



BIOENERGY ACTION PLAN
FOR SALACGRIVA REGION
IN
LATVIA
2012 – 2022

FIRST EDITION

Salacgriva, 2012

Development of the regional bioenergy action plan

This document represents one of the five biomass action plans developed within Intelligent Energy Europe project BioRegions of the European Commission. Action plans set framework for the promotion of renewable energy production and use in five rural territories in Europe.

More information about the project and project partners can be found on the website www.bioregions.eu.



bioregions.eu

Reģionālie tīkli ilgtspējīga bioenerģijas
tirgus attīstībai Eiropā

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Definitions and abbreviations

<i>Bioenergy</i>	–	Energy that is produced from organic sources, both flora (woodfuel, straw, algae, etc.) and fauna (e.g., grease and waste) products.
<i>Bioenergy region (bioregion)</i>	–	A region in which at least one third of heating and electricity needs is provided from regional and sustainable bioenergy sources.
<i>Woodfuel</i>	–	Wood materials of variety of size, moisture content, as well as origin used as fuel. E.g., firewood, wood chips, pellets, briquettes and wood residue.
<i>Cogeneration</i>	–	Primary energy transformation process where electricity and heat energy are simultaneously produced with facility specific power to heat ratio.
<i>Wood residue</i>	–	By-products and residues from wood processing industry.
<i>BTC</i>		Biomass trade and logistic centre
<i>CCFI</i>		The Climate Change Financial Instrument
<i>EAFRD</i>		The European Agricultural Fund for Rural Development
<i>EE</i>		Energy efficiency
<i>EU</i>		European Union
<i>FSC</i>		Forest Stewardship Council
<i>PEFC</i>		Programme for the Endorsement of Forest Certification schemes
<i>RE</i>		Renewable energy
<i>RES</i>		Renewable energy sources

1. NEED OF AN ACTION PLAN

1.1. Background

Energy is one of the leading development topics for European countries forcing the European Union (EU) to solve series of challenges including the climate change and growing dependence on energy imports, energy deficiency and the availability of secure energy at an affordable price. The EU implements an ambitious energy policy that covers all types of energy resources, ranging from fossil resources (oil, gas and coal) to nuclear energy and renewable energy sources (solar, wind, biomass, geothermal, hydro and wave energy), creating preconditions for new industrial revolution that can build low-energy economy, at the same time ensuring more secure, more competitive and more sustainable use of energy.

The EU has long been one of the leading actors fighting climate change in the international arena. Energy efficiency and renewable energy is an integral part of European energy and climate policy. The EU leaders have set three key objectives to be attained by 2020 (also known as '20-20-20' targets):

- A reduction in EU green house gas emissions of at least 20% below 1990 levels;
- 20% of EU energy consumption to come from renewable resources, and;
- A 20% reduction in primary energy use compared with projected levels, to be achieved by improving energy efficiency.

Latvia has committed to increase the share of renewable energy sources in gross energy consumption by up to 40% in 2020. Achievement of this target will only be possible by implementing concrete actions at national, regional and local levels. Each planning level has its own specificity while energy planning at regional level is recognized as the most proper for promoting renewable energy and energy independence, as well as reducing environmental impacts.

The Intelligent Energy Europe project BioRegions contributes to reaching EU renewable energy targets by supporting the creation of 'bioenergy regions' in five rural areas of Europe. A 'bioenergy region' aims to meet at least one third of its heating and electricity needs from regional and sustainable bioenergy sources, with main focus on solid biomass.

One of the key activities of the BioRegions project is the development of regional bioenergy action plans in five rural territories in Europe:

- Brumov-Bylnice & Slavičín region, a forested mountainous area located in the Eastern part of the Czech Republic at the border with Slovakia;
- County Westmeath, Ireland, an agricultural county located west of Dublin;
- Salacgriva and Limbazi regions in Latvia, a densely forested areas located north of Riga;
- Sredna Gora region, a forested mountainous area in Central Bulgaria, and;
- Le Trièves, France, a forested area at the foot of the Alps near Grenoble.

1.2. Overview of existing action plans and policies related to development of the region

At a national level variety of policy planning documents have been developed for the support of renewable energy production and use in Latvia. Long term energy policy priorities are related to increased use of renewable energy sources (RES), energy security and independency, reduced final energy consumption and improved environmental quality.

In Latvia electricity production from renewable energy sources in cogeneration is supported by a **feed-in tariff** and a **guaranteed payment** for installed electrical capacity. Until 2011

also distributed electricity generation from RES was supported by feed-in tariff and guaranteed payment for the installed capacity. However, at present the Ministry of Economics of Latvia has discontinued organization of new tenders for obtaining rights to sell electricity produced from biomass, biogas, solar and wind energy under the mandatory procurement. Currently a new Renewable Energy Act is pending in the Cabinet of Ministers to be confirmed. It will provide support for heat and electricity production from renewable energy sources in terms of price premiums.

The main State support instrument for initial financing of renewable energy and energy efficiency projects in Latvia is the **Climate Change Financial Instrument (CCFI)** or internationally known as Green Investment Scheme. CCFI is a programme of State Budget and resources are obtained from realizing state owned assigned amount units within the framework of international emissions trading. Investment support is also provided by activities implemented within the Rural Support program (the Ministry of Agriculture) and by the Cohesion Fund (the Ministry of Economics) which aim to promote the use of agricultural and forestry biomass in electricity production and to improve efficiency of renewable energy systems.

At a regional level there is a number of binding documents providing future development of Salacgriva region. Each of the three local municipalities – Salacgriva and Ainazi cities with rural territories and Liepupe parish – has elaborated regional development programmes and land use plans. Currently a single development program of the whole Salacgriva region for 2013-2030 is being worked out. In addition to these documents during the period till 2011 Salacgriva port development program until 2013 and Salacgriva tourism development and marketing strategy for 2008-2017 were developed. Tourism development trends at wider scale are discussed in North Vidzeme Biosphere Reserve Coastal tourism development plan for 2012-2020 (2011).

In accordance to the above mentioned planning documents priorities of Salacgriva region are related to the development of port, tourism and industry sectors enabling:

- Recognition of the region at regional and national level;
- Attractive environment for business and investments, and;
- Improved surrounding environment and risen living standards.

Salacgriva region is the first one in Latvia where 'green' ideas have become one of the local priorities. Being aware of such issues as environmental protection, energy efficiency and the use of renewable energy sources, Salacgriva municipality has developed two substantial documents:

- The declaration of the Green municipality of Salacgriva Municipality Council (2010) is an initiative of municipality to promote healthy, economical, nature and human-friendly and sustainable way of life and business in the region, and;
- Climate Change Adaptation Strategy for the Salacgriva Region (2011) was created with an aim to adapt to human-caused global climate change at regional level and to reduce green house gas emissions and promote emission storage in future, as far as possible.

1.3. Aims of the development of the action plan

Salacgriva regional bioenergy action plan creates framework for development of a bioenergy region, and it aims to:

- Support the development of efficient and reliable market and transport chains for solid biomass;
- Increase the knowledge of local stakeholders in establishing biomass projects and all activities related to this development, and;

- Stimulate investments into bioenergy projects and trading businesses of local stakeholders.

The action plan was developed by Ekodoma Ltd. in collaboration with Salacgriva municipality during July-December 2011 and is available in both Latvian and English languages. The action plan will be adopted by responsible authorities during Spring-Summer, 2012. Afterwards first steps for creation of the bioregion will be implemented. The action plan will be updated periodically to adapt to changing framework conditions in the region.

1.4. Methodology of the development of the action plan

The action plan has been developed as a part of the international BioRegions project based on a model created by partners from experienced bioregions in Achenal (Germany) and Jönköping (Sweden).

Data used for calculation of biomass consumption and potential in the target region were collected from both national (Central Statistical Bureau of Latvia, the Rural Support Service, the State Land Service, the State Forest Service, the Agricultural Data Centre and the State Employment Agency, etc.) and regional level sources (regional development programs, Salacgriva Climate Change Adaptation Strategy, Salacgriva Green Region Declaration, etc.). The analytical section is followed by a strategic section defining objectives for the development of bioenergy region and activities necessary for their achievement, as well as evaluating possible impacts.

Quality control of the action plan is ensured by all partner organizations of the BioRegions consortium.

2. TARGET REGION PORTRET

2.1. General characteristics of the region

Salacgriva region is located in the western part of former Limbazi region and it borders with Limbazi region in Southeast, Aloja region in Northeast, Estonia in North and Gulf of Riga (Baltic Sea) in West (Fig.2.1). Total area of the region is 637 km².

Salacgriva region comprises of Salacgriva and Ainazi cities with adherent rural territories and Liepupe parish. According to the data of the Central Statistical Bureau of Republic of Latvia the population of Salacgriva region in 2011 was 9,340. Due to negative migration rate and small number of newborns total population is decreasing over the last decade (Fig.2.2).



Fig.2.1. Salacgriva region

Salacgriva region is rich in natural resources. Forest land covers 62% of region area, 27% is agricultural land, 2% are swamps, 2% of the territory is covered with water. The main economical activities are forestry, wood processing, agriculture and food industry.

Largest companies by turnover in 2010¹ were Ardagh Metal Packaging Latvia, Ltd (cans manufacturing), Brivais Vilnis, JSC (fish products), Baltic Forest, Ltd (forestry, wood processing), Dimela Veta Latvija, JSC (wholesale of pharmaceutical goods), MBEE, Ltd (fuel wholesale), Kubikmetrs, Ltd (wood processing), Novest, Ltd (fuel wholesale).

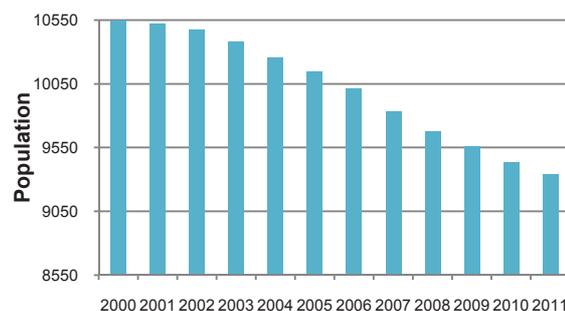


Fig.2.2. Number of inhabitants in Salacgriva region 2000-2011

According to the data of the State Employment Agency² unemployment rate in the region in March, 2011, was 9.7% of economically active population which is less than the average level in Latvia (11%).

Within the territory of Salacgriva region there are two ports – in Salacgriva used for shipping and in Kuivizi used by coastal fisherman. Timber makes the base load in Salacgriva port.

2.2. Current energy situation

2.2.1. Current energy infrastructure

The whole territory of the target region is supplied with **electricity** by the joint-stock company Latvenergo. As a coastal area region has the potential of wind power development. The first wind power plant in Baltic States was installed in Ainazi (1994) with two 0.6 MW wind generators. Annual electricity production is around 1.000 MWh. Produced electricity reaches consumers in Salacgriva and Ainazi cities and rural territories. One of the aspects

¹ Companies with the highest turnover in Limbazi region in 2010. Lursoft statistics

² Number of unemployed persons broken down by cities and regions on March 31st, 2011. The State Employment Agency

delaying further development of wind energy is the lack of infrastructure for high voltage electricity transportation because local consumption is small. Construction of new power facilities and infrastructure depends on demand.

The region does not have a direct access to **natural gas** networks and development of natural gas infrastructure is not planned in the nearest future. Design and construction of new natural gas objects is ordered by the natural gas supply company Latvijas gaze, JSC (the only natural gas supplier in Latvia) and these are focused on gasification of catchment areas, regions, and cities with no existing natural gas infrastructure. If a consumer wants to connect to an existing natural gas infrastructure, this is done by application of an individual submission for connection.

Due to the lack of natural gas infrastructure heat energy in the region is mainly produced from biomass, leaving small share for fossil fuels like light fuel oil, heavy fuel oil, and coal. There are three types of heating systems used in Salacgriva region: (1) district heating, (2) local heating and (3) individual heating.

District heating in Salacgriva region is available in Salacgriva and Ainazi cities and in Liepupe parish where boiler houses with total capacity 4.3 MW are installed (see Table 2.1 below). District heat is used for space heating and hot water preparation in households, municipality buildings and industry related entities in Salacgriva, Ainazi and Liepupe.

Table 2.1

District heating boiler houses in Salacgriva region³

No	Location	Capacity, MW	Fuel	Consumption, t/g
1	Sporta Str.8, Salacgriva	1.4	Light fuel oil	151
2	Smilsu Str.3, Salacgriva	0.6	Logs	160
3	Smilsu Str.1, Salacgriva	0.8	Logs	160
4	Liepupe, Liepupe parish	1.5	Logs	775

As far as possible several boiler houses have been restored, but in general heating systems are old and inefficient, with high heat losses. To improve the quality of heat supply in Salacgriva city a reconstruction project has been developed. The project foresees the development of a joined system in which heat will be produced in one boiler house.

Since autumn 2010 the first district heating system using sea heat pumps is operating in Salacgriva. The new system ensures heat supply for Salacgriva secondary school, kindergarten and stadium's technical facilities, completely replacing the hitherto used light fuel oil boiler. The total capacity of heat pumps is 1.1 MW. Estimated amount of heat produced is 1,700 MWh annually.

Local heating is largely provided in public buildings and industry and services sector while households with no access to district heating networks use **individual heating** systems. The main energy resource used in local and individual heating systems is woodfuel (mostly, firewood).

³ Data base 'Gauss-2'

2.2.2. Current energy supply and consumption

Energy consumption in household, private and public sectors in Salacgriva region is illustrated in Figure 2.3. Estimated energy consumption is 290 TJ/annually. Biomass share in final energy consumption is 80%. Woodfuel (logs, chips, wood residue and pellets) is the most widely used energy resource. Electricity shares slightly more than 10%.

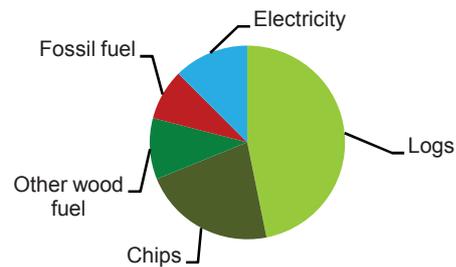


Fig.2.3. Energy consumption in Salacgriva region (%)

Heat energy

The installed capacity in district heating boiler houses in Salacgriva region is 4.3 MW and around 5 thousand MWh of heat energy are produced. Additional share of district heat in Salacgriva region is provided by Brivais Vilnis, JSC.

Around 70 thousand MWh of heat energy annually are produced **decentralized**. Largest heat energy consumer is household sector. The dominant resource for heat production in households is firewood. Data aggregated by the Central Statistical Bureau of Latvia for the year 2010 shows that firewood is mainly burned in room and kitchen stoves with average age exceeding 25 years. Old furnaces are ineffective and increase fuel consumption.

Installed capacity in **industry and services sector** (including district heat production) is 13.4 MW and annually 28 thousand MWh of heat are produced. Dominant fuel types are wood chips and wood residues. Woodfuel share is 87% of total fuel consumption.

Installed capacity in **public sector** (excluding district heat production) is nearly 1 MW and annually 3 thousand MWh of heat are produced. Dominant fuel type is wood logs. Woodfuel share is 80% of total fuel consumption.

Biomass supply in Salacgriva region mainly depends on the requirements and possibilities of the consumer. Fuel for local authorities is purchased in a centralized way. This means that municipality identifies the needs of all local authorities within its supervisory and announces a single tender. Fuel is supplied by the winner of the tender and all costs of fuel preparation and transportation are included in the total contract cost. Usually short term contracts for particular heating season are negotiated between the municipality and fuel supplier. Private consumers use private forest resources or purchase fuel from neighbouring wood processing companies.

Recently increasing interest about decentralized heat production has been observed using such renewable energy technologies as solar collectors and solar cells, heat pumps and wind generators. Climate Change Financial Instrument up to date has financially supported 22 projects in household sector (see Table 1 in Appendix I) for fossil fuel replacement with renewable energy resources giving CO₂ emission reduction 160 thousand t/CO₂/annually. Renewable energy projects are implemented as well in municipality infrastructure (see Table 2 in Appendix I). Activities implemented up to date include installation of a sea heat pump in Salacgriva secondary school and a hybrid lighting system in children's play ground. In the nearest future installation of solar collectors within the system of sea heat pump is planned to increase the overall efficiency of the system. Four renewable energy projects are implemented in the private sector (see Table 3 in Appendix I).

Overall building energy performance in the region is rather low. The average specific heat consumption is around 200 kWh/m²/a. Due to the possibility of attracting co-financing from ERDF for apartment house insulation projects, the number of renovated apartment buildings

is increasing over recent years. Up to date three apartment houses have been renovated and five more projects are under implementation (see Table 4 in Appendix I). The average planned energy saving due to energy efficiency measures (based on energy audits) is around 40%. As far as possible, energy efficiency measures are implemented as well in municipality owned public buildings.

Electricity

Electricity for consumers in Salacgriva region is mainly imported from other parts of Latvia. In the national fuel mix for electricity production mainly natural gas and hydro energy dominates, missing electricity is imported. Locally electricity is produced by two wind turbines in Ainazi.

According to data on electricity consumption in Salacgriva region⁴ the largest part of electricity consumers are in group with electricity consumption not exceeding 100 kWh per month (see Figure 2.5). Total electricity consumption in Salacgriva region is around 10,000 MWh per year.

Costs for electricity depend on electricity consumption. Households pay 0.0825 LVL/kWh (0.117 EUR/kWh) for the first 1,200 kWh per year and 0.1074 LVL/kWh (0.153 EUR/kWh) for each subsequent kWh. Legal entities pay for electricity depending on factors such as the lead-in voltage level, the chosen tariff and electricity consumption.

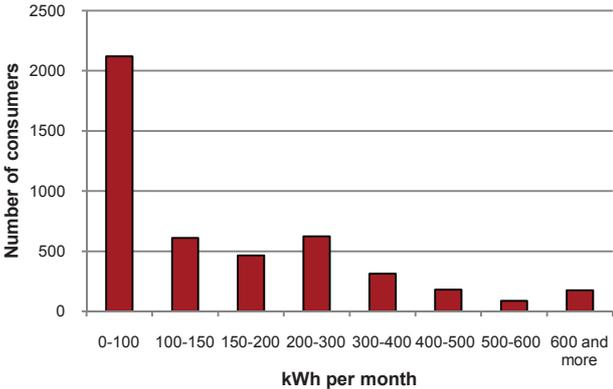


Fig.2.4. Electricity consumers in Salacgriva region depending on average electricity consumption



⁴ Data source: Latvenergo, JSC

3. BIOENERGY POTENTIAL

The main bioenergy potential in Salacgriva region (Fig.3.1) is associated with woodfuel obtaining from forest harvesting works (firewood from low-value round felling assortments, tree branches, tops of trunks, and stumps). Additional biomass sources are plantations of energy crops and wood processing companies. Smaller amounts of biomass can be obtained in form of straw, biogas and roadside maintenance wood.

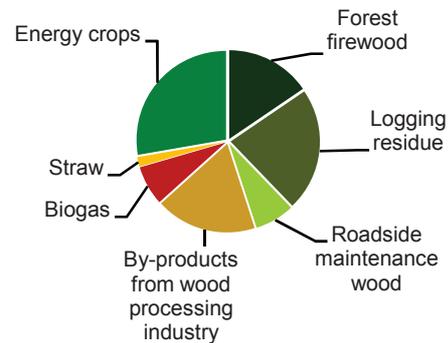


Fig.3.1. Biomass potential in Salacgriva region (%)

3.1. Woody biomass

Woodfuel is the most widely used biomass type. Woodfuel can be sourced from forest harvesting (low-value round felling assortments, stumps, branches, and tops of trunks), wood processing companies (cut offs, blocks, chips), area cleaning and landscaping works (fast growing bushes, etc.), special plantations (energy crops), as well as from wood that is not taken to landfills.

Salacgriva region is rich in forests. Forest lands cover 62% of the territory of region or 39,456 ha⁵. Dominant tree species are birch (44%), pine (25%), and spruce (16%). Wide availability of forest resources has favoured the formation of forest harvesting and wood processing industries as one of the key areas of economical activity in Salacgriva region. Correspondingly significant biomass potential is associated with these activities. Estimated potential of **forest firewood** (low-value felling assortments) and **logging residue** (tree branches, tops of trunks, stumps) in Salacgriva region is around 59 thousand MWh/annually. **By-products and residues from wood processing industry** give additional 28 thousand MWh/annually. However, should be taken into account that the market of wood processing by-products is already well developed. Sawdust in most cases is sold to pellet producers. Increasing number of pellet producers over last years in Latvia has favoured competition for raw material and increased the price of saw dust which is between 4.5-5.5 LVL/ loose-m³ (6.4-7.8 EUR/loose-m³). Saw dust that is not sold for fuel production is used for litter in nearby cattle farms. Wood cuttings are chipped and burned onsite for heating and drying purposes or sold for approx.3.5 LVL/loose-m³ (5.0 EUR/ loose-m³).

Potential source of biomass is as well territories belonging to Salacgriva municipality roads. Taking into account the total length of municipal roads and the average overgrowth (6 solid-m³/ha), it is estimated that annual **roadside maintenance biomass** potential in Salacgriva region is 11 thousand MWh.

Due to large areas of non agricultural lands there is a significant potential for the use of non agricultural land for **energy crops** (willow, canary grass, etc.) cultivation. Approximate energy production potential from energy crops plantations is 43-86 thousand MWh/annually.

⁵ Data source: State land service, 01/01/2010

3.2. Other biomass

Straw as fuel can be used in different forms: starting from pellets and ending with truss of straw. Rough calculation shows that the potential surplus of straw, which can be used for energy production in Salacgriva region, is 3 thousand MWh per year.

Potential feedstock for **biogas production** is animal manure, sewage sludge from wastewater treatment plants and organic part of municipal waste. Biogas potential from animal manure in the region is around 40 TJ/annually. The amount of produced sewage sludge and municipal solid waste is relatively small and additional biogas potential from this feedstock is 40 MWh/a. Sewage sludge and municipal solid waste created in Salacgriva region is collected and disposed at landfill 'Daibe' where landfill gas is produced.

3.3. Evaluation of regional biomass potential

Table 3.2 represents the theoretical biomass potential in Salacgriva region broken down by different biomass sources.

Table 3.2

Biomass potential in Salacgriva region			
Biomass	MWh/a	TJ/a	%
Forest firewood	24,200	87	15,5
Logging residue	35,000	126	22,4
Roadside maintenance wood	11,000	40	7,1
By-products from wood processing industry	28,300	102	18,1
Biogas	11,400	41	7,3
Straw	2,700	10	1,8
Energy crops	43,300	156	27,8
Total:	155,900	562	100,0

Assessment of Salacgriva regional biomass potential leads to two important conclusions. First, the total biomass potential (562 TJ/a) is larger than the annual fuel consumption (290 TJ/a), reflecting the availability of local resources for sustainable energy supply. And second, the main biomass potential is associated with wood chips production from logging residues, roadside maintenance wood, by-products from wood processing industry and specially grown energy crops and its use in energy production.

4. BIOENERGY SWOT ANALYSIS

The SWOT analysis examines regional strengths and weaknesses, opportunities and threats for regional energy supply (see Table 4.1) and energy consumers (see Table 4.2) both in short and long-term.

Table 4.1

Regional energy supply – technical and economical availability of energy sources	
Strength	Weaknesses
Well developed forest harvesting and wood processing industries.	Low efficiency of individual heating systems (outdated technologies).
Biomass is traditionally widely used in heat production.	Low efficiency of fuel use (high moisture content).
High biomass share in heat supply.	High heat losses in distribution systems.
Well developed road network for fuel supply logistics.	High costs for electricity related services (connection, load change, etc.)
Lower costs, if compared to fossil fuel, for the production of heat energy from biomass.	
Significant biomass potential.	
A wide range of energy efficient technologies and equipment in market.	
Well developed district heating systems.	
Opportunities	Threats
Reconstruction and modernization of heat production furnaces.	Lack of capacity and knowledge for successful implementation of projects.
Reducing heat losses in distribution systems.	Lack of financial resources for reconstruction of heat supply systems.
Improved air quality and reduced fuel consumption due to installation of flue gas condensers in biomass boiler houses.	
Growing energy crops on non agricultural lands.	
Attracting co-financing for transfer from fossil fuels to biomass in municipal buildings and private sector.	
Reduced energy costs due to optimum use of local biomass resources.	
Electricity and heat production from biomass in cogeneration.	

Table 4.2

Energy consumers in Salacgriva region – structure and efficiency

Strength	Weaknesses
Region has positive experience in implementing energy efficiency and renewable energy projects.	Low public awareness about renewable energy sources and energy efficiency.
A wide range of energy efficient technologies and equipment offered in market.	Large heat energy consumption because of heat losses at energy demand-side.
Availability of co-financing for energy efficiency measures in municipal buildings, district heating systems, private sector and households.	
Opportunities	Threats
Public and private building energy auditing.	Inability of energy consumers to pay for heat and electricity, if energy tariffs increase.
Increasing public awareness about the importance of renewable energy and energy efficiency.	Lack of financial resources for energy efficiency measures.
Reduced energy costs due to improved energy efficiency.	Lack of knowledge and motivation for planning and implementation of renewable energy and energy efficiency projects.
Energy efficiency measures in all sectors.	

5. SETTING THE BIOREGION TARGET

5.1. Overall bioenergy vision of the region

The declaration of the Green municipality, approved in 2010, establishes a framework for overall bioenergy vision of the region by stressing the substantial role of 'green' ideas for sustainable existence and development of a region. The vision of Salacgrīva Green region is focused on sustainable use of natural resources, including environmentally friendly and effective use of energy resources, as well as promotion of public awareness raising and wide participation in regions activities.

Sustainable use of local bioenergy resources contributes to clean up of surrounding environment, promotion of business, increased welfare and economical development of the region.

5.2. Bioenergy targets for 2022

Overall target of a bioregion is to produce 33% of energy (heat plus electricity) from biomass. In heat production historically biomass has been the main energy resource in Salacgrīva region since the region does not have an access to natural gas grids. Current biomass share is estimated to be around 80% which is more than twice the target. For this reason regional bioenergy targets are focused on more efficient use of bioenergy in terms of woodfuel quality and more efficient technologies and to wider use of local biomass resources.

Based on current energy situation in Salacgrīva region three fundamental bioenergy targets are stated:

- Keep the use of biomass in the final energy consumption at least 80% and increase gradually, ensuring optimum use of local biomass potential;
- Improve efficiency of biomass use for at least 20% till 2022;
- Decrease energy consumption in buildings for at least 30% till 2022.



6. ACTION PLAN

The action plan aims to develop short, medium and long term activities in each target group to promote bioenergy production and use, as well as energy efficiency in Salacgriva region.

The action plan considers five target groups (Figure 6.1):

- Administrative sector (Salacgriva regional administration and local administrations);
- Energy consumers (households, public buildings, industry and tertiary sectors);
- Energy producers (district heating companies, industry, municipality, family house owners);
- Bioenergy producers and suppliers (forestry and wood processing companies, private forest owners, etc.), and;
- Tourism sector.

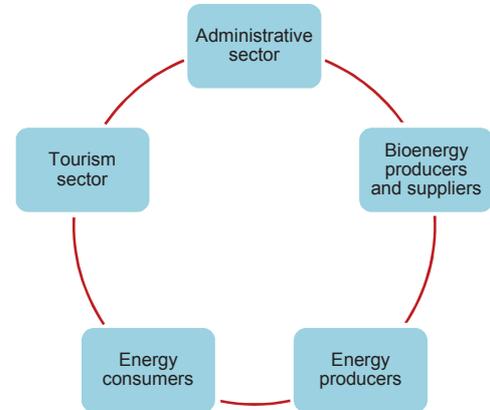


Fig.6.1. Bioenergy market stakeholders

Administrative sector

Salacgriva regional municipality is the key actor to promote the use and production of bioenergy and energy efficiency in two ways. Firstly, the municipality can implement measures to increase energy efficiency and the use of renewable energy sources in its public buildings (schools, kindergartens, museums etc.). Secondly, the municipality can take the lead action to promote energy efficiency and the use of renewable energy among local population.

Energy consumers

Energy efficiency measures at energy-demand side are the main and the most important one and allow reducing heat costs both in the short and long term. Energy efficiency measures associated with consumer behaviour can be implemented with minimal investments but give immediate result in terms of reduced heat energy consumption and costs. In longer term energy efficiency measures allows avoiding sharp increase in energy tariffs as unnecessary investments in increased installed capacity will be avoided.

Energy producers

Energy production is a sector where there is a significant potential for energy efficiency improvement in Salacgriva region. Greater attention should be paid to woodfuel quality issues. Fuel purchase should be organized based on energy content rather than the volume or mass of the fuel. As far as possible the old, inefficient boilers should be replaced with more modern equipment.

Bioenergy producers

Bioenergy producers and suppliers should be involved in the local biomass trading and encouraged to supply biomass to the local bioenergy market. Benefits of participating in the emerging local bioenergy market should be explained for all concerned entities.

Tourism sector

Existing experience has shown that Salacgriva region with its renewable energy incentives is interesting for public. Development of a qualitative tourism service providing binding information on best experience in the field of renewable energy and energy efficiency can

give benefit to both – service providers and consumers.

6.1. Milestones

Short term (2015)	<ul style="list-style-type: none"> ▪ Data base of energy efficiency projects implemented up to date in the region is developed; ▪ Data base of renewable energy projects implemented up to date in the region is developed; ▪ Data base of specific energy consumption in multi-apartment buildings and public buildings is developed and information is made available for local population; ▪ Data analysis and evaluation of energy efficiency and renewable energy projects implemented by the municipality is performed; ▪ Information on municipality website 'Green region' is regularly updated; ▪ Environmental and energy efficiency criteria are integrated in municipality public procurement; ▪ Feasibility study about the possible use of roadside maintenance wood in district heating is performed and following first steps are taken; ▪ At least 3 workshops for different stakeholders with total number of participants at least 45 are organized; ▪ Tourism route 'Green Salacgriva region' is improved, including preparation of informative materials; ▪ Salacgriva and Ainazi cities have involved in Covenant of Mayors initiative.
Medium term (2017)	<ul style="list-style-type: none"> ▪ Energy efficiency fund for obtaining co-financing for building renovation is established; ▪ 30% of municipality owned buildings and 10% of multi-apartment buildings have performed an energy audit and have received an energy performance certificate; ▪ Fuel consumption in district heating systems is reduced by 20% due to improved efficiency in heat energy production; ▪ Feasibility study about the use of biomass in electricity production is performed and following first steps are taken; ▪ Energy management system for largest energy consumers is developed.
Long term (2022)	<ul style="list-style-type: none"> ▪ Heat losses in distribution systems are reduced to 10%; ▪ Municipality owned buildings are 100% heated with biomass; ▪ 80% of municipality owned buildings and 30% of multi-apartment buildings have performed an energy audit and have received an energy performance certificate; ▪ Heat energy consumption in buildings is reduced by at least 30%.

6.2. Concrete actions

Based on regional bioenergy targets, action plan activities are divided into three groups:

- Measures aimed to increase the share of biomass in electricity and heat energy production;
- Measures aimed to increase the efficiency of biomass use, and;
- Measures aimed to decrease energy consumption in all sectors due to implementation of energy efficiency measures.

Following possible activities in each group are proposed:

1. Increased biomass share in energy production

Measure: Biomass cogeneration plant

- Description:** The aim of this measure is to increase the share of biomass in electricity and heat energy production. One of the possibilities is to produce biogas from organic residues (e.g., animal manure, municipal solid waste, and sludge from waste water treatment plants) and specially grown crops (e.g., corn or goat's rue). Another possibility is gasification of woodfuel (e.g., chips) producing synthesis gas.
- Energy production in cogeneration offers several benefits, the most important of which – high efficiency of energy production allowing to reduce fuel consumption. Additional benefits include contribution to national and EU climate and energy policy goals, strengthening regional energy security and reducing energy imports, as well as promoting regional development.
- Heat energy produced in cogeneration process can be used for heat and hot water supply in district heating systems or, e.g., used for improving the quality of woodfuel, while electricity can be transferred to public networks. Electricity production in cogeneration in Latvia is supported by a feed-in tariff or guaranteed payment for installed capacity.
- Several solutions are possible for the implementation of biomass cogeneration project which should be evaluated from technical, economical and environmental aspect. Whichever solution is chosen, the objective of this project is to increase the share of biomass in energy production and to reduce energy costs.
- Responsibility:** Municipality or public investor.
- Financing:** ~ 7 mil.LVL (10 mil.EUR). Source of funding: ERDF, municipality budget or private investments.
- Desired result:** Optimum use of locally available biomass sources by producing energy in cogeneration from locally available biomass sources (agricultural residue, food industry residue, municipal waste, woodfuel, etc.).
Reduced district heat energy costs. Increased share of biomass in electricity production.

Measure: Bioenergy use in municipality buildings and infrastructure

- Description:** There are several municipality owned public buildings in the region which are heated by fossil resources. The objective of this measure is to promote the use of renewable energy sources (especially biomass) instead of fossils in public buildings.
- Responsibility:** Municipality.
- Financing:** Source of funding: municipality budget, ERDF, CCFI.
- Desired result:** 100% of municipality owned buildings are heated with biomass.

2. Increased efficiency of biomass use

Measure: Energy efficiency measures in municipality owned public buildings

- Description: Implementation of energy efficiency measures in municipality owned buildings gives several advantages:
- Lower energy costs allows saving financial resources that can be used for other purposes;
 - Improved surrounding and work environment in renovated buildings;
 - Municipality with a positive experience raises public awareness of the importance of implementing energy efficiency measures.
- Public buildings with potential to be renovated: Salacgriva art school, city council, recreation centre, cinema, Svetciems kindergarten, and Korgene school.
- Responsibility: Municipality.
- Activities: Data base of specific energy consumption in municipality owned public buildings is developed. Buildings with the highest energy efficiency potential are prioritized. Co-financing for renovation is obtained.
- Financing: ~1 mil.LVL (1.4 mil.EUR). Source of funding: municipality budget, CCFI.
- Desired result: Reduced energy consumption in municipality owned public buildings.

Measure: Energy efficiency measures in municipality boiler houses and heat supply systems

- Description: Existing district heat supply systems in Salacgriva region are old and with high heat losses. Implementation of energy efficiency measures in boiler houses and heat supply systems is an opportunity to reduce heat losses and fuel consumption.
- Heat supply systems with potential to be renovated: Salacgriva district heating system, heat networks in Kuivizi, Svetciems and Korgene.
- Responsibility: Municipality.
- Financing: ~ 1.5 mil.LVL (2.1 mil.EUR). Source of funding: municipality budget, ERDF.
- Desired result: Heat losses in distribution systems reduced to 10% till 2022.

Measure: Installation of flue gas condenser in biomass boiler house

- Description: Woodfuel with high moisture content reduces efficiency of heat production. Installation of flue gas cooling and condensation equipment after a woodchip boiler allows increasing the efficiency of the boiler house by using the thermal energy of the outgoing flue gases. Additional benefit is reduced air pollution.
- Responsibility: Municipality or private investor.
- Financing: 200,000 LVL (285,000 EUR). Source of funding: municipality budget or private investments.
- Desired result: 20% reduced fuel consumption. 90% reduced solid particulate emissions.

Measure: Roadside biomass management pilot project

Description: According to estimations there is some roadside maintenance wood potential in the region. This biomass can be used in district heating boiler houses. The aim of roadside biomass management activity is to collect biomass growing along municipal roadsides in the territory of Salacgriva region, to chip this biomass and to use it for heat energy production. Such a scheme involves three interested parties (Figure 6.2):

- Municipality who is owner of roadsides belonging to its territory;
- Wood chips producer who offers chipping service, and;
- Municipality owned district heating boiler house.

The idea of this project is that municipality contracts with company (or private person) that does the roadside management work – collects and chips roadside biomass. Chipped biomass is later sold for heat energy producer.

Such scheme ensures that:

- The municipality has fulfilled the obligation of managing roadsides;
- Wood chips producer profits from selling biomass to boiler house, and;
- Regional biomass resources are optimally used.

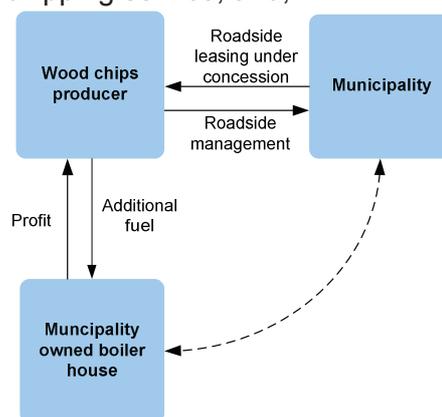


Fig.6.2. Optimized biomass collection and utilization structure in Salacgriva region

Responsibility: Municipality.

Activities: Inventory of municipality owned roads, evaluation of roadside maintenance biomass potential, development of a roadside biomass management plan, contracting with chips producer.

Financing: Necessary for inventory of municipality owned roads.

Desired result: Biomass growing along municipality owned roads is utilized in district heating systems thus optimizing the use of local biomass resources.

Measure: Biomass trade and logistic centre

Description: The main objective of a biomass trade and logistic centre (BTC) is to serve as a mediator between biomass suppliers and consumers (Fig.6.4). Activities of the BTC will be focused on woodfuel (firewood, wood chips, pellets, wood residue) market. Expanding the functions of BTC the centre could act as an energy service provider (biomass drying to improve the quality, chipping, storage).

Advantages of the BTC:

- Opportunity to collect woodfuel from a number of smaller suppliers and to sell it to one or several larger consumers;
- Opportunity to improve woodfuel quality, and;
- Due to the possibility of woodfuel storage, the BTC acts like a buffer for large price and/or consumption fluctuations.

Responsibility: Private company. Possible cooperation with Limbazi region.

Activities: The potential development of the Salacgriva regional BTC is built in three phases (Figure 6.3).

1. A virtual biomass trading platform

Initially the BTC will act virtually via a website. The website will provide information for woodfuel consumers about woodfuel suppliers and vice versa. Consumers will have the opportunity to search for woodfuel suppliers at their location. Such scheme ensures the advantage to quickly and easily compare the price and quality of the woodfuel and to place an order. To participate in the trading platform woodfuel supplier must be able to provide appointed woodfuel supply and trading requirements. The seller must ensure that fuel quality meets the given criteria. Payment for transaction is made directly between the buyer and the seller. Fuel supply conditions depend on the agreement between involved parties.

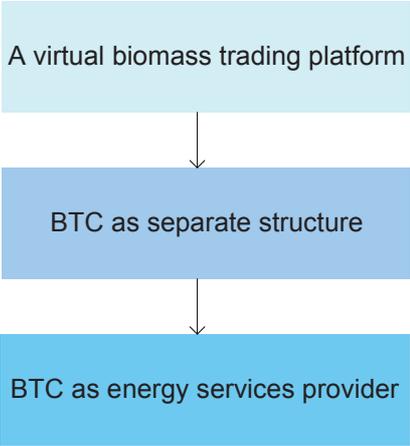


Fig.6.3. Potential development phases of Salacgriva regional BTC

2. Biomass trade centre as a separate structure

Developing the idea further, the BTC from a virtual platform for biomass trading could become a separate structure with its own premises and management. In this phase the BTC will extend its functions and include participation in bioenergy projects, providing advisory and information on bioenergy technologies, organizing training and capacity building events, etc. Necessary funding for operation of the BTC can be obtained in form of an annual membership fee or payment of interest from transactions concluded.

3. Advanced biomass trade centre offering energy services

The concept of the advanced BTC means that in line with information provision on available biomass potential and consumption in the region, the BTC owns necessary infrastructure for woodfuel preparation (chipping, drying, and packing) and storage.

Financing: Ministry of Agriculture⁶, private financing.

Desired result: Development of a virtual biomass logistic and trading platform. Further development of the idea, if the viability of the project is proved.

⁶ Ministry of Agriculture of Republic of Latvia plans to co-finance number of projects for development of woodfuel logistic system

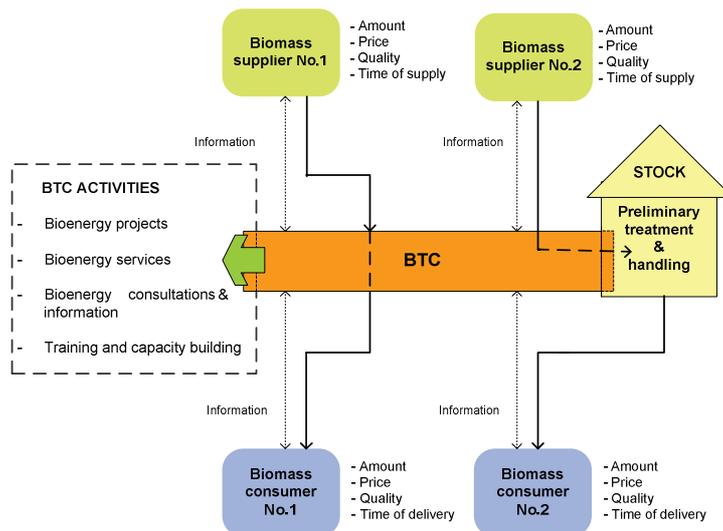


Fig.6.4. Biomass trading centre

3. Promoting energy efficiency and renewable energy

Measure: Public awareness raising

Description: The objective of this measure is to increase public awareness about 'green' lifestyle, renewable energy (RE) and energy efficiency (EE). Increased public awareness will promote reduction of greenhouse gas emissions and increase energy efficiency.

Responsibility: Municipality. Possible cooperation with Limbazi municipality.

- Activities:**
1. Identification and monitoring of current situation:
 - Development of a data base with EE and RES projects implemented up to date in the region;
 - Data analysis and evaluation of municipality implemented EE and RE projects;
 - Development of a data base with information about the specific heat energy consumption in multi-apartment buildings and municipality owned public buildings.
 2. RE and EE information on municipality website:
 - RE and EE best practice examples;
 - Information about the specific heat energy consumption in multi-apartment buildings and municipality owned public buildings made available for inhabitants;
 - Latest information on municipality website about possibilities for obtaining European and State co-financing for RE and EE projects;
 - Information on green public procurement;
 - Contacts for reliable energy auditors and builders.
 3. Public awareness raising:
 - Workshops, consultation, training (technological solutions, energy efficiency, building management);
 - Best practise visits;
 - Preparation of informative materials;

- Competitions on best energy performance in different sectors;
- 'Green energy' lessons at schools (once a year).

Financing: Municipality budget.

Desired result: Increased public awareness about RE (especially biomass) and EE.

- Development of a data base of renewable energy and energy efficiency projects implemented up to date in the region. Carrying out data analysis of municipality owned projects;
- Substantially updated information on municipality website 'Green region';
- At least 1 informative event organized annually.

Measure: Building energy performance certification system

Description: Reduced heat energy consumption in buildings provides environmental, economical and social benefits. In order to improve energy efficiency of buildings the European Union foresees implementation of building energy performance certification system.

According to Directive 2010/31/EU energy performance certificate is necessary when the building is sold, rented or leased. Each public and frequently visited building with floor space exceeding 500 m² must have an energy performance certificate and it must be placed in a visible place.

Energy performance certificate includes energy performance indicators by which the consumer can compare and evaluate building energy performance.

The aim of this measure is to raise public awareness about building energy consumption and possibilities for reducing it by establishing a voluntary building energy performance certification system.

Initially energy performance certificates can be placed in municipality owned public buildings, appealing to owners of private buildings as well to participate in the system.

Responsibility: Municipality.

Activities: Energy auditing and energy certification of municipality owned public buildings.

Financing: Financing is equivalent to the cost of the energy auditing of public buildings and preparation of energy performance certificates (~300 LVL (430 EUR) for one building).

Desired result: Energy audits carried out and energy performance certificates received in all municipality owned public buildings (in active use) by 2022. Increasing number of private sector buildings received energy performance certificates.



Energy Efficiency Rating		Current	Potential
Very energy efficient - lower running costs			
(92-100)	A		
(81-91)	B		
(69-80)	C		73
(55-68)	D		
(39-54)	E		
(21-38)	F	37	
(1-20)	G		
Not energy efficient - higher running costs			

Measure: Energy Efficiency Fund

- Description: The aim of Salacgriva regional Energy Efficiency Fund is to attract co-financing (beside municipality budget) for multi-apartment building renovation.
- Responsibility: Municipality.
- Financing: Source of funding: municipality budget.
- Desired result: Development of Energy efficiency fund. Attracted co-financing for multi-apartment building renovation.

Measure: Green public procurement

- Description: Green public procurement is a systematic integration of environmental and social conditions into all activities related to the procurement of goods and services.
Green public procurement helps to:
- Reduce environmental impact;
 - Promote social improvement, and;
 - Reduce budget costs.
- The aim of activity is to integrate environmental and energy efficiency criteria into municipality public procurement.
- Responsibility: Municipality.
- Activities: Introduction to the existing guidelines for green public procurement (developed by the European Commission and the Ministry of Environmental protection and regional development of Republic of Latvia), integration of green procurement criteria into the public procurement.
- Financing: Not necessary.
- Desired result: Green public procurement in Salacgriva municipality.

Measure: Bioenergy tourism

- Description: Thanks to its geographical location in the North of Vidzeme, on the coasts of the Baltic Sea, Salacgriva region is rich in magnificent and biologically diverse rivers and virgin woods. Availability of natural resources has stipulated the development of green tourism as one of regions largest priorities. This includes not only recreation opportunities in clean and unpolluted environment but as well provides an opportunity to meet regions renewable energy and energy efficiency initiatives.
Due to large interest about the experience of renewable energy production and utilization in Salacgriva region, the Salacgriva Tourism information centre offers a two-hour excursion which includes following objects:
- Administrative building of North Vidzeme Biosphere Reserve (solar collector);
 - Shopping centre 'Maxima' (heat pump);
 - Children play ground 'Nakotnes parks' (solar-wind lighting system);
 - Camp site 'Rakari' (heat pump);
 - Recreation centre 'Kapteinu osta' (heat pump);

- Salacgriva secondary school and kindergarten (heat pump), and;
- Ainazi wind generators.

The idea of Green energy excursion route can be developed further, by providing new objects to visit, detailed information on project implementation and results, as well as interactive maps, factsheets and other promotional activities.

To popularize Salacgriva region as an environmentally friendly and sustainable region, also regional souvenirs could be related to renewable energy themes, showing municipalities incentives in this field (e.g., calendars, postcards, printed souvenirs).

Responsibility:	Municipality, Salacgriva Tourism information centre.
Activities:	Identification of RE and EE projects realized up to date, contacts with project developers, preparation of informative materials.
Financing:	Source of funding: municipality budget.
Desired result:	Review of the existing Green energy route and additions made, if necessary. Development of informative materials about bio-tourism opportunities in Salacgriva region. Created souvenirs representing Salacgriva Green region.

Measure: Participation in Covenant of Mayors initiative

Description:	<p>The Covenant of Mayors is an initiative from European Commission which was created to promote the achievement of European Unions climate goals by stressing the important role of local and regional authorities in the way towards sustainable energy policy.</p> <p>The Covenant of Mayors is the mainstream European movement involving local and regional authorities, voluntarily committing to increase energy efficiency and use of renewable energy sources on their territories. By their commitment, Covenant signatories aim to meet and exceed the European Union 20% CO₂ reduction objective by 2020.</p>
Responsibility:	Municipality.
Activities:	Development of a sustainable energy action plan in a year after signing the Covenant. Implementation of the activities included in the action plan.
Financing:	Necessary for the development of action plan.
Desired result:	Mayors of Salacgriva and Ainazi cities have signed the Covenant of Mayors. Sustainable energy action plans are developed and are implemented.

6.3. Time table

In Table 6.1 an indicative timetable for the implementation of proposed measures is given.

Table 6.1

Activity implementation time table

No.	Action	Activity	Responsible	Financing	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
1	Biomass cogeneration plant	Activities related to project development	Municipality or private company	Budget, ERDF or private investments											
2	Bioenergy use in municipality buildings and infrastructure	Inventory of municipality owned buildings Attracting co-financing and project implementation	Municipality	Budget, ERDF, CCFI											
3	EE measures in municipality buildings	Inventory of municipality owned buildings Attracting co-financing and project implementation	Municipality	Budget, CCFI											
4	EE measures in municipality heat supply infrastructure	Activities related to project development	Municipality	Budget, ERDF											
5	Installation of flue gas condenser	Activities related to project development	Municipality, private investor	Budget, private investments											
6	Roadside maintenance biomass management pilot project	Inventory of municipality owned roads													
		Evaluation of roadside maintenance biomass potential	Municipality	Budget											
		Development of a roadside biomass management plan													
7	Biomass trade and logistic centre	Contracting with chip producer													
		1 st phase. A virtual biomass trading platform													
		2 nd phase. BTC as a separate structure	Private investor	Ministry of Agriculture, private											
8	Public awareness raising	3 rd phase. BTC as energy services provider													
		Identifying and evaluating existing situation in field of RES and EE	Municipality	Budget											

No.	Action	Activity	Responsible	Financing	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
		Updates on municipality website 'Green region'				And further									
		Organization of informative and educational events				And further									
		Preparation of informative materials				And further									
		Placing energy performance certificates in municipality buildings that have carried out energy audit up to date	Municipality	-											
9	Building energy performance certification	Carrying out energy audits in municipality owned public buildings and preparing energy certificates	Municipality	CCFI, budget											
		Promoting building energy performance certification among private sector buildings	Municipality	-											
10	Building energy efficiency fund	Establishment of fund	Municipality	Budget											
		Attracting co-financing													
11	Green public procurement	Integration of environmental and EE criteria into public procurement procedures	Municipality	-		And further									
		Development of 'Green energy' route													
12	Bioenergy tourism	Preparation of informative materials and promoting activities	Municipality, Tourism information centre	Budget											
		Operation of excursion route													
13	Participation in Covenant of Mayors initiative	Signing the Covenant of Mayors													
		Development of sustainable energy action plan	Municipality	Budget											
		Action plan implementation													

6.4. Application of quality/sustainability criteria

The issues of woodfuel quality and sustainable energy production are pressing in Salacgriva region. The quality of solid biomass mainly depends on factors such as the moisture and ash content of fuel. Undoubtedly better quality fuel reduces fuel consumption and energy production costs, as well improves air quality.

Currently there is no imposing legislation on EU level concerning sustainability standards for solid or gaseous biomass use for energy purposes. The bioenergy sector generally operates within frameworks related to agriculture, forest management and waste management.

The European standardisation institute (CEN) has developed 37 standards for solid biofuels, covering fuel specification and classes, fuel quality assurance, sampling and sample preparation, physical and mechanical properties and chemical analysis. Standards have been developed during 2000 – 2011 and are published for market use but are rarely used in Latvia.

To improve the quality of woodfuel municipality should promote fuel purchase based on fuel energy content (LVL/MWh), rather than mass or volumetric units. Fuel procurement based on the energy content of woodfuel will promote effective use of biomass resources.

Forest is the main source of biomass in Salacgriva region. Exploitation of forest biomass in Latvia is generally governed by the Law on Forests. In order to commence tree felling in forest land, a confirmation shall be necessary, except in cases when such trees are cut, for the purpose of thinning of forest stands, the stump diameter of which is less than 12 centimetres, as well as dead standing and windthrown trees. The amount of dead standing and windthrown trees in ownership or lawful possession, cut without a confirmation at the territory of the relevant forest district, shall not exceed 10 m³ per year. Tree felling in a forest is prohibited, if a forest inventory has not been made by the forest owner or the lawful possessor.

It is an obligation of a forest owner or lawful possessor to regenerate a forest stand within a period of three years after the performance of felling or the impact of other factors, if the basal area of the forest stand has become, due to such impact, smaller than the critical basal area. It is also a duty of a forest owner or lawful possessor to perform, in the forests of his ownership or lawful possession, a forest inventory at least once in 10 years, and to submit these materials to the State Forest Service. A forest management plan shall be developed on the basis of the forest inventory data. When planning forest management, a forest owner or lawful possessor shall observe maximum equitable and sustainable utilisation of timber resources and preservation and increase of forest productivity and value.

Two most common forest certification systems – FSC (Forest Stewardship Council) and PEFC (Programme for the Endorsement of Forest Certification schemes) – are used in Latvia. First FSC certificates were issued in 2001. The largest forest management company owing a FSC is company managing Latvian State forests 'Latvijas valsts meži' Ltd.

Considering the development of regional bioenergy market it should be taken into account that Salacgriva region territory incorporates a number of areas of conservation that are under

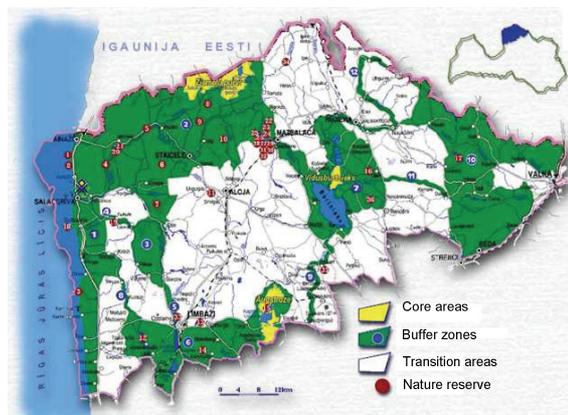


Fig.6.5. Functional zones in North Vidzeme Biosphere Reserve⁷

⁷ North Vidzeme Biosphere Reserve. Available at: http://www.daba.gov.lv/upload/Image/Illustracijas/IADT_visa_LV_XXL.jpg

certain operational restrictions. Largest part of Salacgriva region incorporates in the North Vidzeme Biosphere Reserve (Fig.6.2) with three functional zones under different management restrictions. This includes: (1) core areas where economic activities are almost entirely prohibited, (2) buffer zones where economic activities are allowed but no environmentally harmful industrial development can be done, and (3) transition areas which are intensively used areas, residential areas, road networks.

7. IMPACT ASSESSEMENT AND PROGRESS MONITORING AND EVALUATION

Implementation of the action plan will have a number of positive impacts at regional, national and EU level:

- Contribution to the implementation of national and EU level renewable energy and energy efficiency targets;
- CO₂ reduction and air quality improvement due to fossil fuel replacement with renewable sources;
- Reducing fuel consumption due to energy efficiency measures;
- Income for local forestry and wood processing companies, as well as woodfuel suppliers due to wider use of local woodfuel;
- Creation of new work places and contribution to regions economical growth, and;
- Public awareness and knowledge raising about renewable energy (especially biomass) and energy efficiency topics.

When exploitation of biomass for energy production is considered, also the negative aspects should be taken into account. This includes food safety in the region, competition between sectors and possible influence on biodiversity. Although there is a little likelihood of possible negative influence on regional food safety because of large areas of unused agricultural lands in the region, still first the waste biomass should be exploited.

To ensure the implementation of measures included in the action plan in accordance with the time schedule, a regular monitoring of activities and review of objectives and actions is planned. Responsible parties for the implementation of the action plan supervise the implementation process of the action plan in accordance to the timetable. Once a year, conclusions about the implementation of the action plan are sum up in a report, which, if necessary is followed by a review of action plan targets and proposed actions. The report includes review of regional energy balance based on statistics and the bioenergy characterization.

Monitoring of the action plan development and implementation of corrective measures, if necessary, is done by the working group once a year. Participants of the working group include Salacgriva regional municipality and Tourism information centre representatives, as well as other interested parties.

Implementation of activities defined in the action plan is dependent on the interests and possibilities of the municipality and should be assessed from an economical, technological and environmental perspective. Activities included the action plan do not preclude to any extent implementation of other measures that are consistent with the general development vision of the region.

Specific indicators for monitoring the progress:

Indicator	Unit
Heat energy consumption broken down by sectors (households, industry and services sector, public buildings)	MWh/a
Electricity consumption	MWh/a
Biomass share in heat energy production	%
Biomass share in electricity production	%
Fuel consumption broken down by different fuel types (fossil fuel, biomass)	t/a
Specific building energy consumption	kWh/m ² /a
Reduced greenhouse gas emissions	t CO ₂ /a
Visitors in municipality organized Green region's events	Visitors/a

ANNEX

ANNEX I. Energy efficiency and renewable energy projects in Salacgriva region

Table 1

Use of renewable energy sources in households				
No.	RES technology, location	Heat/ Power, H/P	Project realization	CO ₂ reduction, kg CO ₂ /a
1	Ground heat pump, Salacgriva r.t.	H	1/07/2012	7,552
2	Ground heat pump, Salacgriva r.t.	H	1/07/2012	3,834
3	Ground heat pump, Liepupe parish	H	31/10/2011	7,552
4	Ground heat pump, Liepupe parish	H	1/07/2012	5,923
5	Air heat pump, Ainazu r.t.	H	15/06/2012	9,901
6	Solar collector, Liepupe parish	H	30/06/2012	1,723
7	Wind generator, Salacgriva	P	1/07/2012	2,501
8	Pellet boiler, Salacgriva	H	1/04/2012	13,200
9	Ground heat pump, Liepupe parish	H	30/06/2012	6,516
10	Ground heat pump, Salacgriva r.t.	H	1/07/2012	7,552
11	Ground heat pump, Salacgriva r.t.	H	1/07/2012	3,834
12	Pellet boiler and solar collector, Liepupe parish	H	1/07/2012	21,102
13	Solar collector, Liepupe parish	H	1/07/2012	1,539
14	Ground heat pump, Salacgriva	H	25/06/2012	5,143
15	Solar photovoltaic, Salacgriva r.t.	P	1/07/2012	2,184
16	Ground heat pump, Liepupe parish	H	1/07/2012	7,552
17	Solar photovoltaic, Salacgriva r.t.	P	1/07/2012	2,184
18	Pellet boiler, Liepupe parish	H	1/10/2012	23,100
19	Solar collector, Salacgriva	H	31/12/2011	342
20	Solar collector, Liepupe parish	H	1/11/2012	3,421
21	Pellet boiler and solar collector, Liepupe parish	H	1/11/2012	20,328
22	Ground heat pump, Liepupe parish.	H	31/10/2012	3,239
Total:				160,222

r.t.- rural territory

Table 2

Use of renewable energy sources in municipality buildings and infrastructure				
No	Project	Project activities	Financial instrument	Realization
1	Heat pump demonstration project	Sea heat pump installation for district heat supply	eea grants	Implemented
2	Solar-wind lighting system	Solar-wind lighting system installation in children playground in Salacgriva	Municipality budget	Implemented
3	Solar energy for hot water in Salacgriva municipality	Integration of a solar collector in the system of sea heat pump	CCFI	Active (05/2012)

Table 3

Use of renewable energy sources in industry service			
No	Project	Project implementation	CO ₂ reduction, tCO ₂ /a
1	Complex greenhouse gas emission reduction measures in manufactory Brivais Vilnis, JSC	Active	199
2	Sports centre building in accordance to low energy consumption building principles	Active	n.a
3	Installation of mobile pellet boiler (Granulu Mobilais Siltums, Ltd)	Active	10,520
4	Wind park installation (Jekabpils energija, Ltd)	Active	1,033
Total:			11,752

Table 4

Energy efficiency improvement projects in multi-apartment buildings in Salacgriva region				
No.	Project	Energy efficiency measures	Realization	Planned energy savings, %
1	Energy efficiency measures in multi-apartment building in Salacgriva, Atlantijas Str.1a	Facade insulation, roof replacement, attic ceiling insulation, window and door replacement	Implemented	41
2	Energy efficiency measures in multi-apartment building in Salacgriva, Vidzemes Str.7	Facade insulation, window and door replacement, attic ceiling insulation, heat and hot water supply system insulation	Implemented	44
3	Energy efficiency measures in multi-apartment building 'Liepupe 26' in Liepupe, Salacgriva region	Facade insulation, window replacement, attic ceiling insulation, renovation of ventilation system, roofing replacement	Implemented	47
4	Energy efficiency measures in multi-apartment building in Pernavas Str.14, Salacgriva	Facade and foundation insulation, attic ceiling insulation, roof replacement, window and door replacement, heating system insulation	Active	49
5	Energy efficiency measures in multi-apartment building in Pernavas Str.15, Salacgriva	Facade, foundation and attic ceiling insulation, roof replacement, window and door replacement, heating pipe insulation	Active	43
6	Energy efficiency measures in multi-apartment building in Vilnu Str.9, Salacgriva	Roofing replacement, attic ceiling and facade insulation, window and door replacement, heating pipe insulation	Active	44
7	Energy efficiency measures in multi-apartment building in Pernavas Str.10, Salacgriva	Facade and socle insulation, attic insulation, window and door replacement, heating system renovation	Active	43
8	Energy efficiency measures in multi-apartment building in Smilsu Str.22, Salacgriva	Wall insulation, attic ceiling insulation, window and door replacement	Active	36

EXECUTIVE SUMMARY

The European Union has set a number of ambitious energy and climate policy goals to be achieved over the next decades. Implementation of these goals will require active participation of all interested parties at national, regional and local levels. According to the Latvian legislation local municipalities are not obliged to favour the use of renewable energy sources in the territory of their administration. However both local authorities and the society in general should be aware of the importance of this issue towards sustainable development of the region.

Setting an example for other municipalities in Latvia, Salacgriva region has become the first one in Latvia where 'green' ideas has become one of the priorities of the municipality. The declaration of the Green municipality of Salacgriva municipality Council, approved in 2010, establishes a framework for general bioenergy vision of the region and highlights the importance of 'green' ideas in a sustainable development of the region.

During July-December, 2011, a Bioenergy action plan for Salacgriva region in Latvia was developed within Intelligent Energy Europe project BioRegions of the European Commission. Analytical part of the action plan includes description of the current energy situation and assessment of regional biomass potential. Following strategic section deals with bioenergy targets and measures proposed to achieve these targets.

The share of biomass in Salacgriva region is 80% of the total energy consumption. It is more than twice the bioregion⁸ target. Therefore greater attention should be paid to more sustainable and effective use of biomass which allows not only reducing fuel consumption, but also improves air quality.

Estimation of regional biomass potential indicates that it exceeds annual fuel consumption. This shows the availability of local resources for sustainable energy supply which goes hand in hand with strengthening local economy and promoting welfare.

The action plan indicates three major goals to be achieved till 2022:

- Keeping the use of biomass in the final energy consumption at least 80% and increasing gradually, ensuring optimum use of local biomass potential;
- Improving the efficiency of biomass use for at least 20% till 2022, and;
- Decreasing energy consumption in buildings for at least 30% till 2022.

Activities proposed in the action plan include:

- 1) Public awareness raising about Green region's ideas;
- 2) Replacement of fossil fuel boilers with renewable energy sources (mainly biomass) in municipality owned public buildings;
- 3) Energy efficiency measures in municipality owned public buildings;
- 4) Performing energy audits and placing building energy performance certificates in municipality owned public buildings;
- 5) Establishment of Building Energy Efficiency Fund for attracting co-financing for multi-apartment building renovation;
- 6) Installation of a biomass cogeneration plant;
- 7) Installation of flue gas condenser in biomass boiler house;
- 8) Roadside biomass management pilot project;
- 9) Development of a regional biomass trade and logistic centre;
- 10) Integration of energy efficiency and environmental criteria into the public procurement procedures;
- 11) Bioenergy tourism, and;
- 12) Participation in Covenant of Mayors initiative.

⁸ Bioregion (bioenergy region) – a region in which at least one third of heating and electricity needs is provided from regional and sustainable bioenergy sources

Implementation of activities defined in the action plan is strongly dependent on the interests and possibilities of the municipality and should be assessed from an economical, technological and environmental perspective. Activities included the action plan do not preclude to any extent implementation of other measures that are consistent with the general development vision of the region.

ANNEX

ADOPTION OF THE ACTION PLAN



LATVIJAS REPUBLIKA
SALACGRĪVAS NOVADA DOME

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Salacgrīvā, 2012.gada 21.jūnijā Nr.3-11/ 480

Salacgrīvas novada pozīciju deklarācija

Eiropas Savienība ir izvirzījusi augstus enerģētikas un klimata politikas mērķus, kuru sasniegšana prasa aktīvu rīcību kā valsts, tā reģionālā un vietējā līmenī. Energoplānošana pašvaldības līmenī, ietverot atjaunojamo energoresursu izmantošanas veicināšanu un energoefektivitātes paaugstināšanas pasākumu īstenošanu, ir neatņemama attīstības plānošanas sastāvdaļa ceļā uz ilgtspējīgu novada pastāvēšanu.

Salacgrīvas novads ir bagāts ar biomasas resursiem, kuru optimāla izmantošana sniedz virkni ieguvumu, no kuriem būtiskākie:

- 1 Devums valsts un Eiropas Savienības atjaunojamo energoresursu un energoefektivitātes mērķu sasniegšanā;
- 2 Oglekļa dioksīda (CO₂) emisiju samazinājums un gaisa kvalitātes uzlabošanās, pateicoties fosilā kurināmā aizvietošanai ar atjaunojamajiem enerģijas avotiem;
- 3 Kurināmā patēriņa un izmaksu samazināšanās, pateicoties energoefektivitātes pasākumu īstenošanai siltuma avotos, pārvades sistēmās un pie patērētāja;
- 4 Jaunu darba vietu radīšana un novada ekonomiskās izaugsmes veicināšana;
- 5 Sabiedrības informētības un vispārējā izpratnes līmeņa uzlabošanās.

Eiropas Komisijas programmas „Saprātīga enerģija Eiropai” (Intelligent Energy Europe) projekta „BioRegions” ietvaros laika posmā no 2011.gada jūlija līdz decembrim tika izstrādāts Salacgrīvas novada Bioenerģijas ražošanas un izmantošanas veicināšanas rīcības plāns 2012.-2022.gadam. Rīcības plānu izstrādāja SIA „Ekodoma” sadarbībā ar Salacgrīvas novada pašvaldību un Salacgrīvas Tūrisma informācijas centru. Rīcības plāns kalpo par ietvaru bioenerģijas reģiona izveidošanai, un tas ir vēl viens solis ceļā uz Salacgrīvas Zaļā novada ideju īstenošanu dzīvē.

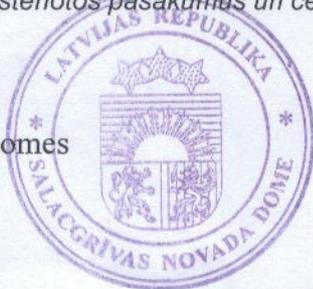
Rīcības plāna mērķi ir:

- ❖ Veicināt efektīva un uzticama vietējā biomasas tirgus un piegādes ķēžu attīstību;
- ❖ Paaugstināt ieinteresēto pušu zināšanas un izpratni par bioenerģijas projektu īstenošanu un ar to saistītajām aktivitātēm;
- ❖ Veicināt investīcijas bioenerģijas projektos un vietējā uzņēmējdarbībā.

Mērķu sasniegšanai rīcības plānā piedāvāti pasākumi trīs grupās: (1) biomasas īpatsvara palielināšanai novada energoapgādē, (2) biomasas izmantošanas efektivitātes paaugstināšanai un (3) energoefektivitātes un atjaunojamo energoresursu izmantošanas veicināšanai.

Nemot vērā ieguvumus, ko sniedz vietējo enerģijas resursu efektīva izmantošana un atbalstot ilgtspējīga bioenerģijas tirgus attīstību Salacgrīvas novadā, Salacgrīvas novads atzinīgi vērtē un atbalsta IEE projekta „BioRegions” ietvaros īstenotos pasākumus un centienus.

Salacgrīvas novada domes
izpilddirektors



Jānis Cīrulis