



Regional Biomass Action Plan for Pomerania



WP2, Task 2.3

Prepared by:

Baltic Energy Conservation Agency





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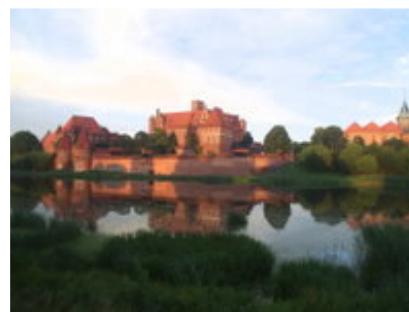
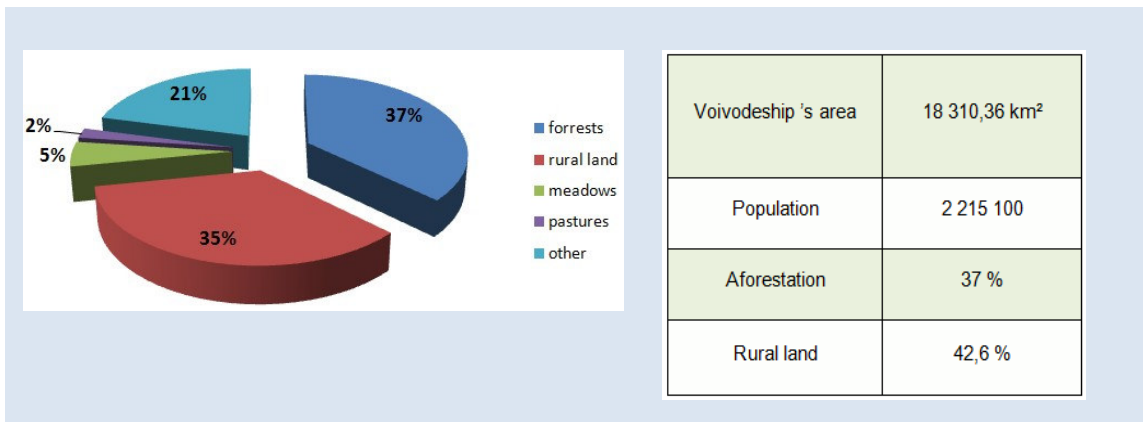
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1. BACKGROUND

Key data about the region:





Voivodeship's characteristics

- well developed tourism- quality of the surrounding environment is very important
- conditions exist for biomass cultivation and for energy crops plantations
- biomass raw material and surpluses of „green” energy from biomass may be exported to other regions

Energy balance in the region (in 2008)

Heat demand of the Voivodeship is assessed at 6 656 MW, approx. 61 522 TJ.
Coal contributes to 71% of heat production.

Biomass resources (in 2008)

Hydropower and **biomass** have the biggest share in RES exploitation in the region.

Total production of energy from **renewable sources** equals **115 GW** annually (= **4% of the total energy production** in the region).

Straw surpluses that may be used for energy production equal **710 000 tonnes** per year (46% of the total volume of straw produced). This amount of straw is sufficient to produce 8 500 thousand GJ/year.

Energy crops plantations have the potential to produce **26 914 thousand GJ**. There are 45 000 hectares of land available, that may be converted into energy crops plantations.

Wood resources (GJ / year)					
forests	wood processing	orchards	roadsides	municipal green areas	TOTAL
1 973 832	2 619 475	9 472	90 592	13 912	4 707 283

Existing and potential **biomass resources** (wood from forestry, straw, energy crops) may deliver enough energy to satisfy **20% of heat demand** in the Voivodeship.



Existing strategies



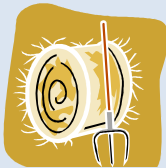
EU regulations

Directive 2004/8/WE, dated 11 February 2004, concerning cogeneration in heat production

Directive 2003/30/WE concerning the use of biofuels in transport

Directive 2001/77/WE dated 27 September 2001, concerning energy production from renewable sources.

Council's ordinance no. **1698/2005**, dated 20 September 2005, concerning supporting rural areas development by the European Rural Fund.



Regional documents

„Regional Operational Plan for Pomorskie Voivodeship” belongs to the measures of National Strategic Reference Framework.

It consists of 10 priorities.

Priority no. 5 :

„Environment & environmentally friendly energetics” -

focuses on the improvement of the natural environment condition and limitation of the environmental threats by means of promotion of RES and increasing the efficiency of energy production and distribution.





Aim of the „**Regional strategy for energy sector development, with the special focus on RES**” is conversion of national energy policy regulations into regional ones.

Strategy is valid until 2025, it introduces sustainability rule to energy sector development, by promotion of thermomodernisation and energy saving measures.

Document is divided into 3 priority sections and 5 strategic aims.

Strategic aim no. 2

„Reduction of primary energy consumption in fuels, by thermomodernisation measures resulting in higher efficiency of energy production and distribution”

focuses on improvement of individual energy sources efficiency by 25-33% through their replacement, retrofitting or fuel exchange.

Strategic aim no. 3

„Reduction of the dependence on conventional energy sources by means of increase of RES exploitation, with their minimum share in 2025 equal 19%”

can be achieved by introduction of heat sources burning solid biomass.

Possible measures:

- promotion and development of heat sources fuelled with solid biomass (wood chips, energy crops, straw, pellets, cubes) - relevant for local heating plants with the power output from few hundred kW to few MW, and individual small boilers
- promotion and development of heat sources fuelled with biogas (from farms, processing plants, wastewater treatment plants & other) - relevant for local heating plants and individual boilers (as per the biomass case above)
- promotion and development of cogeneration units, producing both electricity and heat, with the power output from few hundred kW to few MW, using RES as a fuel, supplemented by the natural gas
- development of the energy crops plantations

Strategic aim no. 4

„Improvement of regional and local energetic safety, reliability of the energy supply and efficiency of energy production and usage”

is closely connected with the development of agroenergetic plants and local energy units fuelled with biofuels (biomass, biogas, liquid biofuels)





BIOGAS PLANTS IN EACH COMMUNE

National programme for biogas plants development in every commune of the voivodeship

On 13th October 2008, the Minister of Agriculture & Rural Development, Marek Sawicki met with the group of experts cooperating with the resort in the area of biogas plants development.

Development of biogas plants is crucial for solving problems of Polish agriculture and reaching European goals for the increased share of RES in the energy balance.

Possibility of joint certificates of origin for both electricity and heat production by the biogas plants can constitute a significant supportive tool.

LINKS

1. <http://www.dpr.woj-pomorskie.pl/>
2. <http://www.wrotapomorza.pl/pl/dprow/>
3. <http://www.nfosigw.gov.pl/site/main/podstrony.php?id=1219147944>
4. <http://www.minrol.gov.pl/DesktopModules/Announcement/ViewAnnouncement.aspx?ModuleId=415&TabOrgID=914&AnnouncementId=11139>
5. http://www.woj-pomorskie.pl/downloads/zalacznik_nr_1_RSE.pdf
6. http://dpr.woj-pomorskie.pl/images/dyn/_RPO_WP_021007_POL.pdf





2. TARGET GROUPS

BIOMASS MARKET ACTORS:

- primary biomass producers
- processed biomass producers
- equipment manufactures
- installers
- design engineers
- municipal users
- individual users

RBAP PARTNERS:

- regional self-government
- selected communes and districts
- Pomeranian Rural Advisory Office
- Regional Management of National Forests
- heating sector (Chamber of Economy “Polish Heating Engineering” – OPEC Gdynia)
- energy sector (ENERGA, EC Wybrzeże)
- Polish Chamber of Biomass
- Polish Chamber of Biogas
- National Chamber of Biofuels
- Voivodeship Fund of Environmental Protection and Water Balance
- nongovernmental organizations (Polish Ecology Club East-Pomeranian District)
- Baltic Energy Conservation Agency





3. BENEFITS / BARRIERS

Expected results:

SOCIAL

- new job vacancies in the course of the investment process and at the biomass production, processing and logistics
- stimulation of the rural areas

ECONOMIC

- regional investments stimulate local economy
- expenditures on the fuel purchase remain on the local market
- income from the sale of green/red certificates
- reduced dependence on conventional energy carriers prices

ENVIRONMENTAL

- reduced emissions of harmful gases
- reduced influence of the system on the environment (lower volume of waste)

Obstacles in biomass projects implementation:

- dispersed resources of biomass
- high prices of the processed biomass
- competition with cheap coal
- high consumption of energy, thermomodernisation necessary prior to fuel exchange
- high investment costs of modern installations
- lack of own financing possibilities for both municipal and individual users
- limited external sources of financing
- lack of environmental and energetic awareness



4. MEASURES / AREA OF ACTIVITIES

	Measure	Main actor(s)	Description of the measure	Year(s) of implementation (estimate)	Funding body	Estimated costs
1	Establishment of the Energy Management Unit at the Marshall's Office framework	Main entities in the region	<ul style="list-style-type: none"> • coordination of the measures included in the Regional Action Plan • elaboration of necessary legal acts and by-law • scheme for projects' financing • supporting local undertakings • cooperation with the Pomeranian Center for Renewable Energy • creation and maintenance of biomass databases (biomass resources, available fuel sources, current biomass utilisation) • supporting innovative projects • monitoring and estimation of RBAP achievements 	2009 - 2012		
2	Establishment of Pomeranian Centre of Renewable Energy	Representatives of: <ul style="list-style-type: none"> • Pomeranian self-government • selected communes and districts • Pomeranian Rural Advisory Office • Regional Management of 	<ul style="list-style-type: none"> • Cooperation and consultations platform for the main actors of energetic utilization of biomass market • Advisory body for Energy Management Unit 	2009 -		



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		<p>National Forests</p> <ul style="list-style-type: none"> • heating sector (Chamber of Economy “Polish Heating Engineering” – OPEC Gdynia) • energy sector (ENERGA, EC Wybrzeże) • Voivodeship Fund of Environmental Protection and Water Balance • nongovernmental organizations (Polish Ecology Club East-Pomeranian District) • Baltic Energy Conservation Agency 				
3	Creation of a biomass data database	<ul style="list-style-type: none"> • Biomass producers and users 	<ul style="list-style-type: none"> • Creation of the up-to-date database containing information about available resources, fuels, installations • Preparation of the biomass and energy balances • Biomass prices monitoring • Promotion of the best practice examples • Facilitation of the information for potential investors, communes, etc. • Publication of the collected data: Newsletter 	2009 -		





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4	Energy crops plantations	<ul style="list-style-type: none"> • Farmers 	<ul style="list-style-type: none"> • Development and popularization of energy crops plantations • Database containing up-to-date information about existing plantations: area, production volume • Enhancement of the biomass supply • Cooperation with the rural and forestry development bodies 	2009 -		
5	Biomass boilers in public buildings and small heating systems	<p>All stakeholders aforementioned, especially:</p> <ul style="list-style-type: none"> - communes - boiler suppliers - fuel suppliers - potential financing partners: <p>commune, Voivodeship Fund of Environmental Protection and Water Balance</p>	<ul style="list-style-type: none"> • Popularization of the biomass installations in public building and small heating systems, especially by means of: <ul style="list-style-type: none"> - support of the projects applying for the support from Regional Operational Program - information facilitation - technical consulting - assistance in financial support possessing process 	2009-2012		
6	Exchange of the oil burners for the biomass ones in public buildings	Public buildings: schools, authorities offices etc.	Obligatory exchange of the oil burners for the biomass ones in public buildings within next 3 years	2009-2012	Own funds, external financing	
7	Biogas plants in each commune	Communes, communal companies: waste, heating etc.	Supporting governmental project of constructing a biogas plant in every commune	2009-2012	Financial resources offered by the Program of Rural Areas Development	
8	Biomass CHP plants	<ul style="list-style-type: none"> • Local self-governments 	<ul style="list-style-type: none"> • Biomass cogeneration units in all heating systems 	2009 -		Environmental funds,



		<ul style="list-style-type: none"> • District heating companies 	<p>working in the Voivodeship</p> <ul style="list-style-type: none"> • Supporting R&D works of the heating companies • Making use of the existing experiences (EC Wybrzeże, ENERGA) in the area of biomass projects • Winning external funds for the biomass cogeneration units financing 			3 rd party financing
9	Trainings for installers of biomass installations	Companies installing biomass installations	<ul style="list-style-type: none"> • Existing best practice examples promotion • Know-how exchange • Achievement of better quality projects 	2009 -		



Sources of financing



National Fund of the Environmental Protection & Water Balance is working on financing scheme for RES and highly efficient cogeneration plants. Money shall be derived from substitute fees and fines established by the Energy Law.

The programme shall be announced in January 2009.

Voivodeship Fund of the Environmental Protection & Water Balance supports RES development in several forms (www.wfosigwgda.pl).

Operational Programme – Infrastructure & Environment

Measure 9.4- Energy production from RES.

Exemplary projects:

- wind farms development
- hydropower plants (<10MW) development
- biomass/biogas plants development
- geothermal plants development
- solar collectors popularization

Minimum value of the project equals 10 or 20 million PLN, depending on the installation type. Maximum value of support cannot exceed 40 million PLN.





Operational Programme – Infrastructure & Environment

Measure 9.5 –

“Biofuels production”

Exemplary projects:

- Development of installations producing biocomponents.
- Biogas production plants development.

Minimum value of the project equals 20 million PLN, maximum value of support cannot exceed 30 million PLN.

Collection of the applications shall start in the first quarter of 2009.

Regional Operational Plan

Supportive measures for the development of heating plants fuelled with biomass, biogas or biofuels are included in the Regional Operational Plan.

Measure 5.4-

„Development of renewable energetics sector”

Focuses on the exploitation of RES (wind, biomass, solar energy, geothermal energy, hydropower) for electricity and heat production.

Projects shall cover development of new units, or expansion and upgrade of the existing ones and purchase of the necessary equipment.

Priority will be given to the following projects:

- Projects compliant with the statements of „Regional strategy for the energy sector development, with the special focus on RES”
- Projects compliant with the assumptions of communal plants for heat, electricity and gas supply
- Complex projects, with the scope covering the area of entire commune or at least its significant part

Maximum value of support cannot exceed 75%.

Minimum value. of the project equals 1 000 000 PLN.

There are two dates for the applications submission scheduled: 09.2009 & 02.2011.





5. TARGETS

MEASURABLE TARGETS:

- Reduction of primary fuels consumption - by 50%
- Reduction of the heat demand - by 23%
- Reduction of the coal share in the energy balance - by 48%
- Increase of RES share in the energy balance
 - by 8% in 2010
 - by 11% in 2013
 - by 19% in 2025

IMMEASURABLE TARGETS:

SOCIAL

- new job vacancies in the course of the investment process and at the biomass production, processing and logistics
- stimulation of the rural areas

ECONOMIC

- regional investments stimulate local economy
- expenditures on the fuel purchase remain on the local market
- income from the sale of green/red certificates
- reduced dependence on conventional energy carriers prices

ENVIRONMENTAL

- reduced emissions of harmful gases
- reduced influence of the system on the environment (lower volume of waste)





6. IMPLEMENTATION & MONITORING

Implementation and monitoring shall be supervised by the Energy Management Unit (*established at the Marshall's Office framework, described in the previous paragraph*).

The results of RBAP implementation shall be presented to the authorities and society.

This document has been prepared as a part of Regbie+ project:

www.regbieplus.eu

