskie Voivodeship
Source: Office of the Marshal of Pomorskie Voivodeship, www.woj-pomorskie.gov.pl

Description of the Regional Network Point

The **"BEEC Regional Network Point on Bioenergy"** has its seat in the Institute of Fluid- Flow Machinery Polish Academy of Sciences (IFFM PASci, *in Polish: IMP PAN*), in Gdańsk. Since IMP PAN is a Leader and legal representative of **the Baltic Eco-Energy Cluster, BEEC** (which exists since June 2007), the Regional Network Point is being built into the already existing network, with the aim of enhancement of further networking and assistance to all the actors of bioenergy market in the Region.
The Regional Network Point on Bioenergy will be thus an added value to the already existing BEEC cluster, and thus it is established as **"BEEC Regional Network Point on Bioenergy".**



The **Baltic Eco-Energy Cluster, BEEC**, was established as a common initiative of Marshals and Self-Governments of the Pomorskie and Warmińsko-Mazurskie Voivodeships, the Institute of Fluid-Flow Machinery Polish Academy of Sciences, University of Warmia and Mazury, Gdańsk University of Technology, Koszalin University of Technology, as well as the economic units and associations having their seats in those voivodeships. It is the biggest eco-energy cluster in Poland (see figure on the left).
The **Baltic Eco-Energy Cluster** associates **almost 75 partners representing academia, local government bodies, as well as businesses sector.**
The main mission of BEEC is to introduce and promote a widely understood idea of distributed co-generation, understood as simultaneous small and medium scale production of thermal energy and electricity from renewable energy sources, mainly biomass, but also by converting water, solar and wind energy.

Geographically, BEEC's activity covers the area of Northern Poland from Koszalin through Pomorskie Voivodeship to eastern confines of Warmińsko-Mazurskie Voivodeship.

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Website
The website for the **"BEEC Regional Network Point on Bioenergy"** is www.imp.gda.pl/bioienergy
More about the Baltic Eco-Energy Cluster can be found at http://www.bkee.eu/

Description of how far each country has come in the establishment of regions and network points, and the remaining challenges

The **"BEEC Regional Network Point on Bioenergy"** is already identified and functioning.
Activities realized by "BEEC Regional Network Point on Bioenergy" so far:

- Baltic Eco-Energy Cluster (BEEC), chaired by IFFM PASci, (in Polish: IMP PAN), together with the Marshal Office of the Pomorskie Voivodeship (Local Self-government) has organized, on the 6th of May 2009, the local workshops focused on consultation of the project of actualization of the Energy Strategy of Pomorskie Voivodeship, with special focus on electricity production in the region and utilization of RES; Ca. 70 persons participated in the event. Workshops attracted reps of regional decision-makers, reps of academia as well as reps of the regional business entities; the idea for co-organization of this event by IFFM-BEEC, as part of the activities under the **"BEEC Regional Network Point on Bioenergy"** together with the Marshal Office of the Pomorskie Voivodeship, was initiated during the local Bioenergy Promotion Kick-off meeting in Gdańsk, in March 2009;
- **BEEC Regional Network Point on Bioenergy** , again in close cooperation with the Marshal Office of the Pomorskie Voivodeship, is currently preparing a continuation of the 1st workshops - a second stage consultation of the project of actualization of the Energy Strategy of Pomorskie Voivodeship, with special focus on RES utilization and electricity production; this event is planned for the 3rd of July 2009;

However, we are still working for the Network Point to become better recognized, as an added value to the BEEC. In order to disseminate the information about the "**BEEC Regional Network Point on Bioenergy",** and its offer (extra added value to BEEC) we are planning to:

1. establish a network point website and interlink it with BEEC website;
2. prepare a brochure about the offer/activities/plans and challenges of the "BEEC Regional Network Point on Bioenergy";

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Description of contributions planned in the task 4.3

- creation of well-organized and well-recognized "BEEC Regional Network Point on Bioenergy";

Activities / offer of the "BEEC Regional Network Point on Bioenergy":

- bioenergy promotion through the stimulation of contacts between biomass market stakeholders (e.g. through meetings/consultations, seminars, workshops as well as via website and brochure);
- consultations for partners interested to invest in the RES technologies development (connection with WP5), possibilities of networking and "match-making for actors of the bioenergy market";
- activities related to building RES awareness among local policy makers and politicians;
- establishing new strategies for energy market in the region;

In a long term perspective, "BEEC Regional Network Point on Bioenergy" aims to:

- Increase the ecological awareness;
- Improve environment in the region;
- Activate residents of rural areas (job creation);

List of people working on the task including contact information (institution, e-mail address)

Institution:

Institute of Fluid Flow Machinery Polish Academy of Sciences (IMP PAN) – Baltic Eco-Energy Cluster (Partner 22)

Name	Position	
Adam Cenian	Associate Professor, PhD, DSc	cenian@imp.gda.pl
Sylwia Polesek-Karczewska	Associate Researcher, PhD	sylwia@imp.gda.pl
Katarzyna Bogucka	Research Assistant	kbogucka@imp.gda.pl
Witold Cenian	Specialist (development of the website)	witcen@imp.gda.pl

Poland: West Pomeranian Region

INTRODUCTION

Why we chosen this region?
There are several main premises which are decided about choice of region.

1. THE WEST POMERANIA IS A GREEN REGION DOMINATED BY AGRICULTURE AND TOURISM

2. THERE IS THE HIGH POTENTIAL OF PRODUCTION OF RENEWABLE ENERGIES WHICH CAN STAND WITH KEY ELEMENT OF DEVELOPMENT OF REGION

3. WE SEE THE CHANCES BY BIOENERGY PROMOTION IN ACTIVATIONS THE WEAK ECONOMICALLY AGRICULTURAL AREAS IN CENTRE OF REGION

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DESCRIPTION OF REGION

The West Pomeranian in statistical nomenclature is region and be appointed on level nuts 2 (fig. 1). This is in administrative and statistical sense division which facilitates in region the realization of tasks and gaining over statistical data. West Pomeranian Voivodeship is divided into 21 counties (powiats): 3 city counties and 18 land counties. These are further divided into 114 gminas. The voivodeship contains 62 cities and towns.

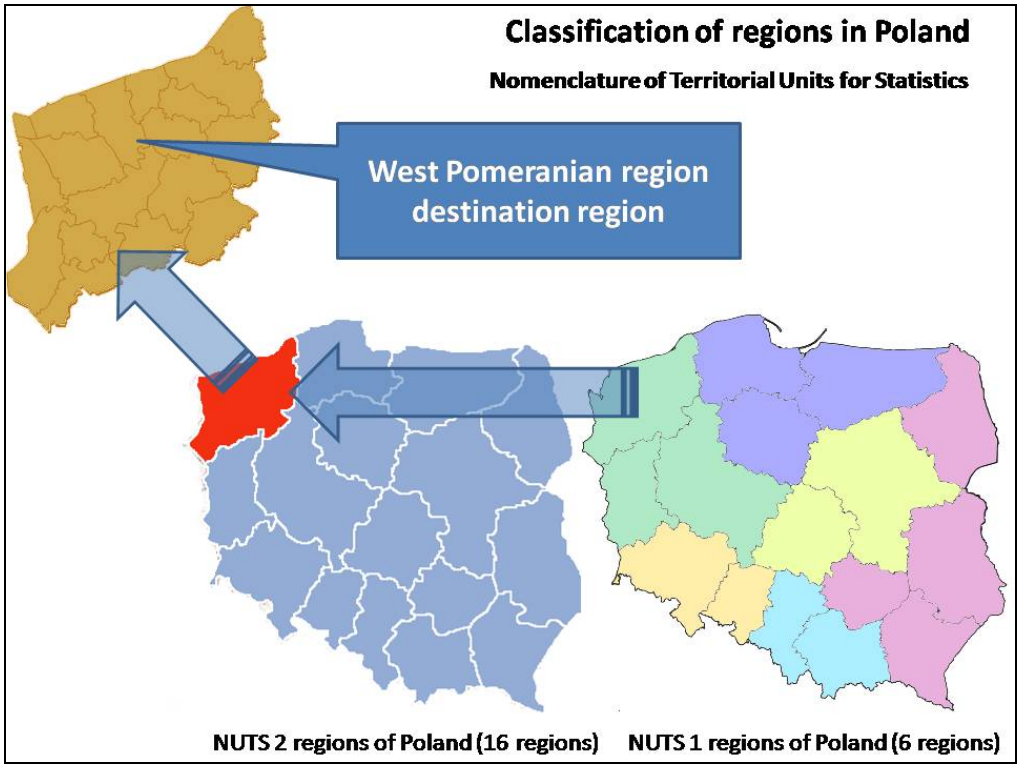

Fig. 1. Classification of region in Poland

The region is laid in north-west part of Poland, bordering on from Germanys, and by Baltic Sea from Denmark and Sweden. It possesses borders about total length 873,9 km, it from what on individual her parts falls:

- 184,9 km of the Baltic Sea to the north,
- 186,6 km of border the German state of Mecklenburg-West Pomerania to the west,
- 177 km of border from Lubusz Voivodeship to the south,
- 171,3 km of border from Greater Poland Voivodeship to the south-east,
- 154,1 km of border from Pomeranian Voivodeship to the east.

BASIC DATA OF WEST POMERANIAN

The West Pomeranian region occupies 22 896 km^2 (7,3 % the surface of country) and it calculates 1692,8 the inhabitants' tys. near low density population of 74 persons/km^2 (average national it carries out over 122 person/km^2).

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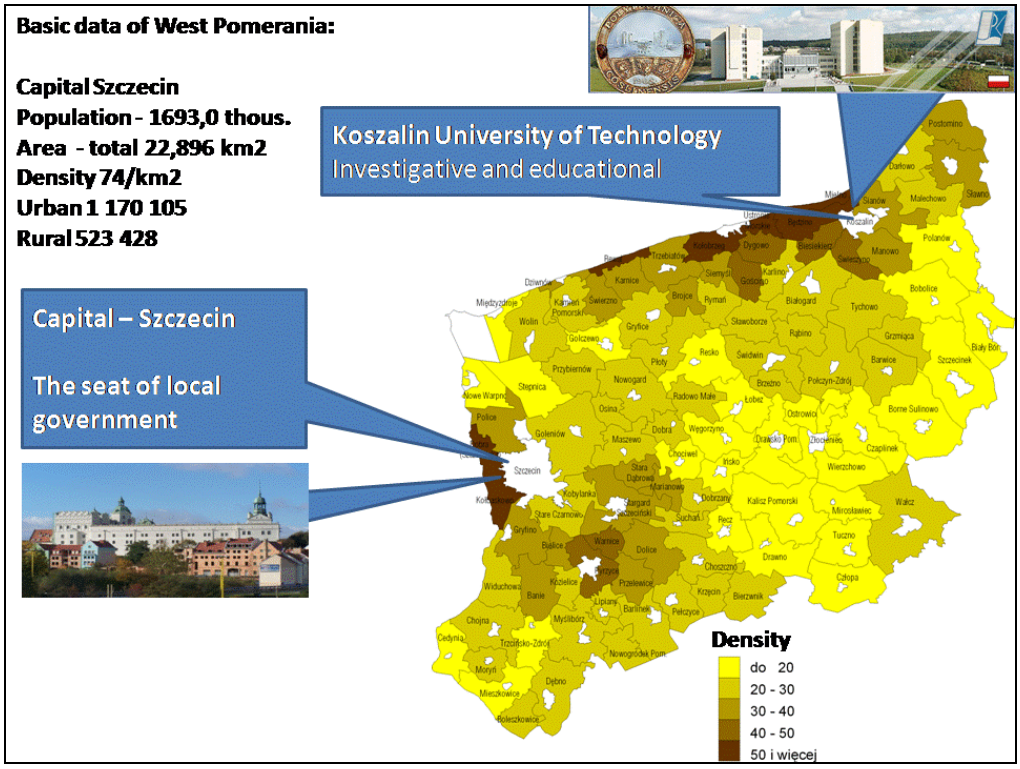

Fig. 2. Basic data of West Pomeranian

In region predominate agricultural areas, forest as well as areas about high touristic attractiveness (fig. 3).

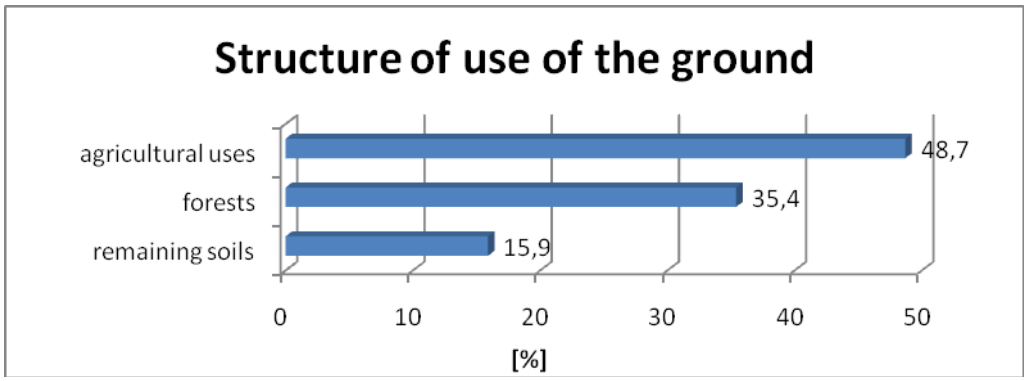

Fig. 3. Structure of use of the ground of the West Pomeranian
Source: Central Statistical Office, www.stat.gov.pl.

POPULATION

Region belongs to the most faintly peopled in country. It estimating the distribution of country population in West Pomeranian, we should notice large relative dispersion spatial inhabitants. The largest density of population is at seaside communes as well as the around large municipal agglomerations of Szczecin and Koszalin, however the smallest density steps out in central populaces and eastern the region (fig. 4).

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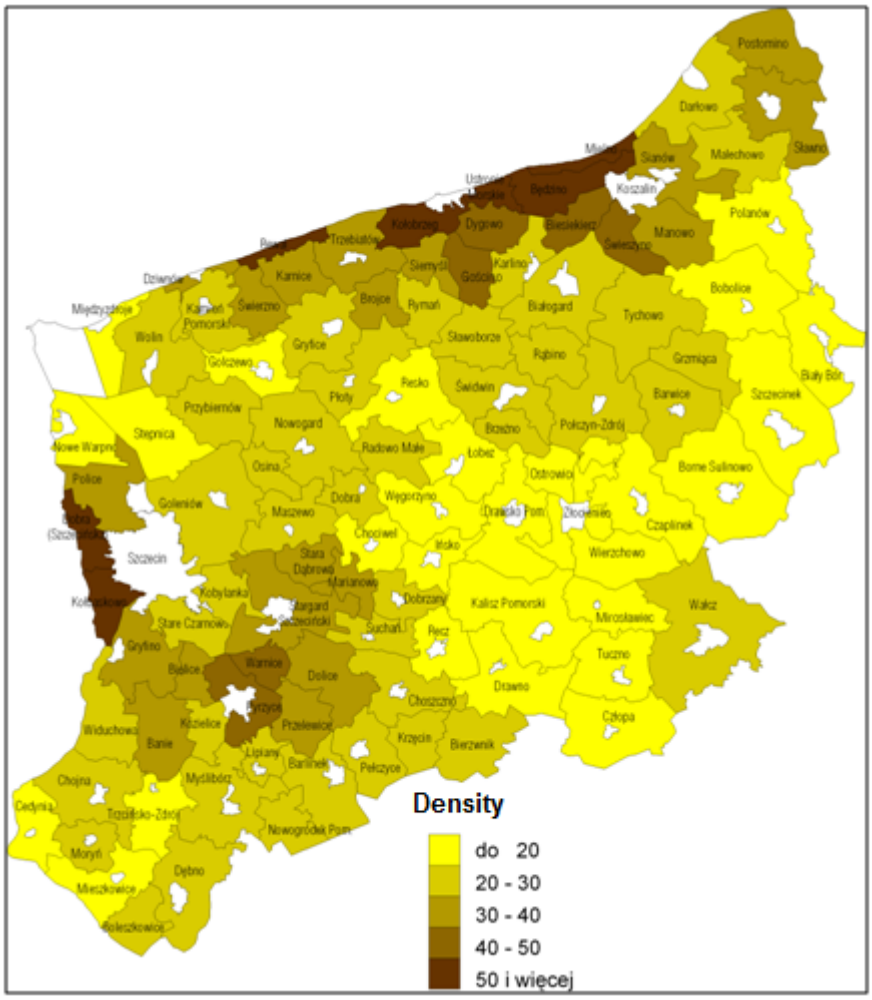

Fig. 4. Density in West Pomeranian region
Source: Patrycjusz Zarębski, Determinants of level of life rural population and economic development communes of West Pomeranian region, 2008.

ECONOMIC
In year 2007 in West Pomeranian be registered 210750 economic entities, which made up 5,7% entities in country. The economic activity in region characterizes with high degree of concentration, in Szczecin be situated 31,5% entities, however together in 3 cities (Szczecin, Koszalin, Świnoujście) almost 44%. In region predominate enterprises connected with industrial processing, building, transportation as well as tourism and agriculture (fig. 5).

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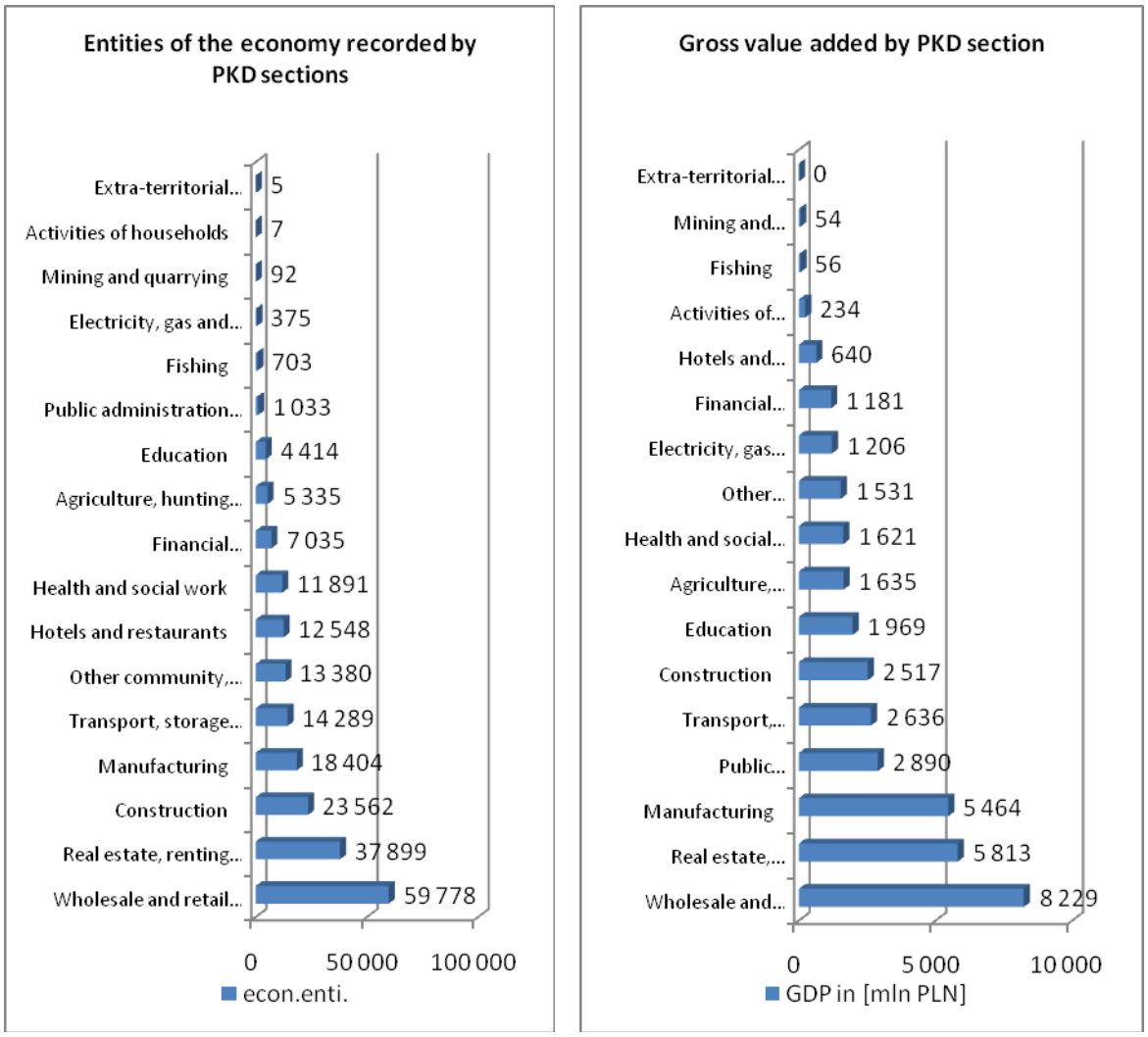

Fig. 5. Entities of economy in West Pomeranian in 2007
Source: Central Statistical Office, www.stat.gov.pl.

AGRICULTURE

After the 2nd World War, the agriculture in the region of West Pomeranian underwent considerable alterations. Untilled fields were afforested forming large mono-cultural forest complexes. The remaining arable grounds were intensively utilised, which led to destruction of small midfield areas of ecological utility, such a water pools, hedges, little damp meadows or cluster of bushes and trees. The old farmhouses were destroyed as well. Introduction of extremely intensive mass-production farming changed the region of Western Pomeranian by turning large areas into a monotonous landscape devoid of forest.

Agricultural land in good agrarian culture it is 40% the general surface and the afforested area it is 37% of the region (fig. 6). Animal production is dominated by production poultry 46% and pork 44% (fig. 7).

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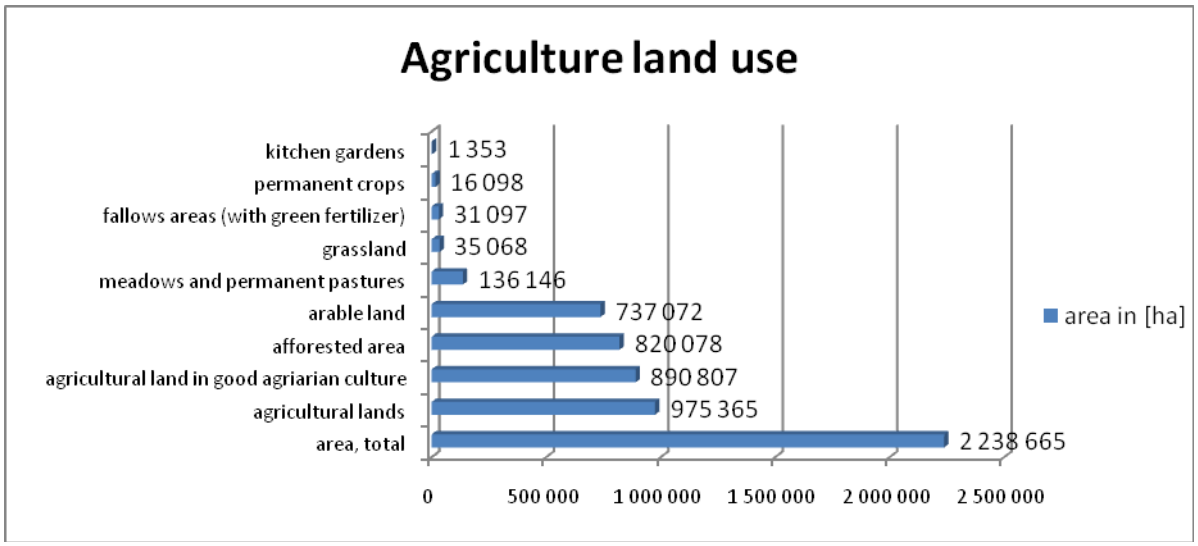

Fig. 6. Agriculture land use in the West Pomeranian region
Source: Central Statistical Office, www.stat.gov.pl.

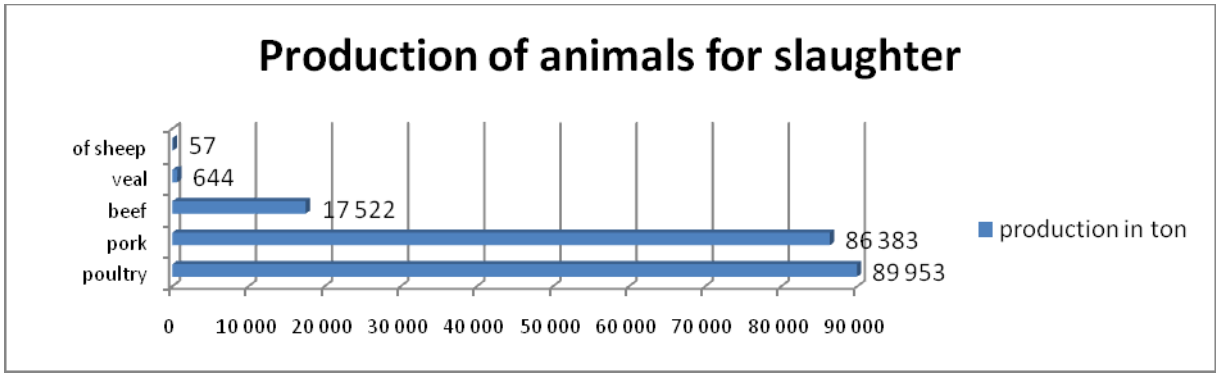

Fig. 7. Production of animals for slaughter
Source: Central Statistical Office, www.stat.gov.pl.

DESCRIPTION OF REGIONAL NETWORK POINTS

Local government and administrative management

- The Parliament of the Westpomeranian Voivodeship
- Marshal's Office of the Westpomeranian Voivodeship
- Voivode's Office of the Westpomeranian Voivodeship

Centre of knowledge:

- Koszalin University of Technology
  Centre Scientifically - Investigative the Renewable Energy

Koszalin University of Technology Centre Scientifically - Investigative the Renewable Energy Centre administers three energetistic willow's plantations about scientifically investigative character.

Planned works on every plantation be led scientifically - investigative in range:

- tillage and fertilization,
- the growth of speeds of biomass,
- the investigation of level and the quality of land waters,
- the investigation of soil,
- logistic investigations,
- the investigation of efficiency of economic tillage willow,

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- economic impact of tillage willow in region,
- the investigation of energetistic balance,
- marketing,
- training working.

In Poland the duty of purchase of energy from renewable sources of energy was establish in decree of minister of economy with day 19 December 2005 r. (Dz. U. Nr 261, poz. 2187). In decree was qualified the size of growth of part energy from renewable sources in range since: 2,65 % in 2003 r. to 9% in 2010 year.

In 2006r. it the amendments of law was accepted establishing new level 10,4 % in 2010r.

DESCRIPTION OF THE WORK TO BE DONE IN ALL TASKS

Task name	Action	Partners involved	Deadline for delivery	People working on the task
2009				
4.1.	Identification of the region West Pomerania – biomass energetic source and work out the strategy for renewable energy – biomass.	Germany, Sweden	December	Prof. M. Jasiulewicz Dr P. Zarębski
4.2.	Assesstment of potential for biomass utilisation in West Pomerania region and sub-region (Koszalin) from agriculture, forest, biological waste, food industry.	Germany, Sweden, Austria	November	Prof. M. Jasiulewicz Dr P. Zarębski
2010				
4.3.	Establishing the regional network point for the dissemination of the information to politicians, business, farmers, newspapers, schools, studies.	Norway, Sweden, Germany, Denmark	April	Prof. M. Jasiulewicz Dr P. Zarębski
4.4.	Analysing the regional value added chains in conjunction with biomass production – economic analysis. Supporting regional investments in the range of biomass.	Germany, Sweden, Denmark, Finland	November	Prof. M. Jasiulewicz Dr P. Zarębski
4.5.	Preparation of a pilot projects in the range of biomass and Bioenergy production – as regional examples, for practical energetic use of biomass – harvestry, transport, logistic, economic analysis.	Germany, Sweden, Denmark, Finland	December	Prof. M. Jasiulewicz Dr P. Zarębski
4.6.	Integration of the land surfaces (local centres) into the regional structure of the rural areas	Germany, Sweden, Norway, Finland, Denmark	November	Prof. M. Jasiulewicz Dr P. Zarębski
4.6.	Specific developing strategies of the region and important factors – analyse economic and space developing, sustainable.	Germany, Norway, Sweden + another	December	Prof. M. Jasiulewicz Dr P. Zarębski

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2011				
4.3.	The issue of regional network point and biomass energy dissemination: farmers, industry, local authority, trade, technology exchange.	Regional partners	October	Prof. M. Jasiulewicz Dr P. Zarębski
4.3.	The issue of own SRC: result in ecology, economy, energy, activities, use LFA to establishment SRC for energy. The result of Biofuel production in Poland and region.	All partners	November	Prof. M. Jasiulewicz Dr P. Zarębski
4.4.	Analysing the regional value added chains in conjuction with biomass production.	All partners	November	Prof. M. Jasiulewicz Dr P. Zarębski
4.6.	Development and prepare regional implementation of the strategic management plans for integrated and optimized use of biomass and Bioenergy. Prepare SWOT system.	Regional partners	December	Prof. M. Jasiulewicz Dr P. Zarębski

People working on the task	Institution	e-mail address
Prof. Michał Jasiulewicz	Koszalin University of Technology	
Dr Patrycjusz Zarębski	Koszalin University of Technology	patrycjusz.zarebski@tu.koszalin.pl

Latvia: Tukums area

The area of Tukums is located in the western part of Latvia on the west coast of the Gulf of Riga and is one of 109 administrative areas in Latvia. It belongs to the Riga planning region, the distance between the capital city and the area centre is 65 km.

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1. Forests grow on 40 % of district territory; agricultural land covers 42 % and bogs 4%.

2. The most significant resources are grit, sand, peat, clay, therapeutic muds and mineral springs.

3. A large range of soil types typify Tukums area. Territory has a significant number of water bodies, the river Abava cross it. Kemeri National Park – NATURA 2000 territory, is nature reserve of international importance and is also situated in the area of territory.

4. There are 19 00 inhabitants in Tukuma city, the urbanization level is quite high. Comparing statistic - the population density of the area and the demographics load is lower, than in Latvia.

5. The location and well developed transport network ensure the situation that, inhabitants from are daily work out of area. The most common industry is food retail and food production, agriculture, road construction and repair, clothes manufacturing, timber export and furniture manufacturing. In the end of 2008 this area had the fourth lowest unemployment rate in the country.

6. A wood chip heat plants located in the Town of Tukums accounts for lion's share of bioenergy use in Tukums area. The use of bioenergy is growing in the region, especially in terms of energy produced with wood and wood waste.

Establishing a regional contact point.

- Creation of Consultation point preferably at the premises of one of the involved Municipalities; Databases creating: all level participant of bioenergy production.

Results:

Regional consultant point:

- Chosen regional point establishing place:
    1. Zemgale region - the largest biomass production area in Latvia, Jelagava area, Jelgava city. Tansportation and industry centre, the largest city in the region;
    2. Chosen region – connected with activities in tasks 4.1. and 4.6.
- Contract with regional point leader:
    1. Point leader Aigars Laizāns, M.Sci.ing., MBA, lecturer in Latvia University of Agriculture, in the IAE (Renewable energy, etc.);
    2. Participation in WP SUB(regions) meeting in Norway, 18 – 20 of May, consultant point presentation;
- Developed vision of regional point work specific:
    1. Provide a communication/information platform, where the public can easily access information on bioenergy;
    2. Provide information dissemination about specific Project"Bioenergy promotion" and Latvian project partner activities, tasks.

Future Steps:

- Physical establishment of regional consultation point:
    1. Positioned in Latvia University of Agriculture – regional and country level science and knowledge centre in agrobiotechnologies and environmental sciences:
        - Connected with society
        - Connected with entrepreneurs
        - Connected with science all over the world
        - Multiplication – knowledge widespread through large pool (students, entrepreneurs, sociey);

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- Excelent premises for seminars, conferences, etc.
- High potential to run the regional point operations after the project finalizing (state owned premises, potential for long term agreements).

- Databases creating:
  1. All level participant of bioenergy production.

Future Steps:
There is territorial reform in the beginning stage in the Latvia write now, so these two areas are startind develop new administrative management, strategic development plants and the necessary for bioenergy strategic management plans for these regions is more necessary. Under task 4.6. this work will be done.

Contact point leader: Mr. Aigars Laizāns aigars.laizans@llu.lv; mob. phone:29233450

Latvia: Jelgava area

The area of Jelgava is located in the central part of Latvia and is one of 109 administrative areas in Latvia. It belongs to the Zemgale planning region, the distance between the capital city and the area centre is 42 km.

1. Forests grow on 29% of district territory; agricultural land covers 56% and bogs 3%.

2. The most significant resources are peat, sand, grant, dolomite, forests.

3. The area is located in the region of the most fertile grounds of Latvia - quality index for arable lands above 50 – 60 points. Historically region has developed as the main agricultural region for Latvia – production of crop, potatoes, milk, pork and beef. The untraditional and biological farming has become more popular in the recent years.

4. River Lielupe, which is the most water richest river in Latvia, cross the territory and on its banks the biodiversity level is very hight. The most significant protected territory of the region is Lielupes flood - lands meadows – NATURA 2000 territory.

5. There are 66 000 inhabitants in Jelgava city, and it is the fourth bigest city in the country. The region where the Jelgava area is located has the second higest population density, and the lowest demographics load in Latvia

6. Area has has well developed transportation network. There was 1 326 enterprises in the end beginning of 2008 in the region. The average level of unemployment was 2, 7 %. The biggest companies of regions are making food retail and food production, agriculture, building materials producing, building, clothes manufacturing, and trading.

7. Jelgava as a city takes impulsive force leading education, cultural, health, sports, sciences and inovation speheres of the region and Latvia.

Description of network point
See Tukums area.

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Lithuania: Kaunas Region

- 29,1 % of the Region area is covered by forests.
- Forest land area is 238,700 ha.
- Forest stands area is 226,400 ha.
- Growing stock volume is 45 million m3.
- Average growing stock volume – 201 m3/ha.
- Mean current annual increment is 6.5 m3 /ha.

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The Network Point (Lithuanian Energy Institute)

- Dissemination of information to the authorities, politicians, business, farmers, education facilities, others.
- Communication with public, where the public can easily access information on biomass, bioenergy etc.
- Support of demonstration projects.
- Selection and transfer best practice from Lithuania and other countries.
- Organization workshops, conferences, public relations.

Estonia: Saaremaa county, Leisi municipality

Saaremaa is the largest island belonging to Estonia, measuring 2,673 km. The capital of Saaremaa is Kuressaare, which has about 15,000 inhabitants; the whole island has over 39,000 inhabitants. The island is covered by over 40% with forests. Extraordinary for Estonia is the share of private forests in Saaremaa, which amounts to 90%. State forests are mostly (strictly) protected nature conservation areas. This results in huge potential of unused forest resources (from pre-commercial thinnings and nature conservation activities), which remain so far unattractive to use. In addition, Saaremaa is rich in reed and bushes, as potential bioenergy resource.

Leisi municipality is home to 2200 people, about 330 live in Leisi village. The established boiler house is old and inefficient; reconstruction is needed as well as a concept how to ensure the supply of wood chips.

Saaremaa has a special interest to become independent from mainland energy, as this has to be transported/transferred to the island and is costly. Saaremaa has been active in bioenergy issues for a couple of years and in several international projects already; Muhu municipality and Kuressaare city are completely served by CHP power plants running on wood chips. The Leisi initiative will bring the aspect of society involvement to the current bioenergy projects.

Estonia: Jõgevamaa county, Saare municipality

Saare municipality measures about 21 000ha, about 12 000ha are forests. The forests are to 45% in private ownerships, while the rest is state forest. The first findings showed that the wood resources in Saare municipality are sufficient to supply the livelihoods with heat (and energy, although the implementation would be to expensive so far). Saare municipality has a string interest in developing a regional initiative towards a holistic development of the region.

This means to include and encourage local business actions and set up a network among the different stakeholders (forest owners, local administration, energy companies). The initiative aims at connecting the different stakeholders in such a way, that forest management becomes profitable while energy prices stay stable and attractive. The local population is interested, but lacks information.

Regional network point:

The Private Forest Center, located in Tallinn, is coordinating the network activities. On place in the municipalities are direct contact partners for the PFC to contact and share information with. PFC is providing technical assistance to the two regions (and if others become interested, also to them) via external assistance (two persons on demand). Communication issues are solved jointly; materials mostly prepared by the PFC.
PFC has it's focus on private forestry and private forest owners; thus coming up initiatives fostering private forestry are more than welcome.

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Tasks and work to be done:
Task 4.1.: PFC is not participating, anyhow the regions are chosen
Task 4.2.:

Activities	**Partner will for his region contribute (please tick yes or no; each activity has to be done in a region by at least one partner!**
Qualitative description:	Yes
Definition of material	Yes
Description of production process	Yes
Options for increased production	Yes
Description of legal framework	Only as showcases
Identification of main energy carrier	Yes
Identification of main user groups of final energy carrier	Yes, only brief
Quanitative description	Yes, if possible
Estimate of sustainability	Only brief

Task 4.3.
Especially of interest are experienced project partners in the Bioenergy Promotion project,w hich could PFC to launch a successful start of the bioenergy villages planned in Estonia. PFC will distribute information via its connections.

Task 4.4. Part of a study ordered by PFC. Inputs according to the template awaited.

Task4.5. Saaremaa and Saare municipality initiatives.

Task 4.6. PFC is not participating in this task

Sweden: Jämtland and Västernorrland

Two counties are included in the JiLU – region, i.e. Jämtland and Västernorrland which are located in the central to northern part of Sweden.

County of Jämtland
County of Jämtland includes the provinces of Jämtland and Härjedalen and some small areas of Hälsingland and Ångermanland. It ranges from the mountainous western area borders to Norway and to the east to the forest dominated parts of County of Västernorrland. From north it ranges from Västerbotten to the south to Dalarna. The county of Jämtland region has 8 municipalities, 12% of the total area of Sweden, i.e. 49 443 km² and 1,5% of the population in Sweden lives in the county, i.e. has a population of 126700 with a population density of 2,6/ km². The region has a long history of forestry and forest industry, 50 % is consider forestland, 1% is agriculture land (580 km²), while peat land is 12%.

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Climate
January is the coldest month, average temperature in Östersund is -8,6 °C and the warmest month is July, average temperature: 13,4°C. During the summer it is light all the day and night though in December there is only light for ca 5 hours.

Fauna and flora
The county Jämtland has a unique fauna and flora and is often called ”The lungs of Europe” because of the fresh air and clean water supply. In the region there are great predatory animals like lynx, wolf, bear, wolverine and arctic fox. Moose is very common and the protected ancient musk ox is present
Because of the calcareous, Silurian soil it is a wide range of different species of flowers growing among others many species of orchids can be seen.

Mountains
The greatest mountain is Helags, the most southern glacier in Sweden, which is 1 796m high.

Lakes, rivers
The area of lakes in the county is 9% and the largest lake, Lake Storsjön in the middle of the county, is the 5th largest lake in Sweden, 456 km². The total area of lakes is 4 500 km² and includes ca 17000 lakes.
In the county there are three major rivers; Ljusnan, Ljungan and Indalsälven which begins in the mountains and flows eastwards against the Baltic Sea. The rivers and streams in the region are 2800km altogether.

Geology
The species of rocks in the region is gneiss, diabase, amphibolites, revsundshale, and limestone shale. The most common type of soil in the region is moraine.

National park
Sonfjället is the only national park, but there are ca 80 nature reserves in the county.

Sami culture

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There Sami people living according to the long history and tradition in the region. In Jämtland Härjedalen there are ca 45-50 000 rein deers and ca 100 companies working according to Sami tradition, and there are 12 Sami villages.

Industry
The county of Jämtland is the second less industrialised county in Sweden. Only 15% of the population is active within industry sector. More than 16% of the people occupied in this sector works in forestry.

Agriculture
The agriculture in the county is the cleanest in Sweden using the least amount of biocide and fertiliser, the area is 580 km², 1% of the total area of the region. There are ca 8 200 companies in the agricultural sector and ca 7% of the population in the county is active.

Energy
The county of Jämtland is self-supporting and exports electrical energy ca 80% is exported. The county consumes only 39 270 kWh/capita and it produces 11 867 581 MWh of which 10 991 164 originates from water power. There are ca 60 water power stations. There are a few wind power stations and combined power and heating plants. Peat is used as well as biogas from waste. The Jämtland County use about 60% of bioenergy.

Forest
There are 14 167 private forest owners in the county, the private forest owner stands for almost 43% of forested land, large scale companies about 46%, remaining forests are owned by the state or other public entities. The yearly growth is 10 mill m³ while annual cut is approximately 45%.

County of Västernorrland
County of Västernorrland includes the provinces of Medelpad and the major part of Ångermanland. In addition smaller areas of Hälsingland, Jämtland, and Västerbotten are included.

It ranges from the border of Jämtland in the western area and to the east to the Baltic Sea. In the north it ranges from the border of Västerbotten to the south to border of county Gästrikland. The county of Västernorrland includes 7 municipalities, 5,2% of the total area of Sweden, i.e. 21 678 km² and 2,6% of the population in Sweden lives in the county, i.e. has a population of 243 000 with a population density of 11/ km². The region has a long history of forestry and forest industry, and water power production. 74 % is consider forestland, 3% is agriculture land (600 km²), while peat land is 6%.

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Climate
January is the coldest month, average temperature in Sundsvall is -9 °C and the warmest month is July, average temperature: 15°C. During the summer it is light all the day and night though in December there is only light for ca 5 hours.

Fauna and flora
The region presents a great variety of animals and flowers. In the Baltic Sea region the steep coast of Höga kusten is very rare and contributes to the variety of species. The varied topography creates many various micro climates. Furthermore the great evelation of the land in the region also contributes to the varied species. Many species live here in the border of their range. In the region there are great predatory animals like lynx, wolf, and bear. Moose and roe deer is very common. Flowers and trees in the border of their range is for example; *Hepatica nobilis*, *Tilia cordata* and *Corulys avellana*.

Mountains
The greatest mountain is Solbergsliden, height 594 m.

Lakes, rivers
The length of the lakes and water-courses in the county is 174822km.
In the county there are three major rivers; Ljungan, Indalsälven and Ångermanälven begins in the mountains in Jämtland county and flows eastwards through county Västernorrland against the Baltic Sea.

Geology
The species of rocks in the region is gneiss, diabase, sandstone, and shale. The most common type of soil in the region is moraine.

National park
Skuleskogen is the only national park, but there are ca 130 nature reserves in the county.

Industry
There are some major companies situated in Västernorrland in the sector of forest industry as well as chemical industry. About 16% of the population is active within the industry sector. In the forestry and agricultural sector 2,5% are occupied and in the building sector 8%.

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Energy
The county Västernorrland is uses a lot of electrical energy due to the great industries in the county. The county consumed 10 287 GWh in 2007 of which 76% were used by the industry and 9% were used for living. In the county 12,2 TWh were produced from water power in 2007. Peat is used as well as biogas from waste.

There are 16905 private forest owners in the region, the private forest owner stands for almost 42% of forested land, large scale companies about 53%, remaining forests are owned by the state or other public entities. The yearly growth is 9 mill m^3 while annual cut is approximately 45%.

Summary of the region of Jämtland and Västernorrland counties.
Bioenergy from forestry is an expanding industry in the region, both as residues from saw- and pulp-mills but even more from wood slash recovered from final felling. Hydropower is also an important energy source in the region; the rivers are producing 16 TWh annually, about one third of Sweden's hydropower production. Bioenergy represents 20 % of Sweden's energy consumption, hydropower stands for 10 %, the former has however a large potential for growth. The potential for bioenergy production in Sweden is estimated to;

BE source	To 2020	Long term
From forest resources	129	190
Spent liquor from pulp mills	45	50
Agriculture	39	70
Peat	12	64
biowaste	23	20
Total TWh:	248	394

For Jämtland and Västernorrland the expectations lies in further development of using forest resources, the area is already producing bioenergy wood for both regional use but to an increasing part for the larger market in central-southern Sweden.

Description of the regional network point
JILU (Jämtland County Council Institute of Rural Development) **www.jilu.se**
JILU is a public owned institute having rural development as the overall aim, supporting primarily the small and medium scale production within forestry, agriculture including garden, wood technology and climate related issues. JILU is working in close cooperation with the private sector, public institutions, and universities to develop business and sustainable methods for improved production within the different sectors. JILU is running long and short education and training courses, including a Diploma forestry & agriculture college. Furthermore, in preparation to together with Norwegian partners start up a B.Sc education with specific focus on sustainable bioenergy production. JILU is running several development projects that have direct links to bioenergy promotion, "Recycling of ash for rehabilitation of former agriculture land" and "Stratified stands of birch and spruce for improved biomass production, just to mention a few. The regional network and cooperation is well developed, our

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main partners are:
LRF (farmers association) in Jämtland and Västernorrland www.lrf.se
BioFuel Region www.biofuelregion.se
Energidalen www.energidalen.se
Jämtkraft www.jamtkraft.se
Swedish Bioenergy Association SVEBIO www.svebio.se
EkoBalans www.ekobalans.se
County of Västernorrland www.lst.z.se
County of Jämtland www.lansstyrelsen.se/jamtland
Norrskog www.norrskog.se
County board of forestry www.skogsstyrelsen.se

Description of how far each country has come in the establishment of regions and network points, and the remaining challenges
Sweden has a large number of organisations and institutions that are networking and cooperating both on national and regional level, however there is yet not a uniform model for regions and network points. JILU can as a minor actor not play the role as the regional network point, at least not after the closure of the Bioenergy Promotion project. The issue about fixed regional network point should be discussed together with relevant actors within the bioenergy sector.
Challenges: The bioenergy production is increasing on national as well as on regional level. For the northern regions of Sweden there is still a large unused potential, mainly in the forestry sector, slash wood from final felling is still not close from the potential, stumps and wood from pre-commercial thinning are not yet exploited at all. If pulp and saw mill industries in the region will face severe market problems it could give both negative and positive impact on bioenergy production. The global, European and national prices for wood bioenergy will set the agenda for further development of bioenergy production, most signals indicates that the prices for e.g. wood chips will increase due to higher demands in countries like U.K, Germany and Benelux-countries. Higher prices will automatically also attract potential producers of bioenergy in Russia, Northern & Latin America and possibly also Africa.
The region of Jämtland and Västernorrland is believed to be a winner in the future demands for more bioenergy. JILU will prioritise to work with following areas;
Small and medium scale heating plants using local resources
Forest management of young stands for improved bioenergy production
Rehabilitation of former agriculture land for bioenergy production

Description of the work to be done in all tasks
Tasks 4.1 and 4.3
Website is established and will be updated continuously; http://www.jilu.se/bioenergy/.
Input and description of region and network point. Looking for collaboration possibilities and benchmarking.
A workshop for regional stakeholders is scheduled to be held in May 2010.

4.2

Activities	**Partner will for his region contribute (please tick yes or no; each activity has to be done in a region by at least one partner!**
Qualitative description:	Yes
Definition of material	Yes
Description of production process	Yes, only brief
Options for increased production	Yes

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Description of legal framework	Yes, overview
Identification of main energy carrier	Yes
Identification of main user groups of final energy carrier	Yes, only brief
Quantitative description	Yes
Estimate of sustainability	Only brief

Task 4.4
Description of region, included.
Contribution- Description of companies according to template.
Summary of the report is finished by the task leader, an update will be done during the en of March and beginning of April.

Task 4.5
Start up / Initiate 2 pilot projects in our region. Take part in the analysis and decide which project should be chosen for the Bio Energy Promotion project.

Task 4.6
Planning process, further discussion and work will be done during the spring, implement decided plans in our project.

List of people working on the task including contact information (institution, e-mail address)
Institution:
Jämtland County Council Institute of Rural Development, Institute of Forestry, JiLU- Institute of Forestry, Skogsvägen 18, S-840 73 Bispgården, Sweden
JiLU is task leader for 4.4 and 4.6.

Name	Position	
Gabriella Gärds	Project Manager & Scientist, PhD,	gabriella.gards@jll.se
Per-Olof Nilsson	Project Manager, MSc	per-olof.nilsson@jll.se
Owe Martinsson	Project Assistant, Prof.Emeritus	owe.martinsson@jll.se

Sweden: Västra Götalandregionen

Decription of the region
Region Västra Götaland was formed in 1999 by merging the county councils of Skaraborg, Älvsborg and Bohus and parts of the City of Göteborg. Region Västra Götaland's main responsibility is health and medical care. Region Västra Götaland were also given responsibility for regional growth and development, issues that had earlier been controlled by the Government through the county administrative boards. This means that the citizens, through their elected representatives, have greater influence over regional social issues such as infrastructure, culture and the environment. With its 50,000 employees and almost 2,000 workplaces, Region Västra Götaland is one of Sweden's biggest employers. 80% of the employees are women and the average age is 46. Most work in healthcare.

Facts and figurs from the Region of Västra Götaland.
- 1,5 million inhabitants
- 17 per cent of the population of Sweden
- 24 000 km2 (landarea)
- 6 per cent of the land area in Sweden

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- 65 inhabitants/km2
- 240 km across from north to south and from east to west

Västra Götaland boasts a wide range of industries in both traditional and modern fields. Over the years a number of different profiles have evolved - trading, shipping, agriculture, forestry and manufacturing industries. All of them play a vital role in the business life. These industries are pervaded by an international spirit, with cutting-edge competence in medicine, foodstuffs, vehicles, interior design, chemistry, textiles and telecommunications. Alongside this strong industrial profile Västra Götaland has a highly productive agriculture and forestry sector. Agriculture and forestry play a vital part in the economy thanks to its geographical conditions and its strong agrarian tradition based on energetic entrepreneurs.
Region Västra Götaland also creates prerequisites for growth in Västra Götaland. This is done in cooperation with local authorities, universities and other institutions of higher education, trade and industry, associations and federations, and government bodies. Growth must take people, the environment and finances into consideration. Region Västra Götaland finances and takes part in the project Energigården, The Energy farm.

Regional network point
Agriculture has got great potential to contribute to Sweden's energy production and ENERGIGÅRDEN will help and support this development. ENERGIGÅRDEN is a meeting place where all interested can assemble for joint work and see the possibilities for producing energy from agriculture.
The purpose of the project ENERGIGÅRDEN is to be a focal point and driving force in the development of renewable energy production from the west Swedish agriculture from a local producer and customer perspective.

The aim of the programme ENERGIGÅRDEN is that Västra Götaland by 2020 shall account for 25% of the 20TWh energy potential estimated by the Swedish Farmers Association.
The project turns firstly to farmers (producers), advisors and counties as representatives for the mass users of energy in Västra Götaland.

Description of how far each country has come in the establishment of regions and network points, and the remaining challenges
The region and the network point are established and are running today. Remaining challenges are mainly to make things happen, to get farmers, politicians, and businesses to start producing bio energy products and get a working market for the products. The challenges are of technical nature as well as finance and above all to have buyers and sellers to meet and to talk to each other. Our main focus is to establish pilot projects that can work as inspiration and information centres for farmers.

Description of the work to be done in all tasks

Tasks 4.1 and 4.3
Input and description of region and network point. Looking for collaboration possibilities and benchmarking.

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Task 4.2

Activities	**Partner will for his region contribute (please tick yes or no; each activity has to be done in a region by at least one partner!**
Qualitative description:	Yes
Definition of material	Yes
Description of production process	Yes, only brief
Options for increased production	Yes
Description of legal framework	Yes, overview
Identification of main energy carrier	Yes
Identification of main user groups of final energy carrier	Yes, only brief
Quanitative description	Yes
Estimate of sustainability	Only brief

Task 4.4
Description of region ,included.
Contribution- Description of companies according to template.

Task 4.5
Start up / Initiate 3 pilot projects in our region. Take part in the analysis and decide which project should be chosen for the Bio Energy Promotion project.

Task 4.6
Not clear, implement decided plans in our project.

Denmark: Region Zealand

Region Zealand is one of five administrative regions in Denmark. It is located in the eastern part of Denmark and embraces most of the island of Zealand, Lolland, Falster and Møn and is neighbouring the capital city Copenhagen. Most of the region comprise of farm land.
Facts about the region:

- 7.273 sq. Km
- 811.511 inhabitants
- 17 municipalities
- 1 regional council
- 1½ universities

WP4 Partners in the Bioenergy promotion programme:

- Regional Council of Zealand
- Roskilde University
- Institute of Food and Resource Economics

Biomass production
The key source of biomass in the Region Zealand is provided by the agriculture. 85% of the farms in the region are engaged in crop production and the rest with cattle or pigs. The crops that are grown can roughly be divided between three types on roughly the same volume: grass, cereals

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and root crops[1]. Root crops (sugar beet) production is especially intense in the southern part of the region where it is produced for sugar production.
The largest fraction of biomass resources that utilised for energy generation (heat and electricity) is currently straw, which appears as a bi-product from production of various crops but mainly weed. Other biomass bi-product and waste fractions include animal manure, sewage sludge and industrial waste (primarily coming from sugar refinery, slaughterhouses, wooden floor manufacturing and dairies).
The Danish partners in the Bioenergy Promotion programme intends to assess potentials for the expansion of the current biomass production (under Task 4.2). The data from this exercise is intended to be used as an input in the identification of potential pilot projects focussed on optimised use of biomass resources for energy generation purposes.

The energy system
The Danish electricity and heating system is comprised by a combination of centralized and decentralized plants. In 2000, 54% of a total of 2.5 million Danish homes were heated by heat produced in CHP plants. 17% were heated by small decentralized CHP plants, which are primarily located in smaller towns, and 37% were heated by large central CHP plants located in major cities[2]. The heat is sold to district heating companies often via transmission companies. District heating companies are typically either municipally owned or owned by consumers in a cooperative. Part of the municipally owned district heating companies are transformed into autonomous corporations as partnerships or limited liability companies (SA), which may be wholly or partially owned municipalities[3].
The incineration of coal, waste or natural gas results in heat that is converted to steam which is deployed in order to drive turbines that produce electricity. Combined heat and power plants utilises the heat which would otherwise be ventilated in the air or cooled by sea water to heat houses via the district heating systems. The co-production of electricity and heat has resulted in energy savings of around 30%[4].
The centralised CHP plants were historically designed to generate electricity only while the decentralised plants were designed for heat production only. This system was changed and both the central and decentralized plants re-designed to produce combined heat and power. However approximately one third of the decentralized plants (130 out of 415 plants) are still only producing heat. Denmark has in total 16 central and 415 decentralized plants[5]. In addition there were in 2004 480 small CHP- and district heating plants, which were dedicated to specific industries, nurseries, schools or offices.
The generation of electricity and heat in the Region Zealand is managed by a combination of three central CPH mainly fuelled by coal; three decentralized CHP plants, mainly fuelled with biomass, serving the smaller cities; a large number of small CHP fuelled by natural gas; and a number of decentralized heating plants which are primarily based on biomass or natural gas. The region additionally hosts three larger biogas plants that produce a methane rich gas from a combination of animal manure and industrial waste. The gas is burned in an engine or a turbine for co-production of heat and electricity. The Region Zealand is characterised by large regional differences. The two islands Lolland and Falster differs from the rest of the region by the fact that the heat is produced in decentralised plants based exclusively on biomass.

[1] Hauggard-Nielsen, Henrik, 2009, Landbrugsafgrøder og Bioenergi, presentation given at Roskilde University, May 2009.

2 Danish Energy authority (Energistyrelsen) 2005, Technology Data for Electricity and Heat Generating Plants, March 2005
3 Danish Energy authority (Energistyrelsen) 2004, Varmeforsyning i Danmark - Hvem Hvad Hvor og Hvorfor
4 Danish Energy authority (Energistyrelsen) 2004, Varmeforsyning i Danmark - Hvem Hvad Hvor og Hvorfor
5 Danish Energy authority (Energistyrelsen) 2005, Technology Data for Electricity and Heat Generating Plants, March 2005

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The regional network point

The regional network point is planned to be established at the regional council of Zealand who is one of the Danish partners in the Bioenergy promotion Programme. There already exist a large number of established organisations in Denmark who are engaged in knowledge dissemination in the area of bioenergy and the necessity for a regional network point that can disseminate knowledge to the wider public is therefore considered insignificant. Knowledge dissemination for the regional network point is therefore targeted local stakeholders (farmers, politicians, technology providers, knowledge institutions, utility companies and energy service providers) who could potentially be associated with the pilot project under Task 4.5 in WP 4. The Danish partners will ensure a close collaboration with the other organisations involved in knowledge dissemination about bioenergy in Danmark in order to ensure that the knowledge transfer that is generated in the Bioenergy Promotion Programme is channelled to relevant stakeholders within Denmark.

Task 4.2

Contact persons: Thomas Budde Christensen (tbc@ruc.dk), Roskilde University and Tyge Kjær (tk@ruc.dk), Roskilde University

Activities	**Partner will for his region contribute (please tick yes or no; each activity has to be done in a region by at least one partner!**
Qualitative description:	X
Definition of material	X
Description of production process	X (only if descriptions appear relevant for the assessment of increased production potentials)
Options for increased production	X (this is fairly complex, but we will try to provide an estimate)
Description of legal framework	X (we will not engage in a detailed description and analysis but contribute to this part if relevant for the assessment)
Identification of main energy carrier	X
Identification of main user groups of final energy carrier	X
Quanitative description	X (when possible)
Estimate of sustainability	Maybe, not sure what that implies….

Task 4.3

The regional network point is under construction (including a regional website).
Contact person for the website is Bjarne Rasmussen from Regional Council of Zealand (br@regionsjaelland.dk).

Task 4.4

The industry analysis will be linked to task 4.5 focussing on farmers, politicians, technology providers, knowledge institutions, utility companies and energy service providers relevant to the selected pilot project.
Contact persons: Thomas Budde Christensen (tbc@ruc.dk), Roskilde University and Tyge Kjær (tk@ruc.dk), Roskilde University

Task 4.5

We are considering four different projects and intend to select one of these for further studies. Initial studies have been launched.

Task 4.6

We are not sure about this part…
Contact persons: Morten Gylling (gylling@foi.dk), Institute of Food and Resource Economics and Bjarne Rasmussen (BR@regionsjaelland.dk), Regional council of Zealand

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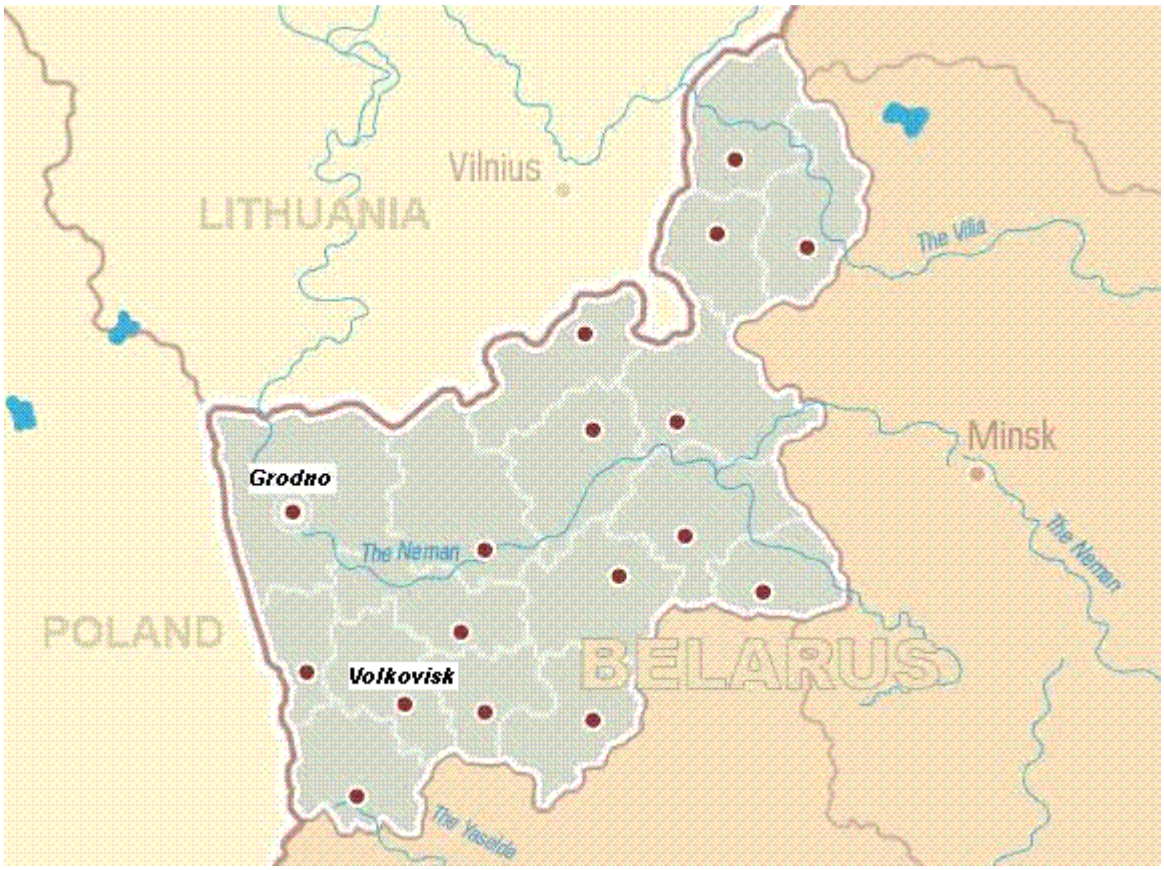
Belarus, Grodno region

Description of the region

Grodno region is situated in the northwest part of Belarus. It borders on Poland in the west and on Lithuania in the north. The region occupies 12 per cent of the territory of Belarus. The center of the region is the town of Grodno (population – 309 thousand people). The region comprises 17 regions, 194 rural councils, 12 towns including 6 which are subordinate to the region management bodies and 21 townships. The region is home to 11.7 per cent of the population of the republic.



The region was founded on September 20, 1944. The total area of the region is 25,1 thousand square kilometers, the population is 1 million and 184 thousand people. The distance from west to east is 213km and from north to south – 247km.

The region is mostly a flat country with the Neman lowland in the center. There are madder hills throughout the region – Grodno madder hill, Volkovysk madder hill, Slonim madder hill, Novogrudok madder hill and Oshmyany madder hill.

As for minerals, the predominant are those non-metallic – clay, chalk, silicate sands and peat. Specialists have discovered deposits of brown coal and iron ore. The climate is temperate and damp. The average temperature in January is 5 Celsius above zero, in July – 18 Celsius below zero. The rainfall averages 53 – 66mm per annum. Forests occupy one third of the territory of Grodno region. In the southwest of it there is a well-known national preserve Belovezhskaya Pushcha. UNESCO inscribed it on the World Heritage List and introduced into the unified global

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system of surveillance for climate change and gave it a status of a bio-preserve. Belovezhskaya Pushcha is an open air nature museum with 889 higher plants, 59 species of mammals, 227 species of birds, 7 species of reptiles, 11 – amphibians, 27 species of fish and about 8500 species of insects. The biggest animal in Belovezhskaya Pushcha is aurochs – one of the most ancient and once numerous animals. Its written history starts in the 3rd century B.C.

Forests of Grodno region are a habitat for elks, red dears, wild boars, roes, badgers, raccoon dogs, otters, martens, foxes, ermines and wolves. Also one can find there wood grouses, black-cocks, cranes, black and white storks, swans, erne, owls, harriers, kites, rollers and a host of other birds.

The Neman River, which crosses Belarus, is the third largest river in the country. Its total length is 937km and 360km in Grodno region. Many rivers cross the region with the majority forming the Neman river basin.

Lakes in Grodno region are scanty and all of them are small. The biggest of them are Beloye (557ha) to the northeast of Grodno, Rybnitsa (248ha) in the Grodno region and Svityaz (224ha) – to the south of Novogrudok. Svityaz Lake makes part to the Svityaz landscape preserve.

Fish is mostly pikes, ides, chubs, cat-fishes, eels, perches. The vegetation in the region is represented by 1,500 types of plants which grow along the banks of rivers, lakes, swamps, in the fields, vacant grounds and in the forests.

The main objective of socio-economic development of the region is to improve standards of living through steady economic growth and increase in efficiency of the real sector of economy.

Grodno region has a significant industrial and manufacturing potential of multi-sectoral orientation - about 250 enterprises, 169 of which are non-governmental. The largest enterprises of the region are represented by the following joint stock companies: "Grodno Azot", "Grodno Khimvolokno", "Belkard", "Lakokraska", "Neman" Glassworks", "Krasnoselskstroymaterialy", etc., which are well-known far beyond the borders of our country.

The share of Grodno region accounts for about 9% of industrial production of the Republic of Belarus.

Sector of industrial production is dominated by food industry, which share in the regional production volume is 27%, as well as by chemical industry (22.3%), mechanical engineering and metalworking industry (14.5%), and construction materials industry (10,4%).

Companies of the region produce more than 300 kinds of products. On its territory the region concentrates the entire national output of caprolactam, synthetic ammonia, potato harvesters, powdered milk formulae for infant feeding, 92.3% of nitrogen fertilizers, 87,8% of tractor seeders, 78,6% of casting machines, 61.8% of tractor ploughs, 51,8% of rigid leather goods, and 42,8% of cement.

The products of our region's enterprises, in terms of their technical characteristics and reliability, are quite competitive in the world markets. 213 organizations, including 116 organizations of municipal level and without departmental governance, have already certified their Quality management systems for compliance with ISO 9000 requirements; 24 organizations, including 8 organizations of municipal property, have certified their

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environmental management systems; 10 organizations have been certified for compliance with European Norms and EU Directives. 23 organizations of food industry, including 14 organizations of municipal level and without departmental governance, are certified for compliance with HACCP principles.

The agricultural sector of the region works in a stable regime.

Taking in consideration the production of main types of agricultural products per capita, the region occupies a leading place not only in the republic, but also among neighbouring and distant countries.

Production volumes and sales of major agricultural products increase every year; simultaneously, there is a steady growth in productivity of land and animal husbandry.

The main emphasis in the development of agro-industrial complex is put on intensification of production, modernization of agricultural sectors, introduction of modern high-efficiency technologies. This allows not only to maintain a high level of production, but also to ensure a stable and consistent increase in the production volume of foodstuffs and raw materials for processing industries.

Foreign economic activity is one of the most important directions for the development of regional economy.

The export structure is made up of a wide range of goods and services. Chemical fertilizers and cardan shafts, chemical fibers, paints and varnishes, building materials, products of light industry and agricultural products are widely known both in our republic, and far beyond its territory.

Regional organizations are involved in foreign trade with 115 countries of the world. Their products are supplied to the markets of 82 countries, and backwards we import products from 101 countries.

The main trading partners of our region are represented by: Russia (33,2% of total turnover), Germany (14,4%), Poland (10%), China (5,2%), Ukraine (4,8%), Brazil (4 %), Lithuania (3.3%), France (2,9%), Italy (2,4%), Latvia (1.6%).

In 2009 the export geography of our region has expanded into 11 new markets - Albania, Myanmar, Jordan, Tunisia, Kuwait, Guatemala, Lebanon, Nicaragua, Reunion (France), Ecuador.

Special attention is paid to the investment sphere. Implementation of investment and innovative projects is aimed at creation of new businesses, upgrade of the existing plants, introduction of advanced technologies, modern machinery and equipment.

Thus, a large-scale technical re-equipment is being carried out at "GrodnoAzot"; the reconstruction and technical re-equipment of nylon industrial yarn and cord fabric production is still on the way at JSC "Grodno Khimvolokno"; the reconstruction of the patterned glass production line has already been effectuated at JSC "Grodno glass plant"; the reconstruction and technical upgrading of the production facilities at JSC "Krasnoselskstroymaterialy", technical re-equipment of JSC Mostovdrev", construction of Grodno hydroelectric power station on the river Neman and other projects are still in progress.

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Technical re-equipment of enterprises of dairy and meat industry is still in progress. Reconstruction and technical re-equipment of "Grodno cannery" is nearing its completion, thus creating a new modern production of high quality canned fruits and juices from domestic raw materials. Many other innovative projects are being implemented in construction and other industries.

Regional network point

The most active bio-energy groups are:

- Solid bio-fuels
- Liquid bio-fuels

To engage in trafficking in waste timber from the main users are going to Volkovysk forestry enterprise Grodno GPLHO. It created a joint Swedish-Belarusian company "RindiBel" on harvesting and chip fuel. The investment will lead to bioenergy Swedish company Rindi Energy AB.

The rapid growth of mini-heat power stations use to produce energy large number of fuel chips, forced to seek new avenues to increase its resource base. One of these is the artificial creation of energy plantations of fast growing species that do not require large expenditures for this. For example in Grodno PLHO for the period 2007-2009 was established 78 hectares of energy plantations, mainly of pine based Volkovysk and Schuchyn forestry enterprises. However, today there are large areas of considerable reserves of biomass suitable for fuel chips. In this connection, Ministry of Forestry with the Ministry of Energy and other stakeholders developed a "Program of the workpiece and the implementation of wood fuel source to set up power sources", which aims at creating conditions to ensure uninterrupted fuel wood and produce a mini-heat power stations. In addition the program provides the procedure for establishing primary zones and infrastructure for the procurement and delivery of fuel source. So already at this stage in conducting forest inventory for each timber enterprise determine how much wood can be used as wood fuel raw materials. Data recorded in the forest inventory project where you can find out how much fuel raw materials obtained, for example, from twigs and branches during felling. And so on all types of cutting and all types of wood waste.

Also at the enterprise "Grodno Azot developed technology for the production of new fuel-biodiesel. Since October 2007 the company produces biodiesel of composite with a 5 % of biofuel produced here - methyl esters of fatty acids of rapeseed oil. The advantage of biofuels is its environmental friendliness, as well as its use in the production of renewable raw materials - rapeseed.

Description of the work to be done in all tasks

Task 4.1 and 4.3:
Identification of a pilot region (Volkovisk), meeting with stakeholders and bio-energy projects, development of an action plan, communication/meetings with local stakeholders, Preparations for the establishment of a website;
Participation in and contribution to the sub-regions workshop for exchange between the involved countries.

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Task 4.2:

Activities	**Partner will for his region contribute (please tick yes or no; each activity has to be done in a region by at least one partner!**
Qualitative description:	Yes
Definition of material	Yes
Description of production process	Only brief
Options for increased production	No
Description of legal framework	No
Identification of main energy carrier	Yes
Identification of main user groups of final energy carrier	Yes
Quantitative description	Only brief
Estimate of sustainability	Only brief

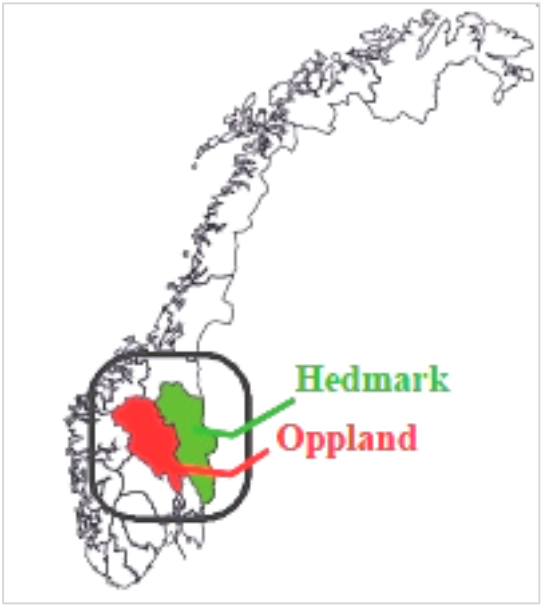
Task 4.4
Report on the sub-region (solid biofuel sector and related industries).

Task 4.5
Here we have a budget that gives us a possibility to come to the workshops.

Task 4.6
Participation in the workshop for sub-regions for an international exchange of experiences;
Development and finalization of a strategic management plan for the regional biomass;
Participation in the final workshop for sub-regions for an international exchange of experiences.
Contact persons: Andrej Buj (turbotaxator@tut.by), Herasimovich Yauheni (evga.ru@list.ru)

Norway: The Inland Region

The Inland Region consists of the two counties Hedmark and Oppland, lying in the southeastern part of Norway, north of Oslo and close to Sweden. The region has 48 municipalities and a population of about 375.000 inhabitants. That gives a population density of 7 persons/km2. We have some small cities as Gjøvik, Lillehammer, Hamar, Elverum and Kongsvinger.



The total areal is 52.600 km2 and a great part of the areal is montaneous. In Oppland county 80% of the land is more than 600 m above sea level. The forests covers 20.800 km2 and the forest areal has increased with 10% since 1960. The Innland is also the two biggest counties in agricultural land. The Inland has to "export" energy or energybased products to other districts in Norway as we have 40% of the bioenergyresoures in Norway and only 8% of the polulation. Then it is positive that we are close to the Oslo-area.

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For Norway it is a question of redusing the use of energy from traditional energysourses and increase the use of renewable and CO2-nutreal energysources. The government has an ambisionof increasing the use of renewable energy to 30 TWh within 2016. About half of this will come from bioenergy.

The counties in the Innland region of Norway have great access to raw materials, especially from the forest areas. There is an increasing focus on industry initiatives within renewable energy and bioenergy in Norway. Several environments including the forest counties, Oppland and Hedmark, being in the forefront, possess bioenergy competence on an international level.

Arena Bioenergi Innlandet is aimed at business and knowledge providers within energy. The aim is to contribute towards increased value creation by strengthening the collaboration and the ability for innovation and further development between business participants, knowledge providers and the public sector.

The ambitions are high. By 2010 the cluster will contribute to reducing the emission of greenhouse gases by 130,000 tons of CO2, increase the production of bioheat from today's 20 to 30 percent. In addition, the inland regions shall supply 30 million liters of biodiesel annually and start exporting biofuel and knowledge about bioenergy in general to the rest of Norway and the Nordic countries. The initiative will create between 300 to 500 new jobs, and an additional 500 by 2015.

The strategy of the project covers the entire value chain with sub-projects, and gathers participants in the five market areas; large-scale bioheat, small-scale bioheat, biofuel, bioresources and biowaste.

The bioenergy business cluster in Hedmark and Oppland consists of:

- Bioenergy companies
- Research and development institutions
- Regional government

The network consists of:

- Eidsiva Bioenergy – the 5th biggest hydro power company in Norway, with an ambision of producing 1 TWh within 2012. Solør-gruppen with the same ambition (they are also established in Rogaland and in Sweden). And other large scale companies.
- Forest owner's organisation - covering half the forestry in Norway and other raw material companies. They are building up a transport and distribution networks with terminals and other equipement.
- Waste companies are soon sending recycled waste to a bioenergyplant at Hamar .
- Biofuel/biorefinery-company have buildt a factory in Fredrikstad (opened 22th of june 2009, producing about 100.000 tons of biodiesel. The government has surprisingly put up taxes on biodiesel and the factory has some challenges.
- A lot of small scale bioenergy-companies are opened, but a lot of plans are close to realization if economic conditions changes a little.
- Information-centers and consultants.
- Universities, colleges and other schools and research institutes. We are building up studies in our University Collages, and we are developing a plan for research and development. We also corporate with national universities and research institutions.

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Project Manager:
Mr. Ole Helmer Bjørlien
M: +47 952 36 911
olehelmer@gmail.com
Web site: www.arenabioenergi.no

The network point
The Energy Farm, located at Brandbu in Oppland is the net work point. The Energy Farm is a centre for Bioenergy promoting bioenergy in theory and practise through:

- Bioenergy Information Center
- Courses and seminars
- Demonstrations and guided tours
- Consulting and education
- Production of biofuels and bioheat

Target groups for the centre are:

- ✓ the energy sector,
- ✓ agriculture and forestry sector
- ✓ Industry
- ✓ public authorities
- ✓ Students, R&D-institutions

Leader of the network point:
Mr Erik Eid Hohle
M: +4790506090
erik.hohle@energigarden.no
Web site: www.energigarden.no

Tasks and work to be done in The Energy Farm and Arena Bioenergy Inland
The secretary for the Arena Bioenergy Inland is located at the Norwegian regional network point; the Energy Farm. For us it is natural to see Task 4.1 Regions and Task 4.3 Regional Network point as closely related.

WP 3. Policy.
This is a important issue for us as we are working a lot with these questions. Here we have a budget that gives us å possibility to come to the workshops.

We are arranging workshops and communicate trough our web site and Newsletters to the members of the cluster. Themes in the latest workshops are biogas, education, research and development. We are now finishing our English version of our web site.

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Conclusions and future work

There are many different kind of clusters in our international network, with different kind of expertise. Up to now it has been a very interesting process and we have already exchanged a lot of knowledge both in cluster work and in our main subject bioenergy. Some countries as Sweden, Finland and Germany has already experience for a long time in bioenergy and has build up institutions, educational systems, research organisations and has a lot of businesses in bioenergy. They have build out bioenergy plants for heating and production of electricity covering both small businesses and large plants covering big cities with a large distribution network and some produce biofuel and biogas. In other countries we have just started and there are a lot to do to develop a whole new business including new laws and how to build up a support system from the state and how to spread information and educate people.

The work in Task 4.1 has early deliveries in the whole work package and we are on schedule in most activities. There is still a work to be done within many of the clusters in each country making the clusters function efficiently and together with the network point, and some nations has still some work to do in their regional websites.

Norway, 15.6.2010
Place, Date

Signature

Ole Helmer Bjørlien, Task 4.1 leader
Name and position of the signatory

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Appendix 1.

Matrix Task 4.1

Country	Region	Coverage land area	Age	Driving forces for the establishement of the bioenergy region	Main BE Businesses
Norway	The Inland	75 % forest, 20 % agricultural, 5 % other	0-2 years	Bioenergy business actors with support from local governments	Wood chip producion, bio heat entrepreneurship, biodiesel production, bio waste as energy

BE production	BE expertise areas - theoretical/knowledge	BE expertise areas - established businesses	BE potential areas	Transferable BE "succes histories"
xx GWh bioheat, xx GWh bioelectricity	R&D Agro energy, Universities - 2 BE professorships on BE from forests	Wood chip production, heat entreprenurship, farmer based bioheating plants, biodiesel,	biogas, pellets	Biodiesel production factory, biogas from waste deposits, bioelectricity from recycled chips, the Energy Farm

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